

Generation Interconnection Feasibility Study Report Queue Position AE2-314

The Interconnection Customer (IC), has proposed a 72.0 MW Energy (43.2 MW Capacity) solar generating facility to be located at Latitude: 39.4753780, Longitude: -74.5978460 in Atlantic County, New Jersey. At the IC's request, PJM studied the AE2-314 project at both a Primary and Secondary Point of Interconnection. The project was studied at a commercial probability of 53% with the results provided below. The planned in-service date, as requested by the IC during the project kick-off call, is June 30, 2022. This date is dependent on completion of PJM studies (System Impact and Facilities) and the Transmission Owner's construction schedule for network upgrades.

Point(s) of Interconnection

The Interconnection Customer requested a Primary and Secondary Point of Interconnection (POI) be evaluated for the AE2-314 project.

Primary Point of Interconnection

PJM studied the AE2-314 project as an injection into the Atlantic City Electric Company (ACE) transmission system at the Cardiff 230 kV Substation (PSSE bus #227900) and evaluated it for compliance with reliability criteria for summer peak conditions in 2022. The AE2-314 project will connect with the ACE transmission system at the Cardiff 230 kV substation. For AE2-314, Cardiff 230 kV substation is required to be reconfigured from a Five-Breaker-Ring-Bus to a Breaker-and-a-Half.

Transmission Owner Scope of Attachment Facilities Work

Substation Interconnection Estimate

Scope: Reconfigure the Cardiff 230 kV substation to a Breaker-and-a-Half layout. The new Breaker-and-a-Half will accommodate the AE2-314 generator.

Estimate: \$23,800,000

Construction Time: 36-48 months

Major Equipment Included in Estimate:

- 3000A Power Circuit Breaker, 230 kV, 3 cycle Qty. 6
- Disconnect Switch, 230 kV Motor Operated Device Qty. 9
- Double 1590 ACSR (325') Qty. 2
- Insulators, 230 kV Qty. 6
- Disconnect Switch Stand, Low, 230 kV, Steel Qty. 2
- Relay Panel, Transmission Bus, FL/BU (20") Qty. 1
- Control Panel, 230 kV Circuit Breaker (10") Qty. 1
- Take-off structure, 230 kV Qty. 2
- 230 kV Lightning Arresters Qty. 3

- 230 kV Lightning Arresters Stands Qty. 3
- 3 Phase Potential Transformers Qty. 3

Estimate Assumptions:

- Room in Control Enclosure for New Relay Panel.
- Fiber optic cable necessary is 1,000 linear feet.
- Developer to purchase additional land for substation expansion.
- Land purchase for the substation is not included.
- Build of temporary substation required.
- Existing AC & DC systems are adequate.
- Existing Ground grid and storm water management will need to be expanded.

Required Relaying and Communications

New protection relays are required for the new terminals.

Front line and back-up line protection will be required. One relay panel for each generator terminal will be required for front line and back-up protection.

A breaker control relay on a breaker control panel will be required for the control and operation of each new 230 kV circuit breaker (1 total).

The project will require re-wiring and adjustment of existing relay schemes to accommodate the new 230 kV breaker-and-half substation.

Metering

A three phase 230 kV revenue metering point will need to be established within the IC facility at the POI.

The IC will purchase and install all metering instrument transformers, as well as construct a metering structure per ACE’s specifications. The secondary wiring connections at the instrument transformers will be completed by the IC’s contractors and inspected by ACE, while the secondary wiring work at the metering enclosure will be completed by ACE’s meter technicians. The metering control cable and meter cabinets will be supplied by ACE and installed by the IC’s contractors. ACE’s meter technicians will program and install two solid state multi-function meters (Primary & Backup) for each new metering position. Each meter will be equipped with load profile, telemetry, and DNP outputs. The IC will be provided with one (1) meter DNP output.

The IC will be required to make provisions for a POTS (plain old telephone service) line within approximately three (3) feet of each ACE metering position to facilitate remote interrogation and data collection.

Interconnection Customer Scope of Direct Connection Work

The IC is responsible for all design and construction related to activities on their side of the Point of Interconnection. Site preparation, including grading and an access road, as necessary, is assumed to

be by the IC. Route selection, line design, and right-of-way acquisition of the direct connect facilities is not included in this report, and is the responsibility of the IC. Protective relaying and metering design and installation must comply with ACE's applicable standards. The IC is also required to provide revenue metering and real-time telemetering data to PJM in conformance with the requirements contained in PJM Manuals M-01 and M-14 and the PJM Tariff.

ACE Interconnection Customer Scope of Direct Connection Work Requirements:

- ACE requires that an IC circuit breaker is located within 500 feet of the ACE substation to facilitate the relay protection scheme between ACE and the IC at the Point of Interconnection (POI).

Special Operating Requirements

1. ACE will require the capability to remotely disconnect the generator from the grid by communication from its System Operations facility. Such disconnection may be facilitated by a generator breaker, or other method depending upon the specific circumstances and the evaluation by ACE.
2. ACE reserves the right to charge the Interconnection Customer operation and maintenance expenses to maintain the Interconnection Customer attachment facilities, including metering and telecommunications facilities, owned by ACE.

Summer Peak Analysis - 2022

Transmission Network Impacts

Potential transmission network impacts are as follows:

Generator Deliverability

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

None

Multiple Facility Contingency

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

None

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
8542941	206297	28MANITOU	JCP&L	206319	28WHITINGS	JCP&L	1	JC-P7-1-JCC-230-10A	tower	817.0	182.68	184.0	DC	10.76
8542942	206297	28MANITOU	JCP&L	206319	28WHITINGS	JCP&L	1	JC-P7-1-JCC-230-12	tower	817.0	178.67	180.09	DC	11.54
8542525	206302	28OYSTER C	JCP&L	206297	28MANITOU	JCP&L	1	JC-P1-2-JCC-230-022	single	817.0	121.62	122.72	DC	8.98
8542547	206302	28OYSTER C	JCP&L	206297	28MANITOU	JCP&L	2	JC-P1-2-JCC-230-021	single	869.0	114.38	115.41	DC	8.98
8542993	206318	28VANHISVL	JCP&L	206294	28LARRABEE	JCP&L	1	JC-P7-1-JCC-230-10A	tower	869.0	150.03	151.19	DC	10.03
8542994	206318	28VANHISVL	JCP&L	206294	28LARRABEE	JCP&L	1	JC-P7-1-JCC-230-12	tower	869.0	149.05	150.27	DC	10.6
8542970	206319	28WHITINGS	JCP&L	206720	28MANCHSTR	JCP&L	1	JC-P7-1-JCC-230-10A	tower	869.0	161.45	162.69	DC	10.77
8542971	206319	28WHITINGS	JCP&L	206720	28MANCHSTR	JCP&L	1	JC-P7-1-JCC-230-12	tower	869.0	155.33	156.64	DC	11.41
8542250	206323	28LAKEWOOD	JCP&L	206294	28LARRABEE	JCP&L	2	JC-P2-3-JCC-230-13D	breaker	817.0	195.7	197.12	DC	11.59
8542983	206720	28MANCHSTR	JCP&L	206318	28VANHISVL	JCP&L	1	JC-P7-1-JCC-230-10A	tower	869.0	159.72	160.96	DC	10.77
8542984	206720	28MANCHSTR	JCP&L	206318	28VANHISVL	JCP&L	1	JC-P7-1-JCC-230-12	tower	869.0	153.59	154.91	DC	11.41
8542174	213922	RICHMOND	PECO	214012	WANEETA3	PECO	1	PECO_P2-2_CHI230B1/* \$ DELCO \$ PECO_P2-2_CHI230B1 \$ B	bus	1180.0	106.17	106.67	DC	13.18
8542462	213922	RICHMOND	PECO	214012	WANEETA3	PECO	1	PECO_P4_CHICH045/* \$ DELCO \$ PECO_P4_CHICH045 \$ STBK	breaker	1180.0	106.16	106.67	DC	13.18
8542176	214206	RICHRE29	PECO	213922	RICHMOND	PECO	1	PECO_P2-2_CHI230B1/* \$ DELCO \$ PECO_P2-2_CHI230B1 \$ B	bus	1336.0	105.34	105.8	DC	13.67
8542464	214206	RICHRE29	PECO	213922	RICHMOND	PECO	1	PECO_P4_CHICH045/* \$ DELCO \$ PECO_P4_CHICH045 \$ STBK	breaker	1336.0	105.32	105.79	DC	13.67
8543059	219100	NEWFRDM	PSE&G	219704	HILLTOP_3	PSE&G	1	PS_P7-1_V2274+P2242_LT	tower	740.0	122.64	123.1	DC	7.54
8543060	219100	NEWFRDM	PSE&G	219704	HILLTOP_3	PSE&G	1	AE_P7-1 W2275_O2241	tower	740.0	116.59	117.06	DC	7.57
8542175	219125	CAMDEN	PSE&G	214206	RICHRE29	PECO	1	PECO_P2-2_CHI230B1/* \$ DELCO \$ PECO_P2-2_CHI230B1 \$ B	bus	1336.0	105.35	105.82	DC	13.67
8542463	219125	CAMDEN	PSE&G	214206	RICHRE29	PECO	1	PECO_P4_CHICH045/* \$ DELCO \$ PECO_P4_CHICH045 \$ STBK	breaker	1336.0	105.34	105.8	DC	13.67
8542936	227900	CARDIFF	AE	219100	NEWFRDM	PSE&G	1	JC-P7-1-JCC-230-13	tower	692.0	179.88	184.29	DC	30.53
8542937	227900	CARDIFF	AE	219100	NEWFRDM	PSE&G	1	AE_P7-1 AE13TOWER	tower	692.0	154.8	159.73	DC	34.1
8542997	228110	BLE	AE	228197	MERION	AE	1	AE_P7-1 AE5TOWER	tower	482.0	119.79	120.26	DC	4.97
8542611	228502	MNOTLA 1	AE	228500	LANDIS	AE	1	Base Case	single	230.0	143.14	144.52	DC	3.19
8542612	228502	MNOTLA 1	AE	228500	LANDIS	AE	1	AE_P1-2 OY CK-CEDAR	single	286.0	133.31	134.78	DC	4.21
8542924	228502	MNOTLA 1	AE	228500	LANDIS	AE	1	AE_P7-1 AE6TOWER	tower	286.0	193.2	194.16	DC	6.09
8542925	228502	MNOTLA 1	AE	228500	LANDIS	AE	1	JC-P7-1-JCC-230-13	tower	286.0	180.74	181.82	DC	6.84
8542636	228503	MNOTLA 2	AE	228502	MNOTLA 1	AE	1	AE_P1-2 OY CK-CEDAR	single	311.0	124.33	125.68	DC	4.21
8542637	228503	MNOTLA 2	AE	228502	MNOTLA 1	AE	1	AE_P1-2 CARD-CEDAR-B	single	311.0	124.19	125.44	DC	3.9
8542639	228503	MNOTLA 2	AE	228502	MNOTLA 1	AE	1	Base Case	single	311.0	107.63	108.65	DC	3.19
8542950	228503	MNOTLA 2	AE	228502	MNOTLA 1	AE	1	AE_P7-1 AE6TOWER	tower	311.0	177.68	178.57	DC	6.09
8542951	228503	MNOTLA 2	AE	228502	MNOTLA 1	AE	1	JC-P7-1-JCC-230-13	tower	311.0	170.37	171.37	DC	6.84

Summer Peak Load Flow Analysis Reinforcements

System Reinforcements

(Upgrades required to mitigate reliability criteria violations, i.e. Network Impacts, initially caused by the addition of this project generation)

ID	Index	Facility	Upgrade Description	Cost
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ID	Index	Facility	Upgrade Description	Cost
8542462,8542174	9	RICHMOND 230.0 kV - WANEETA3 230.0 kV Ckt 1	<u>PECO</u> pe001 (678) : Change connection point for Chichester- Eddystone 220-36 line at Chichester from #1 bus to #2 kV bus Project Type : CON Cost : \$3,000,000 Time Estimate : 24.0 Months	\$3,000,000
8542464,8542176	10	RICHRE29 230.0 kV - RICHMOND 230.0 kV Ckt 1	<u>PECO</u> r_PS_AE2_FES_CamRich (730) : No Violation. PSEG emergency rating 1497 MVA. Project Type : FAC Cost : \$0 Time Estimate : 0.0 Months	
8542463,8542175	12	CAMDEN 230.0 kV - RICHRE29 230.0 kV Ckt 1		
8542936,8542937	13	CARDIFF 230.0 kV - NEWFRDM 230.0 kV Ckt 1	<u>AEC</u> at2310r0001 (42) : To mitigate the (ACE) Cardiff New Freedom 230 kV line (from bus 227900 to bus 219100 ckt 1) overload, it will require increasing the emergency rating of the Cardiff to New Freedom 230 kV line by rebuilding the circuit. The rebuild will include the installation of new poles, foundations, insulators, and conductor. Project Type : FAC Cost : \$63,200,000 Time Estimate : 36-60 Months as2310r0001 (43) : To mitigate the (ACE) Cardiff New Freedom 230 kV line (from bus 227900 to bus 219100 ckt 1) overload, it will require various terminal reinforcements are required at Cardiff. Project Type : FAC Cost : \$400,000 Time Estimate : 24-36 Months as2310r0002 (44) : To mitigate the (ACE) Cardiff New Freedom 230 kV line (from bus 227900 to bus 219100 ckt 1) overload, it will require various terminal reinforcements at Cardiff. Project Type : FAC Cost : \$600,000 Time Estimate : 24-36 Months as2310r0003 (45) : To mitigate the (ACE) Cardiff New Freedom 230 kV line (from bus 227900 to bus 219100 ckt 1) overload, it will require various terminal reinforcements at Cardiff. Project Type : FAC Cost : \$600,000 Time Estimate : 24-36 Months <u>PSEG</u> r_PS_AE2_FES_09_Nfreed (751) : Replace Line Drops Project Type : FAC Cost : \$88,298 Time Estimate : 1.0 Months	\$64,888,298

ID	Index	Facility	Upgrade Description	Cost
8542997	15	BLE 138.0 kV - MERION 138.0 kV Ckt 1	<p>AEC at1401r0001 (25) : To mitigate the (ACE) B.L. England Merion 138 kV line (from bus 228110 to bus 228197 ckt 1) overload, it will require increasing the emergency rating of the B.L. England to Merion 138 kV line by rebuilding the circuit. The rebuild will include the installation of new poles, foundations, insulators, and conductor. In addition, various terminal reinforcements are required at both B.L. England and Merion. Project Type : FAC Cost : \$12,500,000 Time Estimate : 36-60 Months</p> <p>at1401r0002 (26) : To mitigate the (ACE) B.L. England Merion 138 kV line (from bus 228110 to bus 228197 ckt 1) overload, it will require increasing the emergency rating of the B.L. England to Merion 138 kV line by rebuilding the circuit. The rebuild will include the installation of new poles, foundations, insulators, and conductor. In addition, various terminal reinforcements are required at both B.L. England and Merion. Project Type : FAC Cost : \$11,900,000 Time Estimate : 36-60 Months</p>	\$24,400,000
8542250	7	28LAKEWOOD 230.0 kV - 28LARRABEE 230.0 kV Ckt 2	<p>JCPL JCP&L-020H (646) : Reconductor existing sections of 1590 ACSR 45/7 Miscellaneous TDL (MTDL).</p> <p>Reconductor existing section of 1590 ACSR 45/7 with 1590 ACSS 45/7.</p> <p>Replace 1600 Amp Generic Z2026 LN and 2000 Amp CL Price V2-CA Z2026_LB Disconnect Switches.</p> <p>Replace 2000 Amp Generic Wave Trap.</p> <p>Replace 10 Amp Bitronics ZA-50C C, DFR B12 A, and Meter B12 A Meters .</p> <p>All new terminal equipment and conductors should be rated above 1611 MVA (Rate B). Project Type : FAC Cost : \$20,280,000 Time Estimate : 24.0 Months</p>	\$20,280,000

ID	Index	Facility	Upgrade Description	Cost
8542525	3	28OYSTER C 230.0 kV - 28MANITOU 230.0 kV Ckt 1	<p><u>JCPL</u> JCP&L-008D (583) : Reconductor existing sections of 1590 ACSR 45/7 Miscellaneous TDL (MTDL) with 1590 ACSS 45/7.</p> <p>Reconductor existing sections of 1590 ACSR 45/7 with 1590 ACSS 45/7.</p> <p>Replace 10 Amp DFR (Older) (2 total), KD-10 (0.7), KD-4 (0.73) (3 total), IRQ, and KD-41 (0.7) Relays .</p> <p>Replace 10 Amp Meters.</p> <p>All new terminal equipment should be rated above 1004 MVA (Rate B). Project Type : FAC Cost : \$43,875,000 Time Estimate : 36.0 Months</p>	\$43,875,000
8542547	4	28OYSTER C 230.0 kV - 28MANITOU 230.0 kV Ckt 2	<p><u>JCPL</u> JCP&L-009C (587) : Reconductor existing sections of 1590 ACSR 45/7 with 1590 ACSS 45/7.</p> <p>Replace Generic 2000 Amp Wave Traps.</p> <p>Replace 10 Amp Meters.</p> <p>Replace 10 Amp KD-10 (0.7), DFR (Older) (2 Total), KD-4 (0.73) (3 Total), and KD-41 (0.7) Relays.</p> <p>Replace Generic 2000 Amp Disconnect Switch.</p> <p>All new terminal equipment should be rated above 1004 MVA (Rate B). Project Type : FAC Cost : \$44,005,000 Time Estimate : 36.0 Months</p>	\$44,005,000

ID	Index	Facility	Upgrade Description	Cost
8542942,8542941	2	28MANITOU 230.0 kV - 28WHITINGS 230.0 kV Ckt 1	<p><u>JCPL</u> JCP&L-0070 (578) : Reconductor existing sections of 1590 ACSR 45/7 Miscellaneous TDL (MTDL).</p> <p>Reconductor existing sections of 1590 ACSR 45/7.</p> <p>Replace 2000 Amp Generic Wave Trap.</p> <p>Replace 10 Amp DFR (Older) VN a Relay.</p> <p>Replace 10 Amp BV B Meter.</p> <p>Replace Generic 2000 Amp Circuit Breaker.</p> <p>Replace Generic 2000 Amp Disconnect Switches.</p> <p>Replace 15215, 15219, 15220, and 15221 1200 Amp Current Transformers.</p> <p>Replace PM174 15 Amp Meters.</p> <p>Replace SEL501, SEL421, and SEL411L 15 Amp Relays.</p> <p>All new terminal equipment and conductors should be rated above 1504 MVA (Rate B). Project Type : FAC Cost : \$35,425,000 Time Estimate : 30.0 Months</p>	\$35,425,000
8542994,8542993	5	28VANHISVL 230.0 kV - 28LARRABEE 230.0 kV Ckt 1	<p><u>JCPL</u> JCP&L-018M (625) : Reconductor existing section of 1590 ACSR 45/7 with 1590 ACSS 45/7.</p> <p>Replace 2000 Amp Generic Wave Trap.</p> <p>Replace 10 Amp DFR and KD-4 Relay Thermal.</p> <p>Replace 10 Amp Meter Thermal.</p> <p>Replace KD4, 321(Z4P-PR) Impedance Relay.</p> <p>Replace 39034 1200 Amp Circuit Breaker.</p> <p>All new terminal equipment should be rated above 1315 MVA (Rate B). Project Type : FAC Cost : \$29,900,000 Time Estimate : 30.0 Months</p>	\$29,900,000

ID	Index	Facility	Upgrade Description	Cost
8542970,8542971	6	28WHITINGS 230.0 kV - 28MANCHSTR 230.0 kV Ckt 1	<p><u>JCPL</u> JCP&L-019L (638) : Reconductor existing section of 1590 ACSR 45/7.</p> <p>Replace 2000 Amp Generic Wave Trap.</p> <p>Replace 10 Amp W/V XDUC, DFR Meter S.</p> <p>Replace SEL-321 Z2, SEL-321 Z3, SEL-321 Z4 Impedance Relays.</p> <p>Replace 2000 Amp MITSUBISHI Circuit Breaker.</p> <p>Reconductor existing section of 2.5 SPS AL PIPE.</p> <p>Replace 2000 Amp Generic and SS Disconnect Switch.</p> <p>All new terminal equipment and conductors should be rated above 1414 MVA (Rate B). Project Type : FAC Cost : \$50,440,000 Time Estimate : 36.0 Months</p>	\$50,440,000
8542950,8542951,8542637,8542636,8542639	17	MNOTLA 2 138.0 kV - MNOTLA 1 138.0 kV Ckt 1	<p><u>AEC</u> asminotolar0001 (17) : To mitigate the (AE - AE) MNOTLA 2-MNOTLA 1 138 kV line (from bus 228503 to bus 228502 ckt 1) overload will require substation reinforcements at Minotola Substation. Project Type : FAC Cost : \$1,300,000 Time Estimate : 18.0 Months</p>	\$1,300,000
8543059,8543060	11	NEWFRDM 230.0 kV - HILLTOP_3 230.0 kV Ckt 1	<p><u>PSEG</u> r_PS_AE2_FES_11_NFreedHill (753) : Wreck and Rebuild Project Type : FAC Cost : \$76,885,198 Time Estimate : 55.0 Months</p>	\$76,885,198
8542984,8542983	8	28MANCHSTR 230.0 kV - 28VANHISVL 230.0 kV Ckt 1	<p><u>JCPL</u> JCP&L-024I (662) : Reconductor existing section of 1590 ACSR 45/7 with 1590 ACSS 45/7.</p> <p>Reconductor existing section of 2.5 SPS AL PIPE with 1590 ACSS 45/7.</p> <p>Replace 2000 Amp SS Disconnect Switch.</p> <p>All new terminal equipment and conductors should be rated above 1399 MVA (Rate B). Project Type : FAC Cost : \$23,660,000 Time Estimate : 24.0 Months</p>	\$23,660,000

ID	Index	Facility	Upgrade Description	Cost
8542612,8542611,8542925,8542924	16	MNOTLA 1 138.0 kV - LANDIS 138.0 kV Ckt 1	<p>AEC at1409r0001 (54) : To mitigate the (AE - AE) MNOTLA 1-LANDIS 138 kV line (from bus 228502 to bus 228500 ckt 1) overload will include rebuilding the Minotola to Landis 138 kV transmission line. Also, upgrades to the terminals at Minotola and Landis Substation will be required.</p> <p>Project Type : FAC Cost : \$12,800,000 Time Estimate : 36-48 Months</p>	\$12,800,000
			TOTAL COST	\$430,858,496

Steady-State Voltage Requirements

To be performed during later study phases as required.

Short Circuit

No issues identified.

Stability and Reactive Power Requirement

To be performed during later study phase.

Light Load Analysis - 2022

To be performed during later study phases (as required by PJM Manual 14B).

Delivery of Energy Portion of Interconnection Request

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. Only the most severely overloaded conditions are listed. 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 will 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
8542724	206295	28LEISUR D	JCP&L	206323	28LAKEWOOD	JCP&L	1	JC-P1-2-JCC-230-020	operation	869.0	132.92	134.2	DC	11.11
8542649	206296	28LEISUR U	JCP&L	206323	28LAKEWOOD	JCP&L	1	JC-P1-2-JCC-230-019	operation	817.0	150.29	151.65	DC	11.05

ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC DC	MW IMPACT
8542614	206297	28MANITOU	JCP&L	206296	28LEISUR U	JCP&L	1	JC-P1-2-JCC-230-019	operation	817.0	164.65	166.02	DC	11.22
8542619	206297	28MANITOU	JCP&L	206296	28LEISUR U	JCP&L	1	Base Case	operation	650.0	112.08	112.53	DC	6.53
8542620	206297	28MANITOU	JCP&L	206295	28LEISUR D	JCP&L	1	JC-P1-2-JCC-230-020	operation	817.0	164.01	165.38	DC	11.22
8542625	206297	28MANITOU	JCP&L	206295	28LEISUR D	JCP&L	1	Base Case	operation	650.0	112.88	113.33	DC	6.53
8542520	206302	28OYSTER C	JCP&L	206297	28MANITOU	JCP&L	1	JC-P1-2-JCC-230-022	operation	817.0	259.51	261.34	DC	14.96
8542522	206302	28OYSTER C	JCP&L	206297	28MANITOU	JCP&L	1	Base Case	operation	650.0	175.53	176.78	DC	8.07
8542542	206302	28OYSTER C	JCP&L	206297	28MANITOU	JCP&L	2	JC-P1-2-JCC-230-021	operation	869.0	244.04	245.76	DC	14.96
8542544	206302	28OYSTER C	JCP&L	206297	28MANITOU	JCP&L	2	Base Case	operation	709.0	161.14	162.28	DC	8.08
8542565	206323	28LAKEWOOD	JCP&L	206294	28LARRABEE	JCP&L	2	JC-P1-2-JCC-230-014	operation	817.0	195.33	196.75	DC	11.59
8542597	206323	28LAKEWOOD	JCP&L	206294	28LARRABEE	JCP&L	1	JC-P1-2-JCC-230-013	operation	869.0	184.83	186.16	DC	11.59
8542855	213922	RICHMOND	PECO	214012	WANEETA3	PECO	1	Base Case	operation	760.0	102.95	103.65	DC	11.79
8542640	227900	CARDIFF	AE	219100	NEWFRDM	PSE&G	1	AE_P1-2 OY CK-CEDAR	operation	692.0	153.02	157.53	DC	31.24
8542645	227900	CARDIFF	AE	219100	NEWFRDM	PSE&G	1	Base Case	operation	650.0	108.54	112.26	DC	24.17
8542548	227955	CEDAR	AE	206302	28OYSTER C	JCP&L	1	Base Case	operation	464.0	236.05	239.58	DC	16.36
8542800	228110	BLE	AE	228197	MERION	AE	1	AE_P1-2 ENG-CORSON	operation	482.0	118.64	119.11	DC	4.96
8542853	228110	BLE	AE	228111	MDLE TP	AE	1	AE_P1-2 MERION-CORSN	operation	482.0	106.32	106.79	DC	5.04
8542723	228111	MDLE TP	AE	228107	CORSON 2	AE	1	AE_P1-2 MERION-CORSN	operation	315.0	134.04	134.76	DC	5.0
8542854	228197	MERION	AE	228106	CORSON 1	AE	1	AE_P1-2 ENG-CORSON	operation	478.0	105.48	105.95	DC	4.97
8542608	228502	MNOTLA 1	AE	228500	LANDIS	AE	1	Base Case	operation	230.0	180.52	181.56	DC	5.32
8542609	228502	MNOTLA 1	AE	228500	LANDIS	AE	1	AE_P1-2 OY CK-CEDAR	operation	286.0	166.7	167.8	DC	7.01
8542632	228503	MNOTLA 2	AE	228502	MNOTLA 1	AE	1	AE_P1-2 OY CK-CEDAR	operation	311.0	157.54	158.56	DC	7.01
8542635	228503	MNOTLA 2	AE	228502	MNOTLA 1	AE	1	Base Case	operation	311.0	133.59	134.36	DC	5.32
8542572	940360	AE2-020 TAP	AE	227955	CEDAR	AE	1	Base Case	operation	650.0	184.52	186.88	DC	15.32

Atlantic City Electric Costs

Cost estimates will further be refined as a part of the Impact Study and Facilities Study for this project. The Interconnection Customer will be responsible for all costs incurred by ACE in connection with the AE2-314 project.

Secondary Point of Interconnection

PJM studied the AE2-314 project into the Atlantic City Electric Company (ACE) system at a tap of the Cardiff (PSSE bus # 227900) to Cedar (PSSE bus #227955) 230 kV circuit and evaluated it for compliance with reliability criteria for summer peak conditions in 2022.

