



**Generation Interconnection
Feasibility Study Report
for
Queue Project AF1-101
OYSTER CREEK 230 KV III
224.8 MW Capacity / 800 MW Energy**

January, 2020

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1 Introduction

This Feasibility Study has been prepared in accordance with the PJM Open Access Transmission Tariff, 36.2, as well as the Feasibility Study Agreement between the Interconnection Customer (IC), and PJM Interconnection, LLC (PJM), Transmission Provider (TP). The Interconnected Transmission Owner (ITO) is Jersey Central Power and Light (JCPL).

2 Preface

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

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

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

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

PJM utilizes manufacturer models to ensure the performance of turbines is properly captured during the simulations performed for stability verification and, where applicable, for compliance with low voltage ride through requirements. Turbine manufacturers provide such models to their customers. The list of manufacturer models PJM has already validated is contained in Attachment B of Manual 14G. Manufacturer models may be updated from time to time, for various reasons such as to reflect changes to the control systems or to more accurately represent the capabilities turbines and controls which are currently available in the field. Additionally, as new turbine models are developed, turbine manufacturers provide such new models which must be used in the conduct of these studies. PJM needs adequate time to evaluate the new models in

order to reduce delays to the System Impact Study process timeline for the Interconnection Customer as well as other Interconnection Customers in the study group. Therefore, PJM will require that any Interconnection Customer with a new manufacturer model must supply that model to PJM, along with a \$10,000 fully refundable deposit, no later than three (3) months prior to the starting date of the System Impact Study (See Section 4.3 for starting dates) for the Interconnection Request which shall specify the use of the new model. The Interconnection Customer will be required to submit a completed dynamic model study request form (Attachment B-1 of Manual 14G) in order to document the request for the study.

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 to claim 224.8 MW of Capacity rights from the old Oyster Creek Nuclear Power Station and install an Offshore Wind generating facility located in the Atlantic Ocean off the coast of New Jersey. The installed facilities will have a total capability of 800 MW with 224.8 MW of this output being recognized by PJM as Capacity. The proposed in-service date for this project is December 31, 2024. This study does not imply a TO commitment to this in-service date.

Queue Number	AF1-101
Project Name	OYSTER CREEK 230 KV III
State	New Jersey
County	Ocean (POI)
Transmission Owner	JCPL
MFO	800
MWE	800
MWC	224.8
Fuel	Offshore Wind
Basecase Study Year	2023

4 Point of Interconnection

4.1 Primary POI

The interconnection of the project at the Primary POI to the JCPL transmission system will be accomplished by constructing a new direct connection to the Oyster Creek 230 kV substation. The IC will be responsible for acquiring all easements, properties, and permits that may be required to construct the associated facilities. The project will also require non-direct connection upgrades at Oyster Creek 230 kV substation.

Attachment 1 shows a one-line diagram of the proposed primary direct connection facilities for the AF1-101 generation project to connect to the FirstEnergy ("FE") transmission system. IC will be responsible for constructing all of 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 direct connection to the Atlantic City Electric Cardiff 230 kV substation. A full scope of work or estimated cost is not provided for the proposed Secondary POI.

4.3 Cost Summary

The AF1-101 project will be responsible for the following costs:

Description	Total Cost
Attachment Facilities	\$0
Direct Connection Network Upgrade	\$0
Non Direct Connection Network Upgrades	\$2,067,300
Total Costs	\$2,067,300

In addition, the AF1-101 project may be responsible for a contribution to the following costs

Description	Total Cost
System Upgrades	\$1,193,683,266

Cost allocations for these upgrades will be provided in the System Impact Study Report.

The Feasibility Study is used to make a preliminary determination of the type and scope of Attachment Facilities, Local Upgrades, and Network Upgrades that will be necessary to accommodate the Interconnection Request and to provide the Interconnection Customer a preliminary estimate of the time that will be required to construct any necessary facilities and upgrades and the Interconnection Customer's cost responsibility. The System Impact Study provides refined and comprehensive estimates of cost responsibility and construction

lead times for new facilities and system upgrades. Facilities Studies will include, commensurate with the degree of engineering specificity as provided in the Facilities Study Agreement, good faith estimates of the cost, determined in accordance with Section 217 of the Tariff,

- (a) to be charged to each affected New Service Customer for the Facilities and System Upgrades that are necessary to accommodate this queue project;
- (b) the time required to complete detailed design and construction of the facilities and upgrades; and
- (c) a description of any site-specific environmental issues or requirements that could reasonably be anticipated to affect the cost or time required to complete construction of such facilities and upgrades.

The costs provided above exclude the Contribution in Aid of Construction (“CIAC”) Federal Income Tax Gross Up charge. If, at a future date, it is determined that the CIAC Federal Income Tax Gross charge is required, the Transmission Owner shall be reimbursed by the Interconnection Customer for such taxes.

The required Attachment Facilities and Direct and/or Non-Direct Connection work for the interconnection of the AF1-101 generation project to the FE Transmission System is detailed in the following sections. The associated one-line with the generation project Attachment Facilities and the Primary Direct and Non-Direct Connection facilities are shown in Attachment 1.

5 Transmission Owner Scope of Work

The interconnection of the project at the Primary POI to the JCPL transmission system will be accomplished by constructing a new direct connection to the Oyster Creek 230 kV substation. The IC will be responsible for acquiring all easements, properties, and permits that may be required to construct the associated facilities. The project will also require non-direct connection upgrades at Oyster Creek 230 kV substation.

6 Attachment Facilities

There is no Attachment Facility scope of work required.

7 Direct Connection Cost Estimate

There is no Direct Connection scope of work required.

8 Non-Direct Connection Cost Estimate

The total preliminary cost estimate for the Non-Direct Connection work is given in the table below. These costs do not include CIAC Tax Gross-up.

Description	Total Cost
Oyster Creek Substation: Add new 230 kV double-breaker bay for generation interconnection queue AF1-101 @ Oyster Creek SS.	\$2,067,300
Total Non-Direct Connection Facility Costs	\$2,067,300

9 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 **15 months** after the signing of an Interconnection Construction Service Agreement to complete the installation. This assumes that there will be no environmental issues with any of the new properties associated with this project, that there will be no delays in acquiring the necessary permits for implementing the defined interconnection work 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 estimate elapsed time to complete each of the required reinforcements is identified in the “System Reinforcements” section of the report.

10 Transmission Owner Analysis

10.1 Power Flow Analysis

FE performed an analysis of its underlying transmission <100 kV system. The AF1-101 project did not contribute to any overloads on the FE transmission <100 kV system.

11 Interconnection Customer Requirements

11.1 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.

11.2 Compliance Issues and Interconnection Customer Requirements

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

1. The purchase and installation of a fully rated 230 kV circuit breaker to protect the AF1-101 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 AF1-101 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 system.

11.3 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.

12 Revenue Metering and SCADA Requirements

12.1 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.

12.2 JCPL 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>.

13 Network Impacts – Primary POI

The Queue Project AF1-101 was evaluated as a 575.2 MW (Capacity 0.0 MW) injection at the Oyster Creek 230kV substation in the JCPL area. Project AF1-101 was evaluated for compliance with applicable reliability planning criteria (PJM, NERC, NERC Regional Reliability Councils, and Transmission Owners). Project AF1-101 was studied with a commercial probability of 53%. Potential network impacts were as follows:

Summer Peak Load Flow

13.1 Generation Deliverability

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

None

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	CONT NAME	Type	Rating MVA	PRE PROJE T LOADIN G %	POST PROJE T LOADIN G %	AC/D C	MW IMPAC T
42704549	206294	28LARRABEE	230.0	JCP&L	206286	28ATLANTIC	230.0	JCP&L	1	JC-P7-1-JCC-230-7A	tower	1147.0	98.29	104.74	DC	163.35
46760878	206302	28OYSTER C	230.0	JCP&L	227955	CEDAR	230.0	AE	1	JC-P2-3-JCC-230-11	breaker	564.0	99.3	131.53	DC	181.72
46761033	206326	28E WINDSR	230.0	JCP&L	206316	28WINDSOR	230.0	JCP&L	1	PJM500_PS_P2-3_DEANS_5-6	breaker	869.0	99.25	103.02	DC	72.49
46761034	206326	28E WINDSR	230.0	JCP&L	206316	28WINDSOR	230.0	JCP&L	1	PJM_P4_P484B	breaker	869.0	99.24	103.0	DC	72.49
42704380	227955	CEDAR	230.0	AE	227900	CARDIFF	230.0	AE	1	JC-P7-1-JCC-230-13	tower	805.0	97.36	156.29	DC	474.35

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	Rating MVA	PRE PROJE T LOADIN G %	POST PROJE T LOADIN G %	AC/D C	MW IMPAC T
42138102	206294	28LARRABEE	230.0	JCP&L	206309	28SMITHBRG	230.0	JCP&L	2	JC-P2-3-JCC-230-15F	breaker	813.0	139.12	148.7	DC	172.03
42138103	206294	28LARRABEE	230.0	JCP&L	206309	28SMITHBRG	230.0	JCP&L	2	JC-P2-3-JCC-230-13A	breaker	813.0	137.98	147.32	DC	167.6
42138107	206294	28LARRABEE	230.0	JCP&L	206309	28SMITHBRG	230.0	JCP&L	1	JC-P2-3-JCC-230-15G	breaker	817.0	138.44	147.97	DC	172.03
42138108	206294	28LARRABEE	230.0	JCP&L	206309	28SMITHBRG	230.0	JCP&L	1	JC-P2-3-JCC-230-15A	breaker	817.0	134.16	143.45	DC	167.61
42704350	206297	28MANITOU	230.0	JCP&L	206319	28WHITINGS	230.0	JCP&L	1	JC-P7-1-JCC-230-12	tower	817.0	163.48	201.44	DC	310.14
42704351	206297	28MANITOU	230.0	JCP&L	206319	28WHITINGS	230.0	JCP&L	1	JC-P7-1-JCC-230-11A	tower	817.0	140.9	176.73	DC	292.73
40978935	206302	28OYSTER C	230.0	JCP&L	227955	CEDAR	230.0	AE	1	JC-P7-1-JCC-230-13	tower	564.0	191.04	285.34	DC	531.85
40978936	206302	28OYSTER C	230.0	JCP&L	227955	CEDAR	230.0	AE	1	JC-P7-1-JCC-230-10A	tower	564.0	120.68	161.75	DC	231.75
41522166	206302	28OYSTER C	230.0	JCP&L	227955	CEDAR	230.0	AE	1	JC-P2-3-JCC-230-026A	breaker	564.0	100.43	131.89	DC	177.37
42138092	206314	28RED OAKA	230.0	JCP&L	206305	28RAR RVR	230.0	JCP&L	1	JC-P2-3-JCC-230-26B	breaker	869.0	162.25	167.11	DC	93.48
42138093	206314	28RED OAKA	230.0	JCP&L	206305	28RAR RVR	230.0	JCP&L	1	JC-P2-3-JCC-230-026A	breaker	869.0	149.88	154.6	DC	90.76
42138087	206315	28RED OAKB	230.0	JCP&L	206305	28RAR RVR	230.0	JCP&L	1	JC-P2-3-JCC-230-26D	breaker	869.0	165.99	170.83	DC	92.97
42138088	206315	28RED OAKB	230.0	JCP&L	206305	28RAR RVR	230.0	JCP&L	1	JC-P2-3-JCC-230-026C	breaker	869.0	153.59	158.29	DC	90.27
40979068	206316	28WINDSOR	230.0	JCP&L	219752	CLRSKVLL_1	230.0	PSE&G	1	PS_P7-1_11023+GBK-LN_LT	tower	813.0	117.21	121.7	DC	80.95

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 PROJECTIONS LOADIN G %	POST PROJECTIONS LOADIN G %	AC/D C	MW IMPACT
42704372	206318	28VANHISVL	230.0	JCP&L	206294	28LARRABEE	230.0	JCP&L	1	JC-P7-1-JCC-230-12	tower	869.0	144.94	171.04	DC	227.13
42704373	206318	28VANHISVL	230.0	JCP&L	206294	28LARRABEE	230.0	JCP&L	1	JC-P7-1-JCC-230-11A	tower	869.0	125.23	149.91	DC	214.73
42704362	206319	28WHITINGS	230.0	JCP&L	206720	28MANCHSTR	230.0	JCP&L	1	JC-P7-1-JCC-230-12	tower	869.0	141.27	176.52	DC	306.35
42704363	206319	28WHITINGS	230.0	JCP&L	206720	28MANCHSTR	230.0	JCP&L	1	JC-P7-1-JCC-230-11A	tower	869.0	122.34	156.02	DC	292.62
42138042	206323	28LAKEWOOD	230.0	JCP&L	206294	28LARRABEE	230.0	JCP&L	2	JC-P2-3-JCC-230-15J	breaker	817.0	164.71	181.42	DC	301.47
42138050	206323	28LAKEWOOD	230.0	JCP&L	206294	28LARRABEE	230.0	JCP&L	1	JC-P2-3-JCC-230-7A	breaker	869.0	163.74	198.53	DC	302.38
42138495	206326	28E WINDSOR	230.0	JCP&L	206316	28WINDSOR	230.0	JCP&L	1	JC-P2-3-JCC-230-80	breaker	869.0	100.84	104.69	DC	74.14
42704527	206326	28E WINDSOR	230.0	JCP&L	206316	28WINDSOR	230.0	JCP&L	1	PS_P7-1_1LINE+2LINE	tower	869.0	114.43	118.27	DC	73.92
42704528	206326	28E WINDSOR	230.0	JCP&L	206316	28WINDSOR	230.0	JCP&L	1	PS_P7-1_1023+GBK-LN_LT	tower	869.0	112.18	116.01	DC	73.83
42138212	206410	28R11RINGB	230.0	JCP&L	206315	28RED OAKB	230.0	JCP&L	1	JC-P2-3-JCC-230-26D	breaker	869.0	121.28	126.18	DC	94.28
42138213	206410	28R11RINGB	230.0	JCP&L	206315	28RED OAKB	230.0	JCP&L	1	JC-P2-3-JCC-230-026C	breaker	869.0	109.19	113.95	DC	91.57
42138203	206411	28R11RINGA	230.0	JCP&L	206314	28RED OAKA	230.0	JCP&L	1	JC-P2-3-JCC-230-26B	breaker	869.0	125.07	129.98	DC	94.56
42138204	206411	28R11RINGA	230.0	JCP&L	206314	28RED OAKA	230.0	JCP&L	1	JC-P2-3-JCC-230-026A	breaker	869.0	113.02	117.8	DC	91.84
42704365	206720	28MANCHSTR	230.0	JCP&L	206318	28VANHISVL	230.0	JCP&L	1	JC-P7-1-JCC-230-12	tower	869.0	139.7	174.96	DC	306.35
42704366	206720	28MANCHSTR	230.0	JCP&L	206318	28VANHISVL	230.0	JCP&L	1	JC-P7-1-JCC-230-11A	tower	869.0	120.78	154.45	DC	292.62
40978930	227900	CARDIFF	230.0	AE	219100	NEWFRDM	230.0	PSE&G	1	JC-P7-1-JCC-230-13	tower	692.0	291.5	324.09	DC	225.45
40978931	227900	CARDIFF	230.0	AE	219100	NEWFRDM	230.0	PSE&G	1	AE_P7-1 AE13TOWER	tower	692.0	273.4	285.42	DC	83.14
41522016	227900	CARDIFF	230.0	AE	219100	NEWFRDM	230.0	PSE&G	1	AE_P4-2 AE46	breaker	692.0	266.81	272.07	DC	80.65
41522017	227900	CARDIFF	230.0	AE	219100	NEWFRDM	230.0	PSE&G	1	AE_P4-2 AE45	breaker	692.0	234.97	240.04	DC	77.85
41522018	227900	CARDIFF	230.0	AE	219100	NEWFRDM	230.0	PSE&G	1	AE_P4-2 AE9	breaker	692.0	228.92	240.09	DC	77.32
41522019	227900	CARDIFF	230.0	AE	219100	NEWFRDM	230.0	PSE&G	1	AE_P4-2 AE8	breaker	692.0	228.03	238.94	DC	75.52
42138127	227900	CARDIFF	230.0	AE	228002	ORCHARD	230.0	AE	1	AE_P4-2 AE7	breaker	805.0	148.5	156.72	DC	66.11
42138128	227900	CARDIFF	230.0	AE	228002	ORCHARD	230.0	AE	1	AE_P4-2 AE6	breaker	805.0	148.49	156.7	DC	66.1
42704375	227900	CARDIFF	230.0	AE	228002	ORCHARD	230.0	AE	1	JC-P7-1-JCC-230-13	tower	805.0	149.87	169.8	DC	160.49
40979106	227901	DOROTHY	138.0	AE	228503	MNOTLA 2	138.0	AE	1	JC-P7-1-JCC-230-13	tower	478.0	114.56	126.63	DC	57.73
40979083	227949	LEWIS #3	138.0	AE	227901	DOROTHY	138.0	AE	1	JC-P7-1-JCC-230-13	tower	478.0	118.3	130.38	DC	57.73
40978965	228502	MNOTLA 1	138.0	AE	228500	LANDIS	138.0	AE	1	JC-P7-1-JCC-230-13	tower	478.0	187.52	199.6	DC	57.72
40978940	228503	MNOTLA 2	138.0	AE	228502	MNOTLA 1	138.0	AE	1	JC-P7-1-JCC-230-13	tower	311.0	288.19	306.76	DC	57.73

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	FRO M 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
424222 16	20629 4	28LARRABEE	230.0	JCP& L	20630 9	28SMITHBR G	230.0	JCP& L	2	JC-P1-2-JCC-230-017	operati on	813.0	136.83	146.41	DC	172.04
424222 17	20629 4	28LARRABEE	230.0	JCP& L	20630 9	28SMITHBR G	230.0	JCP& L	2	Base Case	operati on	678.0	107.31	114.83	DC	112.53
424223 42	20629 4	28LARRABEE	230.0	JCP& L	20630 9	28SMITHBR G	230.0	JCP& L	1	JC-P1-2-JCC-230-018	operati on	817.0	125.4	134.16	DC	157.92
424223 43	20629 4	28LARRABEE	230.0	JCP& L	20630 9	28SMITHBR G	230.0	JCP& L	1	Base Case	operati on	650.0	111.94	119.77	DC	112.53
424223 04	20629 5	28LEISUR D	230.0	JCP& L	20632 3	28LAKEWOO D	230.0	JCP& L	1	JC-P1-2-JCC-230-020	operati on	869.0	122.87	155.74	DC	285.54
424222 10	20629 6	28LEISUR U	230.0	JCP& L	20632 3	28LAKEWOO D	230.0	JCP& L	1	JC-P1-2-JCC-230-019	operati on	817.0	139.28	174.07	DC	284.19
424221 82	20629 7	28MANITOU	230.0	JCP& L	20629 6	28LEISUR U	230.0	JCP& L	1	JC-P1-2-JCC-230-019	operati on	817.0	152.25	187.56	DC	288.47
424221 87	20629 7	28MANITOU	230.0	JCP& L	20629 6	28LEISUR U	230.0	JCP& L	1	Base Case	operati on	650.0	86.48	112.31	DC	167.85
424221 88	20629 7	28MANITOU	230.0	JCP& L	20629 5	28LEISUR D	230.0	JCP& L	1	JC-P1-2-JCC-230-020	operati on	817.0	151.69	187.0	DC	288.46
424221 93	20629 7	28MANITOU	230.0	JCP& L	20629 5	28LEISUR D	230.0	JCP& L	1	Base Case	operati on	650.0	87.35	113.19	DC	167.97
411851 62	20630 2	28OYSTER C	230.0	JCP& L	22795 5	CEDAR	230.0	AE	1	Base Case	operati on	464.0	105.17	135.47	DC	140.58
411851 63	20630 2	28OYSTER C	230.0	JCP& L	22795 5	CEDAR	230.0	AE	1	JC-P1-2-JCC-230-031	operati on	564.0	100.03	128.09	DC	158.23
424220 90	20630 2	28OYSTER C	230.0	JCP& L	20629 7	28MANITOU	230.0	JCP& L	1	JC-P1-2-JCC-230-022	operati on	817.0	240.14	288.82	DC	397.69
424220 91	20630 2	28OYSTER C	230.0	JCP& L	20629 7	28MANITOU	230.0	JCP& L	1	Base Case	operati on	650.0	159.28	192.31	DC	214.69
424221 11	20630 2	28OYSTER C	230.0	JCP& L	20629 7	28MANITOU	230.0	JCP& L	2	JC-P1-2-JCC-230-021	operati on	869.0	225.81	271.59	DC	397.76
424221 12	20630 2	28OYSTER C	230.0	JCP& L	20629 7	28MANITOU	230.0	JCP& L	2	Base Case	operati on	709.0	146.21	176.53	DC	214.96
411852 27	20630 5	28RAR RVR	230.0	JCP& L	21833 1	KILMER_I	230.0	PSE& G	1	PS_P1-2_#2LINE	operati on	869.0	145.84	150.14	DC	80.67
411852 32	20630 5	28RAR RVR	230.0	JCP& L	21833 1	KILMER_I	230.0	PSE& G	1	Base Case	operati on	709.0	123.63	127.6	DC	60.79
411854 02	20630 5	28RAR RVR	230.0	JCP& L	21833 2	KILMER_W	230.0	PSE& G	1	PS_P1-2_#1LINE	operati on	817.0	128.59	131.98	DC	59.9
411854 07	20630 5	28RAR RVR	230.0	JCP& L	21833 2	KILMER_W	230.0	PSE& G	1	Base Case	operati on	650.0	104.3	106.82	DC	35.63
424222 78	20631 4	28RED OAKA	230.0	JCP& L	20630 5	28RAR RVR	230.0	JCP& L	1	JC-P1-2-JCC-230-027	operati on	869.0	144.25	149.11	DC	93.29
424222 79	20631 4	28RED OAKA	230.0	JCP& L	20630 5	28RAR RVR	230.0	JCP& L	1	Base Case	operati on	709.0	117.15	120.34	DC	49.92
424222 42	20631 5	28RED OAKB	230.0	JCP& L	20630 5	28RAR RVR	230.0	JCP& L	1	JC-P1-2-JCC-230-028	operati on	869.0	148.07	152.91	DC	92.77
424222 43	20631 5	28RED OAKB	230.0	JCP& L	20630 5	28RAR RVR	230.0	JCP& L	1	Base Case	operati on	709.0	107.34	110.41	DC	48.01
411856 29	20631 6	28WINDSOR	230.0	JCP& L	21975 2	CLRKSVLL_1	230.0	PSE& G	1	JC-P1-2-JCC-230-042T	operati on	813.0	97.19	101.08	DC	70.08
411856 32	20631 6	28WINDSOR	230.0	JCP& L	21975 2	CLRKSVLL_1	230.0	PSE& G	1	Base Case	operati on	678.0	97.43	101.62	DC	62.88

ID	FROM BUS#	FROM BUS	kV	FROM BUS AREA	TO BUS#	TO BUS	kV	TO BUS AREA	CK T ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADIN G %	POST PROJECT LOADIN G %	AC/D C	MW IMPACT
424221 28	20632 3	28LAKEWOOD	230.0	JCP&L	20629 4	28LARRABEE	230.0	JCP&L	2	JC-P1-2-JCC-230-014	operation	817.0	164.35	181.06	DC	301.59
424221 32	20632 3	28LAKEWOOD	230.0	JCP&L	20629 4	28LARRABEE	230.0	JCP&L	2	Base Case	operation	650.0	113.79	125.27	DC	164.92
424221 34	20632 3	28LAKEWOOD	230.0	JCP&L	20629 4	28LARRABEE	230.0	JCP&L	1	JC-P1-2-JCC-230-013	operation	869.0	155.67	171.39	DC	301.62
424221 38	20632 3	28LAKEWOOD	230.0	JCP&L	20629 4	28LARRABEE	230.0	JCP&L	1	Base Case	operation	709.0	104.6	115.16	DC	165.35
424221 24	20632 6	28E WINDSOR	230.0	JCP&L	20631 6	28WINDSOR	230.0	JCP&L	1	Base Case	operation	706.0	105.17	108.92	DC	58.83
494606 88	20632 6	28E WINDSOR	230.0	JCP&L	20631 6	28WINDSOR	230.0	JCP&L	1	PJM500_PS_P1-2_5022	operation	869.0	97.86	101.62	DC	72.37
424225 97	20641 0	28R11RINGB	230.0	JCP&L	20631 5	28RED OAKB	230.0	JCP&L	1	JC-P1-2-JCC-230-028	operation	869.0	103.65	108.54	DC	94.07
424225 49	20641 1	28R11RINGA	230.0	JCP&L	20631 4	28RED OAKA	230.0	JCP&L	1	JC-P1-2-JCC-230-027	operation	869.0	107.39	112.29	DC	94.37
424223 20	21833 1	KILMER_I	230.0	PSE&G	21833 3	LNELSN_I	230.0	PSE&G	1	JC-P1-2-JCC-230-043T	operation	805.0	149.55	154.18	DC	80.67
424223 25	21833 1	KILMER_I	230.0	PSE&G	21833 3	LNELSN_I	230.0	PSE&G	1	Base Case	operation	650.0	127.55	131.87	DC	60.79
424223 47	21833 2	KILMER_W	230.0	PSE&G	21833 4	LNELSN_W	230.0	PSE&G	1	PS_P1-2_I-1023	operation	679.0	146.22	150.29	DC	59.78
424223 52	21833 2	KILMER_W	230.0	PSE&G	21833 4	LNELSN_W	230.0	PSE&G	1	Base Case	operation	523.0	120.49	123.62	DC	35.63
424224 79	21833 3	LNELSN_I	230.0	PSE&G	21830 1	MIDDLESEX_I	230.0	PSE&G	1	JC-P1-2-JCC-230-043T	operation	819.0	125.05	129.3	DC	75.25
424224 84	21833 3	LNELSN_I	230.0	PSE&G	21830 1	MIDDLESEX_I	230.0	PSE&G	1	Base Case	operation	709.0	98.31	102.09	DC	57.97
424227 10	21833 4	LNELSN_W	230.0	PSE&G	21852 2	MIDDLESEX_W	230.0	PSE&G	1	JC-P1-2-JCC-230-042T	operation	887.0	108.16	111.27	DC	59.74
424227 04	21852 2	MIDDLESEX_W	230.0	PSE&G	21831 3	GREENBK_W	230.0	PSE&G	1	JC-P1-2-JCC-230-042T	operation	887.0	108.16	111.27	DC	59.74
411849 67	22790 0	CARDIFF	230.0	AE	21910 0	NEWFRDM	230.0	PSE&G	1	AE_P1-2 ORCH-CARD	operation	692.0	227.33	238.18	DC	75.08
411849 72	22790 0	CARDIFF	230.0	AE	21910 0	NEWFRDM	230.0	PSE&G	1	Base Case	operation	650.0	195.97	199.93	DC	57.15
424222 63	22790 0	CARDIFF	230.0	AE	22800 2	ORCHARD	230.0	AE	1	PS_P1-2_2310	operation	805.0	147.54	155.7	DC	65.63
424222 65	22790 0	CARDIFF	230.0	AE	22800 2	ORCHARD	230.0	AE	1	Base Case	operation	650.0	108.62	111.7	DC	44.31

13.5 System Reinforcements

ID	Index	Facility	Upgrade Description	Cost
40979106	20	DOROTHY 138.0 kV - MNOTLA 2 138.0 kV Ckt 1 (Dorothy-Minotola 138 kV Line)	<u>AE</u> at1421r0001_af1f (1042) : To mitigate the (ACE) Dorothy - Minotola 69 kV line (from bus 227901 to bus 228503 ckt 1) overload, it will require increasing the emergency rating of the Dorothy to Minotola 69 kV line by rebuilding the circuit. The rebuild will include the installation of new poles, foundations, insulators, and conductor. Project Type : FAC Cost : \$21,000,000 Time Estimate : 24-48 Months as1421r0001_af1f (1043) : To mitigate the (ACE) Dorothy to Minotola 69 kV line (from bus 227901 to bus 228503 ckt 1) overload, terminal reinforcement is required at both Dorothy & Minotola substations. Project Type : FAC Cost : \$200,000 Time Estimate : 12-24 Months	\$21,200,000
42138103,4213 8102	5	28LARRABEE 230.0 kV - 28SMITHBRG 230.0 kV Ckt 2 (Larrabee-Smithburg #2 230 kV Line)	<u>JCPL</u> JCP&L-AF1-F-0004a (2116) : Larrabee-Smithburg #2 230 kV Line: Reconductor line (~12 miles). Upgrade terminal equipment at Larrabee. Upgrade terminal equipment at Smithburg. Project Type : FAC Cost : \$96,480,000 Time Estimate : 36.0 Months JCP&L-AF1-F-0005 (2683) : Reconductor line (~12 miles). Upgrade terminal equipment at Larrabee and Smithburg. Upgrade terminal equipment at Smithburg Project Type : FAC Cost : \$96,480,000 Time Estimate : 30.0 Months	\$96,480,000
42138108,4213 8107	6	28LARRABEE 230.0 kV - 28SMITHBRG 230.0 kV Ckt 1 (Larrabee-Smithburg 230 kV Line)	<u>JCPL</u> JCP&L-AF1-F-0004a (2681) : Larrabee-Smithburg 230 kV Line: Upgrade terminal equipment at Larrabee. Reconductor line (~12 miles). Upgrade terminal equipment at Smithburg Project Type : FAC Cost : \$96,480,000 Time Estimate : 36.0 Months JCP&L-AF1-F-0004b (2682) : Upgrade terminal equipment at Smithburg Project Type : FAC Cost : \$134,000 Time Estimate : 9.0 Months	\$96,614,000

ID	Index	Facility	Upgrade Description	Cost
40979068	10	28WINDSOR 230.0 kV - CLRKSVLL_1 230.0 kV Ckt 1 (Windsor-Clarksville 230 kV Line)	<u>JCPL</u> JCP&L-AF1-F-0018 (2701) : Replace substation conductor at Windsor. Upgrade terminal equipment at Windsor. Reconductor Windsor-Clarksville 230 kV line (~7.5 miles) Project Type : FAC Cost : \$21,440,000 Time Estimate : 30.0 Months	\$21,440,000

ID	Index	Facility	Upgrade Description	Cost
41522017,41522016,40978930,40978931,41522019,41522018	18	CARDIFF 230.0 kV - NEWFRDM 230.0 kV Ckt 1 (Cardiff-New Freedom 230 kV Line)	AE at2310r0001 (1004) : To mitigate the (ACE) Cardiff New Freedom 230 kV line (from bus 227900 to bus 219100 ckt 1) overload, it will require increasing the emergency rating of the Cardiff to New Freedom 230 kV line by rebuilding the circuit. The rebuild will include the installation of new poles, foundations, insulators, and conductor. Project Type : FAC Cost : \$105,000,000 Time Estimate : 60.0 Months as2310r0001 (1005) : To mitigate the (ACE) Cardiff New Freedom 230 kV line (from bus 227900 to bus 219100 ckt 1) overload, it will require various terminal reinforcements are required at Cardiff. Project Type : FAC Cost : \$400,000 Time Estimate : 24-36 Months as2310r0002 (1006) : To mitigate the (ACE) Cardiff New Freedom 230 kV line (from bus 227900 to bus 219100 ckt 1) overload, it will require various terminal reinforcements at Cardiff. Project Type : FAC Cost : \$600,000 Time Estimate : 24-36 Months as2310r0003 (1007) : To mitigate the (ACE) Cardiff New Freedom 230 kV line (from bus 227900 to bus 219100 ckt 1) overload, it will require various terminal reinforcements at Cardiff. Project Type : FAC Cost : \$600,000 Time Estimate : 24-36 Months as2310r0004_af1f (1008) : To mitigate the (ACE) Cardiff New Freedom 230 kV line (from bus 227900 to bus 219100 ckt 1) overload, it will require various terminal reinforcements at Cardiff. Project Type : FAC Cost : \$600,000 Time Estimate : 24-36 Months at2310r0002_af1f (1009) : To mitigate the (ACE) Cardiff New Freedom 230 kV line (from bus 227900 to bus 219100 ckt 1) overload, it will require increasing the emergency rating of the Cardiff to New Freedom 230 kV line by rebuilding the circuit. The rebuild will include the installation of new poles, foundations, insulators, and conductor. Project Type : FAC Cost : \$160,000,000 Time Estimate : 60-72 Months PSEG r_PS_AE2_SIS_Nfreed1 (2454) : Upgrade New Freedom terminal equipment to a minimum of 2000MVA SER Project Type : FAC Cost : \$29,246,746 Time Estimate : 17.0 Months r_PS_AE2_SIS_Nfreed2 (2455) : Upgrade New Freedom terminal equipment to a minimum of 2450MVA SER Project Type : FAC Cost : \$33,826,720 Time Estimate : 17.0 Months	\$330,273,466

ID	Index	Facility	Upgrade Description	Cost
40978965	22	MNOTLA 1 138.0 kV - LANDIS 138.0 kV Ckt 1 (Minotola 1-Landis 1 138 kV Circuit)	<u>AE</u> at1409r0001 (1032) : To mitigate the (AE - AE) MNOTLA 1-LANDIS 138 kV line (from bus 228502 to bus 228500 ckt 1) overload will include rebuilding the Minotola to Landis 138 kV transmission line. Also, upgrades to the terminals at Minotola and Landis Substation will be required. Project Type : FAC Cost : \$12,800,000 Time Estimate : 36-48 Months as1409r0001_ae2i (1033) : To mitigate the (AE - AE) MNOTLA 1-LANDIS 138 kV line (from bus 228502 to bus 228500 ckt 1) overload, several terminal equipment reinforcement is required at both, Landis and Minotola substation. Project Type : FAC Cost : \$200,000 Time Estimate : 12-24 Months as1409r0002_ae2i (1034) : To mitigate the (AE - AE) MNOTLA 1-LANDIS 138 kV line (from bus 228502 to bus 228500 ckt 1) overload, several terminal equipment reinforcement is required at both, Landis and Minotola substation. Project Type : FAC Cost : \$200,000 Time Estimate : 12-24 Months as1409r0003_ae2i (1035) : To mitigate the (AE - AE) MNOTLA 1-LANDIS 138 kV line (from bus 228502 to bus 228500 ckt 1) overload, several terminal equipment reinforcement is required at both, Landis and Minotola substation. Project Type : FAC Cost : \$300,000 Time Estimate : 12-24 Months as1409r0004_ae2i (1036) : To mitigate the (AE - AE) MNOTLA 1-LANDIS 138 kV line (from bus 228502 to bus 228500 ckt 1) overload, several terminal equipment reinforcement is required at both, Landis and Minotola substation. Project Type : FAC Cost : \$600,000 Time Estimate : 24-48 Months as1409r0005_ae2i (1037) : To mitigate the (AE - AE) MNOTLA 1-LANDIS 138 kV line (from bus 228502 to bus 228500 ckt 1) overload, several terminal equipment reinforcement is required at both, Landis and Minotola substation. Project Type : FAC Cost : \$400,000 Time Estimate : 12-24 Months as1409r0006_af1f (1038) : To mitigate the (AE - AE) MNOTLA 1-LANDIS 138 kV line (from bus 228502 to bus 228500 ckt 1) overload, several terminal equipment reinforcement is required at both, Landis and Minotola substation. Project Type : FAC Cost : \$200,000 Time Estimate : 12-24 Months as1409r0007_af1f (1039) : To mitigate the (AE - AE) MNOTLA 1-LANDIS 138 kV line (from bus 228502 to bus 228500 ckt 1) overload, several terminal equipment reinforcement is required at both, Landis and Minotola substation. Project Type : FAC Cost : \$300,000 Time Estimate : 12-24 Months as1409r0008_af1f (1040) : To mitigate the (AE - AE) MNOTLA 1-LANDIS 138 kV line (from bus 228502 to bus 228500 ckt 1) overload, several terminal equipment reinforcement is required at both, Landis and Minotola substation. Project Type : FAC Cost : \$400,000 Time Estimate : 12-24 Months	\$15,400,000

ID	Index	Facility	Upgrade Description	Cost
40978940	23	MNOTLA 2 138.0 kV - MNOTLA 1 138.0 kV Ckt 1 (Minotola 2-Landis 1 138 kV Circuit)	<u>AE</u> asminotolar0001 (970) : To mitigate the (AE - AE) MNOTLA 2-MNOTLA 1 138 kV line (from bus 228503 to bus 228502 ckt 1) overload will require substation reinforcements at Minotola Substation. Project Type : FAC Cost : \$1,300,000 Time Estimate : 18.0 Months asminotolar0002_ae2i (971) : To mitigate the (AE - AE) MNOTLA 2-MNOTLA 1 138 kV line (from bus 228503 to bus 228502 ckt 1) overload will require terminal reinforcements at Minotola Substation. Project Type : FAC Cost : \$400,000 Time Estimate : 12-18 Months asminotolar0003_ae2i (972) : To mitigate the (AE - AE) MNOTLA 2-MNOTLA 1 138 kV line (from bus 228503 to bus 228502 ckt 1) overload will require terminal reinforcements at Minotola Substation. Project Type : FAC Cost : \$600,000 Time Estimate : 12-24 Months asminotolar0004_ae2i (973) : To mitigate the (AE - AE) MNOTLA 2-MNOTLA 1 138 kV line (from bus 228503 to bus 228502 ckt 1) overload will require terminal reinforcements at Minotola Substation. Project Type : FAC Cost : \$800,000 Time Estimate : 12-18 Months	\$3,100,000

ID	Index	Facility	Upgrade Description	Cost
46760878,4152 2166,40978935, 40978936	2	28OYSTER C 230.0 kV - CEDAR 230.0 kV Ckt 1 (Oyster Creek-Cedar 230 kV Line	<u>AE</u> at2318r0001 (987) : To mitigate the (ACE) Cedar - Oyster Creek 230 kV line (from bus 227955 to bus 206302 ckt 1) overload, it will require increasing the emergency rating of the Cedar to Oyster Creek 230 kV line by rebuilding the circuit. The rebuild will include the installation of new poles, foundations, insulators, and conductor. In addition, various terminal reinforcements are required at Cedar. Project Type : FAC Cost : \$63,000,000 Time Estimate : 60.0 Months at2318r0002 (990) : To mitigate the (ACE) Cedar Oyster Creek 230 kV line (from bus 227955 to bus 206302 ckt 1) overload, it will require increasing the emergency rating of the Cedar to Oyster Creek 230 kV line by rebuilding the circuit. The rebuild will include the installation of new poles, foundations, insulators, and conductor. In addition, various terminal reinforcements are required at Cedar. Project Type : FAC Cost : \$80,000,000 Time Estimate : 60.0 Months <u>JCPL</u> JCP&L-010A (2048) : Oyster Creek-Cedar 230 kV Line: Reconductor Transmission Line Project Type : FAC Cost : \$585,000 Time Estimate : 24.0 Months JCP&L-010B (2049) : Oyster Creek – Cedar 230 kV Line: Reconductor Transmission Line. Additionally, AEP would need to replace their section of the limiting conductor and provide estimates for their replacement. Project Type : FAC Cost : \$520,000 Time Estimate : 24.0 Months JCP&L-AF1-F-0012a (2692) : Reconductor line (~0.08 miles). Upgrade terminal equipment at Oyster Creek. Additionally, AE would need to replace their section of the limiting conductor and provide estimates for their replacement. Project Type : FAC Cost : \$281,400 Time Estimate : 9.0 Months JCP&L-AF1-F-0012b (2693) : Upgrade terminal equipment at Oyster Creek. Replace substation conductor at Oyster Creek Project Type : FAC Cost : \$670,000 Time Estimate : 12.0 Months	\$145,056,400

ID	Index	Facility	Upgrade Description	Cost
42704380	4	CEDAR 230.0 kV - CARDIFF 230.0 kV Ckt 1 (Cardiff-Cedar 230 kV Line)	<u>AE</u> at2317r0001 (991) : Cardiff-Cedar 230 kV Line: To mitigate the (ACE) Cardiff Cedar 230 kV line (from bus 940360 to bus 227955 ckt 1) overload, it will require increasing the emergency rating of the Cardiff to Cedar 230 kV line by rebuilding the circuit. The rebuild will include the installation of new poles, foundations, insulators, and conductor. Project Type : FAC Cost : \$120,000,000 Time Estimate : 60.0 Months as2317r0001 (992) : To mitigate the (ACE) AE2-020 TAP Cedar 230 kV line (from bus 940360 to bus 227955 ckt 1) overload, various terminal reinforcements are required at Cedar. Project Type : FAC Cost : \$300,000 Time Estimate : 24-36 Months	\$120,300,000

ID	Index	Facility	Upgrade Description	Cost
40979083	21	LEWIS #3 138.0 kV - DOROTHY 138.0 kV Ckt 1 (Dorothy-Lewis #3 138 kV Line)	<u>AE</u> as1422r0001_af1f (1044) : To mitigate the (ACE) Dorothy to Lewis #3 138 kV line (from bus 227901 to bus 227949 ckt 1) overload, terminal reinforcement is required at both Dorothy & Lewis #3 substations. Project Type : FAC Cost : \$500,000 Time Estimate : 24-48 Months at1422r0001_af1f (1045) : To mitigate the (ACE) Dorothy - Lewis 138 kV line (from bus 227901 to bus 227949 ckt 1) overload, it will require increasing the emergency rating of the Dorothy to Lewis 138 kV line by rebuilding the circuit. The rebuild will include the installation of new poles, foundations, insulators, and conductor. Project Type : FAC Cost : \$25,000,000 Time Estimate : 36-48 Months as1422r0002_af1f (1046) : To mitigate the (ACE) Dorothy to Lewis #3 138 kV line (from bus 227901 to bus 227949 ckt 1) overload, terminal reinforcement is required at both Dorothy & Lewis #3 substations. Project Type : FAC Cost : \$300,000 Time Estimate : 12-24 Months as1422r0003_af1f (1047) : To mitigate the (ACE) Dorothy to Lewis #3 138 kV line (from bus 227901 to bus 227949 ckt 1) overload, terminal reinforcement is required at both Dorothy & Lewis #3 substations. Project Type : FAC Cost : \$300,000 Time Estimate : 12-24 Months	\$26,100,000
42138088,42138087	9	28RED OAKB 230.0 kV - 28RAR RVR 230.0 kV Ckt 1 (Red Oak B- Raritan River 230 kV Line)	<u>JCPL</u> JCP&L-AF1-F-0017a (2699) : Red Oak B- Raritan River 230 kV Line: Reconductor line (~4.53 miles) Project Type : FAC Cost : \$30,351,000 Time Estimate : 30.0 Months	\$30,351,000
42704549	1	28LARRABEE 230.0 kV - 28ATLANTIC 230.0 kV Ckt 1 (Larrabee-Atlantic 230 kV Line)	<u>JCPL</u> JCP&L-AF1-F-0002 (2680) : Upgrade terminal equipment at Atlantic. Reconductor line (~11.6 miles) Project Type : FAC Cost : \$77,720,000 Time Estimate : 36.0 Months	\$77,720,000

ID	Index	Facility	Upgrade Description	Cost
42138093,42138092	8	28RED OAKA 230.0 kV - 28RAR RVR 230.0 kV Ckt 1 (Red Oak A – Raritan River 230 kV Line)	<u>JCPL</u> JCP&L-AF1-F-0016 (2698) : Red Oak A – Raritan River 230 kV Line: Reconductor line (~4 miles) Project Type : FAC Cost : \$26,800,000 Time Estimate : 30.0 Months	\$26,800,000
42138042	13	28LAKEWOOD 230.0 kV - 28LARRABEE 230.0 kV Ckt 2 (Lakewood-Larrabee #2 230 kV Line)	<u>JCPL</u> JCP&L-AF1-F-0021a (2705) : Replace substation conductor at Lakewood and Larrabee Project Type : FAC Cost : \$134,000 Time Estimate : 6.0 Months JCP&L-AF1-F-0021b (2706) : Lakewood-Larrabee #2 230 kV Line: Reconductor line (~5.25 miles). Upgrade terminal equipment at Larrabee. Upgrade terminal equipment at Lakewood Gen. Replace substation conductor at Lakewood Gen and Larrabee Project Type : FAC Cost : \$35,979,000 Time Estimate : 30.0 Months	\$36,113,000

