



**Generation Interconnection
Feasibility Study Report
for
Queue Project AE1-148
KERR DAM-RIDGE RD 115 KV
54 MW Capacity / 90 MW Energy**

April, 2019

Table Of Contents

Introduction	
Preface	
General	
Attachment Facilities	
Direct Connection Cost Estimate	
Non-Direct Connection Cost Estimate	
Schedule	
Transmission Owner Analysis	
Interconnection Customer Requirements	
Revenue Metering and SCADA Requirements	
Analysis : Summer Peak	
Generation Deliverability	
Multiple Facility	
Contribution to Previously Identified	
Analysis : Affected Systems	
Analysis : Short Circuit	
Online Diagram	

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 Dominion (VEPCO).

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.

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.

General

The IC has proposed a solar and storage generating facility located in Caroline County, Virginia. The installed facilities will have a capability of 90 MW with 54 MW of this output being recognized by PJM as Capacity. The proposed in-service date for the AE1-148 project is 12/01/2021. This study does not imply an ITO commitment to either in-service date.

Queue Number	AE1-148
Project Name	KERR DAM-RIDGE RD 115 KV
Interconnection Customer	
State	Virginia
County	Mecklenburg
Transmission Owner	Dominion
MFO	90
MWE	90
MWC	54
Fuel	Solar
Basecase Study Year	2022

Point of Interconnection

Primary Point of Interconnection

AE1-148 will interconnect with the ITO transmission system via a new three breaker ring bus switching station that connects on the Ridge Road to Kerr Dam 115 kV line # 137. See one line in **Attachment 1**.

Secondary Point of Interconnection

AE1-148 will interconnect with the ITO transmission system via a new three breaker ring bus switching station that connects on the Boydton DP – Kerr Dam 115kV line # 38.

Cost Summary

The AE1-148 project will be responsible for the following costs:

Description	Total Cost
Attachment Facilities	\$1,550,000
Direct Connection Network Upgrade	\$5,500,000
Non Direct Connection Network Upgrades	\$ 800,000
Total Costs	\$7,850,000

In addition, the AE1-148 project may be responsible for a contribution to the following costs

(Reference System Reinforcements in the Network Impacts section for details):

Description	Total Cost
System Upgrades	\$235,105,000

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

Note: PJM Open Access Transmission Tariff (OATT) section 217.3A outline cost allocation rules. The rules are further clarified in PJM Manual 14A Attachment B. The allocation of costs for a network upgrade will start with the first Queue project to cause the need for the upgrade. Later queue projects will receive cost allocation contingent on their contribution to the violation and are allocated to the queues that have not closed less than 5 years following the execution of the first Interconnection Service Agreement which identifies the need for this upgrade.

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.

Transmission Owner Scope of Work

Attachment Facilities

Generation Substation: Install metering and associated protection equipment. Estimated Cost \$550,000.

Transmission: Construct approximately one span of 115 kV Attachment line between the generation substation and a new AE1-148 Switching Station. The estimated cost for this work is \$1,000,000.

The estimated total cost of the Attachment Facilities is \$1,550,000. It is estimated to take 18-24 months to complete this work. These preliminary cost estimates are based on typical engineering costs. A more detailed engineering cost estimates are normally done when the IC provides an exact site plan location for the generation substation during the Facility Study phase. The total preliminary cost estimate for the Attachment work is given in the table below. These costs do not include CIAC Tax Gross-up.

Description	Total Cost
Generator Substation	\$ 550,000
Transmission	\$1,000,000
Total Attachment Facility Costs	\$1,550,000

Direct Connection Cost Estimate

Substation: Establish the new 115 kV AE1-148 Switching Substation (interconnection substation). The estimated cost of this work scope is \$5,500,000. It is estimated to take 24-36 months to complete this work.

Non-Direct Connection Cost Estimate

Transmission: Install transmission structure in-line with transmission line to allow the proposed interconnection switching station to be interconnected with the transmission system. Estimated cost is \$800,000 and is estimated to take 24-30 months to complete.

Remote Terminal Work: During the Facilities Study, ITO's System Protection Engineering Department will review transmission line protection as well as anti-islanding required to accommodate the new generation and interconnection substation. System Protection Engineering will determine the minimal acceptable protection requirements to reliably interconnect the proposed generating facility with the transmission system. The review is based on maintaining system reliability by reviewing ITO's protection requirements with the known transmission system configuration which includes generating facilities in the area. This review may determine that transmission line protection and communication upgrades are required at remote substations.

Interconnection Customer Requirements

ITO's Facility Connection Requirements as posted on PJM's website

<http://www.pjm.com/~media/planning/plan-standards/private-dominion/facility-connection-requirements1.ashx>

Voltage Ride Through Requirements - The Customer Facility shall be designed to remain in service (not trip) for voltages and times as specified for the Eastern Interconnection in Attachment 1 of NERC Reliability Standard PRC-024-1, and successor Reliability Standards, for both high and low voltage conditions, irrespective of generator size, subject to the permissive trip exceptions established in PRC-024-1 (and successor Reliability Standards).

Frequency Ride Through Requirements - The Customer Facility shall be designed to remain in service (not trip) for frequencies and times as specified in Attachment 2 of NERC Reliability Standard PRC-024-1, and successor Reliability Standards, for both high and low frequency condition, irrespective of generator size, subject to the permissive trip exceptions established in PRC-024-1 (and successor Reliability Standards).

Reactive Power - The Generation Interconnection Customer shall design its non-synchronous Customer Facility with the ability to maintain a power factor of at least 0.95 leading to 0.95 lagging measured at the generator's terminals.

Revenue Metering and SCADA Requirements

PJM Requirements

The IC 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 Appendix 2.

Meteorological Data Reporting Requirement

The solar generation facility shall provide the Transmission Provider with site-specific meteorological data including:

- Temperature (degrees Fahrenheit)
- Atmospheric pressure (hectopascals)
- Irradiance
- Forced outage data

Network Impacts – Option 1

The Queue Project AE1-148 was evaluated as a 90 MW (Capacity 54 MW) injection tapping the Ridge Road to Kerr Dam 115 kV line in the ITO area. Project AE1-148 was evaluated for compliance with applicable reliability planning criteria (PJM, NERC, NERC Regional Reliability Councils, and Transmission Owners). Project AE1-148 was studied with a commercial probability of 53%. Potential network impacts were as follows:

Summer Peak Load Flow

Generation Deliverability

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

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
728370	242631	05EDAN 1	AEP	242620	05DANVL2	AEP	1	AEP_SUBT_P1-3_#877_05E.MONU 138_3	single	402.0	99.39	100.19	DC	3.2
425328	314435	6SAPONY	DVP	314282	6CARSON	DVP	1	DVP_P1-2: LN 246	single	678.68	102.09	103.29	DC	8.16
425112	314559	3CAROLNA	DVP	314561	6CAROLNA	DVP	1	DVP_P1-2: LN 1029-B	single	239.89	96.62	99.7	DC	7.39
425080	314563	6CLUBHSE	DVP	314435	6SAPONY	DVP	1	DVP_P1-2: LN 2056-A	single	598.78	109.45	110.81	DC	8.12
425084	314563	6CLUBHSE	DVP	314435	6SAPONY	DVP	1	Base Case	single	598.78	99.22	100.46	DC	7.44
425285	314691	3FARMVIL	DVP	314692	6FARMVIL	DVP	2	DVP_P1-2: LN 235-A	single	182.64	73.81	78.08	DC	7.79
425392	314702	3KERR	DVP	304102	3GW KING TAP	CPL	1	DVP_P1-2: LN 22-A	single	199.0	95.43	102.49	DC	14.06
425393	314702	3KERR	DVP	304102	3GW KING TAP	CPL	1	DVP_P1-2: LN 90	single	199.0	95.04	102.15	DC	14.16

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
424614	314299	6HARROWG	DVP	314263	6TYLER1	DVP	1	DVP_P4-2: 24972-4	breaker	541.0	101.43	102.1	DC	7.97
424615	314299	6HARROWG	DVP	314263	6TYLER1	DVP	1	DVP_P4-2: 562T563	breaker	541.0	99.78	100.21	DC	5.22
424693	314316	6LOCKS	DVP	314301	6HARR205	DVP	1	DVP_P4-2: 562T563	breaker	541.0	93.95	94.41	DC	5.49
424616	314331	6POE	DVP	314299	6HARROWG	DVP	1	DVP_P4-2: 24972-4	breaker	541.0	101.43	102.1	DC	7.97
424617	314331	6POE	DVP	314299	6HARROWG	DVP	1	DVP_P4-2: 562T563	breaker	541.0	99.8	100.23	DC	5.22

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
727474	242631	05EDAN 1	AEP	242620	05DANVL2	AEP	1	AEP_P4_#11112_05J.FERR 765_A1	breaker	402.0	141.5	142.17	DC	5.99
727475	242631	05EDAN 1	AEP	242620	05DANVL2	AEP	1	AEP_P4_#11111_05J.FERR 765_B1	breaker	402.0	134.06	134.75	DC	6.21
728365	242631	05EDAN 1	AEP	242620	05DANVL2	AEP	1	Base Case	single	275.0	119.27	120.39	DC	3.09
424511	313719	3CHESTN UT	DVP	314623	3WITAKRS	DVP	1	DVP_P4-2: 2202	breaker	202.0	123.15	124.64	DC	6.69
424512	313719	3CHESTN UT	DVP	314623	3WITAKRS	DVP	1	DVP_P4-2: 13002	breaker	202.0	122.41	123.9	DC	6.69
424671	313858	3SO JUSTICE	DVP	314577	3COX DP	DVP	1	DVP_P4-2: 2202	breaker	202.0	102.3	103.79	DC	6.69
424672	313858	3SO JUSTICE	DVP	314577	3COX DP	DVP	1	DVP_P4-2: 13002	breaker	202.0	101.6	103.1	DC	6.69
424673	313858	3SO JUSTICE	DVP	314577	3COX DP	DVP	1	DVP_P4-2: 5402	breaker	202.0	101.6	103.1	DC	6.69
424674	313858	3SO JUSTICE	DVP	314577	3COX DP	DVP	1	DVP_P4-2: 101002	breaker	202.0	101.6	103.1	DC	6.69
424384	314282	6CARSON	DVP	314285	6CHRL249	DVP	1	DVP_P4-2: 562T563	breaker	684.0	139.72	140.18	DC	6.96
424412	314285	6CHRL249	DVP	314316	6LOCKS	DVP	1	DVP_P4-2: 562T563	breaker	684.0	136.7	137.16	DC	6.96
424350	314559	3CAROLN A	DVP	314561	6CAROLNA	DVP	1	DVP_P4-2: 102952	breaker	288.6	144.49	146.69	DC	13.98
424351	314559	3CAROLN A	DVP	314561	6CAROLNA	DVP	1	DVP_P4-2: 7152	breaker	288.6	140.03	142.23	DC	13.99
425111	314559	3CAROLN A	DVP	314561	6CAROLNA	DVP	1	DVP_P1-2: LN 1029-A	single	239.89	103.64	106.73	DC	7.39
424215	314562	3CLUBHSE	DVP	314563	6CLUBHSE	DVP	1	DVP_P4-6: CAROLN T122	breaker	208.6	192.91	198.57	DC	11.78
424216	314562	3CLUBHSE	DVP	314563	6CLUBHSE	DVP	1	DVP_P4-2: 2202	breaker	208.6	184.94	189.92	DC	10.39
424940	314562	3CLUBHSE	DVP	314563	6CLUBHSE	DVP	1	DVP_P1-2: LN 130-A	single	182.64	117.98	120.69	DC	4.95
424941	314562	3CLUBHSE	DVP	314563	6CLUBHSE	DVP	1	DVP_P1-3: 6CAROLNA-TX#4	single	182.64	106.59	110.73	DC	7.56
425079	314563	6CLUBHSE	DVP	314435	6SAPONY	DVP	1	DVP_P1-2: LN 246	single	598.78	119.21	120.58	DC	8.16
424550	314677	6BUCKIN G	DVP	314747	6BREMO	DVP	1	DVP_P4-2: 556T591	breaker	699.0	108.64	109.65	DC	15.69
424551	314677	6BUCKIN G	DVP	314747	6BREMO	DVP	1	DVP_P4-2: 511T556	breaker	699.0	108.62	109.64	DC	15.69
425279	314677	6BUCKIN G	DVP	314747	6BREMO	DVP	1	DVP_P1-2: LN 556	single	571.52	115.8	117.44	DC	9.39
424568	314692	6FARMVIL	DVP	314677	6BUCKING	DVP	1	DVP_P4-2: 556T591	breaker	684.0	106.81	107.84	DC	15.7
424569	314692	6FARMVIL	DVP	314677	6BUCKING	DVP	1	DVP_P4-2: 511T556	breaker	684.0	106.79	107.83	DC	15.7
425317	314692	6FARMVIL	DVP	314677	6BUCKING	DVP	1	DVP_P1-2: LN 556	single	559.3	114.81	116.49	DC	9.4
425341	314697	6SEDGE HILL	DVP	927250	AC1-221 TAP	DVP	1	DVP_P1-2: LN 556	single	674.92	107.77	109.03	DC	8.48
424325	314702	3KERR	DVP	304102	3GW KING TAP	CPL	1	DVP_P4-6: CAROLN T122	breaker	199.0	131.05	145.59	DC	28.88
424326	314702	3KERR	DVP	304102	3GW KING TAP	CPL	1	DVP_P4-2: 2202	breaker	199.0	124.13	136.83	DC	25.24
425823	314702	3KERR	DVP	304102	3GW KING TAP	CPL	1	DVP_P7-1: LN 22-90-A	tower	199.0	136.39	150.86	DC	28.73
425824	314702	3KERR	DVP	304102	3GW KING TAP	CPL	1	DVP_P7-1: LN 22-90-B	tower	199.0	124.85	139.31	DC	28.73
425242	927250	AC1-221 TAP	DVP	304070	6PERSON23 OT	CPL	1	DVP_P1-2: LN 556	single	718.0	111.11	112.29	DC	8.48

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
728363	242631	05EDAN 1	AEP	242620	05DANVL2	AEP	1	Base Case	operation	275.0	131.7	132.54	DC	5.15
728364	242631	05EDAN 1	AEP	242620	05DANVL2	AEP	1	AEP_P1-2_#1377	operation	402.0	134.03	134.73	DC	6.21
728543	242632	05EDAN 2	AEP	242631	05EDAN 1	AEP	Z1	AEP_P1-2_#344-A	operation	296.0	109.84	110.53	DC	4.55
425580	313825	3PLYWOOD	DVP	314696	3SEDGE HILL	DVP	1	DVP_P1-2: LN 33-B	operation	141.0	102.1	111.84	DC	13.71
425226	313867	6BREMODIST	DVP	314765	6MTEAGLE	DVP	1	DVP_P1-2: LN 2027-B	operation	661.76	139.62	140.25	DC	9.22
425234	313867	6BREMODIST	DVP	314765	6MTEAGLE	DVP	1	Base Case	operation	661.76	95.97	96.5	DC	7.74
425684	314266	6NORTHAMPTON	DVP	314569	6EARLEYS	DVP	1	DVP_P1-2: LN 238	operation	559.3	104.01	104.61	DC	7.39
425455	314282	6CARSON	DVP	314285	6CHRL249	DVP	1	DVP_P1-2: LN 563	operation	559.3	125.38	125.88	DC	6.16
425490	314285	6CHRL249	DVP	314316	6LOCKS	DVP	1	DVP_P1-2: LN 563	operation	559.3	121.68	122.18	DC	6.16
425646	314299	6HARROWG	DVP	314263	6TYLER1	DVP	1	DVP_P1-2: LN 563	operation	441.8	93.09	93.57	DC	4.68
425643	314331	6POE	DVP	314299	6HARROWG	DVP	1	DVP_P1-2: LN 563	operation	441.8	93.11	93.59	DC	4.68
425322	314435	6SAPONY	DVP	314282	6CARSON	DVP	1	DVP_P1-2: LN 246	operation	678.68	141.29	142.19	DC	13.6
425327	314435	6SAPONY	DVP	314282	6CARSON	DVP	1	Base Case	operation	678.68	116.75	117.58	DC	12.39
425105	314559	3CAROLNA	DVP	314561	6CAROLNA	DVP	1	DVP_P1-2: LN 1029-A	operation	239.89	160.39	162.72	DC	12.32
425110	314559	3CAROLNA	DVP	314561	6CAROLNA	DVP	1	Base Case	operation	226.54	117.82	120.13	DC	11.57
425639	314561	6CAROLNA	DVP	314599	6ROA VAL	DVP	1	DVP_P1-2: LN 238	operation	548.02	107.01	107.62	DC	7.39
424935	314562	3CLUBHSE	DVP	314563	6CLUBHSE	DVP	1	DVP_P1-3: 6CAROLNA-TX#4	operation	182.64	177.87	184.79	DC	12.6
424939	314562	3CLUBHSE	DVP	314563	6CLUBHSE	DVP	1	Base Case	operation	176.81	135.51	140.87	DC	9.45
425073	314563	6CLUBHSE	DVP	314435	6SAPONY	DVP	1	DVP_P1-2: LN 246	operation	598.78	164.13	165.16	DC	13.61
425078	314563	6CLUBHSE	DVP	314435	6SAPONY	DVP	1	Base Case	operation	598.78	140.76	141.69	DC	12.39
425641	314599	6ROA VAL	DVP	314266	6NORTHAMPTON	DVP	1	DVP_P1-2: LN 238	operation	548.02	106.95	107.56	DC	7.39
425610	314625	3AULANDR	DVP	314568	3EARLEYS	DVP	1	DVP_P1-3: 6CAROLNA-TX#4	operation	110.92	109.16	111.15	DC	4.88

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
425574	314626	3WOODLND	DVP	314625	3AULANDR	DVP	1	DVP_P1-3: 6CAROLNA-TX#4	operation	110.92	115.47	117.46	DC	4.88
425278	314677	6BUCKING	DVP	314747	6BREMO	DVP	1	DVP_P1-2: LN 556	operation	571.52	130.07	131.3	DC	15.65
425284	314691	3FARMVIL	DVP	314692	6FARMVIL	DVP	2	DVP_P1-2: LN 235-A	operation	182.64	92.19	95.39	DC	12.99
425316	314692	6FARMVIL	DVP	314677	6BUCKING	DVP	1	DVP_P1-2: LN 556	operation	559.3	127.75	129.01	DC	15.66
425629	314696	3SEDGE HILL	DVP	314697	6SEDGE HILL	DVP	1	DVP_P1-3: 6SEDGE HILL-TX#2	operation	226.73	97.48	104.21	DC	15.25
425340	314697	6SEDGE HILL	DVP	927250	AC1-221 TAP	DVP	1	DVP_P1-2: LN 556	operation	674.92	133.59	134.54	DC	14.14
425386	314702	3KERR	DVP	304102	3GW KING TAP	CPL	1	DVP_P1-2: LN 296-A	operation	199.0	118.35	129.07	DC	21.3
425387	314702	3KERR	DVP	304102	3GW KING TAP	CPL	1	DVP_P1-2: LN 296-B	operation	199.0	118.35	129.07	DC	21.3
425391	314702	3KERR	DVP	304102	3GW KING TAP	CPL	1	Base Case	operation	199.0	107.88	118.29	DC	20.67
425547	314712	3OTTER R	DVP	314666	3ALTVSTA	DVP	1	DVP_P1-2: LN 556	operation	224.66	114.29	115.48	DC	5.93
425183	314747	6BREMO	DVP	313867	6BREMIST	DVP	1	DVP_P1-2: LN 2027-B	operation	661.76	141.95	142.58	DC	9.22
425191	314747	6BREMO	DVP	313867	6BREMIST	DVP	1	Base Case	operation	661.76	98.28	98.81	DC	7.74
425261	314765	6MTEAGLE	DVP	314749	6CHARLV	DVP	1	DVP_P1-2: LN 2027-B	operation	661.76	136.53	137.15	DC	9.22
425709	927140	AC1-208 TAP	DVP	313858	3SO JUSTICE	DVP	1	DVP_P1-3: 6CAROLNA-TX#4	operation	165.44	100.76	102.31	DC	5.67
425241	927250	AC1-221 TAP	DVP	304070	6PERSON230 T	CPL	1	DVP_P1-2: LN 556	operation	718.0	139.81	140.7	DC	14.14

System Reinforcements

ID	Index	Facility	Upgrade Description	Cost
425328	2	6SAPONY 230.0 kV - 6CARSON 230.0 kV Ckt 1	DVP Description : Wreck & rebuild Line 238 12 mi VA CPCN Time Estimate : 30-36 Months	\$29,425,000
424693	8	6LOCKS 230.0 kV - 6HARR205 230.0 kV Ckt 1	DVP Description : No Violation. Facility loading does not exceed 100%.	\$0
424216,424940, 424941,424215	14	3CLUBHSE 115.0 kV - 6CLUBHSE 230.0 kV Ckt 1	DVP Description : Add a second 230/115kV transformer and three 230kV breakers to convert the 230kV arrangement into a ring bus at Clubhouse Time Estimate : 22-26 Months	\$11,000,000
727474,727475, 728365,728370	1	05EDAN 1 138.0 kV - 05DANVL2 138.0 kV Ckt 1	AEP Description : Current AEP End Ratings: S/N: 287, S/E: 337 1) Replace Danville, "Bus 1.5" AL Tubular", \$300k 2) Replace Danville, 2 x Switch (1200A), \$300K 3) Replace Danville and East Danville, 6 x Sub cond 1590 AAC 61 Str., \$600k 4) Rebuild / reconductor ACSR ~ 336/556 Six Wire ~ (Danville - East Dan), 2.85 Miles. \$4.275M 5) Replace Danville and East Danville, 2 x Relay Thermal Limit 1795 Amps, An engineering study will need to be conducted to determine if the Relay Thermal limit setting can be adjusted to mitigate the overload, Estimated Cost for Study: \$25,000. New relay packages will be required if the settings cannot be adjusted, Estimated Cost: \$600,000 6) Replace Danville and East Danville 2 x Relay Compliance Trip Limit 1916 Amps, An engineering study will need to be conducted to determine if the Relay Compliance limit setting can be adjusted to mitigate the overload, Estimated Cost for Study: \$25,000. New relay packages will be required if the settings cannot be adjusted, Estimated Cost: \$600,000 7) Rebuild / reconductor Conductor Section 3, ACSR ~ 1351.5 ~ 45/7 ~ DIPPER, 1.43 Miles. \$2.14M 8) Rebuild / reconductor Conductor Section 1, ACSR ~ 1351.5 ~ 45/7 ~ DIPPER, 1.43 Miles. \$2.14M 9) Replace East Danville, Breaker (2000A) Non Oil, \$150k 10) Replace East Danville, 5 x Sub cond 2-795 AAC 37 Str., \$500k 11) Replace Danville, 2 x Sub cond 2156 ACSR 84/19 STD, \$200K Time Estimate : 18-24 Months	\$10,730,000

ID	Index	Facility	Upgrade Description	Cost
425824,424325, 424326,425392, 425393,425823	6	3KERR 115.0 kV - 3GW KING TAP 115.0 kV Ckt 1	DVP Description : Line 45 Uprate from 90 degree C to 135 degree C Time Estimate : 24-30 Months Cost : \$3,000,000 CPL Description : The external (i.e. Non-PJM) Transmission Owner, Duke / CPL, will not evaluate this violation until the impact study phase.	\$3,000,000
425080,425084, 425079	4	6CLUBHSE 230.0 kV - 6SAPONY 230.0 kV Ckt 1	DVP Description : 16.76 mi NC PUC Required Time Estimate : 44-48 Months	\$41,900,000
424672,424673, 424674,424671	11	3SO JUSTICE 115.0 kV - 3COX DP 115.0 kV Ckt 1	DVP Description : Line 1001 rebuild 2.4 mi SCH Frame 1959 Time Estimate : 30-36 Months	\$4,800,000
425285	5	3FARMVIL 115.0 kV - 6FARMVIL 230.0 kV Ckt 2	DVP Description : Replace Transformer; Install 224 MVA 230-115 kV Transformer Time Estimate : 24-30 Months	\$0
424384	12	6CARSON 230.0 kV - 6CHRL249 230.0 kV Ckt 1	DVP Description : Wreck & rebuild Line 249 7.5 mi VA CPCN Time Estimate : 44-48 Months	\$18,500,000
425112,425111, 424350,424351	3	3CAROLNA 115.0 kV - 6CAROLNA 230.0 kV Ckt 1	DVP Description : Add 2nd 230-115 kV Transformer & Rearrange Substation site expansion Time Estimate : 24-30 Months	\$5,500,000
425341	17	6SEGE HILL 230.0 kV - AC1-221 TAP 230.0 kV Ckt 1	DVP Description : The line rating at DVP side is 904MVA (normal), 904MVA (Emergency) and 1105 MVA (normal). Therefore, the line limit element is not overloaded.	\$0
424616,424617	9	6POE 230.0 kV - 6HARROWG 230.0 kV Ckt 1	DVP Description : Wreck & rebuild VA CPCN Required 2 mi rebuild remaining 7 mi has 2-721 ACAR Time Estimate : 40-44 Months	\$6,000,000

ID	Index	Facility	Upgrade Description	Cost
424512,424511	10	3CHESTNUT 115.0 kV - 3WITAKRS 115.0 kV Ckt 1	<u>DVP</u> Description : Wreck & rebuild Line #1001 4.61 mi Time Estimate : 44-48 Months	\$9,220,000
424568,424569, 425317	16	6FARMVIL 230.0 kV - 6BUCKING 230.0 kV Ckt 1	<u>DVP</u> Description : Wreck & rebuild Line 298 12.7 mi VA CPCN Time Estimate : 44-48 Months	\$31,750,000
424614,424615	7	6HARROWG 230.0 kV - 6TYLER1 230.0 kV Ckt 1	<u>DVP</u> Description : Wreck & rebuild VA CPCN Required 2 mi rebuild remaining 87 mi has 2-636 ACSR Time Estimate : 40-48 Months	\$17,000,000
424412	13	6CHRL249 230.0 kV - 6LOCKS 230.0 kV Ckt 1	<u>DVP</u> Description : Wreck & rebuild Line 249 3 mi VA CPCN Time Estimate : 44-48 Months	\$7,500,000
425242	18	AC1-221 TAP 230.0 kV - 6PERSON230 T 230.0 kV Ckt 1	<u>DVP</u> Description : The line rating at DVP side is 904MVA (normal), 904MVA (Emergency) and 1105 MVA (normal). Therefore, the line limit element is not overloaded at DVP side. <u>CPL</u> Description : The external (i.e. Non-PJM) Transmission Owner, CPLE, will not evaluate this violation until the impact study phase.	\$0
425279,424550, 424551	15	6BUCKING 230.0 kV - 6BREMO 230.0 kV Ckt 1	<u>DVP</u> Description : Wreck & rebuild Line 298 15.51 mi VA CPCN Time Estimate : 44-48 Months	\$38,780,000
			TOTAL COST	\$235,105,000

Flow Gate Details

The following appendices contain additional information about each flowgate presented in the body of the report. For each appendix, 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.

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
727474	242631	05EDAN 1	AEP	242620	05DANVL2	AEP	1	AEP_P4_#11112_05J.FERR 765_A1	breaker	402.0	141.5	142.17	DC	5.99

Bus #	Bus	MW Impact
314554	3BTLEBRO	0.35
314557	3BETHELC	0.33
314572	3EMPORIA	0.13
314574	6EVERETS	1.54
314578	3HORNRTN	1.17
314582	3KELFORD	1.21
314603	3SCOT NK	1.2
314617	3TUNIS	0.27
314623	3WITAKRS	0.57
315131	1EDGECEMA	4.09
315132	1EDGECEMB	4.09
315150	1BUGGS 1	4.52
315151	1BUGGS 2	4.52
917332	Z2-043 E	0.34
917342	Z2-044 E	0.25
917512	Z2-088 E OP1	1.53
918492	AA1-063AE OP	1.36
918512	AA1-065 E OP	1.43
918532	AA1-067 E	0.27
918562	AA1-072 E	0.06
919692	AA2-053 E	1.28
919701	AA2-057 C	2.91
919702	AA2-057 E	1.46
920592	AA2-165 E	0.19
920672	AA2-174 E	0.15
923911	AB2-031 C O1	0.73
923912	AB2-031 E O1	0.36
923941	AB2-035 C	0.14
923942	AB2-035 E	0.06
923992	AB2-040 E O1	1.97
924022	AB2-043 E O1	1.89
924152	AB2-059 E O1	2.4
924162	AB2-060 E O1	1.55
924302	AB2-077 E O1	0.49
924312	AB2-078 E O1	0.49
924322	AB2-079 E O1	0.49
924391	AB2-088 C	0.18
924392	AB2-088 E	0.09
924401	AB2-089 C	0.87
924402	AB2-089 E	0.45
924491	AB2-098 C	0.21

Bus #	Bus	MW Impact
924492	AB2-098 E	0.09
924501	AB2-099 C	0.19
924502	AB2-099 E	0.08
925122	AB2-169 E	1.93
925171	AB2-174 C O1	2.27
925172	AB2-174 E O1	2.06
925591	AC1-034 C	3.01
925592	AC1-034 E	2.27
925612	AC1-036 E	0.51
925781	AC1-054 C O1	2.91
925782	AC1-054 E O1	1.34
926051	AC1-083 C O1	3.91
926052	AC1-083 E O1	6.38
926071	AC1-086 C	6.98
926072	AC1-086 E	3.18
926201	AC1-098 C	2.32
926202	AC1-098 E	1.38
926211	AC1-099 C	0.78
926212	AC1-099 E	0.46
926271	AC1-105 C O1	2.27
926272	AC1-105 E O1	1.13
927021	AC1-189 C	3.35
927022	AC1-189 E	1.67
927141	AC1-208 C	3.47
927142	AC1-208 E	1.54
927251	AC1-221 C	1.55
927252	AC1-221 E	1.55
927261	AC1-222 C	1.45
927262	AC1-222 E	1.38
930402	AB1-081 E O1	1.69
930862	AB1-132 E O1	2.03
931232	AB1-173 E	0.34
931242	AB1-173AE	0.34
932631	AC2-084 C	3.3
932632	AC2-084 E	1.63
932761	AC2-100 C	3.57
932762	AC2-100 E	1.74
933941	AD1-017 C	0.78
933942	AD1-017 E	1.28
934201	AD1-047 C	2.63
934202	AD1-047 E	1.75
934231	AD1-050 C	1.93
934232	AD1-050 E	1.05
934311	AD1-055 C	1.01
934312	AD1-055 E	0.26
934331	AD1-057 C O1	3.95
934332	AD1-057 E O1	2.11
934341	AD1-058 C	3.89
934342	AD1-058 E	0.99
934611	AD1-087 C O1	3.23
934612	AD1-087 E O1	1.52
934991	AD1-131 C	1.27

Bus #	Bus	MW Impact
934992	AD1-131 E	0.85
935171	AD1-152 C O1	3.21
935172	AD1-152 E O1	2.14
936161	AD2-022 C O1	10.55
936162	AD2-022 E O1	6.33
936171	AD2-023 C O1	6.07
936172	AD2-023 E O1	3.29
936261	AD2-033 C	4.35
936262	AD2-033 E	2.9
936331	AD2-043 C	1.88
936332	AD2-043 E	2.22
936361	AD2-046 C O1	3.66
936362	AD2-046 E O1	1.68
936401	AD2-051 C O1	2.88
936402	AD2-051 E O1	1.24
936481	AD2-063 C O1	5.26
936482	AD2-063 E O1	3.51
936531	AD2-068 C	2.24
936532	AD2-068 E	1.15
936701	AD2-089 C	3.01
936702	AD2-089 E	2.01
937481	AD2-202 C O1	0.89
937482	AD2-202 E O1	0.45
937571	AD2-169 C	3.32
937572	AD2-169 E	2.22
938221	AE1-035 C	0.73
938222	AE1-035 E	0.36
938661	AE1-088	0.59
939181	AE1-148 C O1	3.59
939182	AE1-148 E O1	2.39
940081	AE1-250 C	13.95
940082	AE1-250 E	9.3
AA2-074	AA2-074	3.74
BLUEG	BLUEG	4.14
CANNELTON	CANNELTON	0.12
CBM-N	CBM-N	0.02
CBM-S1	CBM-S1	2.87
CBM-S2	CBM-S2	10.47
CBM-W2	CBM-W2	13.16
COFFEEN	COFFEEN	0.19
CPL	CPL	5.5
DEARBORN	DEARBORN	0.83
DUCKCREEK	DUCKCREEK	0.58
EDWARDS	EDWARDS	0.3
ELMERSMITH	ELMERSMITH	0.17
FARMERCITY	FARMERCITY	0.0
G-007A	G-007A	0.4
GIBSON	GIBSON	0.13
NEWTON	NEWTON	0.56
NYISO	NYISO	0.08
O-066A	O-066A	0.18
TATANKA	TATANKA	0.14