Summer Peak Analysis - 2022

Transmission Network Impacts

Potential transmission network impacts are as follows:

Generator Deliverability

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

None

Multiple Facility Contingency

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

None

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	C K T ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC D C	MW IMPACT
8542941	206297	28MANITOU	JCP&L	206319	28WHITINGS	JCP&L	1	JC-P7-1-JCC-230-10A	tower	817.0	193.0	194.32	DC	10.76
8542942	206297	28MANITOU	JCP&L	206319	28WHITINGS	JCP&L	1	JC-P7-1-JCC-230-12	tower	817.0	190.33	191.75	DC	11.54
8542525	206302	28OYSTER C	JCP&L	206297	28MANITOU	JCP&L	1	JC-P1-2-JCC-230-022	single	817.0	117.95	119.05	DC	8.98
8542547	206302	28OYSTER C	JCP&L	206297	28MANITOU	JCP&L	2	JC-P1-2-JCC-230-021	single	869.0	110.91	111.94	DC	8.98
8542993	206318	28VANHISVL	JCP&L	206294	28LARABEE	JCP&L	1	JC-P7-1-JCC-230-10A	tower	869.0	164.76	165.91	DC	10.03
8542994	206318	28VANHISVL	JCP&L	206294	28LARABEE	JCP&L	1	JC-P7-1-JCC-230-12	tower	869.0	164.61	165.83	DC	10.6
8542970	206319	28WHITINGS	JCP&L	206720	28MANCHSTR	JCP&L	1	JC-P7-1-JCC-230-10A	tower	869.0	171.18	172.42	DC	10.77
8542971	206319	28WHITINGS	JCP&L	206720	28MANCHSTR	JCP&L	1	JC-P7-1-JCC-230-12	tower	869.0	165.96	167.27	DC	11.41
8542250	206323	28LAKEWOOD	JCP&L	206294	28LARABEE	JCP&L	2	JC-P2-3-JCC-230-13D	breaker	817.0	208.24	209.66	DC	11.59
8542983	206720	28MANCHSTR	JCP&L	206318	28VANHISVL	JCP&L	1	JC-P7-1-JCC-230-10A	tower	869.0	169.45	170.69	DC	10.77
8542984	206720	28MANCHSTR	JCP&L	206318	28VANHISVL	JCP&L	1	JC-P7-1-JCC-230-12	tower	869.0	164.22	165.53	DC	11.41

ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	C K T ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC D C	MW IMPACT
8542174	213922	RICHMOND	PECO	214012	WANE ETA3	PECO	1	PECO_P2-2_CHI230B1/* \$ DELCO \$ PECO_P2-2_CHI230B1 \$ B	bus	1180.0	118.57	119.07	DC	13.18
8542462	213922	RICHMOND	PECO	214012	WANE ETA3	PECO	1	PECO_P4_CH ICH045/* \$ DELCO \$ PECO_P4_CH ICH045 \$ STBK	breaker	1180.0	118.56	119.06	DC	13.18
14339015	213922	RICHMOND	PECO	214012	WANE ETA3	PECO	1	PECO_P4_PE ACH215/* \$ CHESCO \$ PECO_P4_PE ACH215 \$ STBK	breaker	1180.0	105.05	105.63	DC	15.3
14338791	214010	WANEETA2	PECO	213817	N PHILA	PECO	1	PECO_P2-2_CHI230B1/* \$ DELCO \$ PECO_P2-2_CHI230B1 \$ B	bus	621.0	106.77	107.27	DC	6.83
14339085	214010	WANEETA2	PECO	213817	N PHILA	PECO	1	PECO_P4_CH ICH045/* \$ DELCO \$ PECO_P4_CH ICH045 \$ STBK	breaker	621.0	106.72	107.22	DC	6.83
8542176	214206	RICHRE29	PECO	213922	RICHM OND	PECO	1	PECO_P2-2_CHI230B1/* \$ DELCO \$ PECO_P2-2_CHI230B1 \$ B	bus	1336.0	116.93	117.4	DC	13.67
8542464	214206	RICHRE29	PECO	213922	RICHM OND	PECO	1	PECO_P4_CH ICH045/* \$ DELCO \$ PECO_P4_CH ICH045 \$ STBK	breaker	1336.0	116.91	117.38	DC	13.67
14339023	214206	RICHRE29	PECO	213922	RICHM OND	PECO	1	PECO_P4_PE ACH215/* \$ CHESCO \$ PECO_P4_PE ACH215 \$ STBK	breaker	1336.0	104.81	105.36	DC	15.95
8542175	219125	CAMDEN	PSE&G	214206	RICHR E29	PECO	1	PECO_P2-2_CHI230B1/* \$ DELCO \$ PECO_P2-2_CHI230B1 \$ B	bus	1336.0	116.94	117.41	DC	13.67
8542463	219125	CAMDEN	PSE&G	214206	RICHR E29	PECO	1	PECO_P4_CH ICH045/* \$ DELCO \$ PECO_P4_CH ICH045 \$ STBK	breaker	1336.0	116.93	117.4	DC	13.67
14339018	219125	CAMDEN	PSE&G	214206	RICHR E29	PECO	1	PECO_P4_PE ACH215/* \$ CHESCO \$ PECO_P4_PE ACH215 \$ STBK	breaker	1336.0	104.83	105.37	DC	15.95
8542936	227900	CARDIFF	AE	219100	NEWF RDM	PSE&G	1	JC-P7-1-JCC-230-13	tower	692.0	308.74	313.15	DC	30.53

ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	C K T ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC D C	MW IMPACT
8542937	227900	CARDIFF	AE	219100	NEWRDM	PSE&G	1	AE_P7-1 AE13TOWER	tower	692.0	305.65	310.57	DC	34.1
14338847	227900	CARDIFF	AE	227955	CEDAR	AE	1	AE_P4-2 AE7	breaker	805.0	204.36	207.16	DC	22.58
14338848	227900	CARDIFF	AE	227955	CEDAR	AE	1	AE_P4-2 AE6	breaker	805.0	204.34	207.15	DC	22.58
14338919	227900	CARDIFF	AE	228002	ORCHARD	AE	1	AE_P4-2 AE7	breaker	906.0	151.92	154.37	DC	26.75
14338920	227900	CARDIFF	AE	228002	ORCHARD	AE	1	AE_P4-2 AE6	breaker	906.0	151.89	154.35	DC	26.75
14338955	227900	CARDIFF	AE	227913	CARDIFF	AE	1	AE_P4-2 AE9	breaker	425.0	135.85	138.57	DC	11.8
14338956	227900	CARDIFF	AE	227913	CARDIFF	AE	1	AE_P4-2 AE7	breaker	425.0	108.58	110.74	DC	9.17
14338957	227900	CARDIFF	AE	227913	CARDIFF	AE	1	AE_P4-2 AE6	breaker	425.0	108.42	110.57	DC	9.16
14339072	227900	CARDIFF	AE	227934	CARDIFF2	AE	1	AE_P4-2 AE7	breaker	425.0	108.17	110.32	DC	9.14
14339073	227900	CARDIFF	AE	227934	CARDIFF2	AE	1	AE_P4-2 AE6	breaker	425.0	108.0	110.15	DC	9.13
14339609	227900	CARDIFF	AE	227934	CARDIFF2	AE	1	AE_P7-1 AE3TOWER	tower	425.0	148.37	150.95	DC	10.95
14338960	227902	LEWIS #1	AE	227949	LEWIS #3	AE	1	AE_P4-2 AE7	breaker	478.0	135.28	137.17	DC	9.04
14338961	227902	LEWIS #1	AE	227949	LEWIS #3	AE	1	AE_P4-2 AE6	breaker	478.0	135.24	137.13	DC	9.03
14339636	227902	LEWIS #1	AE	227949	LEWIS #3	AE	1	PS_P7-1_R2244+M2213	tower	478.0	133.62	135.47	DC	8.82
14338994	227913	CARDIFF	AE	227902	LEWIS #1	AE	1	AE_P4-2 AE9	breaker	478.0	120.78	123.2	DC	11.8
14339642	227934	CARDIFF2	AE	227945	LEWIS #2	AE	1	AE_P7-1 AE3TOWER	tower	478.0	131.92	134.21	DC	10.95
14339587	227945	LEWIS #2	AE	227902	LEWIS #1	AE	1	AE_P7-1 AE3TOWER	tower	286.8	169.25	172.21	DC	8.49
8543076	227949	LEWIS #3	AE	227901	DOROTHY	AE	1	AE_P7-1 AE6TOWER	tower	205.0	149.97	151.31	DC	6.09
8543077	227949	LEWIS #3	AE	227901	DOROTHY	AE	1	JC-P7-1-JCC-230-13	tower	205.0	159.95	161.45	DC	6.84
8542232	227955	CEDAR	AE	206302	28OYSTERC	JCP&L	1	JC-P2-3-JCC-500-002D	breaker	564.0	293.56	296.54	DC	16.84
8542233	227955	CEDAR	AE	206302	28OYSTERC	JCP&L	1	JC-P2-3-JCC-500-002B	breaker	564.0	292.61	295.62	DC	16.95
8542553	227955	CEDAR	AE	206302	28OYSTERC	JCP&L	1	PECO_P1-2_5038/* \$ CHESCO \$ PECO_P1-2_5038 \$ L	single	564.0	115.68	117.49	DC	10.2
14339152	227955	CEDAR	AE	206302	28OYSTERC	JCP&L	1	Base Case	single	464.0	115.3	117.42	DC	9.81
8542997	228110	BLE	AE	228197	MERION	AE	1	AE_P7-1 AE5TOWER	tower	482.0	115.0	115.47	DC	4.97
14339705	228312	PEDRKTWN	AE	228313	BRIDG PRT	AE	1	AE_P7-1 AE10TOWER-A	tower	552.0	106.85	107.47	DC	7.5
14339706	228312	PEDRKTWN	AE	228313	BRIDG PRT	AE	1	AE_P7-1 AE8TOWER	tower	552.0	106.16	106.78	DC	7.5
8542611	228502	MNOTLA 1	AE	228500	LANDIS	AE	1	Base Case	single	230.0	160.45	161.84	DC	3.19
8542612	228502	MNOTLA 1	AE	228500	LANDIS	AE	1	AE_P1-2 OYCK-CEDAR	single	286.0	152.34	153.81	DC	4.21
8542924	228502	MNOTLA 1	AE	228500	LANDIS	AE	1	AE_P7-1 AE6TOWER	tower	286.0	219.6	220.56	DC	6.09
8542925	228502	MNOTLA 1	AE	228500	LANDIS	AE	1	JC-P7-1-JCC-230-13	tower	286.0	222.48	223.55	DC	6.84
8542636	228503	MNOTLA 2	AE	228502	MNOTLA 1	AE	1	AE_P1-2 OYCK-CEDAR	single	311.0	141.83	143.18	DC	4.21

ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC DC	MW IMPACT
8542639	228503	MNOTLA 2	AE	228502	MNOT LA 1	AE	1	Base Case	single	311.0	120.43	121.46	DC	3.19
8542950	228503	MNOTLA 2	AE	228502	MNOT LA 1	AE	1	AE_P7-1 AE6TOWER	tower	311.0	202.0	202.89	DC	6.09
8542951	228503	MNOTLA 2	AE	228502	MNOT LA 1	AE	1	JC-P7-1-JCC-230-13	tower	311.0	208.81	209.8	DC	6.84
14339199	228503	MNOTLA 2	AE	228502	MNOT LA 1	AE	1	AE_P1-2 CARD-CEDAR	single	311.0	138.27	139.52	DC	3.9

Delivery of Energy Portion of Interconnection Request

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. Only the most severely overloaded conditions are listed. 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 will 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
8542724	206295	28LEISUR D	JCP&L	206323	28LAKEWOOD	JCP&L	1	JC-P1-2-JCC-230-020	operation	869.0	144.96	146.24	DC	11.11
8542649	206296	28LEISUR U	JCP&L	206323	28LAKEWOOD	JCP&L	1	JC-P1-2-JCC-230-019	operation	817.0	162.84	164.19	DC	11.05
8542614	206297	28MANITOU	JCP&L	206296	28LEISUR U	JCP&L	1	JC-P1-2-JCC-230-019	operation	817.0	177.15	178.52	DC	11.22
8542620	206297	28MANITOU	JCP&L	206295	28LEISUR D	JCP&L	1	JC-P1-2-JCC-230-020	operation	817.0	176.5	177.88	DC	11.22
8542520	206302	28OYSTER C	JCP&L	206297	28MANITOU	JCP&L	1	JC-P1-2-JCC-230-022	operation	817.0	274.81	276.64	DC	14.96
8542522	206302	28OYSTER C	JCP&L	206297	28MANITOU	JCP&L	1	Base Case	operation	650.0	185.92	187.16	DC	8.07
8542542	206302	28OYSTER C	JCP&L	206297	28MANITOU	JCP&L	2	JC-P1-2-JCC-230-021	operation	869.0	258.41	260.14	DC	14.96
8542544	206302	28OYSTER C	JCP&L	206297	28MANITOU	JCP&L	2	Base Case	operation	709.0	170.65	171.79	DC	8.08
8542565	206323	28LAKEWOOD	JCP&L	206294	28LARRABEE	JCP&L	2	JC-P1-2-JCC-230-014	operation	817.0	207.87	209.29	DC	11.59
8542597	206323	28LAKEWOOD	JCP&L	206294	28LARRABEE	JCP&L	1	JC-P1-2-JCC-230-013	operation	869.0	196.62	197.95	DC	11.59
8542855	213922	RICHMOND	PECO	214012	WANEETA3	PECO	1	Base Case	operation	760.0	120.03	120.73	DC	11.79
14339386	213922	RICHMOND	PECO	214012	WANEETA3	PECO	1	PECO_P1-2_5014/* \$ CHESCO \$ PECO_P1-2_5014 \$ L	operation	1180.0	102.05	102.63	DC	15.3

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
14339514	214206	RICHRE29	PECO	213922	RICHMOND	PECO	1	PECO_P1-2_5014/* \$ CHESCO \$ PECO_P1-2_5014 \$ L	operation	1336.0	102.4	102.95	DC	15.95
14339510	219125	CAMDEN	PSE&G	214206	RICHRE29	PECO	1	PECO_P1-2_5014/* \$ CHESCO \$ PECO_P1-2_5014 \$ L	operation	1336.0	102.42	102.96	DC	15.95
8542640	227900	CARDIFF	AE	219100	NEWFRDM	PSE&G	1	AE_P1-2 OY CK- CEDAR	operation	692.0	286.35	290.87	DC	31.24
8542645	227900	CARDIFF	AE	219100	NEWFRDM	PSE&G	1	Base Case	operation	650.0	221.31	225.03	DC	24.17
14339187	227900	CARDIFF	AE	227955	CEDAR	AE	1	PS_P1-2_2310A	operation	805.0	203.76	206.54	DC	22.38
14339188	227900	CARDIFF	AE	227955	CEDAR	AE	1	Base Case	operation	650.0	195.5	197.86	DC	15.32
14339273	227900	CARDIFF	AE	228002	ORCHARD	AE	1	PS_P1-2_2310A	operation	906.0	150.93	153.36	DC	26.48
14339276	227900	CARDIFF	AE	228002	ORCHARD	AE	1	Base Case	operation	748.0	112.95	114.64	DC	17.42
14339481	227900	CARDIFF	AE	227913	CARDIFF	AE	1	AE_P1-3 CARD 7 XFR	operation	425.0	107.92	109.84	DC	8.16
14339485	227900	CARDIFF	AE	227934	CARDIFF2	AE	1	AE_P1-3 CARD 6 XFR	operation	425.0	107.7	109.62	DC	8.14
14339486	227900	CARDIFF	AE	227934	CARDIFF2	AE	1	AE_P1-2 CARD- LEW1	operation	425.0	107.7	109.62	DC	8.14
14339306	227902	LEWIS #1	AE	227949	LEWIS #3	AE	1	PS_P1-2_2310A	operation	478.0	133.51	135.35	DC	8.83
14339281	227949	LEWIS #3	AE	227901	DOROTHY	AE	1	AE_P1-2 OY CK- CEDAR	operation	205.0	148.28	149.82	DC	7.01
14339284	227949	LEWIS #3	AE	227901	DOROTHY	AE	1	Base Case	operation	154.0	132.34	133.89	DC	5.32
8542548	227955	CEDAR	AE	206302	28OYSTER C	JCP&L	1	Base Case	operation	464.0	322.18	325.71	DC	16.36
8542550	227955	CEDAR	AE	206302	28OYSTER C	JCP&L	1	PECO_P1-2_5038/* \$ CHESCO \$ PECO_P1-2_5038 \$ L	operation	564.0	292.45	295.47	DC	16.99
8542800	228110	BLE	AE	228197	MERION	AE	1	AE_P1-2 ENG- CORSON	operation	482.0	113.86	114.33	DC	4.96
8542853	228110	BLE	AE	228111	MDLE TP	AE	1	AE_P1-2 MERION- CORSN	operation	482.0	101.47	101.94	DC	5.04
8542723	228111	MDLE TP	AE	228107	CORSON 2	AE	1	AE_P1-2 MERION- CORSN	operation	315.0	126.98	127.7	DC	5.0
8542854	228197	MERION	AE	228106	CORSON 1	AE	1	AE_P1-2 ENG- CORSON	operation	478.0	100.65	101.12	DC	4.97
14339502	228312	PEDRKTWN	AE	228313	BRIDGPRT	AE	1	AE_P1-2 ORCHARD XF	operation	552.0	105.08	106.09	DC	12.28
14339410	228500	LANDIS	AE	228404	MONROE	AE	1	AE_P1-2 FRNK- LAND-A	operation	331.0	109.79	110.32	DC	3.89
14339480	228500	LANDIS	AE	943080	AE2-335 TAP	AE	1	AE_P1-2 MONROE- LANDIS_1	operation	331.0	110.33	110.86	DC	3.89

ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC DC	MW IMPACT
8542608	228502	MNOTLA 1	AE	228500	LANDIS	AE	1	Base Case	operation	230.0	225.79	226.84	DC	5.32
8542609	228502	MNOTLA 1	AE	228500	LANDIS	AE	1	AE_P1-2 OY CK- CEDAR	operation	286.0	215.0	216.1	DC	7.01
8542632	228503	MNOTLA 2	AE	228502	MNOTLA 1	AE	1	AE_P1-2 OY CK- CEDAR	operation	311.0	201.32	202.34	DC	7.01
8542635	228503	MNOTLA 2	AE	228502	MNOTLA 1	AE	1	Base Case	operation	311.0	167.08	167.85	DC	5.32

Primary POI 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.

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ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC DC	MW IMPACT
8542941	206297	28MANITOU	JCP&L	206319	28WHITINGS	JCP&L	1	JC-P7- 1-JCC- 230- 10A	tower	817.0	182.68	184.0	DC	10.76

Bus #	Bus	MW Impact
206280	28LAKEHURS	0.25
206306	28LKWD G1	5.65
206308	28LKWD G2	5.65
206312	28LKWD G3	3.48
206325	28O C GEN	312.75
206360	28O CRK C1	2.1
206361	28O CRK C2	1.18
206366	28LKWD CT1	10.71
206367	28LKWD CT2	10.71
227801	ONTC&DCT	5.25
227842	MARINGEN	0.06
227843	MARINGEN E	0.54
227927	V4-067C	0.02
227928	V4-067E	0.23
228014	PVILLEG	0.07
292063	V1-021 E	0.03

Bus #	Bus	MW Impact
293404	V3-036	0.75
902432	W2-030 E	0.83
915022	Y3-012 E	1.02
924701	AB2-122 C	0.1
924702	AB2-122 E	0.17
930001	AB1-001 C	0.01
930002	AB1-001 E	0.2
930891	AB1-138 C	0.52
930892	AB1-138 E	0.87
933962	AD1-019 E	1.03
934351	AD1-059	1.01
938781	AE1-104 C O1	15.62
938782	AE1-104 E O1	39.95
939121	AE1-142 C O1	3.93
939122	AE1-142 E O1	5.66
940161	AE2-000 C O1	116.48
940162	AE2-000 E O1	298.02
940361	AE2-020 C O1	27.13
940362	AE2-020 E O1	127.03
940371	AE2-021 C O1	27.13
940372	AE2-021 E O1	127.03
940381	AE2-022 C O1	15.83
940382	AE2-022 E O1	74.1
940391	AE2-023 C O1	8.78
940392	AE2-023 E O1	41.1
942101	AE2-222 C O1	11.63
942102	AE2-222 E O1	29.21
942201	AE2-232 C O1	57.09
942202	AE2-232 E O1	146.09
942941	AE2-314 C	6.45
942942	AE2-314 E	4.3
BLUEG	BLUEG	1.2
CALDERWOOD	CALDERWOOD	0.13
CANNELTON	CANNELTON	0.07
CARR	CARR	0.38
CATAWBA	CATAWBA	0.08
CHEOAH	CHEOAH	0.11
CHILHOWEE	CHILHOWEE	0.04
COFFEEN	COFFEEN	0.13
COTTONWOOD	COTTONWOOD	0.49
DUCKCREEK	DUCKCREEK	0.28
EDWARDS	EDWARDS	0.13
ELMERSMITH	ELMERSMITH	0.12
FARMERCITY	FARMERCITY	0.08
G-007	G-007	3.14
GIBSON	GIBSON	0.05
HAMLET	HAMLET	0.12
NEWTON	NEWTON	0.33
O-066	O-066	9.67
PRAIRIE	PRAIRIE	0.61
RENSSELAER	RENSSELAER	0.3
SANTEETLA	SANTEETLA	0.03

Bus #	Bus	MW Impact
SMITHLAND	SMITHLAND	0.05
TATANKA	TATANKA	0.15
TILTON	TILTON	0.15
TRIMBLE	TRIMBLE	0.13
TVA	TVA	0.41
UNIONPOWER	UNIONPOWER	0.18

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ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC DC	MW IMPACT
8542525	206302	28OYSTER C	JCP&L	206297	28MANITOU	JCP&L	1	JC-P1-2-JCC-230-022	single	817.0	121.62	122.72	DC	8.98

Bus #	Bus	MW Impact
206325	28O C GEN	425.09
206360	28O CRK C1	2.86
206361	28O CRK C2	1.61
227801	ONTC&DCT	7.33
227842	MARINGEN	0.09
227927	V4-067C	0.02
228014	PVILLEG	0.09
228201	CARL#2CT	0.24
228202	CUMB CT	0.69
228203	P06	0.73
228206	SHRMN CT	0.63
228251	CARLLS#4	0.03
228260	V4-054C	0.07
228702	WEST CT	0.28
228711	V2-041C	0.02
228717	S121	0.38
228727	W2-039G	0.69
292062	V1-021 C	0.03
902091	W1-130C	0.05
902431	W2-030 C	0.09
913341	Y1-077	8.57
924531	AB2-102 C	23.48
924701	AB2-122 C	0.14
930001	AB1-001 C	0.02
931191	AB1-169A	55.59
938311	AE1-046 C	0.2
938421	AE1-061 C	0.5
938781	AE1-104 C O1	21.94
939501	AE1-179 C O1	3.06
940001	AE1-240 C O1	2.55
940161	AE2-000 C O1	158.31
940361	AE2-020 C O1	37.23
940371	AE2-021 C O1	37.23
940381	AE2-022 C O1	21.72

Bus #	Bus	MW Impact
940391	AE2-023 C O1	12.33
940961	AE2-087 C	0.12
940963	AE2-087 BAT	0.08
941001	AE2-091 C O1	1.92
941121	AE2-106 C	0.13
941123	AE2-106 BAT	0.08
941931	AE2-205 C O1	4.88
942101	AE2-222 C O1	16.22
942201	AE2-232 C O1	77.6
942941	AE2-314 C	8.98
BLUEG	BLUEG	0.2
CALDERWOOD	CALDERWOOD	0.01
CANNELTON	CANNELTON	0.01
CARR	CARR	0.48
CATAWBA	CATAWBA	0.0
CHEOAH	CHEOAH	0.01
CHILHOWEE	CHILHOWEE	0.0
COFFEEN	COFFEEN	0.02
COTTONWOOD	COTTONWOOD	0.06
CPL	CPL	0.0
DUCKCREEK	DUCKCREEK	0.05
EDWARDS	EDWARDS	0.02
ELMERSMITH	ELMERSMITH	0.02
FARMERCITY	FARMERCITY	0.01
GIBSON	GIBSON	0.01
HAMLET	HAMLET	0.0
NEWTON	NEWTON	0.05
PRAIRIE	PRAIRIE	0.09
RENSELAER	RENSELAER	0.38
SANTEETLA	SANTEETLA	0.0
SMITHLAND	SMITHLAND	0.01
TATANKA	TATANKA	0.02
TILTON	TILTON	0.03
TRIMBLE	TRIMBLE	0.02
TVA	TVA	0.05
UNIONPOWER	UNIONPOWER	0.02

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ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC DC	MW IMPACT
8542547	206302	28OYSTER C	JCP&L	206297	28MANITOU	JCP&L	2	JC-P1-2-JCC-230-021	single	869.0	114.38	115.41	DC	8.98

Bus #	Bus	MW Impact
206325	28O C GEN	425.17
206360	28O CRK C1	2.86
206361	28O CRK C2	1.61
227801	ONTC&DCT	7.33

Bus #	Bus	MW Impact
227842	MARINGEN	0.09
227927	V4-067C	0.02
228014	PVILLEG	0.09
228201	CARL#2CT	0.24
228202	CUMB CT	0.69
228203	P06	0.73
228206	SHRMN CT	0.63
228251	CARLLS#4	0.03
228260	V4-054C	0.07
228702	WEST CT	0.28
228711	V2-041C	0.02
228717	S121	0.38
228727	W2-039G	0.69
292062	V1-021 C	0.03
902091	W1-130C	0.05
902431	W2-030 C	0.09
913341	Y1-077	8.57
924531	AB2-102 C	23.49
924701	AB2-122 C	0.14
930001	AB1-001 C	0.02
931191	AB1-169A	55.6
938311	AE1-046 C	0.2
938421	AE1-061 C	0.5
938781	AE1-104 C O1	21.94
939501	AE1-179 C O1	3.07
940001	AE1-240 C O1	2.55
940161	AE2-000 C O1	158.34
940361	AE2-020 C O1	37.24
940371	AE2-021 C O1	37.24
940381	AE2-022 C O1	21.72
940391	AE2-023 C O1	12.33
940961	AE2-087 C	0.12
940963	AE2-087 BAT	0.08
941001	AE2-091 C O1	1.92
941121	AE2-106 C	0.13
941123	AE2-106 BAT	0.08
941931	AE2-205 C O1	4.89
942101	AE2-222 C O1	16.23
942201	AE2-232 C O1	77.62
942941	AE2-314 C	8.98
BLUEG	BLUEG	0.2
CALDERWOOD	CALDERWOOD	0.01
CANNELTON	CANNELTON	0.01
CARR	CARR	0.48
CATAWBA	CATAWBA	0.0
CHEOAH	CHEOAH	0.01
CHILHOWEE	CHILHOWEE	0.0
COFFEEN	COFFEEN	0.02
COTTONWOOD	COTTONWOOD	0.06
CPL	CPL	0.0
DUCKCREEK	DUCKCREEK	0.05
EDWARDS	EDWARDS	0.02

Bus #	Bus	MW Impact
ELMERSMITH	ELMERSMITH	0.02
FARMERCITY	FARMERCITY	0.01
GIBSON	GIBSON	0.01
HAMLET	HAMLET	0.0
NEWTON	NEWTON	0.05
PRAIRIE	PRAIRIE	0.09
RENSSELAER	RENSSELAER	0.38
SANTEETLA	SANTEETLA	0.0
SMITHLAND	SMITHLAND	0.01
TATANKA	TATANKA	0.02
TILTON	TILTON	0.03
TRIMBLE	TRIMBLE	0.02
TVA	TVA	0.05
UNIONPOWER	UNIONPOWER	0.02

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ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC DC	MW IMPACT
8542993	206318	28VANHISVL	JCP&L	206294	28LARRABEE	JCP&L	1	JC-P7-1-JCC-230-10A	tower	869.0	150.03	151.19	DC	10.03

Bus #	Bus	MW Impact
206280	28LAKEHURS	0.47
206306	28LKWD G1	4.04
206308	28LKWD G2	4.04
206312	28LKWD G3	2.49
206325	28O C GEN	228.42
206360	28O CRK C1	1.54
206361	28O CRK C2	0.86
206366	28LKWD CT1	7.66
206367	28LKWD CT2	7.66
207207	28JCB_W1-129	0.07
207208	28JCB_W4-025	0.1
227801	ONTC&DCT	5.04
227842	MARINGEN	0.06
227843	MARINGEN E	0.52
227927	V4-067C	0.02
227928	V4-067E	0.22
228014	PVILLEG	0.06
292063	V1-021 E	0.03
292099	V1-030 E3	0.1
293404	V3-036	0.72
901981	W1-119 C	0.28
901982	W1-119 E	3.71
901991	W1-120C	2.53
901992	W1-120E	4.12
902082	W1-129E	1.0
902321	W2-019 C	0.09

Bus #	Bus	MW Impact
902322	W2-019 E	1.18
902432	W2-030 E	0.8
902691	W2-056 C	0.07
902692	W2-056 E	0.89
902842	W2-071E	0.18
902951	W2-082 C OP1	0.25
902952	W2-082 E OP1	3.39
903152	W2-102 E	0.55
904042	V4-005 E	0.23
904431	W3-124 C	0.02
904432	W3-124 E	0.24
905252	W4-025 E	1.42
905791	W4-103 C	0.04
905792	W4-103 E	0.6
907272	X1-085 E	0.34
912101	X4-015 C	0.07
912102	X4-015 E	1.0
913332	Y1-075 E	0.21
915022	Y3-012 E	0.98
917611	Z2-102 C	0.2
917612	Z2-102 E	2.71
917682	Z2-109 E	2.06
918452	AA1-060 E	4.89
919672	AA2-049 E	0.43
924701	AB2-122 C	0.09
924702	AB2-122 E	0.16
930001	AB1-001 C	0.01
930002	AB1-001 E	0.19
930102	AB1-025 E	0.54
930891	AB1-138 C	0.98
930892	AB1-138 E	1.63
931122	AB1-163 E	0.82
932361	AC2-050 C O1	0.42
932362	AC2-050 E O1	0.68
933962	AD1-019 E	0.99
934351	AD1-059	0.72
936541	AD2-069 C	0.21
936542	AD2-069 E	0.1
938781	AE1-104 C O1	15.87
938782	AE1-104 E O1	40.58
939121	AE1-142 C O1	3.22
939122	AE1-142 E O1	4.63
940161	AE2-000 C O1	85.07
940162	AE2-000 E O1	217.67
940311	AE2-015 C O1	1.07
940312	AE2-015 E O1	0.53
940361	AE2-020 C O1	22.09
940362	AE2-020 E O1	103.41
940371	AE2-021 C O1	22.09
940372	AE2-021 E O1	103.41
940381	AE2-022 C O1	12.88
940382	AE2-022 E O1	60.33

