

Generation Interconnection Feasibility Study Report Queue Position AE2-222

The Interconnection Customer (IC) has proposed a 300.0 MW Energy (85.4 MW Capacity) offshore wind generating facility to be located at Latitude: 39.0951370, Longitude: -74.3529178 in the Atlantic Ocean off the coast of Atlantic County, New Jersey. At the IC's request, PJM studied the AE2-222 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 1, 2023. 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 AE2-222 project.

Primary Point of Interconnection

PJM studied the AE2-222 project as an injection into the Atlantic City Electric Company (ACE) transmission system at the Higbee 69 kV Substation (PSSE bus #227810) and evaluated it for compliance with reliability criteria for summer peak conditions in 2022. The AE2-222 project will connect with the ACE transmission system at the Interconnection Customer's owned breaker located within 500 feet of ACE's 69 kV Higbee Substation where it will interconnect to an existing 69 kV bus position.

Transmission Owner Scope of Direct connect and Attachment Facilities Work

Substation Interconnection Estimate

Scope: At Higbee Substation, establish a 69 kV terminal at the open position for Interconnecting Customer.

Estimate: \$1,200,000

Construction Time: 24-36 months

Major Equipment Included in Estimate:

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|--|--------|
| • Power Circuit Breaker, 69 kV, 3 cycle | Qty. 1 |
| • Double 954 ACSR (325') | Qty. 1 |
| • Insulators, 69 kV | Qty. 3 |
| • Relay Panel, Bus Differential, FL/BU (20") | Qty. 1 |
| • Control Panel, 69 kV Circuit Breaker (10") | Qty. 1 |
| • 69kV Underground Riser | Qty. 1 |
| • 69 kV Lightning Arresters | Qty. 3 |
| • 69 kV Lightning Arresters Stands | Qty. 3 |

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|---|--------|
| • 69kV CVT Stand | Qty. 3 |
| • 69kV Group Operated Disconnect Switches | Qty. 2 |
| • SCADA Communications Panel | Qty: 1 |

Estimate Assumptions:

- Space available in Control Enclosure for New Relay Panel.
- Developer to purchase required land and is available for use.
- No new land will need to be purchased
- Site clearing and grading performed by Developer.
- Existing AC and DC system is adequate.
- Grounding, environmental and soil studies not included.
- Fiber to point of interconnection is not included in this study
- Fiber optic cable necessary is 1,000 linear feet.

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 69 kV circuit breaker (1 total).

The project will require re-wiring and adjustment of existing relay schemes to accommodate the new 69 kV substation.

Metering

A three phase 69 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.

Additional Interconnection Customer Responsibilities:

1. An Interconnection Customer entering the New Services Queue on or after October 1, 2012 with a proposed new Customer Facility that has a Maximum Facility Output equal to or greater than 100 MW shall install and maintain, at its expense, phasor measurement units (PMUs). See Section 8.5.3 of Appendix 2 to the Interconnection Service Agreement as well as section 4.3 of PJM Manual 14D for additional information.
2. The Interconnection Customer seeking to interconnect a wind generation facility shall maintain meteorological data facilities as well as provide that meteorological data which is required per item 5.IV of Schedule H to the Interconnection Service Agreement.

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)

ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC DC	MW IMPACT
8455994	228106	CORSON 1	AE	228107	CORSON 2	AE	1	AE_P4-2 AE29	breaker	478.0	93.68	100.96	DC	34.72

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
8455749	206294	28LARRABEE	JCP&L	206309	28SMITHBRG	JCP&L	1	JC-P2-3-JCC-230-13G	breaker	817.0	141.98	143.49	DC	27.43
8456466	206294	28LARRABEE	JCP&L	206286	28ATLANTIC	JCP&L	1	JC-P7-1-JCC-230-7A	tower	956.0	119.09	120.41	DC	28.03
8456455	206297	28MANITOU	JCP&L	206319	28WHITINGS	JCP&L	1	JC-P7-1-JCC-230-10A	tower	817.0	152.8	157.81	DC	40.84
8456456	206297	28MANITOU	JCP&L	206319	28WHITINGS	JCP&L	1	JC-P7-1-JCC-230-12	tower	817.0	146.91	152.29	DC	43.9
8456039	206302	28OYSTER C	JCP&L	206297	28MANITOU	JCP&L	1	JC-P1-2-JCC-230-022	single	817.0	110.14	112.13	DC	16.22
8456061	206302	28OYSTER C	JCP&L	206297	28MANITOU	JCP&L	2	JC-P1-2-JCC-230-021	single	869.0	103.58	105.44	DC	16.23
8456507	206318	28VANHISVL	JCP&L	206294	28LARRABEE	JCP&L	1	JC-P7-1-JCC-230-10A	tower	869.0	130.91	132.94	DC	39.18
8456508	206318	28VANHISVL	JCP&L	206294	28LARRABEE	JCP&L	1	JC-P7-1-JCC-230-12	tower	869.0	126.24	131.0	DC	41.39
8456484	206319	28WHITINGS	JCP&L	206720	28MANCHSTR	JCP&L	1	JC-P7-1-JCC-230-10A	tower	869.0	133.34	138.05	DC	40.91
8456485	206319	28WHITINGS	JCP&L	206720	28MANCHSTR	JCP&L	1	JC-P7-1-JCC-230-12	tower	869.0	125.83	130.82	DC	43.38
8455764	206323	28LAKEWOOD	JCP&L	206294	28LARRABEE	JCP&L	2	JC-P2-3-JCC-230-13D	breaker	817.0	164.67	170.09	DC	44.25
8456497	206720	28MANCHSTR	JCP&L	206318	28VANHISVL	JCP&L	1	JC-P7-1-JCC-230-10A	tower	869.0	131.6	136.31	DC	40.91
8456498	206720	28MANCHSTR	JCP&L	206318	28VANHISVL	JCP&L	1	JC-P7-1-JCC-230-12	tower	869.0	124.09	129.08	DC	43.38
8455688	213922	RICHMOND	PECO	214012	WANEETA3	PECO	1	PECO_P2-2_CHI230B1/* \$ DELCO \$ PECO_P2-2_CHI230B1 \$ B	bus	1180.0	103.99	106.16	DC	56.39
8455976	213922	RICHMOND	PECO	214012	WANEETA3	PECO	1	PECO_P4_CHICH045/* \$ DELCO \$ PECO_P4_CHICH045 \$ STBK	breaker	1180.0	103.98	106.15	DC	56.39
8455690	214206	RICHRE29	PECO	213922	RICHMOND	PECO	1	PECO_P2-2_CHI230B1/* \$ DELCO \$ PECO_P2-2_CHI230B1 \$ B	bus	1336.0	103.32	105.33	DC	58.78
8455978	214206	RICHRE29	PECO	213922	RICHMOND	PECO	1	PECO_P4_CHICH045/* \$ DELCO \$ PECO_P4_CHICH045 \$ STBK	breaker	1336.0	103.3	105.31	DC	58.78
8455962	219100	NEWFRDM	PSE&G	219704	HILLTOP_3	PSE&G	1	PECO_P4_PEACH215/* \$ CHESCO \$ PECO_P4_PEACH215 \$ STBK	breaker	740.0	108.23	109.99	DC	28.29
8456573	219100	NEWFRDM	PSE&G	219704	HILLTOP_3	PSE&G	1	PS_P7-1_V2274+P2242_LT	tower	740.0	120.73	122.63	DC	31.31
8456574	219100	NEWFRDM	PSE&G	219704	HILLTOP_3	PSE&G	1	AE_P7-1 W2275_O2241	tower	740.0	114.67	116.59	DC	31.43
8455689	219125	CAMDEN	PSE&G	214206	RICHRE29	PECO	1	PECO_P2-2_CHI230B1/* \$ DELCO \$ PECO_P2-2_CHI230B1 \$ B	bus	1336.0	103.33	105.34	DC	58.78

ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC DC	MW IMPACT
8455977	219125	CAMDEN	PSE&G	214206	RICHRE29	PECO	1	PECO_P4_CHICH045/* \$ DELCO \$ PECO_P4_CHICH045 \$ STBK	breaker	1336.0	103.32	105.33	DC	58.78
8456450	227900	CARDIFF	AE	219100	NEWFRDM	PSE&G	1	JC-P7-1-JCC-230-13	tower	692.0	150.5	157.17	DC	102.44
8456451	227900	CARDIFF	AE	219100	NEWFRDM	PSE&G	1	AE_P7-1 AE13TOWER	tower	692.0	134.33	151.05	DC	115.61
8455797	228106	CORSON 1	AE	228185	CORSON#1	AE	1	AE_P4-2 AE16	breaker	168.0	162.12	167.41	DC	19.73
8455882	228110	BLE	AE	228197	MERION	AE	1	AE_P4-2 AE29	breaker	482.0	129.89	137.02	DC	34.26
8456511	228110	BLE	AE	228197	MERION	AE	1	AE_P7-1 AE5TOWER	tower	482.0	111.75	119.79	DC	38.68
8455919	228197	MERION	AE	228106	CORSON 1	AE	1	AE_P4-2 AE29	breaker	478.0	116.86	124.06	DC	34.34
8456125	228502	MNOTLA 1	AE	228500	LANDIS	AE	1	Base Case	single	230.0	138.57	143.14	DC	10.51
8456126	228502	MNOTLA 1	AE	228500	LANDIS	AE	1	AE_P1-2 OY CK-CEDAR	single	286.0	129.0	133.31	DC	12.34
8456438	228502	MNOTLA 1	AE	228500	LANDIS	AE	1	AE_P7-1 AE6TOWER	tower	286.0	178.17	193.2	DC	42.9
8456439	228502	MNOTLA 1	AE	228500	LANDIS	AE	1	JC-P7-1-JCC-230-13	tower	286.0	159.85	174.77	DC	42.68
8456150	228503	MNOTLA 2	AE	228502	MNOTLA 1	AE	1	AE_P1-2 OY CK-CEDAR	single	311.0	120.36	124.33	DC	12.34
8456151	228503	MNOTLA 2	AE	228502	MNOTLA 1	AE	1	AE_P1-2 CARD-CEDAR-B	single	311.0	120.49	124.19	DC	11.49
8456153	228503	MNOTLA 2	AE	228502	MNOTLA 1	AE	1	Base Case	single	311.0	104.25	107.63	DC	10.51
8456464	228503	MNOTLA 2	AE	228502	MNOTLA 1	AE	1	AE_P7-1 AE6TOWER	tower	311.0	163.86	177.68	DC	42.9
8456465	228503	MNOTLA 2	AE	228502	MNOTLA 1	AE	1	JC-P7-1-JCC-230-13	tower	311.0	151.16	164.89	DC	42.69

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
8455689,8455977	1	CAMDEN 230.0 kV - RICHRE29 230.0 kV Ckt 1	PECO 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 PSEG r_PS_AE2_FES_CamRich (730) : No Violation. PSEG emergency rating 1497 MVA. Project Type : FAC Cost : \$0 Time Estimate : 0.0 Months	\$3,000,000
8455690,8455978	2	RICHRE29 230.0 kV - RICHMOND 230.0 kV Ckt 1		
8455688,8455976	3	RICHMOND 230.0 kV - WANEETA3 230.0 kV Ckt 1		

ID	Index	Facility	Upgrade Description	Cost
8455749	4	28LARRABEE 230.0 kV - 28SMITHBRG 230.0 kV Ckt 1	<u>JCPL</u> JCP&L-005C (558) : Reconductor existing section of 1590 ACSR 45/7 Miscellaneous TDL (MTDL) with 1590 ACSS 45/7. Reconductor existing sections of 1590 ACSR 45/7 with 1590 ACSS 45/7. Replace Generic 2000 Amp Wave Trap. Replace Generic 2000 Amp Disconnect Switch. All new terminal equipment should be rated above 1173 MVA (Rate B). Project Type : FAC Cost : \$46,995,000 Time Estimate : 36.0 Months	\$46,995,000
8456439,8456126,8456125,8456438	5	MNOTLA 1 138.0 kV - LANDIS 138.0 kV Ckt 1	<u>AEC</u> 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. Project Type : FAC Cost : \$12,800,000 Time Estimate : 36-48 Months	\$12,800,000
8455962,8456574,8456573	6	NEWFRDM 230.0 kV - HILLTOP_3 230.0 kV Ckt 1	<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	\$76,885,198
8455797	7	CORSON 1 138.0 kV - CORSON#1 69.0 kV Ckt 1	<u>AEC</u> ascorsonr0001 (14) : To mitigate the (ACE) Corson#1 - Corson#1 138 kV line (from bus 228106 to bus 228185 ckt 1) overload, will require substation reinforcements at Corson#1 Substation. Project Type : FAC Cost : \$250,000 Time Estimate : 24.0 Months ascorsonr0002 (15) : To mitigate the (ACE) Corson#1 - Corson#1 138 kV line (from bus 228106 to bus 228185 ckt 1) overload, will require substation reinforcements at Corson#1 Substation. Project Type : FAC Cost : \$5,200,000 Time Estimate : 28-40 Months ascorsonr0003 (16) : To mitigate the (ACE) Corson#1 - Corson#1 138 kV line (from bus 228106 to bus 228185 ckt 1) overload, will require substation reinforcement of the limiting equipment at Corson#1 Substation. Project Type : FAC Cost : \$230,000 Time Estimate : 43823.0 Months	\$5,680,000

ID	Index	Facility	Upgrade Description	Cost
8456451,8456450	8	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 <u>PSEG</u> r_PS_AE2_FES_09_Nfreed (751) : Replace Line Drops Project Type : FAC Cost : \$88,298 Time Estimate : 1.0 Months	\$64,288,298
8455919	9	MERION 138.0 kV - CORSON 1 138.0 kV Ckt 1	<u>AEC</u> at1411r0001 (41) : To mitigate the (ACE) Merion Corson 138 kV line (from bus 228197 to bus 228106 ckt 1) overload, it will require increasing the emergency rating of the Merion to Corson 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 Corson & Merion. Project Type : FAC Cost : \$20,500,000 Time Estimate : 36-60 Months	\$20,500,000
8456153,8456150,8456151,8456464,8456465	10	MNOTLA 2 138.0 kV - MNOTLA 1 138.0 kV Ckt 1	<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	\$1,300,000