Bus #	Bus	MW Impact
TILTON	TILTON	0.42
TRIMBLE	TRIMBLE	0.48
VFT	VFT	1.04

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
425328	314435	6SAPONY	DVP	314282	6CARSON	DVP	1	DVP_P1-2: LN 246	single	678.68	102.09	103.29	DC	8.16

Bus #	Bus	MW Impact
314589	3MURPHYS	0.09
314704	3LAWRENC	0.64
315126	1ROARAP2	2.09
315128	1ROARAP4	2.01
315131	1EDGECEMA	10.76
315132	1EDGECEMB	10.76
315136	1ROSEMG1	3.95
315137	1ROSEMS1	2.45
315138	1ROSEMG2	1.85
315139	1GASTONA	5.85
315141	1GASTONB	5.85
315150	1BUGGS 1	8.66
315151	1BUGGS 2	8.66
315158	1KERR 1	0.31
315159	1KERR 2	1.25
315160	1KERR 3	1.23
315161	1KERR 4	1.23
315162	1KERR 5	1.23
315163	1KERR 6	1.23
315164	1KERR 7	1.23
315294	1DOMTR10	1.62
917331	Z2-043 C	0.45
917341	Z2-044 C	0.25
917511	Z2-088 C OP1	1.52
918491	AA1-063AC OP	1.93
918511	AA1-065 C OP	1.64
918531	AA1-067 C	0.28
918561	AA1-072 C	0.07
919691	AA2-053 C	2.08
919701	AA2-057 C	8.91
920041	AA2-088 C OP	0.95
920591	AA2-165 C	0.19
920671	AA2-174 C	0.1
923851	AB2-025 C	1.58
923911	AB2-031 C O1	4.86
923941	AB2-035 C	0.38
923991	AB2-040 C O1	2.45
924151	AB2-059 C O1	1.84
924391	AB2-088 C	0.49
924401	AB2-089 C	2.29

Bus #	Bus	MW Impact
924491	AB2-098 C	0.61
924501	AB2-099 C	0.7
924511	AB2-100 C	35.71
925121	AB2-169 C	0.91
925171	AB2-174 C O1	16.03
925591	AC1-034 C	7.77
925781	AC1-054 C O1	8.19
926071	AC1-086 C	42.89
926201	AC1-098 C	8.09
926211	AC1-099 C	2.71
927021	AC1-189 C	9.39
927141	AC1-208 C	12.39
930401	AB1-081 C O1	1.56
930861	AB1-132 C O1	4.47
931231	AB1-173 C	0.75
931241	AB1-173AC	0.75
932631	AC2-084 C	11.54
933991	AD1-023 C	11.69
934201	AD1-047 C	17.41
934231	AD1-050 C	5.04
934331	AD1-057 C O1	15.68
934521	AD1-076 C	42.68
936261	AD2-033 C	8.95
936361	AD2-046 C O1	8.32
936401	AD2-051 C O1	10.79
936481	AD2-063 C O1	11.53
936531	AD2-068 C	4.58
936701	AD2-089 C	8.14
936711	AD2-090 C O1	5.48
937571	AD2-169 C	20.52
938171	AE1-026 C1 O	26.61
938172	AE1-026 C2 O	3.85
938221	AE1-035 C	2.67
938661	AE1-088	3.05
939071	AE1-135 C O1	66.75
939181	AE1-148 C O1	8.16
AA2-074	AA2-074	2.53
CARR	CARR	0.23
CBM-S1	CBM-S1	5.71
CBM-S2	CBM-S2	6.7
CBM-W1	CBM-W1	5.8
CBM-W2	CBM-W2	37.56
CIN	CIN	2.62
CPL	CPL	3.72
IPL	IPL	1.64
LGEE	LGEE	0.76
MEC	MEC	5.8
MECS	MECS	2.48
RENSSELAER	RENSSELAER	0.18
WEC	WEC	0.7

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
424350	314559	3CAROLNA	DVP	314561	6CAROLNA	DVP	1	DVP_P4-2: 102952	breaker	288.6	144.49	146.69	DC	13.98

Bus #	Bus	MW Impact
314539	3UNCAMP	1.77
314541	3WATKINS	0.62
314578	3HORNRTN	8.18
314582	3KELFORD	2.17
314589	3MURPHYS	0.09
314603	3SCOT NK	2.69
314617	3TUNIS	0.64
315126	1ROARAP2	3.42
315128	1ROARAP4	3.29
315150	1BUGGS 1	7.88
315151	1BUGGS 2	7.88
315159	1KERR 2	1.36
315162	1KERR 5	1.34
315163	1KERR 6	1.34
315164	1KERR 7	1.34
900672	V4-068 E	0.31
907092	X1-038 E	4.43
917332	Z2-043 E	0.62
918491	AA1-063AC OP	2.32
918492	AA1-063AE OP	7.14
918562	AA1-072 E	0.1
919691	AA2-053 C	2.93
919692	AA2-053 E	8.21
919701	AA2-057 C	4.74
919702	AA2-057 E	2.37
920041	AA2-088 C OP	1.25
920042	AA2-088 E OP	13.29
920592	AA2-165 E	0.31
920671	AA2-174 C	0.13
920672	AA2-174 E	0.95
923801	AB2-015 C O1	7.16
923802	AB2-015 E O1	5.87
923911	AB2-031 C O1	6.01
923912	AB2-031 E O1	2.96
923991	AB2-040 C O1	3.03
923992	AB2-040 E O1	16.16
924022	AB2-043 E O1	3.26
924162	AB2-060 E O1	2.66
924302	AB2-077 E O1	0.85
924312	AB2-078 E O1	0.85

Bus #	Bus	MW Impact
924322	AB2-079 E O1	0.85
924401	AB2-089 C	2.81
924402	AB2-089 E	1.45
924501	AB2-099 C	0.34
924502	AB2-099 E	0.15
925171	AB2-174 C O1	18.85
925172	AB2-174 E O1	17.06
925612	AC1-036 E	0.77
925781	AC1-054 C O1	10.61
925782	AC1-054 E O1	4.89
926201	AC1-098 C	5.78
926202	AC1-098 E	3.44
926211	AC1-099 C	1.94
926212	AC1-099 E	1.14
927141	AC1-208 C	11.25
927142	AC1-208 E	5.0
931231	AB1-173 C	0.93
931232	AB1-173 E	2.83
931241	AB1-173AC	0.93
931242	AB1-173AE	2.83
932631	AC2-084 C	8.24
932632	AC2-084 E	4.06
934201	AD1-047 C	21.54
934202	AD1-047 E	14.36
934231	AD1-050 C	6.19
934232	AD1-050 E	3.38
936261	AD2-033 C	6.8
936262	AD2-033 E	4.53
936361	AD2-046 C O1	8.69
936362	AD2-046 E O1	3.99
936481	AD2-063 C O1	8.7
936482	AD2-063 E O1	5.8
936711	AD2-090 C O1	7.38
936712	AD2-090 E O1	4.92
937571	AD2-169 C	26.93
937572	AD2-169 E	17.95
938771	AE1-103 C O1	2.66
938772	AE1-103 E O1	3.67
939181	AE1-148 C O1	8.39
939182	AE1-148 E O1	5.59
CARR	CARR	0.04
CBM-S1	CBM-S1	0.35
CBM-S2	CBM-S2	0.32
CBM-W1	CBM-W1	0.35
CBM-W2	CBM-W2	2.24
CIN	CIN	0.17
CPLE	CPLE	0.12
G-007	G-007	0.14
IPL	IPL	0.11
LGEE	LGEE	0.05
MEC	MEC	0.35
MECS	MECS	0.13

Bus #	Bus	MW Impact
O-066	O-066	0.47
RENSSELAER	RENSSELAER	0.03
WEC	WEC	0.04

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
425079	314563	6CLUBHSE	DVP	314435	6SAPONY	DVP	1	DVP_P1-2: LN 246	single	598.78	119.21	120.58	DC	8.16

Bus #	Bus	MW Impact
314589	3MURPHYS	0.09
314704	3LAWRENC	0.64
315126	1ROARAP2	2.09
315128	1ROARAP4	2.01
315131	1EDGECEMA	10.76
315132	1EDGECEMB	10.76
315136	1ROSEMG1	3.95
315137	1ROSEMS1	2.45
315138	1ROSEMG2	1.85
315139	1GASTONA	5.85
315141	1GASTONB	5.85
315150	1BUGGS 1	8.66
315151	1BUGGS 2	8.66
315158	1KERR 1	0.31
315159	1KERR 2	1.25
315160	1KERR 3	1.23
315161	1KERR 4	1.23
315162	1KERR 5	1.23
315163	1KERR 6	1.23
315164	1KERR 7	1.23
315294	1DOMTR10	1.62
917331	Z2-043 C	0.45
917341	Z2-044 C	0.25
917511	Z2-088 C OP1	1.52
918491	AA1-063AC OP	1.93
918511	AA1-065 C OP	1.64
918531	AA1-067 C	0.28
918561	AA1-072 C	0.07
919691	AA2-053 C	2.08
919701	AA2-057 C	8.91
920041	AA2-088 C OP	0.95
920591	AA2-165 C	0.19
920671	AA2-174 C	0.1
923801	AB2-015 C O1	5.17
923911	AB2-031 C O1	4.86
923941	AB2-035 C	0.38
923991	AB2-040 C O1	2.45
924151	AB2-059 C O1	1.84
924391	AB2-088 C	0.49
924401	AB2-089 C	2.29

Bus #	Bus	MW Impact
924491	AB2-098 C	0.61
924501	AB2-099 C	0.7
924511	AB2-100 C	35.71
925121	AB2-169 C	0.91
925171	AB2-174 C O1	16.03
925291	AB2-188 C O1	1.45
925591	AC1-034 C	7.77
925781	AC1-054 C O1	8.2
926071	AC1-086 C	42.9
926201	AC1-098 C	8.1
926211	AC1-099 C	2.71
927021	AC1-189 C	9.39
927141	AC1-208 C	12.39
930401	AB1-081 C O1	1.56
930861	AB1-132 C O1	4.47
931231	AB1-173 C	0.75
931241	AB1-173AC	0.75
932631	AC2-084 C	11.54
933991	AD1-023 C	11.69
934201	AD1-047 C	17.41
934231	AD1-050 C	5.04
934331	AD1-057 C O1	15.69
934521	AD1-076 C	42.7
936261	AD2-033 C	8.95
936361	AD2-046 C O1	8.32
936401	AD2-051 C O1	10.8
936481	AD2-063 C O1	11.54
936531	AD2-068 C	4.58
936701	AD2-089 C	8.15
936711	AD2-090 C O1	5.48
937571	AD2-169 C	20.52
938171	AE1-026 C1 O	26.62
938172	AE1-026 C2 O	3.85
938221	AE1-035 C	2.67
938661	AE1-088	3.05
939071	AE1-135 C O1	66.76
939181	AE1-148 C O1	8.16
AA2-074	AA2-074	2.54
CARR	CARR	0.23
CBM-S1	CBM-S1	5.73
CBM-S2	CBM-S2	6.71
CBM-W1	CBM-W1	5.84
CBM-W2	CBM-W2	37.73
CIN	CIN	2.64
CPLE	CPLE	3.73
IPL	IPL	1.65
LGEE	LGEE	0.76
MEC	MEC	5.83
MECS	MECS	2.5
RENSSELAER	RENSSELAER	0.18
WEC	WEC	0.7

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
425285	314691	3FARMVIL	DVP	314692	6FARMVIL	DVP	2	DVP_P1-2: LN 235-A	single	182.64	73.81	78.08	DC	7.79

Bus #	Bus	MW Impact
314429	3JTRSVLE	1.0
314704	3LAWRENC	0.19
315150	1BUGGS 1	9.74
315151	1BUGGS 2	9.74
315158	1KERR 1	0.26
315159	1KERR 2	1.05
315160	1KERR 3	1.03
315161	1KERR 4	1.03
315162	1KERR 5	1.03
315163	1KERR 6	1.03
315164	1KERR 7	1.03
315266	1PLYWOOD A	0.56
923911	AB2-031 C O1	0.73
923991	AB2-040 C O1	0.37
924021	AB2-043 C O1	0.6
924161	AB2-060 C O1	1.79
924301	AB2-077 C O1	0.37
924311	AB2-078 C O1	0.37
924321	AB2-079 C O1	0.37
924401	AB2-089 C	1.53
925171	AB2-174 C O1	2.32
925611	AC1-036 C	0.3
925781	AC1-054 C O1	4.85
925831	AC1-062	0.14
926271	AC1-105 C O1	3.12
927261	AC1-222 C	1.32
931231	AB1-173 C	0.11
931241	AB1-173AC	0.11
934201	AD1-047 C	2.6
934231	AD1-050 C	3.38
934311	AD1-055 C	0.91
935221	AD1-157 C	0.69
935231	AD1-160 C	3.31
936261	AD2-033 C	24.72
936331	AD2-043 C	1.71
936361	AD2-046 C O1	7.7
936481	AD2-063 C O1	23.29
936651	AD2-082 C	5.07
937571	AD2-169 C	3.18
938371	AE1-056 C	19.49

Bus #	Bus	MW Impact
939181	AE1-148 C O1	7.79
939201	AE1-150 C O1	36.82
939371	AE1-168 C	37.78
CARR	CARR	0.08
CBM-S1	CBM-S1	1.63
CBM-S2	CBM-S2	2.21
CBM-W1	CBM-W1	1.34
CBM-W2	CBM-W2	10.47
CIN	CIN	0.61
CPLE	CPLE	1.19
IPL	IPL	0.38
LGEE	LGEE	0.18
MEC	MEC	1.48
MECS	MECS	0.46
RENSSELAER	RENSSELAER	0.06
WEC	WEC	0.16

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
425823	314702	3KERR	DVP	304102	3GW KING TAP	CPL	1	DVP_P7-1: LN 22-90-A	tower	199.0	136.39	150.86	DC	28.73

Bus #	Bus	MW Impact
315150	1BUGGS 1	15.54
315151	1BUGGS 2	15.54
315158	1KERR 1	0.7
315159	1KERR 2	2.85
315160	1KERR 3	2.81
315161	1KERR 4	2.81
315162	1KERR 5	2.81
315163	1KERR 6	2.81
315164	1KERR 7	2.81
924022	AB2-043 E O1	6.02
924162	AB2-060 E O1	4.91
924302	AB2-077 E O1	1.58
924312	AB2-078 E O1	1.58
924322	AB2-079 E O1	1.58
924401	AB2-089 C	4.63
924402	AB2-089 E	2.38
925612	AC1-036 E	1.43
925781	AC1-054 C O1	15.6
925782	AC1-054 E O1	7.18
926271	AC1-105 C O1	2.87
926272	AC1-105 E O1	1.43
934231	AD1-050 C	10.2
934232	AD1-050 E	5.57
935222	AD1-157 E	0.64
935231	AD1-160 C	0.7
935232	AD1-160 E	0.97
936261	AD2-033 C	12.59
936262	AD2-033 E	8.39
936361	AD2-046 C O1	17.92
936362	AD2-046 E O1	8.24
936481	AD2-063 C O1	16.07
936482	AD2-063 E O1	10.72
936651	AD2-082 C	1.08
936652	AD2-082 E	0.52
938371	AE1-056 C	4.14
938372	AE1-056 E	2.26
939181	AE1-148 C O1	17.24
939182	AE1-148 E O1	11.49
939201	AE1-150 C O1	4.43
939202	AE1-150 E O1	2.95

Bus #	Bus	MW Impact
939371	AE1-168 C	11.8
939372	AE1-168 E	7.86
BAYOU	BAYOU	0.71
BIG_CAJUN1	BIG_CAJUN1	1.12
BIG_CAJUN2	BIG_CAJUN2	2.24
BLUEG	BLUEG	1.98
CALDERWOOD	CALDERWOOD	0.42
CANNELTON	CANNELTON	0.14
CATAWBA	CATAWBA	0.43
CBM-N	CBM-N	0.0
CHEOAH	CHEOAH	0.39
CHILHOWEE	CHILHOWEE	0.14
CHOCTAW	CHOCTAW	0.76
COFFEEN	COFFEEN	0.23
COTTONWOOD	COTTONWOOD	2.77
DEARBORN	DEARBORN	0.25
DUCKCREEK	DUCKCREEK	0.48
EDWARDS	EDWARDS	0.21
ELMERSMITH	ELMERSMITH	0.24
FARMERCITY	FARMERCITY	0.17
G-007A	G-007A	0.09
GIBSON	GIBSON	0.09
HAMLET	HAMLET	1.64
NEWTON	NEWTON	0.61
NYISO	NYISO	0.02
O-066A	O-066A	0.04
PRAIRIE	PRAIRIE	1.28
SANTEETLA	SANTEETLA	0.12
SMITHLAND	SMITHLAND	0.11
TATANKA	TATANKA	0.29
TILTON	TILTON	0.25
TRIMBLE	TRIMBLE	0.22
TVA	TVA	1.17
UNIONPOWER	UNIONPOWER	0.59
VFT	VFT	0.22

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
424614	314299	6HARROWG	DVP	314263	6TYLER1	DVP	1	DVP_P4-2: 24972-4	breaker	541.0	101.43	102.1	DC	7.97

Bus #	Bus	MW Impact
314539	3UNCAMP	1.22
314541	3WATKINS	0.38
314554	3BTLEBRO	0.5
314557	3BETHELC	0.48
314572	3EMPORIA	0.58
314574	6EVERETS	2.18
314578	3HORNRTN	2.97
314582	3KELFORD	2.27
314603	3SCOT NK	2.25
314617	3TUNIS	0.53
314620	6CASHIE	0.4
314623	3WITAKRS	0.88
314704	3LAWRENC	0.36
315126	1ROARAP2	1.17
315131	1EDGECEMA	5.88
315132	1EDGECEMB	5.88
315136	1ROSEMG1	2.16
315137	1ROSEMS1	1.34
315138	1ROSEMG2	1.01
315139	1GASTONA	3.2
315141	1GASTONB	3.2
315150	1BUGGS 1	5.21
315151	1BUGGS 2	5.21
900672	V4-068 E	0.19
907092	X1-038 E	3.04
917332	Z2-043 E	0.65
917342	Z2-044 E	0.38
917512	Z2-088 E OP1	2.18
918492	AA1-063AE OP	3.19
918512	AA1-065 E OP	2.44
918532	AA1-067 E	0.39
918562	AA1-072 E	0.11
919692	AA2-053 E	3.2
919701	AA2-057 C	4.87
919702	AA2-057 E	2.43
920042	AA2-088 E OP	6.77
920592	AA2-165 E	0.32
920672	AA2-174 E	0.37
923801	AB2-015 C O1	4.56
923802	AB2-015 E O1	3.74

Bus #	Bus	MW Impact
923851	AB2-025 C	0.89
923852	AB2-025 E	2.6
923911	AB2-031 C O1	2.72
923912	AB2-031 E O1	1.34
923941	AB2-035 C	0.2
923942	AB2-035 E	0.09
923991	AB2-040 C O1	1.37
923992	AB2-040 E O1	7.31
924022	AB2-043 E O1	2.58
924152	AB2-059 E O1	3.39
924162	AB2-060 E O1	2.1
924302	AB2-077 E O1	0.66
924312	AB2-078 E O1	0.66
924322	AB2-079 E O1	0.66
924391	AB2-088 C	0.26
924392	AB2-088 E	0.12
924401	AB2-089 C	1.32
924402	AB2-089 E	0.68
924491	AB2-098 C	0.3
924492	AB2-098 E	0.13
924501	AB2-099 C	0.37
924502	AB2-099 E	0.16
924511	AB2-100 C	19.94
924512	AB2-100 E	9.82
925061	AB2-161 C O1	3.56
925062	AB2-161 E O1	5.8
925122	AB2-169 E	2.72
925171	AB2-174 C O1	8.98
925172	AB2-174 E O1	8.13
925591	AC1-034 C	4.26
925592	AC1-034 E	3.22
925781	AC1-054 C O1	4.71
925782	AC1-054 E O1	2.17
926071	AC1-086 C	23.46
926072	AC1-086 E	10.68
926201	AC1-098 C	4.34
926202	AC1-098 E	2.59
926211	AC1-099 C	1.45
926212	AC1-099 E	0.85
927021	AC1-189 C	4.75
927022	AC1-189 E	2.37
927141	AC1-208 C	6.77
927142	AC1-208 E	3.01
930402	AB1-081 E O1	2.39
930861	AB1-132 C O1	2.44
930862	AB1-132 E O1	6.83
931231	AB1-173 C	0.42
931232	AB1-173 E	1.28
931241	AB1-173AC	0.42
931242	AB1-173AE	1.28
932581	AC2-078 C O1	6.56
932582	AC2-078 E O1	10.7

Bus #	Bus	MW Impact
932591	AC2-079 C O1	4.04
932592	AC2-079 E O1	6.59
932631	AC2-084 C	6.19
932632	AC2-084 E	3.05
933991	AD1-023 C	5.91
933992	AD1-023 E	3.22
934201	AD1-047 C	9.75
934202	AD1-047 E	6.5
934231	AD1-050 C	2.91
934232	AD1-050 E	1.59
934331	AD1-057 C O1	8.58
934332	AD1-057 E O1	4.58
934571	AD1-082 C	8.1
934572	AD1-082 E	4.62
935211	AD1-156 C	1.05
935212	AD1-156 E	4.58
936361	AD2-046 C O1	4.88
936362	AD2-046 E O1	2.24
936401	AD2-051 C O1	5.39
936402	AD2-051 E O1	2.31
936481	AD2-063 C O1	6.87
936482	AD2-063 E O1	4.58
936531	AD2-068 C	2.4
936532	AD2-068 E	1.24
936661	AD2-085 C	2.49
936662	AD2-085 E	4.07
936701	AD2-089 C	4.3
936702	AD2-089 E	2.87
936711	AD2-090 C O1	4.17
936712	AD2-090 E O1	2.78
937571	AD2-169 C	11.48
937572	AD2-169 E	7.66
938171	AE1-026 C1 O	13.17
938172	AE1-026 C2 O	1.91
938173	AE1-026 E O1	3.98
938221	AE1-035 C	1.24
938222	AE1-035 E	0.61
938631	AE1-085 C O1	16.85
938632	AE1-085 E O1	11.23
938661	AE1-088	0.82
938771	AE1-103 C O1	1.82
938772	AE1-103 E O1	2.52
938841	AE1-109AC O1	9.6
938842	AE1-109AE O1	6.4
939071	AE1-135 C O1	37.34
939072	AE1-135 E O1	24.89
939181	AE1-148 C O1	4.78
939182	AE1-148 E O1	3.19
939191	AE1-149 C O1	18.48
939192	AE1-149 E O1	12.32
940061	AE1-248 C O1	16.84
940062	AE1-248 E O1	11.23

Bus #	Bus	MW Impact
AA2-074	AA2-074	1.64
CARR	CARR	0.16
CBM-S1	CBM-S1	3.83
CBM-S2	CBM-S2	4.45
CBM-W1	CBM-W1	3.86
CBM-W2	CBM-W2	25.14
CIN	CIN	1.74
CPL	CPL	2.41
G-007	G-007	0.54
IPL	IPL	1.09
LGEE	LGEE	0.51
MEC	MEC	3.87
MECS	MECS	1.64
O-066	O-066	1.81
RENSSELAER	RENSSELAER	0.12
WEC	WEC	0.47

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
424693	314316	6LOCKS	DVP	314301	6HARR205	DVP	1	DVP_P4-2: 562T563	breaker	541.0	93.95	94.41	DC	5.49

Bus #	Bus	MW Impact
314314	3LOCKS	0.39
314541	3WATKINS	0.2
314554	3BTLEBRO	0.32
314557	3BETHELC	0.31
314572	3EMPORIA	0.26
314574	6EVERETS	1.43
314578	3HORNRTN	1.52
314582	3KELFORD	1.3
314603	3SCOT NK	1.29
314617	3TUNIS	0.3
314620	6CASHIE	0.25
314623	3WITAKRS	0.55
315131	1EDGECEMA	3.75
315132	1EDGECEMB	3.75
315150	1BUGGS 1	4.05
315151	1BUGGS 2	4.05
900672	V4-068 E	0.1
916302	Z1-086 E	4.11
917332	Z2-043 E	0.37
917342	Z2-044 E	0.23
917512	Z2-088 E OP1	1.41
918492	AA1-063AE OP	1.68
918512	AA1-065 E OP	1.47
918532	AA1-067 E	0.25
918562	AA1-072 E	0.06
919692	AA2-053 E	1.65
919701	AA2-057 C	2.91
919702	AA2-057 E	1.46
920042	AA2-088 E OP	3.58
920592	AA2-165 E	0.19
920672	AA2-174 E	0.19
923851	AB2-025 C	0.34
923852	AB2-025 E	1.01
923911	AB2-031 C O1	1.26
923912	AB2-031 E O1	0.62
923941	AB2-035 C	0.13
923942	AB2-035 E	0.06
923992	AB2-040 E O1	3.38
924022	AB2-043 E O1	1.83
924152	AB2-059 E O1	2.18

Bus #	Bus	MW Impact
924162	AB2-060 E O1	1.5
924302	AB2-077 E O1	0.47
924312	AB2-078 E O1	0.47
924322	AB2-079 E O1	0.47
924391	AB2-088 C	0.17
924392	AB2-088 E	0.08
924401	AB2-089 C	0.85
924402	AB2-089 E	0.44
924491	AB2-098 C	0.2
924492	AB2-098 E	0.08
924501	AB2-099 C	0.21
924502	AB2-099 E	0.09
924511	AB2-100 C	8.3
924512	AB2-100 E	4.09
925051	AB2-160 C O1	7.97
925052	AB2-160 E O1	13.0
925122	AB2-169 E	1.78
925171	AB2-174 C O1	4.09
925172	AB2-174 E O1	3.7
925591	AC1-034 C	2.74
925592	AC1-034 E	2.07
925612	AC1-036 E	0.47
925781	AC1-054 C O1	2.92
925782	AC1-054 E O1	1.34
925821	AC1-061	0.01
926071	AC1-086 C	11.08
926072	AC1-086 E	5.04
926201	AC1-098 C	2.49
926202	AC1-098 E	1.48
926211	AC1-099 C	0.83
926212	AC1-099 E	0.49
926271	AC1-105 C O1	1.86
926272	AC1-105 E O1	0.93
927021	AC1-189 C	3.09
927022	AC1-189 E	1.54
927141	AC1-208 C	3.82
927142	AC1-208 E	1.69
927251	AC1-221 C	0.73
927252	AC1-221 E	0.73
927261	AC1-222 C	1.16
927262	AC1-222 E	1.1
930402	AB1-081 E O1	1.54
930862	AB1-132 E O1	3.22
931232	AB1-173 E	0.59
931242	AB1-173AE	0.59
932581	AC2-078 C O1	1.33
932582	AC2-078 E O1	2.17
932631	AC2-084 C	3.55
932632	AC2-084 E	1.75
932761	AC2-100 C	1.69
932762	AC2-100 E	0.82
934201	AD1-047 C	4.5

Bus #	Bus	MW Impact
934202	AD1-047 E	3.0
934231	AD1-050 C	1.87
934232	AD1-050 E	1.02
934311	AD1-055 C	0.81
934312	AD1-055 E	0.21
934331	AD1-057 C O1	4.63
934332	AD1-057 E O1	2.47
934341	AD1-058 C	1.84
934342	AD1-058 E	0.47
934611	AD1-087 C O1	2.89
934612	AD1-087 E O1	1.36
934621	AD1-088 C	3.8
934622	AD1-088 E	1.78
934991	AD1-131 C	0.6
934992	AD1-131 E	0.4
935171	AD1-152 C O1	2.87
935172	AD1-152 E O1	1.91
935212	AD1-156 E	0.48
936261	AD2-033 C	4.06
936262	AD2-033 E	2.71
936331	AD2-043 C	1.51
936332	AD2-043 E	1.78
936361	AD2-046 C O1	3.35
936362	AD2-046 E O1	1.54
936401	AD2-051 C O1	3.1
936402	AD2-051 E O1	1.33
936481	AD2-063 C O1	5.01
936482	AD2-063 E O1	3.34
936531	AD2-068 C	1.81
936532	AD2-068 E	0.93
936701	AD2-089 C	2.77
936702	AD2-089 E	1.84
936711	AD2-090 C O1	2.22
936712	AD2-090 E O1	1.48
937481	AD2-202 C O1	0.8
937482	AD2-202 E O1	0.4
937571	AD2-169 C	5.4
937572	AD2-169 E	3.6
938171	AE1-026 C1 O	8.32
938172	AE1-026 C2 O	1.2
938173	AE1-026 E O1	2.51
938221	AE1-035 C	0.74
938222	AE1-035 E	0.37
938491	AE1-068 C O1	26.21
938492	AE1-068 E O1	14.48
938501	AE1-069 C O1	20.49
938502	AE1-069 E O1	11.72
938631	AE1-085 C O1	3.48
938632	AE1-085 E O1	2.32
938661	AE1-088	0.54
939071	AE1-135 C O1	15.38
939072	AE1-135 E O1	10.25

Bus #	Bus	MW Impact
939181	AE1-148 C O1	3.3
939182	AE1-148 E O1	2.2
939191	AE1-149 C O1	3.64
939192	AE1-149 E O1	2.43
939411	AE1-173 C	29.88
939412	AE1-173 E	19.92
940071	AE1-249 C	10.51
940072	AE1-249 E	7.84
AA2-074	AA2-074	2.08
CARR	CARR	0.24
CBM-S1	CBM-S1	5.29
CBM-S2	CBM-S2	5.98
CBM-W1	CBM-W1	5.29
CBM-W2	CBM-W2	34.71
CIN	CIN	2.4
CPL	CPL	3.06
G-007	G-007	0.82
IPL	IPL	1.5
LGEE	LGEE	0.69
MEC	MEC	5.33
MECS	MECS	2.23
O-066	O-066	2.71
RENSSELAER	RENSSELAER	0.19
WEC	WEC	0.64

Index 9

ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC DC	MW IMPACT
424616	314331	6POE	DVP	314299	6HARROWG	DVP	1	DVP_P4-2: 24972-4	breaker	541.0	101.43	102.1	DC	7.97

Bus #	Bus	MW Impact
314539	3UNCAMP	1.22
314541	3WATKINS	0.38
314554	3BTLEBRO	0.5
314557	3BETHELC	0.48
314572	3EMPORIA	0.58
314574	6EVERETS	2.18
314578	3HORNRTN	2.97
314582	3KELFORD	2.27
314603	3SCOT NK	2.25
314617	3TUNIS	0.53
314620	6CASHIE	0.4
314623	3WITAKRS	0.88
314704	3LAWRENC	0.36
315126	1ROARAP2	1.17
315131	1EDGECEMA	5.88
315132	1EDGECEMB	5.88
315136	1ROSEMG1	2.16
315137	1ROSEMS1	1.34
315138	1ROSEMG2	1.01
315139	1GASTONA	3.2
315141	1GASTONB	3.2
315150	1BUGGS 1	5.21
315151	1BUGGS 2	5.21
900672	V4-068 E	0.19
907092	X1-038 E	3.04
917332	Z2-043 E	0.65
917342	Z2-044 E	0.38
917512	Z2-088 E OP1	2.18
918492	AA1-063AE OP	3.19
918512	AA1-065 E OP	2.44
918532	AA1-067 E	0.39
918562	AA1-072 E	0.11
919692	AA2-053 E	3.2
919701	AA2-057 C	4.87
919702	AA2-057 E	2.43
920042	AA2-088 E OP	6.77
920592	AA2-165 E	0.32
920672	AA2-174 E	0.37
923801	AB2-015 C O1	4.56
923802	AB2-015 E O1	3.74