Bus #	Bus	MW Impact
940391	AE2-023 C O1	8.92
940392	AE2-023 E O1	41.75
940951	AE2-085 C	0.23
940952	AE2-085 E	0.22
941091	AE2-103 C	0.32
941092	AE2-103 E	0.45
941441	AE2-141 C	0.13
941442	AE2-141 E	0.2
942101	AE2-222 C O1	11.15
942102	AE2-222 E O1	28.02
942201	AE2-232 C O1	41.7
942202	AE2-232 E O1	106.7
942941	AE2-314 C	6.02
942942	AE2-314 E	4.01
BLUEG	BLUEG	0.91
CALDERWOOD	CALDERWOOD	0.08
CANNELTON	CANNELTON	0.05
CARR	CARR	0.96
CATAWBA	CATAWBA	0.04
CHEOAH	CHEOAH	0.08
CHILHOWEE	CHILHOWEE	0.03
COFFEEN	COFFEEN	0.1
COTTONWOOD	COTTONWOOD	0.34
DUCKCREEK	DUCKCREEK	0.21
EDWARDS	EDWARDS	0.1
ELMERSMITH	ELMERSMITH	0.09
FARMERCITY	FARMERCITY	0.06
G-007	G-007	9.97
GIBSON	GIBSON	0.04
HAMLET	HAMLET	0.07
NEWTON	NEWTON	0.25
O-066	O-066	25.98
PRAIRIE	PRAIRIE	0.45
RENSSELAER	RENSSELAER	0.76
SANTEETLA	SANTEETLA	0.02
SMITHLAND	SMITHLAND	0.04
TATANKA	TATANKA	0.11
TILTON	TILTON	0.12
TRIMBLE	TRIMBLE	0.1
TVA	TVA	0.28
UNIONPOWER	UNIONPOWER	0.12

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ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC DC	MW IMPACT
8542970	206319	28WHITINGS	JCP&L	206720	28MANCHSTR	JCP&L	1	JC-P7-1-JCC-230-10A	tower	869.0	161.45	162.69	DC	10.77

Bus #	Bus	MW Impact
206280	28LAKEHURS	0.64
206306	28LKWD G1	5.61
206308	28LKWD G2	5.61
206312	28LKWD G3	3.45
206325	28O C GEN	312.99
206360	28O CRK C1	2.11
206361	28O CRK C2	1.18
206366	28LKWD CT1	10.63
206367	28LKWD CT2	10.63
227801	ONTC&DCT	5.26
227842	MARINGEN	0.06
227843	MARINGEN E	0.55
227927	V4-067C	0.02
227928	V4-067E	0.23
228014	PVILLEG	0.07
292063	V1-021 E	0.03
293404	V3-036	0.75
902432	W2-030 E	0.83
915022	Y3-012 E	1.02
917612	Z2-102 E	0.76
924701	AB2-122 C	0.1
924702	AB2-122 E	0.17
930001	AB1-001 C	0.01
930002	AB1-001 E	0.2
930891	AB1-138 C	1.34
930892	AB1-138 E	2.24
931122	AB1-163 E	0.78
933962	AD1-019 E	1.04
934351	AD1-059	1.0
938781	AE1-104 C O1	15.65
938782	AE1-104 E O1	40.02
939121	AE1-142 C O1	4.44
939122	AE1-142 E O1	6.39
940161	AE2-000 C O1	116.56
940162	AE2-000 E O1	298.25
940361	AE2-020 C O1	27.16
940362	AE2-020 E O1	127.17
940371	AE2-021 C O1	27.16
940372	AE2-021 E O1	127.17
940381	AE2-022 C O1	15.84
940382	AE2-022 E O1	74.18
940391	AE2-023 C O1	8.8
940392	AE2-023 E O1	41.17
942101	AE2-222 C O1	11.65
942102	AE2-222 E O1	29.26
942201	AE2-232 C O1	57.14
942202	AE2-232 E O1	146.2
942941	AE2-314 C	6.46
942942	AE2-314 E	4.31
BLUEG	BLUEG	1.21
CALDERWOOD	CALDERWOOD	0.13
CANNELTON	CANNELTON	0.07

Bus #	Bus	MW Impact
CARR	CARR	0.39
CATAWBA	CATAWBA	0.08
CHEOAH	CHEOAH	0.12
CHILHOWEE	CHILHOWEE	0.04
COFFEEN	COFFEEN	0.13
COTTONWOOD	COTTONWOOD	0.49
DUCKCREEK	DUCKCREEK	0.28
EDWARDS	EDWARDS	0.13
ELMERSMITH	ELMERSMITH	0.13
FARMERCITY	FARMERCITY	0.08
G-007	G-007	3.17
GIBSON	GIBSON	0.05
HAMLET	HAMLET	0.13
NEWTON	NEWTON	0.33
O-066	O-066	9.77
PRAIRIE	PRAIRIE	0.62
RENSELAER	RENSELAER	0.31
SANTEETLA	SANTEETLA	0.03
SMITHLAND	SMITHLAND	0.05
TATANKA	TATANKA	0.15
TILTON	TILTON	0.15
TRIMBLE	TRIMBLE	0.13
TVA	TVA	0.41
UNIONPOWER	UNIONPOWER	0.18

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ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC DC	MW IMPACT
8542250	206323	28LAKEWOOD	JCP&L	206294	28LARRABEE	JCP&L	2	JC-P2-3-JCC-230-13D	breaker	817.0	195.7	197.12	DC	11.59

Bus #	Bus	MW Impact
206280	28LAKEHURS	0.57
206306	28LKWD G1	7.36
206308	28LKWD G2	7.36
206312	28LKWD G3	4.53
206325	28O C GEN	321.99
206360	28O CRK C1	2.17
206361	28O CRK C2	1.22
206366	28LKWD CT1	13.94
206367	28LKWD CT2	13.94
227801	ONTC&DCT	5.69
227842	MARINGEN	0.07
227843	MARINGEN E	0.59
227927	V4-067C	0.02
227928	V4-067E	0.24
228014	PVILLEG	0.07
292063	V1-021 E	0.03

Bus #	Bus	MW Impact
293404	V3-036	0.81
901982	W1-119 E	1.2
901991	W1-120C	0.82
901992	W1-120E	1.33
902432	W2-030 E	0.9
915022	Y3-012 E	1.11
917612	Z2-102 E	0.97
924701	AB2-122 C	0.11
924702	AB2-122 E	0.18
930001	AB1-001 C	0.02
930002	AB1-001 E	0.21
930891	AB1-138 C	1.19
930892	AB1-138 E	1.99
931122	AB1-163 E	0.72
933962	AD1-019 E	1.12
934351	AD1-059	1.31
938781	AE1-104 C O1	17.12
938782	AE1-104 E O1	43.8
939121	AE1-142 C O1	4.44
939122	AE1-142 E O1	6.38
940161	AE2-000 C O1	119.91
940162	AE2-000 E O1	306.82
940361	AE2-020 C O1	28.47
940362	AE2-020 E O1	133.28
940371	AE2-021 C O1	28.47
940372	AE2-021 E O1	133.28
940381	AE2-022 C O1	16.61
940382	AE2-022 E O1	77.75
940391	AE2-023 C O1	9.63
940392	AE2-023 E O1	45.06
942101	AE2-222 C O1	12.6
942102	AE2-222 E O1	31.65
942201	AE2-232 C O1	58.78
942202	AE2-232 E O1	150.4
942941	AE2-314 C	6.95
942942	AE2-314 E	4.63
BLUEG	BLUEG	1.5
CALDERWOOD	CALDERWOOD	0.15
CANNELTON	CANNELTON	0.09
CARR	CARR	0.58
CATAWBA	CATAWBA	0.09
CHEOAH	CHEOAH	0.14
CHILHOWEE	CHILHOWEE	0.05
COFFEEN	COFFEEN	0.16
COTTONWOOD	COTTONWOOD	0.61
DUCKCREEK	DUCKCREEK	0.35
EDWARDS	EDWARDS	0.16
ELMERSMITH	ELMERSMITH	0.16
FARMERCITY	FARMERCITY	0.1
G-007	G-007	5.18
GIBSON	GIBSON	0.06
HAMLET	HAMLET	0.15

Bus #	Bus	MW Impact
NEWTON	NEWTON	0.41
O-066	O-066	14.98
PRAIRIE	PRAIRIE	0.76
RENSELAER	RENSELAER	0.46
SANTEETLA	SANTEETLA	0.04
SMITHLAND	SMITHLAND	0.06
TATANKA	TATANKA	0.19
TILTON	TILTON	0.19
TRIMBLE	TRIMBLE	0.17
TVA	TVA	0.5
UNIONPOWER	UNIONPOWER	0.22

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ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC DC	MW IMPACT
8542983	206720	28MANCHSTR	JCP&L	206318	28VANHISVL	JCP&L	1	JC-P7-1-JCC-230-10A	tower	869.0	159.72	160.96	DC	10.77

Bus #	Bus	MW Impact
206280	28LAKEHURS	0.64
206306	28LKWD G1	5.61
206308	28LKWD G2	5.61
206312	28LKWD G3	3.45
206325	28O C GEN	312.99
206360	28O CRK C1	2.11
206361	28O CRK C2	1.18
206366	28LKWD CT1	10.63
206367	28LKWD CT2	10.63
227801	ONTC&DCT	5.26
227842	MARINGEN	0.06
227843	MARINGEN E	0.55
227927	V4-067C	0.02
227928	V4-067E	0.23
228014	PVILLEG	0.07
292063	V1-021 E	0.03
293404	V3-036	0.75
902432	W2-030 E	0.83
915022	Y3-012 E	1.02
917612	Z2-102 E	0.76
924701	AB2-122 C	0.1
924702	AB2-122 E	0.17
930001	AB1-001 C	0.01
930002	AB1-001 E	0.2
930891	AB1-138 C	1.34
930892	AB1-138 E	2.24
931122	AB1-163 E	0.78
933962	AD1-019 E	1.04
934351	AD1-059	1.0

Bus #	Bus	MW Impact
938781	AE1-104 C O1	15.65
938782	AE1-104 E O1	40.02
939121	AE1-142 C O1	4.44
939122	AE1-142 E O1	6.39
940161	AE2-000 C O1	116.56
940162	AE2-000 E O1	298.25
940361	AE2-020 C O1	27.16
940362	AE2-020 E O1	127.17
940371	AE2-021 C O1	27.16
940372	AE2-021 E O1	127.17
940381	AE2-022 C O1	15.84
940382	AE2-022 E O1	74.18
940391	AE2-023 C O1	8.8
940392	AE2-023 E O1	41.17
942101	AE2-222 C O1	11.65
942102	AE2-222 E O1	29.26
942201	AE2-232 C O1	57.14
942202	AE2-232 E O1	146.2
942941	AE2-314 C	6.46
942942	AE2-314 E	4.31
BLUEG	BLUEG	1.21
CALDERWOOD	CALDERWOOD	0.13
CANNELTON	CANNELTON	0.07
CARR	CARR	0.39
CATAWBA	CATAWBA	0.08
CHEOAH	CHEOAH	0.12
CHILHOWEE	CHILHOWEE	0.04
COFFEEN	COFFEEN	0.13
COTTONWOOD	COTTONWOOD	0.49
DUCKCREEK	DUCKCREEK	0.28
EDWARDS	EDWARDS	0.13
ELMERSMITH	ELMERSMITH	0.13
FARMERCITY	FARMERCITY	0.08
G-007	G-007	3.17
GIBSON	GIBSON	0.05
HAMLET	HAMLET	0.13
NEWTON	NEWTON	0.33
O-066	O-066	9.77
PRAIRIE	PRAIRIE	0.62
RENSSELAER	RENSSELAER	0.31
SANTEETLA	SANTEETLA	0.03
SMITHLAND	SMITHLAND	0.05
TATANKA	TATANKA	0.15
TILTON	TILTON	0.15
TRIMBLE	TRIMBLE	0.13
TVA	TVA	0.41
UNIONPOWER	UNIONPOWER	0.18

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ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC DC	MW IMPACT
8542462	213922	RICHMOND	PECO	214012	WANEETA3	PECO	1	PECO_P4_CHICH045/* \$ DELCO \$ PECO_P4_CHICH045 \$ STBK	breaker	1180.0	106.16	106.67	DC	13.18

Bus #	Bus	MW Impact
213606	FAIRLESS	9.69
213878	PENNSBRY	0.92
213918	RICHMD91	2.82
213919	RICHMD92	2.82
219124	CAMDEN_STG	2.8
219126	CAMDEN_CTG	3.44
219128	GLOUCSTR_26	1.52
219229	EAGLEPT_G3	2.5
219230	EAGLEPT_G1	3.7
219241	CAMDEN1	0.21
219242	CAMDEN2	0.02
227801	ONTC&DCT	7.26
227843	MARINGEN E	0.75
227928	V4-067E	0.3
228261	V4-054E	1.35
228357	V2-046E	3.06
228712	V2-041E	0.49
228721	V2-035E	0.28
291996	U4-036 E	1.01
292063	V1-021 E	0.06
292088	V1-030 CB	0.1
292099	V1-030 E3	0.23
292105	V1-030 E6	0.3
292115	V1-030 EB	1.33
292194	V1-030 CE	0.09
292195	V1-030 EE	1.23
293404	V3-036	1.03
902092	W1-130E	1.35
902432	W2-030 E	1.17
902692	W2-056 E	1.64
902842	W2-071E	0.45
903152	W2-102 E	1.04
903991	W3-080C	1.96
903992	W3-080E	3.21
904042	V4-005 E	0.43
904432	W3-124 E	0.42
905792	W4-103 E	1.03
907382	X1-070 E	0.73
907392	X1-071 E	0.26
909032	X2-013 E	0.63
910862	X3-075 E	1.06

Bus #	Bus	MW Impact
913242	Y1-057 E	0.32
913332	Y1-075 E	0.41
915022	Y3-012 E	1.41
915072	Y3-026 E	1.6
915592	Y3-087 E OP1	0.8
916292	Z1-082 E	0.34
917381	Z2-062	0.13
924051	AB2-049 C	0.87
924052	AB2-049 E	1.41
924531	AB2-102 C	43.43
924532	AB2-102 E	0.97
924701	AB2-122 C	0.13
924702	AB2-122 E	0.22
925391	AC1-010 C	0.78
925392	AC1-010 E	1.34
925442	AC1-016 E	1.41
925452	AC1-017 E	0.67
925562	AC1-030 E	0.51
930002	AB1-001 E	0.27
930102	AB1-025 E	1.01
930242	AB1-063 E	0.14
930722	AB1-116 E	0.18
930732	AB1-119 E	0.17
931191	AB1-169A	119.56
932361	AC2-050 C O1	0.89
932362	AC2-050 E O1	1.46
933962	AD1-019 E	1.43
936211	AD2-027 C	1.4
936212	AD2-027 E	2.29
936321	AD2-042 C	1.85
936322	AD2-042 E	3.03
936411	AD2-052 C	1.54
936412	AD2-052 E	0.76
936491	AD2-064 C	0.12
936492	AD2-064 E	0.17
936501	AD2-065 C	0.5
936502	AD2-065 E	0.69
936541	AD2-069 C	0.52
936542	AD2-069 E	0.26
937011	AD2-135 C	0.13
937012	AD2-135 E	0.23
938311	AE1-046 C	0.43
938312	AE1-046 E	0.22
938421	AE1-061 C	0.58
938422	AE1-061 E	0.58
938431	AE1-062 C	1.2
938432	AE1-062 E	1.2
938611	AE1-083 C	0.51
938612	AE1-083 E	0.71
938781	AE1-104 C O1	26.58
938782	AE1-104 E O1	67.99
938871	AE1-115 C	1.26

Bus #	Bus	MW Impact
938872	AE1-115 E	1.26
939301	AE1-161 C	2.41
939302	AE1-161 E	3.61
939501	AE1-179 C O1	7.33
939502	AE1-179 E O1	5.17
939821	AE1-218 C O1	0.19
939822	AE1-218 E O1	0.28
939831	AE1-219 C O1	0.42
939832	AE1-219 E O1	0.61
939931	AE1-229 C O1	20.42
939932	AE1-229 E O1	13.83
940001	AE1-240 C O1	6.08
940002	AE1-240 E O1	4.34
940281	AE2-011 C	0.29
940282	AE2-011 E	0.41
940361	AE2-020 C O1	17.4
940362	AE2-020 E O1	81.45
940371	AE2-021 C O1	17.4
940372	AE2-021 E O1	81.45
940381	AE2-022 C O1	10.15
940382	AE2-022 E O1	47.51
940391	AE2-023 C O1	14.94
940392	AE2-023 E O1	69.95
940771	AE2-064 C	0.37
940772	AE2-064 E	0.5
940781	AE2-065 C	0.24
940782	AE2-065 E	0.37
940951	AE2-085 C	0.43
940952	AE2-085 E	0.41
940961	AE2-087 C	0.32
940962	AE2-087 E	0.44
940963	AE2-087 BAT	0.12
940971	AE2-088 C	0.17
940972	AE2-088 E	0.23
940973	AE2-088 BAT	0.1
941001	AE2-091 C O1	4.9
941002	AE2-091 E O1	2.56
941051	AE2-097 C	0.24
941052	AE2-097 E	0.38
941071	AE2-101 C	0.42
941072	AE2-101 E	0.58
941121	AE2-106 C	0.35
941122	AE2-106 E	0.49
941123	AE2-106 BAT	0.12
941441	AE2-141 C	0.27
941442	AE2-141 E	0.44
941471	AE2-144 C	0.49
941472	AE2-144 E	0.46
941931	AE2-205 C O1	9.03
941932	AE2-205 E O1	6.02
942011	AE2-213 C	0.37
942012	AE2-213 E	0.33

Bus #	Bus	MW Impact
942101	AE2-222 C O1	16.06
942102	AE2-222 E O1	40.34
942571	AE2-272	0.33
942941	AE2-314 C	7.91
942942	AE2-314 E	5.27
943071	AE2-334 C	6.7
943072	AE2-334 E	3.57
943081	AE2-335 C O1	9.59
943082	AE2-335 E O1	4.27
BLUEG	BLUEG	6.64
CALDERWOOD	CALDERWOOD	0.72
CANNELTON	CANNELTON	0.4
CATAWBA	CATAWBA	0.46
CBM-N	CBM-N	0.84
CHEOAH	CHEOAH	0.66
CHILHOWEE	CHILHOWEE	0.24
COFFEEN	COFFEEN	0.7
COTTONWOOD	COTTONWOOD	2.77
DUCKCREEK	DUCKCREEK	1.53
EDWARDS	EDWARDS	0.7
ELMERSMITH	ELMERSMITH	0.7
FARMERCITY	FARMERCITY	0.46
G-007A	G-007A	12.57
GIBSON	GIBSON	0.27
HAMLET	HAMLET	0.75
NEWTON	NEWTON	1.83
NYISO	NYISO	3.63
PRAIRIE	PRAIRIE	3.42
SANTEETLA	SANTEETLA	0.19
SMITHLAND	SMITHLAND	0.27
TATANKA	TATANKA	0.83
TILTON	TILTON	0.83
TRIMBLE	TRIMBLE	0.74
TVA	TVA	2.31
UNIONPOWER	UNIONPOWER	1.03
VFT	VFT	22.63

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ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC DC	MW IMPACT
8542464	214206	RICHRE29	PECO	213922	RICHMOND	PECO	1	PECO_P4_CHICH045/* \$ DELCO \$ PECO_P4_CHICH045 \$ STBK	breaker	1336.0	105.32	105.79	DC	13.67

Bus #	Bus	MW Impact
219124	CAMDEN_STG	3.13
219126	CAMDEN_C TG	3.85
219128	GLOUCSTR_26	1.7
219229	EAGLEPT_G3	2.79

Bus #	Bus	MW Impact
219230	EAGLEPT_G1	4.12
219231	EAGLEPT_G2	4.12
219241	CAMDEN1	0.23
219242	CAMDEN2	0.03
227801	ONTC&DCT	7.56
227843	MARINGEN E	0.78
227928	V4-067E	0.31
228261	V4-054E	1.44
228357	V2-046E	3.3
228423	Q-090 2	30.11
228712	V2-041E	0.52
228721	V2-035E	0.3
291995	U4-036 C	0.08
291996	U4-036 E	1.12
292063	V1-021 E	0.06
292088	V1-030 CB	0.11
292099	V1-030 E3	0.22
292104	V1-030 C6	0.02
292105	V1-030 E6	0.33
292115	V1-030 EB	1.49
292194	V1-030 CE	0.1
292195	V1-030 EE	1.37
293404	V3-036	1.08
902092	W1-130E	1.43
902432	W2-030 E	1.21
902692	W2-056 E	1.53
902842	W2-071E	0.44
903152	W2-102 E	0.98
903991	W3-080C	1.35
903992	W3-080E	2.2
904042	V4-005 E	0.4
904432	W3-124 E	0.4
905792	W4-103 E	0.97
907381	X1-070 C	0.05
907382	X1-070 E	0.77
907391	X1-071 C	0.01
907392	X1-071 E	0.26
909032	X2-013 E	0.7
910862	X3-075 E	1.18
913332	Y1-075 E	0.39
914231	Y2-081 C OP1	1.35
914232	Y2-081 E OP1	0.07
915022	Y3-012 E	1.47
915072	Y3-026 E	1.1
915591	Y3-087 C OP1	0.06
915592	Y3-087 E OP1	0.89
916292	Z1-082 E	0.38
917381	Z2-062	0.14
919901	AB1-000 1	1.04
919911	AB1-000 2	1.04
919921	AB1-000 3	1.04
924051	AB2-049 C	0.91

Bus #	Bus	MW Impact
924052	AB2-049 E	1.48
924531	AB2-102 C	45.91
924532	AB2-102 E	1.02
924701	AB2-122 C	0.14
924702	AB2-122 E	0.23
925391	AC1-010 C	0.87
925392	AC1-010 E	1.5
925442	AC1-016 E	0.97
925452	AC1-017 E	0.56
925561	AC1-030 C	0.04
925562	AC1-030 E	0.52
930002	AB1-001 E	0.28
930102	AB1-025 E	0.94
930242	AB1-063 E	0.15
930722	AB1-116 E	0.19
930732	AB1-119 E	0.17
931191	AB1-169A	126.85
932361	AC2-050 C O1	0.86
932362	AC2-050 E O1	1.41
933962	AD1-019 E	1.49
934661	AD1-097 1	1.67
934671	AD1-097 2	1.67
934681	AD1-097 3	1.67
934691	AD1-097 4	0.99
936211	AD2-027 C	1.57
936212	AD2-027 E	2.57
936321	AD2-042 C	2.07
936322	AD2-042 E	3.4
936411	AD2-052 C	1.66
936412	AD2-052 E	0.82
936491	AD2-064 C	0.12
936492	AD2-064 E	0.17
936501	AD2-065 C	0.51
936502	AD2-065 E	0.71
936541	AD2-069 C	0.51
936542	AD2-069 E	0.25
937011	AD2-135 C	0.14
937012	AD2-135 E	0.24
938311	AE1-046 C	0.46
938312	AE1-046 E	0.23
938421	AE1-061 C	0.61
938422	AE1-061 E	0.61
938431	AE1-062 C	1.23
938432	AE1-062 E	1.23
938611	AE1-083 C	0.35
938612	AE1-083 E	0.49
938781	AE1-104 C O1	27.85
938782	AE1-104 E O1	71.26
938871	AE1-115 C	1.36
938872	AE1-115 E	1.36
939301	AE1-161 C	2.57
939302	AE1-161 E	3.85

Bus #	Bus	MW Impact
939501	AE1-179 C O1	7.79
939502	AE1-179 E O1	5.5
939821	AE1-218 C O1	0.2
939822	AE1-218 E O1	0.3
939831	AE1-219 C O1	0.44
939832	AE1-219 E O1	0.64
939931	AE1-229 C O1	21.94
939932	AE1-229 E O1	14.86
940001	AE1-240 C O1	6.46
940002	AE1-240 E O1	4.61
940281	AE2-011 C	0.31
940282	AE2-011 E	0.42
940361	AE2-020 C O1	17.69
940362	AE2-020 E O1	82.8
940371	AE2-021 C O1	17.69
940372	AE2-021 E O1	82.8
940381	AE2-022 C O1	10.32
940382	AE2-022 E O1	48.3
940391	AE2-023 C O1	15.66
940392	AE2-023 E O1	73.3
940771	AE2-064 C	0.41
940772	AE2-064 E	0.56
940781	AE2-065 C	0.26
940782	AE2-065 E	0.41
940951	AE2-085 C	0.41
940952	AE2-085 E	0.39
940961	AE2-087 C	0.34
940962	AE2-087 E	0.47
940963	AE2-087 BAT	0.13
940971	AE2-088 C	0.18
940972	AE2-088 E	0.25
940973	AE2-088 BAT	0.1
941001	AE2-091 C O1	5.22
941002	AE2-091 E O1	2.72
941051	AE2-097 C	0.25
941052	AE2-097 E	0.41
941071	AE2-101 C	0.46
941072	AE2-101 E	0.63
941121	AE2-106 C	0.38
941122	AE2-106 E	0.52
941123	AE2-106 BAT	0.13
941441	AE2-141 C	0.26
941442	AE2-141 E	0.42
941471	AE2-144 C	0.55
941472	AE2-144 E	0.97
941931	AE2-205 C O1	9.55
941932	AE2-205 E O1	6.37
942011	AE2-213 C	0.41
942012	AE2-213 E	0.7
942101	AE2-222 C O1	16.74
942102	AE2-222 E O1	42.04
942571	AE2-272	0.36

Bus #	Bus	MW Impact
942941	AE2-314 C	8.2
942942	AE2-314 E	5.47
943071	AE2-334 C	7.11
943072	AE2-334 E	3.79
943081	AE2-335 C O1	10.23
943082	AE2-335 E O1	4.56
BLUEG	BLUEG	5.69
CALDERWOOD	CALDERWOOD	0.61
CANNELTON	CANNELTON	0.34
CATAWBA	CATAWBA	0.39
CBM-N	CBM-N	0.34
CHEOAH	CHEOAH	0.56
CHILHOWEE	CHILHOWEE	0.2
COFFEEN	COFFEEN	0.6
COTTONWOOD	COTTONWOOD	2.36
DUCKCREEK	DUCKCREEK	1.31
EDWARDS	EDWARDS	0.6
ELMERSMITH	ELMERSMITH	0.59
FARMERCITY	FARMERCITY	0.4
G-007A	G-007A	9.86
GIBSON	GIBSON	0.23
HAMLET	HAMLET	0.63
NEWTON	NEWTON	1.57
NYISO	NYISO	1.45
PRAIRIE	PRAIRIE	2.92
SANTEETLA	SANTEETLA	0.16
SMITHLAND	SMITHLAND	0.23
TATANKA	TATANKA	0.71
TILTON	TILTON	0.72
TRIMBLE	TRIMBLE	0.63
TVA	TVA	1.97
UNIONPOWER	UNIONPOWER	0.88
VFT	VFT	14.46

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ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC DC	MW IMPACT
8543059	219100	NEWFRDM	PSE&G	219704	HILLTOP_3	PSE&G	1	PS_P7-1_V2274+P2242_LT	tower	740.0	122.64	123.1	DC	7.54

Bus #	Bus	MW Impact
227801	ONTC&DCT	4.03
227843	MARINGEN E	0.42
227928	V4-067E	0.17
228260	V4-054C	0.1
228261	V4-054E	0.67
228357	V2-046E	1.38
228702	WEST CT	0.35
228712	V2-041E	0.26