ID	Index	Facility	Upgrade Description	Cost
8456511,8455882	11	BLE 138.0 kV - MERION 138.0 kV Ckt 1	<u>AEC</u> 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 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	\$24,400,000
8456039	12	28OYSTER C 230.0 kV - 28MANITOU 230.0 kV Ckt 1	JCP&L-008B (581) : Reconductor existing sections of 1590 ACSR 45/7 Miscellaneous TDL (MTDL) with 1590 ACSS 45/7. Reconductor existing sections of 1590 ACSR 45/7 with 1590 ACSS 45/7. Project Type : FAC Cost : \$43,550,000 Time Estimate : 36.0 Months	\$43,550,000
8456061	13	28OYSTER C 230.0 kV - 28MANITOU 230.0 kV Ckt 2	<u>JCPL</u> JCP&L-009A (585) : Reconductor existing sections of 1590 ACSR 45/7 with 1590 ACSS 45/7. Project Type : FAC Cost : \$43,550,000 Time Estimate : 36.0 Months	\$43,550,000
8455994	14	CORSON 1 138.0 kV - CORSON 2 138.0 kV Ckt 1	<u>AEC</u> at1417r0001 (1) : To mitigate the (ACE) Corson#2 Dennis 138 kV line (from bus 228107 to bus 228216 ckt 1) overload, it will require increasing the emergency rating of the Corson#2 to Dennis 138 kV line by rebuilding the circuit. The rebuild will include the installation of new poles, foundations, insulators, and conductor. It will also require substation reinforcements at Corson#2 & Dennis Substation. Project Type : FAC Cost : \$1,400,000 Time Estimate : 36-60 Months	\$1,400,000

ID	Index	Facility	Upgrade Description	Cost
8456466	15	28LARRABEE 230.0 kV - 28ATLANTIC 230.0 kV Ckt 1	<u>JCPL</u> JCP&L-003A (548) : Replace Generic 2000 Amp Disconnect Switch. All new terminal equipment should be rated above 1151 MVA (Rate B). Project Type : FAC Cost : \$130,000 Time Estimate : 12.0 Months	\$130,000
8455764	16	28LAKEWOOD 230.0 kV - 28LARRABEE 230.0 kV Ckt 2	<u>JCPL</u> JCP&L-020F (644) : Reconductor existing sections of 1590 ACSR 45/7 Miscellaneous TDL (MTDL). Reconductor existing section of 1590 ACSR 45/7 with 1590 ACSS 45/7. Replace 1600 Amp Generic Z2026 LN and 2000 Amp CL Price V2-CA Z2026_LB Disconnect Switches. Replace 2000 Amp Generic Wave Trap. All new terminal equipment and conductors should be rated above 1390 MVA (Rate B). Project Type : FAC Cost : \$20,150,000 Time Estimate : 24.0 Months	\$20,150,000
8456456,8456455	17	28MANITOU 230.0 kV - 28WHITINGS 230.0 kV Ckt 1	<u>JCPL</u> JCP&L-007K (574) : Reconductor existing sections of 1590 ACSR 45/7 Miscellaneous TDL (MTDL) with 1590 ACSS 45/7. Reconductor existing sections of 1590 ACSR 45/7 with 1590 ACSS 45/7. Replace 2000 Amp Generic Wave Trap. Replace 10 Amp DFR (Older) VN a Relay. Replace 10 Amp BV B Meter. Replace Generic 2000 Amp Circuit Breaker. Replace Generic 2000 Amp Disconnect Switches. Replace 15215, 15219, 15220, and 15221 1200 Amp Current Transformers. All new terminal equipment should be rated above 1290 MVA (Rate B). Project Type : FAC Cost : \$35,230,000 Time Estimate : 30.0 Months	\$35,230,000

ID	Index	Facility	Upgrade Description	Cost
8456507,8456508	18	28VANHISVL 230.0 kV - 28LARRABEE 230.0 kV Ckt 1	<u>JCPL</u> JCP&L-018I (621) : Reconductor existing section of 1590 ACSR 45/7 with 1590 ACSS 45/7. Replace 2000 Amp Generic Wave Trap. Replace 10 Amp DFR (Older) and KD-4 (0.73) Relay (3 Total). Replace 10 Amp Meter. All new terminal equipment should be rated above 1156 MVA (Rate B). Project Type : FAC Cost : \$29,575,000 Time Estimate : 30.0 Months	\$29,575,000
8456484,8456485	19	28WHITINGS 230.0 kV - 28MANCHSTR 230.0 kV Ckt 1	<u>JCPL</u> JCP&L-019H (634) : Reconductor existing section of 1590 ACSR 45/7 with 1590 ACSS 45/7. Replace 2000 Amp Generic Wave Trap. Replace 10 Amp W/V XDUC, DFR Meter S. Replace SEL-321 Z2, SEL-321 Z3, SEL-321 Z4 Impedance Relays. Replace 2000 Amp MITSUBISHI Circuit Breaker. Reconductor existing section of 2.5 SPS AL PIPE. Replace 2000 Amp Generic and SS Disconnect Switch. All new terminal equipment and conductors should be rated above 1200 MVA (Rate B). Project Type : FAC Cost : \$50,440,000 Time Estimate : 36.0 Months	\$50,440,000
8456497,8456498	20	28MANCHSTR 230.0 kV - 28VANHISVL 230.0 kV Ckt 1	<u>JCPL</u> JCP&L-024E (658) : Reconductor existing section of 1590 ACSR 45/7 with 1590 ACSS 45/7. Reconductor existing section of 2.5 SPS AL PIPE with 1590 ACSS 45/7. Replace 2000 Amp SS Disconnect Switch. All new terminal equipment and conductors should be rated above 1185 MVA (Rate B). Project Type : FAC Cost : \$23,660,000 Time Estimate : 24.0 Months	\$23,660,000
			TOTAL COST	\$503,533,496

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
8456074	206294	28LARRABEE	JCP&L	206309	28SMITHBRG	JCP&L	2	JC-P1-2-JCC-230-017	operation	813.0	136.21	137.73	DC	27.43
8456076	206294	28LARRABEE	JCP&L	206309	28SMITHBRG	JCP&L	2	Base Case	operation	678.0	106.7	107.89	DC	17.93
8456100	206294	28LARRABEE	JCP&L	206309	28SMITHBRG	JCP&L	1	JC-P1-2-JCC-230-018	operation	817.0	124.5	125.88	DC	24.89
8456102	206294	28LARRABEE	JCP&L	206309	28SMITHBRG	JCP&L	1	Base Case	operation	650.0	111.29	112.54	DC	17.93
8456238	206295	28LEISUR D	JCP&L	206323	28LAKEWOOD	JCP&L	1	JC-P1-2-JCC-230-020	operation	869.0	105.23	110.12	DC	42.49
8456163	206296	28LEISUR U	JCP&L	206323	28LAKEWOOD	JCP&L	1	JC-P1-2-JCC-230-019	operation	817.0	120.98	126.16	DC	42.28
8456128	206297	28MANITOU	JCP&L	206296	28LEISUR U	JCP&L	1	JC-P1-2-JCC-230-019	operation	817.0	134.9	140.15	DC	42.91
8456134	206297	28MANITOU	JCP&L	206295	28LEISUR D	JCP&L	1	JC-P1-2-JCC-230-020	operation	817.0	134.26	139.51	DC	42.91
8456034	206302	28OYSTER C	JCP&L	206297	28MANITOU	JCP&L	1	JC-P1-2-JCC-230-022	operation	817.0	218.73	225.71	DC	56.98
8456036	206302	28OYSTER C	JCP&L	206297	28MANITOU	JCP&L	1	Base Case	operation	650.0	147.87	152.6	DC	30.75

ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC DC	MW IMPACT
8456056	206302	28OYSTER C	JCP&L	206297	28MANITOU	JCP&L	2	JC-P1-2-JCC-230-021	operation	869.0	205.69	212.25	DC	56.99
8456058	206302	28OYSTER C	JCP&L	206297	28MANITOU	JCP&L	2	Base Case	operation	709.0	135.74	140.08	DC	30.79
8456079	206323	28LAKEWOOD	JCP&L	206294	28LARRABEE	JCP&L	2	JC-P1-2-JCC-230-014	operation	817.0	164.29	169.71	DC	44.26
8456081	206323	28LAKEWOOD	JCP&L	206294	28LARRABEE	JCP&L	2	Base Case	operation	650.0	113.75	115.43	DC	24.2
8456111	206323	28LAKEWOOD	JCP&L	206294	28LARRABEE	JCP&L	1	JC-P1-2-JCC-230-013	operation	869.0	155.64	160.73	DC	44.27
8456113	206323	28LAKEWOOD	JCP&L	206294	28LARRABEE	JCP&L	1	Base Case	operation	709.0	104.55	106.1	DC	24.27
8456176	206326	28E WINDSR	JCP&L	206316	28WINDSOR	JCP&L	1	PJM_P1_68	operation	869.0	117.78	118.79	DC	19.46
8456369	213922	RICHMOND	PECO	214012	WANEETA3	PECO	1	Base Case	operation	760.0	99.94	102.93	DC	50.25
8456351	219100	NEWFRDM	PSE&G	219704	HILLTOP_3	PSE&G	1	PECO_P1-2_5014/* \$ CHESCO \$ PECO_P1-2_5014 \$ L	operation	740.0	106.95	108.71	DC	28.29
8456370	219110	GLOUCSTR	PSE&G	219755	CUTHBERT_4	PSE&G	1	PS_P1-2_C-2308_LT	operation	758.0	101.35	103.1	DC	29.01
8456140	227802	HIGBEE#3	AE	227811	HIGBEE#2	AE	1	AE_P1-2 HIG-MARV	operation	146.0	17.5	164.39	DC	214.46
8456145	227802	HIGBEE#3	AE	227811	HIGBEE#2	AE	1	Base Case	operation	146.0	5.5	138.63	DC	194.37
8456116	227810	HIGBEE#1	AE	227802	HIGBEE#3	AE	1	AE_P1-3 HIG 1 XFR	operation	146.0	32.94	184.08	DC	220.66
8456121	227810	HIGBEE#1	AE	227802	HIGBEE#3	AE	1	Base Case	operation	146.0	21.23	172.36	DC	220.66
8456231	227811	HIGBEE#2	AE	227813	ONTAR #2	AE	1	AE_P1-2 HIG-MARV	operation	143.0	23.66	135.13	DC	159.4
8456236	227811	HIGBEE#2	AE	227813	ONTAR #2	AE	1	Base Case	operation	143.0	13.9	114.24	DC	143.48
8456154	227900	CARDIFF	AE	219100	NEWFRDM	PSE&G	1	AE_P1-2 OY CK-CEDAR	operation	692.0	137.82	153.02	DC	105.15
8456159	227900	CARDIFF	AE	219100	NEWFRDM	PSE&G	1	Base Case	operation	650.0	93.74	105.78	DC	78.24
8456062	227955	CEDAR	AE	206302	28OYSTER C	JCP&L	1	Base Case	operation	464.0	222.62	236.05	DC	62.31
8456063	227955	CEDAR	AE	206302	28OYSTER C	JCP&L	1	AE_P1-2 CARD-CEDAR-A	operation	564.0	231.46	233.05	DC	23.62
8456314	228110	BLE	AE	228197	MERION	AE	1	AE_P1-2 ENG-CORSON	operation	482.0	110.62	118.64	DC	38.58
8456367	228110	BLE	AE	228111	MDLE TP	AE	1	AE_P1-2 MERION-CORSN	operation	482.0	98.17	106.32	DC	39.19
8456237	228111	MDLE TP	AE	228107	CORSON 2	AE	1	AE_P1-2 MERION-CORSN	operation	315.0	121.63	134.04	DC	38.97
8456368	228197	MERION	AE	228106	CORSON 1	AE	1	AE_P1-2 ENG-CORSON	operation	478.0	97.37	105.48	DC	38.68
8456122	228502	MNOTLA 1	AE	228500	LANDIS	AE	1	Base Case	operation	230.0	164.47	180.52	DC	36.9
8456123	228502	MNOTLA 1	AE	228500	LANDIS	AE	1	AE_P1-2 OY CK-CEDAR	operation	286.0	151.55	166.7	DC	43.33
8456146	228503	MNOTLA 2	AE	228502	MNOTLA 1	AE	1	AE_P1-2 OY CK-CEDAR	operation	311.0	143.61	157.54	DC	43.34
8456149	228503	MNOTLA 2	AE	228502	MNOTLA 1	AE	1	Base Case	operation	311.0	121.72	133.59	DC	36.9
8456086	940360	AE2-020 TAP	AE	227955	CEDAR	AE	1	Base Case	operation	650.0	177.62	184.52	DC	44.88

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 AE2-222 project.