ID	Index	Facility	Upgrade Description	Cost
42704375,4213 8128,42138127	19	CARDIFF 230.0 kV - ORCHARD 230.0 kV Ckt 1 (Orchard – Cardiff 230 kV Line)	<u>AE</u> at2321r0001_ae2s (1012) : To mitigate the (ACE) Orchard Cardiff 230 kV line (from bus 228002 to bus 227900 ckt 1) overload, it will require increasing the emergency rating of the Orchard to Cardiff 230 kV line by rebuilding the circuit. The rebuild will include the installation of new poles, foundations, insulators, and conductor. In addition, various terminal reinforcements is required at Orchard & Cardiff. Project Type : FAC Cost : \$74,000,000 Time Estimate : 48-60 Months at2321r0002_ae2s (1013) : To mitigate the (ACE) Orchard Cardiff 230 kV line (from bus 228002 to bus 227900 ckt 1) overload, it will require increasing the emergency rating of the Orchard to Cardiff 230 kV line by rebuilding the circuit. The rebuild will include the installation of new poles, foundations, insulators, and conductor. In addition, various terminal reinforcements is required at Orchard & Cumberland. Project Type : FAC Cost : \$300,000 Time Estimate : 24-36 Months as2321r0001_ae2s (1014) : To mitigate the (ACE) Orchard Cardiff 230 kV line (from bus 228002 to bus 227900 ckt 1) overload, it will require reinforcement of terminal equipment at Orchard & Cardiff . Project Type : FAC Cost : \$200,000 Time Estimate : 24-36 Months as2321r0002_ae2s (1016) : To mitigate the (ACE) Orchard Cardiff 230 kV line (from bus 228002 to bus 227900 ckt 1) overload, it will require reinforcement of terminal equipment at Orchard & Cardiff . Project Type : FAC Cost : \$800,000 Time Estimate : 24-36 Months	\$75,300,000

ID	Index	Facility	Upgrade Description	Cost
42138050	14	28LAKEWOOD 230.0 kV - 28LARRABEE 230.0 kV Ckt 1 (Lakewood – Larrabee 230 kV Line)	<u>JCPL</u> JCP&L-AF1-F-0021a (2140) : Replace substation conductor at Lakewood and Larrabee Project Type : FAC Cost : \$134,000 Time Estimate : 6.0 Months JCP&L-AF1-F-0021b (2141) : Lakewood-Larrabee 230 kV Line: Reconductor line (~5.25 miles). Upgrade terminal equipment at Larrabee. Upgrade terminal equipment at Lakewood Gen. Replace substation conductor at Lakewood Gen and Larrabee Project Type : FAC Cost : \$35,979,000 Time Estimate : 30.0 Months	\$36,113,000
42138203,4213 8204	16	28R11RINGA 230.0 kV - 28RED OAKA 230.0 kV Ckt 1 (R11 Ring A- Red Oak A 230 kV Line)	<u>JCPL</u> JCP&L-AF1-F-0025 (2710) : R11 Ring A- Red Oak A 230 kV Line: Reconductor line Project Type : FAC Cost : \$1,608,000 Time Estimate : 18.0 Months	\$1,608,000
42138213,4213 8212	15	28R11RINGB 230.0 kV - 28RED OAKB 230.0 kV Ckt 1 (R11 Ring B – Red Oak B 230 kV Line)	<u>JCPL</u> JCP&L-AF1-F-0023 (2709) : R11 Ring B – Red Oak B 230 kV Line: Reconductor line Project Type : FAC Cost : \$1,608,000 Time Estimate : 18.0 Months	\$1,608,000

ID	Index	Facility	Upgrade Description	Cost
42704351,42704350	7	28MANITOU 230.0 kV - 28WHITINGS 230.0 kV Ckt 1 (Manitou-Whitings 230 kV Line)	<u>JCPL</u> JCP&L-AF1-F-0007a (2685) : Upgrade terminal equipment at at Manitou and Whitings. Reconductor Manitou-Whitings 230 kV line (~9 miles). Replace Wave Trap at Whitings Project Type : FAC Cost : \$25,460,000 Time Estimate : 30.0 Months JCP&L-AF1-F-0007b (2686) : Upgrade terminal equipment at Whitings. Upgrade terminal equipment at Manitou Project Type : FAC Cost : \$469,000 Time Estimate : 9.0 Months JCP&L-AF1-F-0007c (2687) : Upgrade terminal equipment at Manitou and Whitings Project Type : FAC Cost : \$536,000 Time Estimate : 12.0 Months JCP&L-AF1-F-0007d (2688) : Upgrade terminal equipment at Manitou. Upgrade terminal equipment at Whitings. Replace substation conductor at Manitou Project Type : FAC Cost : \$670,000 Time Estimate : 12.0 Months	\$27,135,000
42704373,42704372	11	28VANHISVL 230.0 kV - 28LARRABEE 230.0 kV Ckt 1 (Van Hiseville-Larrabee 230 kV Line)	<u>JCPL</u> JCP&L-AF1-F-0020a (2702) : Van Hiseville-Larrabee 230 kV Line: Reconductor line (~9 miles). Upgrade terminal equipment at Larrabee Project Type : FAC Cost : \$24,790,000 Time Estimate : 30.0 Months JCP&L-AF1-F-0020b (2703) : Upgrade terminal equipment at Larrabee Project Type : FAC Cost : \$1,005,000 Time Estimate : 12.0 Months	\$25,795,000
42704528,42138495,46761034,46761033,42704527	3	28E WINDSR 230.0 kV - 28WINDSOR 230.0 kV Ckt 1 (East Windsor-Windsor 230 kV Line)	<u>JCPL</u> JCP&L-AF1-F-0022a (2142) : East Windsor-Windsor 230 kV Line: Reconductor line (~2.53 miles). Upgrade terminal equipment at Windsor Project Type : FAC Cost : \$7,584,400 Time Estimate : 24.0 Months	\$7,584,400

ID	Index	Facility	Upgrade Description	Cost
42704362,42704363	12	28WHITINGS 230.0 kV - 28MANCHSTR 230.0 kV Ckt 1 (Whitings-Manchester 230 kV Line)	<u>JCPL</u> JCP&L-AF1-F-0029a (2716) : Whitings-Manchester 230 kV Line: Reconductor line (~12.2 miles). Upgrade terminal equipment at Manchester and Whitings Project Type : FAC Cost : \$83,415,000 Time Estimate : 36.0 Months JCP&L-AF1-F-0029b (2717) : Replace substation conductor at Manchester Project Type : FAC Cost : \$134,000 Time Estimate : 6.0 Months	\$83,549,000
42704366,42704365	17	28MANCHSTR 230.0 kV - 28VANHISVL 230.0 kV Ckt 1 (Manchester-Van Hiseville 230 kV Line)	<u>JCPL</u> JCP&L-AF1-F-0027a (2712) :Manchester-Van Hiseville 230 kV Line: Reconductor line (~7.5 miles) Project Type : FAC Cost : \$20,100,000 Time Estimate : 30.0 Months JCP&L-AF1-F-0027b (2713) : Replace substation conductor at Van Hiseville. Upgrade terminal equipment at Manchester Project Type : FAC Cost : \$536,000 Time Estimate : 9.0 Months	\$20,636,000
			TOTAL COST	\$1,193,683,266

13.6 Flow Gate Details

The following indices contain additional information about each flowgate presented in the body of the report. For each index, a description of the flowgate and its contingency was included for convenience. However, the intent of the appendix section is to provide more information on which projects/generators have contributions to the flowgate in question. Although this information is not used "as is" for cost allocation purposes, it can be used to gage other generators impact. It should be noted the generator contributions presented in the appendices sections are full contributions, whereas in the body of the report, those contributions take into consideration the commercial probability of each project.

13.7 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
42704549	206294	28LARRABEE	JCP&L	206286	28ATLANTIC	JCP&L	1	JC-P7-1-JCC-230-7A	tower	1147.0	98.29	104.74	DC	163.35

Bus #	Bus	MW Impact
206280	28LAKEHURS	0.5752
206306	28LKWD G1	3.8898
206308	28LKWD G2	3.8898
206312	28LKWD G3	2.8612
206325	28O C GEN (Deactivation : 09/17/18)	54.2629
206360	28O CRK C1	1.3477
206366	28LKWD CT1	7.8403
206367	28LKWD CT2	7.8403
206370	LKWD CT3	66.8280
206414	28X4-005E	-1.4113
207400	28AA1-060 E	2.3577
219288	REEVES ST E	0.4370
219652	LUMB23SP1_E	0.0134
219656	LUMB23SP2_E	0.0133
219687	LUMSOLAR_N E	0.1346
227928	V4-067E	0.1332
228100	BLE DIES	0.5598
228731	V3-036	0.4433
901982	W1-119 E	1.0025
901992	W1-120E	1.0025
902082	W1-129E	0.5280
902322	W2-019 E	0.6231
902432	W2-030 E	0.4749
902952	W2-082 E OP1	1.8125
903982	W3-079 E	0.9532
905252	W4-025 E	0.7494
907272	X1-085 E	0.3245
912102	X4-015 E	0.5310
913341	Y1-077 (Withdrawn : 12/18/2019)	31.2813
914092	Y2-051 E	0.7365
917612	Z2-102 E	1.4774
919662	AA2-048 E	1.5164
921744	AA2-049 BAT	0.2733
923292	AB1-138 C	1.0522
923293	AB1-138 E	1.7537
923463	AB1-163 E	1.1059
923791	AB2-014	0.3778
924701	AB2-122 C	0.0576
924702	AB2-122 E	0.0987
930001	AB1-001 C	0.0833
930002	AB1-001 E	0.1369

Bus #	Bus	MW Impact
933962	AD1-019 E	0.6126
934351	AD1-059	0.6949
938781	AE1-104 C O1	8.4956
938782	AE1-104 E O1	21.7359
939121	AE1-142 C O1	2.5177
939122	AE1-142 E O1	3.6231
940161	AE2-000 C O1	55.3491
940162	AE2-000 E O1	141.6194
940361	AE2-020 C	4.8757
940362	AE2-020 E	22.8283
940371	AE2-021 C	4.8757
940372	AE2-021 E	22.8283
940381	AE2-022 C	2.8441
940382	AE2-022 E	13.3165
940391	AE2-023 C	5.4837
940392	AE2-023 E	25.6716
940401	AE2-024 C O1	54.0433
940402	AE2-024 E O1	253.0250
940411	AE2-025 C	27.2810
940412	AE2-025 E	127.7154
942101	AE2-222 C O1	6.9187
942102	AE2-222 E O1	17.3802
942201	AE2-232 C O1	27.1315
942202	AE2-232 E O1	69.4218
942381	AE2-251 C	29.1435
942382	AE2-251 E	74.5701
942941	AE2-314 C (Withdrawn : 12/16/2019)	3.7337
942942	AE2-314 E (Withdrawn : 12/16/2019)	2.4891
943561	AF1-027	0.1388
943732	AF1-041 E	0.1038
944332	AF1-101 E O1	73.5871
944611	AF1-126 C O1	4.5091
944612	AF1-126 E O1	18.0362
945951	AF1-260	0.1148
999905	MARINGEN 2	0.3213
999906	PVILLEG 2	0.1383
DUCKCREEK	DUCKCREEK	0.1313
NEWTON	NEWTON	0.1193
FARMERCITY	FARMERCITY	0.0061
NY	NY	0.9285
PRAIRIE	PRAIRIE	0.2764
O-066	O-066	17.4518
COFFEEN	COFFEEN	0.0587
EDWARDS	EDWARDS	0.0399
CHEOAH	CHEOAH	0.0435
TILTON	TILTON	0.0718
G-007	G-007	8.6341
MADISON	MADISON	0.0121
GIBSON	GIBSON	0.0612
CALDERWOOD	CALDERWOOD	0.0437
BLUEG	BLUEG	0.1944
TRIMBLE	TRIMBLE	0.0623

Bus #	Bus	MW Impact
CATAWBA	CATAWBA	0.0234

13.8 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
40978935	206302	28OYSTER C	JCP&L	227955	CEDAR	AE	1	JC-P7-1-JCC-230-13	tower	564.0	191.04	285.34	DC	531.85

Bus #	Bus	MW Impact
206360	28O CRK C1	4.3881
206361	28O CRK C2	2.9464
940161	AE2-000 C O1	212.0177
940162	AE2-000 E O1	542.4804
942201	AE2-232 C O1	103.9284
942202	AE2-232 E O1	265.9236
944332	AF1-101 E O1	531.8472
DUCKCREEK	DUCKCREEK	0.0392
NEWTON	NEWTON	0.0365
FARMERCITY	FARMERCITY	0.0020
G-007A	G-007A	0.9662
VFT	VFT	0.9869
PRAIRIE	PRAIRIE	0.0904
COFFEEN	COFFEEN	0.0180
EDWARDS	EDWARDS	0.0119
CHEOAH	CHEOAH	0.0185
TILTON	TILTON	0.0214
GIBSON	GIBSON	0.0186
CALDERWOOD	CALDERWOOD	0.0179
BLUEG	BLUEG	0.0590
TRIMBLE	TRIMBLE	0.0189
CATAWBA	CATAWBA	0.0133

13.9 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
42704527	206326	28E WINDSR	JCP&L	206316	28WINDSOR	JCP&L	1	PS_P7-1_1LINE+2LINE	tower	869.0	114.43	118.27	DC	73.92

Bus #	Bus	MW Impact
206201	28JERSVGEN	0.0408
206271	28MCRC/REC	1.0133
206306	28LKWD G1	1.7721
206308	28LKWD G2	1.7721
206312	28LKWD G3	1.3035
206325	28O C GEN (Deactivation : 09/17/18)	24.5576
206359	28PARLN3&4	1.1309
206366	28LKWD CT1	3.5719
206367	28LKWD CT2	3.5719
206370	LKWD CT3	30.4460
206412	28R11	53.2389
206414	28X4-005E	2.3751
206416	28MLH_W1-032	0.0289
207143	28BYD_X4-031	0.3058
207144	28HOW_X1-037	0.1343
207145	28FRN_Y2-051	0.0410
207148	28MDF_W3-079	0.0561
207204	28HOL_W1-112	0.0322
207206	28TIN_W1-124	0.1396
219679	NRGCENTER E	-0.3140
901032	W1-024E OP1	0.2949
901112	W1-032 E OP1	0.3497
901912	W1-112E OP1	0.3763
902032	W1-124E	1.6405
903982	W3-079 E	0.6650
905502	W4-060 E OP1	0.7471
907082	X1-037 E	1.5694
914092	Y2-051 E	0.4790
919662	AA2-048 E	1.0580
919712	AA2-058 E	-0.1687
919802	AA2-066 E	-0.3140
920732	AA2-184 E	1.8093
921743	AA2-049 E	0.4687
923292	AB1-138 C	0.4145
923293	AB1-138 E	0.6908
923463	AB1-163 E	0.5106
923791	AB2-014	0.1721
925541	AC1-029 (Withdrawn : 11/27/2019)	2.4200
934351	AD1-059	0.3166
934841	AD1-113	8.9065
937261	AD2-165	4.8399
937523	AD2-213 BAT	1.7324

Bus #	Bus	MW Impact
939121	AE1-142 C O1	0.9709
939122	AE1-142 E O1	1.3972
939981	AE1-238 C	35.6490
939982	AE1-238 E	93.6380
940161	AE2-000 C O1	25.0492
940162	AE2-000 E O1	64.0923
940401	AE2-024 C O1	24.6536
940402	AE2-024 E O1	115.4256
940411	AE2-025 C	12.4451
940412	AE2-025 E	58.2615
940691	AE2-056 C	0.2380
940692	AE2-056 E	0.2082
940701	AE2-057 C	0.0730
940702	AE2-057 E	0.0730
940921	AE2-081 C	0.2529
940922	AE2-081 E	0.2603
940931	AE2-082 C	0.2162
940932	AE2-082 E	0.2289
942201	AE2-232 C O1	12.2788
942202	AE2-232 E O1	31.4180
943521	AF1-023	1.3101
944332	AF1-101 E O1	33.3031
944432	AF1-108 BAT	1.7934
944442	AF1-109 BAT	5.3352
944611	AF1-126 C O1	1.7092
944612	AF1-126 E O1	6.8368
945201	AF1-185 1	0.2719
945571	AF1-222 C	26.1426
945572	AF1-222 E	68.9214
945723	AF1-237 BAT	38.3180
945951	AF1-260	0.1511
945981	AF1-263	0.1070
DUCKCREEK	DUCKCREEK	0.2015
NEWTON	NEWTON	0.1880
FARMERCITY	FARMERCITY	0.0098
G-007A	G-007A	33.4955
NY	NY	0.1040
PRAIRIE	PRAIRIE	0.4520
O-066	O-066	5.5104
COFFEEN	COFFEEN	0.0925
EDWARDS	EDWARDS	0.0609
CHEOAH	CHEOAH	0.0876
TILTON	TILTON	0.1103
GIBSON	GIBSON	0.0956
CALDERWOOD	CALDERWOOD	0.0870
BLUEG	BLUEG	0.3038
TRIMBLE	TRIMBLE	0.0974
CATAWBA	CATAWBA	0.0616

13.10 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
42704380	227955	CEDAR	AE	227900	CARDIFF	AE	1	JC-P7-1-JCC-230-13	tower	805.0	97.36	156.29	DC	474.35

Bus #	Bus	MW Impact
206360	280 CRK C1	3.9137
206361	280 CRK C2	2.6279
930001	AB1-001 C	0.1115
930002	AB1-001 E	0.1833
940161	AE2-000 C O1	189.0968
940162	AE2-000 E O1	483.8339
942201	AE2-232 C O1	92.6929
942202	AE2-232 E O1	237.1751
944332	AF1-101 E O1	474.3502
DUCKCREEK	DUCKCREEK	0.0368
NEWTON	NEWTON	0.0355
FARMERCITY	FARMERCITY	0.0018
G-007A	G-007A	0.8559
VFT	VFT	0.8643
PRAIRIE	PRAIRIE	0.0852
COFFEEN	COFFEEN	0.0174
EDWARDS	EDWARDS	0.0112
CHEOAH	CHEOAH	0.0170
TILTON	TILTON	0.0202
GIBSON	GIBSON	0.0180
CALDERWOOD	CALDERWOOD	0.0169
BLUEG	BLUEG	0.0573
TRIMBLE	TRIMBLE	0.0184
CATAWBA	CATAWBA	0.0126

13.11 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
42138102	206294	28LARRABEE	JCP&L	206309	28SMITHBRG	JCP&L	2	JC-P2-3-JCC-230-15F	breaker	813.0	139.12	148.7	DC	172.03

Bus #	Bus	MW Impact
206271	28MCRC/REC	1.0493
206280	28LAKEHURS	0.6158
206306	28LKWD G1	4.1222
206308	28LKWD G2	4.1222
206312	28LKWD G3	3.0321
206325	28O C GEN (Deactivation : 09/17/18)	57.1482
206360	28O CRK C1	1.4194
206366	28LKWD CT1	8.3086
206367	28LKWD CT2	8.3086
206370	LKWD CT3	70.8200
206412	28R11	29.8639
207143	28BYD_X4-031	0.3422
207145	28FRN_Y2-051	0.0829
207148	28MDF_W3-079	0.1163
207400	28AA1-060 E	2.3313
207419	AB2-139 E	-0.0283
227928	V4-067E	0.1280
228100	BLE DIES	0.5246
228731	V3-036	0.4249
901912	W1-112E OP1	0.3007
901982	W1-119 E	1.0467
901992	W1-120E	1.0467
902032	W1-124E	1.6916
902082	W1-129E	0.5492
902322	W2-019 E	0.6477
902432	W2-030 E	0.4539
902952	W2-082 E OP1	1.8866
903982	W3-079 E	1.3781
905252	W4-025 E	0.7795
905502	W4-060 E OP1	0.4475
907082	X1-037 E	1.2618
907272	X1-085 E	0.3021
912102	X4-015 E	0.5524
913341	Y1-077 (Withdrawn : 12/18/2019)	29.3131
914092	Y2-051 E	0.9694
917612	Z2-102 E	1.5425
919662	AA2-048 E	2.1924
920732	AA2-184 E	1.8269
921743	AA2-049 E	0.4833
923292	AB1-138 C	1.1265

Bus #	Bus	MW Impact
923293	AB1-138 E	1.8775
923463	AB1-163 E	1.2211
923791	AB2-014	0.4004
924701	AB2-122 C	0.0553
924702	AB2-122 E	0.0948
925541	AC1-029 (Withdrawn : 11/27/2019)	1.3575
930001	AB1-001 C	0.0817
930002	AB1-001 E	0.1342
933962	AD1-019 E	0.5871
934351	AD1-059	0.7365
937261	AD2-165	2.7149
938781	AE1-104 C O1	7.9611
938782	AE1-104 E O1	20.3684
939121	AE1-142 C O1	2.6644
939122	AE1-142 E O1	3.8342
939981	AE1-238 C	39.1412
939982	AE1-238 E	102.8110
940161	AE2-000 C O1	58.2922
940162	AE2-000 E O1	149.1497
940361	AE2-020 C	4.7165
940362	AE2-020 E	22.0829
940371	AE2-021 C	4.7165
940372	AE2-021 E	22.0829
940381	AE2-022 C	2.7513
940382	AE2-022 E	12.8817
940391	AE2-023 C	5.1387
940392	AE2-023 E	24.0565
940401	AE2-024 C O1	57.3218
940402	AE2-024 E O1	268.3744
940411	AE2-025 C	28.9360
940412	AE2-025 E	135.4630
940691	AE2-056 C	0.1883
940692	AE2-056 E	0.1647
940701	AE2-057 C	0.0348
940702	AE2-057 E	0.0348
940921	AE2-081 C	0.2000
940922	AE2-081 E	0.2059
942101	AE2-222 C O1	6.6356
942102	AE2-222 E O1	16.6689
942201	AE2-232 C O1	28.5741
942202	AE2-232 E O1	73.1131
942381	AE2-251 C	28.1919
942382	AE2-251 E	72.1353
942941	AE2-314 C (Withdrawn : 12/16/2019)	3.6118
942942	AE2-314 E (Withdrawn : 12/16/2019)	2.4079
943521	AF1-023	0.7011
943561	AF1-027	0.1373
943732	AF1-041 E	0.0997
944332	AF1-101 E O1	77.4999
944611	AF1-126 C O1	4.6658
944612	AF1-126 E O1	18.6633
945571	AF1-222 C	15.2129

Bus #	Bus	MW Impact
945572	AF1-222 E	40.1067
945951	AF1-260	0.3132
945981	AF1-263	0.0635
999905	MARINGEN 2	0.3078
999906	PVILLEG 2	0.1327
DUCKCREEK	DUCKCREEK	0.3765
NEWTON	NEWTON	0.3492
FARMERCITY	FARMERCITY	0.0181
G-007A	G-007A	15.1450
NY	NY	0.5685
PRAIRIE	PRAIRIE	0.8369
O-066	O-066	6.0144
COFFEEN	COFFEEN	0.1723
EDWARDS	EDWARDS	0.1144
CHEOAH	CHEOAH	0.1572
TILTON	TILTON	0.2060
MADISON	MADISON	0.0060
GIBSON	GIBSON	0.1780
CALDERWOOD	CALDERWOOD	0.1561
BLUEG	BLUEG	0.5659
TRIMBLE	TRIMBLE	0.1814
CATAWBA	CATAWBA	0.1067

13.12 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
42138107	206294	28LARRABEE	JCP&L	206309	28SMITHBRG	JCP&L	1	JC-P2-3-JCC-230-15G	breaker	817.0	138.44	147.97	DC	172.03

Bus #	Bus	MW Impact
206271	28MCRC/REC	1.0493
206280	28LAKEHURS	0.6158
206306	28LKWD G1	4.1222
206308	28LKWD G2	4.1222
206312	28LKWD G3	3.0321
206325	28O C GEN (Deactivation : 09/17/18)	57.1482
206360	28O CRK C1	1.4194
206366	28LKWD CT1	8.3086
206367	28LKWD CT2	8.3086
206370	LKWD CT3	70.8200
206412	28R11	29.8639
207143	28BYD_X4-031	0.3422
207145	28FRN_Y2-051	0.0829
207148	28MDF_W3-079	0.1163
207400	28AA1-060 E	2.3313
207419	AB2-139 E	-0.0283
227928	V4-067E	0.1280
228100	BLE DIES	0.5246
228731	V3-036	0.4249
901912	W1-112E OP1	0.3007
901982	W1-119 E	1.0467
901992	W1-120E	1.0467
902032	W1-124E	1.6916
902082	W1-129E	0.5492
902322	W2-019 E	0.6477
902432	W2-030 E	0.4539
902952	W2-082 E OP1	1.8866
903982	W3-079 E	1.3781
905252	W4-025 E	0.7795
905502	W4-060 E OP1	0.4475
907082	X1-037 E	1.2618
907272	X1-085 E	0.3021
912102	X4-015 E	0.5524
913341	Y1-077 (Withdrawn : 12/18/2019)	29.3131
914092	Y2-051 E	0.9694
917612	Z2-102 E	1.5425
919662	AA2-048 E	2.1924
920732	AA2-184 E	1.8269
921743	AA2-049 E	0.4833
923292	AB1-138 C	1.1265

Bus #	Bus	MW Impact
923293	AB1-138 E	1.8775
923463	AB1-163 E	1.2211
923791	AB2-014	0.4004
924701	AB2-122 C	0.0553
924702	AB2-122 E	0.0948
925541	AC1-029 (Withdrawn : 11/27/2019)	1.3575
930001	AB1-001 C	0.0817
930002	AB1-001 E	0.1342
933962	AD1-019 E	0.5871
934351	AD1-059	0.7365
937261	AD2-165	2.7149
938781	AE1-104 C O1	7.9611
938782	AE1-104 E O1	20.3684
939121	AE1-142 C O1	2.6644
939122	AE1-142 E O1	3.8342
939981	AE1-238 C	39.1412
939982	AE1-238 E	102.8110
940161	AE2-000 C O1	58.2922
940162	AE2-000 E O1	149.1497
940361	AE2-020 C	4.7165
940362	AE2-020 E	22.0829
940371	AE2-021 C	4.7165
940372	AE2-021 E	22.0829
940381	AE2-022 C	2.7513
940382	AE2-022 E	12.8817
940391	AE2-023 C	5.1387
940392	AE2-023 E	24.0565
940401	AE2-024 C O1	57.3218
940402	AE2-024 E O1	268.3744
940411	AE2-025 C	28.9360
940412	AE2-025 E	135.4630
940691	AE2-056 C	0.1883
940692	AE2-056 E	0.1647
940701	AE2-057 C	0.0348
940702	AE2-057 E	0.0348
940921	AE2-081 C	0.2000
940922	AE2-081 E	0.2059
942101	AE2-222 C O1	6.6356
942102	AE2-222 E O1	16.6689
942201	AE2-232 C O1	28.5741
942202	AE2-232 E O1	73.1131
942381	AE2-251 C	28.1919
942382	AE2-251 E	72.1353
942941	AE2-314 C (Withdrawn : 12/16/2019)	3.6118
942942	AE2-314 E (Withdrawn : 12/16/2019)	2.4079
943521	AF1-023	0.7011
943561	AF1-027	0.1373
943732	AF1-041 E	0.0997
944332	AF1-101 E O1	77.4999
944611	AF1-126 C O1	4.6658
944612	AF1-126 E O1	18.6633
945571	AF1-222 C	15.2129

Bus #	Bus	MW Impact
945572	AF1-222 E	40.1067
945951	AF1-260	0.3132
945981	AF1-263	0.0635
999905	MARINGEN 2	0.3078
999906	PVILLEG 2	0.1327
DUCKCREEK	DUCKCREEK	0.3765
NEWTON	NEWTON	0.3492
FARMERCITY	FARMERCITY	0.0181
G-007A	G-007A	15.1450
NY	NY	0.5685
PRAIRIE	PRAIRIE	0.8369
O-066	O-066	6.0144
COFFEEN	COFFEEN	0.1723
EDWARDS	EDWARDS	0.1144
CHEOAH	CHEOAH	0.1572
TILTON	TILTON	0.2060
MADISON	MADISON	0.0060
GIBSON	GIBSON	0.1780
CALDERWOOD	CALDERWOOD	0.1561
BLUEG	BLUEG	0.5659
TRIMBLE	TRIMBLE	0.1814
CATAWBA	CATAWBA	0.1067

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ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC DC	MW IMPACT
42704350	206297	28MANITOU	JCP&L	206319	28WHITINGS	JCP&L	1	JC-P7-1-JCC-230-12	tower	817.0	163.48	201.44	DC	310.14

Bus #	Bus	MW Impact
206325	28O C GEN (Deactivation : 09/17/18)	121.2099
206360	28O CRK C1	2.5589
206361	28O CRK C2	1.7182
227842	MARINGEN	0.0774
227927	V4-067C	0.0206
227928	V4-067E	0.2441
228014	PVILLEG	0.0269
228100	BLE DIES	0.9758
228712	V2-041E	0.1657
228729	W2-030 C	0.0730
228731	V3-036	0.8066
228732	V1-021 C	0.0287
902092	W1-130E	0.3579
902432	W2-030 E	0.8599
913341	Y1-077 (Withdrawn : 12/18/2019)	54.5206
923292	AB1-138 C	0.2115
923293	AB1-138 E	0.3525
923532	AB1-169AC	34.8802
924531	AB2-102 C	15.1413
924532	AB2-102 E	0.3365
924701	AB2-122 C	0.1054
924702	AB2-122 E	0.1808
930001	AB1-001 C	0.1596
930002	AB1-001 E	0.2623
933962	AD1-019 E	1.1146
938421	AE1-061 C	0.3140
938422	AE1-061 E	0.3140
938781	AE1-104 C O1	14.8072
938782	AE1-104 E O1	37.8839
939121	AE1-142 C O1	3.8946
939122	AE1-142 E O1	5.6044
939501	AE1-179 C O1	1.9555
939502	AE1-179 E O1	1.3800
940001	AE1-240 C O1	1.6249
940002	AE1-240 E O1	1.1599
940161	AE2-000 C O1	123.6363
940162	AE2-000 E O1	316.3428
940361	AE2-020 C	17.0932
940362	AE2-020 E	80.0316
940371	AE2-021 C	17.0932
940372	AE2-021 E	80.0316

Bus #	Bus	MW Impact
940381	AE2-022 C	9.9710
940382	AE2-022 E	46.6851
940391	AE2-023 C	9.5576
940392	AE2-023 E	44.7435
941001	AE2-091 C O1	1.2219
941002	AE2-091 E O1	0.6375
941931	AE2-205 C O1	3.1494
941932	AE2-205 E O1	2.0996
942101	AE2-222 C O1	12.6037
942102	AE2-222 E O1	31.6613
942201	AE2-232 C O1	60.6050
942202	AE2-232 E O1	155.0710
942381	AE2-251 C	54.1509
942382	AE2-251 E	138.5571
942941	AE2-314 C (Withdrawn : 12/16/2019)	6.9375
942942	AE2-314 E (Withdrawn : 12/16/2019)	4.6250
943732	AF1-041 E	0.3577
944131	AF1-081 C O1	3.4239
944132	AF1-081 E O1	2.2826
944332	AF1-101 E O1	310.1421
944613	AF1-126 BAT	16.0150
945731	AF1-238 C O1	2.0478
945732	AF1-238 E O1	3.0717
945741	AF1-239 C	0.3642
945742	AF1-239 E	0.5463
999905	MARINGEN 2	0.5840
999906	PVILLEG 2	0.2521
DUCKCREEK	DUCKCREEK	0.0265
NEWTON	NEWTON	0.0226
CPL	CPL	0.0086
FARMERCITY	FARMERCITY	0.0011
NY	NY	0.4767
PRAIRIE	PRAIRIE	0.0491
O-066	O-066	8.6016
COFFEEN	COFFEEN	0.0111
CBM-S2	CBM-S2	0.0289
EDWARDS	EDWARDS	0.0081
CHEOAH	CHEOAH	0.0040
TILTON	TILTON	0.0145
G-007	G-007	3.0077
MADISON	MADISON	0.0060
GIBSON	GIBSON	0.0120
CALDERWOOD	CALDERWOOD	0.0040
BLUEG	BLUEG	0.0382
TRIMBLE	TRIMBLE	0.0122

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ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC DC	MW IMPACT
42138092	206314	28RED OAKA	JCP&L	206305	28RAR RVR	JCP&L	1	JC-P2-3-JCC-230-26B	breaker	869.0	162.25	167.11	DC	93.48

Bus #	Bus	MW Impact
206201	28JERSVGEN	0.0540
206271	28MCRC/REC	1.9581
206325	28O C GEN (Deactivation : 09/17/18)	31.0524
206327	28S RIV G1	6.4412
206328	28S RIV G2	6.4412
206329	28S RIV G3	8.5801
206358	28PARLN1&2	3.8866
206359	28PARLN3&4	4.6894
206363	28RDOAKCT2	15.6917
206364	28RDOAKCT3	15.6917
206367	28LKWD CT2	4.4180
206370	LKWD CT3	32.0093
206412	28R11	275.9856
207143	28BYD_X4-031	0.5139
207144	28HOW_X1-037	0.1912
207145	28FRN_Y2-051	0.0542
207148	28MDF_W3-079	0.0772
207204	28HOL_W1-112	0.0669
207206	28TIN_W1-124	0.2715
207400	28AA1-060 E	1.7234
901032	W1-024E OP1	0.2147
901112	W1-032 E OP1	0.1792
901912	W1-112E OP1	0.7815
901982	W1-119 E	0.6260
901992	W1-120E	0.6260
902032	W1-124E	3.1915
902082	W1-129E	0.3367
902322	W2-019 E	0.3986
902952	W2-082 E OP1	1.1514
903982	W3-079 E	0.9147
905252	W4-025 E	0.4779
907082	X1-037 E	2.2347
907272	X1-085 E	0.2709
912102	X4-015 E	0.3380
914092	Y2-051 E	0.6333
917612	Z2-102 E	0.9230
919662	AA2-048 E	1.4552
920732	AA2-184 E	3.5345
921743	AA2-049 E	0.9119
923292	AB1-138 C	0.5459
923293	AB1-138 E	0.9098

Bus #	Bus	MW Impact
923463	AB1-163 E	0.7388
925541	AC1-029 (Withdrawn : 11/27/2019)	12.5448
937261	AD2-165	25.0896
939121	AE1-142 C O1	1.2249
939122	AE1-142 E O1	1.7627
939981	AE1-238 C	69.1245
939982	AE1-238 E	181.5670
940161	AE2-000 C O1	31.6740
940162	AE2-000 E O1	81.0429
940401	AE2-024 C O1	30.2776
940402	AE2-024 E O1	141.7565
940411	AE2-025 C	15.2841
940412	AE2-025 E	71.5521
940691	AE2-056 C	0.3364
940692	AE2-056 E	0.2943
940701	AE2-057 C	0.0968
940702	AE2-057 E	0.0968
940921	AE2-081 C	0.3574
940922	AE2-081 E	0.3679
942201	AE2-232 C O1	15.5262
942202	AE2-232 E O1	39.7272
943521	AF1-023	2.5595
943561	AF1-027	0.1015
944332	AF1-101 E O1	42.1108
944611	AF1-126 C O1	2.6879
944612	AF1-126 E O1	10.7516
945571	AF1-222 C	50.6913
945572	AF1-222 E	133.6407
945951	AF1-260	0.2079
945981	AF1-263	0.1799
DUCKCREEK	DUCKCREEK	0.3950
NEWTON	NEWTON	0.3643
FARMERCITY	FARMERCITY	0.0188
NY	NY	1.4627
PRAIRIE	PRAIRIE	0.8601
O-066	O-066	32.0006
COFFEEN	COFFEEN	0.1792
EDWARDS	EDWARDS	0.1204
CHEOAH	CHEOAH	0.1522
TILTON	TILTON	0.2161
G-007	G-007	28.2318
MADISON	MADISON	0.0161
GIBSON	GIBSON	0.1856
CALDERWOOD	CALDERWOOD	0.1516
BLUEG	BLUEG	0.5902
TRIMBLE	TRIMBLE	0.1892
CATAWBA	CATAWBA	0.0966

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ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC DC	MW IMPACT
42138087	206315	28RED OAKB	JCP&L	206305	28RAR RVR	JCP&L	1	JC-P2-3-JCC-230-26D	breaker	869.0	165.99	170.83	DC	92.97

Bus #	Bus	MW Impact
206201	28JERSVGEN	0.0539
206271	28MCRC/REC	1.9516
206325	28O C GEN (Deactivation : 09/17/18)	30.8843
206327	28S RIV G1	6.3079
206328	28S RIV G2	6.3079
206329	28S RIV G3	8.4026
206358	28PARLN1&2	3.9391
206359	28PARLN3&4	4.7528
206362	28RDOAKCT1	15.7235
206365	28RDOAKST1	22.0489
206367	28LKWD CT2	4.3950
206370	LKWD CT3	31.8427
206412	28R11	270.2744
207143	28BYD_X4-031	0.5121
207144	28HOW_X1-037	0.1906
207145	28FRN_Y2-051	0.0539
207148	28MDF_W3-079	0.0768
207204	28HOL_W1-112	0.0670
207206	28TIN_W1-124	0.2706
207400	28AA1-060 E	1.7131
901032	W1-024E OP1	0.2136
901112	W1-032 E OP1	0.1782
901912	W1-112E OP1	0.7831
901982	W1-119 E	0.6225
901992	W1-120E	0.6225
902032	W1-124E	3.1804
902082	W1-129E	0.3348
902322	W2-019 E	0.3963
902952	W2-082 E OP1	1.1448
903982	W3-079 E	0.9104
905252	W4-025 E	0.4751
907082	X1-037 E	2.2284
907272	X1-085 E	0.2692
912102	X4-015 E	0.3361
914092	Y2-051 E	0.6303
917612	Z2-102 E	0.9178
919662	AA2-048 E	1.4484
920732	AA2-184 E	3.5229
921743	AA2-049 E	0.9087
923292	AB1-138 C	0.5430
923293	AB1-138 E	0.9050

Bus #	Bus	MW Impact
923463	AB1-163 E	0.7350
925541	AC1-029 (Withdrawn : 11/27/2019)	12.2852
937261	AD2-165	24.5704
939121	AE1-142 C O1	1.2184
939122	AE1-142 E O1	1.7533
939981	AE1-238 C	68.7938
939982	AE1-238 E	180.6983
940161	AE2-000 C O1	31.5025
940162	AE2-000 E O1	80.6041
940401	AE2-024 C O1	30.1208
940402	AE2-024 E O1	141.0225
940411	AE2-025 C	15.2050
940412	AE2-025 E	71.1816
940691	AE2-056 C	0.3354
940692	AE2-056 E	0.2935
940701	AE2-057 C	0.0966
940702	AE2-057 E	0.0966
940921	AE2-081 C	0.3564
940922	AE2-081 E	0.3669
942201	AE2-232 C O1	15.4421
942202	AE2-232 E O1	39.5121
943521	AF1-023	2.5511
943561	AF1-027	0.1009
944332	AF1-101 E O1	41.8828
944611	AF1-126 C O1	2.6719
944612	AF1-126 E O1	10.6877
945571	AF1-222 C	50.4488
945572	AF1-222 E	133.0013
945951	AF1-260	0.2069
945981	AF1-263	0.1792
DUCKCREEK	DUCKCREEK	0.4203
NEWTON	NEWTON	0.3890
FARMERCITY	FARMERCITY	0.0200
NY	NY	1.4704
PRAIRIE	PRAIRIE	0.9195
O-066	O-066	32.0410
COFFEEN	COFFEEN	0.1913
EDWARDS	EDWARDS	0.1285
CHEOAH	CHEOAH	0.1637
TILTON	TILTON	0.2306
G-007	G-007	28.1486
MADISON	MADISON	0.0161
GIBSON	GIBSON	0.1982
CALDERWOOD	CALDERWOOD	0.1630
BLUEG	BLUEG	0.6302
TRIMBLE	TRIMBLE	0.2020
CATAWBA	CATAWBA	0.1050

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ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC DC	MW IMPACT
40979068	206316	28WINDSOR	JCP&L	219752	CLRKSVLL_1	PSE&G	1	PS_P7-1_11023+GBK-LN_LT	tower	813.0	117.21	121.7	DC	80.95

Bus #	Bus	MW Impact
206201	28JERSVGEN	0.0525
206271	28MCRC/REC	1.1487
206325	28O C GEN (Deactivation : 09/17/18)	26.8926
206327	28S RIV G1	1.7571
206328	28S RIV G2	1.7571
206329	28S RIV G3	2.3406
206358	28PARLN1&2	1.1214
206359	28PARLN3&4	1.3530
206363	28RDOAKCT2	4.1510
206364	28RDOAKCT3	4.1510
206368	28MDLSEXCO	0.4999
206370	LKWD CT3	28.2200
206412	28R11	75.2884
206414	28X4-005E	2.8905
206416	28MLH_W1-032	0.0314
207143	28BYD_X4-031	0.3542
207144	28HOW_X1-037	0.1651
207145	28FRN_Y2-051	0.0454
207149	28UPF_X1-085	0.0455
207152	28NPK_W1-113	0.0997
207162	28APLW2-078	0.1116
207169	28W4-060COL	0.0945
207204	28HOL_W1-112	0.0375
207205	28MAN_W1-024	0.0435
207206	28TIN_W1-124	0.1580
207400	28AA1-060 E	2.2869
207419	AB2-139 E	0.0931
207420	AC1-207 C	1.0393
219679	NRGCENTER E	-0.3235
901032	W1-024E OP1	0.5126
901112	W1-032 E OP1	0.3802
901422	W1-113 E	1.1752
901912	W1-112E OP1	0.4386
901982	W1-119 E	0.5765
901992	W1-120E	0.5765
902032	W1-124E	1.8566
902082	W1-129E	0.3143
902322	W2-019 E	0.3729
902912	W2-078 E	1.3165
902952	W2-082 E OP1	1.0722
903982	W3-079 E	0.6356

Bus #	Bus	MW Impact
905252	W4-025 E	0.4461
905502	W4-060 E OP1	1.1047
907082	X1-037 E	1.9302
907272	X1-085 E	0.5323
912102	X4-015 E	0.3153
914092	Y2-051 E	0.5308
917612	Z2-102 E	0.8503
919662	AA2-048 E	1.0111
919712	AA2-058 E	-0.1732
919802	AA2-066 E	-0.3235
920732	AA2-184 E	2.0526
921743	AA2-049 E	0.5305
923292	AB1-138 C	0.4745
923293	AB1-138 E	0.7908
923463	AB1-163 E	0.6403
925541	AC1-029 (Withdrawn : 11/27/2019)	3.4222
927132	AC1-207 E	1.7393
934841	AD1-113	10.8394
937261	AD2-165	6.8444
937523	AD2-213 BAT	1.7904
939121	AE1-142 C O1	1.0695
939122	AE1-142 E O1	1.5391
939981	AE1-238 C	39.7822
939982	AE1-238 E	104.4947
940161	AE2-000 C O1	27.4309
940162	AE2-000 E O1	70.1863
940401	AE2-024 C O1	26.8222
940402	AE2-024 E O1	125.5786
940411	AE2-025 C	13.5398
940412	AE2-025 E	63.3863
940691	AE2-056 C	0.2934
940692	AE2-056 E	0.2567
940701	AE2-057 C	0.0940
940702	AE2-057 E	0.0940
940921	AE2-081 C	0.3117
940922	AE2-081 E	0.3209
940931	AE2-082 C	0.7221
940932	AE2-082 E	0.7645
942201	AE2-232 C O1	13.4463
942202	AE2-232 E O1	34.4053
943521	AF1-023	1.4864
943561	AF1-027	0.1347
944332	AF1-101 E O1	36.4696
944432	AF1-108 BAT	1.8538
944442	AF1-109 BAT	5.4732
944611	AF1-126 C O1	2.0773
944612	AF1-126 E O1	8.3090
945201	AF1-185 1	0.3310
945571	AF1-222 C	29.1736
945572	AF1-222 E	76.9123
945723	AF1-237 BAT	39.3160
945951	AF1-260	0.0766