Bus #	Bus	MW Impact
923851	AB2-025 C	0.89
923852	AB2-025 E	2.6
923911	AB2-031 C O1	2.72
923912	AB2-031 E O1	1.34
923941	AB2-035 C	0.2
923942	AB2-035 E	0.09
923991	AB2-040 C O1	1.37
923992	AB2-040 E O1	7.31
924022	AB2-043 E O1	2.58
924152	AB2-059 E O1	3.39
924162	AB2-060 E O1	2.1
924302	AB2-077 E O1	0.66
924312	AB2-078 E O1	0.66
924322	AB2-079 E O1	0.66
924391	AB2-088 C	0.26
924392	AB2-088 E	0.12
924401	AB2-089 C	1.32
924402	AB2-089 E	0.68
924491	AB2-098 C	0.3
924492	AB2-098 E	0.13
924501	AB2-099 C	0.37
924502	AB2-099 E	0.16
924511	AB2-100 C	19.94
924512	AB2-100 E	9.82
925061	AB2-161 C O1	3.56
925062	AB2-161 E O1	5.8
925122	AB2-169 E	2.72
925171	AB2-174 C O1	8.98
925172	AB2-174 E O1	8.13
925591	AC1-034 C	4.26
925592	AC1-034 E	3.22
925781	AC1-054 C O1	4.71
925782	AC1-054 E O1	2.17
926071	AC1-086 C	23.46
926072	AC1-086 E	10.68
926201	AC1-098 C	4.34
926202	AC1-098 E	2.59
926211	AC1-099 C	1.45
926212	AC1-099 E	0.85
927021	AC1-189 C	4.75
927022	AC1-189 E	2.37
927141	AC1-208 C	6.77
927142	AC1-208 E	3.01
930402	AB1-081 E O1	2.39
930861	AB1-132 C O1	2.44
930862	AB1-132 E O1	6.83
931231	AB1-173 C	0.42
931232	AB1-173 E	1.28
931241	AB1-173AC	0.42
931242	AB1-173AE	1.28
932581	AC2-078 C O1	6.56
932582	AC2-078 E O1	10.7

Bus #	Bus	MW Impact
932591	AC2-079 C O1	4.04
932592	AC2-079 E O1	6.59
932631	AC2-084 C	6.19
932632	AC2-084 E	3.05
933991	AD1-023 C	5.91
933992	AD1-023 E	3.22
934201	AD1-047 C	9.75
934202	AD1-047 E	6.5
934231	AD1-050 C	2.91
934232	AD1-050 E	1.59
934331	AD1-057 C O1	8.58
934332	AD1-057 E O1	4.58
934571	AD1-082 C	8.1
934572	AD1-082 E	4.62
935211	AD1-156 C	1.05
935212	AD1-156 E	4.58
936361	AD2-046 C O1	4.88
936362	AD2-046 E O1	2.24
936401	AD2-051 C O1	5.39
936402	AD2-051 E O1	2.31
936481	AD2-063 C O1	6.87
936482	AD2-063 E O1	4.58
936531	AD2-068 C	2.4
936532	AD2-068 E	1.24
936661	AD2-085 C	2.49
936662	AD2-085 E	4.07
936701	AD2-089 C	4.3
936702	AD2-089 E	2.87
936711	AD2-090 C O1	4.17
936712	AD2-090 E O1	2.78
937571	AD2-169 C	11.48
937572	AD2-169 E	7.66
938171	AE1-026 C1 O	13.17
938172	AE1-026 C2 O	1.91
938173	AE1-026 E O1	3.98
938221	AE1-035 C	1.24
938222	AE1-035 E	0.61
938631	AE1-085 C O1	16.85
938632	AE1-085 E O1	11.23
938661	AE1-088	0.82
938771	AE1-103 C O1	1.82
938772	AE1-103 E O1	2.52
938841	AE1-109AC O1	9.6
938842	AE1-109AE O1	6.4
939071	AE1-135 C O1	37.34
939072	AE1-135 E O1	24.89
939181	AE1-148 C O1	4.78
939182	AE1-148 E O1	3.19
939191	AE1-149 C O1	18.48
939192	AE1-149 E O1	12.32
940061	AE1-248 C O1	16.84
940062	AE1-248 E O1	11.23

Bus #	Bus	MW Impact
AA2-074	AA2-074	1.64
CARR	CARR	0.16
CBM-S1	CBM-S1	3.83
CBM-S2	CBM-S2	4.45
CBM-W1	CBM-W1	3.86
CBM-W2	CBM-W2	25.14
CIN	CIN	1.74
CPL	CPL	2.41
G-007	G-007	0.54
IPL	IPL	1.09
LGEE	LGEE	0.51
MEC	MEC	3.87
MECS	MECS	1.64
O-066	O-066	1.81
RENSSELAER	RENSSELAER	0.12
WEC	WEC	0.47

Index 10

ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC DC	MW IMPACT
424511	313719	3CHESTNUT	DVP	314623	3WITAKRS	DVP	1	DVP_P4-2: 2202	breaker	202.0	123.15	124.64	DC	6.69

Bus #	Bus	MW Impact
314578	3HORNRTN	8.36
314582	3KELFORD	4.65
314603	3SCOT NK	7.49
315126	1ROARAP2	2.99
315128	1ROARAP4	2.88
917331	Z2-043 C	0.47
917332	Z2-043 E	1.32
918492	AA1-063AE OP	1.71
918561	AA1-072 C	0.07
918562	AA1-072 E	0.22
919692	AA2-053 E	1.61
919701	AA2-057 C	30.56
919702	AA2-057 E	15.28
920591	AA2-165 C	0.64
920592	AA2-165 E	2.01
920672	AA2-174 E	0.19
924401	AB2-089 C	1.73
924402	AB2-089 E	0.89
925781	AC1-054 C O1	3.64
925782	AC1-054 E O1	1.67
926201	AC1-098 C	17.69
926202	AC1-098 E	10.54
926211	AC1-099 C	5.93
926212	AC1-099 E	3.48
927141	AC1-208 C	30.35
927142	AC1-208 E	13.48
932631	AC2-084 C	25.22
932632	AC2-084 E	12.42
934231	AD1-050 C	3.82
934232	AD1-050 E	2.09
936361	AD2-046 C O1	4.17
936362	AD2-046 E O1	1.92
936401	AD2-051 C O1	3.74
936402	AD2-051 E O1	1.61
939181	AE1-148 C O1	4.01
939182	AE1-148 E O1	2.68
BAYOU	BAYOU	0.31
BIG_CAJUN1	BIG_CAJUN1	0.49
BIG_CAJUN2	BIG_CAJUN2	0.98
BLUEG	BLUEG	0.85
CALDERWOOD	CALDERWOOD	0.18

Bus #	Bus	MW Impact
CANNELTON	CANNELTON	0.06
CARR	CARR	0.0
CATAWBA	CATAWBA	0.18
CHEOAH	CHEOAH	0.17
CHILHOWEE	CHILHOWEE	0.06
CHOCTAW	CHOCTAW	0.33
COFFEEN	COFFEEN	0.1
COTTONWOOD	COTTONWOOD	1.2
DEARBORN	DEARBORN	0.11
DUCKCREEK	DUCKCREEK	0.21
EDWARDS	EDWARDS	0.09
ELMERSMITH	ELMERSMITH	0.1
FARMERCITY	FARMERCITY	0.07
G-007A	G-007A	0.02
GIBSON	GIBSON	0.04
HAMLET	HAMLET	0.77
NEWTON	NEWTON	0.26
O-066A	O-066A	0.01
PRAIRIE	PRAIRIE	0.55
RENSSELAER	RENSSELAER	0.0
SANTEETLA	SANTEETLA	0.05
SMITHLAND	SMITHLAND	0.05
TATANKA	TATANKA	0.12
TILTON	TILTON	0.11
TRIMBLE	TRIMBLE	0.09
TVA	TVA	0.51
UNIONPOWER	UNIONPOWER	0.25
VFT	VFT	0.05

Index 11

ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC DC	MW IMPACT
424674	313858	3SO JUSTICE	DVP	314577	3COX DP	DVP	1	DVP_P4-2: 101002	breaker	202.0	101.6	103.1	DC	6.69

Bus #	Bus	MW Impact
314578	3HORNRTN	8.36
314582	3KELFORD	4.65
314603	3SCOT NK	7.49
315126	1ROARAP2	2.99
315128	1ROARAP4	2.88
917331	Z2-043 C	0.47
917332	Z2-043 E	1.32
918492	AA1-063AE OP	1.71
918561	AA1-072 C	0.07
918562	AA1-072 E	0.22
919692	AA2-053 E	1.61
920672	AA2-174 E	0.19
924401	AB2-089 C	1.73
924402	AB2-089 E	0.89
924501	AB2-099 C	0.23
924502	AB2-099 E	0.1
925781	AC1-054 C O1	3.64
925782	AC1-054 E O1	1.68
926201	AC1-098 C	17.69
926202	AC1-098 E	10.54
926211	AC1-099 C	5.93
926212	AC1-099 E	3.48
927141	AC1-208 C	30.35
927142	AC1-208 E	13.48
932631	AC2-084 C	25.22
932632	AC2-084 E	12.42
934231	AD1-050 C	3.82
934232	AD1-050 E	2.09
936361	AD2-046 C O1	4.17
936362	AD2-046 E O1	1.92
936401	AD2-051 C O1	3.74
936402	AD2-051 E O1	1.61
939181	AE1-148 C O1	4.02
939182	AE1-148 E O1	2.68
BAYOU	BAYOU	0.3
BIG_CAJUN1	BIG_CAJUN1	0.48
BIG_CAJUN2	BIG_CAJUN2	0.96
BLUEG	BLUEG	0.83
CALDERWOOD	CALDERWOOD	0.18
CANNELTON	CANNELTON	0.06

Bus #	Bus	MW Impact
CATAWBA	CATAWBA	0.18
CHEOAH	CHEOAH	0.17
CHILHOWEE	CHILHOWEE	0.06
CHOCTAW	CHOCTAW	0.33
COFFEEN	COFFEEN	0.1
COTTONWOOD	COTTONWOOD	1.18
DEARBORN	DEARBORN	0.11
DUCKCREEK	DUCKCREEK	0.2
EDWARDS	EDWARDS	0.09
ELMERSMITH	ELMERSMITH	0.1
FARMERCITY	FARMERCITY	0.07
G-007A	G-007A	0.03
GIBSON	GIBSON	0.04
HAMLET	HAMLET	0.76
NEWTON	NEWTON	0.26
O-066A	O-066A	0.01
PRAIRIE	PRAIRIE	0.54
SANTEETLA	SANTEETLA	0.05
SMITHLAND	SMITHLAND	0.05
TATANKA	TATANKA	0.12
TILTON	TILTON	0.11
TRIMBLE	TRIMBLE	0.09
TVA	TVA	0.5
UNIONPOWER	UNIONPOWER	0.25
VFT	VFT	0.08

Index 12

ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC DC	MW IMPACT
424384	314282	6CARSON	DVP	314285	6CHRL249	DVP	1	DVP_P4-2: 562T563	breaker	684.0	139.72	140.18	DC	6.96

Bus #	Bus	MW Impact
314541	3WATKINS	0.23
314554	3BTLEBRO	0.4
314557	3BETHEL	0.39
314572	3EMPORIA	0.33
314574	6EVERETS	1.77
314578	3HORNRTN	1.92
314582	3KELFORD	1.62
314603	3SCOT NK	1.61
314617	3TUNIS	0.36
314620	6CASHIE	0.31
314623	3WITAKRS	0.69
314704	3LAWRENC	0.22
315102	1BRUNSWICKG1	4.2
315103	1BRUNSWICKG2	4.2
315104	1BRUNSWICKG3	4.2
315105	1BRUNSWICKS1	8.72
315131	1EDGECEMA	4.73
315132	1EDGECEMB	4.73
315136	1ROSEMG1	1.33
315137	1ROSEMS1	0.82
315138	1ROSEMG2	0.62
315139	1GASTONA	1.92
315141	1GASTONB	1.92
315150	1BUGGS 1	5.14
315151	1BUGGS 2	5.14
900672	V4-068 E	0.13
916301	Z1-086 C	25.59
916302	Z1-086 E	5.22
917332	Z2-043 E	0.46
917342	Z2-044 E	0.3
917512	Z2-088 E OP1	1.76
918492	AA1-063AE OP	2.11
918512	AA1-065 E OP	1.81
918532	AA1-067 E	0.31
918562	AA1-072 E	0.08
919692	AA2-053 E	2.08
919701	AA2-057 C	3.67
919702	AA2-057 E	1.83
920042	AA2-088 E OP	4.28
920592	AA2-165 E	0.24

Bus #	Bus	MW Impact
920672	AA2-174 E	0.24
923851	AB2-025 C	0.44
923852	AB2-025 E	1.3
923911	AB2-031 C O1	1.6
923912	AB2-031 E O1	0.79
923941	AB2-035 C	0.16
923942	AB2-035 E	0.07
923991	AB2-040 C O1	0.8
923992	AB2-040 E O1	4.29
924022	AB2-043 E O1	2.32
924152	AB2-059 E O1	2.75
924162	AB2-060 E O1	1.9
924302	AB2-077 E O1	0.6
924312	AB2-078 E O1	0.6
924322	AB2-079 E O1	0.6
924391	AB2-088 C	0.21
924392	AB2-088 E	0.1
924401	AB2-089 C	1.07
924402	AB2-089 E	0.55
924491	AB2-098 C	0.24
924492	AB2-098 E	0.1
924501	AB2-099 C	0.26
924502	AB2-099 E	0.11
924511	AB2-100 C	10.63
924512	AB2-100 E	5.23
925122	AB2-169 E	2.2
925171	AB2-174 C O1	5.2
925172	AB2-174 E O1	4.71
925591	AC1-034 C	3.46
925592	AC1-034 E	2.61
925612	AC1-036 E	0.6
925781	AC1-054 C O1	3.69
925782	AC1-054 E O1	1.7
926071	AC1-086 C	14.06
926072	AC1-086 E	6.4
926201	AC1-098 C	3.12
926202	AC1-098 E	1.86
926211	AC1-099 C	1.04
926212	AC1-099 E	0.61
926271	AC1-105 C O1	2.36
926272	AC1-105 E O1	1.18
927021	AC1-189 C	3.85
927022	AC1-189 E	1.92
927141	AC1-208 C	4.79
927142	AC1-208 E	2.13
927251	AC1-221 C	0.93
927252	AC1-221 E	0.93
927261	AC1-222 C	1.47
927262	AC1-222 E	1.4
930402	AB1-081 E O1	1.94
930861	AB1-132 C O1	1.46
930862	AB1-132 E O1	4.09

Bus #	Bus	MW Impact
931231	AB1-173 C	0.25
931232	AB1-173 E	0.75
931241	AB1-173AC	0.25
931242	AB1-173AE	0.75
932631	AC2-084 C	4.44
932632	AC2-084 E	2.19
932761	AC2-100 C	2.14
932762	AC2-100 E	1.04
933991	AD1-023 C	4.64
933992	AD1-023 E	2.53
934201	AD1-047 C	5.72
934202	AD1-047 E	3.81
934231	AD1-050 C	2.36
934232	AD1-050 E	1.29
934311	AD1-055 C	1.02
934312	AD1-055 E	0.26
934331	AD1-057 C O1	5.86
934332	AD1-057 E O1	3.13
934341	AD1-058 C	2.33
934342	AD1-058 E	0.59
934611	AD1-087 C O1	3.67
934612	AD1-087 E O1	1.73
934621	AD1-088 C	4.84
934622	AD1-088 E	2.27
934991	AD1-131 C	0.76
934992	AD1-131 E	0.51
935171	AD1-152 C O1	3.65
935172	AD1-152 E O1	2.43
935212	AD1-156 E	0.63
936261	AD2-033 C	5.16
936262	AD2-033 E	3.44
936331	AD2-043 C	1.92
936332	AD2-043 E	2.27
936361	AD2-046 C O1	4.25
936362	AD2-046 E O1	1.95
936401	AD2-051 C O1	3.84
936402	AD2-051 E O1	1.65
936481	AD2-063 C O1	6.37
936482	AD2-063 E O1	4.25
936531	AD2-068 C	2.27
936532	AD2-068 E	1.17
936701	AD2-089 C	3.47
936702	AD2-089 E	2.31
936711	AD2-090 C O1	2.58
936712	AD2-090 E O1	1.72
937481	AD2-202 C O1	1.01
937482	AD2-202 E O1	0.51
937571	AD2-169 C	6.85
937572	AD2-169 E	4.57
938171	AE1-026 C1 O	10.21
938172	AE1-026 C2 O	1.48
938173	AE1-026 E O1	3.08

Bus #	Bus	MW Impact
938221	AE1-035 C	0.92
938222	AE1-035 E	0.45
938491	AE1-068 C O1	33.33
938492	AE1-068 E O1	18.41
938501	AE1-069 C O1	26.06
938502	AE1-069 E O1	14.9
938661	AE1-088	0.67
939071	AE1-135 C O1	19.71
939072	AE1-135 E O1	13.14
939181	AE1-148 C O1	4.18
939182	AE1-148 E O1	2.78
939371	AE1-168 C	5.23
939372	AE1-168 E	3.49
939411	AE1-173 C	37.41
939412	AE1-173 E	24.94
AA2-074	AA2-074	2.63
CARR	CARR	0.31
CBM-S1	CBM-S1	6.67
CBM-S2	CBM-S2	7.56
CBM-W1	CBM-W1	6.65
CBM-W2	CBM-W2	43.74
CIN	CIN	3.01
CPL	CPL	3.87
G-007	G-007	1.05
IPL	IPL	1.89
LGEE	LGEE	0.87
MEC	MEC	6.71
MECS	MECS	2.79
O-066	O-066	3.49
RENSSELAER	RENSSELAER	0.24
WEC	WEC	0.81

Index 13

ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC DC	MW IMPACT
424412	314285	6CHRL249	DVP	314316	6LOCKS	DVP	1	DVP_P4-2: 562T563	breaker	684.0	136.7	137.16	DC	6.96

Bus #	Bus	MW Impact
314541	3WATKINS	0.23
314554	3BTLEBRO	0.4
314557	3BETHEL	0.39
314572	3EMPORIA	0.33
314574	6EVERETS	1.77
314578	3HORNRTN	1.92
314582	3KELFORD	1.62
314603	3SCOT NK	1.61
314617	3TUNIS	0.36
314620	6CASHIE	0.31
314623	3WITAKRS	0.69
314704	3LAWRENC	0.22
315102	1BRUNSWICKG1	4.2
315103	1BRUNSWICKG2	4.2
315104	1BRUNSWICKG3	4.2
315105	1BRUNSWICKS1	8.72
315131	1EDGECEMA	4.73
315132	1EDGECEMB	4.73
315136	1ROSEMG1	1.33
315137	1ROSEMS1	0.82
315138	1ROSEMG2	0.62
315139	1GASTONA	1.92
315141	1GASTONB	1.92
315150	1BUGGS 1	5.14
315151	1BUGGS 2	5.14
900672	V4-068 E	0.13
916301	Z1-086 C	25.59
916302	Z1-086 E	5.22
917332	Z2-043 E	0.46
917342	Z2-044 E	0.3
917512	Z2-088 E OP1	1.76
918492	AA1-063AE OP	2.11
918512	AA1-065 E OP	1.81
918532	AA1-067 E	0.31
918562	AA1-072 E	0.08
919692	AA2-053 E	2.08
919701	AA2-057 C	3.67
919702	AA2-057 E	1.83
920042	AA2-088 E OP	4.28
920592	AA2-165 E	0.24

Bus #	Bus	MW Impact
920672	AA2-174 E	0.24
923851	AB2-025 C	0.44
923852	AB2-025 E	1.3
923911	AB2-031 C O1	1.6
923912	AB2-031 E O1	0.79
923941	AB2-035 C	0.16
923942	AB2-035 E	0.07
923991	AB2-040 C O1	0.8
923992	AB2-040 E O1	4.29
924022	AB2-043 E O1	2.32
924152	AB2-059 E O1	2.75
924162	AB2-060 E O1	1.9
924302	AB2-077 E O1	0.6
924312	AB2-078 E O1	0.6
924322	AB2-079 E O1	0.6
924391	AB2-088 C	0.21
924392	AB2-088 E	0.1
924401	AB2-089 C	1.07
924402	AB2-089 E	0.55
924491	AB2-098 C	0.24
924492	AB2-098 E	0.1
924501	AB2-099 C	0.26
924502	AB2-099 E	0.11
924511	AB2-100 C	10.63
924512	AB2-100 E	5.23
925122	AB2-169 E	2.2
925171	AB2-174 C O1	5.2
925172	AB2-174 E O1	4.71
925591	AC1-034 C	3.46
925592	AC1-034 E	2.61
925612	AC1-036 E	0.6
925781	AC1-054 C O1	3.69
925782	AC1-054 E O1	1.7
926071	AC1-086 C	14.06
926072	AC1-086 E	6.4
926201	AC1-098 C	3.12
926202	AC1-098 E	1.86
926211	AC1-099 C	1.04
926212	AC1-099 E	0.61
926271	AC1-105 C O1	2.36
926272	AC1-105 E O1	1.18
927021	AC1-189 C	3.85
927022	AC1-189 E	1.92
927141	AC1-208 C	4.79
927142	AC1-208 E	2.13
927251	AC1-221 C	0.93
927252	AC1-221 E	0.93
927261	AC1-222 C	1.47
927262	AC1-222 E	1.4
930402	AB1-081 E O1	1.94
930861	AB1-132 C O1	1.46
930862	AB1-132 E O1	4.09

Bus #	Bus	MW Impact
931231	AB1-173 C	0.25
931232	AB1-173 E	0.75
931241	AB1-173AC	0.25
931242	AB1-173AE	0.75
932631	AC2-084 C	4.44
932632	AC2-084 E	2.19
932761	AC2-100 C	2.14
932762	AC2-100 E	1.04
933991	AD1-023 C	4.64
933992	AD1-023 E	2.53
934201	AD1-047 C	5.72
934202	AD1-047 E	3.81
934231	AD1-050 C	2.36
934232	AD1-050 E	1.29
934311	AD1-055 C	1.02
934312	AD1-055 E	0.26
934331	AD1-057 C O1	5.86
934332	AD1-057 E O1	3.13
934341	AD1-058 C	2.33
934342	AD1-058 E	0.59
934611	AD1-087 C O1	3.67
934612	AD1-087 E O1	1.73
934621	AD1-088 C	4.84
934622	AD1-088 E	2.27
934991	AD1-131 C	0.76
934992	AD1-131 E	0.51
935171	AD1-152 C O1	3.65
935172	AD1-152 E O1	2.43
935212	AD1-156 E	0.63
936261	AD2-033 C	5.16
936262	AD2-033 E	3.44
936331	AD2-043 C	1.92
936332	AD2-043 E	2.27
936361	AD2-046 C O1	4.25
936362	AD2-046 E O1	1.95
936401	AD2-051 C O1	3.84
936402	AD2-051 E O1	1.65
936481	AD2-063 C O1	6.37
936482	AD2-063 E O1	4.25
936531	AD2-068 C	2.27
936532	AD2-068 E	1.17
936701	AD2-089 C	3.47
936702	AD2-089 E	2.31
936711	AD2-090 C O1	2.58
936712	AD2-090 E O1	1.72
937481	AD2-202 C O1	1.01
937482	AD2-202 E O1	0.51
937571	AD2-169 C	6.85
937572	AD2-169 E	4.57
938171	AE1-026 C1 O	10.21
938172	AE1-026 C2 O	1.48
938173	AE1-026 E O1	3.08

Bus #	Bus	MW Impact
938221	AE1-035 C	0.92
938222	AE1-035 E	0.45
938491	AE1-068 C O1	33.33
938492	AE1-068 E O1	18.41
938501	AE1-069 C O1	26.06
938502	AE1-069 E O1	14.9
938661	AE1-088	0.67
939071	AE1-135 C O1	19.71
939072	AE1-135 E O1	13.14
939181	AE1-148 C O1	4.18
939182	AE1-148 E O1	2.78
939371	AE1-168 C	5.23
939372	AE1-168 E	3.49
939411	AE1-173 C	37.41
939412	AE1-173 E	24.94
AA2-074	AA2-074	2.63
CARR	CARR	0.31
CBM-S1	CBM-S1	6.67
CBM-S2	CBM-S2	7.56
CBM-W1	CBM-W1	6.65
CBM-W2	CBM-W2	43.74
CIN	CIN	3.01
CPL	CPL	3.87
G-007	G-007	1.05
IPL	IPL	1.89
LGEE	LGEE	0.87
MEC	MEC	6.71
MECS	MECS	2.79
O-066	O-066	3.49
RENSSELAER	RENSSELAER	0.24
WEC	WEC	0.81

Index 14

ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC DC	MW IMPACT
424215	314562	3CLUBHSE	DVP	314563	6CLUBHSE	DVP	1	DVP_P4-6: CAROLIN T122	breaker	208.6	192.91	198.57	DC	11.78

Bus #	Bus	MW Impact
314572	3EMPORIA	1.98
314704	3LAWRENC	1.12
315150	1BUGGS 1	8.31
315151	1BUGGS 2	8.31
315158	1KERR 1	0.24
315159	1KERR 2	0.99
315160	1KERR 3	0.98
315161	1KERR 4	0.98
315162	1KERR 5	0.98
315163	1KERR 6	0.98
315164	1KERR 7	0.98
923911	AB2-031 C O1	10.64
923912	AB2-031 E O1	5.24
923991	AB2-040 C O1	5.36
923992	AB2-040 E O1	28.58
924021	AB2-043 C O1	0.48
924022	AB2-043 E O1	5.17
924161	AB2-060 C O1	1.37
924162	AB2-060 E O1	4.21
924301	AB2-077 C O1	0.3
924302	AB2-077 E O1	1.29
924311	AB2-078 C O1	0.3
924312	AB2-078 E O1	1.29
924321	AB2-079 C O1	0.3
924322	AB2-079 E O1	1.29
924401	AB2-089 C	1.61
924402	AB2-089 E	0.83
925171	AB2-174 C O1	33.34
925172	AB2-174 E O1	30.17
925611	AC1-036 C	0.11
925612	AC1-036 E	1.22
925781	AC1-054 C O1	5.43
925782	AC1-054 E O1	2.5
931231	AB1-173 C	1.64
931232	AB1-173 E	5.0
931241	AB1-173AC	1.64
931242	AB1-173AE	5.0
934201	AD1-047 C	38.11
934202	AD1-047 E	25.4
934231	AD1-050 C	3.55

Bus #	Bus	MW Impact
934232	AD1-050 E	1.94
936261	AD2-033 C	10.77
936262	AD2-033 E	7.18
936361	AD2-046 C O1	7.05
936362	AD2-046 E O1	3.24
936481	AD2-063 C O1	13.78
936482	AD2-063 E O1	9.19
937571	AD2-169 C	47.63
937572	AD2-169 E	31.76
939181	AE1-148 C O1	7.07
939182	AE1-148 E O1	4.71
939371	AE1-168 C	10.05
939372	AE1-168 E	6.7
CARR	CARR	0.04
CBM-S1	CBM-S1	0.53
CBM-S2	CBM-S2	0.43
CBM-W1	CBM-W1	0.63
CBM-W2	CBM-W2	3.54
CIN	CIN	0.29
CPL	CPL	0.17
G-007	G-007	0.13
IPL	IPL	0.19
LGEE	LGEE	0.09
MEC	MEC	0.59
MECS	MECS	0.29
O-066	O-066	0.44
RENSSELAER	RENSSELAER	0.03
WEC	WEC	0.08

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
425279	314677	6BUCKING	DVP	314747	6BREMO	DVP	1	DVP_P1-2: LN 556	single	571.52	115.8	117.44	DC	9.39

Bus #	Bus	MW Impact
314429	3JTRSVLE	0.87
315150	1BUGGS 1	13.25
315151	1BUGGS 2	13.25
315153	1CLOVER1	20.01
315154	1CLOVER2	19.75
315159	1KERR 2	1.3
315162	1KERR 5	1.28
315163	1KERR 6	1.28
315164	1KERR 7	1.28
315266	1PLYWOOD A	1.34
924021	AB2-043 C O1	0.66
924031	AB2-045 C	1.44
924161	AB2-060 C O1	1.95
924301	AB2-077 C O1	0.41
924311	AB2-078 C O1	0.41
924321	AB2-079 C O1	0.41
924401	AB2-089 C	1.91
925611	AC1-036 C	0.28
925781	AC1-054 C O1	6.06
925831	AC1-062	0.12
925991	AC1-075 C	4.95
926021	AC1-080 C	1.65
926271	AC1-105 C O1	6.76
926761	AC1-162 C	83.39
927251	AC1-221 C	1.65
927261	AC1-222 C	4.06
932511	AC2-071 C	1.42
932761	AC2-100 C	3.81
932821	AC2-107 C	8.8
934231	AD1-050 C	4.22
934311	AD1-055 C	2.82
934341	AD1-058 C	4.15
934611	AD1-087 C O1	12.04
934621	AD1-088 C	29.88
934991	AD1-131 C	1.36
935171	AD1-152 C O1	11.97
935221	AD1-157 C	0.6
935231	AD1-160 C	2.85
936261	AD2-033 C	23.74
936331	AD2-043 C	5.27

Bus #	Bus	MW Impact
936361	AD2-046 C O1	9.34
936481	AD2-063 C O1	23.81
936651	AD2-082 C	4.36
937481	AD2-202 C O1	3.32
938371	AE1-056 C	16.74
939181	AE1-148 C O1	9.39
939201	AE1-150 C O1	30.46
939371	AE1-168 C	33.74
AA2-074	AA2-074	2.33
CARR	CARR	0.24
CBM-S1	CBM-S1	5.29
CBM-S2	CBM-S2	6.51
CBM-W1	CBM-W1	4.91
CBM-W2	CBM-W2	34.29
CIN	CIN	2.24
CPLE	CPLE	3.43
IPL	IPL	1.4
LGEE	LGEE	0.65
MEC	MEC	5.12
MECS	MECS	1.93
RENSSELAER	RENSSELAER	0.19
WEC	WEC	0.6

Index 16

ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC DC	MW IMPACT
425317	314692	6FARMVIL	DVP	314677	6BUCKING	DVP	1	DVP_P1-2: LN 556	single	559.3	114.81	116.49	DC	9.4

Bus #	Bus	MW Impact
314429	3JTRSVLE	0.87
315150	1BUGGS 1	13.25
315151	1BUGGS 2	13.25
315153	1CLOVER1	20.02
315154	1CLOVER2	19.76
315159	1KERR 2	1.3
315162	1KERR 5	1.28
315163	1KERR 6	1.28
315164	1KERR 7	1.28
315266	1PLYWOOD A	1.34
924021	AB2-043 C O1	0.66
924161	AB2-060 C O1	1.95
924301	AB2-077 C O1	0.41
924311	AB2-078 C O1	0.41
924321	AB2-079 C O1	0.41
924401	AB2-089 C	1.91
925611	AC1-036 C	0.28
925781	AC1-054 C O1	6.07
925831	AC1-062	0.12
925991	AC1-075 C	4.96
926021	AC1-080 C	1.66
926271	AC1-105 C O1	6.77
926761	AC1-162 C	83.41
927251	AC1-221 C	1.66
927261	AC1-222 C	4.07
932761	AC2-100 C	3.81
932821	AC2-107 C	8.81
934231	AD1-050 C	4.22
934311	AD1-055 C	2.82
934341	AD1-058 C	4.15
934611	AD1-087 C O1	12.05
934621	AD1-088 C	29.89
934991	AD1-131 C	1.36
935171	AD1-152 C O1	11.97
935221	AD1-157 C	0.6
935231	AD1-160 C	2.85
936261	AD2-033 C	23.75
936331	AD2-043 C	5.28
936361	AD2-046 C O1	9.35
936481	AD2-063 C O1	23.82