Secondary Point of Interconnection

PJM studied the AE2-222 project into the Atlantic City Electric Company (ACE) system at the Ontario 69 kV Substation (PSSE bus # 227809) 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)

ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC DC	MW IMPACT
8456061	206302	28OYSTER C	JCP&L	206297	28MANITOU	JCP&L	2	JC-P1-2-JCC-230-021	single	869.0	98.29	100.16	DC	16.22

Multiple Facility Contingency

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

ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC DC	MW IMPACT
8456013	227913	CARDIFF	AE	227900	CARDIFF	AE	1	AE_P4-2 AE9	breaker	425.0	90.13	107.31	DC	73.03
8456590	227949	LEWIS #3	AE	227901	DOROTHY	AE	1	AE_P7-1 AE6TOWER	tower	205.0	99.19	120.14	DC	42.84
8456511	228110	BLE	AE	228197	MERION	AE	1	AE_P7-1 AE5TOWER	tower	482.0	96.54	104.61	DC	38.65
8455919	228197	MERION	AE	228106	CORSON 1	AE	1	AE_P4-2 AE29	breaker	478.0	92.98	100.21	DC	34.32
8456592	228500	LANDIS	AE	228211	UPITTS	AE	1	AE_P7-1 AE8TOWER	tower	205.0	96.78	101.64	DC	22.15
14254685	228500	LANDIS	AE	228211	UPITTS	AE	1	AE_P7-1 AE10TOWER-A	tower	205.0	99.71	104.58	DC	22.15

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
8455749	206294	28LARRABEE	JCP&L	206309	28SMITHBRG	JCP&L	1	JC-P2-3-JCC-230-13G	breaker	817.0	112.94	114.45	DC	27.42
8456466	206294	28LARRABEE	JCP&L	206286	28ATLANTIC	JCP&L	1	JC-P7-1-JCC-230-7A	tower	956.0	104.59	105.91	DC	28.02

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
8456455	206297	28MANITOU	JCP&L	206319	28WHITINGS	JCP&L	1	JC-P7-1-JCC-230-10A	tower	817.0	158.74	163.74	DC	40.82
8456456	206297	28MANITOU	JCP&L	206319	28WHITINGS	JCP&L	1	JC-P7-1-JCC-230-12	tower	817.0	153.57	158.94	DC	43.88
8456039	206302	28OYSTER C	JCP&L	206297	28MANITOU	JCP&L	1	JC-P1-2-JCC-230-022	single	817.0	104.53	106.52	DC	16.22
8456507	206318	28VANHISVL	JCP&L	206294	28LARRABEE	JCP&L	1	JC-P7-1-JCC-230-10A	tower	869.0	137.05	139.08	DC	39.16
8456508	206318	28VANHISVL	JCP&L	206294	28LARRABEE	JCP&L	1	JC-P7-1-JCC-230-12	tower	869.0	132.74	137.5	DC	41.37
8456484	206319	28WHITINGS	JCP&L	206720	28MANCHSTR	JCP&L	1	JC-P7-1-JCC-230-10A	tower	869.0	138.92	143.62	DC	40.89
8456485	206319	28WHITINGS	JCP&L	206720	28MANCHSTR	JCP&L	1	JC-P7-1-JCC-230-12	tower	869.0	131.8	136.79	DC	43.36
8455764	206323	28LAKEWOOD	JCP&L	206294	28LARRABEE	JCP&L	2	JC-P2-3-JCC-230-13D	breaker	817.0	171.3	176.71	DC	44.23
8456497	206720	28MANCHSTR	JCP&L	206318	28VANHISVL	JCP&L	1	JC-P7-1-JCC-230-10A	tower	869.0	137.19	141.9	DC	40.89
8456498	206720	28MANCHSTR	JCP&L	206318	28VANHISVL	JCP&L	1	JC-P7-1-JCC-230-12	tower	869.0	130.06	135.05	DC	43.36
8455688	213922	RICHMOND	PECO	214012	WANEETA3	PECO	1	PECO_P2-2_CHI230B1/* \$ DELCO \$ PECO_P2-2_CHI230B1 \$ B	bus	1180.0	105.15	107.31	DC	56.39
8455976	213922	RICHMOND	PECO	214012	WANEETA3	PECO	1	PECO_P4_CHICH045/* \$ DELCO \$ PECO_P4_CHICH045 \$ STBK	breaker	1180.0	105.14	107.3	DC	56.39
8455690	214206	RICHRE29	PECO	213922	RICHMOND	PECO	1	PECO_P2-2_CHI230B1/* \$ DELCO \$ PECO_P2-2_CHI230B1 \$ B	bus	1336.0	104.55	106.55	DC	58.78
8455978	214206	RICHRE29	PECO	213922	RICHMOND	PECO	1	PECO_P4_CHICH045/* \$ DELCO \$ PECO_P4_CHICH045 \$ STBK	breaker	1336.0	104.53	106.54	DC	58.78
8455962	219100	NEWFRDM	PSE&G	219704	HILLTOP_3	PSE&G	1	PECO_P4_PEACH215/* \$ CHESCO \$ PECO_P4_PEACH215 \$ STBK	breaker	740.0	123.09	124.82	DC	28.29
8455963	219100	NEWFRDM	PSE&G	219704	HILLTOP_3	PSE&G	1	PECO_P4_PEACH205/* \$ CHESCO \$ PECO_P4_PEACH205 \$ STBK	breaker	740.0	121.81	123.53	DC	28.28
8456011	219110	GLOUCSTR	PSE&G	219125	CAMDEN	PSE&G	1	PS_P2-3_CUTB_1-4_LT	breaker	771.0	101.4	103.09	DC	28.36
8456012	219110	GLOUCSTR	PSE&G	219125	CAMDEN	PSE&G	1	PS_P2-3_CUTB_3-4_LT	breaker	771.0	100.03	101.7	DC	27.95
8455689	219125	CAMDEN	PSE&G	214206	RICHRE29	PECO	1	PECO_P2-2_CHI230B1/* \$ DELCO \$ PECO_P2-2_CHI230B1 \$ B	bus	1336.0	104.56	106.57	DC	58.78
8455977	219125	CAMDEN	PSE&G	214206	RICHRE29	PECO	1	PECO_P4_CHICH045/* \$ DELCO \$ PECO_P4_CHICH045 \$ STBK	breaker	1336.0	104.55	106.55	DC	58.78
8456604	219702	HILLTOP_1	PSE&G	219101	BEAVERBK_1	PSE&G	1	PS_P7-1_V2274+P2242_LT	tower	740.0	106.82	108.62	DC	29.56
8456605	219702	HILLTOP_1	PSE&G	219101	BEAVERBK_1	PSE&G	1	AE_P7-1 W2275_O2241	tower	740.0	100.94	102.75	DC	29.68
8456450	227900	CARDIFF	AE	219100	NEWFRDM	PSE&G	1	JC-P7-1-JCC-230-13	tower	692.0	195.9	210.71	DC	102.45
8456451	227900	CARDIFF	AE	219100	NEWFRDM	PSE&G	1	AE_P7-1 AE13TOWER	tower	692.0	179.4	196.11	DC	115.6
14253855	227900	CARDIFF	AE	227955	CEDAR	AE	1	AE_P4-2 AE7	breaker	805.0	133.82	142.01	DC	65.97
14253856	227900	CARDIFF	AE	227955	CEDAR	AE	1	AE_P4-2 AE6	breaker	805.0	133.81	142.01	DC	66.0
14253907	227902	LEWIS #1	AE	227945	LEWIS #2	AE	1	AE_P4-2 AE33	breaker	286.8	156.7	161.07	DC	27.79
14254619	227902	LEWIS #1	AE	227945	LEWIS #2	AE	1	AE_P7-1 AE13TOWER	tower	286.8	143.94	147.76	DC	24.36
8456591	227949	LEWIS #3	AE	227901	DOROTHY	AE	1	JC-P7-1-JCC-230-13	tower	205.0	105.74	126.54	DC	42.63
8455746	227955	CEDAR	AE	206302	28OYSTER C	JCP&L	1	JC-P2-3-JCC-500-002D	breaker	564.0	215.79	227.21	DC	64.39
8455747	227955	CEDAR	AE	206302	28OYSTER C	JCP&L	1	JC-P2-3-JCC-500-002B	breaker	564.0	214.32	225.82	DC	64.85
8455797	228106	CORSON 1	AE	228185	CORSON#1	AE	1	AE_P4-2 AE16	breaker	168.0	123.65	128.97	DC	19.7
8455882	228110	BLE	AE	228197	MERION	AE	1	AE_P4-2 AE29	breaker	482.0	106.27	113.43	DC	34.23
8456125	228502	MNOTLA 1	AE	228500	LANDIS	AE	1	Base Case	single	230.0	141.45	146.01	DC	10.49
8456126	228502	MNOTLA 1	AE	228500	LANDIS	AE	1	AE_P1-2 OY CK-CEDAR	single	286.0	132.73	137.03	DC	12.32
8456438	228502	MNOTLA 1	AE	228500	LANDIS	AE	1	AE_P7-1 AE6TOWER	tower	286.0	183.21	198.23	DC	42.84
8456439	228502	MNOTLA 1	AE	228500	LANDIS	AE	1	JC-P7-1-JCC-230-13	tower	286.0	183.63	198.53	DC	42.62
8456150	228503	MNOTLA 2	AE	228502	MNOTLA 1	AE	1	AE_P1-2 OY CK-CEDAR	single	311.0	123.79	127.75	DC	12.32
8456153	228503	MNOTLA 2	AE	228502	MNOTLA 1	AE	1	Base Case	single	311.0	106.38	109.75	DC	10.49
8456464	228503	MNOTLA 2	AE	228502	MNOTLA 1	AE	1	AE_P7-1 AE6TOWER	tower	311.0	168.53	182.34	DC	42.84

ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC DC	MW IMPACT
8456465	228503	MNOTLA 2	AE	228502	MNOTLA 1	AE	1	JC-P7-1-JCC-230-13	tower	311.0	173.08	186.79	DC	42.63
14254207	228503	MNOTLA 2	AE	228502	MNOTLA 1	AE	1	AE_P1-2 CARD-CEDAR	single	311.0	121.53	125.22	DC	11.48

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
8456074	206294	28LARRABEE	JCP&L	206309	28SMITHBRG	JCP&L	2	JC-P1-2-JCC-230-017	operation	813.0	111.13	112.65	DC	27.42
8456100	206294	28LARRABEE	JCP&L	206309	28SMITHBRG	JCP&L	1	JC-P1-2-JCC-230-018	operation	817.0	101.51	102.88	DC	24.89
8456238	206295	28LEISUR D	JCP&L	206323	28LAKEWOOD	JCP&L	1	JC-P1-2-JCC-230-020	operation	869.0	111.67	116.55	DC	42.47
8456163	206296	28LEISUR U	JCP&L	206323	28LAKEWOOD	JCP&L	1	JC-P1-2-JCC-230-019	operation	817.0	127.6	132.77	DC	42.26
8456128	206297	28MANITOU	JCP&L	206296	28LEISUR U	JCP&L	1	JC-P1-2-JCC-230-019	operation	817.0	141.39	146.64	DC	42.89
8456134	206297	28MANITOU	JCP&L	206295	28LEISUR D	JCP&L	1	JC-P1-2-JCC-230-020	operation	817.0	140.74	145.99	DC	42.89
8456034	206302	28OYSTER C	JCP&L	206297	28MANITOU	JCP&L	1	JC-P1-2-JCC-230-022	operation	817.0	227.15	234.12	DC	56.95
8456036	206302	28OYSTER C	JCP&L	206297	28MANITOU	JCP&L	1	Base Case	operation	650.0	153.58	158.31	DC	30.74
8456056	206302	28OYSTER C	JCP&L	206297	28MANITOU	JCP&L	2	JC-P1-2-JCC-230-021	operation	869.0	213.6	220.15	DC	56.96
8456058	206302	28OYSTER C	JCP&L	206297	28MANITOU	JCP&L	2	Base Case	operation	709.0	140.97	145.31	DC	30.78
8456199	206316	28WINDSOR	JCP&L	219752	CLRSVLL_1	PSE&G	1	PJM_P1_68	operation	813.0	107.84	108.93	DC	19.61
8456079	206323	28LAKEWOOD	JCP&L	206294	28LARRABEE	JCP&L	2	JC-P1-2-JCC-230-014	operation	817.0	170.92	176.33	DC	44.24
8456081	206323	28LAKEWOOD	JCP&L	206294	28LARRABEE	JCP&L	2	Base Case	operation	650.0	106.93	108.61	DC	24.19
8456111	206323	28LAKEWOOD	JCP&L	206294	28LARRABEE	JCP&L	1	JC-P1-2-JCC-230-013	operation	869.0	161.87	166.96	DC	44.25
8456176	206326	28E WINDSR	JCP&L	206316	28WINDSOR	JCP&L	1	PJM_P1_68	operation	869.0	114.13	115.14	DC	19.46
8456369	213922	RICHMOND	PECO	214012	WANEETA3	PECO	1	Base Case	operation	760.0	101.4	104.4	DC	50.25
8456351	219100	NEWFRDM	PSE&G	219704	HILLTOP_3	PSE&G	1	PECO_P1-2_5014/* \$ CHESCO \$ PECO_P1-2_5014 \$ L	operation	740.0	121.8	123.53	DC	28.29
8456394	219108	CUTHBERT	PSE&G	219125	CAMDEN	PSE&G	1	PS_P1-2_U-2299_LT	operation	771.0	104.43	106.28	DC	31.04

ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC/DC	MW IMPACT
8456370	219110	GLOUCSTR	PSE&G	219755	CUTHBERT_4	PSE&G	1	PS_P1-2_C-2308_LT	operation	758.0	109.77	111.53	DC	29.01
8456392	219110	GLOUCSTR	PSE&G	219125	CAMDEN	PSE&G	1	Base Case	operation	500.0	105.0	106.75	DC	19.03
8456396	219110	GLOUCSTR	PSE&G	219753	CUTHBERT_2	PSE&G	1	PS_P1-2_D-2282_LT	operation	771.0	102.39	104.03	DC	27.51
14254401	219110	GLOUCSTR	PSE&G	219755	CUTHBERT_4	PSE&G	1	Base Case	operation	550.0	98.53	100.1	DC	18.8
14254486	219754	CUTHBERT_3	PSE&G	219125	CAMDEN	PSE&G	1	PS_P1-2_Z-2305_LT	operation	792.0	99.31	101.07	DC	30.28
14254264	227809	ONTAR #3	AE	227813	ONTAR #2	AE	1	AE_P1-2 ONT-HURON	operation	146.0	2.87	168.3	DC	241.52
14254269	227809	ONTAR #3	AE	227813	ONTAR #2	AE	1	Base Case	operation	146.0	4.01	129.11	DC	194.36
14254309	227809	ONTAR #3	AE	227812	ONTAR #1	AE	1	AE_P1-2 HIG-ONTARIO	operation	146.0	7.34	135.5	DC	187.12
14254543	227812	ONTAR #1	AE	227880	HURON	AE	1	AE_P1-2 HIG-ONTARIO	operation	119.0	12.13	100.21	DC	104.81
14254339	227813	ONTAR #2	AE	227811	HIGBEE#2	AE	1	AE_P1-2 ONT-HURON	operation	143.0	7.96	126.5	DC	169.51
8456154	227900	CARDIFF	AE	219100	NEWFRDM	PSE&G	1	AE_P1-2 OY CK-CEDAR	operation	692.0	170.84	186.03	DC	105.16
8456159	227900	CARDIFF	AE	219100	NEWFRDM	PSE&G	1	Base Case	operation	650.0	126.61	138.65	DC	78.26
14254195	227900	CARDIFF	AE	227955	CEDAR	AE	1	PS_P1-2_2310A	operation	805.0	133.55	141.97	DC	67.79
14254196	227900	CARDIFF	AE	227955	CEDAR	AE	1	Base Case	operation	650.0	136.21	143.12	DC	44.93
14254294	227902	LEWIS #1	AE	227945	LEWIS #2	AE	1	AE_P1-2 LANDIS-MINO	operation	286.8	143.83	147.69	DC	24.59
14254532	227913	CARDIFF	AE	227900	CARDIFF	AE	1	AE_P1-2 CARD-LEW2	operation	425.0	81.94	101.22	DC	81.92
14254536	227934	CARDIFF2	AE	227900	CARDIFF	AE	1	AE_P1-2 CARD-LEW1	operation	425.0	81.72	100.97	DC	81.8
14254537	227934	CARDIFF2	AE	227900	CARDIFF	AE	1	AE_P1-3 CARD 6 XFR	operation	425.0	81.72	100.97	DC	81.8
14254289	227949	LEWIS #3	AE	227901	DOROTHY	AE	1	AE_P1-2 OY CK-CEDAR	operation	205.0	92.92	114.03	DC	43.28
8456062	227955	CEDAR	AE	206302	28OYSTER C	JCP&L	1	Base Case	operation	464.0	230.42	243.84	DC	62.28
8456064	227955	CEDAR	AE	206302	28OYSTER C	JCP&L	1	PECO_P1-2_5038/* \$ CHESCO \$ PECO_P1-2_5038 \$ L	operation	564.0	213.96	225.49	DC	65.02
8456314	228110	BLE	AE	228197	MERION	AE	1	AE_P1-2 ENG-CORSON	operation	482.0	95.46	103.5	DC	38.55
8456237	228111	MDLE TP	AE	228107	CORSON 2	AE	1	AE_P1-2 MERION-CORSON	operation	315.0	98.56	110.99	DC	38.94
8456122	228502	MNOTLA 1	AE	228500	LANDIS	AE	1	Base Case	operation	230.0	186.62	202.63	DC	36.84
8456123	228502	MNOTLA 1	AE	228500	LANDIS	AE	1	AE_P1-2 OY CK-CEDAR	operation	286.0	175.32	190.46	DC	43.27
8456146	228503	MNOTLA 2	AE	228502	MNOTLA 1	AE	1	AE_P1-2 OY CK-CEDAR	operation	311.0	164.83	178.75	DC	43.28
8456149	228503	MNOTLA 2	AE	228502	MNOTLA 1	AE	1	Base Case	operation	311.0	138.1	149.95	DC	36.85

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
8456466	206294	28LARRABEE	JCP&L	206286	28ATLANTIC	JCP&L	1	JC-P7-1-JCC-230-7A	tower	956.0	119.09	120.41	DC	28.03

Bus #	Bus	MW Impact
206280	28LAKEHURS	0.5
206306	28LKWD G1	3.37
206308	28LKWD G2	3.37
206312	28LKWD G3	2.07
206325	28O C GEN	173.39
206360	28O CRK C1	1.17
206361	28O CRK C2	0.66
206366	28LKWD CT1	6.39
206367	28LKWD CT2	6.39
207145	28FRN_Y2-051	0.06
207207	28JCB_W1-129	0.05
207208	28JCB_W4-025	0.06
227801	ONTC&DCT	3.61
227843	MARINGEN E	0.37
227928	V4-067E	0.15
293404	V3-036	0.51
901981	W1-119 C	0.17
901982	W1-119 E	2.33
901991	W1-120C	1.58
901992	W1-120E	2.59
902082	W1-129E	0.61
902321	W2-019 C	0.05
902322	W2-019 E	0.72
902432	W2-030 E	0.57
902951	W2-082 C OP1	0.16
902952	W2-082 E OP1	2.08
903981	W3-079 C	0.08
903982	W3-079 E	1.14

Bus #	Bus	MW Impact
905252	W4-025 E	0.87
912101	X4-015 C	0.05
912102	X4-015 E	0.61
914092	Y2-051 E	0.86
915022	Y3-012 E	0.7
917611	Z2-102 C	0.13
917612	Z2-102 E	1.71
917682	Z2-109 E	1.97
918452	AA1-060 E	3.03
919662	AA2-048 E	1.81
919672	AA2-049 E	0.29
924701	AB2-122 C	0.07
924702	AB2-122 E	0.11
930002	AB1-001 E	0.13
930891	AB1-138 C	1.04
930892	AB1-138 E	1.74
931122	AB1-163 E	1.29
933962	AD1-019 E	0.71
934351	AD1-059	0.6
938781	AE1-104 C O1	11.24
938782	AE1-104 E O1	28.75
939121	AE1-142 C O1	2.5
939122	AE1-142 E O1	3.59
940161	AE2-000 C O1	64.58
940162	AE2-000 E O1	165.23
940311	AE2-015 C O1	0.65
940312	AE2-015 E O1	0.32
940361	AE2-020 C O1	16.35
940362	AE2-020 E O1	76.56
940371	AE2-021 C O1	16.35
940372	AE2-021 E O1	76.56
940381	AE2-022 C O1	9.54
940382	AE2-022 E O1	44.66
940391	AE2-023 C O1	6.32
940392	AE2-023 E O1	29.57
940401	AE2-024 C O1	53.62
940402	AE2-024 E O1	251.03
940411	AE2-025 C O1	27.07
940412	AE2-025 E O1	126.71
941091	AE2-103 C	0.27
941092	AE2-103 E	0.37
942101	AE2-222 C O1	7.98
942102	AE2-222 E O1	20.05
942201	AE2-232 C O1	31.65
942202	AE2-232 E O1	80.99
942381	AE2-251 C O1	116.47
942382	AE2-251 E O1	298.01
942941	AE2-314 C	4.33
942942	AE2-314 E	2.89
BLUEG	BLUEG	0.49
CALDERWOOD	CALDERWOOD	0.04
CANNELTON	CANNELTON	0.03

Bus #	Bus	MW Impact
CARR	CARR	0.64
CATAWBA	CATAWBA	0.02
CHEOAH	CHEOAH	0.04
CHILHOWEE	CHILHOWEE	0.01
COFFEEN	COFFEEN	0.05
COTTONWOOD	COTTONWOOD	0.18
DUCKCREEK	DUCKCREEK	0.11
EDWARDS	EDWARDS	0.05
ELMERSMITH	ELMERSMITH	0.05
FARMERCITY	FARMERCITY	0.03
G-007	G-007	9.23
GIBSON	GIBSON	0.02
HAMLET	HAMLET	0.03
NEWTON	NEWTON	0.13
O-066	O-066	18.16
PRAIRIE	PRAIRIE	0.24
RENSSELAER	RENSSELAER	0.51
SANTEETLA	SANTEETLA	0.01
SMITHLAND	SMITHLAND	0.02
TATANKA	TATANKA	0.06
TILTON	TILTON	0.06
TRIMBLE	TRIMBLE	0.05
TVA	TVA	0.15
UNIONPOWER	UNIONPOWER	0.06

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ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC DC	MW IMPACT
8455994	228106	CORSON 1	AE	228107	CORSON 2	AE	1	AE_P4-2 AE29	breaker	478.0	93.68	100.96	DC	34.72

Bus #	Bus	MW Impact
227801	ONTC&DCT	4.47
227842	MARINGEN	0.05
227843	MARINGEN E	0.46
227928	V4-067E	0.15
228014	PVILLEG	0.06
293404	V3-036	0.64
902431	W2-030 C	0.05
902432	W2-030 E	0.72
913341	Y1-077	20.62
915022	Y3-012 E	0.87
924701	AB2-122 C	0.07
924702	AB2-122 E	0.11
930001	AB1-001 C	0.01
930002	AB1-001 E	0.17
933962	AD1-019 E	0.88
938781	AE1-104 C O1	52.78
938782	AE1-104 E O1	135.03

Bus #	Bus	MW Impact
940361	AE2-020 C O1	5.35
940362	AE2-020 E O1	25.06
940371	AE2-021 C O1	5.35
940372	AE2-021 E O1	25.06
940381	AE2-022 C O1	3.12
940382	AE2-022 E O1	14.62
940391	AE2-023 C O1	29.67
940392	AE2-023 E O1	138.9
940963	AE2-087 BAT	0.11
941123	AE2-106 BAT	0.11
942101	AE2-222 C O1	9.88
942102	AE2-222 E O1	24.83
942941	AE2-314 C	2.65
942942	AE2-314 E	1.76
BLUEG	BLUEG	0.27
CALDERWOOD	CALDERWOOD	0.03
CANNELTON	CANNELTON	0.02
CATAWBA	CATAWBA	0.02
CBM-N	CBM-N	0.08
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	1.02
GIBSON	GIBSON	0.01
HAMLET	HAMLET	0.03
NEWTON	NEWTON	0.07
NYISO	NYISO	0.33
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	1.12

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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
8455749	206294	28LARRABEE	JCP&L	206309	28SMITHBRG	JCP&L	1	JC-P2-3-JCC-230-13G	breaker	817.0	141.98	143.49	DC	27.43

Bus #	Bus	MW Impact
206271	28MCRC/REC	0.16
206280	28LAKEHURS	0.54
206306	28LKWD G1	3.61
206308	28LKWD G2	3.61
206312	28LKWD G3	2.22
206325	28O C GEN	184.69
206360	28O CRK C1	1.24
206361	28O CRK C2	0.7
206366	28LKWD CT1	6.84
206367	28LKWD CT2	6.84
206412	28R11	36.51
207144	28HOW_X1-037	0.11
207145	28FRN_Y2-051	0.07
207204	28HOL_W1-112	0.03
207206	28TIN_W1-124	0.18
207207	28JCB_W1-129	0.05
207208	28JCB_W4-025	0.07
227801	ONTC&DCT	3.53
227843	MARINGEN E	0.37
227928	V4-067E	0.15
293404	V3-036	0.5
901912	W1-112E OP1	0.36
901981	W1-119 C	0.18
901982	W1-119 E	2.46
901991	W1-120C	1.68
901992	W1-120E	2.73
902032	W1-124E	2.36
902082	W1-129E	0.65
902321	W2-019 C	0.06
902322	W2-019 E	0.76
902432	W2-030 E	0.56
902951	W2-082 C OP1	0.16
902952	W2-082 E OP1	2.2
903981	W3-079 C	0.1
903982	W3-079 E	1.39
905252	W4-025 E	0.92
905502	W4-060 E OP1	0.54
907082	X1-037 E	1.51
912101	X4-015 C	0.05
912102	X4-015 E	0.65
912182	X4-031 E	0.42
914092	Y2-051 E	0.97
915022	Y3-012 E	0.69
917611	Z2-102 C	0.14
917612	Z2-102 E	1.81
917682	Z2-109 E	1.66
918452	AA1-060 E	3.05
919662	AA2-048 E	2.21
919672	AA2-049 E	0.57
920732	AA2-184 E	3.73
924701	AB2-122 C	0.07
924702	AB2-122 E	0.11

Bus #	Bus	MW Impact
925541	AC1-029	1.66
930002	AB1-001 E	0.13
930891	AB1-138 C	1.13
930892	AB1-138 E	1.88
931122	AB1-163 E	1.44
933962	AD1-019 E	0.69
934351	AD1-059	0.64
937261	AD2-165	3.32
938781	AE1-104 C O1	10.76
938782	AE1-104 E O1	27.54
939121	AE1-142 C O1	2.67
939122	AE1-142 E O1	3.84
939981	AE1-238 C	46.09
939982	AE1-238 E	121.06
940161	AE2-000 C O1	68.78
940162	AE2-000 E O1	175.99
940311	AE2-015 C O1	0.69
940312	AE2-015 E O1	0.34
940361	AE2-020 C O1	16.83
940362	AE2-020 E O1	78.78
940371	AE2-021 C O1	16.83
940372	AE2-021 E O1	78.78
940381	AE2-022 C O1	9.82
940382	AE2-022 E O1	45.96
940391	AE2-023 C O1	6.05
940392	AE2-023 E O1	28.33
940401	AE2-024 C O1	57.47
940402	AE2-024 E O1	269.06
940411	AE2-025 C O1	29.01
940412	AE2-025 E O1	135.81
940691	AE2-056 C	0.23
940692	AE2-056 E	0.2
940701	AE2-057 C	0.04
940702	AE2-057 E	0.04
940921	AE2-081 C	0.24
940922	AE2-081 E	0.25
941091	AE2-103 C	0.29
941092	AE2-103 E	0.4
942101	AE2-222 C O1	7.81
942102	AE2-222 E O1	19.62
942201	AE2-232 C O1	33.72
942202	AE2-232 E O1	86.27
942381	AE2-251 C O1	124.83
942382	AE2-251 E O1	319.42
942941	AE2-314 C	4.27
942942	AE2-314 E	2.85
BLUEG	BLUEG	1.79
CALDERWOOD	CALDERWOOD	0.19
CANNELTON	CANNELTON	0.11
CARR	CARR	0.37
CATAWBA	CATAWBA	0.12
CHEOAH	CHEOAH	0.17

Bus #	Bus	MW Impact
CHILHOWEE	CHILHOWEE	0.06
COFFEEN	COFFEEN	0.19
COTTONWOOD	COTTONWOOD	0.73
DUCKCREEK	DUCKCREEK	0.41
EDWARDS	EDWARDS	0.19
ELMERSMITH	ELMERSMITH	0.19
FARMERCITY	FARMERCITY	0.12
G-007A	G-007A	15.95
GIBSON	GIBSON	0.07
HAMLET	HAMLET	0.19
NEWTON	NEWTON	0.49
O-066	O-066	5.81
PRAIRIE	PRAIRIE	0.92
RENSSELAER	RENSSELAER	0.29
SANTEETLA	SANTEETLA	0.05
SMITHLAND	SMITHLAND	0.07
TATANKA	TATANKA	0.22
TILTON	TILTON	0.23
TRIMBLE	TRIMBLE	0.2
TVA	TVA	0.61
UNIONPOWER	UNIONPOWER	0.27