Bus #	Bus	MW Impact
945981	AF1-263	0.1240
DUCKCREEK	DUCKCREEK	0.2556
NEWTON	NEWTON	0.2396
FARMERCITY	FARMERCITY	0.0125
G-007A	G-007A	40.7647
NY	NY	0.1421
PRAIRIE	PRAIRIE	0.5760
O-066	O-066	5.8128
COFFEEN	COFFEEN	0.1179
EDWARDS	EDWARDS	0.0777
CHEOAH	CHEOAH	0.1116
TILTON	TILTON	0.1399
GIBSON	GIBSON	0.1212
CALDERWOOD	CALDERWOOD	0.1108
BLUEG	BLUEG	0.3854
TRIMBLE	TRIMBLE	0.1235
CATAWBA	CATAWBA	0.0784

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ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC DC	MW IMPACT
42704372	206318	28VANHISVL	JCP&L	206294	28LARRABEE	JCP&L	1	JC-P7-1-JCC-230-12	tower	869.0	144.94	171.04	DC	227.13

Bus #	Bus	MW Impact
206280	28LAKEHURS	0.3957
206325	28O C GEN (Deactivation : 09/17/18)	88.7690
206360	28O CRK C1	1.8740
206361	28O CRK C2	1.2583
206414	28X4-005E	-1.5264
207149	28UPF_X1-085	0.0507
207150	28HAN_X4-015	0.0852
207157	28PEM_W1-119	0.1567
207158	28PEM_W1-120	0.1567
207160	28EGP_W2-019	0.1020
207164	28NHV_W2-082	0.2929
207171	28DIX_Z2-102	0.2316
207207	28JCB_W1-129	0.0849
207208	28JCB_W4-025	0.1161
207400	28AA1-060 E	4.3843
207419	AB2-139 E	-0.0341
218660	EHAMPSOLAR C	0.0188
218661	EHAMPSOLAR E	0.2208
219273	CLEANLIGHT E	0.1614
219287	REEVES ST C	0.0847
219288	REEVES ST E	0.9900
219292	REEVESSO E	0.0633
219582	COXSCOSP1_E	0.0075
219614	COXSCOSP2_E	0.0075
219628	LUMB23SP1_C	0.0026
219652	LUMB23SP1_E	0.0302
219653	LUMB23SP2_C	0.0026
219656	LUMB23SP2_E	0.0302
219686	LUMSOLAR_N C	0.0263
219687	LUMSOLAR_N E	0.3048
219689	LUMSOLAR_S E	0.1863
227842	MARINGEN	0.0739
227927	V4-067C	0.0195
227928	V4-067E	0.2305
228014	PVILLEG	0.0256
228100	BLE DIES	0.8331
228712	V2-041E	0.1958
228729	W2-030 C	0.0700
228731	V3-036	0.7685
901982	W1-119 E	1.8357
901992	W1-120E	1.8357

Bus #	Bus	MW Impact
902082	W1-129E	0.9920
902092	W1-130E	0.4564
902322	W2-019 E	1.1754
902432	W2-030 E	0.8241
902691	W2-056 C	0.0737
902692	W2-056 E	0.1203
902952	W2-082 E OP1	3.3896
905252	W4-025 E	1.4080
907272	X1-085 E	0.5926
912102	X4-015 E	0.9957
913341	Y1-077 (Withdrawn : 12/18/2019)	54.7620
917612	Z2-102 E	2.7070
919663	AA2-048 BAT	0.9846
921744	AA2-049 BAT	0.4425
923292	AB1-138 C	0.7238
923293	AB1-138 E	1.2063
923463	AB1-163 E	0.4934
923532	AB1-169AC	44.2535
924531	AB2-102 C	17.5854
924532	AB2-102 E	0.3908
924701	AB2-122 C	0.0996
924702	AB2-122 E	0.1708
930001	AB1-001 C	0.1424
930002	AB1-001 E	0.2341
932361	AC2-050 C O1	0.3500
932362	AC2-050 E O1	0.5711
933962	AD1-019 E	1.0619
938421	AE1-061 C	0.4004
938422	AE1-061 E	0.4004
938781	AE1-104 C O1	14.8727
938782	AE1-104 E O1	38.0516
939121	AE1-142 C O1	3.3006
939122	AE1-142 E O1	4.7496
939501	AE1-179 C O1	2.5570
939502	AE1-179 E O1	1.8045
940001	AE1-240 C O1	2.1189
940002	AE1-240 E O1	1.5125
940161	AE2-000 C O1	90.5460
940162	AE2-000 E O1	231.6761
940361	AE2-020 C	15.8606
940362	AE2-020 E	74.2606
940371	AE2-021 C	15.8606
940372	AE2-021 E	74.2606
940381	AE2-022 C	9.2520
940382	AE2-022 E	43.3187
940391	AE2-023 C	9.5999
940392	AE2-023 E	44.9416
941931	AE2-205 C O1	3.6578
941932	AE2-205 E O1	2.4385
942101	AE2-222 C O1	11.9896
942102	AE2-222 E O1	30.1185
942201	AE2-232 C O1	44.3845

Bus #	Bus	MW Impact
942202	AE2-232 E O1	113.5675
942381	AE2-251 C	50.2462
942382	AE2-251 E	128.5658
942941	AE2-314 C (Withdrawn : 12/16/2019)	6.4372
942942	AE2-314 E (Withdrawn : 12/16/2019)	4.2915
943561	AF1-027	0.4871
943732	AF1-041 E	0.3392
944131	AF1-081 C O1	3.9767
944132	AF1-081 E O1	2.6511
944332	AF1-101 E O1	227.1350
944611	AF1-126 C O1	20.1325
944612	AF1-126 E O1	80.5300
945731	AF1-238 C O1	2.4700
945732	AF1-238 E O1	3.7050
945741	AF1-239 C	0.4718
945742	AF1-239 E	0.7078
999905	MARINGEN 2	0.5570
999906	PVILLEG 2	0.2395
LGEE	LGEE	0.0023
CPL	CPL	0.0635
CBM-W2	CBM-W2	0.1392
NY	NY	1.3217
TVA	TVA	0.0420
O-066	O-066	24.2525
CBM-S2	CBM-S2	0.4335
EDWARDS	EDWARDS	0.0003
CBM-S1	CBM-S1	0.2130
G-007	G-007	9.3382
MADISON	MADISON	0.0202
MEC	MEC	0.0095

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ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC DC	MW IMPACT
42704362	206319	28WHITINGS	JCP&L	206720	28MANCHSTR	JCP&L	1	JC-P7-1-JCC-230-12	tower	869.0	141.27	176.52	DC	306.35

Bus #	Bus	MW Impact
206280	28LAKEHURS	0.5942
206325	28O C GEN (Deactivation : 09/17/18)	119.7285
206360	28O CRK C1	2.5276
206361	28O CRK C2	1.6972
227842	MARINGEN	0.0765
227927	V4-067C	0.0204
227928	V4-067E	0.2411
228014	PVILLEG	0.0266
228100	BLE DIES	0.9641
228712	V2-041E	0.1637
228729	W2-030 C	0.0721
228731	V3-036	0.7969
228732	V1-021 C	0.0284
901982	W1-119 E	0.4539
901992	W1-120E	0.4539
902092	W1-130E	0.3538
902432	W2-030 E	0.8495
913341	Y1-077 (Withdrawn : 12/18/2019)	53.8680
917612	Z2-102 E	0.6565
923292	AB1-138 C	1.0868
923293	AB1-138 E	1.8114
923463	AB1-163 E	0.5520
923532	AB1-169AC	34.4734
924531	AB2-102 C	14.9634
924532	AB2-102 E	0.3325
924701	AB2-122 C	0.1042
924702	AB2-122 E	0.1786
930001	AB1-001 C	0.1576
930002	AB1-001 E	0.2591
933962	AD1-019 E	1.1012
938421	AE1-061 C	0.3103
938422	AE1-061 E	0.3103
938781	AE1-104 C O1	14.6299
938782	AE1-104 E O1	37.4304
939121	AE1-142 C O1	4.5155
939122	AE1-142 E O1	6.4979
939501	AE1-179 C O1	1.9326
939502	AE1-179 E O1	1.3638
940001	AE1-240 C O1	1.6059
940002	AE1-240 E O1	1.1463
940161	AE2-000 C O1	122.1252

Bus #	Bus	MW Impact
940162	AE2-000 E O1	312.4764
940361	AE2-020 C	16.8878
940362	AE2-020 E	79.0698
940371	AE2-021 C	16.8878
940372	AE2-021 E	79.0698
940381	AE2-022 C	9.8512
940382	AE2-022 E	46.1240
940391	AE2-023 C	9.4432
940392	AE2-023 E	44.2079
941931	AE2-205 C O1	3.1124
941932	AE2-205 E O1	2.0749
942101	AE2-222 C O1	12.4525
942102	AE2-222 E O1	31.2815
942201	AE2-232 C O1	59.8642
942202	AE2-232 E O1	153.1758
942381	AE2-251 C	53.5002
942382	AE2-251 E	136.8919
942941	AE2-314 C (Withdrawn : 12/16/2019)	6.8541
942942	AE2-314 E (Withdrawn : 12/16/2019)	4.5694
943732	AF1-041 E	0.3534
944131	AF1-081 C O1	3.3837
944132	AF1-081 E O1	2.2558
944332	AF1-101 E O1	306.3515
945731	AF1-238 C O1	2.0237
945732	AF1-238 E O1	3.0356
945741	AF1-239 C	0.3599
945742	AF1-239 E	0.5399
999905	MARINGEN 2	0.5770
999906	PVILLEG 2	0.2491
DUCKCREEK	DUCKCREEK	0.0299
NEWTON	NEWTON	0.0258
CPL	CPL	0.0060
FARMERCITY	FARMERCITY	0.0013
NY	NY	0.4750
PRAIRIE	PRAIRIE	0.0568
O-066	O-066	8.5546
COFFEEN	COFFEEN	0.0127
CBM-S2	CBM-S2	0.0116
EDWARDS	EDWARDS	0.0091
CHEOAH	CHEOAH	0.0055
TILTON	TILTON	0.0164
G-007	G-007	2.9838
MADISON	MADISON	0.0060
GIBSON	GIBSON	0.0137
CALDERWOOD	CALDERWOOD	0.0055
BLUEG	BLUEG	0.0434
TRIMBLE	TRIMBLE	0.0139

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ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC DC	MW IMPACT
42138042	206323	28LAKEWOOD	JCP&L	206294	28LARRABEE	JCP&L	2	JC-P2-3-JCC-230-15J	breaker	817.0	164.71	181.42	DC	301.47

Bus #	Bus	MW Impact
206306	28LKWD G1	8.4423
206308	28LKWD G2	8.4423
206312	28LKWD G3	6.2098
206325	28O C GEN (Deactivation : 09/17/18)	100.1470
206360	28O CRK C1	2.4873
206366	28LKWD CT1	17.0163
206367	28LKWD CT2	17.0163
206370	LKWD CT3	145.0420
227928	V4-067E	0.2093
228100	BLE DIES	0.8450
228731	V3-036	0.6927
901982	W1-119 E	0.5814
901992	W1-120E	0.5814
902432	W2-030 E	0.7391
913341	Y1-077 (Withdrawn : 12/18/2019)	47.2126
917612	Z2-102 E	0.8503
923292	AB1-138 C	1.0198
923293	AB1-138 E	1.6997
923463	AB1-163 E	0.6190
923791	AB2-014	0.8199
924701	AB2-122 C	0.0904
924702	AB2-122 E	0.1550
930001	AB1-001 C	0.1356
930002	AB1-001 E	0.2229
933962	AD1-019 E	0.9572
934351	AD1-059	1.5083
938781	AE1-104 C O1	12.8224
938782	AE1-104 E O1	32.8059
939121	AE1-142 C O1	4.4474
939122	AE1-142 E O1	6.3998
940161	AE2-000 C O1	102.1517
940162	AE2-000 E O1	261.3711
940361	AE2-020 C	7.7480
940362	AE2-020 E	36.2765
940371	AE2-021 C	7.7480
940372	AE2-021 E	36.2765
940381	AE2-022 C	4.5196
940382	AE2-022 E	21.1613
940391	AE2-023 C	8.2765
940392	AE2-023 E	38.7460
942101	AE2-222 C O1	10.8213

Bus #	Bus	MW Impact
942102	AE2-222 E O1	27.1839
942201	AE2-232 C O1	50.0735
942202	AE2-232 E O1	128.1239
942381	AE2-251 C	46.3121
942382	AE2-251 E	118.4995
942941	AE2-314 C (Withdrawn : 12/16/2019)	5.9332
942942	AE2-314 E (Withdrawn : 12/16/2019)	3.9555
943732	AF1-041 E	0.1627
944332	AF1-101 E O1	135.8114
999905	MARINGEN 2	0.5016
999906	PVILLEG 2	0.2164
DUCKCREEK	DUCKCREEK	0.3385
NEWTON	NEWTON	0.3138
FARMERCITY	FARMERCITY	0.0162
NY	NY	0.8494
PRAIRIE	PRAIRIE	0.7465
O-066	O-066	14.4682
COFFEEN	COFFEEN	0.1543
EDWARDS	EDWARDS	0.1029
CHEOAH	CHEOAH	0.1361
TILTON	TILTON	0.1852
G-007	G-007	4.8672
MADISON	MADISON	0.0101
GIBSON	GIBSON	0.1594
CALDERWOOD	CALDERWOOD	0.1357
BLUEG	BLUEG	0.5069
TRIMBLE	TRIMBLE	0.1631
CATAWBA	CATAWBA	0.0896

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ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC DC	MW IMPACT
42138050	206323	28LAKEWOOD	JCP&L	206294	28LARRABEE	JCP&L	1	JC-P2-3-JCC-230-7A	breaker	869.0	163.74	198.53	DC	302.38

Bus #	Bus	MW Impact
206280	28LAKEHURS	0.6524
206306	28LKWD G1	8.4632
206308	28LKWD G2	8.4632
206312	28LKWD G3	6.2251
206325	28O C GEN (Deactivation : 09/17/18)	118.1774
206360	28O CRK C1	2.4949
206361	28O CRK C2	1.6752
206370	LKWD CT3	145.4000
227842	MARINGEN	0.0790
227927	V4-067C	0.0210
227928	V4-067E	0.2485
228014	PVILLEG	0.0274
228100	BLE DIES	0.8543
228729	W2-030 C	0.0745
228731	V3-036	0.8226
901982	W1-119 E	0.5799
901992	W1-120E	0.5799
902432	W2-030 E	0.8779
913341	Y1-077 (Withdrawn : 12/18/2019)	56.1566
917612	Z2-102 E	0.8479
923292	AB1-138 C	1.1934
923293	AB1-138 E	1.9890
923463	AB1-163 E	0.6906
923791	AB2-014	0.8220
924701	AB2-122 C	0.1074
924702	AB2-122 E	0.1840
930001	AB1-001 C	0.1608
930002	AB1-001 E	0.2643
933962	AD1-019 E	1.1367
934351	AD1-059	1.5120
938781	AE1-104 C O1	15.2515
938782	AE1-104 E O1	39.0207
939121	AE1-142 C O1	4.4578
939122	AE1-142 E O1	6.4148
940161	AE2-000 C O1	120.5430
940162	AE2-000 E O1	308.4282
940361	AE2-020 C	17.3465
940362	AE2-020 E	81.2177
940371	AE2-021 C	17.3465
940372	AE2-021 E	81.2177
940381	AE2-022 C	10.1188

Bus #	Bus	MW Impact
940382	AE2-022 E	47.3770
940391	AE2-023 C	9.8444
940392	AE2-023 E	46.0861
942101	AE2-222 C O1	12.8497
942102	AE2-222 E O1	32.2793
942201	AE2-232 C O1	59.0887
942202	AE2-232 E O1	151.1913
942381	AE2-251 C	54.9535
942382	AE2-251 E	140.6105
942941	AE2-314 C (Withdrawn : 12/16/2019)	7.0403
942942	AE2-314 E (Withdrawn : 12/16/2019)	4.6935
943732	AF1-041 E	0.3645
944332	AF1-101 E O1	302.3826
999905	MARINGEN 2	0.5957
999906	PVILLEG 2	0.2570
DUCKCREEK	DUCKCREEK	0.1865
NEWTON	NEWTON	0.1719
FARMERCITY	FARMERCITY	0.0088
NY	NY	0.7759
PRAIRIE	PRAIRIE	0.4055
O-066	O-066	13.5878
COFFEEN	COFFEEN	0.0846
EDWARDS	EDWARDS	0.0567
CHEOAH	CHEOAH	0.0701
TILTON	TILTON	0.1021
G-007	G-007	4.7393
MADISON	MADISON	0.0101
GIBSON	GIBSON	0.0874
CALDERWOOD	CALDERWOOD	0.0701
BLUEG	BLUEG	0.2778
TRIMBLE	TRIMBLE	0.0896
CATAWBA	CATAWBA	0.0434

13.21 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
42138212	206410	28R11RINGB	JCP&L	206315	28RED OAKB	JCP&L	1	JC-P2-3-JCC-230-26D	breaker	869.0	121.28	126.18	DC	94.28

Bus #	Bus	MW Impact
206201	28JERSVGEN	0.0546
206271	28MCRC/REC	1.9663
206325	28O C GEN (Deactivation : 09/17/18)	31.3180
206327	28S RIV G1	6.3311
206328	28S RIV G2	6.3311
206329	28S RIV G3	8.4335
206358	28PARLN1&2	3.9539
206359	28PARLN3&4	4.7707
206366	28LKWD CT1	4.4483
206367	28LKWD CT2	4.4483
206370	LKWD CT3	32.2286
206412	28R11	271.2688
207143	28BYD_X4-031	0.5167
207144	28HOW_X1-037	0.1927
207145	28FRN_Y2-051	0.0545
207148	28MDF_W3-079	0.0777
207204	28HOL_W1-112	0.0675
207206	28TIN_W1-124	0.2726
207400	28AA1-060 E	1.7479
901032	W1-024E OP1	0.2184
901112	W1-032 E OP1	0.1818
901912	W1-112E OP1	0.7887
901982	W1-119 E	0.6330
901992	W1-120E	0.6330
902032	W1-124E	3.2043
902082	W1-129E	0.3407
902322	W2-019 E	0.4035
902952	W2-082 E OP1	1.1651
903982	W3-079 E	0.9203
905252	W4-025 E	0.4836
905502	W4-060 E OP1	0.5071
907082	X1-037 E	2.2523
907272	X1-085 E	0.2752
912102	X4-015 E	0.3421
914092	Y2-051 E	0.6373
917612	Z2-102 E	0.9333
919662	AA2-048 E	1.4642
920732	AA2-184 E	3.5493
921743	AA2-049 E	0.9155
923292	AB1-138 C	0.5500
923293	AB1-138 E	0.9166

Bus #	Bus	MW Impact
923463	AB1-163 E	0.7447
925541	AC1-029 (Withdrawn : 11/27/2019)	12.3304
937261	AD2-165	24.6608
939121	AE1-142 C O1	1.2342
939122	AE1-142 E O1	1.7761
939981	AE1-238 C	69.3045
939982	AE1-238 E	182.0398
940161	AE2-000 C O1	31.9449
940162	AE2-000 E O1	81.7361
940401	AE2-024 C O1	30.4732
940402	AE2-024 E O1	142.6722
940411	AE2-025 C	15.3829
940412	AE2-025 E	72.0144
940691	AE2-056 C	0.3390
940692	AE2-056 E	0.2967
940701	AE2-057 C	0.0977
940702	AE2-057 E	0.0977
940921	AE2-081 C	0.3602
940922	AE2-081 E	0.3708
942201	AE2-232 C O1	15.6590
942202	AE2-232 E O1	40.0670
943521	AF1-023	2.5701
943561	AF1-027	0.1029
944332	AF1-101 E O1	42.4710
944611	AF1-126 C O1	2.7230
944612	AF1-126 E O1	10.8922
945571	AF1-222 C	50.8233
945572	AF1-222 E	133.9887
945951	AF1-260	0.2092
945981	AF1-263	0.1808
DUCKCREEK	DUCKCREEK	0.1589
NEWTON	NEWTON	0.1451
FARMERCITY	FARMERCITY	0.0073
NY	NY	1.3438
PRAIRIE	PRAIRIE	0.3332
O-066	O-066	30.5155
COFFEEN	COFFEEN	0.0713
EDWARDS	EDWARDS	0.0490
CHEOAH	CHEOAH	0.0501
TILTON	TILTON	0.0876
G-007	G-007	27.9126
MADISON	MADISON	0.0161
GIBSON	GIBSON	0.0743
CALDERWOOD	CALDERWOOD	0.0502
BLUEG	BLUEG	0.2361
TRIMBLE	TRIMBLE	0.0757
CATAWBA	CATAWBA	0.0256

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ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC DC	MW IMPACT
42138203	206411	28R11RINGA	JCP&L	206314	28RED OAKA	JCP&L	1	JC-P2-3-JCC-230-268	breaker	869.0	125.07	129.98	DC	94.56

Bus #	Bus	MW Impact
206201	28JERSVGEN	0.0546
206271	28MCRC/REC	1.9704
206325	28O C GEN (Deactivation : 09/17/18)	31.4136
206327	28S RIV G1	6.4606
206328	28S RIV G2	6.4606
206329	28S RIV G3	8.6060
206358	28PARLN1&2	3.8989
206359	28PARLN3&4	4.7043
206366	28LKWD CT1	4.4624
206367	28LKWD CT2	4.4624
206370	LKWD CT3	32.3306
206412	28R11	276.8172
207143	28BYD_X4-031	0.5177
207144	28HOW_X1-037	0.1929
207145	28FRN_Y2-051	0.0547
207148	28MDF_W3-079	0.0779
207204	28HOL_W1-112	0.0673
207206	28TIN_W1-124	0.2732
207400	28AA1-060 E	1.7523
901032	W1-024E OP1	0.2187
901112	W1-032 E OP1	0.1822
901912	W1-112E OP1	0.7862
901982	W1-119 E	0.6347
901992	W1-120E	0.6347
902032	W1-124E	3.2113
902082	W1-129E	0.3417
902322	W2-019 E	0.4046
902952	W2-082 E OP1	1.1683
903982	W3-079 E	0.9230
905252	W4-025 E	0.4849
907082	X1-037 E	2.2546
907272	X1-085 E	0.2758
912102	X4-015 E	0.3430
914092	Y2-051 E	0.6392
917612	Z2-102 E	0.9359
919662	AA2-048 E	1.4685
920732	AA2-184 E	3.5563
921743	AA2-049 E	0.9175
923292	AB1-138 C	0.5516
923293	AB1-138 E	0.9194
923463	AB1-163 E	0.7469

Bus #	Bus	MW Impact
925541	AC1-029 (Withdrawn : 11/27/2019)	12.5826
937261	AD2-165	25.1652
939121	AE1-142 C O1	1.2381
939122	AE1-142 E O1	1.7816
939981	AE1-238 C	69.5497
939982	AE1-238 E	182.6840
940161	AE2-000 C O1	32.0424
940162	AE2-000 E O1	81.9855
940401	AE2-024 C O1	30.5710
940402	AE2-024 E O1	143.1301
940411	AE2-025 C	15.4322
940412	AE2-025 E	72.2455
940691	AE2-056 C	0.3394
940692	AE2-056 E	0.2970
940701	AE2-057 C	0.0977
940702	AE2-057 E	0.0977
940921	AE2-081 C	0.3606
940922	AE2-081 E	0.3712
942201	AE2-232 C O1	15.7068
942202	AE2-232 E O1	40.1892
943521	AF1-023	2.5753
943561	AF1-027	0.1032
944332	AF1-101 E O1	42.6006
944611	AF1-126 C O1	2.7305
944612	AF1-126 E O1	10.9219
945571	AF1-222 C	51.0031
945572	AF1-222 E	134.4628
945951	AF1-260	0.2098
945981	AF1-263	0.1812
DUCKCREEK	DUCKCREEK	0.1773
NEWTON	NEWTON	0.1612
FARMERCITY	FARMERCITY	0.0082
NY	NY	1.3571
PRAIRIE	PRAIRIE	0.3720
O-066	O-066	30.7306
COFFEEN	COFFEEN	0.0793
EDWARDS	EDWARDS	0.0543
CHEOAH	CHEOAH	0.0576
TILTON	TILTON	0.0970
G-007	G-007	28.0353
MADISON	MADISON	0.0161
GIBSON	GIBSON	0.0824
CALDERWOOD	CALDERWOOD	0.0577
BLUEG	BLUEG	0.2621
TRIMBLE	TRIMBLE	0.0840
CATAWBA	CATAWBA	0.0304

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ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC DC	MW IMPACT
42704365	206720	28MANCHSTR	JCP&L	206318	28VANHISVL	JCP&L	1	JC-P7-1-JCC-230-12	tower	869.0	139.7	174.96	DC	306.35

Bus #	Bus	MW Impact
206280	28LAKEHURS	0.5942
206325	28O C GEN (Deactivation : 09/17/18)	119.7285
206360	28O CRK C1	2.5276
206361	28O CRK C2	1.6972
227842	MARINGEN	0.0765
227927	V4-067C	0.0204
227928	V4-067E	0.2411
228014	PVILLEG	0.0266
228100	BLE DIES	0.9641
228712	V2-041E	0.1637
228729	W2-030 C	0.0721
228731	V3-036	0.7969
228732	V1-021 C	0.0284
901982	W1-119 E	0.4539
901992	W1-120E	0.4539
902092	W1-130E	0.3538
902432	W2-030 E	0.8495
913341	Y1-077 (Withdrawn : 12/18/2019)	53.8680
917612	Z2-102 E	0.6565
923292	AB1-138 C	1.0868
923293	AB1-138 E	1.8114
923463	AB1-163 E	0.5520
923532	AB1-169AC	34.4734
924531	AB2-102 C	14.9634
924532	AB2-102 E	0.3325
924701	AB2-122 C	0.1042
924702	AB2-122 E	0.1786
930001	AB1-001 C	0.1576
930002	AB1-001 E	0.2591
933962	AD1-019 E	1.1012
938421	AE1-061 C	0.3103
938422	AE1-061 E	0.3103
938781	AE1-104 C O1	14.6299
938782	AE1-104 E O1	37.4304
939121	AE1-142 C O1	4.5155
939122	AE1-142 E O1	6.4979
939501	AE1-179 C O1	1.9326
939502	AE1-179 E O1	1.3638
940001	AE1-240 C O1	1.6059
940002	AE1-240 E O1	1.1463
940161	AE2-000 C O1	122.1252

Bus #	Bus	MW Impact
940162	AE2-000 E O1	312.4764
940361	AE2-020 C	16.8878
940362	AE2-020 E	79.0698
940371	AE2-021 C	16.8878
940372	AE2-021 E	79.0698
940381	AE2-022 C	9.8512
940382	AE2-022 E	46.1240
940391	AE2-023 C	9.4432
940392	AE2-023 E	44.2079
941931	AE2-205 C O1	3.1124
941932	AE2-205 E O1	2.0749
942101	AE2-222 C O1	12.4525
942102	AE2-222 E O1	31.2815
942201	AE2-232 C O1	59.8642
942202	AE2-232 E O1	153.1758
942381	AE2-251 C	53.5002
942382	AE2-251 E	136.8919
942941	AE2-314 C (Withdrawn : 12/16/2019)	6.8541
942942	AE2-314 E (Withdrawn : 12/16/2019)	4.5694
943732	AF1-041 E	0.3534
944131	AF1-081 C O1	3.3837
944132	AF1-081 E O1	2.2558
944332	AF1-101 E O1	306.3515
945731	AF1-238 C O1	2.0237
945732	AF1-238 E O1	3.0356
945741	AF1-239 C	0.3599
945742	AF1-239 E	0.5399
999905	MARINGEN 2	0.5770
999906	PVILLEG 2	0.2491
DUCKCREEK	DUCKCREEK	0.0299
NEWTON	NEWTON	0.0258
CPL	CPL	0.0060
FARMERCITY	FARMERCITY	0.0013
NY	NY	0.4750
PRAIRIE	PRAIRIE	0.0568
O-066	O-066	8.5546
COFFEEN	COFFEEN	0.0127
CBM-S2	CBM-S2	0.0116
EDWARDS	EDWARDS	0.0091
CHEOAH	CHEOAH	0.0055
TILTON	TILTON	0.0164
G-007	G-007	2.9838
MADISON	MADISON	0.0060
GIBSON	GIBSON	0.0137
CALDERWOOD	CALDERWOOD	0.0055
BLUEG	BLUEG	0.0434
TRIMBLE	TRIMBLE	0.0139

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ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC DC	MW IMPACT
40978930	227900	CARDIFF	AE	219100	NEWFRDM	PSE&G	1	JC-P7-1-JCC-230-13	tower	692.0	291.5	324.09	DC	225.45

Bus #	Bus	MW Impact
206360	28O CRK C1	1.8601
206361	28O CRK C2	1.2490
227842	MARINGEN	0.1810
227927	V4-067C	0.0513
227928	V4-067E	0.6076
228014	PVILLEG	0.0618
228100	BLE DIES	2.2976
228202	CUMB CT	1.5367
228261	V4-054E	0.5803
228712	V2-041E	0.3530
228721	V2-035E	0.0903
228729	W2-030 C	0.1742
228731	V3-036	1.8761
228732	V1-021 C	0.0657
902092	W1-130E	0.6974
902432	W2-030 E	2.0519
913341	Y1-077 (Withdrawn : 12/18/2019)	128.3784
923532	AB1-169AC	68.2784
924531	AB2-102 C	32.7324
924532	AB2-102 E	0.7274
924701	AB2-122 C	0.2625
924702	AB2-122 E	0.4500
930001	AB1-001 C	0.3031
930002	AB1-001 E	0.4982
933962	AD1-019 E	2.5924
938421	AE1-061 C	0.6118
938422	AE1-061 E	0.6118
938781	AE1-104 C O1	34.8661
938782	AE1-104 E O1	89.2043
939301	AE1-161 C	1.5564
939302	AE1-161 E	2.3345
939501	AE1-179 C O1	3.8467
939502	AE1-179 E O1	2.7147
939931	AE1-229 C O1	6.0618
939932	AE1-229 E O1	4.1071
940001	AE1-240 C O1	3.2075
940002	AE1-240 E O1	2.2895
940161	AE2-000 C O1	89.8741
940162	AE2-000 E O1	229.9571
940361	AE2-020 C	45.0433
940362	AE2-020 E	210.8960

Bus #	Bus	MW Impact
940371	AE2-021 C	45.0433
940372	AE2-021 E	210.8960
940381	AE2-022 C	26.2752
940382	AE2-022 E	123.0227
940391	AE2-023 C	22.5050
940392	AE2-023 E	105.3564
941001	AE2-091 C O1	2.3577
941002	AE2-091 E O1	1.2301
941931	AE2-205 C O1	6.8083
941932	AE2-205 E O1	4.5389
942101	AE2-222 C O1	29.1180
942102	AE2-222 E O1	73.1460
942201	AE2-232 C O1	44.0552
942202	AE2-232 E O1	112.7248
942381	AE2-251 C	142.6963
942382	AE2-251 E	365.1197
942941	AE2-314 C (Withdrawn : 12/16/2019)	18.2814
942942	AE2-314 E (Withdrawn : 12/16/2019)	12.1876
943732	AF1-041 E	0.8330
944131	AF1-081 C O1	7.4019
944132	AF1-081 E O1	4.9346
944332	AF1-101 E O1	225.4497
945431	AF1-208 C O1	1.1887
945432	AF1-208 E O1	0.7925
945731	AF1-238 C O1	4.2951
945732	AF1-238 E O1	6.4426
945741	AF1-239 C	0.7183
945742	AF1-239 E	1.0774
945971	AF1-262	0.0347
999905	MARINGEN 2	1.3651
999906	PVILLEG 2	0.5792
DUCKCREEK	DUCKCREEK	0.0864
NEWTON	NEWTON	0.0806
FARMERCITY	FARMERCITY	0.0042
NY	NY	0.1112
PRAIRIE	PRAIRIE	0.1911
O-066	O-066	1.6666
COFFEEN	COFFEEN	0.0396
EDWARDS	EDWARDS	0.0263
CHEOAH	CHEOAH	0.0360
TILTON	TILTON	0.0473
G-007	G-007	0.2309
GIBSON	GIBSON	0.0409
CALDERWOOD	CALDERWOOD	0.0358
BLUEG	BLUEG	0.1302
TRIMBLE	TRIMBLE	0.0417
CATAWBA	CATAWBA	0.0245

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ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC DC	MW IMPACT
42704375	227900	CARDIFF	AE	228002	ORCHARD	AE	1	JC-P7-1-JCC-230-13	tower	805.0	149.87	169.8	DC	160.49

Bus #	Bus	MW Impact
206360	28O CRK C1	1.3241
206361	28O CRK C2	0.8891
227842	MARINGEN	0.1177
227927	V4-067C	0.0347
227928	V4-067E	0.4109
228014	PVILLEG	0.0406
228100	BLE DIES	1.1981
228729	W2-030 C	0.1118
228731	V3-036	1.2235
902092	W1-130E	0.4169
902432	W2-030 E	1.3168
913341	Y1-077 (Withdrawn : 12/18/2019)	66.9427
923532	AB1-169AC	40.9062
924701	AB2-122 C	0.1775
924702	AB2-122 E	0.3043
930001	AB1-001 C	0.2017
930002	AB1-001 E	0.3315
933962	AD1-019 E	1.6907
938421	AE1-061 C	0.3657
938422	AE1-061 E	0.3657
938781	AE1-104 C O1	18.1809
938782	AE1-104 E O1	46.5155
940161	AE2-000 C O1	63.9770
940162	AE2-000 E O1	163.6952
940361	AE2-020 C	32.2236
940362	AE2-020 E	150.8735
940371	AE2-021 C	32.2236
940372	AE2-021 E	150.8735
940381	AE2-022 C	18.7971
940382	AE2-022 E	88.0095
940391	AE2-023 C	11.7352
940392	AE2-023 E	54.9380
942101	AE2-222 C O1	19.0683
942102	AE2-222 E O1	47.9007
942201	AE2-232 C O1	31.3607
942202	AE2-232 E O1	80.2433
942381	AE2-251 C	102.0839
942382	AE2-251 E	261.2041
942941	AE2-314 C (Withdrawn : 12/16/2019)	13.0784
942942	AE2-314 E (Withdrawn : 12/16/2019)	8.7189
943732	AF1-041 E	0.5508

Bus #	Bus	MW Impact
944332	AF1-101 E O1	160.4866
999905	MARINGEN 2	0.8875
999906	PVILLEG 2	0.3808
DUCKCREEK	DUCKCREEK	0.0115
NEWTON	NEWTON	0.0107
FARMERCITY	FARMERCITY	0.0006
G-007A	G-007A	1.0046
VFT	VFT	1.8770
PRAIRIE	PRAIRIE	0.0284
COFFEEN	COFFEEN	0.0053
EDWARDS	EDWARDS	0.0032
CHEOAH	CHEOAH	0.0070
TILTON	TILTON	0.0063
GIBSON	GIBSON	0.0055
CALDERWOOD	CALDERWOOD	0.0070
BLUEG	BLUEG	0.0174
TRIMBLE	TRIMBLE	0.0056
CATAWBA	CATAWBA	0.0059

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ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC DC	MW IMPACT
40979106	227901	DOROTHY	AE	228503	MNOTLA 2	AE	1	JC-P7-1-JCC-230-13	tower	478.0	114.56	126.63	DC	57.73

Bus #	Bus	MW Impact
206360	280 CRK C1	0.4763
206361	280 CRK C2	0.3198
227842	MARINGEN	0.0781
227927	V4-067C	0.0170
227928	V4-067E	0.2017
228014	PVILLEG	0.0279
228100	BLE DIES	1.0119
228712	V2-041E	0.1220
228729	W2-030 C	0.0712
228731	V3-036	0.8193
902432	W2-030 E	0.8388
913341	Y1-077 (Withdrawn : 12/18/2019)	56.5410
924531	AB2-102 C	11.0523
924532	AB2-102 E	0.2456
924701	AB2-122 C	0.0871
924702	AB2-122 E	0.1494
930001	AB1-001 C	0.1278
930002	AB1-001 E	0.2101
933962	AD1-019 E	1.1321
938423	AE1-061 BAT	3.3650
938781	AE1-104 C O1	15.3559
938782	AE1-104 E O1	39.2878
939303	AE1-161 BAT	10.2110
940161	AE2-000 C O1	23.0148
940162	AE2-000 E O1	58.8871
940361	AE2-020 C	10.7132
940362	AE2-020 E	50.1599
940371	AE2-021 C	10.7132
940372	AE2-021 E	50.1599
940381	AE2-022 C	6.2494
940382	AE2-022 E	29.2600
940391	AE2-023 C	9.9118
940392	AE2-023 E	46.4016
941931	AE2-205 C O1	2.2989
941932	AE2-205 E O1	1.5326
942101	AE2-222 C O1	12.9334
942102	AE2-222 E O1	32.4896
942201	AE2-232 C O1	11.2816
942202	AE2-232 E O1	28.8664
942381	AE2-251 C	33.9392
942382	AE2-251 E	86.8408

Bus #	Bus	MW Impact
942941	AE2-314 C (Withdrawn : 12/16/2019)	4.3481
942942	AE2-314 E (Withdrawn : 12/16/2019)	2.8987
943732	AF1-041 E	0.3559
944131	AF1-081 C O1	2.4993
944132	AF1-081 E O1	1.6662
944332	AF1-101 E O1	57.7328
945731	AF1-238 C O1	1.4537
945732	AF1-238 E O1	2.1805
999905	MARINGEN 2	0.5886
999906	PVILLEG 2	0.2610
DUCKCREEK	DUCKCREEK	0.0092
NEWTON	NEWTON	0.0086
FARMERCITY	FARMERCITY	0.0004
NY	NY	0.0155
PRAIRIE	PRAIRIE	0.0181
O-066	O-066	0.2218
COFFEEN	COFFEEN	0.0042
EDWARDS	EDWARDS	0.0028
CHEOAH	CHEOAH	0.0035
TILTON	TILTON	0.0050
G-007	G-007	0.0073
GIBSON	GIBSON	0.0044
CALDERWOOD	CALDERWOOD	0.0035
BLUEG	BLUEG	0.0139
TRIMBLE	TRIMBLE	0.0045
CATAWBA	CATAWBA	0.0021

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ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC DC	MW IMPACT
40979083	227949	LEWIS #3	AE	227901	DOROTHY	AE	1	JC-P7-1-JCC-230-13	tower	478.0	118.3	130.38	DC	57.73

Bus #	Bus	MW Impact
206360	28O CRK C1	0.4763
206361	28O CRK C2	0.3198
227842	MARINGEN	0.0781
227927	V4-067C	0.0170
227928	V4-067E	0.2017
228014	PVILLEG	0.0279
228100	BLE DIES	1.0119
228712	V2-041E	0.1220
228729	W2-030 C	0.0712
228731	V3-036	0.8193
902432	W2-030 E	0.8388
913341	Y1-077 (Withdrawn : 12/18/2019)	56.5410
924531	AB2-102 C	11.0523
924532	AB2-102 E	0.2456
924701	AB2-122 C	0.0871
924702	AB2-122 E	0.1494
930001	AB1-001 C	0.1278
930002	AB1-001 E	0.2101
933962	AD1-019 E	1.1321
938423	AE1-061 BAT	3.3650
938781	AE1-104 C O1	15.3559
938782	AE1-104 E O1	39.2878
939303	AE1-161 BAT	10.2110
940161	AE2-000 C O1	23.0148
940162	AE2-000 E O1	58.8871
940361	AE2-020 C	10.7132
940362	AE2-020 E	50.1599
940371	AE2-021 C	10.7132
940372	AE2-021 E	50.1599
940381	AE2-022 C	6.2494
940382	AE2-022 E	29.2600
940391	AE2-023 C	9.9118
940392	AE2-023 E	46.4016
941931	AE2-205 C O1	2.2989
941932	AE2-205 E O1	1.5326
942101	AE2-222 C O1	12.9334
942102	AE2-222 E O1	32.4896
942201	AE2-232 C O1	11.2816
942202	AE2-232 E O1	28.8664
942381	AE2-251 C	33.9392
942382	AE2-251 E	86.8408

Bus #	Bus	MW Impact
942941	AE2-314 C (Withdrawn : 12/16/2019)	4.3481
942942	AE2-314 E (Withdrawn : 12/16/2019)	2.8987
943732	AF1-041 E	0.3559
944131	AF1-081 C O1	2.4993
944132	AF1-081 E O1	1.6662
944332	AF1-101 E O1	57.7328
945731	AF1-238 C O1	1.4537
945732	AF1-238 E O1	2.1805
999905	MARINGEN 2	0.5886
999906	PVILLEG 2	0.2610
DUCKCREEK	DUCKCREEK	0.0092
NEWTON	NEWTON	0.0086
FARMERCITY	FARMERCITY	0.0004
NY	NY	0.0155
PRAIRIE	PRAIRIE	0.0181
O-066	O-066	0.2218
COFFEEN	COFFEEN	0.0042
EDWARDS	EDWARDS	0.0028
CHEOAH	CHEOAH	0.0035
TILTON	TILTON	0.0050
G-007	G-007	0.0073
GIBSON	GIBSON	0.0044
CALDERWOOD	CALDERWOOD	0.0035
BLUEG	BLUEG	0.0139
TRIMBLE	TRIMBLE	0.0045
CATAWBA	CATAWBA	0.0021

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ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC DC	MW IMPACT
40978965	228502	MNOTLA 1	AE	228500	LANDIS	AE	1	JC-P7-1-JCC-230-13	tower	478.0	187.52	199.6	DC	57.72

Bus #	Bus	MW Impact
206360	280 CRK C1	0.4762
206361	280 CRK C2	0.3198
227842	MARINGEN	0.0780
227927	V4-067C	0.0170
227928	V4-067E	0.2017
228014	PVILLEG	0.0279
228100	BLE DIES	1.0118
228712	V2-041E	0.1219
228728	W1-130C	0.3241
228729	W2-030 C	0.0712
228731	V3-036	0.8192
902092	W1-130E	3.7819
902432	W2-030 E	0.8387
913341	Y1-077 (Withdrawn : 12/18/2019)	56.5321
923532	AB1-169AC	361.9990
924531	AB2-102 C	11.0485
924532	AB2-102 E	0.2455
924701	AB2-122 C	0.0871
924702	AB2-122 E	0.1494
930001	AB1-001 C	0.1278
930002	AB1-001 E	0.2101
933962	AD1-019 E	1.1319
938421	AE1-061 C	3.3174
938422	AE1-061 E	3.3174
938781	AE1-104 C O1	15.3535
938782	AE1-104 E O1	39.2816
939303	AE1-161 BAT	10.2120
940161	AE2-000 C O1	23.0103
940162	AE2-000 E O1	58.8753
940361	AE2-020 C	10.7111
940362	AE2-020 E	50.1500
940371	AE2-021 C	10.7111
940372	AE2-021 E	50.1500
940381	AE2-022 C	6.2481
940382	AE2-022 E	29.2541
940391	AE2-023 C	9.9102
940392	AE2-023 E	46.3943
941931	AE2-205 C O1	2.2981
941932	AE2-205 E O1	1.5321
942101	AE2-222 C O1	12.9317
942102	AE2-222 E O1	32.4853

Bus #	Bus	MW Impact
942201	AE2-232 C O1	11.2793
942202	AE2-232 E O1	28.8607
942381	AE2-251 C	33.9324
942382	AE2-251 E	86.8236
942941	AE2-314 C (Withdrawn : 12/16/2019)	4.3472
942942	AE2-314 E (Withdrawn : 12/16/2019)	2.8981
943732	AF1-041 E	0.3558
944131	AF1-081 C O1	2.4984
944132	AF1-081 E O1	1.6656
944332	AF1-101 E O1	57.7213
945731	AF1-238 C O1	1.4531
945732	AF1-238 E O1	2.1797
999905	MARINGEN 2	0.5886
999906	PVILLEG 2	0.2610
DUCKCREEK	DUCKCREEK	0.0115
NEWTON	NEWTON	0.0107
FARMERCITY	FARMERCITY	0.0005
NY	NY	0.0166
PRAIRIE	PRAIRIE	0.0232
O-066	O-066	0.2352
COFFEEN	COFFEEN	0.0053
EDWARDS	EDWARDS	0.0035
CHEOAH	CHEOAH	0.0045
TILTON	TILTON	0.0063
G-007	G-007	0.0094
GIBSON	GIBSON	0.0055
CALDERWOOD	CALDERWOOD	0.0045
BLUEG	BLUEG	0.0174
TRIMBLE	TRIMBLE	0.0056
CATAWBA	CATAWBA	0.0028

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ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC DC	MW IMPACT
40978940	228503	MNOTLA 2	AE	228502	MNOTLA 1	AE	1	JC-P7-1-JCC-230-13	tower	311.0	288.19	306.76	DC	57.73

Bus #	Bus	MW Impact
206360	280 CRK C1	0.4763
206361	280 CRK C2	0.3198
227842	MARINGEN	0.0781
227927	V4-067C	0.0170
227928	V4-067E	0.2017
228014	PVILLEG	0.0279
228100	BLE DIES	1.0119
228712	V2-041E	0.1220
228729	W2-030 C	0.0712
228731	V3-036	0.8193
902432	W2-030 E	0.8388
913341	Y1-077 (Withdrawn : 12/18/2019)	56.5410
923532	AB1-169AC	362.0100
924531	AB2-102 C	11.0523
924532	AB2-102 E	0.2456
924701	AB2-122 C	0.0871
924702	AB2-122 E	0.1494
930001	AB1-001 C	0.1278
930002	AB1-001 E	0.2101
933962	AD1-019 E	1.1321
938423	AE1-061 BAT	3.3650
938781	AE1-104 C O1	15.3559
938782	AE1-104 E O1	39.2878
939303	AE1-161 BAT	10.2110
940161	AE2-000 C O1	23.0148
940162	AE2-000 E O1	58.8871
940361	AE2-020 C	10.7132
940362	AE2-020 E	50.1599
940371	AE2-021 C	10.7132
940372	AE2-021 E	50.1599
940381	AE2-022 C	6.2494
940382	AE2-022 E	29.2600
940391	AE2-023 C	9.9118
940392	AE2-023 E	46.4016
941931	AE2-205 C O1	2.2989
941932	AE2-205 E O1	1.5326
942101	AE2-222 C O1	12.9334
942102	AE2-222 E O1	32.4896
942201	AE2-232 C O1	11.2816
942202	AE2-232 E O1	28.8664
942381	AE2-251 C	33.9392

Bus #	Bus	MW Impact
942382	AE2-251 E	86.8408
942941	AE2-314 C (Withdrawn : 12/16/2019)	4.3481
942942	AE2-314 E (Withdrawn : 12/16/2019)	2.8987
943732	AF1-041 E	0.3559
944131	AF1-081 C O1	2.4993
944132	AF1-081 E O1	1.6662
944332	AF1-101 E O1	57.7328
945731	AF1-238 C O1	1.4537
945732	AF1-238 E O1	2.1805
999905	MARINGEN 2	0.5886
999906	PVILLEG 2	0.2610
DUCKCREEK	DUCKCREEK	0.0092
NEWTON	NEWTON	0.0086
FARMERCITY	FARMERCITY	0.0004
NY	NY	0.0155
PRAIRIE	PRAIRIE	0.0181
O-066	O-066	0.2218
COFFEEN	COFFEEN	0.0042
EDWARDS	EDWARDS	0.0028
CHEOAH	CHEOAH	0.0035
TILTON	TILTON	0.0050
G-007	G-007	0.0073
GIBSON	GIBSON	0.0044
CALDERWOOD	CALDERWOOD	0.0035
BLUEG	BLUEG	0.0139
TRIMBLE	TRIMBLE	0.0045
CATAWBA	CATAWBA	0.0021

Affected Systems

13.30 Affected Systems

13.30.1 LG&E

LG&E Impacts to be determined during later study phases (as applicable).