Bus #	Bus	MW Impact
228717	S121	0.5
228720	V2-035C	0.01
228721	V2-035E	0.14
228727	W2-039G	0.83
291996	U4-036 E	0.32
292063	V1-021 E	0.03
292105	V1-030 E6	0.09
293404	V3-036	0.57
902091	W1-130C	0.05
902092	W1-130E	0.73
902432	W2-030 E	0.65
909032	X2-013 E	0.2
915022	Y3-012 E	0.78
916292	Z1-082 E	0.26
924051	AB2-049 C	0.5
924052	AB2-049 E	0.81
924531	AB2-102 C	23.15
924532	AB2-102 E	0.51
924701	AB2-122 C	0.07
924702	AB2-122 E	0.13
930002	AB1-001 E	0.15
930722	AB1-116 E	0.1
930732	AB1-119 E	0.09
931191	AB1-169A	64.54
933962	AD1-019 E	0.79
936411	AD2-052 C	0.7
936412	AD2-052 E	0.35
936491	AD2-064 C	0.07
936492	AD2-064 E	0.09
936501	AD2-065 C	0.25
936502	AD2-065 E	0.35
937011	AD2-135 C	0.09
937012	AD2-135 E	0.15
938311	AE1-046 C	0.23
938312	AE1-046 E	0.12
938421	AE1-061 C	0.59
938422	AE1-061 E	0.59
938431	AE1-062 C	1.19
938432	AE1-062 E	1.19
938781	AE1-104 C O1	14.58
938782	AE1-104 E O1	37.31
938871	AE1-115 C	0.55
938872	AE1-115 E	0.55
939301	AE1-161 C	2.43
939302	AE1-161 E	3.65
939501	AE1-179 C O1	3.78
939502	AE1-179 E O1	2.67
939821	AE1-218 C O1	0.1
939822	AE1-218 E O1	0.16
939831	AE1-219 C O1	0.23
939832	AE1-219 E O1	0.34
939931	AE1-229 C O1	9.8

Bus #	Bus	MW Impact
939932	AE1-229 E O1	6.64
940001	AE1-240 C O1	3.12
940002	AE1-240 E O1	2.23
940281	AE2-011 C	0.17
940282	AE2-011 E	0.23
940361	AE2-020 C O1	8.83
940362	AE2-020 E O1	41.35
940371	AE2-021 C O1	8.83
940372	AE2-021 E O1	41.35
940381	AE2-022 C O1	5.15
940382	AE2-022 E O1	24.12
940391	AE2-023 C O1	8.2
940392	AE2-023 E O1	38.38
940781	AE2-065 C	0.07
940782	AE2-065 E	0.11
940961	AE2-087 C	0.16
940962	AE2-087 E	0.22
940963	AE2-087 BAT	0.06
940971	AE2-088 C	0.09
940972	AE2-088 E	0.13
940973	AE2-088 BAT	0.1
941001	AE2-091 C O1	2.48
941002	AE2-091 E O1	1.29
941071	AE2-101 C	0.17
941072	AE2-101 E	0.24
941121	AE2-106 C	0.17
941122	AE2-106 E	0.24
941123	AE2-106 BAT	0.06
941471	AE2-144 C	0.14
941472	AE2-144 E	0.13
941931	AE2-205 C O1	4.81
941932	AE2-205 E O1	3.21
942011	AE2-213 C	0.12
942012	AE2-213 E	0.1
942101	AE2-222 C O1	8.91
942102	AE2-222 E O1	22.39
942571	AE2-272	0.15
942941	AE2-314 C	4.52
942942	AE2-314 E	3.02
943071	AE2-334 C	3.65
943072	AE2-334 E	1.95
943081	AE2-335 C O1	5.2
943082	AE2-335 E O1	2.32
BLUEG	BLUEG	0.66
CALDERWOOD	CALDERWOOD	0.06
CANNELTON	CANNELTON	0.04
CARR	CARR	0.28
CATAWBA	CATAWBA	0.03
CHEOAH	CHEOAH	0.06
CHILHOWEE	CHILHOWEE	0.02
COFFEEN	COFFEEN	0.07
COTTONWOOD	COTTONWOOD	0.25

Bus #	Bus	MW Impact
DUCKCREEK	DUCKCREEK	0.15
EDWARDS	EDWARDS	0.07
ELMERSMITH	ELMERSMITH	0.07
FARMERCITY	FARMERCITY	0.04
G-007	G-007	0.19
GIBSON	GIBSON	0.03
HAMLET	HAMLET	0.05
NEWTON	NEWTON	0.18
O-066	O-066	6.1
PRAIRIE	PRAIRIE	0.33
RENSELAER	RENSELAER	0.22
SANTEETLA	SANTEETLA	0.02
SMITHLAND	SMITHLAND	0.03
TATANKA	TATANKA	0.08
TILTON	TILTON	0.08
TRIMBLE	TRIMBLE	0.07
TVA	TVA	0.2
UNIONPOWER	UNIONPOWER	0.09

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ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC DC	MW IMPACT
8542463	219125	CAMDEN	PSE&G	214206	RICHRE29	PECO	1	PECO_P4_CHICH045/* \$ DELCO \$ PECO_P4_CHICH045 \$ STBK	breaker	1336.0	105.34	105.8	DC	13.67

Bus #	Bus	MW Impact
219124	CAMDEN_STG	3.13
219126	CAMDEN_CTG	3.85
219128	GLOUCSTR_26	1.7
219229	EAGLEPT_G3	2.79
219230	EAGLEPT_G1	4.12
219231	EAGLEPT_G2	4.12
219241	CAMDEN1	0.23
219242	CAMDEN2	0.03
227801	ONTC&DCT	7.56
227843	MARINGEN E	0.78
227928	V4-067E	0.31
228261	V4-054E	1.44
228357	V2-046E	3.3
228423	Q-090 2	30.11
228712	V2-041E	0.52
228721	V2-035E	0.3
291995	U4-036 C	0.08
291996	U4-036 E	1.12
292063	V1-021 E	0.06
292088	V1-030 CB	0.11
292099	V1-030 E3	0.22

Bus #	Bus	MW Impact
292104	V1-030 C6	0.02
292105	V1-030 E6	0.33
292115	V1-030 EB	1.49
292194	V1-030 CE	0.1
292195	V1-030 EE	1.37
293404	V3-036	1.08
902092	W1-130E	1.43
902432	W2-030 E	1.21
902692	W2-056 E	1.53
902842	W2-071E	0.44
903152	W2-102 E	0.98
903991	W3-080C	1.35
903992	W3-080E	2.2
904042	V4-005 E	0.4
904432	W3-124 E	0.4
905792	W4-103 E	0.97
907381	X1-070 C	0.05
907382	X1-070 E	0.77
907391	X1-071 C	0.01
907392	X1-071 E	0.26
909032	X2-013 E	0.7
910862	X3-075 E	1.18
913332	Y1-075 E	0.39
914231	Y2-081 C OP1	1.35
914232	Y2-081 E OP1	0.07
915022	Y3-012 E	1.47
915072	Y3-026 E	1.1
915591	Y3-087 C OP1	0.06
915592	Y3-087 E OP1	0.89
916292	Z1-082 E	0.38
917381	Z2-062	0.14
919901	AB1-000 1	1.04
919911	AB1-000 2	1.04
919921	AB1-000 3	1.04
924051	AB2-049 C	0.91
924052	AB2-049 E	1.48
924531	AB2-102 C	45.91
924532	AB2-102 E	1.02
924701	AB2-122 C	0.14
924702	AB2-122 E	0.23
925391	AC1-010 C	0.87
925392	AC1-010 E	1.5
925442	AC1-016 E	0.97
925452	AC1-017 E	0.56
925561	AC1-030 C	0.04
925562	AC1-030 E	0.52
930002	AB1-001 E	0.28
930102	AB1-025 E	0.94
930242	AB1-063 E	0.15
930722	AB1-116 E	0.19
930732	AB1-119 E	0.17
931191	AB1-169A	126.85

Bus #	Bus	MW Impact
932361	AC2-050 C O1	0.86
932362	AC2-050 E O1	1.41
933962	AD1-019 E	1.49
934661	AD1-097 1	1.67
934671	AD1-097 2	1.67
934681	AD1-097 3	1.67
934691	AD1-097 4	0.99
936211	AD2-027 C	1.57
936212	AD2-027 E	2.57
936321	AD2-042 C	2.07
936322	AD2-042 E	3.4
936411	AD2-052 C	1.66
936412	AD2-052 E	0.82
936491	AD2-064 C	0.12
936492	AD2-064 E	0.17
936501	AD2-065 C	0.51
936502	AD2-065 E	0.71
936541	AD2-069 C	0.51
936542	AD2-069 E	0.25
937011	AD2-135 C	0.14
937012	AD2-135 E	0.24
938311	AE1-046 C	0.46
938312	AE1-046 E	0.23
938421	AE1-061 C	0.61
938422	AE1-061 E	0.61
938431	AE1-062 C	1.23
938432	AE1-062 E	1.23
938611	AE1-083 C	0.35
938612	AE1-083 E	0.49
938781	AE1-104 C O1	27.85
938782	AE1-104 E O1	71.26
938871	AE1-115 C	1.36
938872	AE1-115 E	1.36
939301	AE1-161 C	2.57
939302	AE1-161 E	3.85
939501	AE1-179 C O1	7.79
939502	AE1-179 E O1	5.5
939821	AE1-218 C O1	0.2
939822	AE1-218 E O1	0.3
939831	AE1-219 C O1	0.44
939832	AE1-219 E O1	0.64
939931	AE1-229 C O1	21.94
939932	AE1-229 E O1	14.86
940001	AE1-240 C O1	6.46
940002	AE1-240 E O1	4.61
940281	AE2-011 C	0.31
940282	AE2-011 E	0.42
940361	AE2-020 C O1	17.69
940362	AE2-020 E O1	82.8
940371	AE2-021 C O1	17.69
940372	AE2-021 E O1	82.8
940381	AE2-022 C O1	10.32

Bus #	Bus	MW Impact
940382	AE2-022 E O1	48.3
940391	AE2-023 C O1	15.66
940392	AE2-023 E O1	73.3
940771	AE2-064 C	0.41
940772	AE2-064 E	0.56
940781	AE2-065 C	0.26
940782	AE2-065 E	0.41
940951	AE2-085 C	0.41
940952	AE2-085 E	0.39
940961	AE2-087 C	0.34
940962	AE2-087 E	0.47
940963	AE2-087 BAT	0.13
940971	AE2-088 C	0.18
940972	AE2-088 E	0.25
940973	AE2-088 BAT	0.1
941001	AE2-091 C O1	5.22
941002	AE2-091 E O1	2.72
941051	AE2-097 C	0.25
941052	AE2-097 E	0.41
941071	AE2-101 C	0.46
941072	AE2-101 E	0.63
941121	AE2-106 C	0.38
941122	AE2-106 E	0.52
941123	AE2-106 BAT	0.13
941441	AE2-141 C	0.26
941442	AE2-141 E	0.42
941471	AE2-144 C	0.55
941472	AE2-144 E	0.97
941931	AE2-205 C O1	9.55
941932	AE2-205 E O1	6.37
942011	AE2-213 C	0.41
942012	AE2-213 E	0.7
942101	AE2-222 C O1	16.74
942102	AE2-222 E O1	42.04
942571	AE2-272	0.36
942941	AE2-314 C	8.2
942942	AE2-314 E	5.47
943071	AE2-334 C	7.11
943072	AE2-334 E	3.79
943081	AE2-335 C O1	10.23
943082	AE2-335 E O1	4.56
BLUEG	BLUEG	5.69
CALDERWOOD	CALDERWOOD	0.61
CANNELTON	CANNELTON	0.34
CATAWBA	CATAWBA	0.39
CBM-N	CBM-N	0.34
CHEOAH	CHEOAH	0.56
CHILHOWEE	CHILHOWEE	0.2
COFFEEN	COFFEEN	0.6
COTTONWOOD	COTTONWOOD	2.36
DUCKCREEK	DUCKCREEK	1.31
EDWARDS	EDWARDS	0.6

Bus #	Bus	MW Impact
ELMERSMITH	ELMERSMITH	0.59
FARMERCITY	FARMERCITY	0.4
G-007A	G-007A	9.86
GIBSON	GIBSON	0.23
HAMLET	HAMLET	0.63
NEWTON	NEWTON	1.57
NYISO	NYISO	1.45
PRAIRIE	PRAIRIE	2.92
SANTEETLA	SANTEETLA	0.16
SMITHLAND	SMITHLAND	0.23
TATANKA	TATANKA	0.71
TILTON	TILTON	0.72
TRIMBLE	TRIMBLE	0.63
TVA	TVA	1.97
UNIONPOWER	UNIONPOWER	0.88
VFT	VFT	14.46

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ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC DC	MW IMPACT
8542936	227900	CARDIFF	AE	219100	NEWFRDM	PSE&G	1	JC-P7-1-JCC-230-13	tower	692.0	179.88	184.29	DC	30.53

Bus #	Bus	MW Impact
206360	280 CRK C1	1.63
206361	280 CRK C2	0.91
227801	ONTC&DCT	13.18
227842	MARINGEN	0.16
227843	MARINGEN E	1.37
227927	V4-067C	0.04
227928	V4-067E	0.61
228261	V4-054E	0.69
228712	V2-041E	0.42
228721	V2-035E	0.1
292063	V1-021 E	0.07
293404	V3-036	1.88
902092	W1-130E	0.94
902431	W2-030 C	0.16
902432	W2-030 E	2.12
915022	Y3-012 E	2.56
924531	AB2-102 C	38.92
924532	AB2-102 E	0.86
924701	AB2-122 C	0.26
924702	AB2-122 E	0.45
930002	AB1-001 E	0.49
931191	AB1-169A	84.08
933962	AD1-019 E	2.6
936411	AD2-052 C	0.54

Bus #	Bus	MW Impact
936412	AD2-052 E	0.26
938311	AE1-046 C	0.31
938312	AE1-046 E	0.15
938421	AE1-061 C	0.4
938422	AE1-061 E	0.4
938781	AE1-104 C O1	39.83
938782	AE1-104 E O1	101.88
939301	AE1-161 C	0.93
939302	AE1-161 E	1.39
939501	AE1-179 C O1	4.6
939502	AE1-179 E O1	3.24
940001	AE1-240 C O1	3.83
940002	AE1-240 E O1	2.74
940161	AE2-000 C O1	90.07
940162	AE2-000 E O1	230.47
940361	AE2-020 C O1	44.03
940362	AE2-020 E O1	206.16
940371	AE2-021 C O1	44.03
940372	AE2-021 E O1	206.16
940381	AE2-022 C O1	25.69
940382	AE2-022 E O1	120.26
940391	AE2-023 C O1	22.39
940392	AE2-023 E O1	104.81
940961	AE2-087 C	0.16
940962	AE2-087 E	0.23
940963	AE2-087 BAT	0.06
941001	AE2-091 C O1	2.82
941002	AE2-091 E O1	1.47
941121	AE2-106 C	0.18
941122	AE2-106 E	0.25
941123	AE2-106 BAT	0.06
941931	AE2-205 C O1	8.1
941932	AE2-205 E O1	5.4
942101	AE2-222 C O1	29.17
942102	AE2-222 E O1	73.27
942201	AE2-232 C O1	44.15
942202	AE2-232 E O1	112.97
942941	AE2-314 C	18.32
942942	AE2-314 E	12.21
BLUEG	BLUEG	0.75
CALDERWOOD	CALDERWOOD	0.08
CANNELTON	CANNELTON	0.05
CARR	CARR	0.1
CATAWBA	CATAWBA	0.05
CHEOAH	CHEOAH	0.07
CHILHOWEE	CHILHOWEE	0.03
COFFEEN	COFFEEN	0.08
COTTONWOOD	COTTONWOOD	0.31
DUCKCREEK	DUCKCREEK	0.17
EDWARDS	EDWARDS	0.08
ELMERSMITH	ELMERSMITH	0.08
FARMERCITY	FARMERCITY	0.05

Bus #	Bus	MW Impact
G-007	G-007	0.31
GIBSON	GIBSON	0.03
HAMLET	HAMLET	0.08
NEWTON	NEWTON	0.21
O-066	O-066	2.17
PRAIRIE	PRAIRIE	0.38
RENSSELAER	RENSSELAER	0.08
SANTEETLA	SANTEETLA	0.02
SMITHLAND	SMITHLAND	0.03
TATANKA	TATANKA	0.09
TILTON	TILTON	0.09
TRIMBLE	TRIMBLE	0.08
TVA	TVA	0.26
UNIONPOWER	UNIONPOWER	0.12

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ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC DC	MW IMPACT
8542997	228110	BLE	AE	228197	MERION	AE	1	AE_P7-1 AESTOWER	tower	482.0	119.79	120.26	DC	4.97

Bus #	Bus	MW Impact
227801	ONTC&DCT	4.97
227842	MARINGEN	0.06
227843	MARINGEN E	0.52
227927	V4-067C	0.01
227928	V4-067E	0.17
228014	PVILLEG	0.06
293404	V3-036	0.71
902092	W1-130E	0.35
902431	W2-030 C	0.06
902432	W2-030 E	0.77
913341	Y1-077	17.84
915022	Y3-012 E	0.97
924701	AB2-122 C	0.07
924702	AB2-122 E	0.12
930001	AB1-001 C	0.01
930002	AB1-001 E	0.19
931191	AB1-169A	31.25
933962	AD1-019 E	0.98
938311	AE1-046 C	0.11
938312	AE1-046 E	0.06
938421	AE1-061 C	0.15
938422	AE1-061 E	0.15
938781	AE1-104 C O1	45.65
938782	AE1-104 E O1	116.77
940361	AE2-020 C O1	6.04
940362	AE2-020 E O1	28.28
940371	AE2-021 C O1	6.04

Bus #	Bus	MW Impact
940372	AE2-021 E O1	28.28
940381	AE2-022 C O1	3.52
940382	AE2-022 E O1	16.5
940391	AE2-023 C O1	25.66
940392	AE2-023 E O1	120.13
940963	AE2-087 BAT	0.12
941123	AE2-106 BAT	0.12
942101	AE2-222 C O1	11.01
942102	AE2-222 E O1	27.67
942941	AE2-314 C	2.98
942942	AE2-314 E	1.99
BLUEG	BLUEG	0.19
CALDERWOOD	CALDERWOOD	0.02
CANNELTON	CANNELTON	0.01
CATAWBA	CATAWBA	0.01
CBM-N	CBM-N	0.1
CHEOAH	CHEOAH	0.02
CHILHOWEE	CHILHOWEE	0.01
COFFEEN	COFFEEN	0.02
COTTONWOOD	COTTONWOOD	0.08
DUCKCREEK	DUCKCREEK	0.04
EDWARDS	EDWARDS	0.02
ELMERSMITH	ELMERSMITH	0.02
FARMERCITY	FARMERCITY	0.01
G-007A	G-007A	1.21
GIBSON	GIBSON	0.01
HAMLET	HAMLET	0.02
NEWTON	NEWTON	0.05
NYISO	NYISO	0.45
PRAIRIE	PRAIRIE	0.1
SANTEETLA	SANTEETLA	0.01
SMITHLAND	SMITHLAND	0.01
TATANKA	TATANKA	0.02
TILTON	TILTON	0.02
TRIMBLE	TRIMBLE	0.02
TVA	TVA	0.07
UNIONPOWER	UNIONPOWER	0.03
VFT	VFT	1.42

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ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC DC	MW IMPACT
8542924	228502	MNOTLA 1	AE	228500	LANDIS	AE	1	AE_P7-1 AE6TOWER	tower	286.0	193.2	194.16	DC	6.09

Bus #	Bus	MW Impact
227801	ONTC&DCT	5.51
227842	MARINGEN	0.07
227843	MARINGEN E	0.57
227928	V4-067E	0.18
228014	PVILLEG	0.07
293404	V3-036	0.79
902091	W1-130C	0.3
902092	W1-130E	3.97
902432	W2-030 E	0.83
913341	Y1-077	8.38
915022	Y3-012 E	1.07
924701	AB2-122 C	0.08
924702	AB2-122 E	0.14
930001	AB1-001 C	0.02
930002	AB1-001 E	0.21
931191	AB1-169A	349.67
933962	AD1-019 E	1.09
938311	AE1-046 C	1.27
938312	AE1-046 E	0.64
938421	AE1-061 C	3.2
938422	AE1-061 E	3.2
938781	AE1-104 C O1	21.45
938782	AE1-104 E O1	54.88
939301	AE1-161 C	3.99
939302	AE1-161 E	5.98
940361	AE2-020 C O1	7.33
940362	AE2-020 E O1	34.31
940371	AE2-021 C O1	7.33
940372	AE2-021 E O1	34.31
940381	AE2-022 C O1	4.27
940382	AE2-022 E O1	20.01
940391	AE2-023 C O1	12.06
940392	AE2-023 E O1	56.46
940973	AE2-088 BAT	0.12
942101	AE2-222 C O1	12.21
942102	AE2-222 E O1	30.68
942941	AE2-314 C	3.66
942942	AE2-314 E	2.44
BLUEG	BLUEG	0.21
CALDERWOOD	CALDERWOOD	0.02
CANNELTON	CANNELTON	0.01
CATAWBA	CATAWBA	0.02

Bus #	Bus	MW Impact
CBM-N	CBM-N	0.07
CHEOAH	CHEOAH	0.02
CHILHOWEE	CHILHOWEE	0.01
COFFEEN	COFFEEN	0.02
COTTONWOOD	COTTONWOOD	0.09
DUCKCREEK	DUCKCREEK	0.05
EDWARDS	EDWARDS	0.02
ELMERSMITH	ELMERSMITH	0.02
FARMERCITY	FARMERCITY	0.01
G-007A	G-007A	1.19
GIBSON	GIBSON	0.01
HAMLET	HAMLET	0.03
NEWTON	NEWTON	0.06
NYISO	NYISO	0.31
PRAIRIE	PRAIRIE	0.11
SANTEETLA	SANTEETLA	0.01
SMITHLAND	SMITHLAND	0.01
TATANKA	TATANKA	0.03
TILTON	TILTON	0.03
TRIMBLE	TRIMBLE	0.02
TVA	TVA	0.08
UNIONPOWER	UNIONPOWER	0.03
VFT	VFT	1.06

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ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC DC	MW IMPACT
8542950	228503	MNOTLA 2	AE	228502	MNOTLA 1	AE	1	AE_P7-1 AE6TOWER	tower	311.0	177.68	178.57	DC	6.09

Bus #	Bus	MW Impact
227801	ONTC&DCT	5.51
227842	MARINGEN	0.07
227843	MARINGEN E	0.57
227928	V4-067E	0.18
228014	PVILLEG	0.07
293404	V3-036	0.79
902432	W2-030 E	0.83
913341	Y1-077	8.38
915022	Y3-012 E	1.07
924701	AB2-122 C	0.08
924702	AB2-122 E	0.14
930001	AB1-001 C	0.02
930002	AB1-001 E	0.21
931191	AB1-169A	349.68
933962	AD1-019 E	1.09
938311	AE1-046 C	1.27
938312	AE1-046 E	0.64
938421	AE1-061 C	1.8

Bus #	Bus	MW Impact
938422	AE1-061 E	1.8
938781	AE1-104 C O1	21.46
938782	AE1-104 E O1	54.89
939301	AE1-161 C	3.99
939302	AE1-161 E	5.98
940361	AE2-020 C O1	7.33
940362	AE2-020 E O1	34.32
940371	AE2-021 C O1	7.33
940372	AE2-021 E O1	34.32
940381	AE2-022 C O1	4.28
940382	AE2-022 E O1	20.02
940391	AE2-023 C O1	12.06
940392	AE2-023 E O1	56.46
940973	AE2-088 BAT	0.12
942101	AE2-222 C O1	12.22
942102	AE2-222 E O1	30.69
942941	AE2-314 C	3.66
942942	AE2-314 E	2.44
BLUEG	BLUEG	0.2
CALDERWOOD	CALDERWOOD	0.02
CANNELTON	CANNELTON	0.01
CATAWBA	CATAWBA	0.01
CBM-N	CBM-N	0.07
CHEOAH	CHEOAH	0.02
CHILHOWEE	CHILHOWEE	0.01
COFFEEN	COFFEEN	0.02
COTTONWOOD	COTTONWOOD	0.09
DUCKCREEK	DUCKCREEK	0.05
EDWARDS	EDWARDS	0.02
ELMERSMITH	ELMERSMITH	0.02
FARMERCITY	FARMERCITY	0.01
G-007A	G-007A	1.2
GIBSON	GIBSON	0.01
HAMLET	HAMLET	0.02
NEWTON	NEWTON	0.06
NYISO	NYISO	0.32
PRAIRIE	PRAIRIE	0.1
SANTEETLA	SANTEETLA	0.01
SMITHLAND	SMITHLAND	0.01
TATANKA	TATANKA	0.03
TILTON	TILTON	0.03
TRIMBLE	TRIMBLE	0.02
TVA	TVA	0.07
UNIONPOWER	UNIONPOWER	0.03
VFT	VFT	1.07

Contingency Name	Contingency Definition
AE_P1-2 CARD-CEDAR-B	CONTINGENCY 'AE_P1-2 CARD-CEDAR-B' OPEN LINE FROM BUS 940360 TO BUS 227955 CIRCUIT 1 / END

Contingency Name	Contingency Definition
AE_P1-2 OY CK-CEDAR	CONTINGENCY 'AE_P1-2 OY CK-CEDAR' OPEN LINE FROM BUS 206302 TO BUS 227955 CIRCUIT 1 / END
PS_P7-1_V2274+P2242_LT	CONTINGENCY 'PS_P7-1_V2274+P2242_LT' /* EAGLE POINT - GLOUCESTER & DEPTFORD - GLOUCESTER DISCONNECT BUS 219757 /* DEPTFORD SECTION 2 DISCONNECT BUS 219760 /* EAGLE POINT SECTION 4 TRIP LINE FROM BUS 219110 TO BUS 219128 CKT 1 /* DISCONNECT TRANSFORMER 26KV CKT 1 CLOSE LINE FROM BUS 219255 TO BUS 219256 CKT Z /* DEPTFORD CLOSE LINE FROM BUS 219180 TO BUS 219181 CKT Z /* DEPTFORD MOVE 8 MW LOAD FROM BUS 219180 TO BUS 219162 /* INTERSTATION TIE TRANSFER LOAD FROM DEPTFORD TO BEAVERBK T1 MOVE 8 MW LOAD FROM BUS 219181 TO BUS 219163 /* INTERSTATION TIE TRANSFER LOAD FROM DEPTFORD TO BEAVERBK T2 MOVE 8 MW LOAD FROM BUS 219255 TO BUS 219162 /* INTERSTATION TIE TRANSFER LOAD FROM DEPTFORD TO BEAVERBK T1 MOVE 8 MW LOAD FROM BUS 219256 TO BUS 219163 /* INTERSTATION TIE TRANSFER LOAD FROM DEPTFORD TO BEAVERBK T2 END
PECO_P4_CHICH045/* \$ DELCO \$ PECO_P4_CHICH045 \$ STBK	CONTINGENCY 'PECO_P4_CHICH045/* \$ DELCO \$ PECO_P4_CHICH045 \$ STBK' DISCONNECT BUS 213489 /* CHICHST1 230.00 \$ DELCO \$ PECO_P4_CHICH045 \$ STBK DISCONNECT BUS 213627 /* FOULK8 230.00 \$ DELCO \$ PECO_P4_CHICH045 \$ STBK END
JC-P7-1-JCC-230-10A	CONTINGENCY 'JC-P7-1-JCC-230-10A' /* LAKEWOOD - LARRABEE 230 KV LINES DISCONNECT BRANCH FROM BUS 206323 TO BUS 206294 CKT 2 DISCONNECT BRANCH FROM BUS 206323 TO BUS 206294 CKT 1 DISCONNECT BRANCH FROM BUS 206294 TO BUS 206274 CKT 3 DISCONNECT BRANCH FROM BUS 206294 TO BUS 206275 CKT 12 /* LARRABEE 12 FUTURE BREAKER AND A HALF SET BUS 206294 LOAD TO 38 MW /* LARRABEE 8 FUTURE BREAKER AND A HALF END
AE_P7-1 AE13TOWER	CONTINGENCY 'AE_P7-1 AE13TOWER' DISCONNECT BRANCH FROM BUS 228500 TO BUS 228502 CKT 1 /* LANDIS TO MINO 138 KV DISCONNECT BRANCH FROM BUS 228002 TO BUS 227900 CKT 1 /* ORCH TO CARD 230 KV END
AE_P7-1 AE6TOWER	CONTINGENCY 'AE_P7-1 AE6TOWER' DISCONNECT BRANCH FROM BUS 228197 TO BUS 228106 CKT 1 /* MERION TO CORSON 138 KV DISCONNECT BUS 228111 /* BLE TO CORSON 138 KV END
PECO_P2-2_CHI230B1/* \$ DELCO \$ PECO_P2-2_CHI230B1 \$ B	CONTINGENCY 'PECO_P2-2_CHI230B1/* \$ DELCO \$ PECO_P2-2_CHI230B1 \$ B' DISCONNECT BUS 213489 /* CHICHST1 230.00 \$ DELCO \$ PECO_P2-2_CHI230B1 \$ B END