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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
8456455	206297	28MANITOU	JCP&L	206319	28WHITINGS	JCP&L	1	JC-P7-1-JCC-230-10A	tower	817.0	152.8	157.81	DC	40.84

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

Bus #	Bus	MW Impact
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
SMITHLAND	SMITHLAND	0.05
TATANKA	TATANKA	0.15
TILTON	TILTON	0.15

Bus #	Bus	MW Impact
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
8456039	206302	28OYSTER C	JCP&L	206297	28MANITOU	JCP&L	1	JC-P1-2-JCC-230-022	single	817.0	110.14	112.13	DC	16.22

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
940391	AE2-023 C O1	12.33
940961	AE2-087 C	0.12
940963	AE2-087 BAT	0.08

Bus #	Bus	MW Impact
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
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
8456061	206302	28OYSTER C	JCP&L	206297	28MANITOU	JCP&L	2	JC-P1-2-JCC-230-021	single	869.0	103.58	105.44	DC	16.23

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

Bus #	Bus	MW Impact
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
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

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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
8456507	206318	28VANHISVL	JCP&L	206294	28LARRABEE	JCP&L	1	JC-P7-1-JCC-230-10A	tower	869.0	130.91	132.94	DC	39.18

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
902322	W2-019 E	1.18
902432	W2-030 E	0.8
902691	W2-056 C	0.07

Bus #	Bus	MW Impact
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
940391	AE2-023 C O1	8.92
940392	AE2-023 E O1	41.75
940951	AE2-085 C	0.23

Bus #	Bus	MW Impact
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
8456484	206319	28WHITINGS	JCP&L	206720	28MANCHSTR	JCP&L	1	JC-P7-1-JCC-230-10A	tower	869.0	133.34	138.05	DC	40.91

Bus #	Bus	MW Impact
206280	28LAKEHURS	0.64
206306	28LKWD G1	5.61

Bus #	Bus	MW Impact
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
CARR	CARR	0.39
CATAWBA	CATAWBA	0.08

Bus #	Bus	MW Impact
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
8455764	206323	28LAKEWOOD	JCP&L	206294	28LARRABEE	JCP&L	2	JC-P2-3-JCC-230-13D	breaker	817.0	164.67	170.09	DC	44.25

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

Bus #	Bus	MW Impact
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
NEWTON	NEWTON	0.41
O-066	O-066	14.98

Bus #	Bus	MW Impact
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

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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
8456497	206720	28MANCHSTR	JCP&L	206318	28VANHISVL	JCP&L	1	JC-P7-1-JCC-230-10A	tower	869.0	131.6	136.31	DC	40.91

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

Bus #	Bus	MW Impact
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
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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
8455976	213922	RICHMOND	PECO	214012	WANEETA3	PECO	1	PECO_P4_CHICH045/* \$ DELCO \$ PECO_P4_CHICH045 \$ STBK	breaker	1180.0	103.98	106.15	DC	56.39

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
913242	Y1-057 E	0.32
913332	Y1-075 E	0.41
915022	Y3-012 E	1.41
915072	Y3-026 E	1.6

Bus #	Bus	MW Impact
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
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

Bus #	Bus	MW Impact
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
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

Bus #	Bus	MW Impact
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
8455978	214206	RICHRE29	PECO	213922	RICHMOND	PECO	1	PECO_P4_CHICH045/* \$ DELCO \$ PECO_P4_CHICH045 \$ STBK	breaker	1336.0	103.3	105.31	DC	58.78

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

Bus #	Bus	MW Impact
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
924052	AB2-049 E	1.48
924531	AB2-102 C	45.91
924532	AB2-102 E	1.02
924701	AB2-122 C	0.14

Bus #	Bus	MW Impact
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
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

Bus #	Bus	MW Impact
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
942941	AE2-314 C	8.2
942942	AE2-314 E	5.47
943071	AE2-334 C	7.11
943072	AE2-334 E	3.79

Bus #	Bus	MW Impact
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
8456573	219100	NEWFRDM	PSE&G	219704	HILLTOP_3	PSE&G	1	PS_P7-1_V2274+P2242_LT	tower	740.0	120.73	122.63	DC	31.31

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
228717	S121	0.5
228720	V2-035C	0.01
228721	V2-035E	0.14
228727	W2-039G	0.83

Bus #	Bus	MW Impact
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
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

Bus #	Bus	MW Impact
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
DUCKCREEK	DUCKCREEK	0.15
EDWARDS	EDWARDS	0.07
ELMERSMITH	ELMERSMITH	0.07
FARMERCITY	FARMERCITY	0.04

Bus #	Bus	MW Impact
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
RENSSELAER	RENSSELAER	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
8455977	219125	CAMDEN	PSE&G	214206	RICHRE29	PECO	1	PECO_P4_CHICH045/* \$ DELCO \$ PECO_P4_CHICH045 \$ STBK	breaker	1336.0	103.32	105.33	DC	58.78

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

Bus #	Bus	MW Impact
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
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

Bus #	Bus	MW Impact
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
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

Bus #	Bus	MW Impact
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
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
8456450	227900	CARDIFF	AE	219100	NEWFRDM	PSE&G	1	JC-P7-1-JCC-230-13	tower	692.0	150.5	157.17	DC	102.44

Bus #	Bus	MW Impact
206360	280 CRK C1	1.63
206361	280 CRK C2	0.91
227801	ONTCDCT	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
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

Bus #	Bus	MW Impact
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
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
8455797	228106	CORSON 1	AE	228185	CORSON#1	AE	1	AE_P4-2 AE16	breaker	168.0	162.12	167.41	DC	19.73

Bus #	Bus	MW Impact
227801	ONTC&DCT	2.53
227843	MARINGEN E	0.26
227928	V4-067E	0.08
293404	V3-036	0.36
902432	W2-030 E	0.38
913341	Y1-077	9.76
915022	Y3-012 E	0.49
924701	AB2-122 C	0.04
924702	AB2-122 E	0.06
930002	AB1-001 E	0.1
933962	AD1-019 E	0.5
938781	AE1-104 C O1	24.98
938782	AE1-104 E O1	63.9
940391	AE2-023 C O1	14.04
940392	AE2-023 E O1	65.73
940963	AE2-087 BAT	0.03
941123	AE2-106 BAT	0.03
942101	AE2-222 C O1	5.62
942102	AE2-222 E O1	14.11
BLUEG	BLUEG	0.11
CALDERWOOD	CALDERWOOD	0.01
CANNELTON	CANNELTON	0.01
CATAWBA	CATAWBA	0.01
CBM-N	CBM-N	0.05
CHEOAH	CHEOAH	0.01
CHILHOWEE	CHILHOWEE	0.0
COFFEEN	COFFEEN	0.01
COTTONWOOD	COTTONWOOD	0.05
DUCKCREEK	DUCKCREEK	0.03
EDWARDS	EDWARDS	0.01
ELMERSMITH	ELMERSMITH	0.01
FARMERCITY	FARMERCITY	0.01
G-007A	G-007A	0.62
GIBSON	GIBSON	0.0
HAMLET	HAMLET	0.01
NEWTON	NEWTON	0.03
NYISO	NYISO	0.22
PRAIRIE	PRAIRIE	0.06
SANTEETLA	SANTEETLA	0.0
SMITHLAND	SMITHLAND	0.0
TATANKA	TATANKA	0.01
TILTON	TILTON	0.01

Bus #	Bus	MW Impact
TRIMBLE	TRIMBLE	0.01
TVA	TVA	0.04
UNIONPOWER	UNIONPOWER	0.02
VFT	VFT	0.72

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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
8455882	228110	BLE	AE	228197	MERION	AE	1	AE_P4-2 AE29	breaker	482.0	129.89	137.02	DC	34.26

Bus #	Bus	MW Impact
227801	ONTC&DCT	4.4
227842	MARINGEN	0.05
227843	MARINGEN E	0.46
227928	V4-067E	0.15
228014	PVILLEG	0.06
293404	V3-036	0.63
902431	W2-030 C	0.05
902432	W2-030 E	0.68
913341	Y1-077	21.8
915022	Y3-012 E	0.86
924701	AB2-122 C	0.06
924702	AB2-122 E	0.11
930001	AB1-001 C	0.01
930002	AB1-001 E	0.17
931191	AB1-169A	27.6
933962	AD1-019 E	0.87
938311	AE1-046 C	0.1
938312	AE1-046 E	0.05
938781	AE1-104 C O1	55.78
938782	AE1-104 E O1	142.69
940361	AE2-020 C O1	5.33
940362	AE2-020 E O1	24.97
940371	AE2-021 C O1	5.33
940372	AE2-021 E O1	24.97
940381	AE2-022 C O1	3.11
940382	AE2-022 E O1	14.57
940391	AE2-023 C O1	31.36
940392	AE2-023 E O1	146.79
940963	AE2-087 BAT	0.11
941123	AE2-106 BAT	0.11
942101	AE2-222 C O1	9.76
942102	AE2-222 E O1	24.5
942941	AE2-314 C	2.64
942942	AE2-314 E	1.76
BLUEG	BLUEG	0.3
CALDERWOOD	CALDERWOOD	0.03
CANNELTON	CANNELTON	0.02

Bus #	Bus	MW Impact
CATAWBA	CATAWBA	0.02
CBM-N	CBM-N	0.07
CHEOAH	CHEOAH	0.03
CHILHOWEE	CHILHOWEE	0.01
COFFEEN	COFFEEN	0.03
COTTONWOOD	COTTONWOOD	0.13
DUCKCREEK	DUCKCREEK	0.07
EDWARDS	EDWARDS	0.03
ELMERSMITH	ELMERSMITH	0.03
FARMERCITY	FARMERCITY	0.02
G-007A	G-007A	1.01
GIBSON	GIBSON	0.01
HAMLET	HAMLET	0.04
NEWTON	NEWTON	0.08
NYISO	NYISO	0.31
PRAIRIE	PRAIRIE	0.16
SANTEETLA	SANTEETLA	0.01
SMITHLAND	SMITHLAND	0.01
TATANKA	TATANKA	0.04
TILTON	TILTON	0.04
TRIMBLE	TRIMBLE	0.03
TVA	TVA	0.11
UNIONPOWER	UNIONPOWER	0.05
VFT	VFT	1.08

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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
8455919	228197	MERION	AE	228106	CORSON 1	AE	1	AE_P4-2 AE29	breaker	478.0	116.86	124.06	DC	34.34

Bus #	Bus	MW Impact
227801	ONTC&DCT	4.42
227842	MARINGEN	0.05
227843	MARINGEN E	0.46
227928	V4-067E	0.15
228014	PVILLEG	0.06
293404	V3-036	0.63
902431	W2-030 C	0.05
902432	W2-030 E	0.69
913341	Y1-077	21.85
915022	Y3-012 E	0.86
924701	AB2-122 C	0.06
924702	AB2-122 E	0.11
930001	AB1-001 C	0.01
930002	AB1-001 E	0.17
931191	AB1-169A	27.67
933962	AD1-019 E	0.87
938311	AE1-046 C	0.1

Bus #	Bus	MW Impact
938312	AE1-046 E	0.05
938781	AE1-104 C O1	55.92
938782	AE1-104 E O1	143.06
940361	AE2-020 C O1	5.35
940362	AE2-020 E O1	25.04
940371	AE2-021 C O1	5.35
940372	AE2-021 E O1	25.04
940381	AE2-022 C O1	3.12
940382	AE2-022 E O1	14.61
940391	AE2-023 C O1	31.44
940392	AE2-023 E O1	147.17
940963	AE2-087 BAT	0.11
941123	AE2-106 BAT	0.11
942101	AE2-222 C O1	9.78
942102	AE2-222 E O1	24.57
942941	AE2-314 C	2.64
942942	AE2-314 E	1.76
BLUEG	BLUEG	0.3
CALDERWOOD	CALDERWOOD	0.03
CANNELTON	CANNELTON	0.02
CATAWBA	CATAWBA	0.02
CBM-N	CBM-N	0.07
CHEOAH	CHEOAH	0.03
CHILHOWEE	CHILHOWEE	0.01
COFFEEN	COFFEEN	0.03
COTTONWOOD	COTTONWOOD	0.13
DUCKCREEK	DUCKCREEK	0.07
EDWARDS	EDWARDS	0.03
ELMERSMITH	ELMERSMITH	0.03
FARMERCITY	FARMERCITY	0.02
G-007A	G-007A	1.01
GIBSON	GIBSON	0.01
HAMLET	HAMLET	0.04
NEWTON	NEWTON	0.08
NYISO	NYISO	0.31
PRAIRIE	PRAIRIE	0.16
SANTEETLA	SANTEETLA	0.01
SMITHLAND	SMITHLAND	0.01
TATANKA	TATANKA	0.04
TILTON	TILTON	0.04
TRIMBLE	TRIMBLE	0.03
TVA	TVA	0.11
UNIONPOWER	UNIONPOWER	0.05
VFT	VFT	1.08

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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
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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
8456438	228502	MNOTLA 1	AE	228500	LANDIS	AE	1	AE_P7-1 AE6TOWER	tower	286.0	178.17	193.2	DC	42.9

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
CBM-N	CBM-N	0.07
CHEOAH	CHEOAH	0.02
CHILHOWEE	CHILHOWEE	0.01
COFFEEN	COFFEEN	0.02
COTTONWOOD	COTTONWOOD	0.09

Bus #	Bus	MW Impact
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
8456464	228503	MNOTLA 2	AE	228502	MNOTLA 1	AE	1	AE_P7-1 AE6TOWER	tower	311.0	163.86	177.68	DC	42.9

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
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

Bus #	Bus	MW Impact
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
JC-P7-1-JCC-230-7A	CONTINGENCY 'JC-P7-1-JCC-230-7A' /* SMITHBURG - LARRABEE 230 LINES DISCONNECT BRANCH FROM BUS 206309 TO BUS 206294 CKT 1 DISCONNECT BRANCH FROM BUS 206309 TO BUS 206294 CKT 2 END