13.30.2 MISO

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

13.30.3 TVA

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

13.30.4 Duke Energy Progress

Duke Energy Progress Impacts to be determined during later study phases (as applicable).

13.30.5 NYISO

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

13.31 Contingency Descriptions

Contingency Name	Contingency Definition
JC-P7-1-JCC-230-7A	CONTINGENCY 'JC-P7-1-JCC-230-7A' /* SMITHBURG - LARRABEE 230 LINES DISCONNECT BRANCH FROM BUS 206309 TO BUS 206294 CKT 1 DISCONNECT BRANCH FROM BUS 206309 TO BUS 206294 CKT 2 END
JC-P2-3-JCC-230-80	CONTINGENCY 'JC-P2-3-JCC-230-80' /* SOUTH RIVER JUNCTION G-T (RARITAN RIVER) LINES STUCK BREAKER DISCONNECT BUS 206314 /* RED OAK 230 KV A TAP DISCONNECT BUS 206363 /* RED OAK 230 KV #2 DISCONNECT BUS 206364 /* RED OAK 230 KV #3 DISCONNECT BUS 206315 /* RED OAK 230 KV B TAP DISCONNECT BUS 206362 /* RED OAK 230 KV #1 DISCONNECT BUS 206365 /* RED OAK 230 KV #4 END
JC-P1-2-JCC-230-043T	CONTINGENCY 'JC-P1-2-JCC-230-043T' /** RARITAN RIVER - LAKE NELSON (W1037) 230 KV LINE DISCONNECT BRANCH FROM BUS 206305 TO BUS 218332 CKT 1 /* 28RAR RVR - KILMER_W 230.00 LINE DISCONNECT BRANCH FROM BUS 218332 TO BUS 218334 CKT 1 /* KILMER_W - LNELSN_W 230.00 LINE DISCONNECT BRANCH FROM BUS 218386 TO BUS 218332 CKT 1 /* KILMER_L1 13.20 - KILMER_W 230.00 XFMR DISCONNECT BRANCH FROM BUS 218387 TO BUS 218332 CKT 1 /* KILMER_L3 13.20 - KILMER_W 230.00 XFMR END
PS_P1-2_#1LINE	CONTINGENCY 'PS_P1-2_#1LINE' /* LAKE NELSON TO RARITAN RIVER DISCONNECT BUS 218331 /* KILMER #1 CLOSE LINE FROM BUS 218384 TO BUS 218387 CKT Z /* KILMER CLOSE LINE FROM BUS 218385 TO BUS 218386 CKT Z /* KILMER END
JC-P1-2-JCC-230-031	CONTINGENCY 'JC-P1-2-JCC-230-031' /* VAN HISEVILLE TAP (B1042) 230 KV LINES DISCONNECT BRANCH FROM BUS 206318 TO BUS 206287 CKT 1 DISCONNECT BRANCH FROM BUS 206318 TO BUS 206720 CKT 1 DISCONNECT BRANCH FROM BUS 206720 TO BUS 206319 CKT 1 DISCONNECT BRANCH FROM BUS 206318 TO BUS 206294 CKT 1 DISCONNECT BUS 206318 DISCONNECT BUS 206720 END

Contingency Name	Contingency Definition
JC-P1-2-JCC-230-018	CONTINGENCY 'JC-P1-2-JCC-230-018' /* LARRABEE - SMITHBURG (H2008) 230 KV DISCONNECT BRANCH FROM BUS 206309 TO BUS 206294 CKT 2 DISCONNECT BRANCH FROM BUS 200017 TO BUS 206309 CKT 4 /* SMITHBURG SMITHBURG 500 230 END
JC-P1-2-JCC-230-019	CONTINGENCY 'JC-P1-2-JCC-230-019' /* LEISURE VILLAGE - MANITOU (A2027) 230 KV DISCONNECT BRANCH FROM BUS 206295 TO BUS 206297 CKT 1 DISCONNECT BRANCH FROM BUS 206297 TO BUS 206277 CKT 7 END
JC-P1-2-JCC-230-017	CONTINGENCY 'JC-P1-2-JCC-230-017' /* FUTURE BREAKERS LARRABEE - SMITHBURG (D2004) 230 KV DISCONNECT BRANCH FROM BUS 206294 TO BUS 206309 CKT 1 END
JC-P2-3-JCC-230-7A	CONTINGENCY 'JC-P2-3-JCC-230-7A' /* LAKEWOOD - LARRABEE (K2011) & OCEAN POWER PEAKING 230 KV DISCONNECT BRANCH FROM BUS 206323 TO BUS 206294 CKT 2 REMOVE MACHINE 1 FROM BUS 206366 REMOVE MACHINE 2 FROM BUS 206367 DISCONNECT BUS 206366 DISCONNECT BUS 206367 END
JC-P1-2-JCC-230-014	CONTINGENCY 'JC-P1-2-JCC-230-014' /* FUTURE BREAKERS LAKEWOOD - LARRABEE (Z2026) 230 KV & LAR BK 8 & 12 DISCONNECT BRANCH FROM BUS 206323 TO BUS 206294 CKT 1 DISCONNECT BRANCH FROM BUS 206294 TO BUS 206275 CKT 12 SET BUS 206294 LOAD TO 38 MW END
JC-P7-1-JCC-230-10A	CONTINGENCY 'JC-P7-1-JCC-230-10A' /* LAKEWOOD - LARRABEE 230 KV LINES DISCONNECT BRANCH FROM BUS 206323 TO BUS 206294 CKT 2 DISCONNECT BRANCH FROM BUS 206323 TO BUS 206294 CKT 1 DISCONNECT BRANCH FROM BUS 206294 TO BUS 206274 CKT 3 DISCONNECT BRANCH FROM BUS 206294 TO BUS 206275 CKT 12 /* LARRABEE 12 FUTURE BREAKER AND A HALF SET BUS 206294 LOAD TO 38 MW /* LARRABEE 8 FUTURE BREAKER AND A HALF END

Contingency Name	Contingency Definition
JC-P2-3-JCC-230-13A	CONTINGENCY 'JC-P2-3-JCC-230-13A' /* LARRABEE - SMITHBURG (D2004) & LAKEWOOD (Z2026) 230 KV DISCONNECT BRANCH FROM BUS 206294 TO BUS 206309 CKT 1 /* LARRABEE- SMITHBURG (D2004) DISCONNECT BRANCH FROM BUS 206294 TO BUS 206323 CKT 2 /* LARRABEE- LAKEWOOD (Z2026) SET BUS 206294 LOAD TO 0 MW /* LARRABEE BK8 DISCONNECT BRANCH FROM BUS 206294 TO BUS 206275 CKT 12 /* LARRABEE BK12 END
AE_P7-1 AE13TOWER	CONTINGENCY 'AE_P7-1 AE13TOWER' DISCONNECT BRANCH FROM BUS 228500 TO BUS 228502 CKT 1 /* LANDIS TO MINO 138 KV DISCONNECT BRANCH FROM BUS 228002 TO BUS 227900 CKT 1 /* ORCH TO CARD 230 KV END
JC-P1-2-JCC-230-013	CONTINGENCY 'JC-P1-2-JCC-230-013' /* LAKEWOOD - LARRABEE (K2011) 230 KV DISCONNECT BRANCH FROM BUS 206323 TO BUS 206294 CKT 2 END
AE_P4-2 AE45	CONTINGENCY 'AE_P4-2 AE45' /*ORCHARD 230 BUS BREAKER E DISCONNECT BRANCH FROM BUS 228002 TO BUS 227900 CKT 1 /* ORCHARD TO CARDIFF 230 230 DISCONNECT BRANCH FROM BUS 200063 TO BUS 228002 CKT 1 /*ORCHARD ORCHARD 500 230 T1 END
JC-P2-3-JCC-230-15J	CONTINGENCY 'JC-P2-3-JCC-230-15J' /* LAKEWOOD-LARRABEE (K2011) & LARRABEE SE BUS 230 KV DISCONNECT BRANCH FROM BUS 206294 TO BUS 206323 CKT 1 /* LARRABEE - LAKEWOOD (K2011) DISCONNECT BRANCH FROM BUS 206294 TO BUS 206274 CKT 4 /* LARRABEE BK4 REDUCE BUS 206294 SHUNT BY 100 PERCENT /* LARRABEE 2X 130MVAR CAPS END
JC-P2-3-JCC-230-15G	CONTINGENCY 'JC-P2-3-JCC-230-15G' /* LARRABEE-SMITHBURG (H2008) 230 KV & LARRABEE NW BUS 230 KV DISCONNECT BRANCH FROM BUS 206294 TO BUS 206309 CKT 2 /* LARRABEE- SMITHBURG (H2008) REMOVE LOAD 7 FROM BUS 206294 /* LARRABEE BK7 DISCONNECT BRANCH FROM BUS 206294 TO BUS 206275 CKT 9 /* LARRABEE BK9 END

Contingency Name	Contingency Definition
JC-P2-3-JCC-230-26D	CONTINGENCY 'JC-P2-3-JCC-230-26D' /* RARITAN RIVER B146 STUCK BREAKER DISCONNECT BUS 206314 /* RED OAK 230 KV A TAP DISCONNECT BUS 206363 /* RED OAK 230 KV #2 DISCONNECT BUS 206364 /* RED OAK 230 KV #3 DISCONNECT BRANCH FROM BUS 206305 TO BUS 206303 CKT 13 /* RARITAN RIVER #13 230/115 KV TRANSFORMER DISCONNECT BUS 206403 /* WOODBRIDGE GENERATOR END
JC-P2-3-JCC-230-15A	CONTINGENCY 'JC-P2-3-JCC-230-15A' /* LAKEWOOD-LARRABEE (K2011) & LARRABEE-SMITHBURG (H2008) 230 KV DISCONNECT BRANCH FROM BUS 206294 TO BUS 206323 CKT 1 /* LARRABEE - LAKEWOOD (K2011) DISCONNECT BRANCH FROM BUS 206294 TO BUS 206309 CKT 2 /* LARRABEE- SMITHBURG (H2008) END
JC-P2-3-JCC-230-26B	CONTINGENCY 'JC-P2-3-JCC-230-26B' /* RARITAN RIVER B144 STUCK BREAKER DISCONNECT BUS 206315 /* RED OAK 230 KV B TAP DISCONNECT BUS 206362 /* RED OAK 230 KV #1 DISCONNECT BUS 206365 /* RED OAK 230 KV #4 DISCONNECT BRANCH FROM BUS 206305 TO BUS 206303 CKT 13 /* RARITAN RIVER #13 230/115 KV TRANSFORMER DISCONNECT BUS 206403 /* WOODBRIDGE GENERATOR END
PS_P1-2_2310	CONTINGENCY 'PS_P1-2_2310' /* NEW FREEDOM TO CARDIFF TIELINE TRIP LINE FROM BUS 219100 TO BUS 227900 CKT 1 /* NEW FREEDOM TO CARDIFF END
JC-P7-1-JCC-230-12	CONTINGENCY 'JC-P7-1-JCC-230-12' /* LEISURE VILLAGE-MANITOU A2027 & C2029 DISCONNECT BRANCH FROM BUS 206295 TO BUS 206297 CKT 1 DISCONNECT BRANCH FROM BUS 206297 TO BUS 206277 CKT 7 DISCONNECT BRANCH FROM BUS 206296 TO BUS 206297 CKT 1 DISCONNECT BRANCH FROM BUS 206296 TO BUS 206276 CKT 3 SET BUS 206296 LOAD TO 0 MW END
JC-P7-1-JCC-230-13	CONTINGENCY 'JC-P7-1-JCC-230-13' /* MANITOU-OYSTER CREEK 230 LINES & OYSTER GEN DISCONNECT BRANCH FROM BUS 206297 TO BUS 206302 CKT 1 DISCONNECT BRANCH FROM BUS 206297 TO BUS 206302 CKT 2 DISCONNECT BRANCH FROM BUS 206302 TO BUS 206325 CKT 1 END

Contingency Name	Contingency Definition
PS_P7-1_1LINE+2LINE	CONTINGENCY 'PS_P7-1_1LINE+2LINE' /* LAKE NELSON - RARITIAN X2 DISCONNECT BUS 218331 /* REMOVE KILMER 1 DISCONNECT BUS 218332 /* REMOVE KILMER 2 MOVE 8 MW LOAD FROM BUS 218384 TO BUS 218383 /* INTERSTATION TIE TRANSFER LOAD FROM KILMER TO GREENBK T1 MOVE 8 MW LOAD FROM BUS 218387 TO BUS 218399 /* INTERSTATION TIE TRANSFER LOAD FROM KILMER TO NEWDOVR T2 MOVE 8 MW LOAD FROM BUS 218385 TO BUS 218393 /* INTERSTATION TIE TRANSFER LOAD FROM KILMER TO MDWRD T2 MOVE 8 MW LOAD FROM BUS 218386 TO BUS 218347 /* INTERSTATION TIE TRANSFER LOAD FROM KILMER TO BNNTLANE T2 END
PJM500_PS_P2-3_DEAN5_5-6	CONTINGENCY 'PJM500_PS_P2-3_DEAN5_5-6' DISCONNECT BRANCH FROM BUS 200006 TO BUS 218306 CKT 2/* BRANCHBURG TX -2 TRIP LINE FROM BUS 200006 TO BUS 200028 CKT 1 /* DEANS TO WINSOR END
PS_P1-2_#2LINE	CONTINGENCY 'PS_P1-2_#2LINE' /* LAKE NELSON TO RARITIAN RIVER DISCONNECT BUS 218332 /* KILMER LINE #2 CLOSE LINE FROM BUS 218384 TO BUS 218387 CKT Z /* KILMER CLOSE LINE FROM BUS 218385 TO BUS 218386 CKT Z /* KILMER END
PS_P7-1_I1023+GBK-LN_LT	CONTINGENCY 'PS_P7-1_I1023+GBK-LN_LT' /* LAKE NELSON - GILLETE BRIDGEWATER & LAKE NELSON -GREENBROOK DISCONNECT BUS 218312 /* GREENBROOK I DISCONNECT BUS 218301 /* MIDDLESEX I DISCONNECT BUS 218333 /* LAKE NELSON I DISCONNECT BUS 218334 /* LAKE NELSON W DISCONNECT BUS 218522 /* MIDDLESEX W CLOSE LINE FROM BUS 218382 TO BUS 218383 CKT Z /* GREENBROOK MOVE 8 MW LOAD FROM BUS 218382 TO BUS 218406 /* INTERSTATION TIE TRANSFER LOAD FROM GREENBK TO SOMRVLE T2 MOVE 8 MW LOAD FROM BUS 218382 TO BUS 218386 /* INTERSTATION TIE TRANSFER LOAD FROM GREENBK TO KILMER T1 MOVE 8 MW LOAD FROM BUS 218383 TO BUS 218384 /* INTERSTATION TIE TRANSFER LOAD FROM GREENBK TO KILMER T2 MOVE 8 MW LOAD FROM BUS 218383 TO BUS 218395 /* INTERSTATION TIE TRANSFER LOAD FROM GREENBK TO SOUTH SECOND ST.(METUCHEN 26KV IM) END
JC-P1-2-JCC-230-027	CONTINGENCY 'JC-P1-2-JCC-230-027' /* RARITAN RIVER - RED OAK - R11 (G1047) 230 KV LINE DISCONNECT BRANCH FROM BUS 206305 TO BUS 206315 CKT 1 DISCONNECT BRANCH FROM BUS 206315 TO BUS 206410 CKT 1 DISCONNECT BUS 206315 DISCONNECT BUS 206362 DISCONNECT BUS 206365 END

Contingency Name	Contingency Definition
PS_P1-2_I-1023	CONTINGENCY 'PS_P1-2_I-1023' /* TIE LINE GILLET I TO BRIDGEWATER THROUGH MIDDLESEX DISCONNECT BUS 218312 /* GREEN BROOK STATION DISCONNECT BUS 218301 /* MIDDLESEX I DISCONNECT BUS 218333 /* LAKE NELSON BUS I CLOSE LINE FROM BUS 218388 TO BUS 218389 CKT Z /* LAKE NELSON CLOSE LINE FROM BUS 218382 TO BUS 218383 CKT Z /* GREENBROOK END
JC-P1-2-JCC-230-042T	CONTINGENCY 'JC-P1-2-JCC-230-042T' /** RARITAN RIVER - LAKE NELSON (I1023) 230 KV LINE DISCONNECT BRANCH FROM BUS 206305 TO BUS 218331 CKT 1 /* 28RAR RVR - KILMER_I 230.00 LINE DISCONNECT BRANCH FROM BUS 218331 TO BUS 218333 CKT 1 /* KILMER_I - LNELSN_I 230.00 LINE DISCONNECT BRANCH FROM BUS 218384 TO BUS 218331 CKT 1 /* KILMER_L2 13.20 - KILMER_I 230.00 XFMR DISCONNECT BRANCH FROM BUS 218385 TO BUS 218331 CKT 1 /* KILMER_L4 13.20 - KILMER_I 230.00 XFMR DISCONNECT BRANCH FROM BUS 218333 TO BUS 218427 CKT 1 /* L.NELSN3 230 L.NELSN3 69 END
JC-P1-2-JCC-230-022	CONTINGENCY 'JC-P1-2-JCC-230-022' /* MANITOU - OYSTER CREEK (O1019) 230 KV DISCONNECT BRANCH FROM BUS 206297 TO BUS 206302 CKT 2 END
JC-P1-2-JCC-230-021	CONTINGENCY 'JC-P1-2-JCC-230-021' /* MANITOU - OYSTER CREEK (N1028) 230 KV DISCONNECT BRANCH FROM BUS 206297 TO BUS 206302 CKT 1 END
JC-P1-2-JCC-230-020	CONTINGENCY 'JC-P1-2-JCC-230-020' /* LEISURE VILLAGE - MANITOU (C2029) 230 KV DISCONNECT BRANCH FROM BUS 206296 TO BUS 206297 CKT 1 DISCONNECT BRANCH FROM BUS 206296 TO BUS 206276 CKT 3 SET BUS 206296 LOAD TO 0 MW END
Base Case	
PJM500_PS_P1-2_5022	CONTINGENCY 'PJM500_PS_P1-2_5022' /* DEANS TO WINDSOR TRIP LINE FROM BUS 200006 TO BUS 200028 CKT 1 /* DEANS TO WINDSOR END

Contingency Name	Contingency Definition
JC-P1-2-JCC-230-028	CONTINGENCY 'JC-P1-2-JCC-230-028' /* RARITAN RIVER - RED OAK - SOUTH RIVER JCT(T1034) 230 KV DISCONNECT BRANCH FROM BUS 206305 TO BUS 206314 CKT 1 /* 28RAR RVR 230.00 28RED OAKA 230.00 DISCONNECT BRANCH FROM BUS 206314 TO BUS 206411 CKT 1 /* 28RED OAKA 230.00 28R11RINGA 230.00 . DISCONNECT BUS 206314 /* 28RED OAKA 230.00 DISCONNECT BUS 206363 /* 28RDOAKCT2 18.00 DISCONNECT BUS 206364 /* 28RDOAKCT3 18.00 END
AE_P1-2 ORCH-CARD	CONTINGENCY 'AE_P1-2 ORCH-CARD' OPEN LINE FROM BUS 228002 TO BUS 227900 CIRCUIT 1 / END
JC-P2-3-JCC-230-15F	CONTINGENCY 'JC-P2-3-JCC-230-15F' /* LARRABEE - SMITHBURG (D2004) & LARRABEE NW BUS 230 KV DISCONNECT BRANCH FROM BUS 206294 TO BUS 206309 CKT 1 /* LARRABEE- SMITHBURG (D2004) REMOVE LOAD 7 FROM BUS 206294 /* LARRABEE BK7 DISCONNECT BRANCH FROM BUS 206294 TO BUS 206275 CKT 9 /* LARRABEE BK9 END
AE_P4-2 AE7	CONTINGENCY 'AE_P4-2 AE7' /*CARDIFF TO NEW FREEDOM BREAKER V DISCONNECT BRANCH FROM BUS 219100 TO BUS 227900 CKT 1 /*NEW FREEDOM TO CARDIFF 230 230 DISCONNECT BRANCH FROM BUS 227900 TO BUS 227910 CKT 1 /*CARDIFF CARDIFF 230 69 T1 END
AE_P4-2 AE6	CONTINGENCY 'AE_P4-2 AE6' /*CARDIFF TO NEW FREEDOM BREAKER W DISCONNECT BRANCH FROM BUS 219100 TO BUS 227900 CKT 1 /*NEW FREEDOM TO CARDIFF 230 230 DISCONNECT BRANCH FROM BUS 227900 TO BUS 227911 CKT 1 /*CARDIFF CARDIFF 230 69 T2 END
AE_P4-2 AE9	CONTINGENCY 'AE_P4-2 AE9' /*CARDIFF TO ORCHARD BREAKER NEW1 DISCONNECT BRANCH FROM BUS 228002 TO BUS 227900 CKT 1 /* CARDIFF TO ORCHARD 230 230 DISCONNECT BRANCH FROM BUS 227900 TO BUS 227934 CKT 1 /*CARDIFF CARDIFF 230 138 T7 END

Contingency Name	Contingency Definition
AE_P4-2 AE8	CONTINGENCY 'AE_P4-2 AE8' /*CARDIFF TO ORCHARD BREAKER NEW2 DISCONNECT BRANCH FROM BUS 228002 TO BUS 227900 CKT 1 /*CARDIFF TO ORCHARD 230 230 DISCONNECT BRANCH FROM BUS 227900 TO BUS 227911 CKT 1 /*CARDIFF CARDIFF 230 69 T2 END
JC-P7-1-JCC-230-11A	CONTINGENCY 'JC-P7-1-JCC-230-11A' /* LAKEWOOD - LEISURE V 230 KV LINES DISCONNECT BRANCH FROM BUS 206323 TO BUS 206295 CKT 1 DISCONNECT BRANCH FROM BUS 206323 TO BUS 206296 CKT 1 DISCONNECT BRANCH FROM BUS 206323 TO BUS 206282 CKT 6 DISCONNECT BRANCH FROM BUS 206282 TO BUS 206999 CKT 1 SET BUS 206295 LOAD TO 0 MW DISCONNECT BUS 206999 DISCONNECT BUS 207110 DISCONNECT BUS 207010 DISCONNECT BUS 207111 END
JC-P2-3-JCC-230-11	CONTINGENCY 'JC-P2-3-JCC-230-11' /* LEISURE VILLAGE - MANITOU & MANITOU - OYSTER CRK 230 KV DISCONNECT BRANCH FROM BUS 206295 TO BUS 206297 CKT 1 DISCONNECT BRANCH FROM BUS 206297 TO BUS 206302 CKT 2 DISCONNECT BRANCH FROM BUS 206297 TO BUS 206277 CKT 7 END
PJM_P4_P484B	CONTINGENCY 'PJM_P4_P484B' /* VALID FROM 2009 DISCONNECT BRANCH FROM BUS 200028 TO BUS 200006 CKT 1 /* WINDSOR DEANS 500500 DISCONNECT BRANCH FROM BUS 200006 TO BUS 218306 CKT 1 /* DEANS XF 2 500230 END
AE_P4-2 AE46	CONTINGENCY 'AE_P4-2 AE46' /*ORCHARD 230 BUS BREAKER D DISCONNECT BRANCH FROM BUS 228002 TO BUS 228310 CKT 1 /* ORCHARD TO CHURCHTOWN 230 230 DISCONNECT BRANCH FROM BUS 200063 TO BUS 228002 CKT 1 /*ORCHARD ORCHARD 500 230 T1 END
JC-P2-3-JCC-230-026A	CONTINGENCY 'JC-P2-3-JCC-230-026A' /* RARITAN RIVER B143 STUCK BREAKER DISCONNECT BUS 206315 /* RED OAK 230 KV B TAP DISCONNECT BUS 206362 /* RED OAK 230 KV #1 DISCONNECT BUS 206365 /* RED OAK 230 KV #4 DISCONNECT BRANCH FROM BUS 206305 TO BUS 206303 CKT 17 /* RARITAN RIVER #17 230/115 KV TRANSFORMER DISCONNECT BUS 206350 /* SAYREVILLE GENERATOR DISCONNECT BUS 206351 /* SAYREVILLE GENERATOR END

Contingency Name	Contingency Definition
JC-P2-3-JCC-230-026C	CONTINGENCY 'JC-P2-3-JCC-230-026C' /* RARITAN RIVER B145 STUCK BREAKER DISCONNECT BUS 206314 /* RED OAK 230 KV A TAP DISCONNECT BUS 206363 /* RED OAK 230 KV #2 DISCONNECT BUS 206364 /* RED OAK 230 KV #3 DISCONNECT BRANCH FROM BUS 206305 TO BUS 206303 CKT 17 /* RARITAN RIVER #17 230/115 KV TRANSFORMER DISCONNECT BUS 206350 /* SAYREVILLE GENERATOR DISCONNECT BUS 206351 /* SAYREVILLE GENERATOR END
JC-P2-3-JCC-230-18A	CONTINGENCY 'JC-P2-3-JCC-230-18A' /* OYSTER CRK-MANITOU & MANITOU-WHITINGS 230 KV DISCONNECT BRANCH FROM BUS 206297 TO BUS 206302 CKT 1 DISCONNECT BRANCH FROM BUS 206297 TO BUS 206319 CKT 1 DISCONNECT BRANCH FROM BUS 206297 TO BUS 206277 CKT 7 DISCONNECT BRANCH FROM BUS 206319 TO BUS 206281 CKT 4 END

Short Circuit

13.32 Short Circuit

The following Breakers are overduty:

None

14 Network Impacts – Secondary POI

The Queue Project AF1-101 was evaluated as a 575.2 MW (Capacity 0.0 MW) injection at the Cardiff 230 kV substation in the JCPL area. Project AF1-101 was evaluated for compliance with applicable reliability planning criteria (PJM, NERC, NERC Regional Reliability Councils, and Transmission Owners). Project AF1-101 was studied with a commercial probability of 53%. Potential network impacts were as follows:

Summer Peak Load Flow

14.1 Generation Deliverability

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

None

14.2 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	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
150457	206294	28LARRABEE	JCP&L	206286	28ATLANTIC	JCP&L	1	JC-P7-1-JCC-230-7A	tower	1147.0	98.28	100.6	DC	58.49
1578749	227901	DOROTHY	AE	228503	MNOTLA 2	AE	1	PS_P7-1_R2244+M2213	tower	478.0	99.15	113.92	DC	70.6
1577903	228106	CORSON 1	AE	228107	CORSON 2	AE	1	AE_P4-2 AE29	breaker	478.0	100.03	103.08	DC	32.3
633356	228207	CUMB	AE	228002	ORCHARD	AE	1	AE_P7-1 AE13TOWER	tower	799.0	98.7	103.24	DC	83.72
633464	228401	MCKLTON	AE	213559	DELCOTAP	PECO	1	AE_P7-1 W2275_O2241	tower	725.0	98.38	101.83	DC	54.52
1578806	228401	MCKLTON	AE	213559	DELCOTAP	PECO	1	AE_P7-1 W2275_O2241	tower	725.0	98.38	101.83	DC	54.52

14.3 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	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
149206	206294	28LARRABEE	JCP&L	206309	28SMITHBRG	JCP&L	2	JC-P2-3-JCC-230-15F	breaker	813.0	139.12	142.28	DC	56.58
149207	206294	28LARRABEE	JCP&L	206309	28SMITHBRG	JCP&L	2	JC-P2-3-JCC-230-13A	breaker	813.0	137.98	141.07	DC	55.21
149211	206294	28LARRABEE	JCP&L	206309	28SMITHBRG	JCP&L	1	JC-P2-3-JCC-230-15G	breaker	817.0	138.44	141.58	DC	56.58
149212	206294	28LARRABEE	JCP&L	206309	28SMITHBRG	JCP&L	1	JC-P2-3-JCC-230-15A	breaker	817.0	134.16	137.23	DC	55.21
150259	206297	28MANITOU	JCP&L	206319	28WHITINGS	JCP&L	1	JC-P7-1-JCC-230-12	tower	817.0	163.49	174.79	DC	92.37
150260	206297	28MANITOU	JCP&L	206319	28WHITINGS	JCP&L	1	JC-P7-1-JCC-230-11A	tower	817.0	140.92	151.56	DC	86.97
150262	206318	28VANHISVL	JCP&L	206294	28LARRABEE	JCP&L	1	JC-P7-1-JCC-230-12	tower	869.0	144.95	154.79	DC	85.71
150263	206318	28VANHISVL	JCP&L	206294	28LARRABEE	JCP&L	1	JC-P7-1-JCC-230-11A	tower	869.0	125.23	134.63	DC	81.86
150290	206319	28WHITINGS	JCP&L	206720	28MANCHSTR	JCP&L	1	JC-P7-1-JCC-230-12	tower	869.0	141.27	151.78	DC	91.26
150291	206319	28WHITINGS	JCP&L	206720	28MANCHSTR	JCP&L	1	JC-P7-1-JCC-230-11A	tower	869.0	122.35	132.36	DC	87.0
149156	206323	28LAKEWOOD	JCP&L	206294	28LARRABEE	JCP&L	1	JC-P2-3-JCC-230-7A	breaker	869.0	163.73	174.51	DC	93.74
149161	206323	28LAKEWOOD	JCP&L	206294	28LARRABEE	JCP&L	2	JC-P2-3-JCC-230-15J	breaker	817.0	164.7	169.91	DC	92.94
150293	206720	28MANCHSTR	JCP&L	206318	28VANHISVL	JCP&L	1	JC-P7-1-JCC-230-12	tower	869.0	139.71	150.21	DC	91.26
150294	206720	28MANCHSTR	JCP&L	206318	28VANHISVL	JCP&L	1	JC-P7-1-JCC-230-11A	tower	869.0	120.78	130.79	DC	87.0

632675	21910 0	NEWFRDM	PSE& G	21970 4	HILLTOP_3	PSE& G	1	PECO_P4_PEACH215/ * \$ CHESCO \$ PEACH215 \$ STBK	breake r	740.0	132.84	136.35	DC	56.47
633339	21910 0	NEWFRDM	PSE& G	21970 4	HILLTOP_3	PSE& G	1	PS_P7- 1_V2274+P2242_LT	tower	740.0	142.09	145.54	DC	60.67
633340	21910 0	NEWFRDM	PSE& G	21970 4	HILLTOP_3	PSE& G	1	PS_P7- 1_W2275+O2241_LT	tower	740.0	135.68	139.14	DC	60.91
632718	21910 8	CUTHBERT	PSE& G	21912 5	CAMDEN	PSE& G	1	PS_P2-3_CAMD_5- 6_LT	breake r	771.0	120.15	123.35	DC	53.93
632693	21911 0	GLOUCSTR	PSE& G	21912 5	CAMDEN	PSE& G	1	PS_P2-3_CUTB_1- 4_LT	breake r	771.0	128.18	131.3	DC	52.52
632694	21911 0	GLOUCSTR	PSE& G	21912 5	CAMDEN	PSE& G	1	PS_P2-3_CUTB_3- 4_LT	breake r	771.0	126.42	129.5	DC	51.76
632695	21911 0	GLOUCSTR	PSE& G	21912 5	CAMDEN	PSE& G	1	PS_P2-3_CUTB_1- 2_LT	breake r	771.0	123.6	126.62	DC	50.69
632696	21911 0	GLOUCSTR	PSE& G	21912 5	CAMDEN	PSE& G	1	PS_P2-3_CUTB_2- 3_LT	breake r	771.0	121.67	124.64	DC	49.86
632431	21912 5	CAMDEN	PSE& G	21420 6	RICHRE29	PECO	1	PECO_P2- 2_CHI230B1/* \$ DELCO \$ CHI230B1 \$ B	bus	1336. 0	142.15	145.91	DC	110.18
632656	21912 5	CAMDEN	PSE& G	21420 6	RICHRE29	PECO	1	PECO_P4_CHICH045/ * \$ DELCO \$ CHICH045 \$ STBK	breake r	1336. 0	142.15	145.91	DC	110.18
632657	21912 5	CAMDEN	PSE& G	21420 6	RICHRE29	PECO	1	PECO_P4_PEACH215/ * \$ CHESCO \$ PEACH215 \$ STBK	breake r	1336. 0	132.97	137.36	DC	128.74
157740 9	21912 5	CAMDEN	PSE& G	21420 6	RICHRE29	PECO	1	PECO_P2- 2_CHI230B1/* \$ DELCO \$ CHI230B1 \$ B	bus	1336. 0	142.15	145.91	DC	110.18
157770 6	21912 5	CAMDEN	PSE& G	21420 6	RICHRE29	PECO	1	PECO_P4_CHICH045/ * \$ DELCO \$ CHICH045 \$ STBK	breake r	1336. 0	142.15	145.91	DC	110.18
157770 7	21912 5	CAMDEN	PSE& G	21420 6	RICHRE29	PECO	1	PECO_P4_PEACH215/ * \$ CHESCO \$ PEACH215 \$ STBK	breake r	1336. 0	132.97	137.36	DC	128.74
632768	21970 2	HILLTOP_1	PSE& G	21910 1	BEAVERBK_1	PSE& G	1	PECO_P4_PEACH215/ * \$ CHESCO \$ PEACH215 \$ STBK	breake r	740.0	108.71	111.93	DC	52.89
633370	21970 2	HILLTOP_1	PSE& G	21910 1	BEAVERBK_1	PSE& G	1	PS_P7- 1_V2274+P2242_LT	tower	740.0	126.24	129.49	DC	57.05
633371	21970 2	HILLTOP_1	PSE& G	21910 1	BEAVERBK_1	PSE& G	1	PS_P7- 1_W2275+O2241_LT	tower	740.0	120.16	123.41	DC	57.28
632795	21975 4	CUTHBERT_3	PSE& G	21912 5	CAMDEN	PSE& G	1	PS_P2-3_CAMD_5- 6_LT	breake r	792.0	106.33	109.16	DC	49.01
633419	21975 6	BEAVERBK_2	PSE& G	21911 0	GLOUCSTR	PSE& G	1	PS_P7- 1_V2274+P2242_LT	tower	740.0	114.81	118.05	DC	57.05
633420	21975 6	BEAVERBK_2	PSE& G	21911 0	GLOUCSTR	PSE& G	1	AE_P7-1 W2275_O2241	tower	740.0	112.6	115.85	DC	57.28
632605	22790 0	CARDIFF	AE	21910 0	NEWFRDM	PSE& G	1	AE_P4-2 AE46	breake r	692.0	266.24	304.38	DC	263.89
632625	22790 0	CARDIFF	AE	22795 5	CEDAR	AE	1	AE_P4-2 AE7	breake r	805.0	189.08	211.46	DC	180.16
632626	22790 0	CARDIFF	AE	22795 5	CEDAR	AE	1	AE_P4-2 AE6	breake r	805.0	189.08	211.46	DC	180.13
632630	22790 0	CARDIFF	AE	22800 2	ORCHARD	AE	1	AE_P4-2 AE7	breake r	805.0	148.5	174.98	DC	213.15
632631	22790 0	CARDIFF	AE	22800 2	ORCHARD	AE	1	AE_P4-2 AE6	breake r	805.0	148.49	174.96	DC	213.11
633315	22790 0	CARDIFF	AE	21910 0	NEWFRDM	PSE& G	1	JC-P7-1-JCC-230-13	tower	692.0	293.78	328.96	DC	243.41
633316	22790 0	CARDIFF	AE	21910 0	NEWFRDM	PSE& G	1	AE_P7-1 AE13TOWER	tower	692.0	275.36	314.87	DC	273.43
157758 6	22790 0	CARDIFF	AE	21910 0	NEWFRDM	PSE& G	1	AE_P4-2 AE46	breake r	692.0	266.24	304.38	DC	263.89
157861 8	22790 0	CARDIFF	AE	21910 0	NEWFRDM	PSE& G	1	JC-P7-1-JCC-230-13	tower	692.0	293.78	328.96	DC	243.41
157861 9	22790 0	CARDIFF	AE	21910 0	NEWFRDM	PSE& G	1	AE_P7-1 AE13TOWER	tower	692.0	275.36	314.87	DC	273.43
157782 0	22790 1	DOROTHY	AE	22850 3	MNOTLA 2	AE	1	AE_P4-2 AE46	breake r	478.0	107.01	121.3	DC	68.28

157874 8	22790 1	DOROTHY	AE	22850 3	MNOTLA 2	AE	1	JC-P7-1-JCC-230-13	tower	478.0	114.62	126.73	DC	57.89
157771 7	22790 2	LEWIS #1	AE	22794 9	LEWIS #3	AE	1	AE_P4-2 AE46	breaker	478.0	129.84	144.98	DC	72.38
157771 8	22790 2	LEWIS #1	AE	22794 9	LEWIS #3	AE	1	AE_P4-2 AE7	breaker	478.0	122.45	138.34	DC	75.98
157771 9	22790 2	LEWIS #1	AE	22794 9	LEWIS #3	AE	1	AE_P4-2 AE6	breaker	478.0	122.41	138.3	DC	75.94
157778 0	22791 3	CARDIFF	AE	22790 2	LEWIS #1	AE	1	AE_P4-2 AE9	breaker	478.0	108.45	128.5	DC	95.85
157870 4	22793 4	CARDIFF2	AE	22794 5	LEWIS #2	AE	1	AE_P7-1 AE3TOWER	tower	478.0	120.7	139.1	DC	87.95
157775 5	22794 5	LEWIS #2	AE	22790 2	LEWIS #1	AE	1	AE_P4-2 AE33	breaker	286.8	129.29	135.74	DC	41.02
157864 3	22794 5	LEWIS #2	AE	22790 2	LEWIS #1	AE	1	AE_P7-1 AE3TOWER	tower	286.8	160.4	184.67	DC	69.6
157780 1	22794 9	LEWIS #3	AE	22790 1	DOROTHY	AE	1	AE_P4-2 AE46	breaker	478.0	110.74	125.02	DC	68.28
157874 5	22794 9	LEWIS #3	AE	22790 1	DOROTHY	AE	1	JC-P7-1-JCC-230-13	tower	478.0	118.36	130.47	DC	57.89
157874 6	22794 9	LEWIS #3	AE	22790 1	DOROTHY	AE	1	PS_P7- 1_R2244+M2213	tower	478.0	102.9	117.67	DC	70.6
149101	22795 5	CEDAR	AE	20630 2	28OYSTER C	JCP&L	1	AE_P4-2 AE7	breaker	564.0	266.21	300.18	DC	191.58
149102	22795 5	CEDAR	AE	20630 2	28OYSTER C	JCP&L	1	AE_P4-2 AE6	breaker	564.0	266.21	300.18	DC	191.56
632610	22795 5	CEDAR	AE	20630 2	28OYSTER C	JCP&L	1	AE_P4-2 AE7	breaker	564.0	266.21	300.18	DC	191.58
632611	22795 5	CEDAR	AE	20630 2	28OYSTER C	JCP&L	1	AE_P4-2 AE6	breaker	564.0	266.21	300.18	DC	191.56
104279 3	22795 5	CEDAR	AE	20630 2	28OYSTER C	JCP&L	1	AE_P4-2 AE7	breaker	564.0	266.21	300.18	DC	191.58
104279 4	22795 5	CEDAR	AE	20630 2	28OYSTER C	JCP&L	1	AE_P4-2 AE6	breaker	564.0	266.21	300.18	DC	191.56
157759 6	22795 5	CEDAR	AE	20630 2	28OYSTER C	JCP&L	1	AE_P4-2 AE7	breaker	564.0	266.21	300.18	DC	191.58
157759 7	22795 5	CEDAR	AE	20630 2	28OYSTER C	JCP&L	1	AE_P4-2 AE6	breaker	564.0	266.21	300.18	DC	191.56
149352	22800 2	ORCHARD	AE	20006 3	ORCHARD	PJM	1	AE_P4-2 AE6	breaker	1349. 0	105.87	119.73	DC	190.76
149353	22800 2	ORCHARD	AE	20006 3	ORCHARD	PJM	1	AE_P4-2 AE7	breaker	1349. 0	105.87	119.73	DC	190.76
632735	22800 2	ORCHARD	AE	20006 3	ORCHARD	PJM	1	AE_P4-2 AE6	breaker	1349. 0	105.87	119.73	DC	190.76
632736	22800 2	ORCHARD	AE	20006 3	ORCHARD	PJM	1	AE_P4-2 AE7	breaker	1349. 0	105.87	119.73	DC	190.76
157782 5	22800 2	ORCHARD	AE	20006 3	ORCHARD	PJM	1	AE_P4-2 AE6	breaker	1349. 0	105.87	119.73	DC	190.76
157782 6	22800 2	ORCHARD	AE	20006 3	ORCHARD	PJM	1	AE_P4-2 AE7	breaker	1349. 0	105.87	119.73	DC	190.76
157771 2	22811 0	BLE	AE	22811 1	MDLE TP	AE	1	AE_P4-2 AE28	breaker	482.0	138.51	141.85	DC	35.79
157777 4	22811 0	BLE	AE	22819 7	MERION	AE	1	AE_P4-2 AE29	breaker	482.0	125.49	128.44	DC	31.62
157763 3	22811 1	MDLE TP	AE	22810 7	CORSON 2	AE	1	AE_P4-2 AE28	breaker	315.0	184.3	189.39	DC	35.64
157782 7	22819 7	MERION	AE	22810 6	CORSON 1	AE	1	AE_P4-2 AE29	breaker	478.0	114.4	117.38	DC	31.62
633463	22840 1	MCKLTON	AE	21355 9	DELCOTAP	PECO	1	PS_P7- 1_V2274+P2242_LT	tower	725.0	104.68	108.13	DC	54.31
157880 5	22840 1	MCKLTON	AE	21355 9	DELCOTAP	PECO	1	PS_P7- 1_V2274+P2242_LT	tower	725.0	104.68	108.13	DC	54.31
157863 3	22850 2	MNOTLA 1	AE	22850 0	LANDIS	AE	1	JC-P7-1-JCC-230-13	tower	478.0	187.58	199.69	DC	57.88
157863 4	22850 2	MNOTLA 1	AE	22850 0	LANDIS	AE	1	PS_P7- 1_R2244+M2213	tower	478.0	172.51	187.27	DC	70.59
157862 3	22850 3	MNOTLA 2	AE	22850 2	MNOTLA 1	AE	1	JC-P7-1-JCC-230-13	tower	311.0	288.29	306.9	DC	57.89