Contingency Name	Contingency Definition
AE_P7-1 W2275_O2241	CONTINGENCY 'AE_P7-1 W2275_O2241' /* DOUBLE CIRCUIT TOWER W-2275(MICKLETON - DEPTFORD) AND O-2241(MICKLETON - THOROFARE) TRIP BRANCH FROM BUS 219762 TO BUS 228401 CKT 1 /* TRIP O-2241(MICKLETON - THOROFARE) 230KV TRIP BRANCH FROM BUS 219121 TO BUS 228401 CKT 1 /* TRIP (MICKLETON - THOROFARE #2) 230KV END
JC-P7-1-JCC-230-12	CONTINGENCY 'JC-P7-1-JCC-230-12' /* LEISURE VILLAGE-MANITOU A2027 & C2029 DISCONNECT BRANCH FROM BUS 206295 TO BUS 206297 CKT 1 DISCONNECT BRANCH FROM BUS 206297 TO BUS 206277 CKT 7 DISCONNECT BRANCH FROM BUS 206296 TO BUS 206297 CKT 1 DISCONNECT BRANCH FROM BUS 206296 TO BUS 206276 CKT 3 SET BUS 206296 LOAD TO 0 MW END
JC-P7-1-JCC-230-13	CONTINGENCY 'JC-P7-1-JCC-230-13' /* MANITOU-OYSTER CREEK 230 LINES & OYSTER GEN DISCONNECT BRANCH FROM BUS 206297 TO BUS 206302 CKT 1 DISCONNECT BRANCH FROM BUS 206297 TO BUS 206302 CKT 2 DISCONNECT BRANCH FROM BUS 206302 TO BUS 206325 CKT 1 END
JC-P1-2-JCC-230-022	CONTINGENCY 'JC-P1-2-JCC-230-022' /* MANITOU - OYSTER CREEK (O1019) 230 KV DISCONNECT BRANCH FROM BUS 206297 TO BUS 206302 CKT 2 END
JC-P1-2-JCC-230-021	CONTINGENCY 'JC-P1-2-JCC-230-021' /* MANITOU - OYSTER CREEK (N1028) 230 KV DISCONNECT BRANCH FROM BUS 206297 TO BUS 206302 CKT 1 END
Base Case	
AE_P7-1 AE5TOWER	CONTINGENCY 'AE_P7-1 AE5TOWER' DISCONNECT BRANCH FROM BUS 228110 TO BUS 228660 CKT 1 /* BLE TO OCITY 138 KV DISCONNECT BUS 228111 /* BLE TO CORSON 138 KV END
JC-P2-3-JCC-230-13D	CONTINGENCY 'JC-P2-3-JCC-230-13D' /* LARRABEE SE BUS & LARRABEE-LAKEWOOD (K2011) 230 KV DISCONNECT BRANCH FROM BUS 206294 TO BUS 206274 CKT 4 /* 28LARRABEE 230 28LARR AB 35 REMOVE SWSHUNT FROM BUS 206294 BLOCK 1 STEP 1 DISCONNECT BRANCH FROM BUS 206294 TO BUS 206323 CKT 1 /* 28LARRABEE 230 28LAKEWOOD 230 END

Secondary POI Flow Gate Details

ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC DC	MW IMPACT
8542941	206297	28MANITOU	JCP&L	206319	28WHITINGS	JCP&L	1	JC-P7-1-JCC-230-10A	tower	817.0	193.0	194.32	DC	10.76

Bus #	Bus	MW Impact
206280	28LAKEHURS	0.25
206306	28LKWD G1	5.65
206308	28LKWD G2	5.65
206312	28LKWD G3	3.48
206325	28O C GEN	312.75
206360	28O CRK C1	2.1
206361	28O CRK C2	1.18
206366	28LKWD CT1	10.71
206367	28LKWD CT2	10.71
227801	ONTC&DCT	5.25
227842	MARINGEN	0.06
227843	MARINGEN E	0.54
227927	V4-067C	0.02
227928	V4-067E	0.23
228014	PVILLEG	0.07
292063	V1-021 E	0.03
293404	V3-036	0.75
902432	W2-030 E	0.83
915022	Y3-012 E	1.02
924701	AB2-122 C	0.1
924702	AB2-122 E	0.17
930001	AB1-001 C	0.01
930002	AB1-001 E	0.2
930891	AB1-138 C	0.52
930892	AB1-138 E	0.87
933962	AD1-019 E	1.03
934351	AD1-059	1.01
938781	AE1-104 C O1	15.62
938782	AE1-104 E O1	39.95
939121	AE1-142 C O1	3.93
939122	AE1-142 E O1	5.66
940361	AE2-020 C O2	15.9
940362	AE2-020 E O2	74.44
940371	AE2-021 C O2	15.9
940372	AE2-021 E O2	74.44
940381	AE2-022 C O2	9.28
940382	AE2-022 E O2	43.43
940391	AE2-023 C O2	10.3
940392	AE2-023 E O2	48.24
940401	AE2-024 C O2	78.85
940402	AE2-024 E O2	369.17
940411	AE2-025 C O2	30.96
940412	AE2-025 E O2	144.94
942101	AE2-222 C O2	11.62
942102	AE2-222 E O2	29.2

Bus #	Bus	MW Impact
942201	AE2-232 C O2	16.79
942202	AE2-232 E O2	42.96
942381	AE2-251 C O2	50.37
942382	AE2-251 E O2	128.89
942941	AE2-314 C	6.45
942942	AE2-314 E	4.3
BLUEG	BLUEG	1.2
CALDERWOOD	CALDERWOOD	0.13
CANNELTON	CANNELTON	0.07
CARR	CARR	0.38
CATAWBA	CATAWBA	0.08
CHEOAH	CHEOAH	0.11
CHILHOWEE	CHILHOWEE	0.04
COFFEEN	COFFEEN	0.13
COTTONWOOD	COTTONWOOD	0.49
DUCKCREEK	DUCKCREEK	0.28
EDWARDS	EDWARDS	0.13
ELMERSMITH	ELMERSMITH	0.12
FARMERCITY	FARMERCITY	0.08
G-007	G-007	3.14
GIBSON	GIBSON	0.05
HAMLET	HAMLET	0.12
NEWTON	NEWTON	0.33
O-066	O-066	9.67
PRAIRIE	PRAIRIE	0.61
RENSELAER	RENSELAER	0.3
SANTEETLA	SANTEETLA	0.03
SMITHLAND	SMITHLAND	0.05
TATANKA	TATANKA	0.15
TILTON	TILTON	0.15
TRIMBLE	TRIMBLE	0.13
TVA	TVA	0.41
UNIONPOWER	UNIONPOWER	0.18

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
8542525	206302	28OYSTER C	JCP&L	206297	28MANITOU	JCP&L	1	JC-P1-2-JCC-230-022	single	817.0	117.95	119.05	DC	8.98

Bus #	Bus	MW Impact
206325	28O C GEN	425.09
206360	28O CRK C1	2.86
206361	28O CRK C2	1.61
227801	ONTC&DCT	7.33
227842	MARINGEN	0.09
227927	V4-067C	0.02
228014	PVILLEG	0.09
228201	CARL#2CT	0.24
228202	CUMB CT	0.69

Bus #	Bus	MW Impact
228203	P06	0.73
228206	SHRMN CT	0.63
228251	CARLLS#4	0.03
228260	V4-054C	0.07
228702	WEST CT	0.28
228711	V2-041C	0.02
228717	S121	0.38
228727	W2-039G	0.69
292062	V1-021 C	0.03
902091	W1-130C	0.05
902431	W2-030 C	0.09
913341	Y1-077	8.57
924531	AB2-102 C	23.48
924701	AB2-122 C	0.14
930001	AB1-001 C	0.02
931191	AB1-169A	55.59
938311	AE1-046 C	0.2
938421	AE1-061 C	0.5
938781	AE1-104 C O1	21.94
939501	AE1-179 C O1	3.06
940001	AE1-240 C O1	2.55
940361	AE2-020 C O2	22.11
940371	AE2-021 C O2	22.11
940381	AE2-022 C O2	12.9
940391	AE2-023 C O2	14.39
940401	AE2-024 C O2	107.17
940411	AE2-025 C O2	42.2
940961	AE2-087 C	0.12
940963	AE2-087 BAT	0.08
941001	AE2-091 C O2	1.9
941121	AE2-106 C	0.13
941123	AE2-106 BAT	0.08
941931	AE2-205 C O2	5.03
942101	AE2-222 C O2	16.22
942201	AE2-232 C O2	23.35
942381	AE2-251 C O2	70.06
942941	AE2-314 C	8.98
BLUEG	BLUEG	0.2
CALDERWOOD	CALDERWOOD	0.01
CANNELTON	CANNELTON	0.01
CARR	CARR	0.48
CATAWBA	CATAWBA	0.0
CHEOAH	CHEOAH	0.01
CHILHOWEE	CHILHOWEE	0.0
COFFEEN	COFFEEN	0.02
COTTONWOOD	COTTONWOOD	0.06
CPL	CPL	0.0
DUCKCREEK	DUCKCREEK	0.05
EDWARDS	EDWARDS	0.02
ELMERSMITH	ELMERSMITH	0.02
FARMERCITY	FARMERCITY	0.01
GIBSON	GIBSON	0.01

Bus #	Bus	MW Impact
HAMLET	HAMLET	0.0
NEWTON	NEWTON	0.05
PRAIRIE	PRAIRIE	0.09
RENSSELAER	RENSSELAER	0.38
SANTEETLA	SANTEETLA	0.0
SMITHLAND	SMITHLAND	0.01
TATANKA	TATANKA	0.02
TILTON	TILTON	0.03
TRIMBLE	TRIMBLE	0.02
TVA	TVA	0.05
UNIONPOWER	UNIONPOWER	0.02

ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC DC	MW IMPACT
8542547	206302	28OYSTER C	JCP&L	206297	28MANITOU	JCP&L	2	JC-P1-2-JCC-230-021	single	869.0	110.91	111.94	DC	8.98

Bus #	Bus	MW Impact
206325	28O C GEN	425.17
206360	28O CRK C1	2.86
206361	28O CRK C2	1.61
227801	ONTC&DCT	7.33
227842	MARINGEN	0.09
227927	V4-067C	0.02
228014	PVILLEG	0.09
228201	CARL#2CT	0.24
228202	CUMB CT	0.69
228203	P06	0.73
228206	SHRMN CT	0.63
228251	CARLLS#4	0.03
228260	V4-054C	0.07
228702	WEST CT	0.28
228711	V2-041C	0.02
228717	S121	0.38
228727	W2-039G	0.69
292062	V1-021 C	0.03
902091	W1-130C	0.05
902431	W2-030 C	0.09
913341	Y1-077	8.57
924531	AB2-102 C	23.49
924701	AB2-122 C	0.14
930001	AB1-001 C	0.02
931191	AB1-169A	55.6
938311	AE1-046 C	0.2
938421	AE1-061 C	0.5
938781	AE1-104 C O1	21.94
939501	AE1-179 C O1	3.07
940001	AE1-240 C O1	2.55
940361	AE2-020 C O2	22.12

Bus #	Bus	MW Impact
940371	AE2-021 C O2	22.12
940381	AE2-022 C O2	12.9
940391	AE2-023 C O2	14.39
940401	AE2-024 C O2	107.19
940411	AE2-025 C O2	42.2
940961	AE2-087 C	0.12
940963	AE2-087 BAT	0.08
941001	AE2-091 C O2	1.9
941121	AE2-106 C	0.13
941123	AE2-106 BAT	0.08
941931	AE2-205 C O2	5.03
942101	AE2-222 C O2	16.22
942201	AE2-232 C O2	23.36
942381	AE2-251 C O2	70.07
942941	AE2-314 C	8.98
BLUEG	BLUEG	0.2
CALDERWOOD	CALDERWOOD	0.01
CANNELTON	CANNELTON	0.01
CARR	CARR	0.48
CATAWBA	CATAWBA	0.0
CHEOAH	CHEOAH	0.01
CHILHOWEE	CHILHOWEE	0.0
COFFEEN	COFFEEN	0.02
COTTONWOOD	COTTONWOOD	0.06
CPL	CPL	0.0
DUCKCREEK	DUCKCREEK	0.05
EDWARDS	EDWARDS	0.02
ELMERSMITH	ELMERSMITH	0.02
FARMERCITY	FARMERCITY	0.01
GIBSON	GIBSON	0.01
HAMLET	HAMLET	0.0
NEWTON	NEWTON	0.05
PRAIRIE	PRAIRIE	0.09
RENSELAER	RENSELAER	0.38
SANTEETLA	SANTEETLA	0.0
SMITHLAND	SMITHLAND	0.01
TATANKA	TATANKA	0.02
TILTON	TILTON	0.03
TRIMBLE	TRIMBLE	0.02
TVA	TVA	0.05
UNIONPOWER	UNIONPOWER	0.02

ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC DC	MW IMPACT
8542994	206318	28VANHISVL	JCP&L	206294	28LARRABEE	JCP&L	1	JC-P7-1-JCC-230-12	tower	869.0	164.61	165.83	DC	10.6

Bus #	Bus	MW Impact
206280	28LAKEHURS	0.34

Bus #	Bus	MW Impact
206325	28O C GEN	241.47
206360	28O CRK C1	1.62
206361	28O CRK C2	0.91
207207	28JCB_W1-129	0.07
207208	28JCB_W4-025	0.1
227801	ONTC&DCT	5.32
227842	MARINGEN	0.06
227843	MARINGEN E	0.55
227927	V4-067C	0.02
227928	V4-067E	0.23
228014	PVILLEG	0.07
228712	V2-041E	0.23
292063	V1-021 E	0.03
292099	V1-030 E3	0.1
293404	V3-036	0.76
901981	W1-119 C	0.27
901982	W1-119 E	3.65
901991	W1-120C	2.49
901992	W1-120E	4.06
902082	W1-129E	0.98
902092	W1-130E	0.58
902321	W2-019 C	0.09
902322	W2-019 E	1.16
902432	W2-030 E	0.84
902692	W2-056 E	0.91
902842	W2-071E	0.18
902951	W2-082 C OP1	0.25
902952	W2-082 E OP1	3.33
903152	W2-102 E	0.56
904042	V4-005 E	0.23
904431	W3-124 C	0.02
904432	W3-124 E	0.25
905252	W4-025 E	1.39
905791	W4-103 C	0.05
905792	W4-103 E	0.61
907272	X1-085 E	0.33
912101	X4-015 C	0.07
912102	X4-015 E	0.98
913332	Y1-075 E	0.22
915022	Y3-012 E	1.03
917611	Z2-102 C	0.2
917612	Z2-102 E	2.67
917682	Z2-109 E	2.07
918452	AA1-060 E	4.79
919662	AA2-048 E	1.03
919672	AA2-049 E	0.45
924531	AB2-102 C	20.44
924532	AB2-102 E	0.45
924701	AB2-122 C	0.1
924702	AB2-122 E	0.17
930001	AB1-001 C	0.01
930002	AB1-001 E	0.2

Bus #	Bus	MW Impact
930102	AB1-025 E	0.55
930891	AB1-138 C	0.71
930892	AB1-138 E	1.19
931122	AB1-163 E	0.56
931191	AB1-169A	51.96
932361	AC2-050 C O1	0.43
932362	AC2-050 E O1	0.7
933962	AD1-019 E	1.05
936541	AD2-069 C	0.21
936542	AD2-069 E	0.1
938311	AE1-046 C	0.19
938312	AE1-046 E	0.09
938421	AE1-061 C	0.25
938422	AE1-061 E	0.25
938781	AE1-104 C O1	16.77
938782	AE1-104 E O1	42.89
939121	AE1-142 C O1	3.28
939122	AE1-142 E O1	4.71
940311	AE2-015 C O2	1.06
940312	AE2-015 E O2	0.52
940361	AE2-020 C O2	15.67
940362	AE2-020 E O2	73.37
940371	AE2-021 C O2	15.67
940372	AE2-021 E O2	73.37
940381	AE2-022 C O2	9.14
940382	AE2-022 E O2	42.8
940391	AE2-023 C O2	10.56
940392	AE2-023 E O2	49.43
940401	AE2-024 C O2	60.88
940402	AE2-024 E O2	285.03
940411	AE2-025 C O2	24.69
940412	AE2-025 E O2	115.58
940951	AE2-085 C	0.23
940952	AE2-085 E	0.22
941091	AE2-103 C	0.3
941092	AE2-103 E	0.41
941441	AE2-141 C	0.13
941442	AE2-141 E	0.21
941931	AE2-205 C O2	4.37
941932	AE2-205 E O2	2.91
942101	AE2-222 C O2	11.78
942102	AE2-222 E O2	29.59
942201	AE2-232 C O2	16.55
942202	AE2-232 E O2	42.34
942381	AE2-251 C O2	49.64
942382	AE2-251 E O2	127.02
942941	AE2-314 C	6.36
942942	AE2-314 E	4.24
CARR	CARR	0.91
CBM-S1	CBM-S1	0.09
CBM-S2	CBM-S2	0.12
CBM-W1	CBM-W1	0.02

Bus #	Bus	MW Impact
CBM-W2	CBM-W2	0.54
CIN	CIN	0.02
CPLE	CPLE	0.06
G-007	G-007	9.99
IPL	IPL	0.02
LGEE	LGEE	0.01
MEC	MEC	0.06
O-066	O-066	25.16
RENSSELAER	RENSSELAER	0.72
WEC	WEC	0.01

ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC DC	MW IMPACT
8542970	206319	28WHITINGS	JCP&L	206720	28MANCHSTR	JCP&L	1	JC-P7-1-JCC-230-10A	tower	869.0	171.18	172.42	DC	10.77

Bus #	Bus	MW Impact
206280	28LAKEHURS	0.64
206306	28LKWD G1	5.61
206308	28LKWD G2	5.61
206312	28LKWD G3	3.45
206325	28O C GEN	312.99
206360	28O CRK C1	2.11
206361	28O CRK C2	1.18
206366	28LKWD CT1	10.63
206367	28LKWD CT2	10.63
227801	ONTC&DCT	5.26
227842	MARINGEN	0.06
227843	MARINGEN E	0.55
227927	V4-067C	0.02
227928	V4-067E	0.23
228014	PVILLEG	0.07
292063	V1-021 E	0.03
293404	V3-036	0.75
902432	W2-030 E	0.83
915022	Y3-012 E	1.02
917612	Z2-102 E	0.76
924701	AB2-122 C	0.1
924702	AB2-122 E	0.17
930001	AB1-001 C	0.01
930002	AB1-001 E	0.2
930891	AB1-138 C	1.34
930892	AB1-138 E	2.24
931122	AB1-163 E	0.78
933962	AD1-019 E	1.04
934351	AD1-059	1.0
938781	AE1-104 C O1	15.65
938782	AE1-104 E O1	40.02
939121	AE1-142 C O1	4.44

Bus #	Bus	MW Impact
939122	AE1-142 E O1	6.39
940361	AE2-020 C O2	15.93
940362	AE2-020 E O2	74.56
940371	AE2-021 C O2	15.93
940372	AE2-021 E O2	74.56
940381	AE2-022 C O2	9.29
940382	AE2-022 E O2	43.5
940391	AE2-023 C O2	10.32
940392	AE2-023 E O2	48.32
940401	AE2-024 C O2	78.91
940402	AE2-024 E O2	369.45
940411	AE2-025 C O2	30.99
940412	AE2-025 E O2	145.06
942101	AE2-222 C O2	11.64
942102	AE2-222 E O2	29.25
942201	AE2-232 C O2	16.82
942202	AE2-232 E O2	43.03
942381	AE2-251 C O2	50.45
942382	AE2-251 E O2	129.09
942941	AE2-314 C	6.46
942942	AE2-314 E	4.31
BLUEG	BLUEG	1.21
CALDERWOOD	CALDERWOOD	0.13
CANNELTON	CANNELTON	0.07
CARR	CARR	0.39
CATAWBA	CATAWBA	0.08
CHEOAH	CHEOAH	0.12
CHILHOWEE	CHILHOWEE	0.04
COFFEEN	COFFEEN	0.13
COTTONWOOD	COTTONWOOD	0.49
DUCKCREEK	DUCKCREEK	0.28
EDWARDS	EDWARDS	0.13
ELMERSMITH	ELMERSMITH	0.13
FARMERCITY	FARMERCITY	0.08
G-007	G-007	3.17
GIBSON	GIBSON	0.05
HAMLET	HAMLET	0.13
NEWTON	NEWTON	0.33
O-066	O-066	9.77
PRAIRIE	PRAIRIE	0.62
RENSSELAER	RENSSELAER	0.31
SANTEETLA	SANTEETLA	0.03
SMITHLAND	SMITHLAND	0.05
TATANKA	TATANKA	0.15
TILTON	TILTON	0.15
TRIMBLE	TRIMBLE	0.13
TVA	TVA	0.41
UNIONPOWER	UNIONPOWER	0.18

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
8542250	206323	28LAKEWOOD	JCP&L	206294	28LARRABEE	JCP&L	2	JC-P2-3-JCC-230-13D	breaker	817.0	208.24	209.66	DC	11.59

Bus #	Bus	MW Impact
206280	28LAKEHURS	0.57
206306	28LKWD G1	7.36
206308	28LKWD G2	7.36
206312	28LKWD G3	4.53
206325	28O C GEN	321.99
206360	28O CRK C1	2.17
206361	28O CRK C2	1.22
206366	28LKWD CT1	13.94
206367	28LKWD CT2	13.94
227801	ONTC&DCT	5.69
227842	MARINGEN	0.07
227843	MARINGEN E	0.59
227927	V4-067C	0.02
227928	V4-067E	0.24
228014	PVILLEG	0.07
292063	V1-021 E	0.03
293404	V3-036	0.81
901982	W1-119 E	1.2
901991	W1-120C	0.82
901992	W1-120E	1.33
902432	W2-030 E	0.9
915022	Y3-012 E	1.11
917612	Z2-102 E	0.97
924701	AB2-122 C	0.11
924702	AB2-122 E	0.18
930001	AB1-001 C	0.02
930002	AB1-001 E	0.21
930891	AB1-138 C	1.19
930892	AB1-138 E	1.99
931122	AB1-163 E	0.72
933962	AD1-019 E	1.12
934351	AD1-059	1.31
938781	AE1-104 C O1	17.12
938782	AE1-104 E O1	43.8
939121	AE1-142 C O1	4.44
939122	AE1-142 E O1	6.38
940361	AE2-020 C O2	17.13
940362	AE2-020 E O2	80.19
940371	AE2-021 C O2	17.13
940372	AE2-021 E O2	80.19
940381	AE2-022 C O2	9.99
940382	AE2-022 E O2	46.78
940391	AE2-023 C O2	11.19
940392	AE2-023 E O2	52.38
940401	AE2-024 C O2	81.18

Bus #	Bus	MW Impact
940402	AE2-024 E O2	380.07
940411	AE2-025 C O2	32.05
940412	AE2-025 E O2	150.04
942101	AE2-222 C O2	12.59
942102	AE2-222 E O2	31.63
942201	AE2-232 C O2	18.09
942202	AE2-232 E O2	46.28
942381	AE2-251 C O2	54.26
942382	AE2-251 E O2	138.83
942941	AE2-314 C	6.95
942942	AE2-314 E	4.63
BLUEG	BLUEG	1.5
CALDERWOOD	CALDERWOOD	0.15
CANNELTON	CANNELTON	0.09
CARR	CARR	0.58
CATAWBA	CATAWBA	0.09
CHEOAH	CHEOAH	0.14
CHILHOWEE	CHILHOWEE	0.05
COFFEEN	COFFEEN	0.16
COTTONWOOD	COTTONWOOD	0.61
DUCKCREEK	DUCKCREEK	0.35
EDWARDS	EDWARDS	0.16
ELMERSMITH	ELMERSMITH	0.16
FARMERCITY	FARMERCITY	0.1
G-007	G-007	5.18
GIBSON	GIBSON	0.06
HAMLET	HAMLET	0.15
NEWTON	NEWTON	0.41
O-066	O-066	14.98
PRAIRIE	PRAIRIE	0.76
RENSSELAER	RENSSELAER	0.46
SANTEETLA	SANTEETLA	0.04
SMITHLAND	SMITHLAND	0.06
TATANKA	TATANKA	0.19
TILTON	TILTON	0.19
TRIMBLE	TRIMBLE	0.17
TVA	TVA	0.5
UNIONPOWER	UNIONPOWER	0.22

ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC DC	MW IMPACT
8542983	206720	28MANCHSTR	JCP&L	206318	28VANHISVL	JCP&L	1	JC-P7-1-JCC-230-10A	tower	869.0	169.45	170.69	DC	10.77

Bus #	Bus	MW Impact
206280	28LAKEHURS	0.64
206306	28LKWD G1	5.61
206308	28LKWD G2	5.61
206312	28LKWD G3	3.45

Bus #	Bus	MW Impact
206325	280 C GEN	312.99
206360	280 CRK C1	2.11
206361	280 CRK C2	1.18
206366	28LKWD CT1	10.63
206367	28LKWD CT2	10.63
227801	ONTC&DCT	5.26
227842	MARINGEN	0.06
227843	MARINGEN E	0.55
227927	V4-067C	0.02
227928	V4-067E	0.23
228014	PVILLEG	0.07
292063	V1-021 E	0.03
293404	V3-036	0.75
902432	W2-030 E	0.83
915022	Y3-012 E	1.02
917612	Z2-102 E	0.76
924701	AB2-122 C	0.1
924702	AB2-122 E	0.17
930001	AB1-001 C	0.01
930002	AB1-001 E	0.2
930891	AB1-138 C	1.34
930892	AB1-138 E	2.24
931122	AB1-163 E	0.78
933962	AD1-019 E	1.04
934351	AD1-059	1.0
938781	AE1-104 C O1	15.65
938782	AE1-104 E O1	40.02
939121	AE1-142 C O1	4.44
939122	AE1-142 E O1	6.39
940361	AE2-020 C O2	15.93
940362	AE2-020 E O2	74.56
940371	AE2-021 C O2	15.93
940372	AE2-021 E O2	74.56
940381	AE2-022 C O2	9.29
940382	AE2-022 E O2	43.5
940391	AE2-023 C O2	10.32
940392	AE2-023 E O2	48.32
940401	AE2-024 C O2	78.91
940402	AE2-024 E O2	369.45
940411	AE2-025 C O2	30.99
940412	AE2-025 E O2	145.06
942101	AE2-222 C O2	11.64
942102	AE2-222 E O2	29.25
942201	AE2-232 C O2	16.82
942202	AE2-232 E O2	43.03
942381	AE2-251 C O2	50.45
942382	AE2-251 E O2	129.09
942941	AE2-314 C	6.46
942942	AE2-314 E	4.31
BLUEG	BLUEG	1.21
CALDERWOOD	CALDERWOOD	0.13
CANNELTON	CANNELTON	0.07

Bus #	Bus	MW Impact
CARR	CARR	0.39
CATAWBA	CATAWBA	0.08
CHEOAH	CHEOAH	0.12
CHILHOWEE	CHILHOWEE	0.04
COFFEEN	COFFEEN	0.13
COTTONWOOD	COTTONWOOD	0.49
DUCKCREEK	DUCKCREEK	0.28
EDWARDS	EDWARDS	0.13
ELMERSMITH	ELMERSMITH	0.13
FARMERCITY	FARMERCITY	0.08
G-007	G-007	3.17
GIBSON	GIBSON	0.05
HAMLET	HAMLET	0.13
NEWTON	NEWTON	0.33
O-066	O-066	9.77
PRAIRIE	PRAIRIE	0.62
RENSSELAER	RENSSELAER	0.31
SANTEETLA	SANTEETLA	0.03
SMITHLAND	SMITHLAND	0.05
TATANKA	TATANKA	0.15
TILTON	TILTON	0.15
TRIMBLE	TRIMBLE	0.13
TVA	TVA	0.41
UNIONPOWER	UNIONPOWER	0.18

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
8542462	213922	RICHMOND	PECO	214012	WANEETA3	PECO	1	PECO_P4_CHICH045/* \$ DELCO \$ PECO_P4_CHICH045 \$ STBK	breaker	1180.0	118.56	119.06	DC	13.18

Bus #	Bus	MW Impact
213606	FAIRLESS	9.69
213878	PENNSBRY	0.92
213918	RICHMD91	2.82
213919	RICHMD92	2.82
219124	CAMDEN_STG	2.8
219126	CAMDEN_CTG	3.44
219128	GLOUCSTR_26	1.52
219229	EAGLEPT_G3	2.5
219230	EAGLEPT_G1	3.7
219241	CAMDEN1	0.21
219242	CAMDEN2	0.02
227801	ONTC&DCT	7.26
227843	MARINGEN E	0.75
227928	V4-067E	0.3
228261	V4-054E	1.35
228357	V2-046E	3.06
228712	V2-041E	0.49
228721	V2-035E	0.28
291996	U4-036 E	1.01