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
AE_P4-2 AE29	CONTINGENCY 'AE_P4-2 AE29' /* ENGLAND TO CORSON BREAKER D DISCONNECT BRANCH FROM BUS 228110 TO BUS 228111 CKT 1 /* ENGLAND MIDDLE TAP 138 138 DISCONNECT BRANCH FROM BUS 228110 TO BUS 227906 CKT 1 /* ENGLAND #2 SCULL 138 138 END
Base Case	
JC-P2-3-JCC-230-13G	CONTINGENCY 'JC-P2-3-JCC-230-13G' /* LARRABEE NW BUS & LARRABEE-SMITHBURG (D2004) 230 KV DISCONNECT BRANCH FROM BUS 206294 TO BUS 206309 CKT 2 /* 28LARRABEE 230 28SMITHBRG 230 REMOVE LOAD 7 FROM BUS 206294 /* 28LARRABEE 230 DISCONNECT BRANCH FROM BUS 206294 TO BUS 206275 CKT 9 /* 28LARRABEE 230 28LARR CD 35 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
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

Contingency Name	Contingency Definition
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
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
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

Contingency Name	Contingency Definition
AE_P4-2 AE16	CONTINGENCY 'AE_P4-2 AE16' /*CORSON TO ENGLAND BREAKER R DISCONNECT BRANCH FROM BUS 228107 TO BUS 228216 CKT 1 /*CORSON DENNIS 138 138 DISCONNECT BRANCH FROM BUS 228111 TO BUS 228107 CKT 1 /*MIDDLETAP CORSON 138 138 DISCONNECT BRANCH FROM BUS 228111 TO BUS 228110 CKT 1 /*MIDDLETAP ENGLAND 138 138 DISCONNECT BRANCH FROM BUS 228111 TO BUS 228112 CKT 1 /*MIDDLETAP MIDDLE 138 138 DISCONNECT BRANCH FROM BUS 228107 TO BUS 228115 CKT 1 /*CORSON 138 69 T2 DISCONNECT BUS 228107 /*CORSON 138 #2 BUS SECTION END
PECO_P4_PEACH215/* \$ CHESCO \$ PECO_P4_PEACH215 \$ STBK 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_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

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
8456061	206302	28OYSTER C	JCP&L	206297	28MANITOU	JCP&L	2	JC-P1-2-JCC-230-021	single	869.0	98.29	100.16	DC	16.22

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

Bus #	Bus	MW Impact
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
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
RENSSELAER	RENSSELAER	0.38
SANTEETLA	SANTEETLA	0.0
SMITHLAND	SMITHLAND	0.01
TATANKA	TATANKA	0.02

Bus #	Bus	MW Impact
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
8455962	219100	NEWFRDM	PSE&G	219704	HILLTOP_3	PSE&G	1	PECO_P4_PEACH215/* \$ CHESCO \$ PECO_P4_PEACH215 \$ STBK	breaker	740.0	123.09	124.82	DC	28.29

Bus #	Bus	MW Impact
200036	SALEM-G1	15.06
200037	SALEM-G2	9.27
200039	HOPE CG1	9.46
200062	SALEM G3	0.5
227801	ONTC&DCT	3.64
227843	MARINGEN E	0.38
227928	V4-067E	0.16
228261	V4-054E	0.41
228712	V2-041E	0.2
228721	V2-035E	0.08
232922	MR3	8.53
292063	V1-021 E	0.03
293404	V3-036	0.52
901004	W1-003 E	0.36
901014	W1-004 E	0.36
901024	W1-005 E	0.36
901034	W1-006 E	0.36
902092	W1-130E	0.52
902432	W2-030 E	0.59
907052	X1-032 E	0.32
909032	X2-013 E	0.15
910572	X3-008 E	0.96
910822	X3-066 E	0.27
913362	Y1-079 E	0.45
913412	Y1-080 E	0.16
915022	Y3-012 E	0.71
915542	Y3-058 E	0.73
916292	Z1-082 E	0.18
917082	Z2-012 E	0.98
917432	Z2-076 E	0.16
917442	Z2-077 E	0.16
919831	AA2-069	37.74
923921	AB2-032 C	0.96
923922	AB2-032 E	0.45
923951	AB2-036 C	2.55
923952	AB2-036 E	4.18
923961	AB2-037 C	5.78
923962	AB2-037 E	9.45
924051	AB2-049 C	0.45

Bus #	Bus	MW Impact
924052	AB2-049 E	0.74
924191	AB2-063 C	0.54
924192	AB2-063 E	0.89
924531	AB2-102 C	18.67
924532	AB2-102 E	0.41
924681	AB2-120 C	3.0
924682	AB2-120 E	4.9
924701	AB2-122 C	0.07
924702	AB2-122 E	0.12
924781	AB2-130 C O1	2.55
924782	AB2-130 E O1	4.17
924801	AB2-133 C O1	1.73
924802	AB2-133 E O1	2.2
924821	AB2-135 C	2.17
924822	AB2-135 E	2.47
924831	AB2-136 C	1.92
924832	AB2-136 E	2.04
924971	AB2-153 C	0.54
924972	AB2-153 E	0.87
925151	AB2-172 C	1.46
925152	AB2-172 E	2.39
925251	AB2-179 C	2.39
925252	AB2-179 E	0.79
925261	AB2-180 C	1.1
925262	AB2-180 E	0.47
925271	AB2-185 C	1.02
925272	AB2-185 E	0.44
926131	AC1-091 C	0.63
926132	AC1-091 E	1.03
926141	AC1-092 C	0.63
926142	AC1-092 E	1.03
926151	AC1-093 C	0.6
926152	AC1-093 E	0.98
926161	AC1-094 C	0.5
926162	AC1-094 E	0.83
926171	AC1-095 C	0.32
926172	AC1-095 E	0.51
926911	AC1-177	0.32
927031	AC1-190 C	2.7
927032	AC1-190 E	1.16
927191	AC1-213 C	0.25
927192	AC1-213 E	0.17
930002	AB1-001 E	0.13
930202	AB1-056 E O1	14.66
930722	AB1-116 E	0.08
930732	AB1-119 E	0.09
930881	AB1-137 C	0.34
930882	AB1-137 E	0.14
930921	AB1-141 C	0.95
930922	AB1-141 E	0.44
930931	AB1-142 C	0.95
930932	AB1-142 E	0.44

Bus #	Bus	MW Impact
931111	AB1-162 C	0.45
931112	AB1-162 E	0.74
931191	AB1-169A	46.43
931261	AB1-176 C	0.24
931262	AB1-176 E	0.4
932082	AC2-018 E1	2.35
932092	AC2-018 E2	2.35
932161	AC2-023 C	2.08
932162	AC2-023 E	1.51
932361	AC2-050 C O1	0.25
932362	AC2-050 E O1	0.42
933631	AC2-185 C	1.28
933632	AC2-185 E	2.09
933641	AC2-186 C	1.52
933642	AC2-186 E	2.48
933962	AD1-019 E	0.72
936491	AD2-064 C	0.07
936492	AD2-064 E	0.09
936501	AD2-065 C	0.25
936502	AD2-065 E	0.35
936611	AD2-076 C O1	1.32
936612	AD2-076 E O1	2.16
936691	AD2-088 C O1	1.42
936692	AD2-088 E O1	0.95
937011	AD2-135 C	0.09
937012	AD2-135 E	0.15
937281	AD2-167	4.71
938251	AE1-038 C O1	0.7
938252	AE1-038 E O1	0.97
938311	AE1-046 C	0.17
938312	AE1-046 E	0.08
938421	AE1-061 C	0.22
938422	AE1-061 E	0.22
938431	AE1-062 C	1.23
938432	AE1-062 E	1.23
938651	AE1-087 C	0.65
938652	AE1-087 E	0.16
938781	AE1-104 C O1	12.65
938782	AE1-104 E O1	32.36
938811	AE1-107 C	1.96
938812	AE1-107 E	1.4
938891	AE1-117 C O1	3.83
938892	AE1-117 E O1	10.22
938901	AE1-118 C O1	3.83
938902	AE1-118 E O1	10.22
939151	AE1-145 C1	0.95
939152	AE1-145 C2	0.63
939153	AE1-145 E	0.02
939301	AE1-161 C	0.86
939302	AE1-161 E	1.29
939361	AE1-167 C O1	0.47
939362	AE1-167 E O1	0.4

Bus #	Bus	MW Impact
939501	AE1-179 C O1	2.66
939502	AE1-179 E O1	1.88
939621	AE1-192 C O1	3.71
939622	AE1-192 E O1	1.82
939821	AE1-218 C O1	0.08
939822	AE1-218 E O1	0.12
939831	AE1-219 C O1	0.18
939832	AE1-219 E O1	0.25
940001	AE1-240 C O1	2.18
940002	AE1-240 E O1	1.55
940281	AE2-011 C	0.16
940282	AE2-011 E	0.22
940361	AE2-020 C O2	10.7
940362	AE2-020 E O2	50.12
940371	AE2-021 C O2	10.7
940372	AE2-021 E O2	50.12
940381	AE2-022 C O2	6.24
940382	AE2-022 E O2	29.23
940391	AE2-023 C O2	7.42
940392	AE2-023 E O2	34.74
940411	AE2-025 C O2	4.94
940412	AE2-025 E O2	23.11
940741	AE2-061	0.63
940961	AE2-087 C	0.1
940962	AE2-087 E	0.13
940963	AE2-087 BAT	0.04
940971	AE2-088 C	0.06
940972	AE2-088 E	0.08
940973	AE2-088 BAT	0.03
941001	AE2-091 C O2	1.62
941002	AE2-091 E O2	0.84
941021	AE2-093 C	1.47
941022	AE2-093 E	2.34
941121	AE2-106 C	0.11
941122	AE2-106 E	0.15
941123	AE2-106 BAT	0.04
941181	AE2-112 C	0.54
941182	AE2-112 E	0.88
941441	AE2-141 C	0.08
941442	AE2-141 E	0.12
941472	AE2-144 E	0.08
941931	AE2-205 C O2	3.89
941932	AE2-205 E O2	2.59
941971	AE2-209 C	2.56
941972	AE2-209 E	1.79
942012	AE2-213 E	0.02
942101	AE2-222 C O2	8.05
942102	AE2-222 E O2	20.23
942201	AE2-232 C O2	11.3
942202	AE2-232 E O2	28.92
942261	AE2-238 C	0.24
942262	AE2-238 E	0.33

Bus #	Bus	MW Impact
942381	AE2-251 C O2	33.91
942382	AE2-251 E O2	86.76
942441	AE2-257 C O2	2.63
942442	AE2-257 E O2	6.94
942701	AE2-286 C	0.62
942702	AE2-286 E	0.9
942821	AE2-301 C	0.32
942822	AE2-301 E	0.48
942941	AE2-314 C	4.34
942942	AE2-314 E	2.9
943071	AE2-334 C	2.61
943072	AE2-334 E	1.39
943081	AE2-335 C O2	3.48
943082	AE2-335 E O2	1.55
BLUEG	BLUEG	2.56
CALDERWOOD	CALDERWOOD	0.28
CANNELTON	CANNELTON	0.16
CATAWBA	CATAWBA	0.18
CBM-N	CBM-N	0.34
CHEOAH	CHEOAH	0.26
CHILHOWEE	CHILHOWEE	0.09
COFFEEN	COFFEEN	0.27
COTTONWOOD	COTTONWOOD	1.08
DUCKCREEK	DUCKCREEK	0.59
EDWARDS	EDWARDS	0.27
ELMERSMITH	ELMERSMITH	0.27
FARMERCITY	FARMERCITY	0.18
G-007A	G-007A	4.12
GIBSON	GIBSON	0.11
HAMLET	HAMLET	0.3
NEWTON	NEWTON	0.71
NYISO	NYISO	1.45
PRAIRIE	PRAIRIE	1.33
SANTEETLA	SANTEETLA	0.08
SMITHLAND	SMITHLAND	0.11
TATANKA	TATANKA	0.32
TILTON	TILTON	0.32
TRIMBLE	TRIMBLE	0.28
TVA	TVA	0.9
UNIONPOWER	UNIONPOWER	0.4
VFT	VFT	6.1

ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC DC	MW IMPACT
8455746	227955	CEDAR	AE	206302	28OYSTER C	JCP&L	1	JC-P2-3-JCC-500-002D	breaker	564.0	215.79	227.21	DC	64.39

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

Bus #	Bus	MW Impact
227843	MARINGEN E	0.86
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

Bus #	Bus	MW Impact
940391	AE2-023 C O2	16.3
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
8455976	213922	RICHMOND	PECO	214012	WANEETA3	PECO	1	PECO_P4_CHICH045/* \$ DELCO \$ PECO_P4_CHICH045 \$ STBK	breaker	1180.0	105.14	107.3	DC	56.39

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
913242	Y1-057 E	0.32
913332	Y1-075 E	0.41
915022	Y3-012 E	1.41
915072	Y3-026 E	1.6

Bus #	Bus	MW Impact
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
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

Bus #	Bus	MW Impact
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
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

Bus #	Bus	MW Impact
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
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
8455978	214206	RICHRE29	PECO	213922	RICHMOND	PECO	1	PECO_P4_CHICH045/* \$ DELCO \$ PECO_P4_CHICH045 \$ STBK	breaker	1336.0	104.53	106.54	DC	58.78

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

Bus #	Bus	MW Impact
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
924052	AB2-049 E	1.48
924531	AB2-102 C	45.91
924532	AB2-102 E	1.02

Bus #	Bus	MW Impact
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
939501	AE1-179 C O1	7.79
939502	AE1-179 E O1	5.5
939821	AE1-218 C O1	0.2

Bus #	Bus	MW Impact
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
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

Bus #	Bus	MW Impact
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
8456011	219110	GLOUCSTR	PSE&G	219125	CAMDEN	PSE&G	1	PS_P2-3_CUTB_1-4_LT	breaker	771.0	101.4	103.09	DC	28.36

Bus #	Bus	MW Impact
219124	CAMDEN_STG	2.61
219126	CAMDEN_CTG	3.21
219128	GLOUCSTR_26	1.41
219229	EAGLEPT_G3	2.25
219230	EAGLEPT_G1	3.34
219231	EAGLEPT_G2	3.34
227801	ONTC&DCT	3.65
227843	MARINGEN E	0.38
227928	V4-067E	0.15
228261	V4-054E	0.82