14.4 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	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
149877	200051	ROCKSPGS	PJM	200065	PCHBTM2S	PJM	1	PECO_P1-2_5038/* \$ CHESCO \$ 5038 \$ L	operation	2905.0	133.9	136.79	DC	181.4
149805	206294	28LARRABEE	JCP&L	206309	28SMITHBRG	JCP&L	2	JC-P1-2-JCC-230-017	operation	813.0	136.83	139.99	DC	56.58
149806	206294	28LARRABEE	JCP&L	206309	28SMITHBRG	JCP&L	2	Base Case	operation	678.0	107.31	109.79	DC	37.0
149893	206294	28LARRABEE	JCP&L	206309	28SMITHBRG	JCP&L	1	JC-P1-2-JCC-230-018	operation	817.0	125.4	128.26	DC	51.33
149894	206294	28LARRABEE	JCP&L	206309	28SMITHBRG	JCP&L	1	Base Case	operation	650.0	111.94	114.52	DC	37.0
149929	206295	28LEISUR D	JCP&L	206323	28LAKEWOOD	JCP&L	1	JC-P1-2-JCC-230-020	operation	869.0	122.88	133.14	DC	89.16
149800	206296	28LEISUR U	JCP&L	206323	28LAKEWOOD	JCP&L	1	JC-P1-2-JCC-230-019	operation	817.0	139.3	150.16	DC	88.72
149730	206297	28MANITOU	JCP&L	206296	28LEISUR U	JCP&L	1	JC-P1-2-JCC-230-019	operation	817.0	152.26	163.28	DC	90.03
149746	206297	28MANITOU	JCP&L	206295	28LEISUR D	JCP&L	1	JC-P1-2-JCC-230-020	operation	817.0	151.69	162.72	DC	90.04
149615	206302	28OYSTER C	JCP&L	206297	28MANITOU	JCP&L	1	JC-P1-2-JCC-230-022	operation	817.0	241.32	255.99	DC	119.86
149616	206302	28OYSTER C	JCP&L	206297	28MANITOU	JCP&L	1	Base Case	operation	650.0	159.3	169.25	DC	64.7
149621	206302	28OYSTER C	JCP&L	206297	28MANITOU	JCP&L	2	JC-P1-2-JCC-230-021	operation	869.0	226.92	240.72	DC	119.88
149623	206302	28OYSTER C	JCP&L	206297	28MANITOU	JCP&L	2	Base Case	operation	709.0	146.23	155.37	DC	64.78
149707	206323	28LAKEWOOD	JCP&L	206294	28LARRABEE	JCP&L	2	JC-P1-2-JCC-230-014	operation	817.0	164.35	169.56	DC	92.97
149708	206323	28LAKEWOOD	JCP&L	206294	28LARRABEE	JCP&L	2	Base Case	operation	650.0	113.79	117.37	DC	50.84
149762	206323	28LAKEWOOD	JCP&L	206294	28LARRABEE	JCP&L	1	JC-P1-2-JCC-230-013	operation	869.0	155.66	160.56	DC	92.98
149763	206323	28LAKEWOOD	JCP&L	206294	28LARRABEE	JCP&L	1	Base Case	operation	709.0	104.6	107.89	DC	50.97
633018	219100	NEWFRDM	PSE&G	219704	HILLTOP_3	PSE&G	1	PECO_P1-2_5014/* \$ CHESCO \$ 5014 \$ L	operation	740.0	131.65	135.17	DC	56.47
633097	219108	CUTHBERT	PSE&G	219125	CAMDEN	PSE&G	1	PS_P1-2_Y-2304	operation	771.0	119.1	122.13	DC	50.85
632975	219110	GLOUCSTR	PSE&G	219755	CUTHBERT_4	PSE&G	1	PS_P1-2_C-2308	operation	758.0	137.29	140.51	DC	53.31

632978	219110	GLOUCSTR	PSE&G	219755	CUTHBERT_4	PSE&G	1	Base Case	operation	550.0	122.7	125.58	DC	34.59
632998	219110	GLOUCSTR	PSE&G	219125	CAMDEN	PSE&G	1	Base Case	operation	500.0	133.11	136.35	DC	35.33
632999	219110	GLOUCSTR	PSE&G	219125	CAMDEN	PSE&G	1	PS_P1-2_D-2282	operation	771.0	117.04	119.86	DC	47.48
633058	219110	GLOUCSTR	PSE&G	219753	CUTHBERT_2	PSE&G	1	PS_P1-2_D-2282	operation	771.0	127.98	130.98	DC	50.53
633060	219110	GLOUCSTR	PSE&G	219753	CUTHBERT_2	PSE&G	1	Base Case	operation	500.0	118.06	120.84	DC	30.23
632984	219125	CAMDEN	PSE&G	214206	RICHRE29	PECO	1	PECO_P1-2_5014/* \$ CHESCO \$ 5014 \$ L	operation	1336.0	130.63	135.02	DC	128.74
632985	219125	CAMDEN	PSE&G	214206	RICHRE29	PECO	1	Base Case	operation	1075.0	129.03	133.24	DC	99.2
1578317	219125	CAMDEN	PSE&G	214206	RICHRE29	PECO	1	PECO_P1-2_5014/* \$ CHESCO \$ 5014 \$ L	operation	1336.0	130.63	135.02	DC	128.74
1578318	219125	CAMDEN	PSE&G	214206	RICHRE29	PECO	1	Base Case	operation	1075.0	129.03	133.24	DC	99.2
633197	219702	HILLTOP_1	PSE&G	219101	BEAVERBK_1	PSE&G	1	PECO_P1-2_5014/* \$ CHESCO \$ 5014 \$ L	operation	740.0	107.59	110.81	DC	52.89
633219	219754	CUTHBERT_3	PSE&G	219125	CAMDEN	PSE&G	1	PS_P1-2_Y-2304	operation	792.0	105.41	108.09	DC	46.21
632917	227900	CARDIFF	AE	219100	NEWFRDM	PSE&G	1	JC-P1-2-JCC-230-002T	operation	692.0	236.21	272.21	DC	249.08
632921	227900	CARDIFF	AE	219100	NEWFRDM	PSE&G	1	Base Case	operation	650.0	196.06	225.71	DC	192.69
632922	227900	CARDIFF	AE	227955	CEDAR	AE	1	PS_P1-2_2310	operation	805.0	188.63	210.82	DC	178.56
632923	227900	CARDIFF	AE	227955	CEDAR	AE	1	Base Case	operation	650.0	180.15	198.99	DC	122.51
632928	227900	CARDIFF	AE	228002	ORCHARD	AE	1	PS_P1-2_2310	operation	805.0	147.54	173.75	DC	211.01
632932	227900	CARDIFF	AE	228002	ORCHARD	AE	1	Base Case	operation	650.0	108.64	130.04	DC	139.12
1578083	227900	CARDIFF	AE	219100	NEWFRDM	PSE&G	1	JC-P1-2-JCC-230-002T	operation	692.0	236.21	272.21	DC	249.08
1578087	227900	CARDIFF	AE	219100	NEWFRDM	PSE&G	1	Base Case	operation	650.0	196.06	225.71	DC	192.69
1578454	227901	DOROTHY	AE	228503	MNOTLA 2	AE	1	PS_P1-2_2310	operation	478.0	99.14	113.91	DC	70.61
1578335	227902	LEWIS #1	AE	227949	LEWIS #3	AE	1	PS_P1-2_2310	operation	478.0	121.05	136.61	DC	74.41
1578509	227913	CARDIFF	AE	227902	LEWIS #1	AE	1	AE_P1-3 CARD 7 XFR	operation	478.0	88.82	102.69	DC	66.29
1578510	227913	CARDIFF	AE	227902	LEWIS #1	AE	1	AE_P1-2 CARD-LEW2	operation	478.0	88.82	102.69	DC	66.29
1578519	227934	CARDIFF2	AE	227945	LEWIS #2	AE	1	AE_P1-3 CARD 6 XFR	operation	478.0	87.44	101.09	DC	65.22
1578425	227949	LEWIS #3	AE	227901	DOROTHY	AE	1	PS_P1-2_2310	operation	478.0	102.88	117.65	DC	70.61
149605	227955	CEDAR	AE	206302	28OYSTER C	JCP&L	1	PS_P1-2_2310	operation	564.0	265.84	299.64	DC	190.63
149606	227955	CEDAR	AE	206302	28OYSTER C	JCP&L	1	Base Case	operation	464.0	247.09	275.34	DC	131.08
632891	227955	CEDAR	AE	206302	28OYSTER C	JCP&L	1	PS_P1-2_2310	operation	564.0	265.84	299.64	DC	190.63
632892	227955	CEDAR	AE	206302	28OYSTER C	JCP&L	1	Base Case	operation	464.0	247.09	275.34	DC	131.08
1043342	227955	CEDAR	AE	206302	28OYSTER C	JCP&L	1	PS_P1-2_2310	operation	564.0	265.84	299.64	DC	190.63
1043343	227955	CEDAR	AE	206302	28OYSTER C	JCP&L	1	Base Case	operation	464.0	247.09	275.34	DC	131.08
1578033	227955	CEDAR	AE	206302	28OYSTER C	JCP&L	1	PS_P1-2_2310	operation	564.0	265.84	299.64	DC	190.63
1578034	227955	CEDAR	AE	206302	28OYSTER C	JCP&L	1	Base Case	operation	464.0	247.09	275.34	DC	131.08
150017	228002	ORCHARD	AE	200063	ORCHARD	PJM	1	PS_P1-2_2310	operation	1349.0	105.85	119.71	DC	190.66
633115	228002	ORCHARD	AE	200063	ORCHARD	PJM	1	PS_P1-2_2310	operation	1349.0	105.85	119.71	DC	190.66
633240	228002	ORCHARD	AE	228310	CHURCHTN	AE	1	AE_P1-2 ORCHARD XF	operation	799.0	91.51	97.89	DC	114.92

1578401	228002	ORCHARD	AE	200063	ORCHARD	PJM	1	PS_P1-2_2310	operation	1349.0	105.85	119.71	DC	190.66
1578352	228110	BLE	AE	228111	MDLE TP	AE	1	AE_P1-2 ENG-MERION	operation	482.0	126.58	130.35	DC	40.37
1578428	228110	BLE	AE	228197	MERION	AE	1	AE_P1-2 ENG-CORSON	operation	482.0	108.57	111.86	DC	35.21
1578171	228111	MDLE TP	AE	228107	CORSON 2	AE	1	AE_P1-2 ENG-MERION	operation	315.0	166.71	172.44	DC	40.09
1578514	228197	MERION	AE	228106	CORSON 1	AE	1	AE_P1-2 ENG-CORSON	operation	478.0	97.34	100.66	DC	35.21
1578254	228256	SHRMAN#1	AE	945730	AF1-238 TAP	AE	1	AE_P1-2 SHERM-BUT	operation	132.0	56.48	59.11	DC	7.68
1578315	228257	SHRMAN#3	AE	228703	BUTLER	AE	1	AE_P1-2 SHERM-W VINE-A	operation	129.0	66.28	69.33	DC	8.73
632992	228311	CHAMBERS	AE	228312	PEDRKTWN	AE	1	AE_P1-2 ORCHARD XF	operation	552.0	123.77	131.95	DC	99.88
632945	228312	PEDRKTWN	AE	228313	BRIDGPRT	AE	1	AE_P1-2 ORCHARD XF	operation	552.0	141.05	149.21	DC	99.52
632950	228312	PEDRKTWN	AE	228313	BRIDGPRT	AE	1	Base Case	operation	552.0	100.81	104.9	DC	49.65
633052	228313	BRIDGPRT	AE	228401	MCKLTON	AE	1	AE_P1-2 ORCHARD XF	operation	804.0	122.92	128.51	DC	98.84
633053	228313	BRIDGPRT	AE	228401	MCKLTON	AE	1	Base Case	operation	650.0	117.01	120.45	DC	48.97
1578312	228482	FRANKLIN	AE	228404	MONROE	AE	1	AE_P1-2 MONROE-LANDIS_1	operation	331.0	135.49	139.9	DC	32.42
1578340	228500	LANDIS	AE	228404	MONROE	AE	1	AE_P1-2 MON-FRNK	operation	331.0	132.94	137.36	DC	32.42
1578204	228502	MNOTLA 1	AE	228500	LANDIS	AE	1	JC-P1-2-JCC-230-002T	operation	478.0	165.6	178.01	DC	59.32
1578205	228502	MNOTLA 1	AE	228500	LANDIS	AE	1	Base Case	operation	390.0	148.94	154.14	DC	45.0
1578088	228503	MNOTLA 2	AE	228502	MNOTLA 1	AE	1	JC-P1-2-JCC-230-002T	operation	311.0	254.52	273.6	DC	59.33
1578092	228503	MNOTLA 2	AE	228502	MNOTLA 1	AE	1	Base Case	operation	311.0	186.82	193.34	DC	45.02

14.5 Flow Gate Details

The following indices contain additional information about each flowgate presented in the body of the report. For each index, a description of the flowgate and its contingency was included for convenience. However, the intent of the appendix section is to provide more information on which projects/generators have contributions to the flowgate in question. Although this information is not used "as is" for cost allocation purposes, it can be used to gage other generators impact. It should be noted the generator contributions presented in the appendices sections are full contributions, whereas in the body of the report, those contributions take into consideration the commercial probability of each project.

14.6 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
150457	206294	28LARRABEE	JCP&L	206286	28ATLANTIC	JCP&L	1	JC-P7-1-JCC-230-7A	tower	1147.0	98.28	100.6	DC	58.49

Bus #	Bus	MW Impact
206280	28LAKEHURS	0.58
206306	28LKWD G1	3.89
206308	28LKWD G2	3.89
206312	28LKWD G3	2.86
206325	28O C GEN	63.84
206360	28O CRK C1	1.35
206366	28LKWD CT1	7.84
206367	28LKWD CT2	7.84
206370	LKWD CT3	66.83
207400	28AA1-060 E	2.77
219288	REEVES ST E	0.51
219652	LUMB23SP1_E	0.02
219656	LUMB23SP2_E	0.02
219687	LUMSOLAR_N E	0.16
227928	V4-067E	0.16
228100	BLE DIES	0.66
228731	V3-036	0.52
901982	W1-119 E	1.18
901992	W1-120E	1.18
902082	W1-129E	0.62
902322	W2-019 E	0.73
902432	W2-030 E	0.56
902952	W2-082 E OP1	2.13
903982	W3-079 E	1.12
905252	W4-025 E	0.88
907272	X1-085 E	0.38
912102	X4-015 E	0.62
913341	Y1-077	36.8
914092	Y2-051 E	0.87
917612	Z2-102 E	1.74
919662	AA2-048 E	1.78
921744	AA2-049 BAT	0.27
923292	AB1-138 C	1.05
923293	AB1-138 E	1.75
923463	AB1-163 E	1.3
923791	AB2-014	0.38
924701	AB2-122 C	0.07
924702	AB2-122 E	0.12
930001	AB1-001 C	0.1
930002	AB1-001 E	0.16
933962	AD1-019 E	0.72

Bus #	Bus	MW Impact
934351	AD1-059	0.69
938781	AE1-104 C O1	9.99
938782	AE1-104 E O1	25.57
939121	AE1-142 C O1	2.52
939122	AE1-142 E O1	3.62
940161	AE2-000 C O1	65.12
940162	AE2-000 E O1	166.61
940361	AE2-020 C	10.82
940362	AE2-020 E	50.67
940371	AE2-021 C	10.82
940372	AE2-021 E	50.67
940381	AE2-022 C	6.31
940382	AE2-022 E	29.56
940391	AE2-023 C	6.45
940392	AE2-023 E	30.2
940401	AE2-024 C O1	54.04
940402	AE2-024 E O1	253.03
940411	AE2-025 C	27.28
940412	AE2-025 E	127.72
942101	AE2-222 C O1	8.14
942102	AE2-222 E O1	20.45
942201	AE2-232 C O1	31.92
942202	AE2-232 E O1	81.67
942381	AE2-251 C	34.29
942382	AE2-251 E	87.73
942941	AE2-314 C	4.39
942942	AE2-314 E	2.93
943561	AF1-027	0.31
943732	AF1-041 E	0.23
944332	AF1-101 E O2	58.49
944611	AF1-126 C O1	10.01
944612	AF1-126 E O1	40.04
945951	AF1-260	0.25
999905	MARINGEN 2	0.38
999906	PVILLEG 2	0.16
BLUEG	BLUEG	0.19
CALDERWOOD	CALDERWOOD	0.04
CATAWBA	CATAWBA	0.02
CHEOAH	CHEOAH	0.04
COFFEEN	COFFEEN	0.06
DUCKCREEK	DUCKCREEK	0.13
EDWARDS	EDWARDS	0.04
FARMERCITY	FARMERCITY	0.01
G-007	G-007	8.63
GIBSON	GIBSON	0.06
MADISON	MADISON	0.01
NEWTON	NEWTON	0.12
NY	NY	0.93
O-066	O-066	17.45
PRAIRIE	PRAIRIE	0.28
TILTON	TILTON	0.07
TRIMBLE	TRIMBLE	0.06

14.7 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
1578748	227901	DOROTHY	AE	228503	MNOTLA 2	AE	1	JC-P7-1-JCC-230-13	tower	478.0	114.62	126.73	DC	57.89

Bus #	Bus	MW Impact
206360	28O CRK C1	0.48
206361	28O CRK C2	0.32
227842	MARINGEN	0.08
227927	V4-067C	0.02
227928	V4-067E	0.2
228014	PVILLEG	0.03
228100	BLE DIES	1.01
228712	V2-041E	0.14
228729	W2-030 C	0.07
228731	V3-036	0.82
902432	W2-030 E	0.84
913341	Y1-077	56.54
924531	AB2-102 C	13.0
924532	AB2-102 E	0.29
924701	AB2-122 C	0.09
924702	AB2-122 E	0.15
930001	AB1-001 C	0.13
930002	AB1-001 E	0.21
933962	AD1-019 E	1.13
938423	AE1-061 BAT	3.37
938781	AE1-104 C O1	15.36
938782	AE1-104 E O1	39.29
939303	AE1-161 BAT	10.21
940161	AE2-000 C O1	23.01
940162	AE2-000 E O1	58.89
940361	AE2-020 C	10.71
940362	AE2-020 E	50.16
940371	AE2-021 C	10.71
940372	AE2-021 E	50.16
940381	AE2-022 C	6.25
940382	AE2-022 E	29.26
940391	AE2-023 C	9.91
940392	AE2-023 E	46.4
941931	AE2-205 C O1	2.7
941932	AE2-205 E O1	1.8
942101	AE2-222 C O1	12.93
942102	AE2-222 E O1	32.49
942201	AE2-232 C O1	11.28
942202	AE2-232 E O1	28.87
942381	AE2-251 C	33.94
942382	AE2-251 E	86.84

Bus #	Bus	MW Impact
942941	AE2-314 C	4.35
942942	AE2-314 E	2.9
943732	AF1-041 E	0.36
944131	AF1-081 C O2	5.93
944132	AF1-081 E O2	3.95
944332	AF1-101 E O2	57.89
999905	MARINGEN 2	0.59
999906	PVILLEG 2	0.26
BLUEG	BLUEG	0.01
CALDERWOOD	CALDERWOOD	0.0
CATAWBA	CATAWBA	0.0
CHEOAH	CHEOAH	0.0
COFFEEN	COFFEEN	0.0
DUCKCREEK	DUCKCREEK	0.01
EDWARDS	EDWARDS	0.0
FARMERCITY	FARMERCITY	0.0
G-007	G-007	0.01
GIBSON	GIBSON	0.0
NEWTON	NEWTON	0.01
NY	NY	0.02
O-066	O-066	0.22
PRAIRIE	PRAIRIE	0.02
TILTON	TILTON	0.01
TRIMBLE	TRIMBLE	0.0

14.8 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
1577903	228106	CORSON 1	AE	228107	CORSON 2	AE	1	AE_P4-2 AE29	breaker	478.0	100.03	103.08	DC	32.3

Bus #	Bus	MW Impact
227842	MARINGEN	0.06
227928	V4-067E	0.14
228014	PVILLEG	0.02
228100	BLE DIES	2.69
228729	W2-030 C	0.05
228731	V3-036	0.58
902432	W2-030 E	0.64
913341	Y1-077	150.04
924701	AB2-122 C	0.06
924702	AB2-122 E	0.1
930001	AB1-001 C	0.08
930002	AB1-001 E	0.14
933962	AD1-019 E	0.8
938781	AE1-104 C O1	40.75
938782	AE1-104 E O1	104.26
940361	AE2-020 C	5.98
940362	AE2-020 E	27.99
940371	AE2-021 C	5.98
940372	AE2-021 E	27.99
940381	AE2-022 C	3.49
940382	AE2-022 E	16.33
940391	AE2-023 C	26.3
940392	AE2-023 E	123.13
942101	AE2-222 C O1	8.97
942102	AE2-222 E O1	22.53
942381	AE2-251 C	18.94
942382	AE2-251 E	48.45
942941	AE2-314 C	2.43
942942	AE2-314 E	1.62
943732	AF1-041 E	0.24
944332	AF1-101 E O2	32.3
945733	AF1-238 BAT	19.5
945743	AF1-239 BAT	3.9
999905	MARINGEN 2	0.42
999906	PVILLEG 2	0.18
CBM-S1	CBM-S1	0.29
CBM-S2	CBM-S2	0.18
CBM-W1	CBM-W1	0.45
CBM-W2	CBM-W2	0.29
CPL	CPL	0.02
G-007A	G-007A	1.08
LGEE	LGEE	0.02

Bus #	Bus	MW Impact
MEC	MEC	0.06
TVA	TVA	0.05
VFT	VFT	1.52
WEC	WEC	0.01

14.9 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
633356	228207	CUMB	AE	228002	ORCHARD	AE	1	AE_P7-1 AE13TOWER	tower	799.0	98.7	103.24	DC	83.72

Bus #	Bus	MW Impact
227928	V4-067E	0.31
228100	BLE DIES	2.65
228202	CUMB CT	4.72
228203	P06	5.76
228206	SHRMN CT	4.07
228261	V4-054E	1.65
228711	V2-041C	0.11
228712	V2-041E	1.23
228727	W2-039G	3.38
228731	V3-036	1.18
228732	V1-021 C	0.12
902092	W1-130E	1.22
902432	W2-030 E	1.36
913341	Y1-077	148.03
923532	AB1-169AC	117.89
924531	AB2-102 C	136.02
924532	AB2-102 E	3.02
924701	AB2-122 C	0.14
924702	AB2-122 E	0.23
930001	AB1-001 C	0.17
930002	AB1-001 E	0.27
933962	AD1-019 E	1.63
938421	AE1-061 C	1.07
938422	AE1-061 E	1.07
938781	AE1-104 C O1	40.2
938782	AE1-104 E O1	102.86
939501	AE1-179 C O1	12.51
939502	AE1-179 E O1	8.83
940001	AE1-240 C O1	10.38
940002	AE1-240 E O1	7.41
940361	AE2-020 C	15.49
940362	AE2-020 E	72.54
940371	AE2-021 C	15.49
940372	AE2-021 E	72.54
940381	AE2-022 C	9.04
940382	AE2-022 E	42.31
940391	AE2-023 C	25.95
940392	AE2-023 E	121.48
941001	AE2-091 C O1	7.27
941002	AE2-091 E O1	3.79
941931	AE2-205 C O1	28.29
941932	AE2-205 E O1	18.86

Bus #	Bus	MW Impact
942101	AE2-222 C O1	17.96
942102	AE2-222 E O1	45.13
942381	AE2-251 C	49.08
942382	AE2-251 E	125.58
942941	AE2-314 C	6.29
942942	AE2-314 E	4.19
943732	AF1-041 E	0.49
944131	AF1-081 C O2	49.9
944132	AF1-081 E O2	33.27
944332	AF1-101 E O2	83.72
945431	AF1-208 C O2	4.12
945432	AF1-208 E O2	2.75
945731	AF1-238 C O2	23.01
945732	AF1-238 E O2	34.51
945741	AF1-239 C	4.6
945742	AF1-239 E	6.9
999905	MARINGEN 2	0.87
999906	PVILLEG 2	0.35
BLUEG	BLUEG	0.24
CALDERWOOD	CALDERWOOD	0.07
CATAWBA	CATAWBA	0.05
CHEOAH	CHEOAH	0.07
COFFEEN	COFFEEN	0.07
DUCKCREEK	DUCKCREEK	0.16
EDWARDS	EDWARDS	0.05
FARMERCITY	FARMERCITY	0.01
G-007A	G-007A	2.41
GIBSON	GIBSON	0.08
NEWTON	NEWTON	0.15
PRAIRIE	PRAIRIE	0.36
TILTON	TILTON	0.09
TRIMBLE	TRIMBLE	0.08
VFT	VFT	2.93

14.10 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
1578805	228401	MCKLTON	AE	213559	DELCOTAP	PECO	1	PS_P7- 1_V2274+P2242_LT	tower	725.0	104.68	108.13	DC	54.31

Bus #	Bus	MW Impact
219229	EAGLEPT_G3	1.88
219230	EAGLEPT_G1	3.55
219231	EAGLEPT_G2	3.55
219235	EAGLEPT_ST2	1.28
219258	KINSLEYDEP C	0.08
219259	KINSLEYDEP E	0.95
219384	DEPTFDSP1_C	0.0
219385	DEPTFDSP1_E	0.01
219388	DEPTFDSP2_C	0.0
219390	DEPTFDSP2_E	0.01
219393	DEPTFDSP3_C	0.0
219394	DEPTFDSP3_E	0.03
219408	DEPTFDSP4_C	0.0
219416	DEPTFDSP4_E	0.01
219662	THOROFSP1_C	0.0
219664	THOROFSP1_E	0.05
219665	THOROFSP2_C	0.0
219666	THOROFSP2_E	0.05
219683	THOSOLAR C	0.02
219684	THOSOLAR E	0.28
227881	GRENWCHG	0.43
227928	V4-067E	0.16
228100	BLE DIES	0.89
228261	V4-054E	0.99
228304	LOGAN	7.96
228306	PCLP STM	2.03
228307	PCLP GT	2.03
228309	CCLP NUG	6.94
228334	MANNMILG	1.68
228357	V2-046E	2.56
228400	MICK 1CT	1.76
228423	Q-090 2	31.26
228471	VALERO1	0.59
228472	VALERO2	0.39
228473	VALERO3	0.39
228484	VALERO4	0.35
228712	V2-041E	0.31
228721	V2-035E	0.21
228731	V3-036	0.57
228733	AB1-119 E	0.08
902092	W1-130E	0.84
902432	W2-030 E	0.63

Bus #	Bus	MW Impact
913341	Y1-077	49.48
917471	Z2-083	3.16
923153	AB1-116 E	0.11
923532	AB1-169AC	81.19
924051	AB2-049 C	0.46
924052	AB2-049 E	0.75
924531	AB2-102 C	27.16
924532	AB2-102 E	0.6
924701	AB2-122 C	0.07
924702	AB2-122 E	0.12
930001	AB1-001 C	0.09
930002	AB1-001 E	0.14
933962	AD1-019 E	0.79
936491	AD2-064 C	0.06
936492	AD2-064 E	0.08
936501	AD2-065 C	0.11
936502	AD2-065 E	0.15
937011	AD2-135 C	0.06
937012	AD2-135 E	0.11
938421	AE1-061 C	0.74
938422	AE1-061 E	0.74
938431	AE1-062 C	0.96
938432	AE1-062 E	0.96
938781	AE1-104 C O1	13.44
938782	AE1-104 E O1	34.38
938871	AE1-115 C	2.04
938872	AE1-115 E	2.04
939301	AE1-161 C	3.19
939302	AE1-161 E	4.78
939501	AE1-179 C O1	5.02
939502	AE1-179 E O1	3.54
939821	AE1-218 C O1	0.12
939822	AE1-218 E O1	0.19
939831	AE1-219 C O1	0.28
939832	AE1-219 E O1	0.4
939931	AE1-229 C O1	16.0
939932	AE1-229 E O1	10.84
940001	AE1-240 C O1	4.18
940002	AE1-240 E O1	2.98
940361	AE2-020 C	10.05
940362	AE2-020 E	47.06
940371	AE2-021 C	10.05
940372	AE2-021 E	47.06
940381	AE2-022 C	5.86
940382	AE2-022 E	27.45
940391	AE2-023 C	8.67
940392	AE2-023 E	40.61
940781	AE2-065 C	0.21
940782	AE2-065 E	0.34
941001	AE2-091 C O1	3.47
941002	AE2-091 E O1	1.81
941931	AE2-205 C O1	5.65

Bus #	Bus	MW Impact
941932	AE2-205 E O1	3.77
942101	AE2-222 C O1	8.92
942102	AE2-222 E O1	22.4
942381	AE2-251 C	31.84
942382	AE2-251 E	81.47
942571	AE2-272	0.16
942941	AE2-314 C	4.08
942942	AE2-314 E	2.72
943071	AE2-334 C	4.45
943072	AE2-334 E	2.37
943081	AE2-335 C O1	6.71
943082	AE2-335 E O1	2.99
943732	AF1-041 E	0.25
944131	AF1-081 C O2	11.88
944132	AF1-081 E O2	7.92
944332	AF1-101 E O2	54.31
944951	AF1-160 C	0.96
944952	AF1-160 E	1.01
945431	AF1-208 C O2	4.82
945432	AF1-208 E O2	3.21
945731	AF1-238 C O2	8.21
945732	AF1-238 E O2	12.31
945741	AF1-239 C	1.64
945742	AF1-239 E	2.46
945971	AF1-262	0.15
999905	MARINGEN 2	0.42
999906	PVILLEG 2	0.18
BLUEG	BLUEG	0.48
CALDERWOOD	CALDERWOOD	0.14
CATAWBA	CATAWBA	0.1
CHEOAH	CHEOAH	0.14
COFFEEN	COFFEEN	0.15
DUCKCREEK	DUCKCREEK	0.32
EDWARDS	EDWARDS	0.1
FARMERCITY	FARMERCITY	0.02
G-007A	G-007A	3.98
GIBSON	GIBSON	0.15
NEWTON	NEWTON	0.3
PRAIRIE	PRAIRIE	0.72
TILTON	TILTON	0.17
TRIMBLE	TRIMBLE	0.15
VFT	VFT	7.24

14.11 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
149206	206294	28LARRABEE	JCP&L	206309	28SMITHBRG	JCP&L	2	JC-P2-3-JCC-230-15F	breaker	813.0	139.12	142.28	DC	56.58

Bus #	Bus	MW Impact
206271	28MCRC/REC	1.23
206280	28LAKEHURS	0.62
206306	28LKWD G1	4.12
206308	28LKWD G2	4.12
206312	28LKWD G3	3.03
206325	28O C GEN	67.23
206360	28O CRK C1	1.42
206366	28LKWD CT1	8.31
206367	28LKWD CT2	8.31
206370	LKWD CT3	70.82
206412	28R11	35.13
207143	28BYD_X4-031	0.4
207145	28FRN_Y2-051	0.08
207148	28MDF_W3-079	0.12
207400	28AA1-060 E	2.74
227928	V4-067E	0.15
228100	BLE DIES	0.62
228731	V3-036	0.5
901912	W1-112E OP1	0.35
901982	W1-119 E	1.23
901992	W1-120E	1.23
902032	W1-124E	1.99
902082	W1-129E	0.65
902322	W2-019 E	0.76
902432	W2-030 E	0.53
902952	W2-082 E OP1	2.22
903982	W3-079 E	1.38
905252	W4-025 E	0.92
905502	W4-060 E OP1	0.53
907082	X1-037 E	1.48
907272	X1-085 E	0.36
912102	X4-015 E	0.65
913341	Y1-077	34.49
914092	Y2-051 E	0.97
917612	Z2-102 E	1.81
919662	AA2-048 E	2.19
920732	AA2-184 E	2.15
921743	AA2-049 E	0.57
923292	AB1-138 C	1.13
923293	AB1-138 E	1.88
923463	AB1-163 E	1.44

Bus #	Bus	MW Impact
923791	AB2-014	0.4
924701	AB2-122 C	0.07
924702	AB2-122 E	0.11
925541	AC1-029	1.6
930001	AB1-001 C	0.1
930002	AB1-001 E	0.16
933962	AD1-019 E	0.69
934351	AD1-059	0.74
937261	AD2-165	3.19
938781	AE1-104 C O1	9.37
938782	AE1-104 E O1	23.96
939121	AE1-142 C O1	2.66
939122	AE1-142 E O1	3.83
939981	AE1-238 C	46.05
939982	AE1-238 E	120.95
940161	AE2-000 C O1	68.58
940162	AE2-000 E O1	175.47
940361	AE2-020 C	10.47
940362	AE2-020 E	49.02
940371	AE2-021 C	10.47
940372	AE2-021 E	49.02
940381	AE2-022 C	6.11
940382	AE2-022 E	28.59
940391	AE2-023 C	6.05
940392	AE2-023 E	28.3
940401	AE2-024 C O1	57.32
940402	AE2-024 E O1	268.37
940411	AE2-025 C	28.94
940412	AE2-025 E	135.46
940691	AE2-056 C	0.22
940692	AE2-056 E	0.19
940701	AE2-057 C	0.04
940702	AE2-057 E	0.04
940921	AE2-081 C	0.24
940922	AE2-081 E	0.24
942101	AE2-222 C O1	7.81
942102	AE2-222 E O1	19.61
942201	AE2-232 C O1	33.62
942202	AE2-232 E O1	86.02
942381	AE2-251 C	33.17
942382	AE2-251 E	84.87
942941	AE2-314 C	4.25
942942	AE2-314 E	2.83
943521	AF1-023	1.56
943561	AF1-027	0.3
943732	AF1-041 E	0.22
944332	AF1-101 E O2	56.58
944611	AF1-126 C O1	10.36
944612	AF1-126 E O1	41.43
945571	AF1-222 C	33.77
945572	AF1-222 E	89.03
945951	AF1-260	0.31

Bus #	Bus	MW Impact
945981	AF1-263	0.14
999905	MARINGEN 2	0.36
999906	PVILLEG 2	0.16
BLUEG	BLUEG	0.57
CALDERWOOD	CALDERWOOD	0.16
CATAWBA	CATAWBA	0.11
CHEOAH	CHEOAH	0.16
COFFEEN	COFFEEN	0.17
DUCKCREEK	DUCKCREEK	0.38
EDWARDS	EDWARDS	0.11
FARMERCITY	FARMERCITY	0.02
G-007A	G-007A	15.14
GIBSON	GIBSON	0.18
MADISON	MADISON	0.01
NEWTON	NEWTON	0.35
NY	NY	0.57
O-066	O-066	6.01
PRAIRIE	PRAIRIE	0.84
TILTON	TILTON	0.21
TRIMBLE	TRIMBLE	0.18

14.12 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
149211	206294	28LARRABEE	JCP&L	206309	28SMITHBRG	JCP&L	1	JC-P2-3-JCC-230-15G	breaker	817.0	138.44	141.58	DC	56.58

Bus #	Bus	MW Impact
206271	28MCRC/REC	1.23
206280	28LAKEHURS	0.62
206306	28LKWD G1	4.12
206308	28LKWD G2	4.12
206312	28LKWD G3	3.03
206325	28O C GEN	67.23
206360	28O CRK C1	1.42
206366	28LKWD CT1	8.31
206367	28LKWD CT2	8.31
206370	LKWD CT3	70.82
206412	28R11	35.13
207143	28BYD_X4-031	0.4
207145	28FRN_Y2-051	0.08
207148	28MDF_W3-079	0.12
207400	28AA1-060 E	2.74
227928	V4-067E	0.15
228100	BLE DIES	0.62
228731	V3-036	0.5
901912	W1-112E OP1	0.35
901982	W1-119 E	1.23
901992	W1-120E	1.23
902032	W1-124E	1.99
902082	W1-129E	0.65
902322	W2-019 E	0.76
902432	W2-030 E	0.53
902952	W2-082 E OP1	2.22
903982	W3-079 E	1.38
905252	W4-025 E	0.92
905502	W4-060 E OP1	0.53
907082	X1-037 E	1.48
907272	X1-085 E	0.36
912102	X4-015 E	0.65
913341	Y1-077	34.49
914092	Y2-051 E	0.97
917612	Z2-102 E	1.81
919662	AA2-048 E	2.19
920732	AA2-184 E	2.15
921743	AA2-049 E	0.57
923292	AB1-138 C	1.13
923293	AB1-138 E	1.88

Bus #	Bus	MW Impact
923463	AB1-163 E	1.44
923791	AB2-014	0.4
924701	AB2-122 C	0.07
924702	AB2-122 E	0.11
925541	AC1-029	1.6
930001	AB1-001 C	0.1
930002	AB1-001 E	0.16
933962	AD1-019 E	0.69
934351	AD1-059	0.74
937261	AD2-165	3.19
938781	AE1-104 C O1	9.37
938782	AE1-104 E O1	23.96
939121	AE1-142 C O1	2.66
939122	AE1-142 E O1	3.83
939981	AE1-238 C	46.05
939982	AE1-238 E	120.95
940161	AE2-000 C O1	68.58
940162	AE2-000 E O1	175.47
940361	AE2-020 C	10.47
940362	AE2-020 E	49.02
940371	AE2-021 C	10.47
940372	AE2-021 E	49.02
940381	AE2-022 C	6.11
940382	AE2-022 E	28.59
940391	AE2-023 C	6.05
940392	AE2-023 E	28.3
940401	AE2-024 C O1	57.32
940402	AE2-024 E O1	268.37
940411	AE2-025 C	28.94
940412	AE2-025 E	135.46
940691	AE2-056 C	0.22
940692	AE2-056 E	0.19
940701	AE2-057 C	0.04
940702	AE2-057 E	0.04
940921	AE2-081 C	0.24
940922	AE2-081 E	0.24
942101	AE2-222 C O1	7.81
942102	AE2-222 E O1	19.61
942201	AE2-232 C O1	33.62
942202	AE2-232 E O1	86.02
942381	AE2-251 C	33.17
942382	AE2-251 E	84.87
942941	AE2-314 C	4.25
942942	AE2-314 E	2.83
943521	AF1-023	1.56
943561	AF1-027	0.3
943732	AF1-041 E	0.22
944332	AF1-101 E O2	56.58
944611	AF1-126 C O1	10.36
944612	AF1-126 E O1	41.43
945571	AF1-222 C	33.77
945572	AF1-222 E	89.03

Bus #	Bus	MW Impact
945951	AF1-260	0.31
945981	AF1-263	0.14
999905	MARINGEN 2	0.36
999906	PVILLEG 2	0.16
BLUEG	BLUEG	0.57
CALDERWOOD	CALDERWOOD	0.16
CATAWBA	CATAWBA	0.11
CHEOAH	CHEOAH	0.16
COFFEEN	COFFEEN	0.17
DUCKCREEK	DUCKCREEK	0.38
EDWARDS	EDWARDS	0.11
FARMERCITY	FARMERCITY	0.02
G-007A	G-007A	15.14
GIBSON	GIBSON	0.18
MADISON	MADISON	0.01
NEWTON	NEWTON	0.35
NY	NY	0.57
O-066	O-066	6.01
PRAIRIE	PRAIRIE	0.84
TILTON	TILTON	0.21
TRIMBLE	TRIMBLE	0.18

14.13 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
150259	206297	28MANITOU	JCP&L	206319	28WHITINGS	JCP&L	1	JC-P7-1-JCC-230-12	tower	817.0	163.49	174.79	DC	92.37

Bus #	Bus	MW Impact
206325	28O C GEN	121.21
206360	28O CRK C1	2.56
206361	28O CRK C2	1.72
227842	MARINGEN	0.08
227927	V4-067C	0.02
227928	V4-067E	0.24
228014	PVILLEG	0.03
228100	BLE DIES	0.98
228712	V2-041E	0.19
228729	W2-030 C	0.07
228731	V3-036	0.81
228732	V1-021 C	0.03
902092	W1-130E	0.42
902432	W2-030 E	0.86
913341	Y1-077	54.52
923292	AB1-138 C	0.25
923293	AB1-138 E	0.41
923532	AB1-169AC	41.04
924531	AB2-102 C	17.81
924532	AB2-102 E	0.4
924701	AB2-122 C	0.11
924702	AB2-122 E	0.18
930001	AB1-001 C	0.16
930002	AB1-001 E	0.26
933962	AD1-019 E	1.11
938421	AE1-061 C	0.37
938422	AE1-061 E	0.37
938781	AE1-104 C O1	14.81
938782	AE1-104 E O1	37.88
939121	AE1-142 C O1	3.89
939122	AE1-142 E O1	5.6
939501	AE1-179 C O1	2.3
939502	AE1-179 E O1	1.62
940001	AE1-240 C O1	1.91
940002	AE1-240 E O1	1.36
940161	AE2-000 C O1	123.64
940162	AE2-000 E O1	316.34
940361	AE2-020 C	17.09
940362	AE2-020 E	80.03
940371	AE2-021 C	17.09
940372	AE2-021 E	80.03