Bus #	Bus	MW Impact
936651	AD2-082 C	4.36
937481	AD2-202 C O1	3.32
938371	AE1-056 C	16.74
939181	AE1-148 C O1	9.4
939201	AE1-150 C O1	30.47
939371	AE1-168 C	33.75
AA2-074	AA2-074	2.34
CARR	CARR	0.24
CBM-S1	CBM-S1	5.33
CBM-S2	CBM-S2	6.54
CBM-W1	CBM-W1	4.99
CBM-W2	CBM-W2	34.62
CIN	CIN	2.28
CPLE	CPLE	3.44
IPL	IPL	1.42
LGEE	LGEE	0.66
MEC	MEC	5.18
MECS	MECS	1.98
RENSSELAER	RENSSELAER	0.19
WEC	WEC	0.61

Index 17

ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC DC	MW IMPACT
425341	314697	65EDGE HILL	DVP	927250	AC1-221 TAP	DVP	1	DVP_P1-2: LN 556	single	674.92	107.77	109.03	DC	8.48

Bus #	Bus	MW Impact
314429	3JTRSVLE	0.5
315150	1BUGGS 1	17.2
315151	1BUGGS 2	17.2
315153	1CLOVER1	35.07
315154	1CLOVER2	34.61
315159	1KERR 2	1.14
315162	1KERR 5	1.12
315163	1KERR 6	1.12
315164	1KERR 7	1.12
315165	1HURT 1	5.16
315166	1HURT 2	5.16
315266	1PLYWOOD A	2.96
924021	AB2-043 C O1	0.65
924031	AB2-045 C	0.38
924161	AB2-060 C O1	1.87
924301	AB2-077 C O1	0.42
924311	AB2-078 C O1	0.42
924321	AB2-079 C O1	0.42
924401	AB2-089 C	1.61
925611	AC1-036 C	0.2
925661	AC1-042 C	1.59
925781	AC1-054 C O1	4.97
925831	AC1-062	0.07
925991	AC1-075 C	11.93
926021	AC1-080 C	3.99
926271	AC1-105 C O1	14.49
926641	AC1-145 C	1.9
926761	AC1-162 C	56.66
927261	AC1-222 C	10.12
932511	AC2-071 C	0.37
932821	AC2-107 C	21.21
934231	AD1-050 C	3.55
934311	AD1-055 C	7.02
934611	AD1-087 C O1	26.93
934621	AD1-088 C	31.81
935171	AD1-152 C O1	26.76
935221	AD1-157 C	0.32
935231	AD1-160 C	1.55
936261	AD2-033 C	17.81
936331	AD2-043 C	13.11

Bus #	Bus	MW Impact
936361	AD2-046 C O1	8.38
936481	AD2-063 C O1	20.34
936651	AD2-082 C	2.37
937481	AD2-202 C O1	7.42
938371	AE1-056 C	9.12
939181	AE1-148 C O1	8.48
939201	AE1-150 C O1	14.36
939371	AE1-168 C	20.89
939941	AE1-230 C1	0.72
AC1-133	AC1-133	20.69
BAYOU	BAYOU	2.62
BIG_CAJUN1	BIG_CAJUN1	4.15
BIG_CAJUN2	BIG_CAJUN2	8.35
BLUEG	BLUEG	6.71
CALDERWOOD	CALDERWOOD	1.58
CANNELTON	CANNELTON	0.47
CATAWBA	CATAWBA	1.69
CBM-N	CBM-N	0.03
CHEOAH	CHEOAH	1.48
CHILHOWEE	CHILHOWEE	0.51
CHOCTAW	CHOCTAW	2.83
COFFEEN	COFFEEN	0.81
COTTONWOOD	COTTONWOOD	10.24
DEARBORN	DEARBORN	0.83
DUCKCREEK	DUCKCREEK	1.65
EDWARDS	EDWARDS	0.73
ELMERSMITH	ELMERSMITH	0.84
FARMERCITY	FARMERCITY	0.6
G-007A	G-007A	0.32
GIBSON	GIBSON	0.29
HAMLET	HAMLET	6.38
NEWTON	NEWTON	2.11
NYISO	NYISO	0.14
O-066A	O-066A	0.14
PRAIRIE	PRAIRIE	4.54
SANTEETLA	SANTEETLA	0.44
SMITHLAND	SMITHLAND	0.41
TATANKA	TATANKA	1.0
TILTON	TILTON	0.86
TRIMBLE	TRIMBLE	0.73
TVA	TVA	4.32
UNIONPOWER	UNIONPOWER	2.22
VFT	VFT	0.83

Index 18

ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC DC	MW IMPACT
425242	927250	AC1-221 TAP	DVP	304070	6PERSON230 T	CPL	1	DVP_P1-2: LN 556	single	718.0	111.11	112.29	DC	8.48

Bus #	Bus	MW Impact
314429	3JTRSVLE	0.5
315150	1BUGGS 1	17.2
315151	1BUGGS 2	17.2
315153	1CLOVER1	35.07
315154	1CLOVER2	34.61
315159	1KERR 2	1.14
315162	1KERR 5	1.12
315163	1KERR 6	1.12
315164	1KERR 7	1.12
315165	1HURT 1	5.16
315166	1HURT 2	5.16
315266	1PLYWOOD A	2.96
924021	AB2-043 C O1	0.65
924031	AB2-045 C	0.38
924161	AB2-060 C O1	1.87
924301	AB2-077 C O1	0.42
924311	AB2-078 C O1	0.42
924321	AB2-079 C O1	0.42
924401	AB2-089 C	1.61
925611	AC1-036 C	0.2
925831	AC1-062	0.07
925991	AC1-075 C	11.93
926021	AC1-080 C	3.99
926271	AC1-105 C O1	14.49
926761	AC1-162 C	56.66
927251	AC1-221 C	11.73
927261	AC1-222 C	10.12
932511	AC2-071 C	0.37
932761	AC2-100 C	26.99
932821	AC2-107 C	21.21
934231	AD1-050 C	3.55
934311	AD1-055 C	7.02
934341	AD1-058 C	29.4
934611	AD1-087 C O1	26.93
934621	AD1-088 C	31.81
934991	AD1-131 C	9.64
935171	AD1-152 C O1	26.76
935221	AD1-157 C	0.32
935231	AD1-160 C	1.55
936261	AD2-033 C	17.81

Bus #	Bus	MW Impact
936331	AD2-043 C	13.11
936361	AD2-046 C O1	8.38
936481	AD2-063 C O1	20.34
936651	AD2-082 C	2.37
937481	AD2-202 C O1	7.42
938371	AE1-056 C	9.12
939181	AE1-148 C O1	8.48
939201	AE1-150 C O1	14.36
939371	AE1-168 C	20.89
AC1-133	AC1-133	20.69
BAYOU	BAYOU	2.62
BIG_CAJUN1	BIG_CAJUN1	4.15
BIG_CAJUN2	BIG_CAJUN2	8.35
BLUEG	BLUEG	6.71
CALDERWOOD	CALDERWOOD	1.58
CANNELTON	CANNELTON	0.47
CATAWBA	CATAWBA	1.69
CBM-N	CBM-N	0.03
CHEOAH	CHEOAH	1.48
CHILHOWEE	CHILHOWEE	0.51
CHOCTAW	CHOCTAW	2.83
COFFEEN	COFFEEN	0.81
COTTONWOOD	COTTONWOOD	10.24
DEARBORN	DEARBORN	0.83
DUCKCREEK	DUCKCREEK	1.65
EDWARDS	EDWARDS	0.73
ELMERSMITH	ELMERSMITH	0.84
FARMERCITY	FARMERCITY	0.6
G-007A	G-007A	0.32
GIBSON	GIBSON	0.29
HAMLET	HAMLET	6.38
NEWTON	NEWTON	2.11
NYISO	NYISO	0.14
O-066A	O-066A	0.14
PRAIRIE	PRAIRIE	4.54
SANTEETLA	SANTEETLA	0.44
SMITHLAND	SMITHLAND	0.41
TATANKA	TATANKA	1.0
TILTON	TILTON	0.86
TRIMBLE	TRIMBLE	0.73
TVA	TVA	4.32
UNIONPOWER	UNIONPOWER	2.22
VFT	VFT	0.83

Contingency Name	Contingency Definition
AEP_SUBT_P1-3_#877_05E.MONU 138_3	CONTINGENCY 'AEP_SUBT_P1-3_#877_05E.MONU 138_3' OPEN BRANCH FROM BUS 242629 TO BUS 243948 CKT 1 / 242629 05E.MONU 138 243948 05BRANTLY 69.0 1 OPEN BRANCH FROM BUS 244013 TO BUS 243948 CKT 1 / 244013 05AIRSIDTP 69.0 243948 05BRANTLY 69.0 1 END
DVP_P1-2: LN 563	CONTINGENCY 'DVP_P1-2: LN 563' OPEN BRANCH FROM BUS 314902 TO BUS 314914 CKT 1 /* 8CARSON 500.00 - 8MDLTHAN 500.00 END
DVP_P1-2: LN 246	CONTINGENCY 'DVP_P1-2: LN 246' OPEN BRANCH FROM BUS 314537 TO BUS 919140 CKT 1 /* 6SUFFOLK 230.00 - AA1-138 TAP 230.00 OPEN BRANCH FROM BUS 314569 TO BUS 314575 CKT 1 /* 6EARLEYS 230.00 - 6NUCO TP 230.00 OPEN BRANCH FROM BUS 314575 TO BUS 314590 CKT 1 /* 6NUCO TP 230.00 - 6NUCOR 230.00 OPEN BRANCH FROM BUS 314575 TO BUS 919140 CKT 1 /* 6NUCO TP 230.00 - AA1-138 TAP 230.00 OPEN BUS 314575 /* ISLAND: 6NUCO TP 230.00 OPEN BUS 314590 /* ISLAND: 6NUCOR 230.00 OPEN BUS 919140 /* ISLAND: AA1-138 TAP 230.00 END
DVP_P1-2: LN 1029-A	CONTINGENCY 'DVP_P1-2: LN 1029-A' OPEN BRANCH FROM BUS 314562 TO BUS 314570 CKT 1 /* 3CLUBHSE 115.00 - 3METCATP 115.00 OPEN BRANCH FROM BUS 314570 TO BUS 314572 CKT 1 /* 3METCATP 115.00 - 3EMPORIA 115.00 OPEN BRANCH FROM BUS 314570 TO BUS 314588 CKT 1 /* 3METCATP 115.00 - 3METCALT 115.00 OPEN BRANCH FROM BUS 314572 TO BUS 925170 CKT 1 /* 3EMPORIA 115.00 - AB2-174 TAP 115.00 OPEN BRANCH FROM BUS 314572 TO BUS 314863 CKT 1 /* 3EMPORIA 115.00 - 3EMPOR_1 115.00 OPEN BUS 314570 /* ISLAND: 3METCATP 115.00 OPEN BUS 314572 /* ISLAND: 3EMPORIA 115.00 OPEN BUS 314588 /* ISLAND: 3METCALT 115.00 OPEN BUS 314863 /* ISLAND: 3EMPOR_1 115.00 END
DVP_P1-2: LN 90	CONTINGENCY 'DVP_P1-2: LN 90' OPEN BRANCH FROM BUS 314265 TO BUS 314584 CKT 1 /* 3FIVEFORKSDP115.00 - 3LITTLTN 115.00 OPEN BRANCH FROM BUS 314265 TO BUS 314673 CKT 1 /* 3FIVEFORKSDP115.00 - 3PALMERSPRNG115.00 OPEN BRANCH FROM BUS 314559 TO BUS 314585 CKT 1 /* 3CAROLNA 115.00 - 3L GASTN 115.00 OPEN BRANCH FROM BUS 314584 TO BUS 314585 CKT 1 /* 3LITTLTN 115.00 - 3L GASTN 115.00 OPEN BUS 314265 /* ISLAND: 3FIVEFORKSDP115.00 OPEN BUS 314584 /* ISLAND: 3LITTLTN 115.00 OPEN BUS 314585 /* ISLAND: 3L GASTN 115.00 END

Contingency Name	Contingency Definition
DVP_P4-2: 562T563	CONTINGENCY 'DVP_P4-2: 562T563' /* CARSON 500 KV OPEN BRANCH FROM BUS 314902 TO BUS 314923 CKT 1 /* 8CARSON 500.00 - 8SEPTA 500.00 OPEN BRANCH FROM BUS 314902 TO BUS 314914 CKT 1 /* 8CARSON 500.00 - 8MDLTHAN 500.00 END
DVP_P1-3: 6CAROLNA-TX#4	CONTINGENCY 'DVP_P1-3: 6CAROLNA-TX#4' OPEN BRANCH FROM BUS 314559 TO BUS 314561 CKT 1 /* 3CAROLNA 115.00 - 6CAROLNA 230.00 END
DVP_P1-2: LN 130-A	CONTINGENCY 'DVP_P1-2: LN 130-A' OPEN BRANCH FROM BUS 314559 TO BUS 314600 CKT 1 /* 3CAROLNA 115.00 - 3PLHITP 115.00 OPEN BRANCH FROM BUS 314595 TO BUS 314600 CKT 1 /* 3PL HILL 115.00 - 3PLHITP 115.00 OPEN BRANCH FROM BUS 314600 TO BUS 937570 CKT 1 /* 3PLHITP 115.00 - AD2-169 TAP 115.00 OPEN BUS 314595 /* ISLAND: 3PL HILL 115.00 OPEN BUS 314600 /* ISLAND: 3PLHITP 115.00 END
DVP_P1-2: LN 33-B	CONTINGENCY 'DVP_P1-2: LN 33-B' OPEN BRANCH FROM BUS 926270 TO BUS 314696 CKT 1 /* AC1-105 TAP 115.00 - 3SEEDGE HILL 115.00 END
DVP_P1-2: LN 296-B	CONTINGENCY 'DVP_P1-2: LN 296-B' OPEN BRANCH FROM BUS 927250 TO BUS 314697 CKT 1 /* AC1-221 TAP T230.00 - 6SEEDGE HILL 230.00 END
DVP_P1-2: LN 296-A	CONTINGENCY 'DVP_P1-2: LN 296-A' OPEN BRANCH FROM BUS 304070 TO BUS 927250 CKT 1 /* 6PERSON230 T230.00 - AC1-221 TAP 230.00 END
DVP_P1-2: LN 2027-B	CONTINGENCY 'DVP_P1-2: LN 2027-B' OPEN BRANCH FROM BUS 933500 TO BUS 314333 CKT 1 /* AC2-165 TAP 230.00 - 6POWHATN 230.00 OPEN BRANCH FROM BUS 314310 TO BUS 314322 CKT 1 /* 6JUDES F 230.00 - 6MDLTHAN 230.00 OPEN BRANCH FROM BUS 314310 TO BUS 314333 CKT 1 /* 6JUDES F 230.00 - 6POWHATN 230.00 OPEN BUS 314310 /* ISLAND: 6JUDES F 230.00 OPEN BUS 314333 /* ISLAND: 6POWHATN 230.00 END
DVP_P1-3: 6SEEDGE HILL-TX#2	CONTINGENCY 'DVP_P1-3: 6SEEDGE HILL-TX#2' OPEN BRANCH FROM BUS 314696 TO BUS 314697 CKT 2 /* 3SEEDGE HILL 115.00 - 6SEEDGE HILL 230.00 END

Contingency Name	Contingency Definition
DVP_P4-2: 2202	CONTINGENCY 'DVP_P4-2: 2202' /* CAROLINA 115 KV OPEN BRANCH FROM BUS 314559 TO BUS 314571 CKT 1 /* 3CAROLNA 115.00 - 3EATON F 115.00 OPEN BRANCH FROM BUS 314571 TO BUS 925780 CKT 1 /* 3EATON F 115.00 - AC1-054 TAP 115.00 /* CONTINGENCY LINE ADDED FOR AE1 BUILD OPEN BUS 314571 /* ISLAND: 3EATON F 115.00 OPEN BRANCH FROM BUS 313722 TO BUS 314559 CKT 1 /* 3OCCONEECHEE115.00 - 3CAROLNA 115.00 OPEN BRANCH FROM BUS 314259 TO BUS 314559 CKT Z1 /* 3CAROL56_1 115.00 - 3CAROLNA 115.00 OPEN BRANCH FROM BUS 314559 TO BUS 314600 CKT 1 /* 3CAROLNA 115.00 - 3PLHITP 115.00 OPEN BRANCH FROM BUS 314559 TO BUS 314561 CKT 1 /* 3CAROLNA 115.00 - 6CAROLNA 230.00 END
DVP_P1-2: LN 1029-B	CONTINGENCY 'DVP_P1-2: LN 1029-B' OPEN BRANCH FROM BUS 925170 TO BUS 314615 CKT 1 /* AB2-174 TAP 115.00 - 3TREGOTP 115.00 END
DVP_P4-2: 7152	CONTINGENCY 'DVP_P4-2: 7152' /* CLUBHOUSE 115 KV OPEN BRANCH FROM BUS 314516 TO BUS 314676 CKT 1 /* 3BRUNWICK_1 115.00 - 3BRUNWICK 115.00 OPEN BRANCH FROM BUS 314562 TO BUS 314565 CKT Z1 /* 3CLUBHSE 115.00 - 3CLUBHSE71 115.00 OPEN BRANCH FROM BUS 314565 TO BUS 314693 CKT 1 /* 3CLUBHSE71 115.00 - 3FRMAN D 115.00 OPEN BRANCH FROM BUS 314565 TO BUS 314850 CKT 1 /* 3CLUBHSE71 115.00 - 3CLUBHSE71_1115.00 OPEN BRANCH FROM BUS 314675 TO BUS 314676 CKT 1 /* 3BRODNAX 115.00 - 3BRUNWICK 115.00 OPEN BRANCH FROM BUS 314676 TO BUS 314704 CKT 1 /* 3BRUNWICK 115.00 - 3LAWRENC 115.00 OPEN BRANCH FROM BUS 314693 TO BUS 314704 CKT 1 /* 3FRMAN D 115.00 - 3LAWRENC 115.00 OPEN BUS 314516 /* ISLAND: 3BRUNWICK_1 115.00 OPEN BUS 314565 /* ISLAND: 3CLUBHSE71 115.00 OPEN BUS 314676 /* ISLAND: 3BRUNWICK 115.00 OPEN BUS 314782 /* ISLAND: 2BRUNWICK 69.000 OPEN BUS 314785 /* ISLAND: 2DANLTWN 69.000 OPEN BUS 314786 /* ISLAND: 2GASBURG 69.000 OPEN BUS 314787 /* ISLAND: 2BRUNWICK2 69.000 OPEN BUS 314872 /* ISLAND: 2BRUNSWICKDP69.000 OPEN BUS 314693 /* ISLAND: 3FRMAN D 115.00 OPEN BUS 314704 /* ISLAND: 3LAWRENC 115.00 OPEN BUS 314850 /* ISLAND: 3CLUBHSE71_1115.00 OPEN BRANCH FROM BUS 314312 TO BUS 314325 CKT 1 /* 3JARRATT 115.00 - 3PURDYSW 115.00 OPEN BRANCH FROM BUS 314325 TO BUS 314562 CKT 1 /* 3PURDYSW 115.00 - 3CLUBHSE 115.00 OPEN BUS 314312 /* ISLAND: 3JARRATT 115.00 OPEN BUS 314325 /* ISLAND: 3PURDYSW 115.00 OPEN BRANCH FROM BUS 314562 TO BUS 314570 CKT 1 /* 3CLUBHSE 115.00 - 3METCATP 115.00 OPEN BRANCH FROM BUS 314562 TO BUS 314563 CKT 1 /* 3CLUBHSE 115.00 - 6CLUBHSE 230.00 OPEN BUS 314562 /* 3CLUBHSE 115.00 KV END

Contingency Name	Contingency Definition
DVP_P1-2: LN 2056-A	CONTINGENCY 'DVP_P1-2: LN 2056-A' OPEN BRANCH FROM BUS 313845 TO BUS 934330 CKT 1 /* 6HATHAWAY 230.00 - AD1-057 TAP 230.00 END
DVP_P4-6: CAROLIN T122	CONTINGENCY 'DVP_P4-6: CAROLIN T122' /* CAROLINA 115 KV OPEN BRANCH FROM BUS 314559 TO BUS 315126 CKT 1 /* 3CAROLNA 115.00 - 1ROARAP2 14.400 OPEN BRANCH FROM BUS 314559 TO BUS 315128 CKT 1 /* 3CAROLNA 115.00 - 1ROARAP4 14.400 OPEN BUS 315126 /* ISLAND: 1ROARAP2 14.400 OPEN BUS 315128 /* ISLAND: 1ROARAP4 14.400 OPEN BRANCH FROM BUS 314559 TO BUS 314571 CKT 1 /* 3CAROLNA 115.00 - 3EATON F 115.00 OPEN BRANCH FROM BUS 313722 TO BUS 314559 CKT 1 /* 3OCCONEECHEE115.00 - 3CAROLNA 115.00 OPEN BRANCH FROM BUS 314259 TO BUS 314559 CKT Z1 /* 3CAROL56_1 115.00 - 3CAROLNA 115.00 OPEN BRANCH FROM BUS 314559 TO BUS 314578 CKT 1 /* 3CAROLNA 115.00 - 3HORNRTN 115.00 OPEN BRANCH FROM BUS 314559 TO BUS 314585 CKT 1 /* 3CAROLNA 115.00 - 3L GASTN 115.00 OPEN BRANCH FROM BUS 314559 TO BUS 314600 CKT 1 /* 3CAROLNA 115.00 - 3PLHITP 115.00 OPEN BRANCH FROM BUS 314559 TO BUS 314561 CKT 1 /* 3CAROLNA 115.00 - 6CAROLNA 230.00 OPEN BUS 314559 /* 3CAROLNA 115.00 KV END
DVP_P1-2: LN 556	CONTINGENCY 'DVP_P1-2: LN 556' OPEN BRANCH FROM BUS 314686 TO BUS 314906 CKT 1 /* 6CLOVER 230.00 - 8CLOVER 500.00 OPEN BRANCH FROM BUS 314686 TO BUS 314906 CKT 2 /* 6CLOVER 230.00 - 8CLOVER 500.00 OPEN BRANCH FROM BUS 314686 TO BUS 314906 CKT 3 /* 6CLOVER 230.00 - 8CLOVER 500.00 OPEN BRANCH FROM BUS 314906 TO BUS 314936 CKT 1 /* 8CLOVER 500.00 - 8RAWLINGS 500.00 OPEN BUS 314906 /* ISLAND: 8CLOVER 500.00 OPEN BUS 314915 /* ISLAND: 8CLOVER_STC 500.00 END
AEP_P4_#11111_05J.FERR 765_B1	CONTINGENCY 'AEP_P4_#11111_05J.FERR 765_B1' OPEN BRANCH FROM BUS 242514 TO BUS 242520 CKT 1 / 242514 05J.FERR 765 242520 05J.FERR 500 1 OPEN BRANCH FROM BUS 242514 TO BUS 242684 CKT 2 / 242514 05J.FERR 765 242684 05J.FERR 138 2 OPEN BRANCH FROM BUS 242520 TO BUS 306719 CKT 1 / 242520 05J.FERR 500 306719 8ANTIOCH 500 1 END
AEP_P1-2_#344-A	CONTINGENCY 'AEP_P1-2_#344-A' OPEN BRANCH FROM BUS 242530 TO BUS 936160 CKT 1 / 242530 05EDANV1 230 936160 AD2- 022 TAP 230 1 END

Contingency Name	Contingency Definition
DVP_P7-1: LN 22-90-A	CONTINGENCY 'DVP_P7-1: LN 22-90-A' OPEN BRANCH FROM BUS 314559 TO BUS 314571 CKT 1 /* 3CAROLNA 115.00 - 3EATON F 115.00 OPEN BRANCH FROM BUS 314571 TO BUS 925780 CKT 1 /* 3EATON F 115.00 - AC1-054 TAP 115.00 OPEN BUS 314571 /* ISLAND: 3EATON F 115.00 OPEN BRANCH FROM BUS 314265 TO BUS 314584 CKT 1 /* 3FIVEFORKSDP115.00 - 3LITTLTN 115.00 OPEN BRANCH FROM BUS 314265 TO BUS 314673 CKT 1 /* 3FIVEFORKSDP115.00 - 3PALMERSPRNG115.00 OPEN BRANCH FROM BUS 314559 TO BUS 314585 CKT 1 /* 3CAROLNA 115.00 - 3L GASTN 115.00 OPEN BRANCH FROM BUS 314584 TO BUS 314585 CKT 1 /* 3LITTLTN 115.00 - 3L GASTN 115.00 OPEN BUS 314265 /* ISLAND: 3FIVEFORKSDP115.00 OPEN BUS 314584 /* ISLAND: 3LITTLTN 115.00 OPEN BUS 314585 /* ISLAND: 3L GASTN 115.00 END
AEP_P1-2_#1377	CONTINGENCY 'AEP_P1-2_#1377' OPEN BRANCH FROM BUS 242514 TO BUS 242520 CKT 1 / 242514 05J.FERR 765 242520 05J.FERR 500 1 OPEN BRANCH FROM BUS 242520 TO BUS 306719 CKT 1 / 242520 05J.FERR 500 306719 8ANTIOCH 500 1 END
DVP_P4-2: 556T591	CONTINGENCY 'DVP_P4-2: 556T591' /* RAWLINGS 500 KV OPEN BRANCH FROM BUS 314686 TO BUS 314906 CKT 1 /* 6CLOVER 230.00 - 8CLOVER 500.00 OPEN BRANCH FROM BUS 314686 TO BUS 314906 CKT 2 /* 6CLOVER 230.00 - 8CLOVER 500.00 OPEN BRANCH FROM BUS 314686 TO BUS 314906 CKT 3 /* 6CLOVER 230.00 - 8CLOVER 500.00 OPEN BRANCH FROM BUS 314906 TO BUS 314936 CKT 1 /* 8CLOVER 500.00 - 8RAWLINGS 500.00 OPEN BUS 314906 /* ISLAND: 8CLOVER 500.00 OPEN BUS 314915 /* ISLAND: 8CLOVER_STC 500.00 OPEN BRANCH FROM BUS 314935 TO BUS 314936 CKT 1 /* 8HERITAGE 500.00 - 8RAWLINGS 500.00 END
DVP_P1-2: LN 238	CONTINGENCY 'DVP_P1-2: LN 238' OPEN BRANCH FROM BUS 314282 TO BUS 314435 CKT 1 /* 6CARSON 230.00 - 6SAPONY 230.00 OPEN BRANCH FROM BUS 314435 TO BUS 314563 CKT 1 /* 6SAPONY 230.00 - 6CLUBHSE 230.00 OPEN BRANCH FROM BUS 314562 TO BUS 314563 CKT 1 /* 3CLUBHSE 115.00 - 6CLUBHSE 230.00 OPEN BUS 314435 /* ISLAND: 6SAPONY 230.00 END

Contingency Name	Contingency Definition
DVP_P7-1: LN 22-90-B	CONTINGENCY 'DVP_P7-1: LN 22-90-B' OPEN BRANCH FROM BUS 925780 TO BUS 314702 CKT 1 /* AC1-054 TAP 115.00 - 3KERR 115.00 OPEN BRANCH FROM BUS 314265 TO BUS 314584 CKT 1 /* 3FIVEFORKSDP115.00 - 3LITTLTN 115.00 OPEN BRANCH FROM BUS 314265 TO BUS 314673 CKT 1 /* 3FIVEFORKSDP115.00 - 3PALMERSPRNG115.00 OPEN BRANCH FROM BUS 314559 TO BUS 314585 CKT 1 /* 3CAROLNA 115.00 - 3L GASTN 115.00 OPEN BRANCH FROM BUS 314584 TO BUS 314585 CKT 1 /* 3LITTLTN 115.00 - 3L GASTN 115.00 OPEN BUS 314265 /* ISLAND: 3FIVEFORKSDP115.00 OPEN BUS 314584 /* ISLAND: 3LITTLTN 115.00 OPEN BUS 314585 /* ISLAND: 3L GASTN 115.00 END
DVP_P4-2: 102952	CONTINGENCY 'DVP_P4-2: 102952' /* CLUBHOUSE 115 KV OPEN BRANCH FROM BUS 314312 TO BUS 314325 CKT 1 /* 3JARRATT 115.00 - 3PURDYSW 115.00 OPEN BRANCH FROM BUS 314325 TO BUS 314562 CKT 1 /* 3PURDYSW 115.00 - 3CLUBHSE 115.00 OPEN BUS 314312 /* ISLAND: 3JARRATT 115.00 OPEN BUS 314325 /* ISLAND: 3PURDYSW 115.00 OPEN BRANCH FROM BUS 314562 TO BUS 314570 CKT 1 /* 3CLUBHSE 115.00 - 3METCATP 115.00 OPEN BRANCH FROM BUS 314570 TO BUS 314572 CKT 1 /* 3METCATP 115.00 - 3EMPORIA 115.00 OPEN BRANCH FROM BUS 314570 TO BUS 314588 CKT 1 /* 3METCATP 115.00 - 3METCALF 115.00 OPEN BRANCH FROM BUS 314572 TO BUS 925170 CKT 1 /* 3EMPORIA 115.00 - AB2-174 TAP 115.00 /* CONTINGENCY LINE ADDED FOR AE1 BUILD OPEN BRANCH FROM BUS 314572 TO BUS 314863 CKT 1 /* 3EMPORIA 115.00 - 3EMPOR_1 115.00 OPEN BUS 314570 /* ISLAND: 3METCATP 115.00 OPEN BUS 314572 /* ISLAND: 3EMPORIA 115.00 OPEN BUS 314588 /* ISLAND: 3METCALF 115.00 OPEN BUS 314863 /* ISLAND: 3EMPOR_1 115.00 OPEN BRANCH FROM BUS 314562 TO BUS 314565 CKT Z1 /* 3CLUBHSE 115.00 - 3CLUBHSE71 115.00 OPEN BRANCH FROM BUS 314562 TO BUS 314563 CKT 1 /* 3CLUBHSE 115.00 - 6CLUBHSE 230.00 OPEN BUS 314562 /* 3CLUBHSE 115.00 KV END
DVP_P4-2: 101002	CONTINGENCY 'DVP_P4-2: 101002' /* CAROLINA 115 KV OPEN BRANCH FROM BUS 314259 TO BUS 314559 CKT Z1 /* 3CAROL56_1 115.00 - 3CAROLNA 115.00 OPEN BRANCH FROM BUS 314259 TO BUS 314835 CKT 1 /* 3CAROL56_1 115.00 - 3CAROL_1 115.00 OPEN BUS 314835 /* ISLAND: 3CAROL_1 115.00 OPEN BRANCH FROM BUS 314559 TO BUS 314571 CKT 1 /* 3CAROLNA 115.00 - 3EATON F 115.00 OPEN BRANCH FROM BUS 313722 TO BUS 314559 CKT 1 /* 3OCCONEECHEE115.00 - 3CAROLNA 115.00 OPEN BRANCH FROM BUS 314559 TO BUS 314600 CKT 1 /* 3CAROLNA 115.00 - 3PLHITP 115.00 OPEN BRANCH FROM BUS 314559 TO BUS 314561 CKT 1 /* 3CAROLNA 115.00 - 6CAROLNA 230.00 END
Base Case	