Bus #	Bus	MW Impact
228357	V2-046E	2.03
228423	Q-090 2	21.2
228712	V2-041E	0.28
228721	V2-035E	0.18
291995	U4-036 C	0.06
291996	U4-036 E	0.86
292063	V1-021 E	0.03
292104	V1-030 C6	0.02
292105	V1-030 E6	0.25
292194	V1-030 CE	0.09
292195	V1-030 EE	1.14
293404	V3-036	0.52
902092	W1-130E	0.79
902432	W2-030 E	0.59
909032	X2-013 E	0.54
910862	X3-075 E	0.99
914231	Y2-081 C OP1	1.07
914232	Y2-081 E OP1	0.06
915022	Y3-012 E	0.71
915591	Y3-087 C OP1	0.05
915592	Y3-087 E OP1	0.7
916292	Z1-082 E	0.14
917381	Z2-062	0.12
924051	AB2-049 C	0.42
924052	AB2-049 E	0.69
924531	AB2-102 C	24.15
924532	AB2-102 E	0.54
924701	AB2-122 C	0.06
924702	AB2-122 E	0.11
925391	AC1-010 C	0.72
925392	AC1-010 E	1.25
930002	AB1-001 E	0.14
930722	AB1-116 E	0.1
930732	AB1-119 E	0.07
931191	AB1-169A	69.49
933962	AD1-019 E	0.72
936411	AD2-052 C	1.01
936412	AD2-052 E	0.5
936491	AD2-064 C	0.05
936492	AD2-064 E	0.07
936501	AD2-065 C	0.19
936502	AD2-065 E	0.26
937011	AD2-135 C	0.06
937012	AD2-135 E	0.11
938311	AE1-046 C	0.25
938312	AE1-046 E	0.13
938421	AE1-061 C	0.34
938422	AE1-061 E	0.34
938431	AE1-062 C	0.46
938432	AE1-062 E	0.46
938781	AE1-104 C O1	13.91
938782	AE1-104 E O1	35.59

Bus #	Bus	MW Impact
938871	AE1-115 C	0.85
938872	AE1-115 E	0.85
939301	AE1-161 C	1.45
939302	AE1-161 E	2.18
939501	AE1-179 C O1	4.28
939502	AE1-179 E O1	3.02
939821	AE1-218 C O1	0.11
939822	AE1-218 E O1	0.16
939831	AE1-219 C O1	0.24
939832	AE1-219 E O1	0.34
939931	AE1-229 C O1	13.11
939932	AE1-229 E O1	8.89
940001	AE1-240 C O1	3.56
940002	AE1-240 E O1	2.54
940281	AE2-011 C	0.13
940282	AE2-011 E	0.18
940361	AE2-020 C O2	9.37
940362	AE2-020 E O2	43.85
940371	AE2-021 C O2	9.37
940372	AE2-021 E O2	43.85
940381	AE2-022 C O2	5.46
940382	AE2-022 E O2	25.58
940391	AE2-023 C O2	7.5
940392	AE2-023 E O2	35.11
940771	AE2-064 C	0.32
940772	AE2-064 E	0.44
940781	AE2-065 C	0.21
940782	AE2-065 E	0.33
940961	AE2-087 C	0.19
940962	AE2-087 E	0.27
940963	AE2-087 BAT	0.07
940971	AE2-088 C	0.1
940972	AE2-088 E	0.14
940973	AE2-088 BAT	0.06
941001	AE2-091 C O2	2.94
941002	AE2-091 E O2	1.53
941071	AE2-101 C	0.3
941072	AE2-101 E	0.41
941121	AE2-106 C	0.22
941122	AE2-106 E	0.3
941123	AE2-106 BAT	0.07
941471	AE2-144 C	0.44
941472	AE2-144 E	0.78
941931	AE2-205 C O2	5.11
941932	AE2-205 E O2	3.41
942011	AE2-213 C	0.32
942012	AE2-213 E	0.54
942101	AE2-222 C O2	8.07
942102	AE2-222 E O2	20.28
942201	AE2-232 C O2	9.89
942202	AE2-232 E O2	25.31
942381	AE2-251 C O2	29.67

Bus #	Bus	MW Impact
942382	AE2-251 E O2	75.92
942571	AE2-272	0.22
942941	AE2-314 C	3.8
942942	AE2-314 E	2.53
943071	AE2-334 C	3.87
943072	AE2-334 E	2.06
943081	AE2-335 C O2	5.79
943082	AE2-335 E O2	2.58
BLUEG	BLUEG	1.6
CALDERWOOD	CALDERWOOD	0.16
CANNELTON	CANNELTON	0.1
CARR	CARR	0.37
CATAWBA	CATAWBA	0.1
CHEOAH	CHEOAH	0.15
CHILHOWEE	CHILHOWEE	0.05
COFFEEN	COFFEEN	0.17
COTTONWOOD	COTTONWOOD	0.64
DUCKCREEK	DUCKCREEK	0.37
EDWARDS	EDWARDS	0.17
ELMERSMITH	ELMERSMITH	0.17
FARMERCITY	FARMERCITY	0.11
G-007	G-007	0.75
GIBSON	GIBSON	0.07
HAMLET	HAMLET	0.16
NEWTON	NEWTON	0.44
O-066	O-066	8.35
PRAIRIE	PRAIRIE	0.82
RENSSELAER	RENSSELAER	0.3
SANTEETLA	SANTEETLA	0.04
SMITHLAND	SMITHLAND	0.06
TATANKA	TATANKA	0.2
TILTON	TILTON	0.2
TRIMBLE	TRIMBLE	0.18
TVA	TVA	0.54
UNIONPOWER	UNIONPOWER	0.24

ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC DC	MW IMPACT
8455977	219125	CAMDEN	PSE&G	214206	RICHRE29	PECO	1	PECO_P4_CHICH045/* \$ DELCO \$ PECO_P4_CHICH045 \$ STBK	breaker	1336.0	104.55	106.55	DC	58.78

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

Bus #	Bus	MW Impact
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
924052	AB2-049 E	1.48
924531	AB2-102 C	45.91
924532	AB2-102 E	1.02
924701	AB2-122 C	0.14

Bus #	Bus	MW Impact
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
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

Bus #	Bus	MW Impact
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
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

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 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
8456604	219702	HILLTOP_1	PSE&G	219101	BEAVERBK_1	PSE&G	1	PS_P7-1_V2274+P2242_LT	tower	740.0	106.82	108.62	DC	29.56

Bus #	Bus	MW Impact
227801	ONTC&DCT	3.8
227843	MARINGEN E	0.39
227928	V4-067E	0.16
228260	V4-054C	0.09
228261	V4-054E	0.63
228357	V2-046E	1.3
228702	WEST CT	0.33
228712	V2-041E	0.25
228717	S121	0.47
228720	V2-035C	0.01
228721	V2-035E	0.13

Bus #	Bus	MW Impact
228727	W2-039G	0.79
291996	U4-036 E	0.3
292063	V1-021 E	0.03
292105	V1-030 E6	0.09
293404	V3-036	0.54
902091	W1-130C	0.05
902092	W1-130E	0.69
902432	W2-030 E	0.61
909032	X2-013 E	0.19
915022	Y3-012 E	0.74
924051	AB2-049 C	0.47
924052	AB2-049 E	0.77
924531	AB2-102 C	21.84
924532	AB2-102 E	0.49
924701	AB2-122 C	0.07
924702	AB2-122 E	0.12
930002	AB1-001 E	0.14
930722	AB1-116 E	0.1
930732	AB1-119 E	0.09
931191	AB1-169A	60.9
933962	AD1-019 E	0.75
936411	AD2-052 C	0.66
936412	AD2-052 E	0.33
936491	AD2-064 C	0.06
936492	AD2-064 E	0.09
936501	AD2-065 C	0.24
936502	AD2-065 E	0.33
937011	AD2-135 C	0.08
937012	AD2-135 E	0.14
938311	AE1-046 C	0.22
938312	AE1-046 E	0.11
938421	AE1-061 C	0.55
938422	AE1-061 E	0.55
938431	AE1-062 C	1.13
938432	AE1-062 E	1.13
938781	AE1-104 C O1	13.77
938782	AE1-104 E O1	35.21
938871	AE1-115 C	0.52
938872	AE1-115 E	0.52
939301	AE1-161 C	2.29
939302	AE1-161 E	3.44
939501	AE1-179 C O1	3.57
939502	AE1-179 E O1	2.52
939821	AE1-218 C O1	0.1
939822	AE1-218 E O1	0.15
939831	AE1-219 C O1	0.22
939832	AE1-219 E O1	0.32
939931	AE1-229 C O1	9.24
939932	AE1-229 E O1	6.26
940001	AE1-240 C O1	2.95
940002	AE1-240 E O1	2.1
940281	AE2-011 C	0.16

Bus #	Bus	MW Impact
940282	AE2-011 E	0.22
940361	AE2-020 C O2	10.52
940362	AE2-020 E O2	49.27
940371	AE2-021 C O2	10.52
940372	AE2-021 E O2	49.27
940381	AE2-022 C O2	6.14
940382	AE2-022 E O2	28.74
940391	AE2-023 C O2	7.79
940392	AE2-023 E O2	36.46
940781	AE2-065 C	0.07
940782	AE2-065 E	0.1
940961	AE2-087 C	0.15
940962	AE2-087 E	0.21
940963	AE2-087 BAT	0.06
940971	AE2-088 C	0.09
940972	AE2-088 E	0.12
940973	AE2-088 BAT	0.09
941001	AE2-091 C O2	2.34
941002	AE2-091 E O2	1.22
941071	AE2-101 C	0.16
941072	AE2-101 E	0.23
941121	AE2-106 C	0.17
941122	AE2-106 E	0.23
941123	AE2-106 BAT	0.06
941471	AE2-144 C	0.14
941472	AE2-144 E	0.13
941931	AE2-205 C O2	4.61
941932	AE2-205 E O2	3.08
942011	AE2-213 C	0.11
942012	AE2-213 E	0.1
942101	AE2-222 C O2	8.42
942102	AE2-222 E O2	21.14
942201	AE2-232 C O2	11.11
942202	AE2-232 E O2	28.43
942381	AE2-251 C O2	33.34
942382	AE2-251 E O2	85.3
942571	AE2-272	0.14
942941	AE2-314 C	4.27
942942	AE2-314 E	2.85
943071	AE2-334 C	3.44
943072	AE2-334 E	1.84
943081	AE2-335 C O2	4.9
943082	AE2-335 E O2	2.19
BLUEG	BLUEG	0.62
CALDERWOOD	CALDERWOOD	0.06
CANNELTON	CANNELTON	0.04
CARR	CARR	0.26
CATAWBA	CATAWBA	0.03
CHEOAH	CHEOAH	0.05
CHILHOWEE	CHILHOWEE	0.02
COFFEEN	COFFEEN	0.07
COTTONWOOD	COTTONWOOD	0.23

Bus #	Bus	MW Impact
DUCKCREEK	DUCKCREEK	0.14
EDWARDS	EDWARDS	0.07
ELMERSMITH	ELMERSMITH	0.06
FARMERCITY	FARMERCITY	0.04
G-007	G-007	0.15
GIBSON	GIBSON	0.03
HAMLET	HAMLET	0.05
NEWTON	NEWTON	0.17
O-066	O-066	5.67
PRAIRIE	PRAIRIE	0.31
RENSSELAER	RENSSELAER	0.2
SANTEETLA	SANTEETLA	0.02
SMITHLAND	SMITHLAND	0.02
TATANKA	TATANKA	0.08
TILTON	TILTON	0.08
TRIMBLE	TRIMBLE	0.07
TVA	TVA	0.19
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
8456013	227913	CARDIFF	AE	227900	CARDIFF	AE	1	AE_P4-2 AE9	breaker	425.0	90.13	107.31	DC	73.03

Bus #	Bus	MW Impact
227801	ONTC&DCT	9.4
227842	MARINGEN	0.11
227843	MARINGEN E	0.98
227928	V4-067E	0.08
228014	PVILLEG	0.13
228261	V4-054E	0.44
228712	V2-041E	0.27
228721	V2-035E	0.08
292062	V1-021 C	0.04
292063	V1-021 E	0.05
293404	V3-036	1.34
902091	W1-130C	0.07
902092	W1-130E	0.9
902431	W2-030 C	0.09
902432	W2-030 E	1.23
913341	Y1-077	12.41
915022	Y3-012 E	1.84
924531	AB2-102 C	23.35
924532	AB2-102 E	0.52
924701	AB2-122 C	0.04
924702	AB2-122 E	0.06
930001	AB1-001 C	0.03
930002	AB1-001 E	0.38
931191	AB1-169A	80.65
933962	AD1-019 E	1.85
938311	AE1-046 C	0.29

Bus #	Bus	MW Impact
938312	AE1-046 E	0.15
938421	AE1-061 C	0.72
938422	AE1-061 E	0.72
938781	AE1-104 C O1	31.75
938782	AE1-104 E O1	81.22
939301	AE1-161 C	0.89
939302	AE1-161 E	1.34
939501	AE1-179 C O1	2.96
939502	AE1-179 E O1	2.09
939931	AE1-229 C O1	4.83
939932	AE1-229 E O1	3.27
940001	AE1-240 C O1	2.46
940002	AE1-240 E O1	1.76
940391	AE2-023 C O2	25.59
940392	AE2-023 E O2	119.8
940961	AE2-087 C	0.1
940962	AE2-087 E	0.14
940963	AE2-087 BAT	0.04
940971	AE2-088 C	0.05
940972	AE2-088 E	0.06
940973	AE2-088 BAT	0.03
941001	AE2-091 C O2	1.78
941002	AE2-091 E O2	0.93
941121	AE2-106 C	0.12
941122	AE2-106 E	0.16
941123	AE2-106 BAT	0.04
941931	AE2-205 C O2	5.36
941932	AE2-205 E O2	3.57
942101	AE2-222 C O2	20.79
942102	AE2-222 E O2	52.24
943081	AE2-335 C O2	2.66
943082	AE2-335 E O2	1.18
BLUEG	BLUEG	0.42
CALDERWOOD	CALDERWOOD	0.04
CANNELTON	CANNELTON	0.03
CARR	CARR	0.12
CATAWBA	CATAWBA	0.03
CHEOAH	CHEOAH	0.04
CHILHOWEE	CHILHOWEE	0.01
COFFEEN	COFFEEN	0.04
COTTONWOOD	COTTONWOOD	0.17
DUCKCREEK	DUCKCREEK	0.1
EDWARDS	EDWARDS	0.04
ELMERSMITH	ELMERSMITH	0.04
FARMERCITY	FARMERCITY	0.03
G-007	G-007	0.95
GIBSON	GIBSON	0.02
HAMLET	HAMLET	0.04
NEWTON	NEWTON	0.11
O-066	O-066	3.06
PRAIRIE	PRAIRIE	0.21
RENSSELAER	RENSSELAER	0.1