Bus #	Bus	MW Impact
940381	AE2-022 C	9.97
940382	AE2-022 E	46.69
940391	AE2-023 C	9.56
940392	AE2-023 E	44.74
941001	AE2-091 C O1	1.44
941002	AE2-091 E O1	0.75
941931	AE2-205 C O1	3.71
941932	AE2-205 E O1	2.47
942101	AE2-222 C O1	12.6
942102	AE2-222 E O1	31.66
942201	AE2-232 C O1	60.6
942202	AE2-232 E O1	155.07
942381	AE2-251 C	54.15
942382	AE2-251 E	138.56
942941	AE2-314 C	6.94
942942	AE2-314 E	4.63
943732	AF1-041 E	0.36
944131	AF1-081 C O2	7.81
944132	AF1-081 E O2	5.2
944332	AF1-101 E O2	92.37
944613	AF1-126 BAT	16.02
945731	AF1-238 C O2	4.04
945732	AF1-238 E O2	6.06
945741	AF1-239 C	0.81
945742	AF1-239 E	1.21
999905	MARINGEN 2	0.58
999906	PVILLEG 2	0.25
BLUEG	BLUEG	0.04
CALDERWOOD	CALDERWOOD	0.0
CBM-S2	CBM-S2	0.03
CHEOAH	CHEOAH	0.0
COFFEEN	COFFEEN	0.01
CPL	CPL	0.01
DUCKCREEK	DUCKCREEK	0.03
EDWARDS	EDWARDS	0.01
FARMERCITY	FARMERCITY	0.0
G-007	G-007	3.01
GIBSON	GIBSON	0.01
MADISON	MADISON	0.01
NEWTON	NEWTON	0.02
NY	NY	0.48
O-066	O-066	8.6
PRAIRIE	PRAIRIE	0.05
TILTON	TILTON	0.01
TRIMBLE	TRIMBLE	0.01

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ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC DC	MW IMPACT
150262	206318	28VANHISVL	JCP&L	206294	28LARRABEE	JCP&L	1	JC-P7-1-JCC-230-12	tower	869.0	144.95	154.79	DC	85.71

Bus #	Bus	MW Impact
206280	28LAKEHURS	0.4
206325	28O C GEN	88.77
206360	28O CRK C1	1.87
206361	28O CRK C2	1.26
207149	28UPF_X1-085	0.05
207150	28HAN_X4-015	0.09
207157	28PEM_W1-119	0.16
207158	28PEM_W1-120	0.16
207160	28EGP_W2-019	0.1
207164	28NHV_W2-082	0.29
207171	28DIX_Z2-102	0.23
207207	28JCB_W1-129	0.08
207208	28JCB_W4-025	0.12
207400	28AA1-060 E	4.38
218660	EHAMPSOLAR C	0.02
218661	EHAMPSOLAR E	0.22
219273	CLEANLIGHT E	0.19
219287	REEVES ST C	0.08
219288	REEVES ST E	0.99
219292	REEVESSO E	0.07
219582	COXSCOSP1_E	0.01
219614	COXSCOSP2_E	0.01
219628	LUMB23SP1_C	0.0
219652	LUMB23SP1_E	0.03
219653	LUMB23SP2_C	0.0
219656	LUMB23SP2_E	0.03
219686	LUMSOLAR_N C	0.03
219687	LUMSOLAR_N E	0.3
219689	LUMSOLAR_S E	0.22
227842	MARINGEN	0.07
227927	V4-067C	0.02
227928	V4-067E	0.23
228014	PVILLEG	0.03
228100	BLE DIES	0.98
228712	V2-041E	0.23
228729	W2-030 C	0.07
228731	V3-036	0.77
901982	W1-119 E	1.84
901992	W1-120E	1.84
902082	W1-129E	0.99
902092	W1-130E	0.54

Bus #	Bus	MW Impact
902322	W2-019 E	1.18
902432	W2-030 E	0.82
902691	W2-056 C	0.07
902692	W2-056 E	0.12
902952	W2-082 E OP1	3.39
905252	W4-025 E	1.41
907272	X1-085 E	0.59
912102	X4-015 E	1.0
913341	Y1-077	54.76
917612	Z2-102 E	2.71
919663	AA2-048 BAT	0.98
921744	AA2-049 BAT	0.44
923292	AB1-138 C	0.72
923293	AB1-138 E	1.21
923463	AB1-163 E	0.58
923532	AB1-169AC	52.06
924531	AB2-102 C	20.69
924532	AB2-102 E	0.46
924701	AB2-122 C	0.1
924702	AB2-122 E	0.17
930001	AB1-001 C	0.14
930002	AB1-001 E	0.23
932361	AC2-050 C O1	0.41
932362	AC2-050 E O1	0.67
933962	AD1-019 E	1.06
938421	AE1-061 C	0.47
938422	AE1-061 E	0.47
938781	AE1-104 C O1	14.87
938782	AE1-104 E O1	38.05
939121	AE1-142 C O1	3.3
939122	AE1-142 E O1	4.75
939501	AE1-179 C O1	3.01
939502	AE1-179 E O1	2.12
940001	AE1-240 C O1	2.49
940002	AE1-240 E O1	1.78
940161	AE2-000 C O1	90.55
940162	AE2-000 E O1	231.68
940361	AE2-020 C	15.86
940362	AE2-020 E	74.26
940371	AE2-021 C	15.86
940372	AE2-021 E	74.26
940381	AE2-022 C	9.25
940382	AE2-022 E	43.32
940391	AE2-023 C	9.6
940392	AE2-023 E	44.94
941931	AE2-205 C O1	4.3
941932	AE2-205 E O1	2.87
942101	AE2-222 C O1	11.99
942102	AE2-222 E O1	30.12
942201	AE2-232 C O1	44.38
942202	AE2-232 E O1	113.57
942381	AE2-251 C	50.25

Bus #	Bus	MW Impact
942382	AE2-251 E	128.57
942941	AE2-314 C	6.44
942942	AE2-314 E	4.29
943561	AF1-027	0.49
943732	AF1-041 E	0.34
944131	AF1-081 C O2	9.06
944132	AF1-081 E O2	6.04
944332	AF1-101 E O2	85.71
944611	AF1-126 C O1	20.13
944612	AF1-126 E O1	80.53
945731	AF1-238 C O2	5.24
945732	AF1-238 E O2	7.86
945741	AF1-239 C	1.05
945742	AF1-239 E	1.57
999905	MARINGEN 2	0.56
999906	PVILLEG 2	0.24
CBM-S1	CBM-S1	0.21
CBM-S2	CBM-S2	0.43
CBM-W2	CBM-W2	0.14
CPL	CPL	0.06
EDWARDS	EDWARDS	0.0
G-007	G-007	9.34
LGEE	LGEE	0.0
MADISON	MADISON	0.02
MEC	MEC	0.01
NY	NY	1.32
O-066	O-066	24.25
TVA	TVA	0.04

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ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC DC	MW IMPACT
150290	206319	28WHITINGS	JCP&L	206720	28MANCHSTR	JCP&L	1	JC-P7-1-JCC-230-12	tower	869.0	141.27	151.78	DC	91.26

Bus #	Bus	MW Impact
206280	28LAKEHURS	0.59
206325	28O C GEN	119.73
206360	28O CRK C1	2.53
206361	28O CRK C2	1.7
227842	MARINGEN	0.08
227927	V4-067C	0.02
227928	V4-067E	0.24
228014	PVILLEG	0.03
228100	BLE DIES	0.96
228712	V2-041E	0.19
228729	W2-030 C	0.07
228731	V3-036	0.8
228732	V1-021 C	0.03
901982	W1-119 E	0.53
901992	W1-120E	0.53
902092	W1-130E	0.42
902432	W2-030 E	0.85
913341	Y1-077	53.87
917612	Z2-102 E	0.77
923292	AB1-138 C	1.09
923293	AB1-138 E	1.81
923463	AB1-163 E	0.55
923532	AB1-169AC	40.56
924531	AB2-102 C	17.6
924532	AB2-102 E	0.39
924701	AB2-122 C	0.1
924702	AB2-122 E	0.18
930001	AB1-001 C	0.16
930002	AB1-001 E	0.26
933962	AD1-019 E	1.1
938421	AE1-061 C	0.37
938422	AE1-061 E	0.37
938781	AE1-104 C O1	14.63
938782	AE1-104 E O1	37.43
939121	AE1-142 C O1	4.52
939122	AE1-142 E O1	6.5
939501	AE1-179 C O1	2.27
939502	AE1-179 E O1	1.6
940001	AE1-240 C O1	1.89
940002	AE1-240 E O1	1.35
940161	AE2-000 C O1	122.13

Bus #	Bus	MW Impact
940162	AE2-000 E O1	312.48
940361	AE2-020 C	16.89
940362	AE2-020 E	79.07
940371	AE2-021 C	16.89
940372	AE2-021 E	79.07
940381	AE2-022 C	9.85
940382	AE2-022 E	46.12
940391	AE2-023 C	9.44
940392	AE2-023 E	44.21
941931	AE2-205 C O1	3.66
941932	AE2-205 E O1	2.44
942101	AE2-222 C O1	12.45
942102	AE2-222 E O1	31.28
942201	AE2-232 C O1	59.86
942202	AE2-232 E O1	153.18
942381	AE2-251 C	53.5
942382	AE2-251 E	136.89
942941	AE2-314 C	6.85
942942	AE2-314 E	4.57
943732	AF1-041 E	0.35
944131	AF1-081 C O2	7.71
944132	AF1-081 E O2	5.14
944332	AF1-101 E O2	91.26
945731	AF1-238 C O2	3.99
945732	AF1-238 E O2	5.99
945741	AF1-239 C	0.8
945742	AF1-239 E	1.2
999905	MARINGEN 2	0.58
999906	PVILLEG 2	0.25
BLUEG	BLUEG	0.04
CALDERWOOD	CALDERWOOD	0.01
CBM-S2	CBM-S2	0.01
CHEOAH	CHEOAH	0.01
COFFEEN	COFFEEN	0.01
CPL	CPL	0.01
DUCKCREEK	DUCKCREEK	0.03
EDWARDS	EDWARDS	0.01
FARMERCITY	FARMERCITY	0.0
G-007	G-007	2.98
GIBSON	GIBSON	0.01
MADISON	MADISON	0.01
NEWTON	NEWTON	0.03
NY	NY	0.47
O-066	O-066	8.55
PRAIRIE	PRAIRIE	0.06
TILTON	TILTON	0.02
TRIMBLE	TRIMBLE	0.01

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ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC DC	MW IMPACT
149156	206323	28LAKEWOOD	JCP&L	206294	28LARRABEE	JCP&L	1	JC-P2-3-JCC-230-7A	breaker	869.0	163.73	174.51	DC	93.74

Bus #	Bus	MW Impact
206280	28LAKEHURS	0.65
206306	28LKWD G1	8.46
206308	28LKWD G2	8.46
206312	28LKWD G3	6.23
206325	28O C GEN	118.18
206360	28O CRK C1	2.49
206361	28O CRK C2	1.68
206370	LKWD CT3	145.4
227842	MARINGEN	0.08
227927	V4-067C	0.02
227928	V4-067E	0.25
228014	PVILLEG	0.03
228100	BLE DIES	1.01
228729	W2-030 C	0.07
228731	V3-036	0.82
901982	W1-119 E	0.68
901992	W1-120E	0.68
902432	W2-030 E	0.88
913341	Y1-077	56.16
917612	Z2-102 E	1.0
923292	AB1-138 C	1.19
923293	AB1-138 E	1.99
923463	AB1-163 E	0.69
923791	AB2-014	0.82
924701	AB2-122 C	0.11
924702	AB2-122 E	0.18
930001	AB1-001 C	0.16
930002	AB1-001 E	0.26
933962	AD1-019 E	1.14
934351	AD1-059	1.51
938781	AE1-104 C O1	15.25
938782	AE1-104 E O1	39.02
939121	AE1-142 C O1	4.46
939122	AE1-142 E O1	6.41
940161	AE2-000 C O1	120.54
940162	AE2-000 E O1	308.43
940361	AE2-020 C	17.35
940362	AE2-020 E	81.22
940371	AE2-021 C	17.35
940372	AE2-021 E	81.22
940381	AE2-022 C	10.12

Bus #	Bus	MW Impact
940382	AE2-022 E	47.38
940391	AE2-023 C	9.84
940392	AE2-023 E	46.09
942101	AE2-222 C O1	12.85
942102	AE2-222 E O1	32.28
942201	AE2-232 C O1	59.09
942202	AE2-232 E O1	151.19
942381	AE2-251 C	54.95
942382	AE2-251 E	140.61
942941	AE2-314 C	7.04
942942	AE2-314 E	4.69
943732	AF1-041 E	0.36
944332	AF1-101 E O2	93.74
999905	MARINGEN 2	0.6
999906	PVILLEG 2	0.26
BLUEG	BLUEG	0.28
CALDERWOOD	CALDERWOOD	0.07
CATAWBA	CATAWBA	0.04
CHEOAH	CHEOAH	0.07
COFFEEN	COFFEEN	0.08
DUCKCREEK	DUCKCREEK	0.19
EDWARDS	EDWARDS	0.06
FARMERCITY	FARMERCITY	0.01
G-007	G-007	4.74
GIBSON	GIBSON	0.09
MADISON	MADISON	0.01
NEWTON	NEWTON	0.17
NY	NY	0.78
O-066	O-066	13.59
PRAIRIE	PRAIRIE	0.41
TILTON	TILTON	0.1
TRIMBLE	TRIMBLE	0.09

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ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC DC	MW IMPACT
149161	206323	28LAKEWOOD	JCP&L	206294	28LARRABEE	JCP&L	2	JC-P2-3-JCC-230-15J	breaker	817.0	164.7	169.91	DC	92.94

Bus #	Bus	MW Impact
206306	28LKWD G1	8.44
206308	28LKWD G2	8.44
206312	28LKWD G3	6.21
206325	28O C GEN	117.82
206360	28O CRK C1	2.49
206366	28LKWD CT1	17.02
206367	28LKWD CT2	17.02
206370	LKWD CT3	145.04
227928	V4-067E	0.25
228100	BLE DIES	0.99
228731	V3-036	0.81
901982	W1-119 E	0.68
901992	W1-120E	0.68
902432	W2-030 E	0.87
913341	Y1-077	55.54
917612	Z2-102 E	1.0
923292	AB1-138 C	1.2
923293	AB1-138 E	2.0
923463	AB1-163 E	0.73
923791	AB2-014	0.82
924701	AB2-122 C	0.11
924702	AB2-122 E	0.18
930001	AB1-001 C	0.16
930002	AB1-001 E	0.26
933962	AD1-019 E	1.13
934351	AD1-059	1.51
938781	AE1-104 C O1	15.09
938782	AE1-104 E O1	38.6
939121	AE1-142 C O1	4.45
939122	AE1-142 E O1	6.4
940161	AE2-000 C O1	120.18
940162	AE2-000 E O1	307.5
940361	AE2-020 C	17.2
940362	AE2-020 E	80.52
940371	AE2-021 C	17.2
940372	AE2-021 E	80.52
940381	AE2-022 C	10.03
940382	AE2-022 E	46.97
940391	AE2-023 C	9.74
940392	AE2-023 E	45.58
942101	AE2-222 C O1	12.73

Bus #	Bus	MW Impact
942102	AE2-222 E O1	31.98
942201	AE2-232 C O1	58.91
942202	AE2-232 E O1	150.73
942381	AE2-251 C	54.48
942382	AE2-251 E	139.41
942941	AE2-314 C	6.98
942942	AE2-314 E	4.65
943732	AF1-041 E	0.36
944332	AF1-101 E O2	92.94
999905	MARINGEN 2	0.59
999906	PVILLEG 2	0.25
BLUEG	BLUEG	0.51
CALDERWOOD	CALDERWOOD	0.14
CATAWBA	CATAWBA	0.09
CHEOAH	CHEOAH	0.14
COFFEEN	COFFEEN	0.15
DUCKCREEK	DUCKCREEK	0.34
EDWARDS	EDWARDS	0.1
FARMERCITY	FARMERCITY	0.02
G-007	G-007	4.87
GIBSON	GIBSON	0.16
MADISON	MADISON	0.01
NEWTON	NEWTON	0.31
NY	NY	0.85
O-066	O-066	14.47
PRAIRIE	PRAIRIE	0.75
TILTON	TILTON	0.19
TRIMBLE	TRIMBLE	0.16

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ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC DC	MW IMPACT
150293	206720	28MANCHSTR	JCP&L	206318	28VANHISVL	JCP&L	1	JC-P7-1-JCC-230-12	tower	869.0	139.71	150.21	DC	91.26

Bus #	Bus	MW Impact
206280	28LAKEHURS	0.59
206325	28O C GEN	119.73
206360	28O CRK C1	2.53
206361	28O CRK C2	1.7
227842	MARINGEN	0.08
227927	V4-067C	0.02
227928	V4-067E	0.24
228014	PVILLEG	0.03
228100	BLE DIES	0.96
228712	V2-041E	0.19
228729	W2-030 C	0.07
228731	V3-036	0.8
228732	V1-021 C	0.03
901982	W1-119 E	0.53
901992	W1-120E	0.53
902092	W1-130E	0.42
902432	W2-030 E	0.85
913341	Y1-077	53.87
917612	Z2-102 E	0.77
923292	AB1-138 C	1.09
923293	AB1-138 E	1.81
923463	AB1-163 E	0.55
923532	AB1-169AC	40.56
924531	AB2-102 C	17.6
924532	AB2-102 E	0.39
924701	AB2-122 C	0.1
924702	AB2-122 E	0.18
930001	AB1-001 C	0.16
930002	AB1-001 E	0.26
933962	AD1-019 E	1.1
938421	AE1-061 C	0.37
938422	AE1-061 E	0.37
938781	AE1-104 C O1	14.63
938782	AE1-104 E O1	37.43
939121	AE1-142 C O1	4.52
939122	AE1-142 E O1	6.5
939501	AE1-179 C O1	2.27
939502	AE1-179 E O1	1.6
940001	AE1-240 C O1	1.89
940002	AE1-240 E O1	1.35
940161	AE2-000 C O1	122.13

Bus #	Bus	MW Impact
940162	AE2-000 E O1	312.48
940361	AE2-020 C	16.89
940362	AE2-020 E	79.07
940371	AE2-021 C	16.89
940372	AE2-021 E	79.07
940381	AE2-022 C	9.85
940382	AE2-022 E	46.12
940391	AE2-023 C	9.44
940392	AE2-023 E	44.21
941931	AE2-205 C O1	3.66
941932	AE2-205 E O1	2.44
942101	AE2-222 C O1	12.45
942102	AE2-222 E O1	31.28
942201	AE2-232 C O1	59.86
942202	AE2-232 E O1	153.18
942381	AE2-251 C	53.5
942382	AE2-251 E	136.89
942941	AE2-314 C	6.85
942942	AE2-314 E	4.57
943732	AF1-041 E	0.35
944131	AF1-081 C O2	7.71
944132	AF1-081 E O2	5.14
944332	AF1-101 E O2	91.26
945731	AF1-238 C O2	3.99
945732	AF1-238 E O2	5.99
945741	AF1-239 C	0.8
945742	AF1-239 E	1.2
999905	MARINGEN 2	0.58
999906	PVILLEG 2	0.25
BLUEG	BLUEG	0.04
CALDERWOOD	CALDERWOOD	0.01
CBM-S2	CBM-S2	0.01
CHEOAH	CHEOAH	0.01
COFFEEN	COFFEEN	0.01
CPL	CPL	0.01
DUCKCREEK	DUCKCREEK	0.03
EDWARDS	EDWARDS	0.01
FARMERCITY	FARMERCITY	0.0
G-007	G-007	2.98
GIBSON	GIBSON	0.01
MADISON	MADISON	0.01
NEWTON	NEWTON	0.03
NY	NY	0.47
O-066	O-066	8.55
PRAIRIE	PRAIRIE	0.06
TILTON	TILTON	0.02
TRIMBLE	TRIMBLE	0.01

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ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC DC	MW IMPACT
633339	219100	NEWFRDM	PSE&G	219704	HILLTOP_3	PSE&G	1	PS_P7-1_V2274+P2242_LT	tower	740.0	142.09	145.54	DC	60.67

Bus #	Bus	MW Impact
200062	SALEM G3	3.1
219259	KINSLEYDEP E	0.31
219385	DEPTFDSP1_E	0.0
219390	DEPTFDSP2_E	0.0
219394	DEPTFDSP3_E	0.01
219416	DEPTFDSP4_E	0.0
219664	THOROFSP1_E	0.02
219666	THOROFSP2_E	0.02
219684	THOSOLAR E	0.09
219727	Z1-082 BAT	0.26
227881	GRENWCHG	0.18
227928	V4-067E	0.17
228100	BLE DIES	0.84
228261	V4-054E	0.67
228334	MANNMILG	0.9
228357	V2-046E	1.39
228702	WEST CT	0.38
228712	V2-041E	0.26
228717	S121	0.92
228720	V2-035C	0.01
228721	V2-035E	0.14
228728	W1-130C	0.06
228731	V3-036	0.58
228733	AB1-119 E	0.09
902092	W1-130E	0.68
902432	W2-030 E	0.63
913341	Y1-077	47.06
923153	AB1-116 E	0.1
923532	AB1-169AC	65.15
924051	AB2-049 C	0.5
924052	AB2-049 E	0.82
924531	AB2-102 C	23.24
924532	AB2-102 E	0.52
924701	AB2-122 C	0.07
924702	AB2-122 E	0.13
930001	AB1-001 C	0.09
930002	AB1-001 E	0.14
933962	AD1-019 E	0.8
936491	AD2-064 C	0.07
936492	AD2-064 E	0.09
936501	AD2-065 C	0.13
936502	AD2-065 E	0.17

Bus #	Bus	MW Impact
937011	AD2-135 C	0.09
937012	AD2-135 E	0.15
938421	AE1-061 C	0.59
938422	AE1-061 E	0.59
938431	AE1-062 C	1.21
938432	AE1-062 E	1.21
938781	AE1-104 C O1	12.78
938782	AE1-104 E O1	32.7
938871	AE1-115 C	1.04
938872	AE1-115 E	1.04
939301	AE1-161 C	2.44
939302	AE1-161 E	3.66
939501	AE1-179 C O1	3.8
939502	AE1-179 E O1	2.68
939821	AE1-218 C O1	0.1
939822	AE1-218 E O1	0.15
939831	AE1-219 C O1	0.23
939832	AE1-219 E O1	0.33
939931	AE1-229 C O1	9.88
939932	AE1-229 E O1	6.69
940001	AE1-240 C O1	3.14
940002	AE1-240 E O1	2.24
940361	AE2-020 C	11.23
940362	AE2-020 E	52.56
940371	AE2-021 C	11.23
940372	AE2-021 E	52.56
940381	AE2-022 C	6.55
940382	AE2-022 E	30.66
940391	AE2-023 C	8.25
940392	AE2-023 E	38.62
940781	AE2-065 C	0.07
940782	AE2-065 E	0.11
941001	AE2-091 C O1	2.49
941002	AE2-091 E O1	1.3
941931	AE2-205 C O1	4.83
941932	AE2-205 E O1	3.22
942101	AE2-222 C O1	8.97
942102	AE2-222 E O1	22.54
942381	AE2-251 C	35.56
942382	AE2-251 E	91.0
942571	AE2-272	0.09
942941	AE2-314 C	4.56
942942	AE2-314 E	3.04
943071	AE2-334 C	3.68
943072	AE2-334 E	1.96
943081	AE2-335 C O1	5.22
943082	AE2-335 E O1	2.33
943732	AF1-041 E	0.25
944131	AF1-081 C O2	10.07
944132	AF1-081 E O2	6.72
944332	AF1-101 E O2	60.67
944951	AF1-160 C	1.21

Bus #	Bus	MW Impact
944952	AF1-160 E	1.27
945431	AF1-208 C O2	2.87
945432	AF1-208 E O2	1.91
945731	AF1-238 C O2	6.59
945732	AF1-238 E O2	9.88
945741	AF1-239 C	1.32
945742	AF1-239 E	1.98
945971	AF1-262	0.1
999905	MARINGEN 2	0.42
999906	PVILLEG 2	0.18
BLUEG	BLUEG	0.18
CALDERWOOD	CALDERWOOD	0.04
CATAWBA	CATAWBA	0.02
CHEOAH	CHEOAH	0.04
COFFEEN	COFFEEN	0.06
DUCKCREEK	DUCKCREEK	0.12
EDWARDS	EDWARDS	0.04
FARMERCITY	FARMERCITY	0.01
G-007	G-007	0.13
GIBSON	GIBSON	0.06
MADISON	MADISON	0.01
NEWTON	NEWTON	0.11
NY	NY	0.38
O-066	O-066	5.53
PRAIRIE	PRAIRIE	0.26
TILTON	TILTON	0.07
TRIMBLE	TRIMBLE	0.06

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ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC DC	MW IMPACT
632718	219108	CUTHBERT	PSE&G	219125	CAMDEN	PSE&G	1	PS_P2-3_CAMD_5-6_LT	breaker	771.0	120.15	123.35	DC	53.93

Bus #	Bus	MW Impact
219124	CAMDEN_STG	2.74
219126	CAMDEN_CTG	3.37
219128	GLOUCSTR_26	1.39
219229	EAGLEPT_G3	1.72
219230	EAGLEPT_G1	3.24
219231	EAGLEPT_G2	3.24
219235	EAGLEPT_ST2	1.17
219240	MANTUACREK E	0.6
219258	KINSLEYDEP C	0.07
219259	KINSLEYDEP E	0.86
219340	CUTHBSP1_C	0.0
219344	CUTHBSP1_E	0.06
219345	CUTHBSP2_C	0.0
219347	CUTHBSP2_E	0.05
219350	CUTHBSP3_C	0.0
219351	CUTHBSP3_E	0.05
219357	CUTHBSP4_C	0.0
219379	CUTHBSP4_E	0.04
219384	DEPTFDSP1_C	0.0
219385	DEPTFDSP1_E	0.01
219388	DEPTFDSP2_C	0.0
219390	DEPTFDSP2_E	0.01
219393	DEPTFDSP3_C	0.0
219394	DEPTFDSP3_E	0.03
219408	DEPTFDSP4_C	0.0
219416	DEPTFDSP4_E	0.01
219623	KINSLEYBEA C	0.05
219624	KINSLEYBEA E	0.64
219662	THOROFSP1_C	0.0
219664	THOROFSP1_E	0.04
219665	THOROFSP2_C	0.0
219666	THOROFSP2_E	0.04
219683	THOSOLAR C	0.02
219684	THOSOLAR E	0.23
219706	BEAVBRSP1_C	0.0
219707	BEAVBRSP1_E	0.04
219708	BEAVBRSP2_C	0.0
219709	BEAVBRSP2_E	0.04
219718	GLOUCSP1_C	0.01
219719	GLOUCSP1_E	0.09
219726	BAT.STORG E	0.15

Bus #	Bus	MW Impact
219765	PARADISE E	0.96
219766	PARADISE C	0.08
227881	GRENWCHG	0.32
227928	V4-067E	0.16
228100	BLE DIES	0.84
228261	V4-054E	0.84
228334	MANNMILG	1.34
228357	V2-046E	2.05
228400	MICK 1CT	1.3
228423	Q-090 2	22.36
228471	VALERO1	0.44
228472	VALERO2	0.29
228473	VALERO3	0.29
228484	VALERO4	0.26
228712	V2-041E	0.29
228721	V2-035E	0.18
228731	V3-036	0.55
228733	AB1-119 E	0.08
902092	W1-130E	0.75
902432	W2-030 E	0.6
910862	OWENSCORIN E	0.52
913341	Y1-077	46.68
917471	Z2-083	2.26
923153	AB1-116 E	0.1
923532	AB1-169AC	72.2
924051	AB2-049 C	0.46
924052	AB2-049 E	0.75
924531	AB2-102 C	25.01
924532	AB2-102 E	0.56
924701	AB2-122 C	0.07
924702	AB2-122 E	0.12
925391	AC1-010 C	0.66
925392	AC1-010 E	1.14
930001	AB1-001 C	0.08
930002	AB1-001 E	0.13
933962	AD1-019 E	0.76
936491	AD2-064 C	0.06
936492	AD2-064 E	0.08
936501	AD2-065 C	0.11
936502	AD2-065 E	0.15
937011	AD2-135 C	0.07
937012	AD2-135 E	0.12
938421	AE1-061 C	0.66
938422	AE1-061 E	0.66
938431	AE1-062 C	1.0
938432	AE1-062 E	1.0
938781	AE1-104 C O1	12.68
938782	AE1-104 E O1	32.44
938871	AE1-115 C	1.61
938872	AE1-115 E	1.61
939301	AE1-161 C	2.79
939302	AE1-161 E	4.19

Bus #	Bus	MW Impact
939501	AE1-179 C O1	4.41
939502	AE1-179 E O1	3.12
939821	AE1-218 C O1	0.11
939822	AE1-218 E O1	0.17
939831	AE1-219 C O1	0.25
939832	AE1-219 E O1	0.36
939931	AE1-229 C O1	13.22
939932	AE1-229 E O1	8.96
940001	AE1-240 C O1	3.67
940002	AE1-240 E O1	2.62
940361	AE2-020 C	9.98
940362	AE2-020 E	46.72
940371	AE2-021 C	9.98
940372	AE2-021 E	46.72
940381	AE2-022 C	5.82
940382	AE2-022 E	27.25
940391	AE2-023 C	8.18
940392	AE2-023 E	38.31
940771	AE2-064 C	0.23
940772	AE2-064 E	0.31
940781	AE2-065 C	0.19
940782	AE2-065 E	0.3
941001	AE2-091 C O1	3.0
941002	AE2-091 E O1	1.57
941931	AE2-205 C O1	5.2
941932	AE2-205 E O1	3.47
942101	AE2-222 C O1	8.53
942102	AE2-222 E O1	21.42
942381	AE2-251 C	31.61
942382	AE2-251 E	80.89
942571	AE2-272	0.13
942941	AE2-314 C	4.05
942942	AE2-314 E	2.7
943071	AE2-334 C	4.0
943072	AE2-334 E	2.13
943081	AE2-335 C O1	5.92
943082	AE2-335 E O1	2.64
943732	AF1-041 E	0.24
944131	AF1-081 C O2	10.87
944132	AF1-081 E O2	7.25
944332	AF1-101 E O2	53.92
944951	AF1-160 C	1.0
944952	AF1-160 E	1.05
945431	AF1-208 C O2	3.95
945432	AF1-208 E O2	2.63
945731	AF1-238 C O2	7.35
945732	AF1-238 E O2	11.03
945741	AF1-239 C	1.47
945742	AF1-239 E	2.21
945971	AF1-262	0.13
945991	AF1-264	0.22
999905	MARINGEN 2	0.4

Bus #	Bus	MW Impact
999906	PVILLEG 2	0.17
BLUEG	BLUEG	0.5
CALDERWOOD	CALDERWOOD	0.13
CATAWBA	CATAWBA	0.09
CHEOAH	CHEOAH	0.13
COFFEEN	COFFEEN	0.15
DUCKCREEK	DUCKCREEK	0.34
EDWARDS	EDWARDS	0.1
FARMERCITY	FARMERCITY	0.02
G-007	G-007	0.31
GIBSON	GIBSON	0.16
MADISON	MADISON	0.01
NEWTON	NEWTON	0.31
NY	NY	0.47
O-066	O-066	6.7
PRAIRIE	PRAIRIE	0.74
TILTON	TILTON	0.18
TRIMBLE	TRIMBLE	0.16

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ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC DC	MW IMPACT
632693	219110	GLOUCSTR	PSE&G	219125	CAMDEN	PSE&G	1	PS_P2-3_CUTB_1-4_LT	breaker	771.0	128.18	131.3	DC	52.52

Bus #	Bus	MW Impact
219124	CAMDEN_STG	2.96
219126	CAMDEN_CTG	3.63
219128	GLOUCSTR_26	1.5
219229	EAGLEPT_G3	1.85
219230	EAGLEPT_G1	3.48
219231	EAGLEPT_G2	3.48
219235	EAGLEPT_ST2	1.26
219240	MANTUACREK E	0.65
219258	KINSLEYDEP C	0.08
219259	KINSLEYDEP E	0.92
219384	DEPTFDSP1_C	0.0
219385	DEPTFDSP1_E	0.01
219388	DEPTFDSP2_C	0.0
219390	DEPTFDSP2_E	0.01
219393	DEPTFDSP3_C	0.0
219394	DEPTFDSP3_E	0.03
219408	DEPTFDSP4_C	0.0
219416	DEPTFDSP4_E	0.01
219623	KINSLEYBEA C	0.06
219624	KINSLEYBEA E	0.69
219662	THOROFSP1_C	0.0
219664	THOROFSP1_E	0.04
219665	THOROFSP2_C	0.0
219666	THOROFSP2_E	0.04
219683	THOSOLAR C	0.02
219684	THOSOLAR E	0.24
219706	BEAVBRSP1_C	0.0
219707	BEAVBRSP1_E	0.05
219708	BEAVBRSP2_C	0.0
219709	BEAVBRSP2_E	0.05
219718	GLOUCSP1_C	0.01
219719	GLOUCSP1_E	0.1
219726	BAT.STORG E	0.16
219765	PARADISE E	1.04
219766	PARADISE C	0.09
227881	GRENWCHG	0.34
227928	V4-067E	0.15
228100	BLE DIES	0.83
228261	V4-054E	0.86
228334	MANNMILG	1.39
228357	V2-046E	2.12

Bus #	Bus	MW Impact
228400	MICK 1CT	1.37
228423	Q-090 2	23.82
228471	VALERO1	0.47
228472	VALERO2	0.31
228473	VALERO3	0.31
228484	VALERO4	0.27
228712	V2-041E	0.29
228721	V2-035E	0.18
228731	V3-036	0.54
228733	AB1-119 E	0.08
902092	W1-130E	0.76
902432	W2-030 E	0.59
910862	OWENSCORIN E	0.57
913341	Y1-077	46.33
917471	Z2-083	2.41
923153	AB1-116 E	0.1
923532	AB1-169AC	73.03
924051	AB2-049 C	0.44
924052	AB2-049 E	0.72
924531	AB2-102 C	25.17
924532	AB2-102 E	0.56
924701	AB2-122 C	0.07
924702	AB2-122 E	0.11
925391	AC1-010 C	0.71
925392	AC1-010 E	1.23
930001	AB1-001 C	0.08
930002	AB1-001 E	0.13
933962	AD1-019 E	0.75
936491	AD2-064 C	0.06
936492	AD2-064 E	0.08
936501	AD2-065 C	0.1
936502	AD2-065 E	0.14
937011	AD2-135 C	0.07
937012	AD2-135 E	0.11
938421	AE1-061 C	0.67
938422	AE1-061 E	0.67
938431	AE1-062 C	0.91
938432	AE1-062 E	0.91
938781	AE1-104 C O1	12.58
938782	AE1-104 E O1	32.19
938871	AE1-115 C	1.68
938872	AE1-115 E	1.68
939301	AE1-161 C	2.84
939302	AE1-161 E	4.26
939501	AE1-179 C O1	4.48
939502	AE1-179 E O1	3.16
939821	AE1-218 C O1	0.11
939822	AE1-218 E O1	0.17
939831	AE1-219 C O1	0.25
939832	AE1-219 E O1	0.36
939931	AE1-229 C O1	13.63
939932	AE1-229 E O1	9.23

Bus #	Bus	MW Impact
940001	AE1-240 C O1	3.72
940002	AE1-240 E O1	2.66
940361	AE2-020 C	9.72
940362	AE2-020 E	45.51
940371	AE2-021 C	9.72
940372	AE2-021 E	45.51
940381	AE2-022 C	5.67
940382	AE2-022 E	26.54
940391	AE2-023 C	8.12
940392	AE2-023 E	38.02
940771	AE2-064 C	0.25
940772	AE2-064 E	0.33
940781	AE2-065 C	0.21
940782	AE2-065 E	0.33
941001	AE2-091 C O1	3.05
941002	AE2-091 E O1	1.59
941931	AE2-205 C O1	5.24
941932	AE2-205 E O1	3.49
942101	AE2-222 C O1	8.39
942102	AE2-222 E O1	21.07
942381	AE2-251 C	30.79
942382	AE2-251 E	78.78
942571	AE2-272	0.13
942941	AE2-314 C	3.94
942942	AE2-314 E	2.63
943071	AE2-334 C	4.02
943072	AE2-334 E	2.14
943081	AE2-335 C O1	6.02
943082	AE2-335 E O1	2.68
943732	AF1-041 E	0.23
944131	AF1-081 C O2	10.94
944132	AF1-081 E O2	7.29
944332	AF1-101 E O2	52.52
944951	AF1-160 C	0.91
944952	AF1-160 E	0.95
945431	AF1-208 C O2	4.07
945432	AF1-208 E O2	2.72
945731	AF1-238 C O2	7.43
945732	AF1-238 E O2	11.14
945741	AF1-239 C	1.49
945742	AF1-239 E	2.23
945971	AF1-262	0.13
945991	AF1-264	0.25
999905	MARINGEN 2	0.39
999906	PVILLEG 2	0.17
BLUEG	BLUEG	0.51
CALDERWOOD	CALDERWOOD	0.14
CATAWBA	CATAWBA	0.09
CHEOAH	CHEOAH	0.14
COFFEEN	COFFEEN	0.15
DUCKCREEK	DUCKCREEK	0.34
EDWARDS	EDWARDS	0.1

Bus #	Bus	MW Impact
FARMERCITY	FARMERCITY	0.02
G-007	G-007	0.72
GIBSON	GIBSON	0.16
MADISON	MADISON	0.01
NEWTON	NEWTON	0.31
NY	NY	0.55
O-066	O-066	8.07
PRAIRIE	PRAIRIE	0.75
TILTON	TILTON	0.19
TRIMBLE	TRIMBLE	0.16

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ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC DC	MW IMPACT
1577706	219125	CAMDEN	PSE&G	214206	RICHRE29	PECO	1	PECO_P4_CHICH045/* \$ DELCO \$ CHICH045 \$ STBK	breaker	1336.0	142.15	145.91	DC	110.18

Bus #	Bus	MW Impact
218661	EHAMPSOLAR E	0.4
219124	CAMDEN_STG	3.56
219126	CAMDEN_CTG	4.37
219128	GLOUCSTR_26	1.81
219229	EAGLEPT_G3	2.29
219230	EAGLEPT_G1	4.32
219231	EAGLEPT_G2	4.32
219235	EAGLEPT_ST2	1.56
219236	SOUTHERNHQ C	0.02
219237	SOUTHERNHQ E	0.19
219240	MANTUACREK E	0.78
219241	CAMDEN1	0.27
219242	CAMDEN2	0.03
219258	KINSLEYDEP C	0.1
219259	KINSLEYDEP E	1.15
219273	CLEANLIGHT E	0.44
219288	REEVES ST E	1.52
219292	REEVESSO E	0.14
219305	NAMERICA E	0.76
219340	CUTHBSP1_C	0.01
219344	CUTHBSP1_E	0.07
219345	CUTHBSP2_C	0.01
219347	CUTHBSP2_E	0.07
219349	LDSOLAR E	0.66
219350	CUTHBSP3_C	0.01
219351	CUTHBSP3_E	0.07
219357	CUTHBSP4_C	0.0
219379	CUTHBSP4_E	0.05
219384	DEPTFDSP1_C	0.0
219385	DEPTFDSP1_E	0.02
219388	DEPTFDSP2_C	0.0
219390	DEPTFDSP2_E	0.02
219393	DEPTFDSP3_C	0.0
219394	DEPTFDSP3_E	0.04
219408	DEPTFDSP4_C	0.0
219416	DEPTFDSP4_E	0.02
219566	BURLINSP1_E	0.09
219574	CAMDENSP1_C	0.03
219575	CAMDENSP1_E	0.37
219582	COXSCOSP1_E	0.02
219608	WPEMNERT E	0.76

Bus #	Bus	MW Impact
219611	FLORENCE E	2.17
219614	COXSCOSP2_E	0.02
219619	MILLCREEK E	0.52
219623	KINSLEYBEA C	0.07
219624	KINSLEYBEA E	0.87
219647	COOPERSOLA E	0.15
219652	LUMB23SP1_E	0.05
219656	LUMB23SP2_E	0.05
219662	THOROFSP1_C	0.01
219664	THOROFSP1_E	0.06
219665	THOROFSP2_C	0.01
219666	THOROFSP2_E	0.06
219683	THOSOLAR C	0.03
219684	THOSOLAR E	0.32
219687	LUMSOLAR_N E	0.47
219689	LUMSOLAR_S E	0.46
219706	BEAVBRSP1_C	0.01
219707	BEAVBRSP1_E	0.06
219708	BEAVBRSP2_C	0.01
219709	BEAVBRSP2_E	0.06
219710	CINNAMSP1_C	0.0
219711	CINNAMSP1_E	0.03
219712	CINNAMSP2_C	0.0
219713	CINNAMSP2_E	0.02
219714	CINNAMSP3_C	0.0
219715	CINNAMSP3_E	0.03
219716	CINNAMSP4_C	0.0
219717	CINNAMSP4_E	0.03
219718	GLOUCSP1_C	0.01
219719	GLOUCSP1_E	0.11
219726	BAT.STORG E	0.38
219765	PARADISE E	1.25
219766	PARADISE C	0.1
227881	GRENWCHG	0.5
227928	V4-067E	0.32
228100	BLE DIES	1.62
228261	V4-054E	1.46
228334	MANNMILG	2.19
228357	V2-046E	3.37
228400	MICK 1CT	1.98
228423	Q-090 2	32.97
228471	VALERO1	0.68
228472	VALERO2	0.45
228473	VALERO3	0.45
228484	VALERO4	0.4
228712	V2-041E	0.53
228721	V2-035E	0.31
228731	V3-036	1.09
228733	AB1-119 E	0.17
902092	W1-130E	1.34
902432	W2-030 E	1.19
910862	OWENSCORIN E	1.11

Bus #	Bus	MW Impact
913341	Y1-077	90.25
917471	Z2-083	3.34
919901	AB1-000 1	1.06
919911	AB1-000 2	1.06
919921	AB1-000 3	1.06
923153	AB1-116 E	0.19
923532	AB1-169AC	129.29
924051	AB2-049 C	0.92
924052	AB2-049 E	1.5
924531	AB2-102 C	46.48
924532	AB2-102 E	1.03
924701	AB2-122 C	0.14
924702	AB2-122 E	0.23
925391	AC1-010 C	0.86
925392	AC1-010 E	1.49
925441	AC1-016 C	0.58
925442	AC1-016 E	0.95
925451	AC1-017 C	0.34
925452	AC1-017 E	0.55
925561	AC1-030 C	0.04
925562	AC1-030 E	0.5
930001	AB1-001 C	0.17
930002	AB1-001 E	0.27
930242	AB1-063 E	0.15
932361	AC2-050 C O1	0.86
932362	AC2-050 E O1	1.41
933962	AD1-019 E	1.5
934661	AD1-097 1	1.72
934671	AD1-097 2	1.72
934681	AD1-097 3	1.72
934691	AD1-097 4	1.02
936211	AD2-027 C	0.22
936212	AD2-027 E	2.55
936321	AD2-042 C	0.29
936322	AD2-042 E	3.37
936491	AD2-064 C	0.13
936492	AD2-064 E	0.17
936501	AD2-065 C	0.25
936502	AD2-065 E	0.35
937011	AD2-135 C	0.14
937012	AD2-135 E	0.24
938421	AE1-061 C	1.18
938422	AE1-061 E	1.18
938431	AE1-062 C	2.33
938432	AE1-062 E	2.33
938781	AE1-104 C O1	24.51
938782	AE1-104 E O1	62.71
938871	AE1-115 C	2.61
938872	AE1-115 E	2.61
939301	AE1-161 C	4.9
939302	AE1-161 E	7.35
939501	AE1-179 C O1	7.91