Contingency Name	Contingency Definition
DVP_P1-2: LN 22-A	CONTINGENCY 'DVP_P1-2: LN 22-A' OPEN BRANCH FROM BUS 314559 TO BUS 314571 CKT 1 /* 3CAROLNA 115.00 - 3EATON F 115.00 OPEN BRANCH FROM BUS 314571 TO BUS 925780 CKT 1 /* 3EATON F 115.00 - AC1-054 TAP 115.00 OPEN BUS 314571 /* ISLAND: 3EATON F 115.00 END
DVP_P4-2: 511T556	CONTINGENCY 'DVP_P4-2: 511T556' /* RAWLINGS 500 KV OPEN BRANCH FROM BUS 314902 TO BUS 314936 CKT 1 /* 8CARSON 500.00 - 8RAWLINGS 500.00 OPEN BRANCH FROM BUS 314686 TO BUS 314906 CKT 1 /* 6CLOVER 230.00 - 8CLOVER 500.00 OPEN BRANCH FROM BUS 314686 TO BUS 314906 CKT 2 /* 6CLOVER 230.00 - 8CLOVER 500.00 OPEN BRANCH FROM BUS 314686 TO BUS 314906 CKT 3 /* 6CLOVER 230.00 - 8CLOVER 500.00 OPEN BRANCH FROM BUS 314906 TO BUS 314936 CKT 1 /* 8CLOVER 500.00 - 8RAWLINGS 500.00 OPEN BUS 314906 /* ISLAND: 8CLOVER 500.00 OPEN BUS 314915 /* ISLAND: 8CLOVER_STC 500.00 END
DVP_P4-2: 5402	CONTINGENCY 'DVP_P4-2: 5402' /* CAROLINA 115 KV OPEN BRANCH FROM BUS 313722 TO BUS 314559 CKT 1 /* 3OCCONEECHEE115.00 - 3CAROLNA 115.00 OPEN BRANCH FROM BUS 314559 TO BUS 314571 CKT 1 /* 3CAROLNA 115.00 - 3EATON F 115.00 OPEN BRANCH FROM BUS 314259 TO BUS 314559 CKT Z1 /* 3CAROL56_1 115.00 - 3CAROLNA 115.00 OPEN BRANCH FROM BUS 314559 TO BUS 314600 CKT 1 /* 3CAROLNA 115.00 - 3PLHITP 115.00 OPEN BRANCH FROM BUS 314559 TO BUS 314561 CKT 1 /* 3CAROLNA 115.00 - 6CAROLNA 230.00 END
DVP_P1-2: LN 235-A	CONTINGENCY 'DVP_P1-2: LN 235-A' OPEN BRANCH FROM BUS 313802 TO BUS 314268 CKT 1 /* 6PRINCE EDW 230.00 - 6BRIERY 230.00 OPEN BRANCH FROM BUS 313802 TO BUS 314692 CKT 1 /* 6PRINCE EDW 230.00 - 6FARMVIL 230.00 OPEN BRANCH FROM BUS 314268 TO BUS 926760 CKT 1 /* 6BRIERY 230.00 - AC1-162 TAP 230.00 OPEN BRANCH FROM BUS 314691 TO BUS 314692 CKT 1 /* 3FARMVIL 115.00 - 6FARMVIL 230.00 OPEN BUS 313802 /* ISLAND: 6PRINCE EDW 230.00 OPEN BUS 314268 /* ISLAND: 6BRIERY 230.00 END
DVP_P4-2: 24972-4	CONTINGENCY 'DVP_P4-2: 24972-4' /* CARSON 230 KV OPEN BRANCH FROM BUS 314282 TO BUS 314285 CKT 1 /* 6CARSON 230.00 - 6CHRL249 230.00 OPEN BRANCH FROM BUS 314285 TO BUS 314316 CKT 1 /* 6CHRL249 230.00 - 6LOCKS 230.00 OPEN BRANCH FROM BUS 314314 TO BUS 314316 CKT 2 /* 3LOCKS 115.00 - 6LOCKS 230.00 OPEN BUS 314285 /* ISLAND: 6CHRL249 230.00 OPEN BRANCH FROM BUS 314282 TO BUS 314902 CKT 1 /* 6CARSON 230.00 - 8CARSON 500.00 OPEN BUS 314455 /* 6CARSO_1 230.00 KV END

Contingency Name	Contingency Definition
AEP_P4_#11112_05J.FERR 765_A1	CONTINGENCY 'AEP_P4_#11112_05J.FERR 765_A1' OPEN BRANCH FROM BUS 242511 TO BUS 242514 CKT 1 / 242511 05BROADF 765 242514 05J.FERR 765 1 OPEN BRANCH FROM BUS 242514 TO BUS 242520 CKT 1 / 242514 05J.FERR 765 242520 05J.FERR 500 1 OPEN BRANCH FROM BUS 242520 TO BUS 306719 CKT 1 / 242520 05J.FERR 500 306719 8ANTIOCH 500 1 OPEN BRANCH FROM BUS 242566 TO BUS 242567 CKT ZB / 242566 05BROADF 138 242567 05BROADX 138 ZB END
DVP_P4-2: 13002	CONTINGENCY 'DVP_P4-2: 13002' /* CAROLINA 115 KV OPEN BRANCH FROM BUS 314559 TO BUS 314600 CKT 1 /* 3CAROLNA 115.00 - 3PLHITP 115.00 OPEN BRANCH FROM BUS 314595 TO BUS 314600 CKT 1 /* 3PL HILL 115.00 - 3PLHITP 115.00 OPEN BRANCH FROM BUS 314600 TO BUS 937570 CKT 1 /* 3PLHITP 115.00 - AD2-169 TAP 115.00 /* CONTINGENCY LINE ADDED FOR AE1 BUILD OPEN BUS 314595 /* ISLAND: 3PL HILL 115.00 OPEN BUS 314600 /* ISLAND: 3PLHITP 115.00 OPEN BRANCH FROM BUS 314559 TO BUS 314571 CKT 1 /* 3CAROLNA 115.00 - 3EATON F 115.00 OPEN BRANCH FROM BUS 313722 TO BUS 314559 CKT 1 /* 3OCCONEECHEE115.00 - 3CAROLNA 115.00 OPEN BRANCH FROM BUS 314259 TO BUS 314559 CKT Z1 /* 3CAROL56_1 115.00 - 3CAROLNA 115.00 OPEN BRANCH FROM BUS 314559 TO BUS 314561 CKT 1 /* 3CAROLNA 115.00 - 6CAROLNA 230.00 END

Short Circuit

Short Circuit

(Summary of impacted circuit breakers)

New circuit breakers found to be over-duty:

None

Contributions to previously identified circuit breakers found to be over-duty:

None

Network Impacts – Option 2

The Queue Project AE1-148 was evaluated as a 90 MW (Capacity 54 MW) injection tapping the Boydton DP to Kerr Dam 115 kV line in the ITO area. Project AE1-148 was evaluated for compliance with applicable reliability planning criteria (PJM, NERC, NERC Regional Reliability Councils, and Transmission Owners). Project AE1-148 was studied with a commercial probability of 53%. Potential network impacts were as follows:

Summer Peak Load Flow

Generation Deliverability

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

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
714868	242631	05EDAN 1	AEP	242620	05DANVL2	AEP	1	AEP_SUBT_P1-3_#877_05E.MONU 138_3	single	402.0	99.47	100.27	DC	3.21
392135	314435	6SAPONY	DVP	314282	6CARSON	DVP	1	DVP_P1-2: LN 246	single	678.68	101.93	103.13	DC	8.16
391852	314559	3CAROLNA	DVP	314561	6CAROLNA	DVP	1	DVP_P1-2: LN 1029-B	single	239.89	96.47	99.56	DC	7.41
391831	314563	6CLUBHSE	DVP	314435	6SAPONY	DVP	1	DVP_P1-2: LN 2056-A	single	598.78	109.16	110.51	DC	8.12
391835	314563	6CLUBHSE	DVP	314435	6SAPONY	DVP	1	Base Case	single	598.78	99.07	100.31	DC	7.44
392079	314691	3FARMVIL	DVP	314692	6FARMVIL	DVP	2	DVP_P1-2: LN 235-A	single	182.64	73.79	78.04	DC	7.77
392217	314702	3KERR	DVP	304102	3GW KING TAP	CPL	1	DVP_P1-2: LN 22-A	single	199.0	95.51	102.59	DC	14.09
392218	314702	3KERR	DVP	304102	3GW KING TAP	CPL	1	DVP_P1-2: LN 90	single	199.0	95.11	102.24	DC	14.19

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
391283	314299	6HARROWG	DVP	314263	6TYLER1	DVP	1	DVP_P4-2: 24972-4	breaker	541.0	101.07	101.73	DC	7.98
391284	314299	6HARROWG	DVP	314263	6TYLER1	DVP	1	DVP_P4-2: 562T563	breaker	541.0	99.6	100.04	DC	5.22
391360	314316	6LOCKS	DVP	314301	6HARR205	DVP	1	DVP_P4-2: 562T563	breaker	541.0	93.96	94.42	DC	5.49
391281	314331	6POE	DVP	314299	6HARROWG	DVP	1	DVP_P4-2: 24972-4	breaker	541.0	101.09	101.75	DC	7.98
391282	314331	6POE	DVP	314299	6HARROWG	DVP	1	DVP_P4-2: 562T563	breaker	541.0	99.62	100.06	DC	5.22

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	CK T ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADIN G %	POST PROJECT LOADIN G %	AC/D C	MW IMPAC T
714077	242631	05EDAN 1	AEP	242620	05DANVL2	AEP	1	AEP_P4_#11112_05J.FER R 765_A1	breaker	402.0	150.02	150.69	DC	5.99
714078	242631	05EDAN 1	AEP	242620	05DANVL2	AEP	1	AEP_P4_#11111_05J.FER R 765_B1	breaker	402.0	148.41	149.11	DC	6.21
714864	242631	05EDAN 1	AEP	242620	05DANVL2	AEP	1	Base Case	single	275.0	119.25	120.37	DC	3.09
391162	313719	3CHESTNU T	DVP	314623	3WITAKRS	DVP	1	DVP_P4-2: 2202	breaker	202.0	123.15	124.65	DC	6.7
391163	313719	3CHESTNU T	DVP	314623	3WITAKRS	DVP	1	DVP_P4-2: 13002	breaker	202.0	122.46	123.96	DC	6.7
391335	313858	3SO JUSTICE	DVP	314577	3COX DP	DVP	1	DVP_P4-2: 2202	breaker	202.0	102.31	103.81	DC	6.71
391336	313858	3SO JUSTICE	DVP	314577	3COX DP	DVP	1	DVP_P4-2: 13002	breaker	202.0	101.62	103.12	DC	6.71
391337	313858	3SO JUSTICE	DVP	314577	3COX DP	DVP	1	DVP_P4-2: 5402	breaker	202.0	101.62	103.12	DC	6.71
391338	313858	3SO JUSTICE	DVP	314577	3COX DP	DVP	1	DVP_P4-2: 101002	breaker	202.0	101.62	103.12	DC	6.71
390989	314282	6CARSON	DVP	314285	6CHRL249	DVP	1	DVP_P4-2: 562T563	breaker	684.0	139.71	140.17	DC	6.96
391017	314285	6CHRL249	DVP	314316	6LOCKS	DVP	1	DVP_P4-2: 562T563	breaker	684.0	136.69	137.15	DC	6.96
390941	314559	3CAROLNA	DVP	314561	6CAROLNA	DVP	1	DVP_P4-2: 102952	breaker	288.6	144.33	146.53	DC	14.01
390942	314559	3CAROLNA	DVP	314561	6CAROLNA	DVP	1	DVP_P4-2: 7152	breaker	288.6	139.92	142.12	DC	14.01
391851	314559	3CAROLNA	DVP	314561	6CAROLNA	DVP	1	DVP_P1-2: LN 1029-A	single	239.89	103.54	106.63	DC	7.41
390802	314562	3CLUBHSE	DVP	314563	6CLUBHSE	DVP	1	DVP_P4-6: CAROLIN T122	breaker	208.6	192.86	198.51	DC	11.76
390803	314562	3CLUBHSE	DVP	314563	6CLUBHSE	DVP	1	DVP_P4-2: 2202	breaker	208.6	184.89	189.86	DC	10.37
391651	314562	3CLUBHSE	DVP	314563	6CLUBHSE	DVP	1	DVP_P1-2: LN 130-A	single	182.64	117.92	120.62	DC	4.94
391652	314562	3CLUBHSE	DVP	314563	6CLUBHSE	DVP	1	DVP_P1-3: 6CAROLNA-TX#4	single	182.64	106.53	110.67	DC	7.56
391830	314563	6CLUBHSE	DVP	314435	6SAPONY	DVP	1	DVP_P1-2: LN 246	single	598.78	119.04	120.41	DC	8.16
391197	314677	6BUCKING	DVP	314747	6BREMO	DVP	1	DVP_P4-2: 556T591	breaker	699.0	108.49	109.5	DC	15.64
391198	314677	6BUCKING	DVP	314747	6BREMO	DVP	1	DVP_P4-2: 511T556	breaker	699.0	108.49	109.5	DC	15.64
391199	314677	6BUCKING	DVP	314747	6BREMO	DVP	1	DVP_P4-2: 511T591	breaker	699.0	108.29	109.29	DC	15.64
392082	314677	6BUCKING	DVP	314747	6BREMO	DVP	1	DVP_P1-2: LN 556	single	571.52	115.69	117.33	DC	9.36
391220	314692	6FARMVIL	DVP	314677	6BUCKING	DVP	1	DVP_P4-2: 511T556	breaker	684.0	106.65	107.68	DC	15.65
391221	314692	6FARMVIL	DVP	314677	6BUCKING	DVP	1	DVP_P4-2: 556T591	breaker	684.0	106.65	107.68	DC	15.65
391222	314692	6FARMVIL	DVP	314677	6BUCKING	DVP	1	DVP_P4-2: 511T591	breaker	684.0	106.45	107.48	DC	15.65
392107	314692	6FARMVIL	DVP	314677	6BUCKING	DVP	1	DVP_P1-2: LN 556	single	559.3	114.73	116.4	DC	9.37
392148	314697	6SEEDGE HILL	DVP	927250	AC1-221 TAP	DVP	1	DVP_P1-2: LN 556	single	674.92	107.89	109.15	DC	8.47
390916	314702	3KERR	DVP	304102	3GW KING TAP	CPL	1	DVP_P4-6: CAROLIN T122	breaker	199.0	131.14	145.71	DC	28.94

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
390917	314702	3KERR	DVP	304102	3GW KING TAP	CPL	1	DVP_P4-2: 2202	breaker	199.0	124.21	136.94	DC	25.29
392642	314702	3KERR	DVP	304102	3GW KING TAP	CPL	1	DVP_P7-1: LN 22-90-A	tower	199.0	136.48	150.97	DC	28.79
392643	314702	3KERR	DVP	304102	3GW KING TAP	CPL	1	DVP_P7-1: LN 22-90-B	tower	199.0	124.93	139.42	DC	28.79
392066	927250	AC1-221 TAP	DVP	304070	6PERSON230 T	CPL	1	DVP_P1-2: LN 556	single	718.0	111.22	112.4	DC	8.47

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
714861	242631	05EDAN 1	AEP	242620	05DANVL2	AEP	1	AEP_P1-2_#1377	operation	402.0	148.39	149.08	DC	6.21
714862	242631	05EDAN 1	AEP	242620	05DANVL2	AEP	1	Base Case	operation	275.0	131.67	132.52	DC	5.15
715107	242632	05EDAN 2	AEP	242631	05EDAN 1	AEP	Z1	AEP_P1-2_#344-A	operation	296.0	109.81	110.51	DC	4.55
392354	313825	3PLYWOOD	DVP	314696	3SEGE HILL	DVP	1	DVP_P1-2: LN 33-B	operation	141.0	102.22	111.96	DC	13.71
392005	313867	6BREMODIST	DVP	938070	AE1-009 TAP	DVP	1	DVP_P1-2: LN 2027-B	operation	661.76	141.15	141.78	DC	9.26
392013	313867	6BREMODIST	DVP	938070	AE1-009 TAP	DVP	1	Base Case	operation	661.76	96.8	97.33	DC	7.76
392482	314266	6NORTHAMPTON	DVP	314569	6EARLEYS	DVP	1	DVP_P1-2: LN 238	operation	559.3	103.99	104.58	DC	7.4
392269	314282	6CARSON	DVP	314285	6CHRL249	DVP	1	DVP_P1-2: LN 563	operation	559.3	125.37	125.87	DC	6.16
392303	314285	6CHRL249	DVP	314316	6LOCKS	DVP	1	DVP_P1-2: LN 563	operation	559.3	121.69	122.18	DC	6.16
392456	314299	6HARROWG	DVP	314263	6TYLER1	DVP	1	DVP_P1-2: LN 563	operation	441.8	92.9	93.37	DC	4.68
392454	314331	6POE	DVP	314299	6HARROWG	DVP	1	DVP_P1-2: LN 563	operation	441.8	92.92	93.4	DC	4.68
392129	314435	6SAPONY	DVP	314282	6CARSON	DVP	1	DVP_P1-2: LN 246	operation	678.68	141.11	142.01	DC	13.6
392134	314435	6SAPONY	DVP	314282	6CARSON	DVP	1	Base Case	operation	678.68	116.61	117.43	DC	12.39
391845	314559	3CAROLNA	DVP	314561	6CAROLNA	DVP	1	DVP_P1-2: LN 1029-A	operation	239.89	160.27	162.6	DC	12.35
391850	314559	3CAROLNA	DVP	314561	6CAROLNA	DVP	1	Base Case	operation	226.54	117.67	120.0	DC	11.59
392448	314561	6CAROLNA	DVP	314599	6ROA VAL	DVP	1	DVP_P1-2: LN 238	operation	548.02	106.97	107.57	DC	7.4

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
391646	314562	3CLUBHSE	DVP	314563	6CLUBHSE	DVP	1	DVP_P1-3: 6CAROLNA-TX#4	operation	182.64	177.81	184.73	DC	12.59
391650	314562	3CLUBHSE	DVP	314563	6CLUBHSE	DVP	1	Base Case	operation	176.81	135.46	140.81	DC	9.45
391824	314563	6CLUBHSE	DVP	314435	6SAPONY	DVP	1	DVP_P1-2: LN 246	operation	598.78	163.94	164.97	DC	13.61
391829	314563	6CLUBHSE	DVP	314435	6SAPONY	DVP	1	Base Case	operation	598.78	140.59	141.52	DC	12.39
392451	314599	6ROA VAL	DVP	314266	6NORTHAMPTON	DVP	1	DVP_P1-2: LN 238	operation	548.02	106.91	107.52	DC	7.4
392414	314625	3AULANDR	DVP	314568	3EARLEYS	DVP	1	DVP_P1-3: 6CAROLNA-TX#4	operation	110.92	109.16	111.15	DC	4.88
392353	314626	3WOODLND	DVP	314625	3AULANDR	DVP	1	DVP_P1-3: 6CAROLNA-TX#4	operation	110.92	115.47	117.46	DC	4.88
392081	314677	6BUCKING	DVP	314747	6BREMO	DVP	1	DVP_P1-2: LN 556	operation	571.52	129.96	131.19	DC	15.6
392078	314691	3FARMVIL	DVP	314692	6FARMVIL	DVP	2	DVP_P1-2: LN 235-A	operation	182.64	92.16	95.35	DC	12.95
392106	314692	6FARMVIL	DVP	314677	6BUCKING	DVP	1	DVP_P1-2: LN 556	operation	559.3	127.67	128.92	DC	15.62
392437	314696	3SEEDGE HILL	DVP	314697	6SEEDGE HILL	DVP	1	DVP_P1-3: 6SEEDGE HILL-TX#2	operation	226.73	97.5	104.22	DC	15.22
392147	314697	6SEEDGE HILL	DVP	927250	AC1-221 TAP	DVP	1	DVP_P1-2: LN 556	operation	674.92	133.71	134.66	DC	14.11
392211	314702	3KERR	DVP	304102	3GW KING TAP	CPL	1	DVP_P1-2: LN 296-A	operation	199.0	118.44	129.18	DC	21.34
392212	314702	3KERR	DVP	304102	3GW KING TAP	CPL	1	DVP_P1-2: LN 296-B	operation	199.0	118.44	129.18	DC	21.34
392216	314702	3KERR	DVP	304102	3GW KING TAP	CPL	1	Base Case	operation	199.0	107.96	118.39	DC	20.71
392330	314712	3OTTER R	DVP	314666	3ALTVSTA	DVP	1	DVP_P1-2: LN 556	operation	224.66	114.58	115.77	DC	5.93
391971	314747	6BREMO	DVP	313867	6BREMOMIST	DVP	1	DVP_P1-2: LN 2027-B	operation	661.76	143.47	144.11	DC	9.26
391979	314747	6BREMO	DVP	313867	6BREMOMIST	DVP	1	Base Case	operation	661.76	99.13	99.66	DC	7.76
392034	314765	6MTEAGLE	DVP	314749	6CHARLV	DVP	1	DVP_P1-2: LN 2027-B	operation	661.76	139.06	139.69	DC	9.25
392042	314765	6MTEAGLE	DVP	314749	6CHARLV	DVP	1	Base Case	operation	661.76	93.12	93.65	DC	7.76
392494	927140	AC1-208 TAP	DVP	313858	3SO JUSTICE	DVP	1	DVP_P1-3: 6CAROLNA-TX#4	operation	165.44	100.84	102.39	DC	5.68
392065	927250	AC1-221 TAP	DVP	304070	6PERSON230 T	CPL	1	DVP_P1-2: LN 556	operation	718.0	139.93	140.82	DC	14.11
391982	938070	AE1-009 TAP	DVP	314765	6MTEAGLE	DVP	1	DVP_P1-2: LN 2027-B	operation	661.76	142.44	143.07	DC	9.26
391990	938070	AE1-009 TAP	DVP	314765	6MTEAGLE	DVP	1	Base Case	operation	661.76	97.7	98.23	DC	7.76

Flow Gate Details

The following appendices contain additional information about each flowgate presented in the body of the report. For each appendix, 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 gauge 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.

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
714077	242631	05EDAN 1	AEP	242620	05DANVL2	AEP	1	AEP_P4_#11112_05J.FERR 765_A1	breaker	402.0	150.02	150.69	DC	5.99

Bus #	Bus	MW Impact
314554	3BTLEBRO	0.35
314557	3BETHELC	0.33
314572	3EMPORIA	0.13
314574	6EVERETS	1.55
314578	3HORNRTN	1.17
314582	3KELFORD	1.21
314603	3SCOT NK	1.2
314617	3TUNIS	0.27
314620	6CASHIE	0.26
314623	3WITAKRS	0.57
315131	1EDGECEMA	4.09
315132	1EDGECEMB	4.09
315150	1BUGGS 1	4.52
315151	1BUGGS 2	4.52
900672	V4-068 E	0.09
917332	Z2-043 E	0.35
917342	Z2-044 E	0.25
917512	Z2-088 E OP1	1.53
918492	AA1-063AE OP	1.36
918512	AA1-065 E OP	1.43
918532	AA1-067 E	0.27
918562	AA1-072 E	0.06
919692	AA2-053 E	1.28
919701	AA2-057 C	2.91
919702	AA2-057 E	1.46
920042	AA2-088 E OP	3.13
920592	AA2-165 E	0.19
920672	AA2-174 E	0.15
923911	AB2-031 C O1	0.73
923912	AB2-031 E O1	0.36
923941	AB2-035 C	0.14
923942	AB2-035 E	0.06
923992	AB2-040 E O1	1.97
924022	AB2-043 E O1	1.89
924152	AB2-059 E O1	2.4
924162	AB2-060 E O1	1.55
924302	AB2-077 E O1	0.49
924312	AB2-078 E O1	0.49
924322	AB2-079 E O1	0.49
924391	AB2-088 C	0.18
924392	AB2-088 E	0.09

Bus #	Bus	MW Impact
924401	AB2-089 C	0.88
924402	AB2-089 E	0.45
924491	AB2-098 C	0.21
924492	AB2-098 E	0.09
924501	AB2-099 C	0.19
924502	AB2-099 E	0.08
925122	AB2-169 E	1.93
925171	AB2-174 C O1	2.28
925172	AB2-174 E O1	2.06
925591	AC1-034 C	3.01
925592	AC1-034 E	2.27
925612	AC1-036 E	0.51
925781	AC1-054 C O1	2.91
925782	AC1-054 E O1	1.34
926051	AC1-083 C O1	3.91
926052	AC1-083 E O1	6.37
926071	AC1-086 C	6.99
926072	AC1-086 E	3.18
926201	AC1-098 C	2.32
926202	AC1-098 E	1.38
926211	AC1-099 C	0.78
926212	AC1-099 E	0.46
926271	AC1-105 C O1	2.27
926272	AC1-105 E O1	1.13
927021	AC1-189 C	3.35
927022	AC1-189 E	1.67
927141	AC1-208 C	3.47
927142	AC1-208 E	1.54
927251	AC1-221 C	1.55
927252	AC1-221 E	1.55
927261	AC1-222 C	1.45
927262	AC1-222 E	1.38
930402	AB1-081 E O1	1.69
930862	AB1-132 E O1	2.03
931232	AB1-173 E	0.35
931242	AB1-173AE	0.35
932631	AC2-084 C	3.31
932632	AC2-084 E	1.63
932761	AC2-100 C	3.57
932762	AC2-100 E	1.74
933941	AD1-017 C	0.78
933942	AD1-017 E	1.27
933991	AD1-023 C	3.99
933992	AD1-023 E	2.17
934201	AD1-047 C	2.63
934202	AD1-047 E	1.75
934231	AD1-050 C	1.93
934232	AD1-050 E	1.05
934311	AD1-055 C	1.01
934312	AD1-055 E	0.26
934331	AD1-057 C O1	3.95
934332	AD1-057 E O1	2.11

Bus #	Bus	MW Impact
934341	AD1-058 C	3.89
934342	AD1-058 E	0.99
934521	AD1-076 C	16.14
934522	AD1-076 E	8.22
934611	AD1-087 C O1	3.23
934612	AD1-087 E O1	1.52
934991	AD1-131 C	1.27
934992	AD1-131 E	0.85
935171	AD1-152 C O1	3.21
935172	AD1-152 E O1	2.14
936161	AD2-022 C O1	10.54
936162	AD2-022 E O1	6.33
936171	AD2-023 C O1	6.06
936172	AD2-023 E O1	3.29
936261	AD2-033 C	4.35
936262	AD2-033 E	2.9
936331	AD2-043 C	1.88
936332	AD2-043 E	2.22
936361	AD2-046 C O1	3.67
936362	AD2-046 E O1	1.69
936401	AD2-051 C O1	2.88
936402	AD2-051 E O1	1.24
936481	AD2-063 C O1	5.27
936482	AD2-063 E O1	3.51
936531	AD2-068 C	2.24
936532	AD2-068 E	1.15
936701	AD2-089 C	3.01
936702	AD2-089 E	2.01
937481	AD2-202 C O1	0.89
937482	AD2-202 E O1	0.45
937492	AD2-205 E	0.21
937571	AD2-169 C	3.33
937572	AD2-169 E	2.22
938171	AE1-026 C1 O	8.61
938172	AE1-026 C2 O	1.25
938173	AE1-026 E O2	2.6
938221	AE1-035 C	0.73
938222	AE1-035 E	0.36
938661	AE1-088	0.59
939181	AE1-148 C O2	3.6
939182	AE1-148 E O2	2.4
939371	AE1-168 C	4.6
939372	AE1-168 E	3.06
940081	AE1-250 C	13.93
940082	AE1-250 E	9.29
AA2-074	AA2-074	3.74
BLUEG	BLUEG	4.15
CANNELTON	CANNELTON	0.12
CBM-N	CBM-N	0.02
CBM-S1	CBM-S1	2.86
CBM-S2	CBM-S2	10.47
CBM-W2	CBM-W2	13.09

Bus #	Bus	MW Impact
COFFEEN	COFFEEN	0.19
CPL	CPL	5.5
DEARBORN	DEARBORN	0.83
DUCKCREEK	DUCKCREEK	0.58
EDWARDS	EDWARDS	0.3
ELMERSMITH	ELMERSMITH	0.17
FARMERCITY	FARMERCITY	0.0
G-007A	G-007A	0.41
GIBSON	GIBSON	0.13
NEWTON	NEWTON	0.56
NYISO	NYISO	0.08
O-066A	O-066A	0.18
TATANKA	TATANKA	0.14
TILTON	TILTON	0.43
TRIMBLE	TRIMBLE	0.48
VFT	VFT	1.06

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
392135	314435	6SAPONY	DVP	314282	6CARSON	DVP	1	DVP_P1-2: LN 246	single	678.68	101.93	103.13	DC	8.16

Bus #	Bus	MW Impact
314589	3MURPHYS	0.09
314704	3LAWRENC	0.64
315126	1ROARAP2	2.09
315128	1ROARAP4	2.01
315131	1EDGECEMA	10.75
315132	1EDGECEMB	10.75
315136	1ROSEMG1	3.95
315137	1ROSEMS1	2.45
315138	1ROSEMG2	1.85
315139	1GASTONA	5.84
315141	1GASTONB	5.84
315150	1BUGGS 1	8.65
315151	1BUGGS 2	8.65
315158	1KERR 1	0.31
315159	1KERR 2	1.25
315160	1KERR 3	1.23
315161	1KERR 4	1.23
315162	1KERR 5	1.23
315163	1KERR 6	1.23
315164	1KERR 7	1.23
315294	1DOMTR10	1.62
917331	Z2-043 C	0.45
917341	Z2-044 C	0.25
917511	Z2-088 C OP1	1.52
918491	AA1-063AC OP	1.93
918511	AA1-065 C OP	1.64
918531	AA1-067 C	0.28
918561	AA1-072 C	0.07
919691	AA2-053 C	2.08
919701	AA2-057 C	8.9
920041	AA2-088 C OP	0.95
920591	AA2-165 C	0.19
920671	AA2-174 C	0.1
923851	AB2-025 C	1.58
923911	AB2-031 C O1	4.86
923941	AB2-035 C	0.38
923991	AB2-040 C O1	2.45
924151	AB2-059 C O1	1.84
924391	AB2-088 C	0.49
924401	AB2-089 C	2.28

Bus #	Bus	MW Impact
924491	AB2-098 C	0.61
924501	AB2-099 C	0.7
924511	AB2-100 C	35.68
925121	AB2-169 C	0.91
925171	AB2-174 C O1	16.03
925591	AC1-034 C	7.77
925781	AC1-054 C O1	8.19
926071	AC1-086 C	42.86
926201	AC1-098 C	8.09
926211	AC1-099 C	2.71
927021	AC1-189 C	9.38
927141	AC1-208 C	12.38
930401	AB1-081 C O1	1.56
930861	AB1-132 C O1	4.46
931231	AB1-173 C	0.75
931241	AB1-173AC	0.75
932631	AC2-084 C	11.53
933991	AD1-023 C	11.68
934201	AD1-047 C	17.41
934231	AD1-050 C	5.04
934331	AD1-057 C O1	15.67
934521	AD1-076 C	42.65
936261	AD2-033 C	8.94
936361	AD2-046 C O1	8.32
936401	AD2-051 C O1	10.79
936481	AD2-063 C O1	11.53
936531	AD2-068 C	4.57
936701	AD2-089 C	8.14
936711	AD2-090 C O1	5.48
937571	AD2-169 C	20.52
938171	AE1-026 C1 O	26.48
938172	AE1-026 C2 O	3.83
938221	AE1-035 C	2.67
938661	AE1-088	3.04
939071	AE1-135 C O2	66.67
939181	AE1-148 C O2	8.16
AA2-074	AA2-074	2.53
CARR	CARR	0.23
CBM-S1	CBM-S1	5.71
CBM-S2	CBM-S2	6.69
CBM-W1	CBM-W1	5.8
CBM-W2	CBM-W2	37.54
CIN	CIN	2.62
CPL	CPL	3.72
IPL	IPL	1.64
LGEE	LGEE	0.76
MEC	MEC	5.8
MECS	MECS	2.48
RENSSELAER	RENSSELAER	0.18
WEC	WEC	0.7

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
390941	314559	3CAROLNA	DVP	314561	6CAROLNA	DVP	1	DVP_P4-2: 102952	breaker	288.6	144.33	146.53	DC	14.01

Bus #	Bus	MW Impact
314539	3UNCAMP	1.77
314541	3WATKINS	0.62
314578	3HORNRTN	8.18
314582	3KELFORD	2.17
314589	3MURPHYS	0.09
314603	3SCOT NK	2.68
314617	3TUNIS	0.64
315126	1ROARAP2	3.42
315128	1ROARAP4	3.29
315150	1BUGGS 1	7.88
315151	1BUGGS 2	7.88
315159	1KERR 2	1.36
315162	1KERR 5	1.34
315163	1KERR 6	1.34
315164	1KERR 7	1.34
900672	V4-068 E	0.31
907092	X1-038 E	4.43
917332	Z2-043 E	0.62
918491	AA1-063AC OP	2.32
918492	AA1-063AE OP	7.14
918562	AA1-072 E	0.1
919691	AA2-053 C	2.93
919692	AA2-053 E	8.21
919701	AA2-057 C	4.73
919702	AA2-057 E	2.37
920041	AA2-088 C OP	1.25
920042	AA2-088 E OP	13.29
920592	AA2-165 E	0.31
920671	AA2-174 C	0.13
920672	AA2-174 E	0.95
923801	AB2-015 C O1	7.16
923802	AB2-015 E O1	5.87
923911	AB2-031 C O1	6.01
923912	AB2-031 E O1	2.96
923991	AB2-040 C O1	3.03
923992	AB2-040 E O1	16.16
924022	AB2-043 E O1	3.26
924162	AB2-060 E O1	2.66
924302	AB2-077 E O1	0.85
924312	AB2-078 E O1	0.85