Bus #	Bus	MW Impact
292063	V1-021 E	0.06
292088	V1-030 CB	0.1
292099	V1-030 E3	0.23
292105	V1-030 E6	0.3
292115	V1-030 EB	1.33
292194	V1-030 CE	0.09
292195	V1-030 EE	1.23
293404	V3-036	1.03
902092	W1-130E	1.35
902432	W2-030 E	1.17
902692	W2-056 E	1.64
902842	W2-071E	0.45
903152	W2-102 E	1.04
903991	W3-080C	1.96
903992	W3-080E	3.21
904042	V4-005 E	0.43
904432	W3-124 E	0.42
905792	W4-103 E	1.03
907382	X1-070 E	0.73
907392	X1-071 E	0.26
909032	X2-013 E	0.63
910862	X3-075 E	1.06
913242	Y1-057 E	0.32
913332	Y1-075 E	0.41
915022	Y3-012 E	1.41
915072	Y3-026 E	1.6
915592	Y3-087 E OP1	0.8
916292	Z1-082 E	0.34
917381	Z2-062	0.13
924051	AB2-049 C	0.87
924052	AB2-049 E	1.41
924531	AB2-102 C	43.43
924532	AB2-102 E	0.97
924701	AB2-122 C	0.13
924702	AB2-122 E	0.22
925391	AC1-010 C	0.78
925392	AC1-010 E	1.34
925442	AC1-016 E	1.41
925452	AC1-017 E	0.67
925562	AC1-030 E	0.51
930002	AB1-001 E	0.27
930102	AB1-025 E	1.01
930242	AB1-063 E	0.14
930722	AB1-116 E	0.18
930732	AB1-119 E	0.17
931191	AB1-169A	119.56
932361	AC2-050 C O1	0.89
932362	AC2-050 E O1	1.46
933962	AD1-019 E	1.43
936211	AD2-027 C	1.4
936212	AD2-027 E	2.29
936321	AD2-042 C	1.85

Bus #	Bus	MW Impact
936322	AD2-042 E	3.03
936411	AD2-052 C	1.54
936412	AD2-052 E	0.76
936491	AD2-064 C	0.12
936492	AD2-064 E	0.17
936501	AD2-065 C	0.5
936502	AD2-065 E	0.69
936541	AD2-069 C	0.52
936542	AD2-069 E	0.26
937011	AD2-135 C	0.13
937012	AD2-135 E	0.23
938311	AE1-046 C	0.43
938312	AE1-046 E	0.22
938421	AE1-061 C	0.58
938422	AE1-061 E	0.58
938431	AE1-062 C	1.2
938432	AE1-062 E	1.2
938611	AE1-083 C	0.51
938612	AE1-083 E	0.71
938781	AE1-104 C O1	26.58
938782	AE1-104 E O1	67.99
938871	AE1-115 C	1.26
938872	AE1-115 E	1.26
939301	AE1-161 C	2.41
939302	AE1-161 E	3.61
939501	AE1-179 C O1	7.33
939502	AE1-179 E O1	5.17
939821	AE1-218 C O1	0.19
939822	AE1-218 E O1	0.28
939831	AE1-219 C O1	0.42
939832	AE1-219 E O1	0.61
939931	AE1-229 C O1	20.42
939932	AE1-229 E O1	13.83
940001	AE1-240 C O1	6.08
940002	AE1-240 E O1	4.34
940281	AE2-011 C	0.29
940282	AE2-011 E	0.41
940361	AE2-020 C O2	19.49
940362	AE2-020 E O2	91.26
940371	AE2-021 C O2	19.49
940372	AE2-021 E O2	91.26
940381	AE2-022 C O2	11.37
940382	AE2-022 E O2	53.23
940391	AE2-023 C O2	14.81
940392	AE2-023 E O2	69.34
940771	AE2-064 C	0.37
940772	AE2-064 E	0.5
940781	AE2-065 C	0.24
940782	AE2-065 E	0.37
940951	AE2-085 C	0.43
940952	AE2-085 E	0.41
940961	AE2-087 C	0.32

Bus #	Bus	MW Impact
940962	AE2-087 E	0.44
940963	AE2-087 BAT	0.12
940971	AE2-088 C	0.17
940972	AE2-088 E	0.23
940973	AE2-088 BAT	0.1
941001	AE2-091 C O2	4.91
941002	AE2-091 E O2	2.56
941051	AE2-097 C	0.24
941052	AE2-097 E	0.38
941071	AE2-101 C	0.42
941072	AE2-101 E	0.58
941121	AE2-106 C	0.35
941122	AE2-106 E	0.49
941123	AE2-106 BAT	0.12
941441	AE2-141 C	0.27
941442	AE2-141 E	0.44
941471	AE2-144 C	0.49
941472	AE2-144 E	0.46
941931	AE2-205 C O2	9.18
941932	AE2-205 E O2	6.12
942011	AE2-213 C	0.37
942012	AE2-213 E	0.33
942101	AE2-222 C O2	16.06
942102	AE2-222 E O2	40.34
942201	AE2-232 C O2	20.58
942202	AE2-232 E O2	52.67
942381	AE2-251 C O2	61.75
942382	AE2-251 E O2	158.0
942571	AE2-272	0.33
942941	AE2-314 C	7.91
942942	AE2-314 E	5.27
943071	AE2-334 C	6.7
943072	AE2-334 E	3.57
943081	AE2-335 C O2	9.58
943082	AE2-335 E O2	4.27
BLUEG	BLUEG	6.64
CALDERWOOD	CALDERWOOD	0.72
CANNELTON	CANNELTON	0.4
CATAWBA	CATAWBA	0.46
CBM-N	CBM-N	0.84
CHEOAH	CHEOAH	0.66
CHILHOWEE	CHILHOWEE	0.24
COFFEEN	COFFEEN	0.7
COTTONWOOD	COTTONWOOD	2.77
DUCKCREEK	DUCKCREEK	1.53
EDWARDS	EDWARDS	0.7
ELMERSMITH	ELMERSMITH	0.7
FARMERCITY	FARMERCITY	0.46
G-007A	G-007A	12.57
GIBSON	GIBSON	0.27
HAMLET	HAMLET	0.75
NEWTON	NEWTON	1.83

Bus #	Bus	MW Impact
NYISO	NYISO	3.63
PRAIRIE	PRAIRIE	3.42
SANTEETLA	SANTEETLA	0.19
SMITHLAND	SMITHLAND	0.27
TATANKA	TATANKA	0.83
TILTON	TILTON	0.83
TRIMBLE	TRIMBLE	0.74
TVA	TVA	2.31
UNIONPOWER	UNIONPOWER	1.03
VFT	VFT	22.63

ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC DC	MW IMPACT
14339085	214010	WANEETA2	PECO	213817	N PHILA	PECO	1	PECO_P4_CHICH045/* \$ DELCO \$ PECO_P4_CHICH045 \$ STBK	breaker	621.0	106.72	107.22	DC	6.83

Bus #	Bus	MW Impact
213606	FAIRLESS	6.63
213878	PENNSBRY	0.63
213918	RICHMD91	1.37
213919	RICHMD92	1.37
219124	CAMDEN_STG	1.4
219126	CAMDEN_CTG	1.72
219128	GLOUCSTR_26	0.76
219229	EAGLEPT_G3	1.25
219230	EAGLEPT_G1	1.85
219241	CAMDEN1	0.1
219242	CAMDEN2	0.01
227801	ONTC&DCT	3.75
227843	MARINGEN E	0.39
227928	V4-067E	0.16
228261	V4-054E	0.69
228357	V2-046E	1.55
228712	V2-041E	0.25
228721	V2-035E	0.14
291996	U4-036 E	0.51
292063	V1-021 E	0.03
292088	V1-030 CB	0.05
292099	V1-030 E3	0.12
292105	V1-030 E6	0.15
292115	V1-030 EB	0.66
292194	V1-030 CE	0.05
292195	V1-030 EE	0.61
293404	V3-036	0.53
902092	W1-130E	0.69
902432	W2-030 E	0.6
902692	W2-056 E	0.86
902842	W2-071E	0.23
903152	W2-102 E	0.55
903991	W3-080C	1.09

Bus #	Bus	MW Impact
903992	W3-080E	1.78
904042	V4-005 E	0.23
904432	W3-124 E	0.22
905792	W4-103 E	0.54
907382	X1-070 E	0.37
907391	X1-071 C	0.01
907392	X1-071 E	0.13
909032	X2-013 E	0.32
910862	X3-075 E	0.53
913332	Y1-075 E	0.22
915022	Y3-012 E	0.73
915072	Y3-026 E	0.89
915592	Y3-087 E OP1	0.4
916292	Z1-082 E	0.17
917381	Z2-062	0.06
924051	AB2-049 C	0.44
924052	AB2-049 E	0.72
924531	AB2-102 C	22.23
924532	AB2-102 E	0.49
924701	AB2-122 C	0.07
924702	AB2-122 E	0.12
925391	AC1-010 C	0.39
925392	AC1-010 E	0.67
925442	AC1-016 E	0.78
925452	AC1-017 E	0.36
925561	AC1-030 C	0.02
925562	AC1-030 E	0.26
930002	AB1-001 E	0.14
930102	AB1-025 E	0.53
930242	AB1-063 E	0.07
930722	AB1-116 E	0.09
930732	AB1-119 E	0.08
931191	AB1-169A	61.04
932361	AC2-050 C O1	0.47
932362	AC2-050 E O1	0.76
933962	AD1-019 E	0.74
936211	AD2-027 C	0.7
936212	AD2-027 E	1.14
936321	AD2-042 C	0.92
936322	AD2-042 E	1.51
936411	AD2-052 C	0.78
936412	AD2-052 E	0.38
936491	AD2-064 C	0.06
936492	AD2-064 E	0.08
936501	AD2-065 C	0.26
936502	AD2-065 E	0.35
936541	AD2-069 C	0.27
936542	AD2-069 E	0.13
937011	AD2-135 C	0.07
937012	AD2-135 E	0.12
938311	AE1-046 C	0.22
938312	AE1-046 E	0.11

Bus #	Bus	MW Impact
938421	AE1-061 C	0.29
938422	AE1-061 E	0.29
938431	AE1-062 C	0.62
938432	AE1-062 E	0.62
938611	AE1-083 C	0.29
938612	AE1-083 E	0.4
938781	AE1-104 C O1	13.68
938782	AE1-104 E O1	35.0
938871	AE1-115 C	0.64
938872	AE1-115 E	0.64
939301	AE1-161 C	1.23
939302	AE1-161 E	1.84
939501	AE1-179 C O1	3.74
939502	AE1-179 E O1	2.64
939821	AE1-218 C O1	0.1
939822	AE1-218 E O1	0.14
939831	AE1-219 C O1	0.21
939832	AE1-219 E O1	0.31
939931	AE1-229 C O1	10.36
939932	AE1-229 E O1	7.02
940001	AE1-240 C O1	3.1
940002	AE1-240 E O1	2.21
940281	AE2-011 C	0.15
940282	AE2-011 E	0.21
940361	AE2-020 C O2	10.1
940362	AE2-020 E O2	47.27
940371	AE2-021 C O2	10.1
940372	AE2-021 E O2	47.27
940381	AE2-022 C O2	5.89
940382	AE2-022 E O2	27.58
940391	AE2-023 C O2	7.65
940392	AE2-023 E O2	35.79
940771	AE2-064 C	0.18
940772	AE2-064 E	0.25
940781	AE2-065 C	0.12
940782	AE2-065 E	0.19
940951	AE2-085 C	0.23
940952	AE2-085 E	0.21
940961	AE2-087 C	0.16
940962	AE2-087 E	0.22
940963	AE2-087 BAT	0.06
940971	AE2-088 C	0.09
940972	AE2-088 E	0.12
940973	AE2-088 BAT	0.05
941001	AE2-091 C O2	2.5
941002	AE2-091 E O2	1.31
941051	AE2-097 C	0.12
941052	AE2-097 E	0.2
941071	AE2-101 C	0.21
941072	AE2-101 E	0.29
941121	AE2-106 C	0.18
941122	AE2-106 E	0.25

Bus #	Bus	MW Impact
941123	AE2-106 BAT	0.06
941441	AE2-141 C	0.14
941442	AE2-141 E	0.23
941471	AE2-144 C	0.25
941472	AE2-144 E	0.23
941931	AE2-205 C O2	4.7
941932	AE2-205 E O2	3.13
942011	AE2-213 C	0.19
942012	AE2-213 E	0.17
942101	AE2-222 C O2	8.29
942102	AE2-222 E O2	20.83
942201	AE2-232 C O2	10.66
942202	AE2-232 E O2	27.28
942381	AE2-251 C O2	31.99
942382	AE2-251 E O2	81.85
942571	AE2-272	0.17
942941	AE2-314 C	4.1
942942	AE2-314 E	2.73
943071	AE2-334 C	3.41
943072	AE2-334 E	1.82
943081	AE2-335 C O2	4.87
943082	AE2-335 E O2	2.17
BLUEG	BLUEG	2.88
CALDERWOOD	CALDERWOOD	0.32
CANNELTON	CANNELTON	0.18
CATAWBA	CATAWBA	0.21
CBM-N	CBM-N	0.87
CHEOAH	CHEOAH	0.29
CHILHOWEE	CHILHOWEE	0.1
COFFEEN	COFFEEN	0.3
COTTONWOOD	COTTONWOOD	1.22
DUCKCREEK	DUCKCREEK	0.66
EDWARDS	EDWARDS	0.3
ELMERSMITH	ELMERSMITH	0.3
FARMERCITY	FARMERCITY	0.2
G-007A	G-007A	8.18
GIBSON	GIBSON	0.12
HAMLET	HAMLET	0.34
NEWTON	NEWTON	0.79
NYISO	NYISO	3.79
PRAIRIE	PRAIRIE	1.49
SANTEETLA	SANTEETLA	0.09
SMITHLAND	SMITHLAND	0.12
TATANKA	TATANKA	0.36
TILTON	TILTON	0.36
TRIMBLE	TRIMBLE	0.32
TVA	TVA	1.01
UNIONPOWER	UNIONPOWER	0.45
VFT	VFT	16.55

ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC DC	MW IMPACT
8542464	214206	RICHRE29	PECO	213922	RICHMOND	PECO	1	PECO_P4_CHICH045/* \$ DELCO \$ PECO_P4_CHICH045 \$ STBK	breaker	1336.0	116.91	117.38	DC	13.67

Bus #	Bus	MW Impact
219124	CAMDEN_STG	3.13
219126	CAMDEN_CTG	3.85
219128	GLOUCSTR_26	1.7
219229	EAGLEPT_G3	2.79
219230	EAGLEPT_G1	4.12
219231	EAGLEPT_G2	4.12
219241	CAMDEN1	0.23
219242	CAMDEN2	0.03
227801	ONTC&DCT	7.56
227843	MARINGEN E	0.78
227928	V4-067E	0.31
228261	V4-054E	1.44
228357	V2-046E	3.3
228423	Q-090 2	30.11
228712	V2-041E	0.52
228721	V2-035E	0.3
291995	U4-036 C	0.08
291996	U4-036 E	1.12
292063	V1-021 E	0.06
292088	V1-030 CB	0.11
292099	V1-030 E3	0.22
292104	V1-030 C6	0.02
292105	V1-030 E6	0.33
292115	V1-030 EB	1.49
292194	V1-030 CE	0.1
292195	V1-030 EE	1.37
293404	V3-036	1.08
902092	W1-130E	1.43
902432	W2-030 E	1.21
902692	W2-056 E	1.53
902842	W2-071E	0.44
903152	W2-102 E	0.98
903991	W3-080C	1.35
903992	W3-080E	2.2
904042	V4-005 E	0.4
904432	W3-124 E	0.4
905792	W4-103 E	0.97
907381	X1-070 C	0.05
907382	X1-070 E	0.77
907391	X1-071 C	0.01
907392	X1-071 E	0.26
909032	X2-013 E	0.7
910862	X3-075 E	1.18
913332	Y1-075 E	0.39
914231	Y2-081 C OP1	1.35

Bus #	Bus	MW Impact
914232	Y2-081 E OP1	0.07
915022	Y3-012 E	1.47
915072	Y3-026 E	1.1
915591	Y3-087 C OP1	0.06
915592	Y3-087 E OP1	0.89
916292	Z1-082 E	0.38
917381	Z2-062	0.14
919901	AB1-000 1	1.04
919911	AB1-000 2	1.04
919921	AB1-000 3	1.04
924051	AB2-049 C	0.91
924052	AB2-049 E	1.48
924531	AB2-102 C	45.91
924532	AB2-102 E	1.02
924701	AB2-122 C	0.14
924702	AB2-122 E	0.23
925391	AC1-010 C	0.87
925392	AC1-010 E	1.5
925442	AC1-016 E	0.97
925452	AC1-017 E	0.56
925561	AC1-030 C	0.04
925562	AC1-030 E	0.52
930002	AB1-001 E	0.28
930102	AB1-025 E	0.94
930242	AB1-063 E	0.15
930722	AB1-116 E	0.19
930732	AB1-119 E	0.17
931191	AB1-169A	126.85
932361	AC2-050 C O1	0.86
932362	AC2-050 E O1	1.41
933962	AD1-019 E	1.49
934661	AD1-097 1	1.67
934671	AD1-097 2	1.67
934681	AD1-097 3	1.67
934691	AD1-097 4	0.99
936211	AD2-027 C	1.57
936212	AD2-027 E	2.57
936321	AD2-042 C	2.07
936322	AD2-042 E	3.4
936411	AD2-052 C	1.66
936412	AD2-052 E	0.82
936491	AD2-064 C	0.12
936492	AD2-064 E	0.17
936501	AD2-065 C	0.51
936502	AD2-065 E	0.71
936541	AD2-069 C	0.51
936542	AD2-069 E	0.25
937011	AD2-135 C	0.14
937012	AD2-135 E	0.24
938311	AE1-046 C	0.46
938312	AE1-046 E	0.23
938421	AE1-061 C	0.61

Bus #	Bus	MW Impact
938422	AE1-061 E	0.61
938431	AE1-062 C	1.23
938432	AE1-062 E	1.23
938611	AE1-083 C	0.35
938612	AE1-083 E	0.49
938781	AE1-104 C O1	27.85
938782	AE1-104 E O1	71.26
938871	AE1-115 C	1.36
938872	AE1-115 E	1.36
939301	AE1-161 C	2.57
939302	AE1-161 E	3.85
939501	AE1-179 C O1	7.79
939502	AE1-179 E O1	5.5
939821	AE1-218 C O1	0.2
939822	AE1-218 E O1	0.3
939831	AE1-219 C O1	0.44
939832	AE1-219 E O1	0.64
939931	AE1-229 C O1	21.94
939932	AE1-229 E O1	14.86
940001	AE1-240 C O1	6.46
940002	AE1-240 E O1	4.61
940281	AE2-011 C	0.31
940282	AE2-011 E	0.42
940361	AE2-020 C O2	20.21
940362	AE2-020 E O2	94.63
940371	AE2-021 C O2	20.21
940372	AE2-021 E O2	94.63
940381	AE2-022 C O2	11.79
940382	AE2-022 E O2	55.2
940391	AE2-023 C O2	15.45
940392	AE2-023 E O2	72.34
940771	AE2-064 C	0.41
940772	AE2-064 E	0.56
940781	AE2-065 C	0.26
940782	AE2-065 E	0.41
940951	AE2-085 C	0.41
940952	AE2-085 E	0.39
940961	AE2-087 C	0.34
940962	AE2-087 E	0.47
940963	AE2-087 BAT	0.13
940971	AE2-088 C	0.18
940972	AE2-088 E	0.25
940973	AE2-088 BAT	0.1
941001	AE2-091 C O2	5.24
941002	AE2-091 E O2	2.73
941051	AE2-097 C	0.25
941052	AE2-097 E	0.41
941071	AE2-101 C	0.46
941072	AE2-101 E	0.63
941121	AE2-106 C	0.38
941122	AE2-106 E	0.52
941123	AE2-106 BAT	0.13

Bus #	Bus	MW Impact
941441	AE2-141 C	0.26
941442	AE2-141 E	0.42
941471	AE2-144 C	0.55
941472	AE2-144 E	0.97
941931	AE2-205 C O2	9.7
941932	AE2-205 E O2	6.47
942011	AE2-213 C	0.41
942012	AE2-213 E	0.7
942101	AE2-222 C O2	16.74
942102	AE2-222 E O2	42.04
942201	AE2-232 C O2	21.34
942202	AE2-232 E O2	54.61
942381	AE2-251 C O2	64.03
942382	AE2-251 E O2	163.83
942571	AE2-272	0.36
942941	AE2-314 C	8.2
942942	AE2-314 E	5.47
943071	AE2-334 C	7.11
943072	AE2-334 E	3.79
943081	AE2-335 C O2	10.22
943082	AE2-335 E O2	4.56
BLUEG	BLUEG	5.69
CALDERWOOD	CALDERWOOD	0.61
CANNELTON	CANNELTON	0.34
CATAWBA	CATAWBA	0.39
CBM-N	CBM-N	0.34
CHEOAH	CHEOAH	0.56
CHILHOWEE	CHILHOWEE	0.2
COFFEEN	COFFEEN	0.6
COTTONWOOD	COTTONWOOD	2.36
DUCKCREEK	DUCKCREEK	1.31
EDWARDS	EDWARDS	0.6
ELMERSMITH	ELMERSMITH	0.59
FARMERCITY	FARMERCITY	0.4
G-007A	G-007A	9.86
GIBSON	GIBSON	0.23
HAMLET	HAMLET	0.63
NEWTON	NEWTON	1.57
NYISO	NYISO	1.45
PRAIRIE	PRAIRIE	2.92
SANTEETLA	SANTEETLA	0.16
SMITHLAND	SMITHLAND	0.23
TATANKA	TATANKA	0.71
TILTON	TILTON	0.72
TRIMBLE	TRIMBLE	0.63
TVA	TVA	1.97
UNIONPOWER	UNIONPOWER	0.88
VFT	VFT	14.46

ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC DC	MW IMPACT
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ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC DC	MW IMPACT
8542463	219125	CAMDEN	PSE&G	214206	RICHRE29	PECO	1	PECO_P4_CHICH045/* \$ DELCO \$ PECO_P4_CHICH045 \$ STBK	breaker	1336.0	116.93	117.4	DC	13.67

Bus #	Bus	MW Impact
219124	CAMDEN_STG	3.13
219126	CAMDEN_CTG	3.85
219128	GLOUCSTR_26	1.7
219229	EAGLEPT_G3	2.79
219230	EAGLEPT_G1	4.12
219231	EAGLEPT_G2	4.12
219241	CAMDEN1	0.23
219242	CAMDEN2	0.03
227801	ONTC&DCT	7.56
227843	MARINGEN E	0.78
227928	V4-067E	0.31
228261	V4-054E	1.44
228357	V2-046E	3.3
228423	Q-090 2	30.11
228712	V2-041E	0.52
228721	V2-035E	0.3
291995	U4-036 C	0.08
291996	U4-036 E	1.12
292063	V1-021 E	0.06
292088	V1-030 CB	0.11
292099	V1-030 E3	0.22
292104	V1-030 C6	0.02
292105	V1-030 E6	0.33
292115	V1-030 EB	1.49
292194	V1-030 CE	0.1
292195	V1-030 EE	1.37
293404	V3-036	1.08
902092	W1-130E	1.43
902432	W2-030 E	1.21
902692	W2-056 E	1.53
902842	W2-071E	0.44
903152	W2-102 E	0.98
903991	W3-080C	1.35
903992	W3-080E	2.2
904042	V4-005 E	0.4
904432	W3-124 E	0.4
905792	W4-103 E	0.97
907381	X1-070 C	0.05
907382	X1-070 E	0.77
907391	X1-071 C	0.01
907392	X1-071 E	0.26
909032	X2-013 E	0.7
910862	X3-075 E	1.18
913332	Y1-075 E	0.39
914231	Y2-081 C OP1	1.35

Bus #	Bus	MW Impact
914232	Y2-081 E OP1	0.07
915022	Y3-012 E	1.47
915072	Y3-026 E	1.1
915591	Y3-087 C OP1	0.06
915592	Y3-087 E OP1	0.89
916292	Z1-082 E	0.38
917381	Z2-062	0.14
919901	AB1-000 1	1.04
919911	AB1-000 2	1.04
919921	AB1-000 3	1.04
924051	AB2-049 C	0.91
924052	AB2-049 E	1.48
924531	AB2-102 C	45.91
924532	AB2-102 E	1.02
924701	AB2-122 C	0.14
924702	AB2-122 E	0.23
925391	AC1-010 C	0.87
925392	AC1-010 E	1.5
925442	AC1-016 E	0.97
925452	AC1-017 E	0.56
925561	AC1-030 C	0.04
925562	AC1-030 E	0.52
930002	AB1-001 E	0.28
930102	AB1-025 E	0.94
930242	AB1-063 E	0.15
930722	AB1-116 E	0.19
930732	AB1-119 E	0.17
931191	AB1-169A	126.85
932361	AC2-050 C O1	0.86
932362	AC2-050 E O1	1.41
933962	AD1-019 E	1.49
934661	AD1-097 1	1.67
934671	AD1-097 2	1.67
934681	AD1-097 3	1.67
934691	AD1-097 4	0.99
936211	AD2-027 C	1.57
936212	AD2-027 E	2.57
936321	AD2-042 C	2.07
936322	AD2-042 E	3.4
936411	AD2-052 C	1.66
936412	AD2-052 E	0.82
936491	AD2-064 C	0.12
936492	AD2-064 E	0.17
936501	AD2-065 C	0.51
936502	AD2-065 E	0.71
936541	AD2-069 C	0.51
936542	AD2-069 E	0.25
937011	AD2-135 C	0.14
937012	AD2-135 E	0.24
938311	AE1-046 C	0.46
938312	AE1-046 E	0.23
938421	AE1-061 C	0.61

Bus #	Bus	MW Impact
938422	AE1-061 E	0.61
938431	AE1-062 C	1.23
938432	AE1-062 E	1.23
938611	AE1-083 C	0.35
938612	AE1-083 E	0.49
938781	AE1-104 C O1	27.85
938782	AE1-104 E O1	71.26
938871	AE1-115 C	1.36
938872	AE1-115 E	1.36
939301	AE1-161 C	2.57
939302	AE1-161 E	3.85
939501	AE1-179 C O1	7.79
939502	AE1-179 E O1	5.5
939821	AE1-218 C O1	0.2
939822	AE1-218 E O1	0.3
939831	AE1-219 C O1	0.44
939832	AE1-219 E O1	0.64
939931	AE1-229 C O1	21.94
939932	AE1-229 E O1	14.86
940001	AE1-240 C O1	6.46
940002	AE1-240 E O1	4.61
940281	AE2-011 C	0.31
940282	AE2-011 E	0.42
940361	AE2-020 C O2	20.21
940362	AE2-020 E O2	94.63
940371	AE2-021 C O2	20.21
940372	AE2-021 E O2	94.63
940381	AE2-022 C O2	11.79
940382	AE2-022 E O2	55.2
940391	AE2-023 C O2	15.45
940392	AE2-023 E O2	72.34
940771	AE2-064 C	0.41
940772	AE2-064 E	0.56
940781	AE2-065 C	0.26
940782	AE2-065 E	0.41
940951	AE2-085 C	0.41
940952	AE2-085 E	0.39
940961	AE2-087 C	0.34
940962	AE2-087 E	0.47
940963	AE2-087 BAT	0.13
940971	AE2-088 C	0.18
940972	AE2-088 E	0.25
940973	AE2-088 BAT	0.1
941001	AE2-091 C O2	5.24
941002	AE2-091 E O2	2.73
941051	AE2-097 C	0.25
941052	AE2-097 E	0.41
941071	AE2-101 C	0.46
941072	AE2-101 E	0.63
941121	AE2-106 C	0.38
941122	AE2-106 E	0.52
941123	AE2-106 BAT	0.13

Bus #	Bus	MW Impact
941441	AE2-141 C	0.26
941442	AE2-141 E	0.42
941471	AE2-144 C	0.55
941472	AE2-144 E	0.97
941931	AE2-205 C O2	9.7
941932	AE2-205 E O2	6.47
942011	AE2-213 C	0.41
942012	AE2-213 E	0.7
942101	AE2-222 C O2	16.74
942102	AE2-222 E O2	42.04
942201	AE2-232 C O2	21.34
942202	AE2-232 E O2	54.61
942381	AE2-251 C O2	64.03
942382	AE2-251 E O2	163.83
942571	AE2-272	0.36
942941	AE2-314 C	8.2
942942	AE2-314 E	5.47
943071	AE2-334 C	7.11
943072	AE2-334 E	3.79
943081	AE2-335 C O2	10.22
943082	AE2-335 E O2	4.56
BLUEG	BLUEG	5.69
CALDERWOOD	CALDERWOOD	0.61
CANNELTON	CANNELTON	0.34
CATAWBA	CATAWBA	0.39
CBM-N	CBM-N	0.34
CHEOAH	CHEOAH	0.56
CHILHOWEE	CHILHOWEE	0.2
COFFEEN	COFFEEN	0.6
COTTONWOOD	COTTONWOOD	2.36
DUCKCREEK	DUCKCREEK	1.31
EDWARDS	EDWARDS	0.6
ELMERSMITH	ELMERSMITH	0.59
FARMERCITY	FARMERCITY	0.4
G-007A	G-007A	9.86
GIBSON	GIBSON	0.23
HAMLET	HAMLET	0.63
NEWTON	NEWTON	1.57
NYISO	NYISO	1.45
PRAIRIE	PRAIRIE	2.92
SANTEETLA	SANTEETLA	0.16
SMITHLAND	SMITHLAND	0.23
TATANKA	TATANKA	0.71
TILTON	TILTON	0.72
TRIMBLE	TRIMBLE	0.63
TVA	TVA	1.97
UNIONPOWER	UNIONPOWER	0.88
VFT	VFT	14.46

ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC DC	MW IMPACT
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ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC DC	MW IMPACT
8542936	227900	CARDIFF	AE	219100	NEWFRDM	PSE&G	1	JC-P7-1-JCC-230-13	tower	692.0	308.74	313.15	DC	30.53

Bus #	Bus	MW Impact
206360	280 CRK C1	1.63
206361	280 CRK C2	0.91
227801	ONTC&DCT	13.18
227842	MARINGEN	0.16
227843	MARINGEN E	1.37
227927	V4-067C	0.04
227928	V4-067E	0.61
228261	V4-054E	0.69
228712	V2-041E	0.42
292063	V1-021 E	0.07
293404	V3-036	1.88
902092	W1-130E	0.94
902431	W2-030 C	0.16
902432	W2-030 E	2.12
915022	Y3-012 E	2.56
924531	AB2-102 C	38.92
924532	AB2-102 E	0.86
924701	AB2-122 C	0.26
924702	AB2-122 E	0.45
930002	AB1-001 E	0.49
931191	AB1-169A	84.08
933962	AD1-019 E	2.6
938311	AE1-046 C	0.31
938312	AE1-046 E	0.15
938421	AE1-061 C	0.4
938422	AE1-061 E	0.4
938781	AE1-104 C O1	39.83
938782	AE1-104 E O1	101.88
939301	AE1-161 C	0.93
939302	AE1-161 E	1.39
939501	AE1-179 C O1	4.6
939502	AE1-179 E O1	3.24
940001	AE1-240 C O1	3.83
940002	AE1-240 E O1	2.74
940361	AE2-020 C O2	45.13
940362	AE2-020 E O2	211.29
940371	AE2-021 C O2	45.13
940372	AE2-021 E O2	211.29
940381	AE2-022 C O2	26.32
940382	AE2-022 E O2	123.26
940391	AE2-023 C O2	26.77
940392	AE2-023 E O2	125.31
940401	AE2-024 C O2	60.98
940402	AE2-024 E O2	285.49
940411	AE2-025 C O2	31.34
940412	AE2-025 E O2	146.73

Bus #	Bus	MW Impact
940961	AE2-087 C	0.16
940962	AE2-087 E	0.23
940963	AE2-087 BAT	0.06
941001	AE2-091 C O2	2.78
941002	AE2-091 E O2	1.45
941121	AE2-106 C	0.18
941122	AE2-106 E	0.25
941123	AE2-106 BAT	0.06
941931	AE2-205 C O2	8.33
941932	AE2-205 E O2	5.55
942101	AE2-222 C O2	29.17
942102	AE2-222 E O2	73.28
942201	AE2-232 C O2	47.66
942202	AE2-232 E O2	121.94
942381	AE2-251 C O2	142.97
942382	AE2-251 E O2	365.81
942941	AE2-314 C	18.32
942942	AE2-314 E	12.21
BLUEG	BLUEG	0.75
CALDERWOOD	CALDERWOOD	0.08
CANNELTON	CANNELTON	0.05
CARR	CARR	0.1
CATAWBA	CATAWBA	0.05
CHEOAH	CHEOAH	0.07
CHILHOWEE	CHILHOWEE	0.03
COFFEEN	COFFEEN	0.08
COTTONWOOD	COTTONWOOD	0.31
DUCKCREEK	DUCKCREEK	0.17
EDWARDS	EDWARDS	0.08
ELMERSMITH	ELMERSMITH	0.08
FARMERCITY	FARMERCITY	0.05
G-007	G-007	0.31
GIBSON	GIBSON	0.03
HAMLET	HAMLET	0.08
NEWTON	NEWTON	0.21
O-066	O-066	2.17
PRAIRIE	PRAIRIE	0.38
RENSELAER	RENSELAER	0.08
SANTEETLA	SANTEETLA	0.02
SMITHLAND	SMITHLAND	0.03
TATANKA	TATANKA	0.09
TILTON	TILTON	0.09
TRIMBLE	TRIMBLE	0.08
TVA	TVA	0.26
UNIONPOWER	UNIONPOWER	0.12

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
14338848	227900	CARDIFF	AE	227955	CEDAR	AE	1	AE_P4-2 AE6	breaker	805.0	204.34	207.15	DC	22.58

Bus #	Bus	MW Impact
227801	ONTC&DCT	8.49
227842	MARINGEN	0.1
227843	MARINGEN E	0.88
227927	V4-067C	0.03
227928	V4-067E	0.4
228014	PVILLEG	0.11
228202	CUMB CT	0.87
228261	V4-054E	0.59
228357	V2-046E	0.81
228712	V2-041E	0.32
228721	V2-035E	0.1
292062	V1-021 C	0.04
292063	V1-021 E	0.05
293404	V3-036	1.21
902092	W1-130E	0.74
902431	W2-030 C	0.1
902432	W2-030 E	1.4
913341	Y1-077	10.88
915022	Y3-012 E	1.65
919662	AA2-048 E	0.53
924531	AB2-102 C	29.86
924532	AB2-102 E	0.66
924701	AB2-122 C	0.17
924702	AB2-122 E	0.3
930001	AB1-001 C	0.02
930002	AB1-001 E	0.31
931191	AB1-169A	66.67
933962	AD1-019 E	1.67
936411	AD2-052 C	0.5
936412	AD2-052 E	0.25
938311	AE1-046 C	0.24
938312	AE1-046 E	0.12
938421	AE1-061 C	0.32
938422	AE1-061 E	0.32
938781	AE1-104 C O1	27.84
938782	AE1-104 E O1	71.22
938871	AE1-115 C	0.34
938872	AE1-115 E	0.34
939301	AE1-161 C	0.87
939302	AE1-161 E	1.3
939501	AE1-179 C O1	3.75
939502	AE1-179 E O1	2.65
939931	AE1-229 C O1	6.61
939932	AE1-229 E O1	4.48
940001	AE1-240 C O1	3.12
940002	AE1-240 E O1	2.23
940361	AE2-020 C O2	33.38
940362	AE2-020 E O2	156.29
940371	AE2-021 C O2	33.38
940372	AE2-021 E O2	156.29
940381	AE2-022 C O2	19.47

Bus #	Bus	MW Impact
940382	AE2-022 E O2	91.17
940391	AE2-023 C O2	18.37
940392	AE2-023 E O2	85.99
940961	AE2-087 C	0.14
940962	AE2-087 E	0.19
940963	AE2-087 BAT	0.05
940971	AE2-088 C	0.05
940972	AE2-088 E	0.07
940973	AE2-088 BAT	0.03
941001	AE2-091 C O2	2.31
941002	AE2-091 E O2	1.21
941121	AE2-106 C	0.15
941122	AE2-106 E	0.21
941123	AE2-106 BAT	0.05
941931	AE2-205 C O2	6.34
941932	AE2-205 E O2	4.23
942101	AE2-222 C O2	18.79
942102	AE2-222 E O2	47.21
942201	AE2-232 C O2	35.25
942202	AE2-232 E O2	90.19
942381	AE2-251 C O2	105.75
942382	AE2-251 E O2	270.57
942571	AE2-272	0.09
942941	AE2-314 C	13.55
942942	AE2-314 E	9.03
943081	AE2-335 C O2	2.79
943082	AE2-335 E O2	1.24
BLUEG	BLUEG	0.19
CALDERWOOD	CALDERWOOD	0.01
CANNELTON	CANNELTON	0.01
CARR	CARR	0.42
CATAWBA	CATAWBA	0.0
CHEOAH	CHEOAH	0.01
CHILHOWEE	CHILHOWEE	0.0
COFFEEN	COFFEEN	0.02
COTTONWOOD	COTTONWOOD	0.06
DUCKCREEK	DUCKCREEK	0.04
EDWARDS	EDWARDS	0.02
ELMERSMITH	ELMERSMITH	0.02
FARMERCITY	FARMERCITY	0.01
G-007	G-007	4.03
GIBSON	GIBSON	0.01
HAMLET	HAMLET	0.0
NEWTON	NEWTON	0.05
O-066	O-066	11.32
PRAIRIE	PRAIRIE	0.09
RENSSELAER	RENSSELAER	0.33
SANTEETLA	SANTEETLA	0.0
SMITHLAND	SMITHLAND	0.01
TATANKA	TATANKA	0.02
TILTON	TILTON	0.02
TRIMBLE	TRIMBLE	0.02

Bus #	Bus	MW Impact
TVA	TVA	0.05
UNIONPOWER	UNIONPOWER	0.02

ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC DC	MW IMPACT
14338920	227900	CARDIFF	AE	228002	ORCHARD	AE	1	AE_P4-2 AE6	breaker	906.0	151.89	154.35	DC	26.75

Bus #	Bus	MW Impact
206325	280 C GEN	70.97
206360	280 CRK C1	0.48
227801	ONTC&DCT	9.88
227842	MARINGEN	0.12
227843	MARINGEN E	1.02
227927	V4-067C	0.03
227928	V4-067E	0.46
228014	PVILLEG	0.13
292063	V1-021 E	0.03
293404	V3-036	1.41
902092	W1-130E	0.62
902431	W2-030 C	0.12
902432	W2-030 E	1.56
913341	Y1-077	9.7
915022	Y3-012 E	1.92
924701	AB2-122 C	0.2
924702	AB2-122 E	0.34
930001	AB1-001 C	0.03
930002	AB1-001 E	0.37
930891	AB1-138 C	0.23
930892	AB1-138 E	0.38
931191	AB1-169A	55.81
933962	AD1-019 E	1.95
938311	AE1-046 C	0.2
938312	AE1-046 E	0.1
938421	AE1-061 C	0.26
938422	AE1-061 E	0.26
938781	AE1-104 C O1	24.83
938782	AE1-104 E O1	63.51
939121	AE1-142 C O1	0.65
939122	AE1-142 E O1	0.94
940361	AE2-020 C O2	39.54
940362	AE2-020 E O2	185.13
940371	AE2-021 C O2	39.54
940372	AE2-021 E O2	185.13
940381	AE2-022 C O2	23.06
940382	AE2-022 E O2	107.99
940391	AE2-023 C O2	20.64
940392	AE2-023 E O2	96.63
940401	AE2-024 C O2	17.89
940402	AE2-024 E O2	83.77
940411	AE2-025 C O2	15.05

Bus #	Bus	MW Impact
940412	AE2-025 E O2	70.45
942101	AE2-222 C O2	21.87
942102	AE2-222 E O2	54.95
942201	AE2-232 C O2	41.75
942202	AE2-232 E O2	106.83
942381	AE2-251 C O2	125.26
942382	AE2-251 E O2	320.5
942941	AE2-314 C	16.05
942942	AE2-314 E	10.7
BLUEG	BLUEG	0.43
CALDERWOOD	CALDERWOOD	0.05
CANNELTON	CANNELTON	0.03
CATAWBA	CATAWBA	0.04
CBM-N	CBM-N	0.49
CHEOAH	CHEOAH	0.05
CHILHOWEE	CHILHOWEE	0.02
COFFEEN	COFFEEN	0.05
COTTONWOOD	COTTONWOOD	0.19
DUCKCREEK	DUCKCREEK	0.1
EDWARDS	EDWARDS	0.04
ELMERSMITH	ELMERSMITH	0.05
FARMERCITY	FARMERCITY	0.03
G-007A	G-007A	5.57
GIBSON	GIBSON	0.02
HAMLET	HAMLET	0.06
NEWTON	NEWTON	0.12
NYISO	NYISO	2.12
PRAIRIE	PRAIRIE	0.22
SANTEETLA	SANTEETLA	0.01
SMITHLAND	SMITHLAND	0.02
TATANKA	TATANKA	0.05
TILTON	TILTON	0.05
TRIMBLE	TRIMBLE	0.05
TVA	TVA	0.16
UNIONPOWER	UNIONPOWER	0.07
VFT	VFT	6.42

ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC DC	MW IMPACT
14338955	227900	CARDIFF	AE	227913	CARDIFF	AE	1	AE_P4-2 AE9	breaker	425.0	135.85	138.57	DC	11.8

Bus #	Bus	MW Impact
938421	AE1-061 C	0.72
938422	AE1-061 E	0.72
939301	AE1-161 C	0.89
939302	AE1-161 E	1.34
940361	AE2-020 C O2	17.45
940362	AE2-020 E O2	81.7
940371	AE2-021 C O2	17.45

Bus #	Bus	MW Impact
940372	AE2-021 E O2	81.7
940381	AE2-022 C O2	10.18
940382	AE2-022 E O2	47.66
940411	AE2-025 C O2	5.12
940412	AE2-025 E O2	23.95
940963	AE2-087 BAT	0.04
940973	AE2-088 BAT	0.03
941123	AE2-106 BAT	0.04
942201	AE2-232 C O2	18.43
942202	AE2-232 E O2	47.15
942381	AE2-251 C O2	55.28
942382	AE2-251 E O2	141.45
942941	AE2-314 C	7.08
942942	AE2-314 E	4.72
CBM-N	CBM-N	0.25
CBM-S1	CBM-S1	0.26
CBM-S2	CBM-S2	0.13
CBM-W1	CBM-W1	0.49
CBM-W2	CBM-W2	1.93
CIN	CIN	0.21
CPLE	CPLE	0.05
G-007A	G-007A	2.17
IPL	IPL	0.13
LGEE	LGEE	0.06
MEC	MEC	0.38
MECS	MECS	0.3
NYISO	NYISO	1.09
VFT	VFT	2.93
WEC	WEC	0.06

ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC DC	MW IMPACT
14339609	227900	CARDIFF	AE	227934	CARDIFF2	AE	1	AE_P7-1 AE3TOWER	tower	425.0	148.37	150.95	DC	10.95

Bus #	Bus	MW Impact
938421	AE1-061 C	0.7
938422	AE1-061 E	0.7
939301	AE1-161 C	0.81
939302	AE1-161 E	1.22
940361	AE2-020 C O2	16.18
940362	AE2-020 E O2	75.78
940371	AE2-021 C O2	16.18
940372	AE2-021 E O2	75.78
940381	AE2-022 C O2	9.44
940382	AE2-022 E O2	44.2
940963	AE2-087 BAT	0.03
940973	AE2-088 BAT	0.02
941123	AE2-106 BAT	0.03
942201	AE2-232 C O2	17.09
942202	AE2-232 E O2	43.73

Bus #	Bus	MW Impact
942381	AE2-251 C O2	51.27
942382	AE2-251 E O2	131.19
942941	AE2-314 C	6.57
942942	AE2-314 E	4.38
CBM-N	CBM-N	0.0
CBM-S1	CBM-S1	0.29
CBM-S2	CBM-S2	0.15
CBM-W1	CBM-W1	0.52
CBM-W2	CBM-W2	2.15
CIN	CIN	0.22
CPLE	CPLE	0.06
G-007	G-007	0.22
IPL	IPL	0.14
LGEE	LGEE	0.06
MEC	MEC	0.42
MECS	MECS	0.31
NYISO	NYISO	0.02
O-066	O-066	0.25
WEC	WEC	0.06

ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC DC	MW IMPACT
14338961	227902	LEWIS #1	AE	227949	LEWIS #3	AE	1	AE_P4-2 AE6	breaker	478.0	135.24	137.13	DC	9.03

Bus #	Bus	MW Impact
227928	V4-067E	0.1
228712	V2-041E	0.17
292062	V1-021 C	0.03
292063	V1-021 E	0.03
913341	Y1-077	8.14
924531	AB2-102 C	15.16
924532	AB2-102 E	0.34
924701	AB2-122 C	0.04
924702	AB2-122 E	0.07
938421	AE1-061 C	1.65
938422	AE1-061 E	1.65
938781	AE1-104 C O1	20.83
938782	AE1-104 E O1	53.28
939301	AE1-161 C	3.66
939302	AE1-161 E	5.5
940361	AE2-020 C O2	13.35
940362	AE2-020 E O2	62.52
940371	AE2-021 C O2	13.35
940372	AE2-021 E O2	62.52
940381	AE2-022 C O2	7.79
940382	AE2-022 E O2	36.47
940391	AE2-023 C O2	17.63
940392	AE2-023 E O2	82.51
940411	AE2-025 C O2	4.32
940412	AE2-025 E O2	20.2

Bus #	Bus	MW Impact
940973	AE2-088 BAT	0.11
941931	AE2-205 C O2	3.38
941932	AE2-205 E O2	2.25
942201	AE2-232 C O2	14.1
942202	AE2-232 E O2	36.08
942381	AE2-251 C O2	42.31
942382	AE2-251 E O2	108.25
942941	AE2-314 C	5.42
942942	AE2-314 E	3.61
BLUEG	BLUEG	0.27
CALDERWOOD	CALDERWOOD	0.03
CANNELTON	CANNELTON	0.02
CATAWBA	CATAWBA	0.02
CBM-N	CBM-N	0.06
CHEOAH	CHEOAH	0.03
CHILHOWEE	CHILHOWEE	0.01
COFFEEN	COFFEEN	0.03
COTTONWOOD	COTTONWOOD	0.12
DUCKCREEK	DUCKCREEK	0.06
EDWARDS	EDWARDS	0.03
ELMERSMITH	ELMERSMITH	0.03
FARMERCITY	FARMERCITY	0.02
G-007A	G-007A	1.24
GIBSON	GIBSON	0.01
HAMLET	HAMLET	0.03
NEWTON	NEWTON	0.07
NYISO	NYISO	0.25
PRAIRIE	PRAIRIE	0.14
SANTEETLA	SANTEETLA	0.01
SMITHLAND	SMITHLAND	0.01
TATANKA	TATANKA	0.03
TILTON	TILTON	0.03
TRIMBLE	TRIMBLE	0.03
TVA	TVA	0.1
UNIONPOWER	UNIONPOWER	0.04
VFT	VFT	0.93

ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC DC	MW IMPACT
14338994	227913	CARDIFF	AE	227902	LEWIS #1	AE	1	AE_P4-2 AE9	breaker	478.0	120.78	123.2	DC	11.8

Bus #	Bus	MW Impact
938421	AE1-061 C	0.72
938422	AE1-061 E	0.72
939301	AE1-161 C	0.89
939302	AE1-161 E	1.34
940361	AE2-020 C O2	17.45
940362	AE2-020 E O2	81.7
940371	AE2-021 C O2	17.45

Bus #	Bus	MW Impact
940372	AE2-021 E O2	81.7
940381	AE2-022 C O2	10.18
940382	AE2-022 E O2	47.66
940411	AE2-025 C O2	5.12
940412	AE2-025 E O2	23.95
940963	AE2-087 BAT	0.04
940973	AE2-088 BAT	0.03
941123	AE2-106 BAT	0.04
942201	AE2-232 C O2	18.43
942202	AE2-232 E O2	47.15
942381	AE2-251 C O2	55.28
942382	AE2-251 E O2	141.45
942941	AE2-314 C	7.08
942942	AE2-314 E	4.72
CBM-N	CBM-N	0.25
CBM-S1	CBM-S1	0.26
CBM-S2	CBM-S2	0.13
CBM-W1	CBM-W1	0.49
CBM-W2	CBM-W2	1.93
CIN	CIN	0.21
CPLE	CPLE	0.05
G-007A	G-007A	2.17
IPL	IPL	0.13
LGEE	LGEE	0.06
MEC	MEC	0.38
MECS	MECS	0.3
NYISO	NYISO	1.09
VFT	VFT	2.93
WEC	WEC	0.06

ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC DC	MW IMPACT
14339642	227934	CARDIFF2	AE	227945	LEWIS #2	AE	1	AE_P7-1 AE3TOWER	tower	478.0	131.92	134.21	DC	10.95

Bus #	Bus	MW Impact
938421	AE1-061 C	0.7
938422	AE1-061 E	0.7
939301	AE1-161 C	0.81
939302	AE1-161 E	1.22
940361	AE2-020 C O2	16.18
940362	AE2-020 E O2	75.78
940371	AE2-021 C O2	16.18
940372	AE2-021 E O2	75.78
940381	AE2-022 C O2	9.44
940382	AE2-022 E O2	44.2
940963	AE2-087 BAT	0.03
940973	AE2-088 BAT	0.02
941123	AE2-106 BAT	0.03
942201	AE2-232 C O2	17.09
942202	AE2-232 E O2	43.73

Bus #	Bus	MW Impact
942381	AE2-251 C O2	51.27
942382	AE2-251 E O2	131.19
942941	AE2-314 C	6.57
942942	AE2-314 E	4.38
CBM-N	CBM-N	0.0
CBM-S1	CBM-S1	0.29
CBM-S2	CBM-S2	0.15
CBM-W1	CBM-W1	0.52
CBM-W2	CBM-W2	2.15
CIN	CIN	0.22
CPLE	CPLE	0.06
G-007	G-007	0.22
IPL	IPL	0.14
LGEE	LGEE	0.06
MEC	MEC	0.42
MECS	MECS	0.31
NYISO	NYISO	0.02
O-066	O-066	0.25
WEC	WEC	0.06

ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC DC	MW IMPACT
14339587	227945	LEWIS #2	AE	227902	LEWIS #1	AE	1	AE_P7-1 AE3TOWER	tower	286.8	169.25	172.21	DC	8.49

Bus #	Bus	MW Impact
938421	AE1-061 C	1.14
938422	AE1-061 E	1.14
939301	AE1-161 C	2.5
939302	AE1-161 E	3.75
940361	AE2-020 C O2	12.56
940362	AE2-020 E O2	58.8
940371	AE2-021 C O2	12.56
940372	AE2-021 E O2	58.8
940381	AE2-022 C O2	7.33
940382	AE2-022 E O2	34.3
940973	AE2-088 BAT	0.04
942201	AE2-232 C O2	13.26
942202	AE2-232 E O2	33.93
942381	AE2-251 C O2	39.78
942382	AE2-251 E O2	101.79
942941	AE2-314 C	5.1
942942	AE2-314 E	3.4
CARR	CARR	0.02
CBM-S1	CBM-S1	0.07
CBM-S2	CBM-S2	0.04
CBM-W1	CBM-W1	0.12
CBM-W2	CBM-W2	0.52
CIN	CIN	0.05
CPLE	CPLE	0.02
G-007	G-007	0.19

Bus #	Bus	MW Impact
IPL	IPL	0.03
LGEE	LGEE	0.01
MEC	MEC	0.1
MECS	MECS	0.07
O-066	O-066	0.52
RENSSELAER	RENSSELAER	0.01
WEC	WEC	0.01

ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC DC	MW IMPACT
8543077	227949	LEWIS #3	AE	227901	DOROTHY	AE	1	JC-P7-1-JCC-230-13	tower	205.0	159.95	161.45	DC	6.84

Bus #	Bus	MW Impact
227801	ONTC&DCT	5.49
227842	MARINGEN	0.07
227843	MARINGEN E	0.57
227928	V4-067E	0.19
228014	PVILLEG	0.07
228712	V2-041E	0.14
292063	V1-021 E	0.03
293404	V3-036	0.78
902431	W2-030 C	0.06
902432	W2-030 E	0.83
915022	Y3-012 E	1.07
924531	AB2-102 C	12.54
924532	AB2-102 E	0.28
924701	AB2-122 C	0.08
924702	AB2-122 E	0.14
930001	AB1-001 C	0.02
930002	AB1-001 E	0.21
933962	AD1-019 E	1.08
938421	AE1-061 C	1.79
938422	AE1-061 E	1.79
938781	AE1-104 C O1	16.6
938782	AE1-104 E O1	42.47
939301	AE1-161 C	3.92
939302	AE1-161 E	5.89
940361	AE2-020 C O2	10.11
940362	AE2-020 E O2	47.35
940371	AE2-021 C O2	10.11
940372	AE2-021 E O2	47.35
940381	AE2-022 C O2	5.9
940382	AE2-022 E O2	27.62
940391	AE2-023 C O2	12.35
940392	AE2-023 E O2	57.81
940401	AE2-024 C O2	14.69
940402	AE2-024 E O2	68.79

Bus #	Bus	MW Impact
940411	AE2-025 C O2	7.55
940412	AE2-025 E O2	35.35
940973	AE2-088 BAT	0.11
941931	AE2-205 C O2	2.8
941932	AE2-205 E O2	1.87
942101	AE2-222 C O2	12.14
942102	AE2-222 E O2	30.49
942201	AE2-232 C O2	10.68
942202	AE2-232 E O2	27.32
942381	AE2-251 C O2	32.04
942382	AE2-251 E O2	81.97
942941	AE2-314 C	4.1
942942	AE2-314 E	2.74
BLUEG	BLUEG	0.19
CALDERWOOD	CALDERWOOD	0.02
CANNELTON	CANNELTON	0.01
CARR	CARR	0.02
CATAWBA	CATAWBA	0.01
CHEOAH	CHEOAH	0.02
CHILHOWEE	CHILHOWEE	0.01
COFFEEN	COFFEEN	0.02
COTTONWOOD	COTTONWOOD	0.08
DUCKCREEK	DUCKCREEK	0.04
EDWARDS	EDWARDS	0.02
ELMERSMITH	ELMERSMITH	0.02
FARMERCITY	FARMERCITY	0.01
G-007	G-007	0.04
GIBSON	GIBSON	0.01
HAMLET	HAMLET	0.02
NEWTON	NEWTON	0.05
O-066	O-066	0.4
PRAIRIE	PRAIRIE	0.1
RENSELAER	RENSELAER	0.02
SANTEETLA	SANTEETLA	0.01
SMITHLAND	SMITHLAND	0.01
TATANKA	TATANKA	0.02
TILTON	TILTON	0.02
TRIMBLE	TRIMBLE	0.02
TVA	TVA	0.06
UNIONPOWER	UNIONPOWER	0.03

ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC DC	MW IMPACT
8542232	227955	CEDAR	AE	206302	28OYSTER C	JCP&L	1	JC-P2-3-JCC-500-002D	breaker	564.0	293.56	296.54	DC	16.84

Bus #	Bus	MW Impact
227801	ONTC&DCT	8.28
227842	MARINGEN	0.1
227843	MARINGEN E	0.86

Bus #	Bus	MW Impact
227927	V4-067C	0.03
227928	V4-067E	0.36
228014	PVILLEG	0.11
228202	CUMB CT	0.82
228261	V4-054E	0.59
228357	V2-046E	0.89
228712	V2-041E	0.31
228721	V2-035E	0.1
292062	V1-021 C	0.04
292063	V1-021 E	0.05
293404	V3-036	1.18
902092	W1-130E	0.73
902431	W2-030 C	0.1
902432	W2-030 E	1.31
913341	Y1-077	9.82
915022	Y3-012 E	1.61
918452	AA1-060 E	1.43
919662	AA2-048 E	0.78
919672	AA2-049 E	0.28
924531	AB2-102 C	27.97
924532	AB2-102 E	0.62
924701	AB2-122 C	0.15
924702	AB2-122 E	0.26
930001	AB1-001 C	0.02
930002	AB1-001 E	0.31
931191	AB1-169A	65.66
933962	AD1-019 E	1.63
936411	AD2-052 C	0.52
936412	AD2-052 E	0.26
938311	AE1-046 C	0.24
938312	AE1-046 E	0.12
938421	AE1-061 C	0.31
938422	AE1-061 E	0.31
938781	AE1-104 C O1	25.13
938782	AE1-104 E O1	64.28
938871	AE1-115 C	0.36
938872	AE1-115 E	0.36
939301	AE1-161 C	0.94
939302	AE1-161 E	1.41
939501	AE1-179 C O1	3.69
939502	AE1-179 E O1	2.61
939931	AE1-229 C O1	7.03
939932	AE1-229 E O1	4.77
940001	AE1-240 C O1	3.07
940002	AE1-240 E O1	2.19
940361	AE2-020 C O2	24.89
940362	AE2-020 E O2	116.53
940371	AE2-021 C O2	24.89
940372	AE2-021 E O2	116.53
940381	AE2-022 C O2	14.52
940382	AE2-022 E O2	67.98
940391	AE2-023 C O2	16.3

Bus #	Bus	MW Impact
940392	AE2-023 E O2	76.32
940411	AE2-025 C O2	45.79
940412	AE2-025 E O2	214.38
940961	AE2-087 C	0.14
940962	AE2-087 E	0.19
940963	AE2-087 BAT	0.05
940971	AE2-088 C	0.06
940972	AE2-088 E	0.08
940973	AE2-088 BAT	0.03
941001	AE2-091 C O2	2.3
941002	AE2-091 E O2	1.2
941121	AE2-106 C	0.16
941122	AE2-106 E	0.21
941123	AE2-106 BAT	0.05
941931	AE2-205 C O2	5.96
941932	AE2-205 E O2	3.97
942101	AE2-222 C O2	18.33
942102	AE2-222 E O2	46.06
942201	AE2-232 C O2	26.28
942202	AE2-232 E O2	67.25
942381	AE2-251 C O2	78.85
942382	AE2-251 E O2	201.75
942571	AE2-272	0.1
942941	AE2-314 C	10.1
942942	AE2-314 E	6.73
943081	AE2-335 C O2	3.22
943082	AE2-335 E O2	1.44
BLUEG	BLUEG	0.03
CANNELTON	CANNELTON	0.0
CARR	CARR	0.73
CBM-S1	CBM-S1	0.03
CBM-S2	CBM-S2	0.07
CBM-W2	CBM-W2	0.07
COFFEEN	COFFEEN	0.0
CPLE	CPLE	0.04
DUCKCREEK	DUCKCREEK	0.01
EDWARDS	EDWARDS	0.0
ELMERSMITH	ELMERSMITH	0.0
FARMERCITY	FARMERCITY	0.0
G-007	G-007	6.33
GIBSON	GIBSON	0.0
NEWTON	NEWTON	0.01
O-066	O-066	19.64
PRAIRIE	PRAIRIE	0.0
RENSSELAER	RENSSELAER	0.58
TATANKA	TATANKA	0.0
TILTON	TILTON	0.01
TRIMBLE	TRIMBLE	0.0

ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC DC	MW IMPACT
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ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC DC	MW IMPACT
8542997	228110	BLE	AE	228197	MERION	AE	1	AE_P7-1 AESTOWER	tower	482.0	115.0	115.47	DC	4.97

Bus #	Bus	MW Impact
227801	ONTC&DCT	4.97
227842	MARINGEN	0.06
227843	MARINGEN E	0.52
227927	V4-067C	0.01
227928	V4-067E	0.17
228014	PVILLEG	0.06
293404	V3-036	0.71
902092	W1-130E	0.35
902431	W2-030 C	0.06
902432	W2-030 E	0.77
913341	Y1-077	17.84
915022	Y3-012 E	0.97
924701	AB2-122 C	0.07
924702	AB2-122 E	0.12
930001	AB1-001 C	0.01
930002	AB1-001 E	0.19
931191	AB1-169A	31.25
933962	AD1-019 E	0.98
938311	AE1-046 C	0.11
938312	AE1-046 E	0.06
938421	AE1-061 C	0.15
938422	AE1-061 E	0.15
938781	AE1-104 C O1	45.65
938782	AE1-104 E O1	116.77
940361	AE2-020 C O2	7.35
940362	AE2-020 E O2	34.43
940371	AE2-021 C O2	7.35
940372	AE2-021 E O2	34.43
940381	AE2-022 C O2	4.29
940382	AE2-022 E O2	20.08
940391	AE2-023 C O2	11.21
940392	AE2-023 E O2	52.46
940963	AE2-087 BAT	0.12
941123	AE2-106 BAT	0.12
942101	AE2-222 C O2	11.0
942102	AE2-222 E O2	27.64
942201	AE2-232 C O2	7.76
942202	AE2-232 E O2	19.87
942381	AE2-251 C O2	23.29
942382	AE2-251 E O2	59.6
942941	AE2-314 C	2.98
942942	AE2-314 E	1.99
BLUEG	BLUEG	0.19
CALDERWOOD	CALDERWOOD	0.02
CANNELTON	CANNELTON	0.01
CATAWBA	CATAWBA	0.01
CBM-N	CBM-N	0.1

Bus #	Bus	MW Impact
CHEOAH	CHEOAH	0.02
CHILHOWEE	CHILHOWEE	0.01
COFFEEN	COFFEEN	0.02
COTTONWOOD	COTTONWOOD	0.08
DUCKCREEK	DUCKCREEK	0.04
EDWARDS	EDWARDS	0.02
ELMERSMITH	ELMERSMITH	0.02
FARMERCITY	FARMERCITY	0.01
G-007A	G-007A	1.21
GIBSON	GIBSON	0.01
HAMLET	HAMLET	0.02
NEWTON	NEWTON	0.05
NYISO	NYISO	0.45
PRAIRIE	PRAIRIE	0.1
SANTEETLA	SANTEETLA	0.01
SMITHLAND	SMITHLAND	0.01
TATANKA	TATANKA	0.02
TILTON	TILTON	0.02
TRIMBLE	TRIMBLE	0.02
TVA	TVA	0.07
UNIONPOWER	UNIONPOWER	0.03
VFT	VFT	1.42

ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC DC	MW IMPACT
14339705	228312	PEDRKTWN	AE	228313	BRIDGPRT	AE	1	AE_P7-1 AE10TOWER-A	tower	552.0	106.85	107.47	DC	7.5

Bus #	Bus	MW Impact
227801	ONTC&DCT	4.76
227843	MARINGEN E	0.49
227928	V4-067E	0.19
228201	CARL#2CT	0.55
228261	V4-054E	1.13
228306	PCLP STM	4.77
228307	PCLP GT	4.76
228309	CCLP NUG	14.01
228334	MANNMILG	0.24
228343	QUINTN#1	0.06
228351	V2-046C	0.18
228357	V2-046E	2.72
228712	V2-041E	0.4
228720	V2-035C	0.03
228721	V2-035E	0.4
292063	V1-021 E	0.05
293404	V3-036	0.68
902091	W1-130C	0.11
902092	W1-130E	1.49
902432	W2-030 E	0.77

Bus #	Bus	MW Impact
915022	Y3-012 E	0.92
924531	AB2-102 C	38.79
924532	AB2-102 E	0.86
924701	AB2-122 C	0.08
924702	AB2-122 E	0.14
930002	AB1-001 E	0.18
931191	AB1-169A	131.36
933962	AD1-019 E	0.94
936411	AD2-052 C	1.76
936412	AD2-052 E	0.87
938311	AE1-046 C	0.48
938312	AE1-046 E	0.24
938421	AE1-061 C	1.2
938422	AE1-061 E	1.2
938781	AE1-104 C O1	19.7
938782	AE1-104 E O1	50.4
938871	AE1-115 C	3.12
938872	AE1-115 E	3.12
939301	AE1-161 C	5.54
939302	AE1-161 E	8.31
939501	AE1-179 C O1	5.55
939502	AE1-179 E O1	3.92
939931	AE1-229 C O1	32.63
939932	AE1-229 E O1	22.11
940001	AE1-240 C O1	4.71
940002	AE1-240 E O1	3.36
940361	AE2-020 C O2	11.08
940362	AE2-020 E O2	51.88
940371	AE2-021 C O2	11.08
940372	AE2-021 E O2	51.88
940381	AE2-022 C O2	6.46
940382	AE2-022 E O2	30.27
940391	AE2-023 C O2	10.07
940392	AE2-023 E O2	47.15
940961	AE2-087 C	0.27
940962	AE2-087 E	0.37
940963	AE2-087 BAT	0.1
941001	AE2-091 C O2	3.94
941002	AE2-091 E O2	2.05
941071	AE2-101 C	0.31
941072	AE2-101 E	0.42
941121	AE2-106 C	0.3
941122	AE2-106 E	0.41
941123	AE2-106 BAT	0.1
941931	AE2-205 C O2	7.63
941932	AE2-205 E O2	5.09
942101	AE2-222 C O2	10.52
942102	AE2-222 E O2	26.44
942201	AE2-232 C O2	11.7
942202	AE2-232 E O2	29.94
942381	AE2-251 C O2	35.11
942382	AE2-251 E O2	89.83

Bus #	Bus	MW Impact
942571	AE2-272	0.3
942941	AE2-314 C	4.5
942942	AE2-314 E	3.0
943081	AE2-335 C O2	11.5
943082	AE2-335 E O2	5.13
BLUEG	BLUEG	0.52
CALDERWOOD	CALDERWOOD	0.05
CANNELTON	CANNELTON	0.03
CARR	CARR	0.07
CATAWBA	CATAWBA	0.03
CHEOAH	CHEOAH	0.05
CHILHOWEE	CHILHOWEE	0.02
COFFEEN	COFFEEN	0.06
COTTONWOOD	COTTONWOOD	0.21
DUCKCREEK	DUCKCREEK	0.12
EDWARDS	EDWARDS	0.06
ELMERSMITH	ELMERSMITH	0.05
FARMERCITY	FARMERCITY	0.04
G-007A	G-007A	0.58
GIBSON	GIBSON	0.02
HAMLET	HAMLET	0.05
NEWTON	NEWTON	0.14
O-066	O-066	1.13
PRAIRIE	PRAIRIE	0.27
RENSELAER	RENSELAER	0.05
SANTEETLA	SANTEETLA	0.01
SMITHLAND	SMITHLAND	0.02
TATANKA	TATANKA	0.07
TILTON	TILTON	0.07
TRIMBLE	TRIMBLE	0.06
TVA	TVA	0.18
UNIONPOWER	UNIONPOWER	0.08

ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC DC	MW IMPACT
8542925	228502	MNOTLA 1	AE	228500	LANDIS	AE	1	JC-P7-1-JCC-230-13	tower	286.0	222.48	223.55	DC	6.84

Bus #	Bus	MW Impact
227801	ONTC&DCT	5.48
227842	MARINGEN	0.07
227843	MARINGEN E	0.57
227928	V4-067E	0.19
228014	PVILLEG	0.07
292063	V1-021 E	0.03
293404	V3-036	0.78
902091	W1-130C	0.3
902092	W1-130E	3.98
902431	W2-030 C	0.06
902432	W2-030 E	0.83
915022	Y3-012 E	1.07

Bus #	Bus	MW Impact
924701	AB2-122 C	0.08
924702	AB2-122 E	0.14
930001	AB1-001 C	0.02
930002	AB1-001 E	0.21
931191	AB1-169A	350.48
933962	AD1-019 E	1.08
938311	AE1-046 C	1.27
938312	AE1-046 E	0.64
938421	AE1-061 C	3.21
938422	AE1-061 E	3.21
938781	AE1-104 C O1	16.6
938782	AE1-104 E O1	42.46
939301	AE1-161 C	3.92
939302	AE1-161 E	5.89
940361	AE2-020 C O2	10.11
940362	AE2-020 E O2	47.34
940371	AE2-021 C O2	10.11
940372	AE2-021 E O2	47.34
940381	AE2-022 C O2	5.9
940382	AE2-022 E O2	27.61
940391	AE2-023 C O2	12.35
940392	AE2-023 E O2	57.81
940401	AE2-024 C O2	14.69
940402	AE2-024 E O2	68.77
940411	AE2-025 C O2	7.55
940412	AE2-025 E O2	35.34
940973	AE2-088 BAT	0.11
942101	AE2-222 C O2	12.14
942102	AE2-222 E O2	30.49
942201	AE2-232 C O2	10.68
942202	AE2-232 E O2	27.32
942381	AE2-251 C O2	32.03
942382	AE2-251 E O2	81.96
942941	AE2-314 C	4.1
942942	AE2-314 E	2.74
BLUEG	BLUEG	0.2
CALDERWOOD	CALDERWOOD	0.02
CANNELTON	CANNELTON	0.01
CARR	CARR	0.02
CATAWBA	CATAWBA	0.01
CHEOAH	CHEOAH	0.02
CHILHOWEE	CHILHOWEE	0.01
COFFEEN	COFFEEN	0.02
COTTONWOOD	COTTONWOOD	0.08
DUCKCREEK	DUCKCREEK	0.04
EDWARDS	EDWARDS	0.02
ELMERSMITH	ELMERSMITH	0.02
FARMERCITY	FARMERCITY	0.01
G-007	G-007	0.04
GIBSON	GIBSON	0.01
HAMLET	HAMLET	0.02
NEWTON	NEWTON	0.05

Bus #	Bus	MW Impact
O-066	O-066	0.42
PRAIRIE	PRAIRIE	0.1
RENSSELAER	RENSSELAER	0.02
SANTEETLA	SANTEETLA	0.01
SMITHLAND	SMITHLAND	0.01
TATANKA	TATANKA	0.02
TILTON	TILTON	0.02
TRIMBLE	TRIMBLE	0.02
TVA	TVA	0.07
UNIONPOWER	UNIONPOWER	0.03

ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC DC	MW IMPACT
8542951	228503	MNOTLA 2	AE	228502	MNOTLA 1	AE	1	JC-P7-1-JCC-230-13	tower	311.0	208.81	209.8	DC	6.84

Bus #	Bus	MW Impact
227801	ONTC&DCT	5.49
227842	MARINGEN	0.07
227843	MARINGEN E	0.57
227928	V4-067E	0.19
228014	PVILLEG	0.07
228712	V2-041E	0.14
292063	V1-021 E	0.03
293404	V3-036	0.78
902431	W2-030 C	0.06
902432	W2-030 E	0.83
915022	Y3-012 E	1.07
924531	AB2-102 C	12.54
924532	AB2-102 E	0.28
924701	AB2-122 C	0.08
924702	AB2-122 E	0.14
930001	AB1-001 C	0.02
930002	AB1-001 E	0.21
931191	AB1-169A	350.49
933962	AD1-019 E	1.08
938311	AE1-046 C	1.27
938312	AE1-046 E	0.64
938421	AE1-061 C	1.79
938422	AE1-061 E	1.79
938781	AE1-104 C O1	16.6
938782	AE1-104 E O1	42.47
939301	AE1-161 C	3.92
939302	AE1-161 E	5.89
940361	AE2-020 C O2	10.11
940362	AE2-020 E O2	47.35
940371	AE2-021 C O2	10.11
940372	AE2-021 E O2	47.35
940381	AE2-022 C O2	5.9
940382	AE2-022 E O2	27.62
940391	AE2-023 C O2	12.35
940392	AE2-023 E O2	57.81
940401	AE2-024 C O2	14.69
940402	AE2-024 E O2	68.79
940411	AE2-025 C O2	7.55
940412	AE2-025 E O2	35.35
940973	AE2-088 BAT	0.11
941931	AE2-205 C O2	2.8
941932	AE2-205 E O2	1.87
942101	AE2-222 C O2	12.14
942102	AE2-222 E O2	30.49
942201	AE2-232 C O2	10.68

Bus #	Bus	MW Impact
942202	AE2-232 E O2	27.32
942381	AE2-251 C O2	32.04
942382	AE2-251 E O2	81.97
942941	AE2-314 C	4.1
942942	AE2-314 E	2.74
BLUEG	BLUEG	0.19
CALDERWOOD	CALDERWOOD	0.02
CANNELTON	CANNELTON	0.01
CARR	CARR	0.02
CATAWBA	CATAWBA	0.01
CHEOAH	CHEOAH	0.02
CHILHOWEE	CHILHOWEE	0.01
COFFEEN	COFFEEN	0.02
COTTONWOOD	COTTONWOOD	0.08
DUCKCREEK	DUCKCREEK	0.04
EDWARDS	EDWARDS	0.02
ELMERSMITH	ELMERSMITH	0.02
FARMERCITY	FARMERCITY	0.01
G-007	G-007	0.04
GIBSON	GIBSON	0.01
HAMLET	HAMLET	0.02
NEWTON	NEWTON	0.05
O-066	O-066	0.4
PRAIRIE	PRAIRIE	0.1
RENSELAER	RENSELAER	0.02
SANTEETLA	SANTEETLA	0.01
SMITHLAND	SMITHLAND	0.01
TATANKA	TATANKA	0.02
TILTON	TILTON	0.02
TRIMBLE	TRIMBLE	0.02
TVA	TVA	0.06
UNIONPOWER	UNIONPOWER	0.03

Contingency Name	Contingency Definition
AE_P1-2 OY CK-CEDAR	CONTINGENCY 'AE_P1-2 OY CK-CEDAR' OPEN LINE FROM BUS 206302 TO BUS 227955 CIRCUIT 1 / END
JC-P2-3-JCC-500-002D	CONTINGENCY 'JC-P2-3-JCC-500-002D' /* E.WINDSOR CB16 DISCONNECT BRANCH FROM BUS 200006 TO BUS 200028 CKT 1 /* DEANS - WINDSOR 500.00 LINE DISCONNECT BRANCH FROM BUS 200012 TO BUS 200028 CKT 1 /* NEWFRDM - WINDSOR 500.00 LINE END
PS_P1-2_2310A	CONTINGENCY 'PS_P1-2_2310A' /* NEW FREEDOM TO CARDIFF TIELINE TRIP LINE FROM BUS 219100 TO BUS 227900 CKT 1 /* NEW FREEDOM TO CARDIFF END

Contingency Name	Contingency Definition
JC-P1-2-JCC-230-019	CONTINGENCY 'JC-P1-2-JCC-230-019' /* LEISURE VILLAGE - MANITOU (A2027) 230 KV DISCONNECT BRANCH FROM BUS 206295 TO BUS 206297 CKT 1 DISCONNECT BRANCH FROM BUS 206297 TO BUS 206277 CKT 7 END
AE_P7-1 AE8TOWER	CONTINGENCY 'AE_P7-1 AE8TOWER' DISCONNECT BRANCH FROM BUS 228404 TO BUS 228482 CKT 1 /* MONROE TO FRANK 138 KV DISCONNECT BRANCH FROM BUS 228404 TO BUS 228500 CKT 1 /* MONROE TO LANDIS 138 KV END
JC-P1-2-JCC-230-014	CONTINGENCY 'JC-P1-2-JCC-230-014' /* FUTURE BREAKERS LAKEWOOD - LARRABEE (Z2026) 230 KV & LAR BK 8 & 12 DISCONNECT BRANCH FROM BUS 206323 TO BUS 206294 CKT 1 DISCONNECT BRANCH FROM BUS 206294 TO BUS 206275 CKT 12 SET BUS 206294 LOAD TO 38 MW END
JC-P1-2-JCC-230-013	CONTINGENCY 'JC-P1-2-JCC-230-013' /* LAKEWOOD - LARRABEE (K2011) 230 KV DISCONNECT BRANCH FROM BUS 206323 TO BUS 206294 CKT 2 END
JC-P2-3-JCC-230-13D	CONTINGENCY 'JC-P2-3-JCC-230-13D' /* LARRABEE SE BUS & LARRABEE-LAKEWOOD (K2011) 230 KV DISCONNECT BRANCH FROM BUS 206294 TO BUS 206274 CKT 4 /* 28LARRABEE 230 28LARR AB 35 REMOVE SWSHUNT FROM BUS 206294 BLOCK 1 STEP 1 DISCONNECT BRANCH FROM BUS 206294 TO BUS 206323 CKT 1 /* 28LARRABEE 230 28LAKEWOOD 230 END
JC-P7-1-JCC-230-10A	CONTINGENCY 'JC-P7-1-JCC-230-10A' /* LAKEWOOD - LARRABEE 230 KV LINES DISCONNECT BRANCH FROM BUS 206323 TO BUS 206294 CKT 2 DISCONNECT BRANCH FROM BUS 206323 TO BUS 206294 CKT 1 DISCONNECT BRANCH FROM BUS 206294 TO BUS 206274 CKT 3 DISCONNECT BRANCH FROM BUS 206294 TO BUS 206275 CKT 12 /* LARRABEE 12 FUTURE BREAKER AND A HALF SET BUS 206294 LOAD TO 38 MW /* LARRABEE 8 FUTURE BREAKER AND A HALF END
AE_P7-1 AE13TOWER	CONTINGENCY 'AE_P7-1 AE13TOWER' DISCONNECT BRANCH FROM BUS 228500 TO BUS 228502 CKT 1 /* LANDIS TO MINO 138 KV DISCONNECT BRANCH FROM BUS 228002 TO BUS 227900 CKT 1 /* ORCH TO CARD 230 KV END
AE_P7-1 AE6TOWER	CONTINGENCY 'AE_P7-1 AE6TOWER' DISCONNECT BRANCH FROM BUS 228197 TO BUS 228106 CKT 1 /* MERION TO CORSON 138 KV DISCONNECT BUS 228111 /* BLE TO CORSON 138 KV END
PECO_P1-2_5038/* \$ CHESCO \$ PECO_P1-2_5038 \$ L	CONTINGENCY 'PECO_P1-2_5038/* \$ CHESCO \$ PECO_P1-2_5038 \$ L' TRIP BRANCH FROM BUS 200012 TO BUS 200028 CKT 1 /* NFREEDOM 500.00 WINDSOR 500.00 \$ CHESCO \$ PECO_P1-2_5038 \$ L END

Contingency Name	Contingency Definition
PECO_P2-2_CHI230B1/* \$ DELCO \$ PECO_P2-2_CHI230B1 \$ B PECO_P2-2_CHI230B1 \$ B	CONTINGENCY 'PECO_P2-2_CHI230B1/* \$ DELCO \$ PECO_P2-2_CHI230B1 \$ B' DISCONNECT BUS 213489 /* CHICHST1 230.00 \$ DELCO \$ PECO_P2-2_CHI230B1 \$ B END
AE_P1-2 ORCHARD XF	CONTINGENCY 'AE_P1-2 ORCHARD XF' OPEN LINE FROM BUS 200063 TO BUS 228002 CIRCUIT 1 / END
AE_P7-1 AE10TOWER-A	CONTINGENCY 'AE_P7-1 AE10TOWER-A' DISCONNECT BRANCH FROM BUS 228482 TO BUS 943080 CKT 1 /* FRANK TO AE2-335 TAP 138 KV DISCONNECT BRANCH FROM BUS 228404 TO BUS 228500 CKT 1 /* MONROE TO LANDIS 138 KV END
AE_P7-1 AE3TOWER	CONTINGENCY 'AE_P7-1 AE3TOWER' DISCONNECT BRANCH FROM BUS 227900 TO BUS 227955 CKT 1 /* CARDIFF TO CEDAR 230 KV DISCONNECT BRANCH FROM BUS 227913 TO BUS 227902 CKT 1 /* CARDIFF TO LEWIS 138 KV END
AE_P1-2 ENG-CORSON	CONTINGENCY 'AE_P1-2 ENG-CORSON' DISCONNECT BUS 228111 / END
AE_P1-2 FRNK-LAND-A	CONTINGENCY 'AE_P1-2 FRNK-LAND-A' OPEN LINE FROM BUS 228482 TO BUS 943080 CIRCUIT 1 / END
JC-P7-1-JCC-230-12	CONTINGENCY 'JC-P7-1-JCC-230-12' /* LEISURE VILLAGE-MANITOU A2027 & C2029 DISCONNECT BRANCH FROM BUS 206295 TO BUS 206297 CKT 1 DISCONNECT BRANCH FROM BUS 206297 TO BUS 206277 CKT 7 DISCONNECT BRANCH FROM BUS 206296 TO BUS 206297 CKT 1 DISCONNECT BRANCH FROM BUS 206296 TO BUS 206276 CKT 3 SET BUS 206296 LOAD TO 0 MW END
JC-P7-1-JCC-230-13	CONTINGENCY 'JC-P7-1-JCC-230-13' /* MANITOU-OYSTER CREEK 230 LINES & OYSTER GEN DISCONNECT BRANCH FROM BUS 206297 TO BUS 206302 CKT 1 DISCONNECT BRANCH FROM BUS 206297 TO BUS 206302 CKT 2 DISCONNECT BRANCH FROM BUS 206302 TO BUS 206325 CKT 1 END
AE_P1-3 CARD 6 XFR	CONTINGENCY 'AE_P1-3 CARD 6 XFR' OPEN LINE FROM BUS 227900 TO BUS 227913 CIRCUIT 1 / END
AE_P1-2 CARD-LEW1	CONTINGENCY 'AE_P1-2 CARD-LEW1' OPEN LINE FROM BUS 227913 TO BUS 227902 CIRCUIT 1 / END

Contingency Name	Contingency Definition
PECO_P1-2_5014/* \$ CHESCO \$ PECO_P1-2_5014 \$ L	CONTINGENCY 'PECO_P1-2_5014/* \$ CHESCO \$ PECO_P1-2_5014 \$ L' TRIP BRANCH FROM BUS 200065 TO BUS 200051 CKT 1 /* PCHBTM2S 500.00 ROCKSPGS 500.00 \$ CHESCO \$ PECO_P1-2_5014 \$ L END
AE_P1-2 MERION-CORSN	CONTINGENCY 'AE_P1-2 MERION-CORSN' OPEN LINE FROM BUS 228197 TO BUS 228106 CIRCUIT 1 / OPEN LINE FROM BUS 228197 TO BUS 228198 CIRCUIT 1 / CLOSE LINE FROM BUS 228198 TO BUS 228199 CIRCUIT 1 / END
AE_P1-3 CARD 7 XFR	CONTINGENCY 'AE_P1-3 CARD 7 XFR' OPEN LINE FROM BUS 227900 TO BUS 227934 CIRCUIT 1 / END
PECO_P4_CHICH045/* \$ DELCO \$ PECO_P4_CHICH045 \$ STBK	CONTINGENCY 'PECO_P4_CHICH045/* \$ DELCO \$ PECO_P4_CHICH045 \$ STBK' DISCONNECT BUS 213489 /* CHICHST1 230.00 \$ DELCO \$ PECO_P4_CHICH045 \$ STBK DISCONNECT BUS 213627 /* FOULK8 230.00 \$ DELCO \$ PECO_P4_CHICH045 \$ STBK END
JC-P1-2-JCC-230-022	CONTINGENCY 'JC-P1-2-JCC-230-022' /* MANITOU - OYSTER CREEK (O1019) 230 KV DISCONNECT BRANCH FROM BUS 206297 TO BUS 206302 CKT 2 END
JC-P1-2-JCC-230-021	CONTINGENCY 'JC-P1-2-JCC-230-021' /* MANITOU - OYSTER CREEK (N1028) 230 KV DISCONNECT BRANCH FROM BUS 206297 TO BUS 206302 CKT 1 END
JC-P1-2-JCC-230-020	CONTINGENCY 'JC-P1-2-JCC-230-020' /* LEISURE VILLAGE - MANITOU (C2029) 230 KV DISCONNECT BRANCH FROM BUS 206296 TO BUS 206297 CKT 1 DISCONNECT BRANCH FROM BUS 206296 TO BUS 206276 CKT 3 SET BUS 206296 LOAD TO 0 MW END
Base Case	
JC-P2-3-JCC-500-002B	CONTINGENCY 'JC-P2-3-JCC-500-002B' /* E.WINDSOR CB10 DISCONNECT BRANCH FROM BUS 200012 TO BUS 200028 CKT 1 /* NEWFRDM - WINDSOR 500.00 LINE DISCONNECT BRANCH FROM BUS 200028 TO BUS 206326 CKT 2 /* WINDSOR 500.00 - 28E WINDSR 230.00 XFMR END
AE_P4-2 AE7	CONTINGENCY 'AE_P4-2 AE7' /*CARDIFF TO NEW FREEDOM BREAKER V DISCONNECT BRANCH FROM BUS 219100 TO BUS 227900 CKT 1 /*NEW FREEDOM TO CARDIFF 230 230 DISCONNECT BRANCH FROM BUS 227900 TO BUS 227910 CKT 1 /*CARDIFF CARDIFF 230 69 T1 END

Contingency Name	Contingency Definition
PECO_P4_PEACH215/* \$ CHESCO \$ PECO_P4_PEACH215 \$ STBK	CONTINGENCY 'PECO_P4_PEACH215/* \$ CHESCO \$ PECO_P4_PEACH215 \$ STBK' TRIP BRANCH FROM BUS 200065 TO BUS 200051 CKT 1 /* PCHBTM2S 500.00 ROCKSPGS 500.00 \$ CHESCO \$ PECO_P4_PEACH215 \$ STBK REMOVE MACHINE 1 FROM BUS 200034 /* PCHBTM 2 22.00 \$ CHESCO \$ PECO_P4_PEACH215 \$ STBK END
AE_P4-2 AE9	CONTINGENCY 'AE_P4-2 AE9' /*CARDIFF TO ORCHARD BREAKER NEW1 DISCONNECT BRANCH FROM BUS 228002 TO BUS 227900 CKT 1 /* CARDIFF TO ORCHARD 230 230 DISCONNECT BRANCH FROM BUS 227900 TO BUS 227934 CKT 1 /*CARDIFF CARDIFF 230 138 T7 END
AE_P1-2 CARD-CEDAR	CONTINGENCY 'AE_P1-2 CARD-CEDAR' OPEN LINE FROM BUS 227900 TO BUS 227955 CIRCUIT 1 / END
AE_P4-2 AE6	CONTINGENCY 'AE_P4-2 AE6' /*CARDIFF TO NEW FREEDOM BREAKER W DISCONNECT BRANCH FROM BUS 219100 TO BUS 227900 CKT 1 /*NEW FREEDOM TO CARDIFF 230 230 DISCONNECT BRANCH FROM BUS 227900 TO BUS 227911 CKT 1 /*CARDIFF CARDIFF 230 69 T2 END
AE_P7-1 AE5TOWER	CONTINGENCY 'AE_P7-1 AE5TOWER' DISCONNECT BRANCH FROM BUS 228110 TO BUS 228660 CKT 1 /* BLE TO OCITY 138 KV DISCONNECT BUS 228111 /* BLE TO CORSON 138 KV END
AE_P1-2 MONROE-LANDIS_1	CONTINGENCY 'AE_P1-2 MONROE-LANDIS_1' OPEN BRANCH FROM BUS 228404 TO BUS 228500 CKT 1 END
PS_P7-1_R2244+M2213	CONTINGENCY 'PS_P7-1_R2244+M2213' TRIP LINE FROM BUS 219100 TO BUS 227900 CKT 1 /* NEW FREEDOM TO CARDIFF TRIP LINE FROM BUS 219100 TO BUS 228600 CKT 1 /* NEW FREEDOM TO SICKLER END