Bus #	Bus	MW Impact
939502	AE1-179 E O1	5.58
939821	AE1-218 C O1	0.2
939822	AE1-218 E O1	0.3
939831	AE1-219 C O1	0.46
939832	AE1-219 E O1	0.66
939931	AE1-229 C O1	22.26
939932	AE1-229 E O1	15.08
940001	AE1-240 C O1	6.56
940002	AE1-240 E O1	4.68
940361	AE2-020 C	20.39
940362	AE2-020 E	95.46
940371	AE2-021 C	20.39
940372	AE2-021 E	95.46
940381	AE2-022 C	11.89
940382	AE2-022 E	55.69
940391	AE2-023 C	15.82
940392	AE2-023 E	74.07
940771	AE2-064 C	0.31
940772	AE2-064 E	0.42
940781	AE2-065 C	0.26
940782	AE2-065 E	0.41
941001	AE2-091 C O1	5.3
941002	AE2-091 E O1	2.77
941931	AE2-205 C O1	9.67
941932	AE2-205 E O1	6.45
942101	AE2-222 C O1	16.9
942102	AE2-222 E O1	42.47
942381	AE2-251 C	64.59
942382	AE2-251 E	165.27
942571	AE2-272	0.21
942941	AE2-314 C	8.27
942942	AE2-314 E	5.52
943071	AE2-334 C	7.2
943072	AE2-334 E	3.84
943081	AE2-335 C O1	10.36
943082	AE2-335 E O1	4.62
943732	AF1-041 E	0.47
944131	AF1-081 C O2	20.16
944132	AF1-081 E O2	13.44
944332	AF1-101 E O2	110.18
944951	AF1-160 C	2.33
944952	AF1-160 E	2.45
945431	AF1-208 C O2	6.66
945432	AF1-208 E O2	4.44
945731	AF1-238 C O2	13.37
945732	AF1-238 E O2	20.05
945741	AF1-239 C	2.67
945742	AF1-239 E	4.01
945961	AF1-261	0.16
945971	AF1-262	0.22
945991	AF1-264	0.48
999905	MARINGEN 2	0.79

Bus #	Bus	MW Impact
999906	PVILLEG 2	0.34
BLUEG	BLUEG	1.8
CALDERWOOD	CALDERWOOD	0.51
CATAWBA	CATAWBA	0.35
CHEOAH	CHEOAH	0.51
COFFEEN	COFFEEN	0.55
DUCKCREEK	DUCKCREEK	1.19
EDWARDS	EDWARDS	0.36
FARMERCITY	FARMERCITY	0.06
G-007A	G-007A	9.45
GIBSON	GIBSON	0.57
MADISON	MADISON	0.01
NEWTON	NEWTON	1.11
PRAIRIE	PRAIRIE	2.67
TILTON	TILTON	0.65
TRIMBLE	TRIMBLE	0.58
VFT	VFT	14.81

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ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC DC	MW IMPACT
633370	219702	HILLTOP_1	PSE&G	219101	BEAVERBK_1	PSE&G	1	PS_P7-1_V2274+P2242_LT	tower	740.0	126.24	129.49	DC	57.05

Bus #	Bus	MW Impact
200062	SALEM G3	2.92
219259	KINSLEYDEP E	0.29
219385	DEPTFDSP1_E	0.0
219390	DEPTFDSP2_E	0.0
219394	DEPTFDSP3_E	0.01
219416	DEPTFDSP4_E	0.0
219664	THOROFSP1_E	0.02
219666	THOROFSP2_E	0.02
219684	THOSOLAR E	0.09
227881	GRENWCHG	0.17
227928	V4-067E	0.16
228100	BLE DIES	0.79
228261	V4-054E	0.63
228334	MANNMILG	0.84
228357	V2-046E	1.31
228702	WEST CT	0.36
228712	V2-041E	0.25
228717	S121	0.86
228720	V2-035C	0.01
228721	V2-035E	0.14
228728	W1-130C	0.05
228731	V3-036	0.54
228733	AB1-119 E	0.09
902092	W1-130E	0.64
902432	W2-030 E	0.59
913341	Y1-077	44.26
923153	AB1-116 E	0.1
923532	AB1-169AC	61.25
924051	AB2-049 C	0.47
924052	AB2-049 E	0.77
924531	AB2-102 C	21.86
924532	AB2-102 E	0.49
924701	AB2-122 C	0.07
924702	AB2-122 E	0.12
930001	AB1-001 C	0.08
930002	AB1-001 E	0.13
933962	AD1-019 E	0.75
936491	AD2-064 C	0.06
936492	AD2-064 E	0.09
936501	AD2-065 C	0.12
936502	AD2-065 E	0.16
937011	AD2-135 C	0.08

Bus #	Bus	MW Impact
937012	AD2-135 E	0.14
938421	AE1-061 C	0.56
938422	AE1-061 E	0.56
938431	AE1-062 C	1.14
938432	AE1-062 E	1.14
938781	AE1-104 C O1	12.02
938782	AE1-104 E O1	30.76
938871	AE1-115 C	0.97
938872	AE1-115 E	0.97
939301	AE1-161 C	2.29
939302	AE1-161 E	3.44
939501	AE1-179 C O1	3.57
939502	AE1-179 E O1	2.52
939821	AE1-218 C O1	0.1
939822	AE1-218 E O1	0.15
939831	AE1-219 C O1	0.22
939832	AE1-219 E O1	0.31
939931	AE1-229 C O1	9.29
939932	AE1-229 E O1	6.29
940001	AE1-240 C O1	2.95
940002	AE1-240 E O1	2.11
940361	AE2-020 C	10.56
940362	AE2-020 E	49.43
940371	AE2-021 C	10.56
940372	AE2-021 E	49.43
940381	AE2-022 C	6.16
940382	AE2-022 E	28.84
940391	AE2-023 C	7.76
940392	AE2-023 E	36.32
940781	AE2-065 C	0.07
940782	AE2-065 E	0.1
941001	AE2-091 C O1	2.34
941002	AE2-091 E O1	1.22
941931	AE2-205 C O1	4.55
941932	AE2-205 E O1	3.03
942101	AE2-222 C O1	8.44
942102	AE2-222 E O1	21.2
942381	AE2-251 C	33.45
942382	AE2-251 E	85.58
942571	AE2-272	0.08
942941	AE2-314 C	4.29
942942	AE2-314 E	2.86
943071	AE2-334 C	3.46
943072	AE2-334 E	1.84
943081	AE2-335 C O1	4.91
943082	AE2-335 E O1	2.19
943732	AF1-041 E	0.24
944131	AF1-081 C O2	9.47
944132	AF1-081 E O2	6.32
944332	AF1-101 E O2	57.05
944951	AF1-160 C	1.14
944952	AF1-160 E	1.19

Bus #	Bus	MW Impact
945431	AF1-208 C O2	2.7
945432	AF1-208 E O2	1.8
945731	AF1-238 C O2	6.19
945732	AF1-238 E O2	9.29
945741	AF1-239 C	1.24
945742	AF1-239 E	1.86
945971	AF1-262	0.1
999905	MARINGEN 2	0.4
999906	PVILLEG 2	0.17
BLUEG	BLUEG	0.18
CALDERWOOD	CALDERWOOD	0.04
CATAWBA	CATAWBA	0.02
CHEOAH	CHEOAH	0.04
COFFEEN	COFFEEN	0.05
DUCKCREEK	DUCKCREEK	0.12
EDWARDS	EDWARDS	0.04
FARMERCITY	FARMERCITY	0.01
G-007	G-007	0.12
GIBSON	GIBSON	0.06
MADISON	MADISON	0.01
NEWTON	NEWTON	0.11
NY	NY	0.35
O-066	O-066	5.15
PRAIRIE	PRAIRIE	0.25
TILTON	TILTON	0.06
TRIMBLE	TRIMBLE	0.06

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ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC DC	MW IMPACT
632795	219754	CUTHBERT_3	PSE&G	219125	CAMDEN	PSE&G	1	PS_P2-3_CAMD_5-6_LT	breaker	792.0	106.33	109.16	DC	49.01

Bus #	Bus	MW Impact
219124	CAMDEN_STG	2.49
219126	CAMDEN_CTG	3.06
219128	GLOUCSTR_26	1.26
219229	EAGLEPT_G3	1.56
219230	EAGLEPT_G1	2.94
219231	EAGLEPT_G2	2.94
219235	EAGLEPT_ST2	1.06
219240	MANTUACREK E	0.55
219258	KINSLEYDEP C	0.07
219259	KINSLEYDEP E	0.78
219340	CUTHBSP1_C	0.0
219344	CUTHBSP1_E	0.05
219345	CUTHBSP2_C	0.0
219347	CUTHBSP2_E	0.05
219350	CUTHBSP3_C	0.0
219351	CUTHBSP3_E	0.05
219357	CUTHBSP4_C	0.0
219379	CUTHBSP4_E	0.04
219384	DEPTFDSP1_C	0.0
219385	DEPTFDSP1_E	0.01
219388	DEPTFDSP2_C	0.0
219390	DEPTFDSP2_E	0.01
219393	DEPTFDSP3_C	0.0
219394	DEPTFDSP3_E	0.03
219408	DEPTFDSP4_C	0.0
219416	DEPTFDSP4_E	0.01
219623	KINSLEYBEA C	0.05
219624	KINSLEYBEA E	0.58
219662	THOROFSP1_C	0.0
219664	THOROFSP1_E	0.04
219665	THOROFSP2_C	0.0
219666	THOROFSP2_E	0.04
219683	THOSOLAR C	0.02
219684	THOSOLAR E	0.21
219706	BEAVBRSP1_C	0.0
219707	BEAVBRSP1_E	0.04
219708	BEAVBRSP2_C	0.0
219709	BEAVBRSP2_E	0.04
219718	GLOUCSP1_C	0.01
219719	GLOUCSP1_E	0.08
219726	BAT.STORG E	0.13

Bus #	Bus	MW Impact
219765	PARADISE E	0.88
219766	PARADISE C	0.07
227881	GRENWCHG	0.29
227928	V4-067E	0.14
228100	BLE DIES	0.76
228261	V4-054E	0.76
228334	MANNMILG	1.21
228357	V2-046E	1.86
228400	MICK 1CT	1.18
228423	Q-090 2	20.32
228471	VALERO1	0.4
228472	VALERO2	0.26
228473	VALERO3	0.26
228484	VALERO4	0.24
228712	V2-041E	0.26
228721	V2-035E	0.16
228731	V3-036	0.5
228733	AB1-119 E	0.07
902092	W1-130E	0.68
902432	W2-030 E	0.55
910862	OWENSCORIN E	0.47
913341	Y1-077	42.42
917471	Z2-083	2.06
923153	AB1-116 E	0.09
923532	AB1-169AC	65.62
924051	AB2-049 C	0.42
924052	AB2-049 E	0.68
924531	AB2-102 C	22.73
924532	AB2-102 E	0.51
924701	AB2-122 C	0.06
924702	AB2-122 E	0.11
925391	AC1-010 C	0.6
925392	AC1-010 E	1.04
930001	AB1-001 C	0.07
930002	AB1-001 E	0.12
933962	AD1-019 E	0.69
936491	AD2-064 C	0.05
936492	AD2-064 E	0.07
936501	AD2-065 C	0.1
936502	AD2-065 E	0.14
937011	AD2-135 C	0.06
937012	AD2-135 E	0.11
938421	AE1-061 C	0.6
938422	AE1-061 E	0.6
938431	AE1-062 C	0.91
938432	AE1-062 E	0.91
938781	AE1-104 C O1	11.52
938782	AE1-104 E O1	29.48
938871	AE1-115 C	1.46
938872	AE1-115 E	1.46
939301	AE1-161 C	2.54
939302	AE1-161 E	3.81

Bus #	Bus	MW Impact
939501	AE1-179 C O1	4.01
939502	AE1-179 E O1	2.83
939821	AE1-218 C O1	0.1
939822	AE1-218 E O1	0.15
939831	AE1-219 C O1	0.23
939832	AE1-219 E O1	0.33
939931	AE1-229 C O1	12.01
939932	AE1-229 E O1	8.14
940001	AE1-240 C O1	3.33
940002	AE1-240 E O1	2.38
940361	AE2-020 C	9.07
940362	AE2-020 E	42.46
940371	AE2-021 C	9.07
940372	AE2-021 E	42.46
940381	AE2-022 C	5.29
940382	AE2-022 E	24.77
940391	AE2-023 C	7.44
940392	AE2-023 E	34.81
940771	AE2-064 C	0.21
940772	AE2-064 E	0.28
940781	AE2-065 C	0.18
940782	AE2-065 E	0.28
941001	AE2-091 C O1	2.73
941002	AE2-091 E O1	1.42
941931	AE2-205 C O1	4.73
941932	AE2-205 E O1	3.15
942101	AE2-222 C O1	7.75
942102	AE2-222 E O1	19.46
942381	AE2-251 C	28.73
942382	AE2-251 E	73.51
942571	AE2-272	0.12
942941	AE2-314 C	3.68
942942	AE2-314 E	2.45
943071	AE2-334 C	3.63
943072	AE2-334 E	1.94
943081	AE2-335 C O1	5.38
943082	AE2-335 E O1	2.4
943732	AF1-041 E	0.22
944131	AF1-081 C O2	9.88
944132	AF1-081 E O2	6.59
944332	AF1-101 E O2	49.01
944951	AF1-160 C	0.91
944952	AF1-160 E	0.96
945431	AF1-208 C O2	3.59
945432	AF1-208 E O2	2.39
945731	AF1-238 C O2	6.68
945732	AF1-238 E O2	10.03
945741	AF1-239 C	1.34
945742	AF1-239 E	2.01
945971	AF1-262	0.12
945991	AF1-264	0.2
999905	MARINGEN 2	0.36

Bus #	Bus	MW Impact
999906	PVILLEG 2	0.15
BLUEG	BLUEG	0.46
CALDERWOOD	CALDERWOOD	0.12
CATAWBA	CATAWBA	0.08
CHEOAH	CHEOAH	0.12
COFFEEN	COFFEEN	0.14
DUCKCREEK	DUCKCREEK	0.31
EDWARDS	EDWARDS	0.09
FARMERCITY	FARMERCITY	0.01
G-007	G-007	0.28
GIBSON	GIBSON	0.14
MADISON	MADISON	0.01
NEWTON	NEWTON	0.28
NY	NY	0.43
O-066	O-066	6.09
PRAIRIE	PRAIRIE	0.67
TILTON	TILTON	0.17
TRIMBLE	TRIMBLE	0.15

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ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC DC	MW IMPACT
633419	219756	BEAVERBK_2	PSE&G	219110	GLOUCSTR	PSE&G	1	PS_P7-1_V2274+P2242_LT	tower	740.0	114.81	118.05	DC	57.05

Bus #	Bus	MW Impact
219259	KINSLEYDEP E	0.29
219385	DEPTFDSP1_E	0.0
219390	DEPTFDSP2_E	0.0
219394	DEPTFDSP3_E	0.01
219416	DEPTFDSP4_E	0.0
219623	KINSLEYBEA C	0.13
219624	KINSLEYBEA E	1.62
219664	THOROFSP1_E	0.02
219666	THOROFSP2_E	0.02
219684	THOSOLAR E	0.09
219706	BEAVBRSP1_C	0.01
219707	BEAVBRSP1_E	0.11
219708	BEAVBRSP2_C	0.01
219709	BEAVBRSP2_E	0.11
227881	GRENWCHG	0.17
227928	V4-067E	0.16
228100	BLE DIES	0.79
228261	V4-054E	0.63
228334	MANNMILG	0.84
228357	V2-046E	1.31
228702	WEST CT	0.36
228712	V2-041E	0.25
228717	S121	0.86
228720	V2-035C	0.01
228721	V2-035E	0.14
228728	W1-130C	0.05
228731	V3-036	0.54
228733	AB1-119 E	0.09
902092	W1-130E	0.64
902432	W2-030 E	0.59
913341	Y1-077	44.26
923153	AB1-116 E	0.1
923532	AB1-169AC	61.25
924051	AB2-049 C	0.47
924052	AB2-049 E	0.77
924531	AB2-102 C	21.86
924532	AB2-102 E	0.49
924701	AB2-122 C	0.07
924702	AB2-122 E	0.12
930001	AB1-001 C	0.08
930002	AB1-001 E	0.13
933962	AD1-019 E	0.75

Bus #	Bus	MW Impact
936491	AD2-064 C	0.06
936492	AD2-064 E	0.09
936501	AD2-065 C	0.12
936502	AD2-065 E	0.16
937011	AD2-135 C	0.08
937012	AD2-135 E	0.14
938421	AE1-061 C	0.56
938422	AE1-061 E	0.56
938431	AE1-062 C	1.14
938432	AE1-062 E	1.14
938781	AE1-104 C O1	12.02
938782	AE1-104 E O1	30.75
938871	AE1-115 C	0.97
938872	AE1-115 E	0.97
939301	AE1-161 C	2.29
939302	AE1-161 E	3.44
939501	AE1-179 C O1	3.57
939502	AE1-179 E O1	2.52
939821	AE1-218 C O1	0.1
939822	AE1-218 E O1	0.15
939831	AE1-219 C O1	0.22
939832	AE1-219 E O1	0.31
939931	AE1-229 C O1	9.29
939932	AE1-229 E O1	6.29
940001	AE1-240 C O1	2.95
940002	AE1-240 E O1	2.11
940361	AE2-020 C	10.56
940362	AE2-020 E	49.43
940371	AE2-021 C	10.56
940372	AE2-021 E	49.43
940381	AE2-022 C	6.16
940382	AE2-022 E	28.83
940391	AE2-023 C	7.76
940392	AE2-023 E	36.32
940771	AE2-064 C	0.58
940772	AE2-064 E	0.79
940781	AE2-065 C	0.07
940782	AE2-065 E	0.1
941001	AE2-091 C O1	2.34
941002	AE2-091 E O1	1.22
941931	AE2-205 C O1	4.55
941932	AE2-205 E O1	3.03
942101	AE2-222 C O1	8.44
942102	AE2-222 E O1	21.2
942381	AE2-251 C	33.44
942382	AE2-251 E	85.57
942571	AE2-272	0.08
942941	AE2-314 C	4.28
942942	AE2-314 E	2.86
943071	AE2-334 C	3.46
943072	AE2-334 E	1.84
943081	AE2-335 C O1	4.91

Bus #	Bus	MW Impact
943082	AE2-335 E O1	2.19
943732	AF1-041 E	0.24
944131	AF1-081 C O2	9.47
944132	AF1-081 E O2	6.31
944332	AF1-101 E O2	57.05
944951	AF1-160 C	1.14
944952	AF1-160 E	1.19
945431	AF1-208 C O2	2.7
945432	AF1-208 E O2	1.8
945731	AF1-238 C O2	6.19
945732	AF1-238 E O2	9.29
945741	AF1-239 C	1.24
945742	AF1-239 E	1.86
945971	AF1-262	0.1
999905	MARINGEN 2	0.4
999906	PVILLEG 2	0.17
BLUEG	BLUEG	0.18
CALDERWOOD	CALDERWOOD	0.04
CATAWBA	CATAWBA	0.02
CHEOAH	CHEOAH	0.04
COFFEEN	COFFEEN	0.05
DUCKCREEK	DUCKCREEK	0.12
EDWARDS	EDWARDS	0.04
FARMERCITY	FARMERCITY	0.01
G-007	G-007	0.12
GIBSON	GIBSON	0.06
MADISON	MADISON	0.01
NEWTON	NEWTON	0.11
NY	NY	0.35
O-066	O-066	5.15
PRAIRIE	PRAIRIE	0.25
TILTON	TILTON	0.06
TRIMBLE	TRIMBLE	0.06

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ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC DC	MW IMPACT
1578618	227900	CARDIFF	AE	219100	NEWFRDM	PSE&G	1	JC-P7-1-JCC-230-13	tower	692.0	293.78	328.96	DC	243.41

Bus #	Bus	MW Impact
206360	28O CRK C1	1.86
206361	28O CRK C2	1.25
227842	MARINGEN	0.18
227927	V4-067C	0.05
227928	V4-067E	0.61
228014	PVILLEG	0.06
228100	BLE DIES	2.3
228202	CUMB CT	1.54
228261	V4-054E	0.68
228712	V2-041E	0.42
228721	V2-035E	0.11
228729	W2-030 C	0.17
228731	V3-036	1.88
228732	V1-021 C	0.07
902092	W1-130E	0.82
902432	W2-030 E	2.05
913341	Y1-077	128.38
923532	AB1-169AC	80.33
924531	AB2-102 C	38.51
924532	AB2-102 E	0.86
924701	AB2-122 C	0.26
924702	AB2-122 E	0.45
930001	AB1-001 C	0.3
930002	AB1-001 E	0.5
933962	AD1-019 E	2.59
938421	AE1-061 C	0.72
938422	AE1-061 E	0.72
938781	AE1-104 C O1	34.87
938782	AE1-104 E O1	89.2
939301	AE1-161 C	1.83
939302	AE1-161 E	2.75
939501	AE1-179 C O1	4.53
939502	AE1-179 E O1	3.19
939931	AE1-229 C O1	7.13
939932	AE1-229 E O1	4.83
940001	AE1-240 C O1	3.77
940002	AE1-240 E O1	2.69
940161	AE2-000 C O1	89.87
940162	AE2-000 E O1	229.96
940361	AE2-020 C	45.04
940362	AE2-020 E	210.9

Bus #	Bus	MW Impact
940371	AE2-021 C	45.04
940372	AE2-021 E	210.9
940381	AE2-022 C	26.28
940382	AE2-022 E	123.02
940391	AE2-023 C	22.5
940392	AE2-023 E	105.36
941001	AE2-091 C O1	2.77
941002	AE2-091 E O1	1.45
941931	AE2-205 C O1	8.01
941932	AE2-205 E O1	5.34
942101	AE2-222 C O1	29.12
942102	AE2-222 E O1	73.15
942201	AE2-232 C O1	44.06
942202	AE2-232 E O1	112.72
942381	AE2-251 C	142.7
942382	AE2-251 E	365.12
942941	AE2-314 C	18.28
942942	AE2-314 E	12.19
943732	AF1-041 E	0.83
944131	AF1-081 C O2	16.86
944132	AF1-081 E O2	11.24
944332	AF1-101 E O2	243.41
945431	AF1-208 C O2	2.43
945432	AF1-208 E O2	1.62
945731	AF1-238 C O2	7.97
945732	AF1-238 E O2	11.96
945741	AF1-239 C	1.59
945742	AF1-239 E	2.39
945971	AF1-262	0.08
999905	MARINGEN 2	1.37
999906	PVILLEG 2	0.58
BLUEG	BLUEG	0.13
CALDERWOOD	CALDERWOOD	0.04
CATAWBA	CATAWBA	0.02
CHEOAH	CHEOAH	0.04
COFFEEN	COFFEEN	0.04
DUCKCREEK	DUCKCREEK	0.09
EDWARDS	EDWARDS	0.03
FARMERCITY	FARMERCITY	0.0
G-007	G-007	0.23
GIBSON	GIBSON	0.04
NEWTON	NEWTON	0.08
NY	NY	0.11
O-066	O-066	1.67
PRAIRIE	PRAIRIE	0.19
TILTON	TILTON	0.05
TRIMBLE	TRIMBLE	0.04

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ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC DC	MW IMPACT
632626	227900	CARDIFF	AE	227955	CEDAR	AE	1	AE_P4-2 AE6	breaker	805.0	189.08	211.46	DC	180.13

Bus #	Bus	MW Impact
227842	MARINGEN	0.12
227927	V4-067C	0.03
227928	V4-067E	0.4
228014	PVILLEG	0.04
228100	BLE DIES	1.6
228202	CUMB CT	1.18
228203	P06	1.26
228261	V4-054E	0.58
228334	MANNMILG	0.53
228357	V2-046E	0.81
228711	V2-041C	0.03
228712	V2-041E	0.32
228721	V2-035E	0.1
228729	W2-030 C	0.12
228731	V3-036	1.21
228732	V1-021 C	0.05
902092	W1-130E	0.66
902432	W2-030 E	1.36
913341	Y1-077	89.65
919663	AA2-048 BAT	0.51
921744	AA2-049 BAT	0.18
923532	AB1-169AC	64.48
924531	AB2-102 C	29.65
924532	AB2-102 E	0.66
924701	AB2-122 C	0.17
924702	AB2-122 E	0.3
930001	AB1-001 C	0.13
930002	AB1-001 E	0.21
933962	AD1-019 E	1.67
938421	AE1-061 C	0.58
938422	AE1-061 E	0.58
938781	AE1-104 C O1	24.35
938782	AE1-104 E O1	62.3
938871	AE1-115 C	0.64
938872	AE1-115 E	0.64
939301	AE1-161 C	1.69
939302	AE1-161 E	2.54
939501	AE1-179 C O1	3.72
939502	AE1-179 E O1	2.62
939931	AE1-229 C O1	6.76
939932	AE1-229 E O1	4.58
940001	AE1-240 C O1	3.09

Bus #	Bus	MW Impact
940002	AE1-240 E O1	2.21
940361	AE2-020 C	33.33
940362	AE2-020 E	156.07
940371	AE2-021 C	33.33
940372	AE2-021 E	156.07
940381	AE2-022 C	19.44
940382	AE2-022 E	91.04
940391	AE2-023 C	15.72
940392	AE2-023 E	73.58
941001	AE2-091 C O1	2.32
941002	AE2-091 E O1	1.21
941931	AE2-205 C O1	6.17
941932	AE2-205 E O1	4.11
942101	AE2-222 C O1	18.63
942102	AE2-222 E O1	46.81
942381	AE2-251 C	105.6
942382	AE2-251 E	270.19
942571	AE2-272	0.05
942941	AE2-314 C	13.53
942942	AE2-314 E	9.02
943081	AE2-335 C O1	2.85
943082	AE2-335 E O1	1.27
943732	AF1-041 E	0.53
944131	AF1-081 C O2	12.89
944132	AF1-081 E O2	8.59
944332	AF1-101 E O2	180.13
945431	AF1-208 C O2	2.19
945432	AF1-208 E O2	1.46
945731	AF1-238 C O2	6.52
945732	AF1-238 E O2	9.78
945741	AF1-239 C	1.3
945742	AF1-239 E	1.96
945971	AF1-262	0.07
999905	MARINGEN 2	0.88
999906	PVILLEG 2	0.37
BLUEG	BLUEG	0.0
CBM-S1	CBM-S1	0.08
CBM-S2	CBM-S2	0.18
CBM-W2	CBM-W2	0.04
COFFEEN	COFFEEN	0.0
CPL	CPL	0.03
DUCKCREEK	DUCKCREEK	0.0
EDWARDS	EDWARDS	0.0
G-007	G-007	3.74
GIBSON	GIBSON	0.0
MADISON	MADISON	0.01
NEWTON	NEWTON	0.0
NY	NY	0.59
O-066	O-066	10.68
TILTON	TILTON	0.0
TRIMBLE	TRIMBLE	0.0
TVA	TVA	0.02

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ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC DC	MW IMPACT
632631	227900	CARDIFF	AE	228002	ORCHARD	AE	1	AE_P4-2 AE6	breaker	805.0	148.49	174.96	DC	213.11

Bus #	Bus	MW Impact
206325	280 C GEN	25.83
206360	280 CRK C1	0.55
206361	280 CRK C2	0.37
206370	LKWD CT3	11.8
227842	MARINGEN	0.14
227927	V4-067C	0.04
227928	V4-067E	0.46
228014	PVILLEG	0.05
228100	BLE DIES	1.45
228729	W2-030 C	0.13
228731	V3-036	1.41
228732	V1-021 C	0.03
902092	W1-130E	0.54
902432	W2-030 E	1.51
913341	Y1-077	80.75
923292	AB1-138 C	0.23
923293	AB1-138 E	0.38
923532	AB1-169AC	52.74
924701	AB2-122 C	0.2
924702	AB2-122 E	0.34
930001	AB1-001 C	0.22
930002	AB1-001 E	0.36
933962	AD1-019 E	1.94
938421	AE1-061 C	0.47
938422	AE1-061 E	0.47
938781	AE1-104 C O1	21.93
938782	AE1-104 E O1	56.11
939121	AE1-142 C O1	0.65
939122	AE1-142 E O1	0.93
940161	AE2-000 C O1	26.35
940162	AE2-000 E O1	67.42
940361	AE2-020 C	39.44
940362	AE2-020 E	184.64
940371	AE2-021 C	39.44
940372	AE2-021 E	184.64
940381	AE2-022 C	23.0
940382	AE2-022 E	107.71
940391	AE2-023 C	14.16
940392	AE2-023 E	66.27
942101	AE2-222 C O1	21.93
942102	AE2-222 E O1	55.1

Bus #	Bus	MW Impact
942201	AE2-232 C O1	12.92
942202	AE2-232 E O1	33.05
942381	AE2-251 C	124.93
942382	AE2-251 E	319.67
942941	AE2-314 C	16.01
942942	AE2-314 E	10.67
943732	AF1-041 E	0.63
944332	AF1-101 E O2	213.11
999905	MARINGEN 2	1.02
999906	PVILLEG 2	0.44
BLUEG	BLUEG	0.05
CALDERWOOD	CALDERWOOD	0.02
CATAWBA	CATAWBA	0.02
CHEOAH	CHEOAH	0.02
COFFEEN	COFFEEN	0.02
DUCKCREEK	DUCKCREEK	0.03
EDWARDS	EDWARDS	0.01
FARMERCITY	FARMERCITY	0.0
G-007A	G-007A	5.4
GIBSON	GIBSON	0.02
NEWTON	NEWTON	0.03
PRAIRIE	PRAIRIE	0.09
TILTON	TILTON	0.02
TRIMBLE	TRIMBLE	0.02
VFT	VFT	6.55

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ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC DC	MW IMPACT
1577717	227902	LEWIS #1	AE	227949	LEWIS #3	AE	1	AE_P4-2 AE46	breaker	478.0	129.84	144.98	DC	72.38

Bus #	Bus	MW Impact
227928	V4-067E	0.14
228100	BLE DIES	1.47
228202	CUMB CT	1.12
228203	P06	1.27
228206	SHRMN CT	0.96
228261	V4-054E	0.33
228711	V2-041C	0.03
228712	V2-041E	0.3
228732	V1-021 C	0.04
902432	W2-030 E	0.45
913341	Y1-077	82.34
924531	AB2-102 C	29.92
924532	AB2-102 E	0.66
924701	AB2-122 C	0.06
924702	AB2-122 E	0.11
938423	AE1-061 BAT	3.11
938781	AE1-104 C O1	22.36
938782	AE1-104 E O1	57.21
939303	AE1-161 BAT	9.67
939501	AE1-179 C O1	2.78
939502	AE1-179 E O1	1.96
940001	AE1-240 C O1	2.3
940002	AE1-240 E O1	1.64
940361	AE2-020 C	13.39
940362	AE2-020 E	62.71
940371	AE2-021 C	13.39
940372	AE2-021 E	62.71
940381	AE2-022 C	7.81
940382	AE2-022 E	36.58
940391	AE2-023 C	14.43
940392	AE2-023 E	67.57
941001	AE2-091 C O1	1.56
941002	AE2-091 E O1	0.81
941931	AE2-205 C O1	6.22
941932	AE2-205 E O1	4.15
942381	AE2-251 C	42.43
942382	AE2-251 E	108.57
942941	AE2-314 C	5.44
942942	AE2-314 E	3.62
944131	AF1-081 C O2	12.19
944132	AF1-081 E O2	8.12
944332	AF1-101 E O2	72.38

Bus #	Bus	MW Impact
945731	AF1-238 C O2	5.19
945732	AF1-238 E O2	7.79
945741	AF1-239 C	1.04
945742	AF1-239 E	1.56
BLUEG	BLUEG	0.03
CALDERWOOD	CALDERWOOD	0.01
CATAWBA	CATAWBA	0.01
CHEOAH	CHEOAH	0.01
COFFEEN	COFFEEN	0.01
DUCKCREEK	DUCKCREEK	0.02
EDWARDS	EDWARDS	0.01
FARMERCITY	FARMERCITY	0.0
G-007A	G-007A	1.46
GIBSON	GIBSON	0.01
NEWTON	NEWTON	0.02
PRAIRIE	PRAIRIE	0.05
TILTON	TILTON	0.01
TRIMBLE	TRIMBLE	0.01
VFT	VFT	1.54

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ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC DC	MW IMPACT
1577780	227913	CARDIFF	AE	227902	LEWIS #1	AE	1	AE_P4-2 AE9	breaker	478.0	108.45	128.5	DC	95.85

Bus #	Bus	MW Impact
938423	AE1-061 BAT	1.4
939303	AE1-161 BAT	4.48
940361	AE2-020 C	17.74
940362	AE2-020 E	83.04
940371	AE2-021 C	17.74
940372	AE2-021 E	83.04
940381	AE2-022 C	10.35
940382	AE2-022 E	48.44
942381	AE2-251 C	56.19
942382	AE2-251 E	143.77
942941	AE2-314 C	7.2
942942	AE2-314 E	4.8
944332	AF1-101 E O2	95.85
945733	AF1-238 BAT	13.04
945743	AF1-239 BAT	2.61
CBM-S1	CBM-S1	0.22
CBM-S2	CBM-S2	0.12
CBM-W1	CBM-W1	0.36
CBM-W2	CBM-W2	0.22
CPL	CPL	0.01
G-007A	G-007A	1.96
LGEE	LGEE	0.02
MEC	MEC	0.04
TVA	TVA	0.04
VFT	VFT	2.52
WEC	WEC	0.01

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ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC DC	MW IMPACT
1578704	227934	CARDIFF2	AE	227945	LEWIS #2	AE	1	AE_P7-1 AE3TOWER	tower	478.0	120.7	139.1	DC	87.95

Bus #	Bus	MW Impact
938423	AE1-061 BAT	1.33
939303	AE1-161 BAT	4.04
940361	AE2-020 C	16.28
940362	AE2-020 E	76.2
940371	AE2-021 C	16.28
940372	AE2-021 E	76.2
940381	AE2-022 C	9.49
940382	AE2-022 E	44.45
942381	AE2-251 C	51.56
942382	AE2-251 E	131.93
942941	AE2-314 C	6.61
942942	AE2-314 E	4.4
944332	AF1-101 E O2	87.95
945733	AF1-238 BAT	9.97
945743	AF1-239 BAT	1.99
CBM-S1	CBM-S1	0.28
CBM-S2	CBM-S2	0.2
CBM-W1	CBM-W1	0.39
CBM-W2	CBM-W2	0.26
CPL	CPL	0.02
G-007	G-007	0.28
LGEE	LGEE	0.02
MEC	MEC	0.05
NY	NY	0.03
O-066	O-066	0.65
TVA	TVA	0.05
WEC	WEC	0.01

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ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC DC	MW IMPACT
1578643	227945	LEWIS #2	AE	227902	LEWIS #1	AE	1	AE_P7-1 AE3TOWER	tower	286.8	160.4	184.67	DC	69.6

Bus #	Bus	MW Impact
938423	AE1-061 BAT	2.15
939303	AE1-161 BAT	6.53
940361	AE2-020 C	12.88
940362	AE2-020 E	60.3
940371	AE2-021 C	12.88
940372	AE2-021 E	60.3
940381	AE2-022 C	7.51
940382	AE2-022 E	35.18
942381	AE2-251 C	40.8
942382	AE2-251 E	104.4
942941	AE2-314 C	5.23
942942	AE2-314 E	3.48
944332	AF1-101 E O2	69.6
CBM-S1	CBM-S1	0.11
CBM-S2	CBM-S2	0.09
CBM-W1	CBM-W1	0.15
CBM-W2	CBM-W2	0.1
CPL	CPL	0.01
G-007	G-007	0.19
LGEE	LGEE	0.01
MEC	MEC	0.02
NY	NY	0.03
O-066	O-066	0.58
TVA	TVA	0.02
WEC	WEC	0.0

14.33 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
1578745	227949	LEWIS #3	AE	227901	DOROTHY	AE	1	JC-P7-1-JCC-230-13	tower	478.0	118.36	130.47	DC	57.89

Bus #	Bus	MW Impact
206360	28O CRK C1	0.48
206361	28O CRK C2	0.32
227842	MARINGEN	0.08
227927	V4-067C	0.02
227928	V4-067E	0.2
228014	PVILLEG	0.03
228100	BLE DIES	1.01
228712	V2-041E	0.14
228729	W2-030 C	0.07
228731	V3-036	0.82
902432	W2-030 E	0.84
913341	Y1-077	56.54
924531	AB2-102 C	13.0
924532	AB2-102 E	0.29
924701	AB2-122 C	0.09
924702	AB2-122 E	0.15
930001	AB1-001 C	0.13
930002	AB1-001 E	0.21
933962	AD1-019 E	1.13
938423	AE1-061 BAT	3.37
938781	AE1-104 C O1	15.36
938782	AE1-104 E O1	39.29
939303	AE1-161 BAT	10.21
940161	AE2-000 C O1	23.01
940162	AE2-000 E O1	58.89
940361	AE2-020 C	10.71
940362	AE2-020 E	50.16
940371	AE2-021 C	10.71
940372	AE2-021 E	50.16
940381	AE2-022 C	6.25
940382	AE2-022 E	29.26
940391	AE2-023 C	9.91
940392	AE2-023 E	46.4
941931	AE2-205 C O1	2.7
941932	AE2-205 E O1	1.8
942101	AE2-222 C O1	12.93
942102	AE2-222 E O1	32.49
942201	AE2-232 C O1	11.28
942202	AE2-232 E O1	28.87
942381	AE2-251 C	33.94
942382	AE2-251 E	86.84

Bus #	Bus	MW Impact
942941	AE2-314 C	4.35
942942	AE2-314 E	2.9
943732	AF1-041 E	0.36
944131	AF1-081 C O2	5.93
944132	AF1-081 E O2	3.95
944332	AF1-101 E O2	57.89
999905	MARINGEN 2	0.59
999906	PVILLEG 2	0.26
BLUEG	BLUEG	0.01
CALDERWOOD	CALDERWOOD	0.0
CATAWBA	CATAWBA	0.0
CHEOAH	CHEOAH	0.0
COFFEEN	COFFEEN	0.0
DUCKCREEK	DUCKCREEK	0.01
EDWARDS	EDWARDS	0.0
FARMERCITY	FARMERCITY	0.0
G-007	G-007	0.01
GIBSON	GIBSON	0.0
NEWTON	NEWTON	0.01
NY	NY	0.02
O-066	O-066	0.22
PRAIRIE	PRAIRIE	0.02
TILTON	TILTON	0.01
TRIMBLE	TRIMBLE	0.0

14.34 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
1577597	227955	CEDAR	AE	206302	28OYSTER C	JCP&L	1	AE_P4-2 AE6	breaker	564.0	266.21	300.18	DC	191.56

Bus #	Bus	MW Impact
227842	MARINGEN	0.15
227927	V4-067C	0.04
227928	V4-067E	0.48
228014	PVILLEG	0.05
228100	BLE DIES	1.92
228202	CUMB CT	1.37
228203	P06	1.45
228261	V4-054E	0.67
228334	MANNMILG	0.6
228357	V2-046E	0.92
228711	V2-041C	0.03
228712	V2-041E	0.37
228721	V2-035E	0.12
228729	W2-030 C	0.14
228731	V3-036	1.57
228732	V1-021 C	0.06
902092	W1-130E	0.79
902432	W2-030 E	1.68
913341	Y1-077	107.2
919663	AA2-048 BAT	0.58
921744	AA2-049 BAT	0.2
923532	AB1-169AC	76.81
924531	AB2-102 C	34.31
924532	AB2-102 E	0.76
924701	AB2-122 C	0.21
924702	AB2-122 E	0.35
930001	AB1-001 C	0.29
930002	AB1-001 E	0.48
933962	AD1-019 E	2.17
938421	AE1-061 C	0.69
938422	AE1-061 E	0.69
938781	AE1-104 C O1	29.12
938782	AE1-104 E O1	74.49
938871	AE1-115 C	0.72
938872	AE1-115 E	0.72
939301	AE1-161 C	2.0
939302	AE1-161 E	3.0
939501	AE1-179 C O1	4.32
939502	AE1-179 E O1	3.05
939931	AE1-229 C O1	7.8
939932	AE1-229 E O1	5.28
940001	AE1-240 C O1	3.59

Bus #	Bus	MW Impact
940002	AE1-240 E O1	2.56
940361	AE2-020 C	35.45
940362	AE2-020 E	165.97
940371	AE2-021 C	35.45
940372	AE2-021 E	165.97
940381	AE2-022 C	20.68
940382	AE2-022 E	96.82
940391	AE2-023 C	18.79
940392	AE2-023 E	87.98
941001	AE2-091 C O1	2.69
941002	AE2-091 E O1	1.4
941931	AE2-205 C O1	7.14
941932	AE2-205 E O1	4.76
942101	AE2-222 C O1	24.49
942102	AE2-222 E O1	61.53
942381	AE2-251 C	112.3
942382	AE2-251 E	287.35
942571	AE2-272	0.06
942941	AE2-314 C	14.39
942942	AE2-314 E	9.59
943081	AE2-335 C O1	3.36
943082	AE2-335 E O1	1.5
943732	AF1-041 E	0.69
944131	AF1-081 C O2	15.02
944132	AF1-081 E O2	10.01
944332	AF1-101 E O2	191.56
945431	AF1-208 C O2	2.52
945432	AF1-208 E O2	1.68
945731	AF1-238 C O2	7.59
945732	AF1-238 E O2	11.38
945741	AF1-239 C	1.52
945742	AF1-239 E	2.28
945971	AF1-262	0.08
999905	MARINGEN 2	1.14
999906	PVILLEG 2	0.49
BLUEG	BLUEG	0.01
CBM-S1	CBM-S1	0.07
CBM-S2	CBM-S2	0.2
CBM-W2	CBM-W2	0.03
COFFEEN	COFFEEN	0.0
CPL	CPL	0.03
DUCKCREEK	DUCKCREEK	0.01
EDWARDS	EDWARDS	0.0
FARMERCITY	FARMERCITY	0.0
G-007	G-007	4.23
GIBSON	GIBSON	0.0
MADISON	MADISON	0.01
NEWTON	NEWTON	0.0
NY	NY	0.66
O-066	O-066	12.07
TILTON	TILTON	0.0
TRIMBLE	TRIMBLE	0.0

Bus #	Bus	MW Impact
TVA	TVA	0.02

14.35 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
1577826	228002	ORCHARD	AE	200063	ORCHARD	PJM	1	AE_P4-2 AE7	breaker	1349.0	105.87	119.73	DC	190.76

Bus #	Bus	MW Impact
206325	280 C GEN	24.71
227881	GRENWCHG	0.25
227928	V4-067E	0.53
228100	BLE DIES	2.84
228202	CUMB CT	3.63
228203	P06	4.19
228206	SHRMN CT	3.27
228261	V4-054E	1.9
228334	MANNMILG	2.03
228357	V2-046E	3.02
228711	V2-041C	0.08
228712	V2-041E	0.97
228721	V2-035E	0.26
228727	W2-039G	2.94
228731	V3-036	1.75
228732	V1-021 C	0.11
902092	W1-130E	1.14
902432	W2-030 E	1.96
913341	Y1-077	158.85
923532	AB1-169AC	111.11
924531	AB2-102 C	99.01
924532	AB2-102 E	2.2
924701	AB2-122 C	0.23
924702	AB2-122 E	0.39
930001	AB1-001 C	0.26
930002	AB1-001 E	0.42
933962	AD1-019 E	2.42
938421	AE1-061 C	1.0
938422	AE1-061 E	1.0
938781	AE1-104 C O1	43.14
938782	AE1-104 E O1	110.38
938871	AE1-115 C	2.73
938872	AE1-115 E	2.73
939301	AE1-161 C	3.38
939302	AE1-161 E	5.08
939501	AE1-179 C O1	11.57
939502	AE1-179 E O1	8.16
939931	AE1-229 C O1	22.21
939932	AE1-229 E O1	15.05
940001	AE1-240 C O1	9.66
940002	AE1-240 E O1	6.9
940161	AE2-000 C O1	25.2