Bus #	Bus	MW Impact
924322	AB2-079 E O1	0.85
924401	AB2-089 C	2.81
924402	AB2-089 E	1.45
924501	AB2-099 C	0.34
924502	AB2-099 E	0.15
925171	AB2-174 C O1	18.85
925172	AB2-174 E O1	17.05
925612	AC1-036 E	0.77
925781	AC1-054 C O1	10.61
925782	AC1-054 E O1	4.89
926201	AC1-098 C	5.78
926202	AC1-098 E	3.44
926211	AC1-099 C	1.94
926212	AC1-099 E	1.14
927141	AC1-208 C	11.25
927142	AC1-208 E	5.0
931231	AB1-173 C	0.93
931232	AB1-173 E	2.83
931241	AB1-173AC	0.93
931242	AB1-173AE	2.83
932631	AC2-084 C	8.24
932632	AC2-084 E	4.06
934201	AD1-047 C	21.54
934202	AD1-047 E	14.36
934231	AD1-050 C	6.19
934232	AD1-050 E	3.38
936261	AD2-033 C	6.8
936262	AD2-033 E	4.53
936361	AD2-046 C O1	8.68
936362	AD2-046 E O1	3.99
936481	AD2-063 C O1	8.7
936482	AD2-063 E O1	5.8
936711	AD2-090 C O1	7.38
936712	AD2-090 E O1	4.92
937571	AD2-169 C	26.93
937572	AD2-169 E	17.95
938771	AE1-103 C O2	2.41
938772	AE1-103 E O2	3.32
939181	AE1-148 C O2	8.4
939182	AE1-148 E O2	5.6
CARR	CARR	0.04
CBM-S1	CBM-S1	0.34
CBM-S2	CBM-S2	0.31
CBM-W1	CBM-W1	0.34
CBM-W2	CBM-W2	2.22
CIN	CIN	0.17
CPL	CPL	0.12
G-007	G-007	0.14
IPL	IPL	0.1
LGEE	LGEE	0.05
MEC	MEC	0.35
MECS	MECS	0.13

Bus #	Bus	MW Impact
O-066	O-066	0.47
RENSSELAER	RENSSELAER	0.03
WEC	WEC	0.04

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
391830	314563	6CLUBHSE	DVP	314435	6SAPONY	DVP	1	DVP_P1-2: LN 246	single	598.78	119.04	120.41	DC	8.16

Bus #	Bus	MW Impact
314589	3MURPHYS	0.09
314704	3LAWRENC	0.64
315126	1ROARAP2	2.09
315128	1ROARAP4	2.01
315131	1EDGECEMA	10.75
315132	1EDGECEMB	10.75
315136	1ROSEMG1	3.95
315137	1ROSEMS1	2.45
315138	1ROSEMG2	1.85
315139	1GASTONA	5.85
315141	1GASTONB	5.85
315150	1BUGGS 1	8.66
315151	1BUGGS 2	8.66
315158	1KERR 1	0.31
315159	1KERR 2	1.25
315160	1KERR 3	1.23
315161	1KERR 4	1.23
315162	1KERR 5	1.23
315163	1KERR 6	1.23
315164	1KERR 7	1.23
315294	1DOMTR10	1.62
917331	Z2-043 C	0.45
917341	Z2-044 C	0.25
917511	Z2-088 C OP1	1.52
918491	AA1-063AC OP	1.93
918511	AA1-065 C OP	1.64
918531	AA1-067 C	0.28
918561	AA1-072 C	0.07
919691	AA2-053 C	2.08
919701	AA2-057 C	8.9
920041	AA2-088 C OP	0.95
920591	AA2-165 C	0.19
920671	AA2-174 C	0.1
923801	AB2-015 C O1	5.17
923911	AB2-031 C O1	4.86
923941	AB2-035 C	0.38
923991	AB2-040 C O1	2.45
924151	AB2-059 C O1	1.84
924391	AB2-088 C	0.49
924401	AB2-089 C	2.29

Bus #	Bus	MW Impact
924491	AB2-098 C	0.61
924501	AB2-099 C	0.7
924511	AB2-100 C	35.69
925121	AB2-169 C	0.91
925171	AB2-174 C O1	16.04
925291	AB2-188 C O1	1.45
925591	AC1-034 C	7.77
925781	AC1-054 C O1	8.19
926071	AC1-086 C	42.87
926201	AC1-098 C	8.09
926211	AC1-099 C	2.71
927021	AC1-189 C	9.38
927141	AC1-208 C	12.39
930401	AB1-081 C O1	1.56
930861	AB1-132 C O1	4.46
931231	AB1-173 C	0.75
931241	AB1-173AC	0.75
932631	AC2-084 C	11.53
933991	AD1-023 C	11.68
934201	AD1-047 C	17.41
934231	AD1-050 C	5.04
934331	AD1-057 C O1	15.68
934521	AD1-076 C	42.68
936261	AD2-033 C	8.95
936361	AD2-046 C O1	8.32
936401	AD2-051 C O1	10.79
936481	AD2-063 C O1	11.53
936531	AD2-068 C	4.58
936701	AD2-089 C	8.14
936711	AD2-090 C O1	5.48
937571	AD2-169 C	20.52
938171	AE1-026 C1 O	26.5
938172	AE1-026 C2 O	3.83
938221	AE1-035 C	2.67
938661	AE1-088	3.04
939071	AE1-135 C O2	66.68
939181	AE1-148 C O2	8.16
AA2-074	AA2-074	2.53
CARR	CARR	0.23
CBM-S1	CBM-S1	5.73
CBM-S2	CBM-S2	6.71
CBM-W1	CBM-W1	5.84
CBM-W2	CBM-W2	37.7
CIN	CIN	2.64
CPLE	CPLE	3.72
IPL	IPL	1.65
LGEE	LGEE	0.76
MEC	MEC	5.83
MECS	MECS	2.5
RENSSELAER	RENSSELAER	0.18
WEC	WEC	0.7

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
392079	314691	3FARMVIL	DVP	314692	6FARMVIL	DVP	2	DVP_P1-2: LN 235-A	single	182.64	73.79	78.04	DC	7.77

Bus #	Bus	MW Impact
314429	3JTRSVLE	1.0
314704	3LAWRENC	0.19
315150	1BUGGS 1	9.73
315151	1BUGGS 2	9.73
315158	1KERR 1	0.26
315159	1KERR 2	1.05
315160	1KERR 3	1.03
315161	1KERR 4	1.03
315162	1KERR 5	1.03
315163	1KERR 6	1.03
315164	1KERR 7	1.03
315266	1PLYWOOD A	0.56
923911	AB2-031 C O1	0.72
923991	AB2-040 C O1	0.36
924021	AB2-043 C O1	0.6
924161	AB2-060 C O1	1.79
924301	AB2-077 C O1	0.37
924311	AB2-078 C O1	0.37
924321	AB2-079 C O1	0.37
924401	AB2-089 C	1.53
925171	AB2-174 C O1	2.31
925611	AC1-036 C	0.3
925781	AC1-054 C O1	4.84
925831	AC1-062	0.14
926271	AC1-105 C O1	3.12
927261	AC1-222 C	1.32
931231	AB1-173 C	0.11
931241	AB1-173AC	0.11
934201	AD1-047 C	2.6
934231	AD1-050 C	3.38
934311	AD1-055 C	0.91
935221	AD1-157 C	0.69
935231	AD1-160 C	3.31
936261	AD2-033 C	24.71
936331	AD2-043 C	1.71
936361	AD2-046 C O1	7.69
936481	AD2-063 C O1	23.28
936651	AD2-082 C	5.07
937571	AD2-169 C	3.18
938371	AE1-056 C	19.47

Bus #	Bus	MW Impact
939181	AE1-148 C O2	7.77
939201	AE1-150 C O2	36.94
939371	AE1-168 C	37.75
CARR	CARR	0.08
CBM-S1	CBM-S1	1.66
CBM-S2	CBM-S2	2.22
CBM-W1	CBM-W1	1.38
CBM-W2	CBM-W2	10.63
CIN	CIN	0.63
CPLE	CPLE	1.2
IPL	IPL	0.39
LGEE	LGEE	0.18
MEC	MEC	1.52
MECS	MECS	0.48
RENSSELAER	RENSSELAER	0.06
WEC	WEC	0.17

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
392642	314702	3KERR	DVP	304102	3GW KING TAP	CPL	1	DVP_P7-1: LN 22-90-A	tower	199.0	136.48	150.97	DC	28.79

Bus #	Bus	MW Impact
315150	1BUGGS 1	15.54
315151	1BUGGS 2	15.54
315158	1KERR 1	0.7
315159	1KERR 2	2.85
315160	1KERR 3	2.81
315161	1KERR 4	2.81
315162	1KERR 5	2.81
315163	1KERR 6	2.81
315164	1KERR 7	2.81
924022	AB2-043 E O1	6.02
924162	AB2-060 E O1	4.91
924302	AB2-077 E O1	1.58
924312	AB2-078 E O1	1.58
924322	AB2-079 E O1	1.58
924401	AB2-089 C	4.63
924402	AB2-089 E	2.38
925612	AC1-036 E	1.43
925781	AC1-054 C O1	15.6
925782	AC1-054 E O1	7.18
926271	AC1-105 C O1	2.87
926272	AC1-105 E O1	1.43
934231	AD1-050 C	10.2
934232	AD1-050 E	5.57
935222	AD1-157 E	0.64
935231	AD1-160 C	0.7
935232	AD1-160 E	0.97
936261	AD2-033 C	12.59
936262	AD2-033 E	8.4
936361	AD2-046 C O1	17.92
936362	AD2-046 E O1	8.24
936481	AD2-063 C O1	16.08
936482	AD2-063 E O1	10.72
936651	AD2-082 C	1.08
936652	AD2-082 E	0.52
938371	AE1-056 C	4.14
938372	AE1-056 E	2.26
939181	AE1-148 C O2	17.27
939182	AE1-148 E O2	11.52
939201	AE1-150 C O2	4.39
939202	AE1-150 E O2	2.93

Bus #	Bus	MW Impact
939371	AE1-168 C	11.8
939372	AE1-168 E	7.87
BAYOU	BAYOU	0.71
BIG_CAJUN1	BIG_CAJUN1	1.12
BIG_CAJUN2	BIG_CAJUN2	2.25
BLUEG	BLUEG	1.99
CALDERWOOD	CALDERWOOD	0.42
CANNELTON	CANNELTON	0.14
CATAWBA	CATAWBA	0.43
CBM-N	CBM-N	0.01
CHEOAH	CHEOAH	0.39
CHILHOWEE	CHILHOWEE	0.14
CHOCTAW	CHOCTAW	0.76
COFFEEN	COFFEEN	0.23
COTTONWOOD	COTTONWOOD	2.77
DEARBORN	DEARBORN	0.25
DUCKCREEK	DUCKCREEK	0.48
EDWARDS	EDWARDS	0.21
ELMERSMITH	ELMERSMITH	0.24
FARMERCITY	FARMERCITY	0.17
G-007A	G-007A	0.09
GIBSON	GIBSON	0.09
HAMLET	HAMLET	1.64
NEWTON	NEWTON	0.61
NYISO	NYISO	0.02
O-066A	O-066A	0.04
PRAIRIE	PRAIRIE	1.28
SANTEETLA	SANTEETLA	0.12
SMITHLAND	SMITHLAND	0.11
TATANKA	TATANKA	0.29
TILTON	TILTON	0.25
TRIMBLE	TRIMBLE	0.22
TVA	TVA	1.17
UNIONPOWER	UNIONPOWER	0.59
VFT	VFT	0.23

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
391283	314299	6HARROWG	DVP	314263	6TYLER1	DVP	1	DVP_P4-2: 24972-4	breaker	541.0	101.07	101.73	DC	7.98

Bus #	Bus	MW Impact
314539	3UNCAMP	1.22
314541	3WATKINS	0.38
314554	3BTLEBRO	0.5
314557	3BETHELC	0.48
314572	3EMPORIA	0.58
314574	6EVERETS	2.18
314578	3HORNRTN	2.96
314582	3KELFORD	2.27
314603	3SCOT NK	2.25
314617	3TUNIS	0.53
314620	6CASHIE	0.4
314623	3WITAKRS	0.88
314704	3LAWRENC	0.36
315126	1ROARAP2	1.17
315131	1EDGECEMA	5.88
315132	1EDGECEMB	5.88
315136	1ROSEMG1	2.16
315137	1ROSEMS1	1.34
315138	1ROSEMG2	1.01
315139	1GASTONA	3.2
315141	1GASTONB	3.2
315150	1BUGGS 1	5.21
315151	1BUGGS 2	5.21
900672	V4-068 E	0.19
907092	X1-038 E	3.04
917332	Z2-043 E	0.64
917342	Z2-044 E	0.38
917512	Z2-088 E OP1	2.17
918492	AA1-063AE OP	3.19
918512	AA1-065 E OP	2.44
918532	AA1-067 E	0.39
918562	AA1-072 E	0.11
919692	AA2-053 E	3.2
919701	AA2-057 C	4.86
919702	AA2-057 E	2.43
920042	AA2-088 E OP	6.77
920592	AA2-165 E	0.32
920672	AA2-174 E	0.37
923801	AB2-015 C O1	4.56
923802	AB2-015 E O1	3.74

Bus #	Bus	MW Impact
923851	AB2-025 C	0.89
923852	AB2-025 E	2.6
923911	AB2-031 C O1	2.72
923912	AB2-031 E O1	1.34
923941	AB2-035 C	0.2
923942	AB2-035 E	0.09
923991	AB2-040 C O1	1.37
923992	AB2-040 E O1	7.31
924022	AB2-043 E O1	2.58
924152	AB2-059 E O1	3.39
924162	AB2-060 E O1	2.1
924302	AB2-077 E O1	0.66
924312	AB2-078 E O1	0.66
924322	AB2-079 E O1	0.66
924391	AB2-088 C	0.26
924392	AB2-088 E	0.12
924401	AB2-089 C	1.32
924402	AB2-089 E	0.68
924491	AB2-098 C	0.3
924492	AB2-098 E	0.13
924501	AB2-099 C	0.36
924502	AB2-099 E	0.16
924511	AB2-100 C	19.93
924512	AB2-100 E	9.82
925061	AB2-161 C O1	3.56
925062	AB2-161 E O1	5.8
925122	AB2-169 E	2.71
925171	AB2-174 C O1	8.98
925172	AB2-174 E O1	8.13
925591	AC1-034 C	4.26
925592	AC1-034 E	3.22
925781	AC1-054 C O1	4.71
925782	AC1-054 E O1	2.17
926071	AC1-086 C	23.45
926072	AC1-086 E	10.67
926201	AC1-098 C	4.34
926202	AC1-098 E	2.58
926211	AC1-099 C	1.45
926212	AC1-099 E	0.85
927021	AC1-189 C	4.75
927022	AC1-189 E	2.37
927141	AC1-208 C	6.77
927142	AC1-208 E	3.01
930402	AB1-081 E O1	2.39
930861	AB1-132 C O1	2.44
930862	AB1-132 E O1	6.82
931231	AB1-173 C	0.42
931232	AB1-173 E	1.28
931241	AB1-173AC	0.42
931242	AB1-173AE	1.28
932581	AC2-078 C O1	6.56
932582	AC2-078 E O1	10.7

Bus #	Bus	MW Impact
932591	AC2-079 C O1	4.04
932592	AC2-079 E O1	6.59
932631	AC2-084 C	6.18
932632	AC2-084 E	3.05
933991	AD1-023 C	5.91
933992	AD1-023 E	3.22
934201	AD1-047 C	9.75
934202	AD1-047 E	6.5
934231	AD1-050 C	2.91
934232	AD1-050 E	1.59
934331	AD1-057 C O1	8.57
934332	AD1-057 E O1	4.57
934571	AD1-082 C	8.1
934572	AD1-082 E	4.62
935211	AD1-156 C	1.05
935212	AD1-156 E	4.58
936361	AD2-046 C O1	4.87
936362	AD2-046 E O1	2.24
936401	AD2-051 C O1	5.39
936402	AD2-051 E O1	2.31
936481	AD2-063 C O1	6.87
936482	AD2-063 E O1	4.58
936531	AD2-068 C	2.4
936532	AD2-068 E	1.23
936661	AD2-085 C	2.49
936662	AD2-085 E	4.07
936701	AD2-089 C	4.3
936702	AD2-089 E	2.87
936711	AD2-090 C O1	4.17
936712	AD2-090 E O1	2.78
937571	AD2-169 C	11.49
937572	AD2-169 E	7.66
938171	AE1-026 C1 O	13.13
938172	AE1-026 C2 O	1.9
938173	AE1-026 E O2	3.96
938221	AE1-035 C	1.24
938222	AE1-035 E	0.61
938631	AE1-085 C O2	17.01
938632	AE1-085 E O2	11.34
938661	AE1-088	0.82
938771	AE1-103 C O2	1.76
938772	AE1-103 E O2	2.43
938841	AE1-109AC O2	8.59
938842	AE1-109AE O2	5.72
939071	AE1-135 C O2	37.3
939072	AE1-135 E O2	24.86
939181	AE1-148 C O2	4.79
939182	AE1-148 E O2	3.19
939191	AE1-149 C O2	18.91
939192	AE1-149 E O2	12.6
940061	AE1-248 C O2	17.01
940062	AE1-248 E O2	11.34

Bus #	Bus	MW Impact
AA2-074	AA2-074	1.64
CARR	CARR	0.16
CBM-S1	CBM-S1	3.83
CBM-S2	CBM-S2	4.45
CBM-W1	CBM-W1	3.86
CBM-W2	CBM-W2	25.16
CIN	CIN	1.75
CPLE	CPLE	2.41
G-007	G-007	0.54
IPL	IPL	1.09
LGEE	LGEE	0.51
MEC	MEC	3.87
MECS	MECS	1.65
O-066	O-066	1.81
RENSSELAER	RENSSELAER	0.12
WEC	WEC	0.47

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
391360	314316	6LOCKS	DVP	314301	6HARR205	DVP	1	DVP_P4-2: 562T563	breaker	541.0	93.96	94.42	DC	5.49

Bus #	Bus	MW Impact
314314	3LOCKS	0.39
314541	3WATKINS	0.2
314554	3BTLEBRO	0.32
314557	3BETHELC	0.31
314572	3EMPORIA	0.26
314574	6EVERETS	1.43
314578	3HORNRTN	1.52
314582	3KELFORD	1.3
314603	3SCOT NK	1.29
314617	3TUNIS	0.3
314620	6CASHIE	0.25
314623	3WITAKRS	0.55
315131	1EDGECEMA	3.75
315132	1EDGECEMB	3.75
315150	1BUGGS 1	4.05
315151	1BUGGS 2	4.05
900672	V4-068 E	0.1
916302	Z1-086 E	4.11
917332	Z2-043 E	0.37
917342	Z2-044 E	0.23
917512	Z2-088 E OP1	1.41
918492	AA1-063AE OP	1.68
918512	AA1-065 E OP	1.46
918532	AA1-067 E	0.25
918562	AA1-072 E	0.06
919692	AA2-053 E	1.65
919701	AA2-057 C	2.91
919702	AA2-057 E	1.46
920042	AA2-088 E OP	3.58
920592	AA2-165 E	0.19
920672	AA2-174 E	0.19
923851	AB2-025 C	0.34
923852	AB2-025 E	1.01
923911	AB2-031 C O1	1.26
923912	AB2-031 E O1	0.62
923941	AB2-035 C	0.13
923942	AB2-035 E	0.06
923992	AB2-040 E O1	3.38
924022	AB2-043 E O1	1.83
924152	AB2-059 E O1	2.18

Bus #	Bus	MW Impact
924162	AB2-060 E O1	1.5
924302	AB2-077 E O1	0.47
924312	AB2-078 E O1	0.47
924322	AB2-079 E O1	0.47
924391	AB2-088 C	0.17
924392	AB2-088 E	0.08
924401	AB2-089 C	0.85
924402	AB2-089 E	0.44
924491	AB2-098 C	0.2
924492	AB2-098 E	0.08
924501	AB2-099 C	0.21
924502	AB2-099 E	0.09
924511	AB2-100 C	8.29
924512	AB2-100 E	4.08
925051	AB2-160 C O1	7.97
925052	AB2-160 E O1	13.0
925122	AB2-169 E	1.78
925171	AB2-174 C O1	4.09
925172	AB2-174 E O1	3.7
925591	AC1-034 C	2.74
925592	AC1-034 E	2.07
925612	AC1-036 E	0.47
925781	AC1-054 C O1	2.92
925782	AC1-054 E O1	1.34
925821	AC1-061	0.01
926071	AC1-086 C	11.07
926072	AC1-086 E	5.04
926201	AC1-098 C	2.49
926202	AC1-098 E	1.48
926211	AC1-099 C	0.83
926212	AC1-099 E	0.49
926271	AC1-105 C O1	1.86
926272	AC1-105 E O1	0.93
927021	AC1-189 C	3.08
927022	AC1-189 E	1.54
927141	AC1-208 C	3.81
927142	AC1-208 E	1.69
927251	AC1-221 C	0.73
927252	AC1-221 E	0.73
927261	AC1-222 C	1.16
927262	AC1-222 E	1.11
930402	AB1-081 E O1	1.54
930862	AB1-132 E O1	3.22
931232	AB1-173 E	0.59
931242	AB1-173AE	0.59
932581	AC2-078 C O1	1.33
932582	AC2-078 E O1	2.17
932631	AC2-084 C	3.54
932632	AC2-084 E	1.75
932761	AC2-100 C	1.69
932762	AC2-100 E	0.82
934201	AD1-047 C	4.5

Bus #	Bus	MW Impact
934202	AD1-047 E	3.0
934231	AD1-050 C	1.87
934232	AD1-050 E	1.02
934311	AD1-055 C	0.81
934312	AD1-055 E	0.21
934331	AD1-057 C O1	4.63
934332	AD1-057 E O1	2.47
934341	AD1-058 C	1.84
934342	AD1-058 E	0.47
934611	AD1-087 C O1	2.89
934612	AD1-087 E O1	1.36
934621	AD1-088 C	3.8
934622	AD1-088 E	1.78
934991	AD1-131 C	0.6
934992	AD1-131 E	0.4
935171	AD1-152 C O1	2.87
935172	AD1-152 E O1	1.91
935212	AD1-156 E	0.47
936261	AD2-033 C	4.06
936262	AD2-033 E	2.7
936331	AD2-043 C	1.51
936332	AD2-043 E	1.79
936361	AD2-046 C O1	3.35
936362	AD2-046 E O1	1.54
936401	AD2-051 C O1	3.1
936402	AD2-051 E O1	1.33
936481	AD2-063 C O1	5.01
936482	AD2-063 E O1	3.34
936531	AD2-068 C	1.81
936532	AD2-068 E	0.93
936701	AD2-089 C	2.76
936702	AD2-089 E	1.84
936711	AD2-090 C O1	2.22
936712	AD2-090 E O1	1.48
937481	AD2-202 C O1	0.8
937482	AD2-202 E O1	0.4
937571	AD2-169 C	5.4
937572	AD2-169 E	3.6
938171	AE1-026 C1 O	8.3
938172	AE1-026 C2 O	1.2
938173	AE1-026 E O2	2.51
938221	AE1-035 C	0.74
938222	AE1-035 E	0.37
938491	AE1-068 C O2	25.95
938492	AE1-068 E O2	14.34
938501	AE1-069 C O2	20.6
938502	AE1-069 E O2	11.78
938631	AE1-085 C O2	3.5
938632	AE1-085 E O2	2.33
938661	AE1-088	0.54
939071	AE1-135 C O2	15.36
939072	AE1-135 E O2	10.24

Bus #	Bus	MW Impact
939181	AE1-148 C O2	3.3
939182	AE1-148 E O2	2.2
939191	AE1-149 C O2	3.69
939192	AE1-149 E O2	2.46
939411	AE1-173 C	29.86
939412	AE1-173 E	19.91
940071	AE1-249 C	10.51
940072	AE1-249 E	7.83
AA2-074	AA2-074	2.08
CARR	CARR	0.24
CBM-S1	CBM-S1	5.3
CBM-S2	CBM-S2	5.98
CBM-W1	CBM-W1	5.3
CBM-W2	CBM-W2	34.73
CIN	CIN	2.4
CPL	CPL	3.06
G-007	G-007	0.82
IPL	IPL	1.51
LGEE	LGEE	0.7
MEC	MEC	5.34
MECS	MECS	2.23
O-066	O-066	2.72
RENSSELAER	RENSSELAER	0.19
WEC	WEC	0.64

Index 9

ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC DC	MW IMPACT
391281	314331	6POE	DVP	314299	6HARROWG	DVP	1	DVP_P4-2: 24972-4	breaker	541.0	101.09	101.75	DC	7.98

Bus #	Bus	MW Impact
314539	3UNCAMP	1.22
314541	3WATKINS	0.38
314554	3BTLEBRO	0.5
314557	3BETHELC	0.48
314572	3EMPORIA	0.58
314574	6EVERETS	2.18
314578	3HORNRTN	2.96
314582	3KELFORD	2.27
314603	3SCOT NK	2.25
314617	3TUNIS	0.53
314620	6CASHIE	0.4
314623	3WITAKRS	0.88
314704	3LAWRENC	0.36
315126	1ROARAP2	1.17
315131	1EDGECEMA	5.88
315132	1EDGECEMB	5.88
315136	1ROSEMG1	2.16
315137	1ROSEMS1	1.34
315138	1ROSEMG2	1.01
315139	1GASTONA	3.2
315141	1GASTONB	3.2
315150	1BUGGS 1	5.21
315151	1BUGGS 2	5.21
900672	V4-068 E	0.19
907092	X1-038 E	3.04
917332	Z2-043 E	0.64
917342	Z2-044 E	0.38
917512	Z2-088 E OP1	2.17
918492	AA1-063AE OP	3.19
918512	AA1-065 E OP	2.44
918532	AA1-067 E	0.39
918562	AA1-072 E	0.11
919692	AA2-053 E	3.2
919701	AA2-057 C	4.86
919702	AA2-057 E	2.43
920042	AA2-088 E OP	6.77
920592	AA2-165 E	0.32
920672	AA2-174 E	0.37
923801	AB2-015 C O1	4.56
923802	AB2-015 E O1	3.74

Bus #	Bus	MW Impact
923851	AB2-025 C	0.89
923852	AB2-025 E	2.6
923911	AB2-031 C O1	2.72
923912	AB2-031 E O1	1.34
923941	AB2-035 C	0.2
923942	AB2-035 E	0.09
923991	AB2-040 C O1	1.37
923992	AB2-040 E O1	7.31
924022	AB2-043 E O1	2.58
924152	AB2-059 E O1	3.39
924162	AB2-060 E O1	2.1
924302	AB2-077 E O1	0.66
924312	AB2-078 E O1	0.66
924322	AB2-079 E O1	0.66
924391	AB2-088 C	0.26
924392	AB2-088 E	0.12
924401	AB2-089 C	1.32
924402	AB2-089 E	0.68
924491	AB2-098 C	0.3
924492	AB2-098 E	0.13
924501	AB2-099 C	0.36
924502	AB2-099 E	0.16
924511	AB2-100 C	19.93
924512	AB2-100 E	9.82
925061	AB2-161 C O1	3.56
925062	AB2-161 E O1	5.8
925122	AB2-169 E	2.71
925171	AB2-174 C O1	8.98
925172	AB2-174 E O1	8.13
925591	AC1-034 C	4.26
925592	AC1-034 E	3.22
925781	AC1-054 C O1	4.71
925782	AC1-054 E O1	2.17
926071	AC1-086 C	23.45
926072	AC1-086 E	10.67
926201	AC1-098 C	4.34
926202	AC1-098 E	2.58
926211	AC1-099 C	1.45
926212	AC1-099 E	0.85
927021	AC1-189 C	4.75
927022	AC1-189 E	2.37
927141	AC1-208 C	6.77
927142	AC1-208 E	3.01
930402	AB1-081 E O1	2.39
930861	AB1-132 C O1	2.44
930862	AB1-132 E O1	6.82
931231	AB1-173 C	0.42
931232	AB1-173 E	1.28
931241	AB1-173AC	0.42
931242	AB1-173AE	1.28
932581	AC2-078 C O1	6.56
932582	AC2-078 E O1	10.7

Bus #	Bus	MW Impact
932591	AC2-079 C O1	4.04
932592	AC2-079 E O1	6.59
932631	AC2-084 C	6.18
932632	AC2-084 E	3.05
933991	AD1-023 C	5.91
933992	AD1-023 E	3.22
934201	AD1-047 C	9.75
934202	AD1-047 E	6.5
934231	AD1-050 C	2.91
934232	AD1-050 E	1.59
934331	AD1-057 C O1	8.57
934332	AD1-057 E O1	4.57
934571	AD1-082 C	8.1
934572	AD1-082 E	4.62
935211	AD1-156 C	1.05
935212	AD1-156 E	4.58
936361	AD2-046 C O1	4.87
936362	AD2-046 E O1	2.24
936401	AD2-051 C O1	5.39
936402	AD2-051 E O1	2.31
936481	AD2-063 C O1	6.87
936482	AD2-063 E O1	4.58
936531	AD2-068 C	2.4
936532	AD2-068 E	1.23
936661	AD2-085 C	2.49
936662	AD2-085 E	4.07
936701	AD2-089 C	4.3
936702	AD2-089 E	2.87
936711	AD2-090 C O1	4.17
936712	AD2-090 E O1	2.78
937571	AD2-169 C	11.49
937572	AD2-169 E	7.66
938171	AE1-026 C1 O	13.13
938172	AE1-026 C2 O	1.9
938173	AE1-026 E O2	3.96
938221	AE1-035 C	1.24
938222	AE1-035 E	0.61
938631	AE1-085 C O2	17.01
938632	AE1-085 E O2	11.34
938661	AE1-088	0.82
938771	AE1-103 C O2	1.76
938772	AE1-103 E O2	2.43
938841	AE1-109AC O2	8.59
938842	AE1-109AE O2	5.72
939071	AE1-135 C O2	37.3
939072	AE1-135 E O2	24.86
939181	AE1-148 C O2	4.79
939182	AE1-148 E O2	3.19
939191	AE1-149 C O2	18.91
939192	AE1-149 E O2	12.6
940061	AE1-248 C O2	17.01
940062	AE1-248 E O2	11.34

Bus #	Bus	MW Impact
AA2-074	AA2-074	1.64
CARR	CARR	0.16
CBM-S1	CBM-S1	3.83
CBM-S2	CBM-S2	4.45
CBM-W1	CBM-W1	3.86
CBM-W2	CBM-W2	25.16
CIN	CIN	1.75
CPL	CPL	2.41
G-007	G-007	0.54
IPL	IPL	1.09
LGEE	LGEE	0.51
MEC	MEC	3.87
MECS	MECS	1.65
O-066	O-066	1.81
RENSSELAER	RENSSELAER	0.12
WEC	WEC	0.47

Index 10

ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC DC	MW IMPACT
391162	313719	3CHESTNUT	DVP	314623	3WITAKRS	DVP	1	DVP_P4-2: 2202	breaker	202.0	123.15	124.65	DC	6.7

Bus #	Bus	MW Impact
314578	3HORNRTN	8.36
314582	3KELFORD	4.65
314603	3SCOT NK	7.49
315126	1ROARAP2	2.99
315128	1ROARAP4	2.88
917331	Z2-043 C	0.47
917332	Z2-043 E	1.32
918492	AA1-063AE OP	1.71
918561	AA1-072 C	0.07
918562	AA1-072 E	0.22
919692	AA2-053 E	1.61
919701	AA2-057 C	30.56
919702	AA2-057 E	15.28
920591	AA2-165 C	0.64
920592	AA2-165 E	2.01
920672	AA2-174 E	0.19
924401	AB2-089 C	1.73
924402	AB2-089 E	0.89
925781	AC1-054 C O1	3.64
925782	AC1-054 E O1	1.67
926201	AC1-098 C	17.69
926202	AC1-098 E	10.54
926211	AC1-099 C	5.93
926212	AC1-099 E	3.48
927141	AC1-208 C	30.35
927142	AC1-208 E	13.48
932631	AC2-084 C	25.22
932632	AC2-084 E	12.42
934231	AD1-050 C	3.82
934232	AD1-050 E	2.09
936361	AD2-046 C O1	4.17
936362	AD2-046 E O1	1.92
936401	AD2-051 C O1	3.74
936402	AD2-051 E O1	1.61
939181	AE1-148 C O2	4.02
939182	AE1-148 E O2	2.68
BAYOU	BAYOU	0.31
BIG_CAJUN1	BIG_CAJUN1	0.49
BIG_CAJUN2	BIG_CAJUN2	0.98
BLUEG	BLUEG	0.85
CALDERWOOD	CALDERWOOD	0.18

Bus #	Bus	MW Impact
CANNELTON	CANNELTON	0.06
CARR	CARR	0.0
CATAWBA	CATAWBA	0.18
CHEOAH	CHEOAH	0.17
CHILHOWEE	CHILHOWEE	0.06
CHOCTAW	CHOCTAW	0.33
COFFEEN	COFFEEN	0.1
COTTONWOOD	COTTONWOOD	1.2
DEARBORN	DEARBORN	0.11
DUCKCREEK	DUCKCREEK	0.21
EDWARDS	EDWARDS	0.09
ELMERSMITH	ELMERSMITH	0.1
FARMERCITY	FARMERCITY	0.07
G-007A	G-007A	0.02
GIBSON	GIBSON	0.04
HAMLET	HAMLET	0.77
NEWTON	NEWTON	0.26
O-066A	O-066A	0.01
PRAIRIE	PRAIRIE	0.55
RENSSELAER	RENSSELAER	0.0
SANTEETLA	SANTEETLA	0.05
SMITHLAND	SMITHLAND	0.05
TATANKA	TATANKA	0.12
TILTON	TILTON	0.11
TRIMBLE	TRIMBLE	0.09
TVA	TVA	0.51
UNIONPOWER	UNIONPOWER	0.25
VFT	VFT	0.05

Index 11

ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC DC	MW IMPACT
391338	313858	3SO JUSTICE	DVP	314577	3COX DP	DVP	1	DVP_P4-2: 101002	breaker	202.0	101.62	103.12	DC	6.71

Bus #	Bus	MW Impact
314578	3HORNRTN	8.36
314582	3KELFORD	4.65
314603	3SCOT NK	7.49
315126	1ROARAP2	2.99
315128	1ROARAP4	2.88
917331	Z2-043 C	0.47
917332	Z2-043 E	1.32
918492	AA1-063AE OP	1.71
918561	AA1-072 C	0.07
918562	AA1-072 E	0.22
919692	AA2-053 E	1.61
920672	AA2-174 E	0.19
924401	AB2-089 C	1.73
924402	AB2-089 E	0.89
924501	AB2-099 C	0.23
924502	AB2-099 E	0.1
925781	AC1-054 C O1	3.64
925782	AC1-054 E O1	1.68
926201	AC1-098 C	17.69
926202	AC1-098 E	10.54
926211	AC1-099 C	5.93
926212	AC1-099 E	3.48
927141	AC1-208 C	30.35
927142	AC1-208 E	13.48
932631	AC2-084 C	25.22
932632	AC2-084 E	12.42
934231	AD1-050 C	3.82
934232	AD1-050 E	2.09
936361	AD2-046 C O1	4.18
936362	AD2-046 E O1	1.92
936401	AD2-051 C O1	3.74
936402	AD2-051 E O1	1.61
939181	AE1-148 C O2	4.02
939182	AE1-148 E O2	2.68
BAYOU	BAYOU	0.3
BIG_CAJUN1	BIG_CAJUN1	0.48
BIG_CAJUN2	BIG_CAJUN2	0.97
BLUEG	BLUEG	0.84
CALDERWOOD	CALDERWOOD	0.18
CANNELTON	CANNELTON	0.06

Bus #	Bus	MW Impact
CATAWBA	CATAWBA	0.18
CHEOAH	CHEOAH	0.17
CHILHOWEE	CHILHOWEE	0.06
CHOCTAW	CHOCTAW	0.33
COFFEEN	COFFEEN	0.1
COTTONWOOD	COTTONWOOD	1.19
DEARBORN	DEARBORN	0.11
DUCKCREEK	DUCKCREEK	0.2
EDWARDS	EDWARDS	0.09
ELMERSMITH	ELMERSMITH	0.1
FARMERCITY	FARMERCITY	0.07
G-007A	G-007A	0.03
GIBSON	GIBSON	0.04
HAMLET	HAMLET	0.76
NEWTON	NEWTON	0.26
O-066A	O-066A	0.01
PRAIRIE	PRAIRIE	0.55
SANTEETLA	SANTEETLA	0.05
SMITHLAND	SMITHLAND	0.05
TATANKA	TATANKA	0.12
TILTON	TILTON	0.11
TRIMBLE	TRIMBLE	0.09
TVA	TVA	0.5
UNIONPOWER	UNIONPOWER	0.25
VFT	VFT	0.07

Index 12

ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC DC	MW IMPACT
390989	314282	6CARSON	DVP	314285	6CHRL249	DVP	1	DVP_P4-2: 562T563	breaker	684.0	139.71	140.17	DC	6.96

Bus #	Bus	MW Impact
314541	3WATKINS	0.23
314554	3BTLEBRO	0.4
314557	3BETHEL	0.39
314572	3EMPORIA	0.33
314574	6EVERETS	1.77
314578	3HORNRTN	1.92
314582	3KELFORD	1.62
314603	3SCOT NK	1.61
314617	3TUNIS	0.36
314620	6CASHIE	0.31
314623	3WITAKRS	0.69
314704	3LAWRENC	0.22
315102	1BRUNSWICKG1	4.2
315103	1BRUNSWICKG2	4.2
315104	1BRUNSWICKG3	4.2
315105	1BRUNSWICKS1	8.72
315131	1EDGECEMA	4.73
315132	1EDGECEMB	4.73
315136	1ROSEMG1	1.33
315137	1ROSEMS1	0.82
315138	1ROSEMG2	0.62
315139	1GASTONA	1.92
315141	1GASTONB	1.92
315150	1BUGGS 1	5.14
315151	1BUGGS 2	5.14
900672	V4-068 E	0.13
916301	Z1-086 C	25.61
916302	Z1-086 E	5.23
917332	Z2-043 E	0.46
917342	Z2-044 E	0.3
917512	Z2-088 E OP1	1.76
918492	AA1-063AE OP	2.11
918512	AA1-065 E OP	1.81
918532	AA1-067 E	0.31
918562	AA1-072 E	0.08
919692	AA2-053 E	2.07
919701	AA2-057 C	3.67
919702	AA2-057 E	1.83
920042	AA2-088 E OP	4.27
920592	AA2-165 E	0.24

Bus #	Bus	MW Impact
920672	AA2-174 E	0.24
923851	AB2-025 C	0.44
923852	AB2-025 E	1.3
923911	AB2-031 C O1	1.6
923912	AB2-031 E O1	0.79
923941	AB2-035 C	0.16
923942	AB2-035 E	0.07
923991	AB2-040 C O1	0.8
923992	AB2-040 E O1	4.29
924022	AB2-043 E O1	2.32
924152	AB2-059 E O1	2.75
924162	AB2-060 E O1	1.9
924302	AB2-077 E O1	0.6
924312	AB2-078 E O1	0.6
924322	AB2-079 E O1	0.6
924391	AB2-088 C	0.21
924392	AB2-088 E	0.1
924401	AB2-089 C	1.07
924402	AB2-089 E	0.55
924491	AB2-098 C	0.24
924492	AB2-098 E	0.1
924501	AB2-099 C	0.25
924502	AB2-099 E	0.11
924511	AB2-100 C	10.62
924512	AB2-100 E	5.23
925122	AB2-169 E	2.2
925171	AB2-174 C O1	5.2
925172	AB2-174 E O1	4.7
925591	AC1-034 C	3.46
925592	AC1-034 E	2.61
925612	AC1-036 E	0.6
925781	AC1-054 C O1	3.69
925782	AC1-054 E O1	1.7
926071	AC1-086 C	14.05
926072	AC1-086 E	6.39
926201	AC1-098 C	3.12
926202	AC1-098 E	1.86
926211	AC1-099 C	1.04
926212	AC1-099 E	0.61
926271	AC1-105 C O1	2.36
926272	AC1-105 E O1	1.18
927021	AC1-189 C	3.85
927022	AC1-189 E	1.92
927141	AC1-208 C	4.79
927142	AC1-208 E	2.13
927251	AC1-221 C	0.93
927252	AC1-221 E	0.93
927261	AC1-222 C	1.47
927262	AC1-222 E	1.4
930402	AB1-081 E O1	1.94
930861	AB1-132 C O1	1.46
930862	AB1-132 E O1	4.09

Bus #	Bus	MW Impact
931231	AB1-173 C	0.25
931232	AB1-173 E	0.75
931241	AB1-173AC	0.25
931242	AB1-173AE	0.75
932631	AC2-084 C	4.44
932632	AC2-084 E	2.19
932761	AC2-100 C	2.14
932762	AC2-100 E	1.04
933991	AD1-023 C	4.64
933992	AD1-023 E	2.53
934201	AD1-047 C	5.72
934202	AD1-047 E	3.81
934231	AD1-050 C	2.36
934232	AD1-050 E	1.29
934311	AD1-055 C	1.02
934312	AD1-055 E	0.26
934331	AD1-057 C O1	5.86
934332	AD1-057 E O1	3.12
934341	AD1-058 C	2.33
934342	AD1-058 E	0.59
934611	AD1-087 C O1	3.67
934612	AD1-087 E O1	1.73
934621	AD1-088 C	4.84
934622	AD1-088 E	2.27
934991	AD1-131 C	0.76
934992	AD1-131 E	0.51
935171	AD1-152 C O1	3.65
935172	AD1-152 E O1	2.43
935212	AD1-156 E	0.63
936261	AD2-033 C	5.16
936262	AD2-033 E	3.44
936331	AD2-043 C	1.92
936332	AD2-043 E	2.27
936361	AD2-046 C O1	4.24
936362	AD2-046 E O1	1.95
936401	AD2-051 C O1	3.84
936402	AD2-051 E O1	1.65
936481	AD2-063 C O1	6.37
936482	AD2-063 E O1	4.24
936531	AD2-068 C	2.27
936532	AD2-068 E	1.17
936701	AD2-089 C	3.47
936702	AD2-089 E	2.31
936711	AD2-090 C O1	2.58
936712	AD2-090 E O1	1.72
937481	AD2-202 C O1	1.01
937482	AD2-202 E O1	0.51
937571	AD2-169 C	6.85
937572	AD2-169 E	4.56
938171	AE1-026 C1 O	10.19
938172	AE1-026 C2 O	1.47
938173	AE1-026 E O2	3.08

Bus #	Bus	MW Impact
938221	AE1-035 C	0.92
938222	AE1-035 E	0.45
938491	AE1-068 C O2	33.0
938492	AE1-068 E O2	18.23
938501	AE1-069 C O2	26.19
938502	AE1-069 E O2	14.97
938661	AE1-088	0.67
939071	AE1-135 C O2	19.69
939072	AE1-135 E O2	13.13
939181	AE1-148 C O2	4.18
939182	AE1-148 E O2	2.78
939371	AE1-168 C	5.23
939372	AE1-168 E	3.48
939411	AE1-173 C	37.39
939412	AE1-173 E	24.93
AA2-074	AA2-074	2.63
CARR	CARR	0.31
CBM-S1	CBM-S1	6.68
CBM-S2	CBM-S2	7.57
CBM-W1	CBM-W1	6.66
CBM-W2	CBM-W2	43.81
CIN	CIN	3.02
CPL	CPL	3.87
G-007	G-007	1.05
IPL	IPL	1.89
LGEE	LGEE	0.88
MEC	MEC	6.72
MECS	MECS	2.79
O-066	O-066	3.49
RENSSELAER	RENSSELAER	0.24
WEC	WEC	0.81

Index 13

ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC DC	MW IMPACT
391017	314285	6CHRL249	DVP	314316	6LOCKS	DVP	1	DVP_P4-2: 562T563	breaker	684.0	136.69	137.15	DC	6.96

Bus #	Bus	MW Impact
314541	3WATKINS	0.23
314554	3BTLEBRO	0.4
314557	3BETHELC	0.39
314572	3EMPORIA	0.33
314574	6EVERETS	1.77
314578	3HORNRTN	1.92
314582	3KELFORD	1.62
314603	3SCOT NK	1.61
314617	3TUNIS	0.36
314620	6CASHIE	0.31
314623	3WITAKRS	0.69
314704	3LAWRENC	0.22
315102	1BRUNSWICKG1	4.2
315103	1BRUNSWICKG2	4.2
315104	1BRUNSWICKG3	4.2
315105	1BRUNSWICKS1	8.72
315131	1EDGECEMA	4.73
315132	1EDGECEMB	4.73
315136	1ROSEMG1	1.33
315137	1ROSEMS1	0.82
315138	1ROSEMG2	0.62
315139	1GASTONA	1.92
315141	1GASTONB	1.92
315150	1BUGGS 1	5.14
315151	1BUGGS 2	5.14
900672	V4-068 E	0.13
916301	Z1-086 C	25.61
916302	Z1-086 E	5.23
917332	Z2-043 E	0.46
917342	Z2-044 E	0.3
917512	Z2-088 E OP1	1.76
918492	AA1-063AE OP	2.11
918512	AA1-065 E OP	1.81
918532	AA1-067 E	0.31
918562	AA1-072 E	0.08
919692	AA2-053 E	2.07
919701	AA2-057 C	3.67
919702	AA2-057 E	1.83
920042	AA2-088 E OP	4.27
920592	AA2-165 E	0.24

Bus #	Bus	MW Impact
920672	AA2-174 E	0.24
923851	AB2-025 C	0.44
923852	AB2-025 E	1.3
923911	AB2-031 C O1	1.6
923912	AB2-031 E O1	0.79
923941	AB2-035 C	0.16
923942	AB2-035 E	0.07
923991	AB2-040 C O1	0.8
923992	AB2-040 E O1	4.29
924022	AB2-043 E O1	2.32
924152	AB2-059 E O1	2.75
924162	AB2-060 E O1	1.9
924302	AB2-077 E O1	0.6
924312	AB2-078 E O1	0.6
924322	AB2-079 E O1	0.6
924391	AB2-088 C	0.21
924392	AB2-088 E	0.1
924401	AB2-089 C	1.07
924402	AB2-089 E	0.55
924491	AB2-098 C	0.24
924492	AB2-098 E	0.1
924501	AB2-099 C	0.25
924502	AB2-099 E	0.11
924511	AB2-100 C	10.62
924512	AB2-100 E	5.23
925122	AB2-169 E	2.2
925171	AB2-174 C O1	5.2
925172	AB2-174 E O1	4.7
925591	AC1-034 C	3.46
925592	AC1-034 E	2.61
925612	AC1-036 E	0.6
925781	AC1-054 C O1	3.69
925782	AC1-054 E O1	1.7
926071	AC1-086 C	14.05
926072	AC1-086 E	6.39
926201	AC1-098 C	3.12
926202	AC1-098 E	1.86
926211	AC1-099 C	1.04
926212	AC1-099 E	0.61
926271	AC1-105 C O1	2.36
926272	AC1-105 E O1	1.18
927021	AC1-189 C	3.85
927022	AC1-189 E	1.92
927141	AC1-208 C	4.79
927142	AC1-208 E	2.13
927251	AC1-221 C	0.93
927252	AC1-221 E	0.93
927261	AC1-222 C	1.47
927262	AC1-222 E	1.4
930402	AB1-081 E O1	1.94
930861	AB1-132 C O1	1.46
930862	AB1-132 E O1	4.09

Bus #	Bus	MW Impact
931231	AB1-173 C	0.25
931232	AB1-173 E	0.75
931241	AB1-173AC	0.25
931242	AB1-173AE	0.75
932631	AC2-084 C	4.44
932632	AC2-084 E	2.19
932761	AC2-100 C	2.14
932762	AC2-100 E	1.04
933991	AD1-023 C	4.64
933992	AD1-023 E	2.53
934201	AD1-047 C	5.72
934202	AD1-047 E	3.81
934231	AD1-050 C	2.36
934232	AD1-050 E	1.29
934311	AD1-055 C	1.02
934312	AD1-055 E	0.26
934331	AD1-057 C O1	5.86
934332	AD1-057 E O1	3.12
934341	AD1-058 C	2.33
934342	AD1-058 E	0.59
934611	AD1-087 C O1	3.67
934612	AD1-087 E O1	1.73
934621	AD1-088 C	4.84
934622	AD1-088 E	2.27
934991	AD1-131 C	0.76
934992	AD1-131 E	0.51
935171	AD1-152 C O1	3.65
935172	AD1-152 E O1	2.43
935212	AD1-156 E	0.63
936261	AD2-033 C	5.16
936262	AD2-033 E	3.44
936331	AD2-043 C	1.92
936332	AD2-043 E	2.27
936361	AD2-046 C O1	4.24
936362	AD2-046 E O1	1.95
936401	AD2-051 C O1	3.84
936402	AD2-051 E O1	1.65
936481	AD2-063 C O1	6.37
936482	AD2-063 E O1	4.24
936531	AD2-068 C	2.27
936532	AD2-068 E	1.17
936701	AD2-089 C	3.47
936702	AD2-089 E	2.31
936711	AD2-090 C O1	2.58
936712	AD2-090 E O1	1.72
937481	AD2-202 C O1	1.01
937482	AD2-202 E O1	0.51
937571	AD2-169 C	6.85
937572	AD2-169 E	4.56
938171	AE1-026 C1 O	10.19
938172	AE1-026 C2 O	1.47
938173	AE1-026 E O2	3.08

Bus #	Bus	MW Impact
938221	AE1-035 C	0.92
938222	AE1-035 E	0.45
938491	AE1-068 C O2	33.0
938492	AE1-068 E O2	18.23
938501	AE1-069 C O2	26.19
938502	AE1-069 E O2	14.97
938661	AE1-088	0.67
939071	AE1-135 C O2	19.69
939072	AE1-135 E O2	13.13
939181	AE1-148 C O2	4.18
939182	AE1-148 E O2	2.78
939371	AE1-168 C	5.23
939372	AE1-168 E	3.48
939411	AE1-173 C	37.39
939412	AE1-173 E	24.93
AA2-074	AA2-074	2.63
CARR	CARR	0.31
CBM-S1	CBM-S1	6.68
CBM-S2	CBM-S2	7.57
CBM-W1	CBM-W1	6.66
CBM-W2	CBM-W2	43.81
CIN	CIN	3.02
CPL	CPL	3.87
G-007	G-007	1.05
IPL	IPL	1.89
LGEE	LGEE	0.88
MEC	MEC	6.72
MECS	MECS	2.79
O-066	O-066	3.49
RENSSELAER	RENSSELAER	0.24
WEC	WEC	0.81

Index 14

ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC DC	MW IMPACT
390802	314562	3CLUBHSE	DVP	314563	6CLUBHSE	DVP	1	DVP_P4-6: CAROLIN T122	breaker	208.6	192.86	198.51	DC	11.76

Bus #	Bus	MW Impact
314572	3EMPORIA	1.98
314704	3LAWRENC	1.12
315150	1BUGGS 1	8.31
315151	1BUGGS 2	8.31
315158	1KERR 1	0.24
315159	1KERR 2	0.99
315160	1KERR 3	0.98
315161	1KERR 4	0.98
315162	1KERR 5	0.98
315163	1KERR 6	0.98
315164	1KERR 7	0.98
923911	AB2-031 C O1	10.64
923912	AB2-031 E O1	5.24
923991	AB2-040 C O1	5.36
923992	AB2-040 E O1	28.58
924021	AB2-043 C O1	0.48
924022	AB2-043 E O1	5.17
924161	AB2-060 C O1	1.37
924162	AB2-060 E O1	4.21
924301	AB2-077 C O1	0.3
924302	AB2-077 E O1	1.29
924311	AB2-078 C O1	0.3
924312	AB2-078 E O1	1.29
924321	AB2-079 C O1	0.3
924322	AB2-079 E O1	1.29
924401	AB2-089 C	1.61
924402	AB2-089 E	0.83
925171	AB2-174 C O1	33.34
925172	AB2-174 E O1	30.17
925611	AC1-036 C	0.11
925612	AC1-036 E	1.22
925781	AC1-054 C O1	5.43
925782	AC1-054 E O1	2.5
931231	AB1-173 C	1.64
931232	AB1-173 E	5.0
931241	AB1-173AC	1.64
931242	AB1-173AE	5.0
934201	AD1-047 C	38.11
934202	AD1-047 E	25.4
934231	AD1-050 C	3.55

Bus #	Bus	MW Impact
934232	AD1-050 E	1.94
936261	AD2-033 C	10.77
936262	AD2-033 E	7.18
936361	AD2-046 C O1	7.05
936362	AD2-046 E O1	3.24
936481	AD2-063 C O1	13.78
936482	AD2-063 E O1	9.19
937571	AD2-169 C	47.63
937572	AD2-169 E	31.75
939181	AE1-148 C O2	7.06
939182	AE1-148 E O2	4.71
939371	AE1-168 C	10.05
939372	AE1-168 E	6.7
CARR	CARR	0.04
CBM-S1	CBM-S1	0.53
CBM-S2	CBM-S2	0.43
CBM-W1	CBM-W1	0.63
CBM-W2	CBM-W2	3.54
CIN	CIN	0.29
CPL	CPL	0.17
G-007	G-007	0.13
IPL	IPL	0.19
LGEE	LGEE	0.09
MEC	MEC	0.59
MECS	MECS	0.29
O-066	O-066	0.44
RENSSELAER	RENSSELAER	0.03
WEC	WEC	0.08

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
392082	314677	6BUCKING	DVP	314747	6BREMO	DVP	1	DVP_P1-2: LN 556	single	571.52	115.69	117.33	DC	9.36

Bus #	Bus	MW Impact
314429	3JTRSVLE	0.87
315150	1BUGGS 1	13.23
315151	1BUGGS 2	13.23
315153	1CLOVER1	19.99
315154	1CLOVER2	19.72
315159	1KERR 2	1.3
315162	1KERR 5	1.28
315163	1KERR 6	1.28
315164	1KERR 7	1.28
315266	1PLYWOOD A	1.34
924021	AB2-043 C O1	0.66
924031	AB2-045 C	1.44
924161	AB2-060 C O1	1.95
924301	AB2-077 C O1	0.41
924311	AB2-078 C O1	0.41
924321	AB2-079 C O1	0.41
924401	AB2-089 C	1.91
925611	AC1-036 C	0.28
925781	AC1-054 C O1	6.05
925831	AC1-062	0.12
925991	AC1-075 C	4.97
926021	AC1-080 C	1.66
926271	AC1-105 C O1	6.76
926761	AC1-162 C	83.25
927251	AC1-221 C	1.65
927261	AC1-222 C	4.07
932511	AC2-071 C	1.42
932761	AC2-100 C	3.81
932821	AC2-107 C	8.84
934231	AD1-050 C	4.21
934311	AD1-055 C	2.82
934341	AD1-058 C	4.15
934611	AD1-087 C O1	12.03
934621	AD1-088 C	29.83
934991	AD1-131 C	1.36
935171	AD1-152 C O1	11.95
935221	AD1-157 C	0.59
935231	AD1-160 C	2.84
936261	AD2-033 C	23.71
936331	AD2-043 C	5.28

Bus #	Bus	MW Impact
936361	AD2-046 C O1	9.33
936481	AD2-063 C O1	23.77
936651	AD2-082 C	4.35
937481	AD2-202 C O1	3.31
938371	AE1-056 C	16.71
939181	AE1-148 C O2	9.36
939201	AE1-150 C O2	30.51
939371	AE1-168 C	33.68
AA2-074	AA2-074	2.33
CARR	CARR	0.25
CBM-S1	CBM-S1	5.34
CBM-S2	CBM-S2	6.53
CBM-W1	CBM-W1	4.99
CBM-W2	CBM-W2	34.64
CIN	CIN	2.28
CPLE	CPLE	3.43
IPL	IPL	1.42
LGEE	LGEE	0.66
MEC	MEC	5.18
MECS	MECS	1.97
RENSSELAER	RENSSELAER	0.19
WEC	WEC	0.61

Index 16

ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC DC	MW IMPACT
392107	314692	6FARMVIL	DVP	314677	6BUCKING	DVP	1	DVP_P1-2: LN 556	single	559.3	114.73	116.4	DC	9.37

Bus #	Bus	MW Impact
314429	3JTRSVLE	0.87
315150	1BUGGS 1	13.24
315151	1BUGGS 2	13.24
315153	1CLOVER1	19.99
315154	1CLOVER2	19.73
315159	1KERR 2	1.3
315162	1KERR 5	1.28
315163	1KERR 6	1.28
315164	1KERR 7	1.28
315266	1PLYWOOD A	1.34
924021	AB2-043 C O1	0.66
924161	AB2-060 C O1	1.95
924301	AB2-077 C O1	0.41
924311	AB2-078 C O1	0.41
924321	AB2-079 C O1	0.41
924401	AB2-089 C	1.91
925611	AC1-036 C	0.28
925781	AC1-054 C O1	6.06
925831	AC1-062	0.12
925991	AC1-075 C	4.98
926021	AC1-080 C	1.66
926271	AC1-105 C O1	6.77
926761	AC1-162 C	83.27
927251	AC1-221 C	1.66
927261	AC1-222 C	4.07
932761	AC2-100 C	3.81
932821	AC2-107 C	8.85
934231	AD1-050 C	4.22
934311	AD1-055 C	2.83
934341	AD1-058 C	4.15
934611	AD1-087 C O1	12.04
934621	AD1-088 C	29.84
934991	AD1-131 C	1.36
935171	AD1-152 C O1	11.96
935221	AD1-157 C	0.59
935231	AD1-160 C	2.84
936261	AD2-033 C	23.72
936331	AD2-043 C	5.28
936361	AD2-046 C O1	9.34
936481	AD2-063 C O1	23.79

Bus #	Bus	MW Impact
936651	AD2-082 C	4.35
937481	AD2-202 C O1	3.31
938371	AE1-056 C	16.72
939181	AE1-148 C O2	9.37
939201	AE1-150 C O2	30.52
939371	AE1-168 C	33.69
AA2-074	AA2-074	2.34
CARR	CARR	0.24
CBM-S1	CBM-S1	5.38
CBM-S2	CBM-S2	6.55
CBM-W1	CBM-W1	5.08
CBM-W2	CBM-W2	34.99
CIN	CIN	2.32
CPLE	CPLE	3.44
IPL	IPL	1.45
LGEE	LGEE	0.67
MEC	MEC	5.25
MECS	MECS	2.02
RENSSELAER	RENSSELAER	0.19
WEC	WEC	0.62

Index 17

ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC DC	MW IMPACT
392148	314697	65EDGE HILL	DVP	927250	AC1-221 TAP	DVP	1	DVP_P1-2: LN 556	single	674.92	107.89	109.15	DC	8.47

Bus #	Bus	MW Impact
314429	3JTRSVLE	0.5
315150	1BUGGS 1	17.21
315151	1BUGGS 2	17.21
315153	1CLOVER1	35.08
315154	1CLOVER2	34.62
315159	1KERR 2	1.14
315162	1KERR 5	1.12
315163	1KERR 6	1.12
315164	1KERR 7	1.12
315165	1HURT 1	5.14
315166	1HURT 2	5.14
315266	1PLYWOOD A	2.96
924021	AB2-043 C O1	0.65
924031	AB2-045 C	0.38
924161	AB2-060 C O1	1.87
924301	AB2-077 C O1	0.42
924311	AB2-078 C O1	0.42
924321	AB2-079 C O1	0.42
924401	AB2-089 C	1.61
925611	AC1-036 C	0.2
925661	AC1-042 C	1.59
925781	AC1-054 C O1	4.97
925831	AC1-062	0.07
925991	AC1-075 C	11.92
926021	AC1-080 C	3.98
926271	AC1-105 C O1	14.49
926641	AC1-145 C	1.89
926761	AC1-162 C	56.71
927261	AC1-222 C	10.12
932511	AC2-071 C	0.37
932821	AC2-107 C	21.19
934231	AD1-050 C	3.56
934311	AD1-055 C	7.02
934611	AD1-087 C O1	26.94
934621	AD1-088 C	31.83
935171	AD1-152 C O1	26.77
935221	AD1-157 C	0.32
935231	AD1-160 C	1.55
936261	AD2-033 C	17.82
936331	AD2-043 C	13.11

Bus #	Bus	MW Impact
936361	AD2-046 C O1	8.38
936481	AD2-063 C O1	20.36
936651	AD2-082 C	2.38
937481	AD2-202 C O1	7.42
938371	AE1-056 C	9.13
939181	AE1-148 C O2	8.47
939201	AE1-150 C O2	14.38
939371	AE1-168 C	20.91
939941	AE1-230 C1	0.72
AC1-133	AC1-133	20.69
BAYOU	BAYOU	2.63
BIG_CAJUN1	BIG_CAJUN1	4.16
BIG_CAJUN2	BIG_CAJUN2	8.37
BLUEG	BLUEG	6.74
CALDERWOOD	CALDERWOOD	1.59
CANNELTON	CANNELTON	0.47
CATAWBA	CATAWBA	1.7
CBM-N	CBM-N	0.03
CHEOAH	CHEOAH	1.49
CHILHOWEE	CHILHOWEE	0.51
CHOCTAW	CHOCTAW	2.84
COFFEEN	COFFEEN	0.82
COTTONWOOD	COTTONWOOD	10.26
DEARBORN	DEARBORN	0.83
DUCKCREEK	DUCKCREEK	1.66
EDWARDS	EDWARDS	0.74
ELMERSMITH	ELMERSMITH	0.84
FARMERCITY	FARMERCITY	0.6
G-007A	G-007A	0.32
GIBSON	GIBSON	0.3
HAMLET	HAMLET	6.38
NEWTON	NEWTON	2.12
NYISO	NYISO	0.14
O-066A	O-066A	0.14
PRAIRIE	PRAIRIE	4.55
SANTEETLA	SANTEETLA	0.44
SMITHLAND	SMITHLAND	0.41
TATANKA	TATANKA	1.01
TILTON	TILTON	0.86
TRIMBLE	TRIMBLE	0.74
TVA	TVA	4.33
UNIONPOWER	UNIONPOWER	2.22
VFT	VFT	0.84

Index 18

ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC DC	MW IMPACT
392066	927250	AC1-221 TAP	DVP	304070	6PERSON230 T	CPL	1	DVP_P1-2: LN 556	single	718.0	111.22	112.4	DC	8.47

Bus #	Bus	MW Impact
314429	3JTRSVLE	0.5
315150	1BUGGS 1	17.21
315151	1BUGGS 2	17.21
315153	1CLOVER1	35.08
315154	1CLOVER2	34.62
315159	1KERR 2	1.14
315162	1KERR 5	1.12
315163	1KERR 6	1.12
315164	1KERR 7	1.12
315165	1HURT 1	5.14
315166	1HURT 2	5.14
315266	1PLYWOOD A	2.96
924021	AB2-043 C O1	0.65
924031	AB2-045 C	0.38
924161	AB2-060 C O1	1.87
924301	AB2-077 C O1	0.42
924311	AB2-078 C O1	0.42
924321	AB2-079 C O1	0.42
924401	AB2-089 C	1.61
925611	AC1-036 C	0.2
925831	AC1-062	0.07
925991	AC1-075 C	11.92
926021	AC1-080 C	3.98
926271	AC1-105 C O1	14.49
926761	AC1-162 C	56.71
927251	AC1-221 C	11.73
927261	AC1-222 C	10.12
932511	AC2-071 C	0.37
932761	AC2-100 C	26.99
932821	AC2-107 C	21.19
934231	AD1-050 C	3.56
934311	AD1-055 C	7.02
934341	AD1-058 C	29.4
934611	AD1-087 C O1	26.94
934621	AD1-088 C	31.83
934991	AD1-131 C	9.64
935171	AD1-152 C O1	26.77
935221	AD1-157 C	0.32
935231	AD1-160 C	1.55
936261	AD2-033 C	17.82