Bus #	Bus	MW Impact
940162	AE2-000 E O1	64.48
940361	AE2-020 C	35.3
940362	AE2-020 E	165.28
940371	AE2-021 C	35.3
940372	AE2-021 E	165.28
940381	AE2-022 C	20.59
940382	AE2-022 E	96.41
940391	AE2-023 C	27.85
940392	AE2-023 E	130.36
941001	AE2-091 C O1	7.36
941002	AE2-091 E O1	3.84
941931	AE2-205 C O1	20.59
941932	AE2-205 E O1	13.73
942101	AE2-222 C O1	26.96
942102	AE2-222 E O1	67.73
942201	AE2-232 C O1	12.35
942202	AE2-232 E O1	31.61
942381	AE2-251 C	111.83
942382	AE2-251 E	286.14
942571	AE2-272	0.19
942941	AE2-314 C	14.33
942942	AE2-314 E	9.55
943071	AE2-334 C	2.96
943072	AE2-334 E	1.58
943081	AE2-335 C O1	5.64
943082	AE2-335 E O1	2.51
943732	AF1-041 E	0.76
944131	AF1-081 C O2	38.88
944132	AF1-081 E O2	25.92
944332	AF1-101 E O2	190.76
945431	AF1-208 C O2	7.85
945432	AF1-208 E O2	5.23
945731	AF1-238 C O2	19.84
945732	AF1-238 E O2	29.76
945741	AF1-239 C	3.97
945742	AF1-239 E	5.95
945971	AF1-262	0.19
999905	MARINGEN 2	1.28
999906	PVILLEG 2	0.53
BLUEG	BLUEG	0.52
CALDERWOOD	CALDERWOOD	0.16
CATAWBA	CATAWBA	0.12
CHEOAH	CHEOAH	0.16
COFFEEN	COFFEEN	0.16
DUCKCREEK	DUCKCREEK	0.34
EDWARDS	EDWARDS	0.1
FARMERCITY	FARMERCITY	0.02
G-007A	G-007A	5.91
GIBSON	GIBSON	0.16
NEWTON	NEWTON	0.32
PRAIRIE	PRAIRIE	0.79
TILTON	TILTON	0.19

Bus #	Bus	MW Impact
TRIMBLE	TRIMBLE	0.17
VFT	VFT	8.42

14.36 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
1577712	228110	BLE	AE	228111	MDLE TP	AE	1	AE_P4-2 AE28	breaker	482.0	138.51	141.85	DC	35.79

Bus #	Bus	MW Impact
227842	MARINGEN	0.06
227928	V4-067E	0.15
228014	PVILLEG	0.02
228100	BLE DIES	3.28
228729	W2-030 C	0.06
228731	V3-036	0.63
902432	W2-030 E	0.66
913341	Y1-077	183.23
924701	AB2-122 C	0.06
924702	AB2-122 E	0.11
930001	AB1-001 C	0.09
930002	AB1-001 E	0.15
933962	AD1-019 E	0.87
938781	AE1-104 C O1	49.76
938782	AE1-104 E O1	127.32
940361	AE2-020 C	6.62
940362	AE2-020 E	31.01
940371	AE2-021 C	6.62
940372	AE2-021 E	31.01
940381	AE2-022 C	3.86
940382	AE2-022 E	18.09
940391	AE2-023 C	32.12
940392	AE2-023 E	150.37
942101	AE2-222 C O1	9.87
942102	AE2-222 E O1	24.78
942381	AE2-251 C	20.98
942382	AE2-251 E	53.68
942941	AE2-314 C	2.69
942942	AE2-314 E	1.79
943732	AF1-041 E	0.27
944332	AF1-101 E O2	35.79
945733	AF1-238 BAT	20.58
945743	AF1-239 BAT	4.12
999905	MARINGEN 2	0.45
999906	PVILLEG 2	0.2
CBM-S1	CBM-S1	0.32
CBM-S2	CBM-S2	0.2
CBM-W1	CBM-W1	0.5
CBM-W2	CBM-W2	0.31
CPL	CPL	0.02
G-007A	G-007A	1.2
LGEE	LGEE	0.02

Bus #	Bus	MW Impact
MEC	MEC	0.06
TVA	TVA	0.05
VFT	VFT	1.7
WEC	WEC	0.01

14.37 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
1577774	228110	BLE	AE	228197	MERION	AE	1	AE_P4-2 AE29	breaker	482.0	125.49	128.44	DC	31.62

Bus #	Bus	MW Impact
227928	V4-067E	0.13
228014	PVILLEG	0.02
228100	BLE DIES	2.91
228731	V3-036	0.55
902432	W2-030 E	0.58
913341	Y1-077	162.56
924701	AB2-122 C	0.06
924702	AB2-122 E	0.1
930001	AB1-001 C	0.08
930002	AB1-001 E	0.13
933962	AD1-019 E	0.77
938781	AE1-104 C O1	44.15
938782	AE1-104 E O1	112.95
940361	AE2-020 C	5.85
940362	AE2-020 E	27.4
940371	AE2-021 C	5.85
940372	AE2-021 E	27.4
940381	AE2-022 C	3.41
940382	AE2-022 E	15.98
940391	AE2-023 C	28.5
940392	AE2-023 E	133.41
942101	AE2-222 C O1	8.71
942102	AE2-222 E O1	21.88
942381	AE2-251 C	18.54
942382	AE2-251 E	47.44
942941	AE2-314 C	2.38
942942	AE2-314 E	1.58
943732	AF1-041 E	0.24
944332	AF1-101 E O2	31.62
945733	AF1-238 BAT	18.19
945743	AF1-239 BAT	3.64
999905	MARINGEN 2	0.4
999906	PVILLEG 2	0.18
CBM-S1	CBM-S1	0.27
CBM-S2	CBM-S2	0.17
CBM-W1	CBM-W1	0.43
CBM-W2	CBM-W2	0.27
CPL	CPL	0.02
G-007A	G-007A	1.06
LGEE	LGEE	0.02
MEC	MEC	0.05
TVA	TVA	0.04

Bus #	Bus	MW Impact
VFT	VFT	1.5
WEC	WEC	0.01

14.38 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
1577633	228111	MDLE TP	AE	228107	CORSON 2	AE	1	AE_P4-2 AE28	breaker	315.0	184.3	189.39	DC	35.64

Bus #	Bus	MW Impact
227842	MARINGEN	0.06
227928	V4-067E	0.15
228014	PVILLEG	0.02
228100	BLE DIES	3.21
228729	W2-030 C	0.06
228731	V3-036	0.63
902432	W2-030 E	0.67
913341	Y1-077	179.33
924701	AB2-122 C	0.06
924702	AB2-122 E	0.11
930001	AB1-001 C	0.09
930002	AB1-001 E	0.15
933962	AD1-019 E	0.87
938781	AE1-104 C O1	48.7
938782	AE1-104 E O1	124.61
940361	AE2-020 C	6.6
940362	AE2-020 E	30.88
940371	AE2-021 C	6.6
940372	AE2-021 E	30.88
940381	AE2-022 C	3.85
940382	AE2-022 E	18.01
940391	AE2-023 C	31.44
940392	AE2-023 E	147.17
942101	AE2-222 C O1	9.84
942102	AE2-222 E O1	24.72
942381	AE2-251 C	20.89
942382	AE2-251 E	53.46
942941	AE2-314 C	2.68
942942	AE2-314 E	1.78
943732	AF1-041 E	0.27
944332	AF1-101 E O2	35.64
945733	AF1-238 BAT	20.65
945743	AF1-239 BAT	4.13
999905	MARINGEN 2	0.45
999906	PVILLEG 2	0.2
CBM-S1	CBM-S1	0.32
CBM-S2	CBM-S2	0.2
CBM-W1	CBM-W1	0.5
CBM-W2	CBM-W2	0.31
CPL	CPL	0.02
G-007A	G-007A	1.2
LGEE	LGEE	0.02

Bus #	Bus	MW Impact
MEC	MEC	0.06
TVA	TVA	0.05
VFT	VFT	1.69
WEC	WEC	0.01

14.39 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
1577827	228197	MERION	AE	228106	CORSON 1	AE	1	AE_P4-2 AE29	breaker	478.0	114.4	117.38	DC	31.62

Bus #	Bus	MW Impact
227928	V4-067E	0.13
228014	PVILLEG	0.02
228100	BLE DIES	2.91
228731	V3-036	0.55
902432	W2-030 E	0.58
913341	Y1-077	162.56
924701	AB2-122 C	0.06
924702	AB2-122 E	0.1
930001	AB1-001 C	0.08
930002	AB1-001 E	0.13
933962	AD1-019 E	0.77
938781	AE1-104 C O1	44.15
938782	AE1-104 E O1	112.95
940361	AE2-020 C	5.85
940362	AE2-020 E	27.4
940371	AE2-021 C	5.85
940372	AE2-021 E	27.4
940381	AE2-022 C	3.41
940382	AE2-022 E	15.98
940391	AE2-023 C	28.5
940392	AE2-023 E	133.41
942101	AE2-222 C O1	8.71
942102	AE2-222 E O1	21.88
942381	AE2-251 C	18.54
942382	AE2-251 E	47.44
942941	AE2-314 C	2.38
942942	AE2-314 E	1.58
943732	AF1-041 E	0.24
944332	AF1-101 E O2	31.62
945733	AF1-238 BAT	18.19
945743	AF1-239 BAT	3.64
999905	MARINGEN 2	0.4
999906	PVILLEG 2	0.18
CBM-S1	CBM-S1	0.27
CBM-S2	CBM-S2	0.17
CBM-W1	CBM-W1	0.43
CBM-W2	CBM-W2	0.27
CPL	CPL	0.02
G-007A	G-007A	1.06
LGEE	LGEE	0.02
MEC	MEC	0.05
TVA	TVA	0.04

Bus #	Bus	MW Impact
VFT	VFT	1.5
WEC	WEC	0.01

14.40 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
1578633	228502	MNOTLA 1	AE	228500	LANDIS	AE	1	JC-P7-1-JCC-230-13	tower	478.0	187.58	199.69	DC	57.88

Bus #	Bus	MW Impact
206360	280 CRK C1	0.48
206361	280 CRK C2	0.32
227842	MARINGEN	0.08
227927	V4-067C	0.02
227928	V4-067E	0.2
228014	PVILLEG	0.03
228100	BLE DIES	1.01
228712	V2-041E	0.14
228728	W1-130C	0.32
228729	W2-030 C	0.07
228731	V3-036	0.82
902092	W1-130E	3.78
902432	W2-030 E	0.84
913341	Y1-077	56.53
923532	AB1-169AC	362.0
924531	AB2-102 C	13.0
924532	AB2-102 E	0.29
924701	AB2-122 C	0.09
924702	AB2-122 E	0.15
930001	AB1-001 C	0.13
930002	AB1-001 E	0.21
933962	AD1-019 E	1.13
938421	AE1-061 C	3.32
938422	AE1-061 E	3.32
938781	AE1-104 C O1	15.35
938782	AE1-104 E O1	39.28
939303	AE1-161 BAT	10.21
940161	AE2-000 C O1	23.01
940162	AE2-000 E O1	58.88
940361	AE2-020 C	10.71
940362	AE2-020 E	50.15
940371	AE2-021 C	10.71
940372	AE2-021 E	50.15
940381	AE2-022 C	6.25
940382	AE2-022 E	29.25
940391	AE2-023 C	9.91
940392	AE2-023 E	46.39
941931	AE2-205 C O1	2.7
941932	AE2-205 E O1	1.8
942101	AE2-222 C O1	12.93
942102	AE2-222 E O1	32.49

Bus #	Bus	MW Impact
942201	AE2-232 C O1	11.28
942202	AE2-232 E O1	28.86
942381	AE2-251 C	33.93
942382	AE2-251 E	86.82
942941	AE2-314 C	4.35
942942	AE2-314 E	2.9
943732	AF1-041 E	0.36
944131	AF1-081 C O2	5.93
944132	AF1-081 E O2	3.95
944332	AF1-101 E O2	57.88
999905	MARINGEN 2	0.59
999906	PVILLEG 2	0.26
BLUEG	BLUEG	0.02
CALDERWOOD	CALDERWOOD	0.0
CATAWBA	CATAWBA	0.0
CHEOAH	CHEOAH	0.0
COFFEEN	COFFEEN	0.01
DUCKCREEK	DUCKCREEK	0.01
EDWARDS	EDWARDS	0.0
FARMERCITY	FARMERCITY	0.0
G-007	G-007	0.01
GIBSON	GIBSON	0.01
NEWTON	NEWTON	0.01
NY	NY	0.02
O-066	O-066	0.24
PRAIRIE	PRAIRIE	0.02
TILTON	TILTON	0.01
TRIMBLE	TRIMBLE	0.01

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ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC DC	MW IMPACT
1578623	228503	MNOTLA 2	AE	228502	MNOTLA 1	AE	1	JC-P7-1-JCC-230-13	tower	311.0	288.29	306.9	DC	57.89

Bus #	Bus	MW Impact
206360	28O CRK C1	0.48
206361	28O CRK C2	0.32
227842	MARINGEN	0.08
227927	V4-067C	0.02
227928	V4-067E	0.2
228014	PVILLEG	0.03
228100	BLE DIES	1.01
228712	V2-041E	0.14
228729	W2-030 C	0.07
228731	V3-036	0.82
902432	W2-030 E	0.84
913341	Y1-077	56.54
923532	AB1-169AC	362.01
924531	AB2-102 C	13.0
924532	AB2-102 E	0.29
924701	AB2-122 C	0.09
924702	AB2-122 E	0.15
930001	AB1-001 C	0.13
930002	AB1-001 E	0.21
933962	AD1-019 E	1.13
938423	AE1-061 BAT	3.37
938781	AE1-104 C O1	15.36
938782	AE1-104 E O1	39.29
939303	AE1-161 BAT	10.21
940161	AE2-000 C O1	23.01
940162	AE2-000 E O1	58.89
940361	AE2-020 C	10.71
940362	AE2-020 E	50.16
940371	AE2-021 C	10.71
940372	AE2-021 E	50.16
940381	AE2-022 C	6.25
940382	AE2-022 E	29.26
940391	AE2-023 C	9.91
940392	AE2-023 E	46.4
941931	AE2-205 C O1	2.7
941932	AE2-205 E O1	1.8
942101	AE2-222 C O1	12.93
942102	AE2-222 E O1	32.49
942201	AE2-232 C O1	11.28
942202	AE2-232 E O1	28.87
942381	AE2-251 C	33.94

Bus #	Bus	MW Impact
942382	AE2-251 E	86.84
942941	AE2-314 C	4.35
942942	AE2-314 E	2.9
943732	AF1-041 E	0.36
944131	AF1-081 C O2	5.93
944132	AF1-081 E O2	3.95
944332	AF1-101 E O2	57.89
999905	MARINGEN 2	0.59
999906	PVILLEG 2	0.26
BLUEG	BLUEG	0.01
CALDERWOOD	CALDERWOOD	0.0
CATAWBA	CATAWBA	0.0
CHEOAH	CHEOAH	0.0
COFFEEN	COFFEEN	0.0
DUCKCREEK	DUCKCREEK	0.01
EDWARDS	EDWARDS	0.0
FARMERCITY	FARMERCITY	0.0
G-007	G-007	0.01
GIBSON	GIBSON	0.0
NEWTON	NEWTON	0.01
NY	NY	0.02
O-066	O-066	0.22
PRAIRIE	PRAIRIE	0.02
TILTON	TILTON	0.01
TRIMBLE	TRIMBLE	0.0

Affected Systems

14.42 Affected Systems

14.42.1 LG&E

LG&E Impacts to be determined during later study phases (as applicable).

14.42.2 MISO

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

14.42.3 TVA

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

14.42.4 Duke Energy Progress

Duke Energy Progress Impacts to be determined during later study phases (as applicable).

14.42.5 NYISO

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

14.43 Contingency Descriptions

Contingency Name	Contingency Definition
JC-P7-1-JCC-230-7A	CONTINGENCY 'JC-P7-1-JCC-230-7A' /* SMITHBURG - LARRABEE 230 LINES DISCONNECT BRANCH FROM BUS 206309 TO BUS 206294 CKT 1 DISCONNECT BRANCH FROM BUS 206309 TO BUS 206294 CKT 2 END
PS_P7-1_V2274+P2242_LT	CONTINGENCY 'PS_P7-1_V2274+P2242_LT' /* EAGLE POINT - GLOUCESTER & DEPTFORD - GLOUCESTER DISCONNECT BUS 219757 /* DEPTFORD SECTION 2 TRIP LINE FROM BUS 219110 TO BUS 219128 CKT 1 CLOSE LINE FROM BUS 219255 TO BUS 219256 CKT Z /* DEPTFORD CLOSE LINE FROM BUS 219180 TO BUS 219181 CKT Z /* DEPTFORD DISCONNECT BUS 219760 /* EAGLE POINT SECTION 4 MOVE 8 MW LOAD FROM BUS 219180 TO BUS 219162 /* INTERSTATION TIE TRANSFER LOAD FROM DEPTFORD TO BEAVERBK T1 MOVE 8 MW LOAD FROM BUS 219181 TO BUS 219163 /* INTERSTATION TIE TRANSFER LOAD FROM DEPTFORD TO BEAVERBK T2 MOVE 8 MW LOAD FROM BUS 219255 TO BUS 219162 /* INTERSTATION TIE TRANSFER LOAD FROM DEPTFORD TO BEAVERBK T1 MOVE 8 MW LOAD FROM BUS 219256 TO BUS 219163 /* INTERSTATION TIE TRANSFER LOAD FROM DEPTFORD TO BEAVERBK T2 END
PS_P2-3_CUTB_3-4_LT	CONTINGENCY 'PS_P2-3_CUTB_3-4_LT' DISCONNECT BUS 219754 /* CUTHBERTH SECTION 3 DISCONNECT BUS 219755 /* BUS SECTION 4 CUTHBERT CLOSE LINE FROM BUS 219177 TO BUS 219178 CKT Z /* CUTHBERT CLOSE LINE FROM BUS 219176 TO BUS 219179 CKT Z /* CUTHBERTH MOVE 8 MW LOAD FROM BUS 219176 TO BUS 219170 /* INTERSTATION TIE TRANSFER LOAD FROM CUTHBERT TO CINN T2 MOVE 8 MW LOAD FROM BUS 219176 TO BUS 219678 /* INTERSTATION TIE TRANSFER LOAD FROM CUTHBERT TO MAPLE SHADE MOVE 8 MW LOAD FROM BUS 219179 TO BUS 219678 /* INTERSTATION TIE TRANSFER LOAD FROM CUTHBERT TO MAPLE SHADE MOVE 8 MW LOAD FROM BUS 219178 TO BUS 219678 /* INTERSTATION TIE TRANSFER LOAD FROM CUTHBERT TO MAPLE SHADE MOVE 8 MW LOAD FROM BUS 219177 TO BUS 219677 /* INTERSTATION TIE TRANSFER LOAD FROM CUTHBERT TO MAPLE SHADE MOVE 8 MW LOAD FROM BUS 219179 TO BUS 219629 /* INTERSTATION TIE TRANSFER LOAD FROM CUTHBERT TO LAWNSIDE END

PS_P2-3_CUTB_1-4_LT	CONTINGENCY 'PS_P2-3_CUTB_1-4_LT' DISCONNECT BUS 219108 /* CUTBERTH SECTION 1 DISCONNECT BUS 219755 /* BUS SECTION 4 CUTHBERT CLOSE LINE FROM BUS 219177 TO BUS 219178 CKT Z /* CUTHBERT CLOSE LINE FROM BUS 219176 TO BUS 219179 CKT Z /* CUTBERTH MOVE 8 MW LOAD FROM BUS 219176 TO BUS 219170 /* INTERSTATION TIE TRANSFER LOAD FROM CUTHBERT TO CINN T2 MOVE 8 MW LOAD FROM BUS 219176 TO BUS 219678 /* INTERSTATION TIE TRANSFER LOAD FROM CUTHBERT TO MAPLE SHADE MOVE 8 MW LOAD FROM BUS 219179 TO BUS 219678 /* INTERSTATION TIE TRANSFER LOAD FROM CUTHBERT TO MAPLE SHADE MOVE 8 MW LOAD FROM BUS 219178 TO BUS 219678 /* INTERSTATION TIE TRANSFER LOAD FROM CUTHBERT TO MAPLE SHADE MOVE 8 MW LOAD FROM BUS 219177 TO BUS 219677 /* INTERSTATION TIE TRANSFER LOAD FROM CUTHBERT TO MAPLE SHADE MOVE 8 MW LOAD FROM BUS 219179 TO BUS 219629 /* INTERSTATION TIE TRANSFER LOAD FROM CUTHBERT TO LAWN SIDE END
PECO_P1-2_5014/* \$ CHESCO \$ 5014 \$ L	CONTINGENCY 'PECO_P1-2_5014/* \$ CHESCO \$ 5014 \$ L' TRIP BRANCH FROM BUS 200065 TO BUS 200051 CKT 1 /* PCHBTM2S 500.00 ROCKSPGS 500.00 \$ CHESCO \$ 5014 \$ L END
AE_P4-2 AE28	CONTINGENCY 'AE_P4-2 AE28' /*ENGLAND TO MERION CITY BREAKER C DISCONNECT BRANCH FROM BUS 228110 TO BUS 228197 CKT 1 /*ENGLAND MERION 138 138 DISCONNECT BRANCH FROM BUS 228110 TO BUS 227905 CKT 1 /*ENGLAND #1 SCULL 138 138 END
AE_P4-2 AE29	CONTINGENCY 'AE_P4-2 AE29' /*ENGLAND TO CORSON BREAKER D DISCONNECT BRANCH FROM BUS 228110 TO BUS 228111 CKT 1 /*ENGLAND MIDDLE TAP 138 138 DISCONNECT BRANCH FROM BUS 228110 TO BUS 227906 CKT 1 /*ENGLAND #2 SCULL 138 138 END
PECO_P4_CHICH045/* \$ DELCO \$ CHICH045 \$ STBK	CONTINGENCY 'PECO_P4_CHICH045/* \$ DELCO \$ CHICH045 \$ STBK' DISCONNECT BUS 213489 /* CHICHST1 230.00 \$ DELCO \$ CHICH045 \$ STBK DISCONNECT BUS 213627 /* FOULK8 230.00 \$ DELCO \$ CHICH045 \$ STBK END
PS_P2-3_CUTB_1-2_LT	CONTINGENCY 'PS_P2-3_CUTB_1-2_LT' DISCONNECT BUS 219108 /* CUTHBERTH SECTION 1 DISCONNECT BUS 219753 /* CUTHBERTH SECTION 2 CLOSE LINE FROM BUS 219176 TO BUS 219179 CKT Z /* CUTBERTH CLOSE LINE FROM BUS 219177 TO BUS 219178 CKT Z /* CUTHBERT MOVE 8 MW LOAD FROM BUS 219176 TO BUS 219170 /* INTERSTATION TIE TRANSFER LOAD FROM CUTHBERT TO CINN T2 MOVE 8 MW LOAD FROM BUS 219176 TO BUS 219678 /* INTERSTATION TIE TRANSFER LOAD FROM CUTHBERT TO MAPLE SHADE MOVE 8 MW LOAD FROM BUS 219179 TO BUS 219678 /* INTERSTATION TIE TRANSFER LOAD FROM CUTHBERT TO MAPLE SHADE MOVE 8 MW LOAD FROM BUS 219178 TO BUS 219678 /* INTERSTATION TIE TRANSFER LOAD FROM CUTHBERT TO MAPLE SHADE MOVE 8 MW LOAD FROM BUS 219177 TO BUS 219677 /* INTERSTATION TIE TRANSFER LOAD FROM CUTHBERT TO MAPLE SHADE MOVE 8 MW LOAD FROM BUS 219179 TO BUS 219629 /* INTERSTATION TIE TRANSFER LOAD FROM CUTHBERT TO LAWN SIDE END

JC-P1-2-JCC-230-018	CONTINGENCY 'JC-P1-2-JCC-230-018' /* LARRABEE - SMITHBURG (H2008) 230 KV DISCONNECT BRANCH FROM BUS 206309 TO BUS 206294 CKT 2 DISCONNECT BRANCH FROM BUS 200017 TO BUS 206309 CKT 4 /* SMITHBURG SMITHBURG 500 230 END
JC-P1-2-JCC-230-019	CONTINGENCY 'JC-P1-2-JCC-230-019' /* LEISURE VILLAGE - MANITOU (A2027) 230 KV DISCONNECT BRANCH FROM BUS 206295 TO BUS 206297 CKT 1 DISCONNECT BRANCH FROM BUS 206297 TO BUS 206277 CKT 7 END
JC-P1-2-JCC-230-002T	CONTINGENCY 'JC-P1-2-JCC-230-002T' /** OYSTER CREEK - CEDAR (S2045) 230 KV DISCONNECT BRANCH FROM BUS 206302 TO BUS 227955 CKT 1 /* 28OYSTER C 230 CEDAR 230 END
JC-P1-2-JCC-230-017	CONTINGENCY 'JC-P1-2-JCC-230-017' /* FUTURE BREAKERS LARRABEE - SMITHBURG (D2004) 230 KV DISCONNECT BRANCH FROM BUS 206294 TO BUS 206309 CKT 1 END
JC-P2-3-JCC-230-7A	CONTINGENCY 'JC-P2-3-JCC-230-7A' /* LAKEWOOD - LARRABEE (K2011) & OCEAN POWER PEAKING 230 KV DISCONNECT BRANCH FROM BUS 206323 TO BUS 206294 CKT 2 REMOVE MACHINE 1 FROM BUS 206366 REMOVE MACHINE 2 FROM BUS 206367 DISCONNECT BUS 206366 DISCONNECT BUS 206367 END
JC-P1-2-JCC-230-014	CONTINGENCY 'JC-P1-2-JCC-230-014' /* FUTURE BREAKERS LAKEWOOD - LARRABEE (Z2026) 230 KV & LAR BK 8 & 12 DISCONNECT BRANCH FROM BUS 206323 TO BUS 206294 CKT 1 DISCONNECT BRANCH FROM BUS 206294 TO BUS 206275 CKT 12 SET BUS 206294 LOAD TO 38 MW END
AE_P1-2 SHERM-BUT	CONTINGENCY 'AE_P1-2 SHERM-BUT' OPEN LINE FROM BUS 228257 TO BUS 228703 CIRCUIT 1 / END
JC-P2-3-JCC-230-13A	CONTINGENCY 'JC-P2-3-JCC-230-13A' /* LARRABEE - SMITHBURG (D2004) & LAKEWOOD (Z2026) 230 KV DISCONNECT BRANCH FROM BUS 206294 TO BUS 206309 CKT 1 /* LARRABEE-SMITHBURG (D2004) DISCONNECT BRANCH FROM BUS 206294 TO BUS 206323 CKT 2 /* LARRABEE-LAKEWOOD (Z2026) SET BUS 206294 LOAD TO 0 MW /* LARRABEE BK8 DISCONNECT BRANCH FROM BUS 206294 TO BUS 206275 CKT 12 /* LARRABEE BK12 END
AE_P7-1 AE13TOWER	CONTINGENCY 'AE_P7-1 AE13TOWER' DISCONNECT BRANCH FROM BUS 228500 TO BUS 228502 CKT 1 /* LANDIS TO MINO 138 KV DISCONNECT BRANCH FROM BUS 228002 TO BUS 227900 CKT 1 /* ORCH TO CARD 230 KV END

AE_P1-3 CARD 7 XFR	CONTINGENCY 'AE_P1-3 CARD 7 XFR' OPEN LINE FROM BUS 227900 TO BUS 227934 CIRCUIT 1 / END
PS_P2-3_CAMD_5-6_LT	CONTINGENCY 'PS_P2-3_CAMD_5-6_LT' TRIP LINE FROM BUS 219110 TO BUS 219125 CKT 1 /* CAMDEN TO GLOUCESTER - Y-2304 DISCONNECT BRANCH FROM BUS 219110 TO BUS 219128 CKT 2 /* REMOVE 26KV -2 DISCONNECT BUS 219129 /* REMOVE LEVITOWN BUS M-2291 CLOSE LINE FROM BUS 219196 TO BUS 219198 CKT Z /* LEVITTOWN CLOSE LINE FROM BUS 219195 TO BUS 219197 CKT Z /* LEVITOWN MOVE 8 MW LOAD FROM BUS 219195 TO BUS 219166 /* INTERSTATION TIE TRANSFER LOAD FROM LEVITN TO BUSLTN T1 MOVE 8 MW LOAD FROM BUS 219197 TO BUS 219165 /* INTERSTATION TIE TRANSFER LOAD FROM LEVITN TO BUSLTN T2 MOVE 8 MW LOAD FROM BUS 219196 TO BUS 219166 /* INTERSTATION TIE TRANSFER LOAD FROM LEVITN TO BUSLTN T1 MOVE 8 MW LOAD FROM BUS 219198 TO BUS 219165 /* INTERSTATION TIE TRANSFER LOAD FROM LEVITN TO BUSLTN T2 END
JC-P1-2-JCC-230-013	CONTINGENCY 'JC-P1-2-JCC-230-013' /* LAKEWOOD - LARRABEE (K2011) 230 KV DISCONNECT BRANCH FROM BUS 206323 TO BUS 206294 CKT 2 END
AE_P1-2 SHERM-W VINE-A	CONTINGENCY 'AE_P1-2 SHERM-W VINE-A' OPEN LINE FROM BUS 228256 TO BUS 945730 CIRCUIT 1 / END
PS_P1-2_D-2282	CONTINGENCY 'PS_P1-2_D-2282' /* CUTHBERT TO GLOUCESTER DISCONNECT BUS 219755 /* BUS SECTION 4 CUTHBERT CLOSE LINE FROM BUS 219177 TO BUS 219178 CKT Z /* CUTHBERT END
AE_P1-2 ENG-MERION	CONTINGENCY 'AE_P1-2 ENG-MERION' OPEN LINE FROM BUS 228197 TO BUS 228110 CIRCUIT 1 / OPEN LINE FROM BUS 228197 TO BUS 228199 CIRCUIT 1 / CLOSE LINE FROM BUS 228198 TO BUS 228199 CIRCUIT 1 / END
AE_P1-2 ORCHARD XF	CONTINGENCY 'AE_P1-2 ORCHARD XF' OPEN LINE FROM BUS 200063 TO BUS 228002 CIRCUIT 1 / END
JC-P2-3-JCC-230-15J	CONTINGENCY 'JC-P2-3-JCC-230-15J' /* LAKEWOOD-LARRABEE (K2011) & LARRABEE SE BUS 230 KV DISCONNECT BRANCH FROM BUS 206294 TO BUS 206323 CKT 1 /* LARRABEE - LAKEWOOD (K2011) DISCONNECT BRANCH FROM BUS 206294 TO BUS 206274 CKT 4 /* LARRABEE BK4 REDUCE BUS 206294 SHUNT BY 100 PERCENT /* LARRABEE 2X 130MVAR CAPS END
AE_P7-1 AE3TOWER	CONTINGENCY 'AE_P7-1 AE3TOWER' DISCONNECT BRANCH FROM BUS 227900 TO BUS 227955 CKT 1 /* CARDIFF TO CEDAR 230 KV DISCONNECT BRANCH FROM BUS 227913 TO BUS 227902 CKT 1 /* CARDIFF TO LEWIS 138 KV END

JC-P2-3-JCC-230-15G	CONTINGENCY 'JC-P2-3-JCC-230-15G' /* LARRABEE-SMITHBURG (H2008) 230 KV & LARRABEE NW BUS 230 KV DISCONNECT BRANCH FROM BUS 206294 TO BUS 206309 CKT 2 /* LARRABEE-SMITHBURG (H2008) REMOVE LOAD 7 FROM BUS 206294 /* LARRABEE BK7 DISCONNECT BRANCH FROM BUS 206294 TO BUS 206275 CKT 9 /* LARRABEE BK9 END
AE_P7-1 W2275_O2241	CONTINGENCY 'AE_P7-1 W2275_O2241' /* DOUBLE CIRCUIT TOWER W- 2275(MICKLETON - DEPTFORD) AND O-2241(MICKLETON - THOROFARE) DISCONNECT BUS 219762 DISCONNECT BUS 219121 CLOSE LINE FROM BUS 219211 TO BUS 219212 CKT Z /*THOROFARE END
JC-P2-3-JCC-230-15A	CONTINGENCY 'JC-P2-3-JCC-230-15A' /* LAKEWOOD-LARRABEE (K2011) & LARRABEE- SMITHBURG (H2008) 230 KV DISCONNECT BRANCH FROM BUS 206294 TO BUS 206323 CKT 1 /* LARRABEE - LAKEWOOD (K2011) DISCONNECT BRANCH FROM BUS 206294 TO BUS 206309 CKT 2 /* LARRABEE-SMITHBURG (H2008) END
PS_P1-2_2310	CONTINGENCY 'PS_P1-2_2310' /* NEW FREEDOM TO CARDIFF TIELINE TRIP LINE FROM BUS 219100 TO BUS 227900 CKT 1 /* NEW FREEDOM TO CARDIFF END
JC-P7-1-JCC-230-12	CONTINGENCY 'JC-P7-1-JCC-230-12' /* LEISURE VILLAGE-MANITOU A2027 & C2029 DISCONNECT BRANCH FROM BUS 206295 TO BUS 206297 CKT 1 DISCONNECT BRANCH FROM BUS 206297 TO BUS 206277 CKT 7 DISCONNECT BRANCH FROM BUS 206296 TO BUS 206297 CKT 1 DISCONNECT BRANCH FROM BUS 206296 TO BUS 206276 CKT 3 SET BUS 206296 LOAD TO 0 MW END
JC-P7-1-JCC-230-13	CONTINGENCY 'JC-P7-1-JCC-230-13' /* MANITOU-OYSTER CREEK 230 LINES & OYSTER GEN DISCONNECT BRANCH FROM BUS 206297 TO BUS 206302 CKT 1 DISCONNECT BRANCH FROM BUS 206297 TO BUS 206302 CKT 2 DISCONNECT BRANCH FROM BUS 206302 TO BUS 206325 CKT 1 END
AE_P4-2 AE33	CONTINGENCY 'AE_P4-2 AE33' /*LEWIS TO CARDIFF BREAKER V DISCONNECT BRANCH FROM BUS 227902 TO BUS 227913 CKT 1 /*LEWIS CARDIFF 138 138 DISCONNECT BRANCH FROM BUS 227902 TO BUS 227903 CKT 1 /*LEWIS MILL #1 138 138 DISCONNECT BRANCH FROM BUS 227902 TO BUS 227918 CKT 1 /*LEWIS 138 69 T1 END
PS_P1-2_Y-2304	CONTINGENCY 'PS_P1-2_Y-2304' /* CAMDEN TO GLOUCESTER TRIP LINE FROM BUS 219110 TO BUS 219125 CKT 1 /* CAMDEN TO GLOUCESTER DISCONNECT BRANCH FROM BUS 219110 TO BUS 219128 CKT 2 /* REMOVE 26KV -2 END
PECO_P1-2_5038/* \$ CHESCO \$ 5038 \$ L	CONTINGENCY 'PECO_P1-2_5038/* \$ CHESCO \$ 5038 \$ L' TRIP BRANCH FROM BUS 200012 TO BUS 200028 CKT 1 /* NFREEDOM 500.00 WINDSOR 500.00 \$ CHESCO \$ 5038 \$ L END

AE_P1-2 CARD-LEW2	CONTINGENCY 'AE_P1-2 CARD-LEW2' OPEN LINE FROM BUS 227934 TO BUS 227945 CIRCUIT 1 / END
PECO_P4_PEACH215/* \$ CHESCO \$ PEACH215 \$ STBK	CONTINGENCY 'PECO_P4_PEACH215/* \$ CHESCO \$ PEACH215 \$ STBK' TRIP BRANCH FROM BUS 200065 TO BUS 200051 CKT 1 /* PCHBTM2S 500.00 ROCKSPGS 500.00 \$ CHESCO \$ PEACH215 \$ STBK REMOVE MACHINE 1 FROM BUS 200034 /* PCHBTM 2 22.00 \$ CHESCO \$ PEACH215 \$ STBK END
AE_P1-2 ENG-CORSON	CONTINGENCY 'AE_P1-2 ENG-CORSON' DISCONNECT BUS 228111 / END
PECO_P2-2_CHI230B1/* \$ DELCO \$ CHI230B1 \$ B	CONTINGENCY 'PECO_P2-2_CHI230B1/* \$ DELCO \$ CHI230B1 \$ B' DISCONNECT BUS 213489 /* CHICHST1 230.00 \$ DELCO \$ CHI230B1 \$ B END
JC-P1-2-JCC-230-022	CONTINGENCY 'JC-P1-2-JCC-230-022' /* MANITOU - OYSTER CREEK (O1019) 230 KV DISCONNECT BRANCH FROM BUS 206297 TO BUS 206302 CKT 2 END
JC-P1-2-JCC-230-021	CONTINGENCY 'JC-P1-2-JCC-230-021' /* MANITOU - OYSTER CREEK (N1028) 230 KV DISCONNECT BRANCH FROM BUS 206297 TO BUS 206302 CKT 1 END
JC-P1-2-JCC-230-020	CONTINGENCY 'JC-P1-2-JCC-230-020' /* LEISURE VILLAGE - MANITOU (C2029) 230 KV DISCONNECT BRANCH FROM BUS 206296 TO BUS 206297 CKT 1 DISCONNECT BRANCH FROM BUS 206296 TO BUS 206276 CKT 3 SET BUS 206296 LOAD TO 0 MW END
Base Case	
AE_P1-3 CARD 6 XFR	CONTINGENCY 'AE_P1-3 CARD 6 XFR' OPEN LINE FROM BUS 227900 TO BUS 227913 CIRCUIT 1 / END
JC-P2-3-JCC-230-15F	CONTINGENCY 'JC-P2-3-JCC-230-15F' /* LARRABEE - SMITHBURG (D2004) & LARRABEE NW BUS 230 KV DISCONNECT BRANCH FROM BUS 206294 TO BUS 206309 CKT 1 /* LARRABEE-SMITHBURG (D2004) REMOVE LOAD 7 FROM BUS 206294 /* LARRABEE BK7 DISCONNECT BRANCH FROM BUS 206294 TO BUS 206275 CKT 9 /* LARRABEE BK9 END
AE_P4-2 AE7	CONTINGENCY 'AE_P4-2 AE7' /*CARDIFF TO NEW FREEDOM BREAKER V DISCONNECT BRANCH FROM BUS 219100 TO BUS 227900 CKT 1 /*NEW FREEDOM TO CARDIFF 230 230 DISCONNECT BRANCH FROM BUS 227900 TO BUS 227910 CKT 1 /*CARDIFF CARDIFF 230 69 T1 END

PS_P2-3_CUTB_2-3_LT	CONTINGENCY 'PS_P2-3_CUTB_2-3_LT' DISCONNECT BUS 219753 /* CUTHBERTH SECTION 2 DISCONNECT BUS 219754 /* CUTHBERTH SECTION 3 CLOSE LINE FROM BUS 219176 TO BUS 219179 CKT Z /* CUTHBERT CLOSE LINE FROM BUS 219177 TO BUS 219178 CKT Z /* CUTHBERT MOVE 8 MW LOAD FROM BUS 219176 TO BUS 219170 /* INTERSTATION TIE TRANSFER LOAD FROM CUTHBERT TO CINN T2 MOVE 8 MW LOAD FROM BUS 219176 TO BUS 219678 /* INTERSTATION TIE TRANSFER LOAD FROM CUTHBERT TO MAPLE SHADE MOVE 8 MW LOAD FROM BUS 219179 TO BUS 219678 /* INTERSTATION TIE TRANSFER LOAD FROM CUTHBERT TO MAPLE SHADE MOVE 8 MW LOAD FROM BUS 219178 TO BUS 219678 /* INTERSTATION TIE TRANSFER LOAD FROM CUTHBERT TO MAPLE SHADE MOVE 8 MW LOAD FROM BUS 219177 TO BUS 219677 /* INTERSTATION TIE TRANSFER LOAD FROM CUTHBERT TO MAPLE SHADE MOVE 8 MW LOAD FROM BUS 219179 TO BUS 219629 /* INTERSTATION TIE TRANSFER LOAD FROM CUTHBERT TO LAWN SIDE END
AE_P4-2 AE6	CONTINGENCY 'AE_P4-2 AE6' /*CARDIFF TO NEW FREEDOM BREAKER W DISCONNECT BRANCH FROM BUS 219100 TO BUS 227900 CKT 1 /*NEW FREEDOM TO CARDIFF 230 DISCONNECT BRANCH FROM BUS 227900 TO BUS 227911 CKT 1 /*CARDIFF CARDIFF 230 69 T2 END
AE_P4-2 AE9	CONTINGENCY 'AE_P4-2 AE9' /*CARDIFF TO ORCHARD BREAKER NEW1 DISCONNECT BRANCH FROM BUS 228002 TO BUS 227900 CKT 1 /* CARDIFF TO ORCHARD 230 230 DISCONNECT BRANCH FROM BUS 227900 TO BUS 227934 CKT 1 /*CARDIFF CARDIFF 230 138 T7 END
AE_P1-2 MON-FRnk	CONTINGENCY 'AE_P1-2 MON-FRnk' OPEN LINE FROM BUS 228404 TO BUS 228482 CIRCUIT 1 / END
PS_P1-2_C-2308	CONTINGENCY 'PS_P1-2_C-2308' /* CUTHBERT TO GLOUCESTER DISCONNECT BUS 219753 /* CUTHBERTH SECTOIN 2 CLOSE LINE FROM BUS 219177 TO BUS 219178 CKT Z /* CUTHBERT END
JC-P7-1-JCC-230-11A	CONTINGENCY 'JC-P7-1-JCC-230-11A' /* LAKEWOOD - LEISURE V 230 KV LINES DISCONNECT BRANCH FROM BUS 206323 TO BUS 206295 CKT 1 DISCONNECT BRANCH FROM BUS 206323 TO BUS 206296 CKT 1 DISCONNECT BRANCH FROM BUS 206323 TO BUS 206282 CKT 6 DISCONNECT BRANCH FROM BUS 206282 TO BUS 206999 CKT 1 SET BUS 206295 LOAD TO 0 MW DISCONNECT BUS 206999 DISCONNECT BUS 207110 DISCONNECT BUS 207010 DISCONNECT BUS 207111 END
AE_P4-2 AE46	CONTINGENCY 'AE_P4-2 AE46' /*ORCHARD 230 BUS BREAKER D DISCONNECT BRANCH FROM BUS 228002 TO BUS 228310 CKT 1 /* ORCHARD TO CHURCHTOWN 230 230 DISCONNECT BRANCH FROM BUS 200063 TO BUS 228002 CKT 1 /*ORCHARD ORCHARD 500 230 T1 END

PS_P7-1_W2275+O2241_LT	CONTINGENCY 'PS_P7-1_W2275+O2241_LT' /* MICKLETON -DEPTFORD & MICKLETON - THOROFARE DISCONNECT BUS 219121 /* THOROFARE SECTION 1 DISCONNECT BUS 219109 /* DEPTFORD BUS SECTION 1 CLOSE LINE FROM BUS 219255 TO BUS 219256 CKT Z /* DEPTFORD T3 TO T4 CLOSE LINE FROM BUS 219180 TO BUS 219181 CKT Z /* DEPTFORD T1 TO T2 DISCONNECT BUS 219762 /* THOROFARE SECTION 2 DISCONNECT BUS 219759 /* EAGLE POINT BUS SECTION 3 MOVE 8 MW LOAD FROM BUS 219180 TO BUS 219162 /* INTERSTATION TIE TRANSFER LOAD FROM DEPTFORD TO BEAVERBK T1 MOVE 8 MW LOAD FROM BUS 219181 TO BUS 219163 /* INTERSTATION TIE TRANSFER LOAD FROM DEPTFORD TO BEAVERBK T2 MOVE 8 MW LOAD FROM BUS 219255 TO BUS 219162 /* INTERSTATION TIE TRANSFER LOAD FROM DEPTFORD TO BEAVERBK T1 MOVE 8 MW LOAD FROM BUS 219256 TO BUS 219163 /* INTERSTATION TIE TRANSFER LOAD FROM DEPTFORD TO BEAVERBK T2 END
AE_P1-2 MONROE-LANDIS_1	CONTINGENCY 'AE_P1-2 MONROE-LANDIS_1' OPEN BRANCH FROM BUS 228404 TO BUS 228500 CKT 1 END
PS_P7-1_R2244+M2213	CONTINGENCY 'PS_P7-1_R2244+M2213' TRIP LINE FROM BUS 219100 TO BUS 227900 CKT 1 /* NEW FREEDOM TO CARDIFF TRIP LINE FROM BUS 219100 TO BUS 228600 CKT 1 /* NEW FREEDOM TO SICKLER END

Short Circuit

14.44 Short Circuit

The following Breakers are overduty:

None

15 Attachment One: One Line Diagram