Bus #	Bus	MW Impact
936331	AD2-043 C	13.11
936361	AD2-046 C O1	8.38
936481	AD2-063 C O1	20.36
936651	AD2-082 C	2.38
937481	AD2-202 C O1	7.42
938371	AE1-056 C	9.13
939181	AE1-148 C O2	8.47
939201	AE1-150 C O2	14.38
939371	AE1-168 C	20.91
AC1-133	AC1-133	20.69
BAYOU	BAYOU	2.63
BIG_CAJUN1	BIG_CAJUN1	4.16
BIG_CAJUN2	BIG_CAJUN2	8.37
BLUEG	BLUEG	6.74
CALDERWOOD	CALDERWOOD	1.59
CANNELTON	CANNELTON	0.47
CATAWBA	CATAWBA	1.7
CBM-N	CBM-N	0.03
CHEOAH	CHEOAH	1.49
CHILHOWEE	CHILHOWEE	0.51
CHOCTAW	CHOCTAW	2.84
COFFEEN	COFFEEN	0.82
COTTONWOOD	COTTONWOOD	10.26
DEARBORN	DEARBORN	0.83
DUCKCREEK	DUCKCREEK	1.66
EDWARDS	EDWARDS	0.74
ELMERSMITH	ELMERSMITH	0.84
FARMERCITY	FARMERCITY	0.6
G-007A	G-007A	0.32
GIBSON	GIBSON	0.3
HAMLET	HAMLET	6.38
NEWTON	NEWTON	2.12
NYISO	NYISO	0.14
O-066A	O-066A	0.14
PRAIRIE	PRAIRIE	4.55
SANTEETLA	SANTEETLA	0.44
SMITHLAND	SMITHLAND	0.41
TATANKA	TATANKA	1.01
TILTON	TILTON	0.86
TRIMBLE	TRIMBLE	0.74
TVA	TVA	4.33
UNIONPOWER	UNIONPOWER	2.22
VFT	VFT	0.84

Contingency Name	Contingency Definition
AEP_SUBT_P1-3_#877_05E.MONU 138_3	CONTINGENCY 'AEP_SUBT_P1-3_#877_05E.MONU 138_3' OPEN BRANCH FROM BUS 242629 TO BUS 243948 CKT 1 / 242629 05E.MONU 138 243948 05BRANTLY 69.0 1 OPEN BRANCH FROM BUS 244013 TO BUS 243948 CKT 1 / 244013 05AIRSIDTP 69.0 243948 05BRANTLY 69.0 1 END
DVP_P1-2: LN 563	CONTINGENCY 'DVP_P1-2: LN 563' OPEN BRANCH FROM BUS 314902 TO BUS 314914 CKT 1 /* 8CARSON 500.00 - 8MDLTHAN 500.00 END
DVP_P1-2: LN 246	CONTINGENCY 'DVP_P1-2: LN 246' OPEN BRANCH FROM BUS 314537 TO BUS 919140 CKT 1 /* 6SUFFOLK 230.00 - AA1-138 TAP 230.00 OPEN BRANCH FROM BUS 314569 TO BUS 314575 CKT 1 /* 6EARLEYS 230.00 - 6NUCO TP 230.00 OPEN BRANCH FROM BUS 314575 TO BUS 314590 CKT 1 /* 6NUCO TP 230.00 - 6NUCOR 230.00 OPEN BRANCH FROM BUS 314575 TO BUS 919140 CKT 1 /* 6NUCO TP 230.00 - AA1-138 TAP 230.00 OPEN BUS 314575 /* ISLAND: 6NUCO TP 230.00 OPEN BUS 314590 /* ISLAND: 6NUCOR 230.00 OPEN BUS 919140 /* ISLAND: AA1-138 TAP 230.00 END
DVP_P1-2: LN 1029-A	CONTINGENCY 'DVP_P1-2: LN 1029-A' OPEN BRANCH FROM BUS 314562 TO BUS 314570 CKT 1 /* 3CLUBHSE 115.00 - 3METCATP 115.00 OPEN BRANCH FROM BUS 314570 TO BUS 314572 CKT 1 /* 3METCATP 115.00 - 3EMPORIA 115.00 OPEN BRANCH FROM BUS 314570 TO BUS 314588 CKT 1 /* 3METCATP 115.00 - 3METCALF 115.00 OPEN BRANCH FROM BUS 314572 TO BUS 925170 CKT 1 /* 3EMPORIA 115.00 - AB2-174 TAP 115.00 OPEN BRANCH FROM BUS 314572 TO BUS 314863 CKT 1 /* 3EMPORIA 115.00 - 3EMPOR_1 115.00 OPEN BUS 314570 /* ISLAND: 3METCATP 115.00 OPEN BUS 314572 /* ISLAND: 3EMPORIA 115.00 OPEN BUS 314588 /* ISLAND: 3METCALF 115.00 OPEN BUS 314863 /* ISLAND: 3EMPOR_1 115.00 END
DVP_P1-2: LN 90	CONTINGENCY 'DVP_P1-2: LN 90' OPEN BRANCH FROM BUS 314265 TO BUS 314584 CKT 1 /* 3FIVEFORKSDP115.00 - 3LITTLTN 115.00 OPEN BRANCH FROM BUS 314265 TO BUS 314673 CKT 1 /* 3FIVEFORKSDP115.00 - 3PALMERSPRNG115.00 OPEN BRANCH FROM BUS 314559 TO BUS 314585 CKT 1 /* 3CAROLNA 115.00 - 3L GASTN 115.00 OPEN BRANCH FROM BUS 314584 TO BUS 314585 CKT 1 /* 3LITTLTN 115.00 - 3L GASTN 115.00 OPEN BUS 314265 /* ISLAND: 3FIVEFORKSDP115.00 OPEN BUS 314584 /* ISLAND: 3LITTLTN 115.00 OPEN BUS 314585 /* ISLAND: 3L GASTN 115.00 END

Contingency Name	Contingency Definition
DVP_P4-2: 562T563	CONTINGENCY 'DVP_P4-2: 562T563' /* CARSON 500 KV OPEN BRANCH FROM BUS 314902 TO BUS 314923 CKT 1 /* 8CARSON 500.00 - 8SEPTA 500.00 OPEN BRANCH FROM BUS 314902 TO BUS 314914 CKT 1 /* 8CARSON 500.00 - 8MDLTHAN 500.00 END
DVP_P1-3: 6CAROLNA-TX#4	CONTINGENCY 'DVP_P1-3: 6CAROLNA-TX#4' OPEN BRANCH FROM BUS 314559 TO BUS 314561 CKT 1 /* 3CAROLNA 115.00 - 6CAROLNA 230.00 END
DVP_P1-2: LN 130-A	CONTINGENCY 'DVP_P1-2: LN 130-A' OPEN BRANCH FROM BUS 314559 TO BUS 314600 CKT 1 /* 3CAROLNA 115.00 - 3PLHITP 115.00 OPEN BRANCH FROM BUS 314595 TO BUS 314600 CKT 1 /* 3PL HILL 115.00 - 3PLHITP 115.00 OPEN BRANCH FROM BUS 314600 TO BUS 937570 CKT 1 /* 3PLHITP 115.00 - AD2-169 TAP 115.00 OPEN BUS 314595 /* ISLAND: 3PL HILL 115.00 OPEN BUS 314600 /* ISLAND: 3PLHITP 115.00 END
DVP_P1-2: LN 33-B	CONTINGENCY 'DVP_P1-2: LN 33-B' OPEN BRANCH FROM BUS 926270 TO BUS 314696 CKT 1 /* AC1-105 TAP 115.00 - 3SEEDGE HILL 115.00 END
DVP_P4-2: 511T591	CONTINGENCY 'DVP_P4-2: 511T591' /* RAWLINGS 500 KV OPEN BRANCH FROM BUS 314902 TO BUS 314936 CKT 1 /* 8CARSON 500.00 - 8RAWLINGS 500.00 OPEN BRANCH FROM BUS 314935 TO BUS 314936 CKT 1 /* 8HERITAGE 500.00 - 8RAWLINGS 500.00 END
DVP_P1-2: LN 296-A	CONTINGENCY 'DVP_P1-2: LN 296-A' OPEN BRANCH FROM BUS 304070 TO BUS 927250 CKT 1 /* 6PERSON230 T230.00 - AC1-221 TAP 230.00 END
DVP_P1-2: LN 2027-B	CONTINGENCY 'DVP_P1-2: LN 2027-B' OPEN BRANCH FROM BUS 933500 TO BUS 314333 CKT 1 /* AC2-165 TAP 230.00 - 6POWHATN 230.00 OPEN BRANCH FROM BUS 314310 TO BUS 314322 CKT 1 /* 6JUDES F 230.00 - 6MDLTHAN 230.00 OPEN BRANCH FROM BUS 314310 TO BUS 314333 CKT 1 /* 6JUDES F 230.00 - 6POWHATN 230.00 OPEN BUS 314310 /* ISLAND: 6JUDES F 230.00 OPEN BUS 314333 /* ISLAND: 6POWHATN 230.00 END
DVP_P1-3: 6SEEDGE HILL-TX#2	CONTINGENCY 'DVP_P1-3: 6SEEDGE HILL-TX#2' OPEN BRANCH FROM BUS 314696 TO BUS 314697 CKT 2 /* 3SEEDGE HILL 115.00 - 6SEEDGE HILL 230.00 END

Contingency Name	Contingency Definition
DVP_P4-2: 2202	CONTINGENCY 'DVP_P4-2: 2202' /* CAROLINA 115 KV OPEN BRANCH FROM BUS 314559 TO BUS 314571 CKT 1 /* 3CAROLNA 115.00 - 3EATON F 115.00 OPEN BRANCH FROM BUS 314571 TO BUS 925780 CKT 1 /* 3EATON F 115.00 - AC1-054 TAP 115.00 /* CONTINGENCY LINE ADDED FOR AE1 BUILD OPEN BUS 314571 /* ISLAND: 3EATON F 115.00 OPEN BRANCH FROM BUS 313722 TO BUS 314559 CKT 1 /* 3OCCONEECHEE115.00 - 3CAROLNA 115.00 OPEN BRANCH FROM BUS 314259 TO BUS 314559 CKT Z1 /* 3CAROL56_1 115.00 - 3CAROLNA 115.00 OPEN BRANCH FROM BUS 314559 TO BUS 314600 CKT 1 /* 3CAROLNA 115.00 - 3PLHITP 115.00 OPEN BRANCH FROM BUS 314559 TO BUS 314561 CKT 1 /* 3CAROLNA 115.00 - 6CAROLNA 230.00 END
DVP_P1-2: LN 1029-B	CONTINGENCY 'DVP_P1-2: LN 1029-B' OPEN BRANCH FROM BUS 925170 TO BUS 314615 CKT 1 /* AB2-174 TAP 115.00 - 3TREGOTP 115.00 END
DVP_P4-2: 7152	CONTINGENCY 'DVP_P4-2: 7152' /* CLUBHOUSE 115 KV OPEN BRANCH FROM BUS 314516 TO BUS 314676 CKT 1 /* 3BRUNWICK_1 115.00 - 3BRUNWICK 115.00 OPEN BRANCH FROM BUS 314562 TO BUS 314565 CKT Z1 /* 3CLUBHSE 115.00 - 3CLUBHSE71 115.00 OPEN BRANCH FROM BUS 314565 TO BUS 314693 CKT 1 /* 3CLUBHSE71 115.00 - 3FRMAN D 115.00 OPEN BRANCH FROM BUS 314565 TO BUS 314850 CKT 1 /* 3CLUBHSE71 115.00 - 3CLUBHSE71_1115.00 OPEN BRANCH FROM BUS 314675 TO BUS 314676 CKT 1 /* 3BRODNAX 115.00 - 3BRUNWICK 115.00 OPEN BRANCH FROM BUS 314676 TO BUS 314704 CKT 1 /* 3BRUNWICK 115.00 - 3LAWRENC 115.00 OPEN BRANCH FROM BUS 314693 TO BUS 314704 CKT 1 /* 3FRMAN D 115.00 - 3LAWRENC 115.00 OPEN BUS 314516 /* ISLAND: 3BRUNWICK_1 115.00 OPEN BUS 314565 /* ISLAND: 3CLUBHSE71 115.00 OPEN BUS 314676 /* ISLAND: 3BRUNWICK 115.00 OPEN BUS 314782 /* ISLAND: 2BRUNWICK 69.000 OPEN BUS 314785 /* ISLAND: 2DANLTWN 69.000 OPEN BUS 314786 /* ISLAND: 2GASBURG 69.000 OPEN BUS 314787 /* ISLAND: 2BRUNWICK2 69.000 OPEN BUS 314872 /* ISLAND: 2BRUNSWICKDP69.000 OPEN BUS 314693 /* ISLAND: 3FRMAN D 115.00 OPEN BUS 314704 /* ISLAND: 3LAWRENC 115.00 OPEN BUS 314850 /* ISLAND: 3CLUBHSE71_1115.00 OPEN BRANCH FROM BUS 314312 TO BUS 314325 CKT 1 /* 3JARRATT 115.00 - 3PURDYSW 115.00 OPEN BRANCH FROM BUS 314325 TO BUS 314562 CKT 1 /* 3PURDYSW 115.00 - 3CLUBHSE 115.00 OPEN BUS 314312 /* ISLAND: 3JARRATT 115.00 OPEN BUS 314325 /* ISLAND: 3PURDYSW 115.00 OPEN BRANCH FROM BUS 314562 TO BUS 314570 CKT 1 /* 3CLUBHSE 115.00 - 3METCATP 115.00 OPEN BRANCH FROM BUS 314562 TO BUS 314563 CKT 1 /* 3CLUBHSE 115.00 - 6CLUBHSE 230.00 OPEN BUS 314562 /* 3CLUBHSE 115.00 KV END

Contingency Name	Contingency Definition
DVP_P1-2: LN 296-B	CONTINGENCY 'DVP_P1-2: LN 296-B' OPEN BRANCH FROM BUS 927250 TO BUS 314697 CKT 1 /* AC1-221 TAP T230.00 - 6SEEDGE HILL 230.00 END
DVP_P1-2: LN 2056-A	CONTINGENCY 'DVP_P1-2: LN 2056-A' OPEN BRANCH FROM BUS 313845 TO BUS 934330 CKT 1 /* 6HATHAWAY 230.00 - AD1-057 TAP 230.00 END
DVP_P4-6: CAROLIN T122	CONTINGENCY 'DVP_P4-6: CAROLIN T122' /* CAROLINA 115 KV OPEN BRANCH FROM BUS 314559 TO BUS 315126 CKT 1 /* 3CAROLNA 115.00 - 1ROARAP2 14.400 OPEN BRANCH FROM BUS 314559 TO BUS 315128 CKT 1 /* 3CAROLNA 115.00 - 1ROARAP4 14.400 OPEN BUS 315126 /* ISLAND: 1ROARAP2 14.400 OPEN BUS 315128 /* ISLAND: 1ROARAP4 14.400 OPEN BRANCH FROM BUS 314559 TO BUS 314571 CKT 1 /* 3CAROLNA 115.00 - 3EATON F 115.00 OPEN BRANCH FROM BUS 313722 TO BUS 314559 CKT 1 /* 3OCCONEECHEE115.00 - 3CAROLNA 115.00 OPEN BRANCH FROM BUS 314259 TO BUS 314559 CKT Z1 /* 3CAROL56_1 115.00 - 3CAROLNA 115.00 OPEN BRANCH FROM BUS 314559 TO BUS 314578 CKT 1 /* 3CAROLNA 115.00 - 3HORNRTN 115.00 OPEN BRANCH FROM BUS 314559 TO BUS 314585 CKT 1 /* 3CAROLNA 115.00 - 3L GASTN 115.00 OPEN BRANCH FROM BUS 314559 TO BUS 314600 CKT 1 /* 3CAROLNA 115.00 - 3PLHITP 115.00 OPEN BRANCH FROM BUS 314559 TO BUS 314561 CKT 1 /* 3CAROLNA 115.00 - 6CAROLNA 230.00 OPEN BUS 314559 /* 3CAROLNA 115.00 KV END
DVP_P1-2: LN 556	CONTINGENCY 'DVP_P1-2: LN 556' OPEN BRANCH FROM BUS 314686 TO BUS 314906 CKT 1 /* 6CLOVER 230.00 - 8CLOVER 500.00 OPEN BRANCH FROM BUS 314686 TO BUS 314906 CKT 2 /* 6CLOVER 230.00 - 8CLOVER 500.00 OPEN BRANCH FROM BUS 314686 TO BUS 314906 CKT 3 /* 6CLOVER 230.00 - 8CLOVER 500.00 OPEN BRANCH FROM BUS 314906 TO BUS 314936 CKT 1 /* 8CLOVER 500.00 - 8RAWLINGS 500.00 OPEN BUS 314906 /* ISLAND: 8CLOVER 500.00 OPEN BUS 314915 /* ISLAND: 8CLOVER_STC 500.00 END
AEP_P4_#11111_05J.FERR 765_B1	CONTINGENCY 'AEP_P4_#11111_05J.FERR 765_B1' OPEN BRANCH FROM BUS 242514 TO BUS 242520 CKT 1 / 242514 05J.FERR 765 242520 05J.FERR 500 1 OPEN BRANCH FROM BUS 242514 TO BUS 242684 CKT 2 / 242514 05J.FERR 765 242684 05J.FERR 138 2 OPEN BRANCH FROM BUS 242520 TO BUS 306719 CKT 1 / 242520 05J.FERR 500 306719 8ANTIOCH 500 1 END
AEP_P1-2_#344-A	CONTINGENCY 'AEP_P1-2_#344-A' OPEN BRANCH FROM BUS 242530 TO BUS 936160 CKT 1 / 242530 05EDANV1 230 936160 AD2- 022 TAP 230 1 END

Contingency Name	Contingency Definition
DVP_P7-1: LN 22-90-A	CONTINGENCY 'DVP_P7-1: LN 22-90-A' OPEN BRANCH FROM BUS 314559 TO BUS 314571 CKT 1 /* 3CAROLNA 115.00 - 3EATON F 115.00 OPEN BRANCH FROM BUS 314571 TO BUS 925780 CKT 1 /* 3EATON F 115.00 - AC1-054 TAP 115.00 OPEN BUS 314571 /* ISLAND: 3EATON F 115.00 OPEN BRANCH FROM BUS 314265 TO BUS 314584 CKT 1 /* 3FIVEFORKSDP115.00 - 3LITTLTN 115.00 OPEN BRANCH FROM BUS 314265 TO BUS 314673 CKT 1 /* 3FIVEFORKSDP115.00 - 3PALMERSPRNG115.00 OPEN BRANCH FROM BUS 314559 TO BUS 314585 CKT 1 /* 3CAROLNA 115.00 - 3L GASTN 115.00 OPEN BRANCH FROM BUS 314584 TO BUS 314585 CKT 1 /* 3LITTLTN 115.00 - 3L GASTN 115.00 OPEN BUS 314265 /* ISLAND: 3FIVEFORKSDP115.00 OPEN BUS 314584 /* ISLAND: 3LITTLTN 115.00 OPEN BUS 314585 /* ISLAND: 3L GASTN 115.00 END
AEP_P1-2_#1377	CONTINGENCY 'AEP_P1-2_#1377' OPEN BRANCH FROM BUS 242514 TO BUS 242520 CKT 1 / 242514 05J.FERR 765 242520 05J.FERR 500 1 OPEN BRANCH FROM BUS 242520 TO BUS 306719 CKT 1 / 242520 05J.FERR 500 306719 8ANTIOCH 500 1 END
DVP_P4-2: 556T591	CONTINGENCY 'DVP_P4-2: 556T591' /* RAWLINGS 500 KV OPEN BRANCH FROM BUS 314686 TO BUS 314906 CKT 1 /* 6CLOVER 230.00 - 8CLOVER 500.00 OPEN BRANCH FROM BUS 314686 TO BUS 314906 CKT 2 /* 6CLOVER 230.00 - 8CLOVER 500.00 OPEN BRANCH FROM BUS 314686 TO BUS 314906 CKT 3 /* 6CLOVER 230.00 - 8CLOVER 500.00 OPEN BRANCH FROM BUS 314906 TO BUS 314936 CKT 1 /* 8CLOVER 500.00 - 8RAWLINGS 500.00 OPEN BUS 314906 /* ISLAND: 8CLOVER 500.00 OPEN BUS 314915 /* ISLAND: 8CLOVER_STC 500.00 OPEN BRANCH FROM BUS 314935 TO BUS 314936 CKT 1 /* 8HERITAGE 500.00 - 8RAWLINGS 500.00 END
DVP_P1-2: LN 238	CONTINGENCY 'DVP_P1-2: LN 238' OPEN BRANCH FROM BUS 314282 TO BUS 314435 CKT 1 /* 6CARSON 230.00 - 6SAPONY 230.00 OPEN BRANCH FROM BUS 314435 TO BUS 314563 CKT 1 /* 6SAPONY 230.00 - 6CLUBHSE 230.00 OPEN BRANCH FROM BUS 314562 TO BUS 314563 CKT 1 /* 3CLUBHSE 115.00 - 6CLUBHSE 230.00 OPEN BUS 314435 /* ISLAND: 6SAPONY 230.00 END

Contingency Name	Contingency Definition
DVP_P7-1: LN 22-90-B	CONTINGENCY 'DVP_P7-1: LN 22-90-B' OPEN BRANCH FROM BUS 925780 TO BUS 314702 CKT 1 /* AC1-054 TAP 115.00 - 3KERR 115.00 OPEN BRANCH FROM BUS 314265 TO BUS 314584 CKT 1 /* 3FIVEFORKSDP115.00 - 3LITTLTN 115.00 OPEN BRANCH FROM BUS 314265 TO BUS 314673 CKT 1 /* 3FIVEFORKSDP115.00 - 3PALMERSPRNG115.00 OPEN BRANCH FROM BUS 314559 TO BUS 314585 CKT 1 /* 3CAROLNA 115.00 - 3L GASTN 115.00 OPEN BRANCH FROM BUS 314584 TO BUS 314585 CKT 1 /* 3LITTLTN 115.00 - 3L GASTN 115.00 OPEN BUS 314265 /* ISLAND: 3FIVEFORKSDP115.00 OPEN BUS 314584 /* ISLAND: 3LITTLTN 115.00 OPEN BUS 314585 /* ISLAND: 3L GASTN 115.00 END
DVP_P4-2: 102952	CONTINGENCY 'DVP_P4-2: 102952' /* CLUBHOUSE 115 KV OPEN BRANCH FROM BUS 314312 TO BUS 314325 CKT 1 /* 3JARRATT 115.00 - 3PURDYSW 115.00 OPEN BRANCH FROM BUS 314325 TO BUS 314562 CKT 1 /* 3PURDYSW 115.00 - 3CLUBHSE 115.00 OPEN BUS 314312 /* ISLAND: 3JARRATT 115.00 OPEN BUS 314325 /* ISLAND: 3PURDYSW 115.00 OPEN BRANCH FROM BUS 314562 TO BUS 314570 CKT 1 /* 3CLUBHSE 115.00 - 3METCATP 115.00 OPEN BRANCH FROM BUS 314570 TO BUS 314572 CKT 1 /* 3METCATP 115.00 - 3EMPORIA 115.00 OPEN BRANCH FROM BUS 314570 TO BUS 314588 CKT 1 /* 3METCATP 115.00 - 3METCALF 115.00 OPEN BRANCH FROM BUS 314572 TO BUS 925170 CKT 1 /* 3EMPORIA 115.00 - AB2-174 TAP 115.00 /* CONTINGENCY LINE ADDED FOR AE1 BUILD OPEN BRANCH FROM BUS 314572 TO BUS 314863 CKT 1 /* 3EMPORIA 115.00 - 3EMPOR_1 115.00 OPEN BUS 314570 /* ISLAND: 3METCATP 115.00 OPEN BUS 314572 /* ISLAND: 3EMPORIA 115.00 OPEN BUS 314588 /* ISLAND: 3METCALF 115.00 OPEN BUS 314863 /* ISLAND: 3EMPOR_1 115.00 OPEN BRANCH FROM BUS 314562 TO BUS 314565 CKT Z1 /* 3CLUBHSE 115.00 - 3CLUBHSE71 115.00 OPEN BRANCH FROM BUS 314562 TO BUS 314563 CKT 1 /* 3CLUBHSE 115.00 - 6CLUBHSE 230.00 OPEN BUS 314562 /* 3CLUBHSE 115.00 KV END
DVP_P4-2: 101002	CONTINGENCY 'DVP_P4-2: 101002' /* CAROLINA 115 KV OPEN BRANCH FROM BUS 314259 TO BUS 314559 CKT Z1 /* 3CAROL56_1 115.00 - 3CAROLNA 115.00 OPEN BRANCH FROM BUS 314259 TO BUS 314835 CKT 1 /* 3CAROL56_1 115.00 - 3CAROL_1 115.00 OPEN BUS 314835 /* ISLAND: 3CAROL_1 115.00 OPEN BRANCH FROM BUS 314559 TO BUS 314571 CKT 1 /* 3CAROLNA 115.00 - 3EATON F 115.00 OPEN BRANCH FROM BUS 313722 TO BUS 314559 CKT 1 /* 3OCCONEECHEE115.00 - 3CAROLNA 115.00 OPEN BRANCH FROM BUS 314559 TO BUS 314600 CKT 1 /* 3CAROLNA 115.00 - 3PLHITP 115.00 OPEN BRANCH FROM BUS 314559 TO BUS 314561 CKT 1 /* 3CAROLNA 115.00 - 6CAROLNA 230.00 END
Base Case	

Contingency Name	Contingency Definition
DVP_P1-2: LN 22-A	CONTINGENCY 'DVP_P1-2: LN 22-A' OPEN BRANCH FROM BUS 314559 TO BUS 314571 CKT 1 /* 3CAROLNA 115.00 - 3EATON F 115.00 OPEN BRANCH FROM BUS 314571 TO BUS 925780 CKT 1 /* 3EATON F 115.00 - AC1-054 TAP 115.00 OPEN BUS 314571 /* ISLAND: 3EATON F 115.00 END
DVP_P4-2: 511T556	CONTINGENCY 'DVP_P4-2: 511T556' /* RAWLINGS 500 KV OPEN BRANCH FROM BUS 314902 TO BUS 314936 CKT 1 /* 8CARSON 500.00 - 8RAWLINGS 500.00 OPEN BRANCH FROM BUS 314686 TO BUS 314906 CKT 1 /* 6CLOVER 230.00 - 8CLOVER 500.00 OPEN BRANCH FROM BUS 314686 TO BUS 314906 CKT 2 /* 6CLOVER 230.00 - 8CLOVER 500.00 OPEN BRANCH FROM BUS 314686 TO BUS 314906 CKT 3 /* 6CLOVER 230.00 - 8CLOVER 500.00 OPEN BRANCH FROM BUS 314906 TO BUS 314936 CKT 1 /* 8CLOVER 500.00 - 8RAWLINGS 500.00 OPEN BUS 314906 /* ISLAND: 8CLOVER 500.00 OPEN BUS 314915 /* ISLAND: 8CLOVER_STC 500.00 END
DVP_P4-2: 5402	CONTINGENCY 'DVP_P4-2: 5402' /* CAROLINA 115 KV OPEN BRANCH FROM BUS 313722 TO BUS 314559 CKT 1 /* 3OCCONEECHEE115.00 - 3CAROLNA 115.00 OPEN BRANCH FROM BUS 314559 TO BUS 314571 CKT 1 /* 3CAROLNA 115.00 - 3EATON F 115.00 OPEN BRANCH FROM BUS 314259 TO BUS 314559 CKT Z1 /* 3CAROL56_1 115.00 - 3CAROLNA 115.00 OPEN BRANCH FROM BUS 314559 TO BUS 314600 CKT 1 /* 3CAROLNA 115.00 - 3PLHITP 115.00 OPEN BRANCH FROM BUS 314559 TO BUS 314561 CKT 1 /* 3CAROLNA 115.00 - 6CAROLNA 230.00 END
DVP_P1-2: LN 235-A	CONTINGENCY 'DVP_P1-2: LN 235-A' OPEN BRANCH FROM BUS 313802 TO BUS 314268 CKT 1 /* 6PRINCE EDW 230.00 - 6BRIERY 230.00 OPEN BRANCH FROM BUS 313802 TO BUS 314692 CKT 1 /* 6PRINCE EDW 230.00 - 6FARMVIL 230.00 OPEN BRANCH FROM BUS 314268 TO BUS 926760 CKT 1 /* 6BRIERY 230.00 - AC1-162 TAP 230.00 OPEN BRANCH FROM BUS 314691 TO BUS 314692 CKT 1 /* 3FARMVIL 115.00 - 6FARMVIL 230.00 OPEN BUS 313802 /* ISLAND: 6PRINCE EDW 230.00 OPEN BUS 314268 /* ISLAND: 6BRIERY 230.00 END
DVP_P4-2: 24972-4	CONTINGENCY 'DVP_P4-2: 24972-4' /* CARSON 230 KV OPEN BRANCH FROM BUS 314282 TO BUS 314285 CKT 1 /* 6CARSON 230.00 - 6CHRL249 230.00 OPEN BRANCH FROM BUS 314285 TO BUS 314316 CKT 1 /* 6CHRL249 230.00 - 6LOCKS 230.00 OPEN BRANCH FROM BUS 314314 TO BUS 314316 CKT 2 /* 3LOCKS 115.00 - 6LOCKS 230.00 OPEN BUS 314285 /* ISLAND: 6CHRL249 230.00 OPEN BRANCH FROM BUS 314282 TO BUS 314902 CKT 1 /* 6CARSON 230.00 - 8CARSON 500.00 OPEN BUS 314455 /* 6CARSO_1 230.00 KV END

Contingency Name	Contingency Definition
AEP_P4_#11112_05J.FERR 765_A1	CONTINGENCY 'AEP_P4_#11112_05J.FERR 765_A1' OPEN BRANCH FROM BUS 242511 TO BUS 242514 CKT 1 / 242511 05BROADF 765 242514 05J.FERR 765 1 OPEN BRANCH FROM BUS 242514 TO BUS 242520 CKT 1 / 242514 05J.FERR 765 242520 05J.FERR 500 1 OPEN BRANCH FROM BUS 242520 TO BUS 306719 CKT 1 / 242520 05J.FERR 500 306719 8ANTIOCH 500 1 OPEN BRANCH FROM BUS 242566 TO BUS 242567 CKT ZB / 242566 05BROADF 138 242567 05BROADX 138 ZB END
DVP_P4-2: 13002	CONTINGENCY 'DVP_P4-2: 13002' /* CAROLINA 115 KV OPEN BRANCH FROM BUS 314559 TO BUS 314600 CKT 1 /* 3CAROLNA 115.00 - 3PLHITP 115.00 OPEN BRANCH FROM BUS 314595 TO BUS 314600 CKT 1 /* 3PL HILL 115.00 - 3PLHITP 115.00 OPEN BRANCH FROM BUS 314600 TO BUS 937570 CKT 1 /* 3PLHITP 115.00 - AD2-169 TAP 115.00 /* CONTINGENCY LINE ADDED FOR AE1 BUILD OPEN BUS 314595 /* ISLAND: 3PL HILL 115.00 OPEN BUS 314600 /* ISLAND: 3PLHITP 115.00 OPEN BRANCH FROM BUS 314559 TO BUS 314571 CKT 1 /* 3CAROLNA 115.00 - 3EATON F 115.00 OPEN BRANCH FROM BUS 313722 TO BUS 314559 CKT 1 /* 3OCCONEECHEE115.00 - 3CAROLNA 115.00 OPEN BRANCH FROM BUS 314259 TO BUS 314559 CKT Z1 /* 3CAROL56_1 115.00 - 3CAROLNA 115.00 OPEN BRANCH FROM BUS 314559 TO BUS 314561 CKT 1 /* 3CAROLNA 115.00 - 6CAROLNA 230.00 END

Short Circuit

Short Circuit

(Summary of impacted circuit breakers)

New circuit breakers found to be over-duty:

None

Contributions to previously identified circuit breakers found to be over-duty:

None

Attachment 1

Single Line Diagram