Bus #	Bus	MW Impact
SANTEETLA	SANTEETLA	0.01
SMITHLAND	SMITHLAND	0.02
TATANKA	TATANKA	0.05
TILTON	TILTON	0.05
TRIMBLE	TRIMBLE	0.05
TVA	TVA	0.14
UNIONPOWER	UNIONPOWER	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
8456591	227949	LEWIS #3	AE	227901	DOROTHY	AE	1	JC-P7-1-JCC-230-13	tower	205.0	105.74	126.54	DC	42.63

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
940411	AE2-025 C O2	7.55
940412	AE2-025 E O2	35.35
940973	AE2-088 BAT	0.11

Bus #	Bus	MW Impact
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
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	0.06
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
8455882	228110	BLE	AE	228197	MERION	AE	1	AE_P4-2 AE29	breaker	482.0	106.27	113.43	DC	34.23

Bus #	Bus	MW Impact
227801	ONTC&DCT	4.4
227842	MARINGEN	0.05
227843	MARINGEN E	0.46
227928	V4-067E	0.15
228014	PVILLEG	0.06
293404	V3-036	0.63
902431	W2-030 C	0.05

Bus #	Bus	MW Impact
902432	W2-030 E	0.68
913341	Y1-077	21.8
915022	Y3-012 E	0.86
924701	AB2-122 C	0.06
924702	AB2-122 E	0.11
930001	AB1-001 C	0.01
930002	AB1-001 E	0.17
931191	AB1-169A	27.6
933962	AD1-019 E	0.87
938311	AE1-046 C	0.1
938312	AE1-046 E	0.05
938781	AE1-104 C O1	55.78
938782	AE1-104 E O1	142.69
940361	AE2-020 C O2	6.5
940362	AE2-020 E O2	30.43
940371	AE2-021 C O2	6.5
940372	AE2-021 E O2	30.43
940381	AE2-022 C O2	3.79
940382	AE2-022 E O2	17.75
940391	AE2-023 C O2	9.93
940392	AE2-023 E O2	46.49
940963	AE2-087 BAT	0.11
941123	AE2-106 BAT	0.11
942101	AE2-222 C O2	9.75
942102	AE2-222 E O2	24.48
942201	AE2-232 C O2	6.86
942202	AE2-232 E O2	17.56
942381	AE2-251 C O2	20.59
942382	AE2-251 E O2	52.69
942941	AE2-314 C	2.64
942942	AE2-314 E	1.76
BLUEG	BLUEG	0.3
CALDERWOOD	CALDERWOOD	0.03
CANNELTON	CANNELTON	0.02
CATAWBA	CATAWBA	0.02
CBM-N	CBM-N	0.07
CHEOAH	CHEOAH	0.03
CHILHOWEE	CHILHOWEE	0.01
COFFEEN	COFFEEN	0.03
COTTONWOOD	COTTONWOOD	0.13
DUCKCREEK	DUCKCREEK	0.07
EDWARDS	EDWARDS	0.03
ELMERSMITH	ELMERSMITH	0.03
FARMERCITY	FARMERCITY	0.02
G-007A	G-007A	1.01
GIBSON	GIBSON	0.01
HAMLET	HAMLET	0.04
NEWTON	NEWTON	0.08
NYISO	NYISO	0.31
PRAIRIE	PRAIRIE	0.16
SANTEETLA	SANTEETLA	0.01
SMITHLAND	SMITHLAND	0.01

Bus #					Bus					MW Impact				
TATANKA					TATANKA					0.04				
TILTON					TILTON					0.04				
TRIMBLE					TRIMBLE					0.03				
TVA					TVA					0.11				
UNIONPOWER					UNIONPOWER					0.05				
VFT					VFT					1.08				
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
8455919	228197	MERION	AE	228106	CORSON 1	AE	1	AE_P4-2 AE29	breaker	478.0	92.98	100.21	DC	34.32

Bus #					Bus					MW Impact				
227801					ONTC&DCT					4.42				
227842					MARINGEN					0.05				
227843					MARINGEN E					0.46				
227928					V4-067E					0.15				
228014					PVILLEG					0.06				
293404					V3-036					0.63				
902431					W2-030 C					0.05				
902432					W2-030 E					0.69				
913341					Y1-077					21.85				
915022					Y3-012 E					0.86				
924701					AB2-122 C					0.06				
924702					AB2-122 E					0.11				
930001					AB1-001 C					0.01				
930002					AB1-001 E					0.17				
931191					AB1-169A					27.67				
933962					AD1-019 E					0.87				
938311					AE1-046 C					0.1				
938312					AE1-046 E					0.05				
938781					AE1-104 C O1					55.92				
938782					AE1-104 E O1					143.06				
940361					AE2-020 C O2					6.52				
940362					AE2-020 E O2					30.51				
940371					AE2-021 C O2					6.52				
940372					AE2-021 E O2					30.51				
940381					AE2-022 C O2					3.8				
940382					AE2-022 E O2					17.8				
940391					AE2-023 C O2					9.95				
940392					AE2-023 E O2					46.6				
940963					AE2-087 BAT					0.11				
941123					AE2-106 BAT					0.11				
942101					AE2-222 C O2					9.77				
942102					AE2-222 E O2					24.55				
942201					AE2-232 C O2					6.88				
942202					AE2-232 E O2					17.61				
942381					AE2-251 C O2					20.64				
942382					AE2-251 E O2					52.82				
942941					AE2-314 C					2.64				
942942					AE2-314 E					1.76				
BLUEG					BLUEG					0.3				
CALDERWOOD					CALDERWOOD					0.03				

Bus #	Bus	MW Impact
CANNELTON	CANNELTON	0.02
CATAWBA	CATAWBA	0.02
CBM-N	CBM-N	0.07
CHEOAH	CHEOAH	0.03
CHILHOWEE	CHILHOWEE	0.01
COFFEEN	COFFEEN	0.03
COTTONWOOD	COTTONWOOD	0.13
DUCKCREEK	DUCKCREEK	0.07
EDWARDS	EDWARDS	0.03
ELMERSMITH	ELMERSMITH	0.03
FARMERCITY	FARMERCITY	0.02
G-007A	G-007A	1.01
GIBSON	GIBSON	0.01
HAMLET	HAMLET	0.04
NEWTON	NEWTON	0.08
NYISO	NYISO	0.31
PRAIRIE	PRAIRIE	0.16
SANTEETLA	SANTEETLA	0.01
SMITHLAND	SMITHLAND	0.01
TATANKA	TATANKA	0.04
TILTON	TILTON	0.04
TRIMBLE	TRIMBLE	0.03
TVA	TVA	0.11
UNIONPOWER	UNIONPOWER	0.05
VFT	VFT	1.08

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
14254685	228500	LANDIS	AE	228211	UPIITS	AE	1	AE_P7-1 AE10TOWER-A	tower	205.0	99.71	104.58	DC	22.15

Bus #	Bus	MW Impact
227801	ONTCDCT	2.85
227843	MARINGEN E	0.3
227928	V4-067E	0.09
293404	V3-036	0.41
902091	W1-130C	0.19
902092	W1-130E	2.49
902432	W2-030 E	0.42
915022	Y3-012 E	0.55
924701	AB2-122 C	0.04
924702	AB2-122 E	0.07
930002	AB1-001 E	0.11
931191	AB1-169A	219.19
933962	AD1-019 E	0.56
938311	AE1-046 C	0.8
938312	AE1-046 E	0.4
938421	AE1-061 C	2.01
938422	AE1-061 E	2.01
938781	AE1-104 C O1	8.25
938782	AE1-104 E O1	21.1

Bus #	Bus	MW Impact
939301	AE1-161 C	10.15
939302	AE1-161 E	15.23
940391	AE2-023 C O2	6.58
940392	AE2-023 E O2	30.83
942101	AE2-222 C O2	6.31
942102	AE2-222 E O2	15.84
943081	AE2-335 C O2	21.07
943082	AE2-335 E O2	9.39
BLUEG	BLUEG	0.05
CALDERWOOD	CALDERWOOD	0.01
CANNELTON	CANNELTON	0.0
CATAWBA	CATAWBA	0.0
CBM-N	CBM-N	0.06
CHEOAH	CHEOAH	0.01
CHILHOWEE	CHILHOWEE	0.0
COFFEEN	COFFEEN	0.01
COTTONWOOD	COTTONWOOD	0.02
DUCKCREEK	DUCKCREEK	0.01
EDWARDS	EDWARDS	0.01
ELMERSMITH	ELMERSMITH	0.01
FARMERCITY	FARMERCITY	0.0
G-007A	G-007A	0.7
GIBSON	GIBSON	0.0
HAMLET	HAMLET	0.01
NEWTON	NEWTON	0.01
NYISO	NYISO	0.24
PRAIRIE	PRAIRIE	0.03
SANTEETLA	SANTEETLA	0.0
SMITHLAND	SMITHLAND	0.0
TATANKA	TATANKA	0.01
TILTON	TILTON	0.01
TRIMBLE	TRIMBLE	0.01
TVA	TVA	0.02
UNIONPOWER	UNIONPOWER	0.01
VFT	VFT	0.75

ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC DC	MW IMPACT
8455749	206294	28LARRABEE	JCP&L	206309	28SMITHBRG	JCP&L	1	JC-P2-3-JCC-230-13G	breaker	817.0	112.94	114.45	DC	27.42

Bus #	Bus	MW Impact
206271	28MCRC/REC	0.16
206280	28LAKEHURS	0.54
206306	28LKWD G1	3.61
206308	28LKWD G2	3.61
206312	28LKWD G3	2.22
206325	28O C GEN	184.69
206360	28O CRK C1	1.24

Bus #	Bus	MW Impact
206361	28O CRK C2	0.7
206366	28LKWD CT1	6.84
206367	28LKWD CT2	6.84
206412	28R11	36.51
207144	28HOW_X1-037	0.11
207145	28FRN_Y2-051	0.07
207204	28HOL_W1-112	0.03
207206	28TIN_W1-124	0.18
207207	28JCB_W1-129	0.05
207208	28JCB_W4-025	0.07
227801	ONTC&DCT	3.53
227843	MARINGEN E	0.37
227928	V4-067E	0.15
293404	V3-036	0.5
901912	W1-112E OP1	0.36
901981	W1-119 C	0.18
901982	W1-119 E	2.46
901991	W1-120C	1.68
901992	W1-120E	2.73
902032	W1-124E	2.36
902082	W1-129E	0.65
902321	W2-019 C	0.06
902322	W2-019 E	0.76
902432	W2-030 E	0.56
902951	W2-082 C OP1	0.16
902952	W2-082 E OP1	2.2
903981	W3-079 C	0.1
903982	W3-079 E	1.39
905252	W4-025 E	0.92
905502	W4-060 E OP1	0.54
907082	X1-037 E	1.51
912101	X4-015 C	0.05
912102	X4-015 E	0.65
912182	X4-031 E	0.42
914092	Y2-051 E	0.97
915022	Y3-012 E	0.69
917611	Z2-102 C	0.14
917612	Z2-102 E	1.81
917682	Z2-109 E	1.66
918452	AA1-060 E	3.05
919662	AA2-048 E	2.21
919672	AA2-049 E	0.57
920732	AA2-184 E	3.73
924701	AB2-122 C	0.07
924702	AB2-122 E	0.11
925541	AC1-029	1.66
930002	AB1-001 E	0.13
930891	AB1-138 C	1.13
930892	AB1-138 E	1.88
931122	AB1-163 E	1.44
933962	AD1-019 E	0.69
934351	AD1-059	0.64

Bus #	Bus	MW Impact
937261	AD2-165	3.32
938781	AE1-104 C O1	10.76
938782	AE1-104 E O1	27.54
939121	AE1-142 C O1	2.67
939122	AE1-142 E O1	3.84
939981	AE1-238 C	46.09
939982	AE1-238 E	121.06
940161	AE2-000 C O2	84.89
940162	AE2-000 E O2	217.2
940311	AE2-015 C O2	0.7
940312	AE2-015 E O2	0.34
940361	AE2-020 C O2	10.53
940362	AE2-020 E O2	49.3
940371	AE2-021 C O2	10.53
940372	AE2-021 E O2	49.3
940381	AE2-022 C O2	6.14
940382	AE2-022 E O2	28.76
940391	AE2-023 C O2	6.96
940392	AE2-023 E O2	32.57
940401	AE2-024 C O2	46.56
940402	AE2-024 E O2	218.01
940411	AE2-025 C O2	18.55
940412	AE2-025 E O2	86.83
940691	AE2-056 C	0.23
940692	AE2-056 E	0.2
940701	AE2-057 C	0.04
940702	AE2-057 E	0.04
940921	AE2-081 C	0.24
940922	AE2-081 E	0.25
941091	AE2-103 C	0.29
941092	AE2-103 E	0.4
942101	AE2-222 C O2	7.81
942102	AE2-222 E O2	19.61
942201	AE2-232 C O2	11.12
942202	AE2-232 E O2	28.45
942381	AE2-251 C O2	33.36
942382	AE2-251 E O2	85.35
942941	AE2-314 C	4.27
942942	AE2-314 E	2.85
BLUEG	BLUEG	1.79
CALDERWOOD	CALDERWOOD	0.19
CANNELTON	CANNELTON	0.11
CARR	CARR	0.37
CATAWBA	CATAWBA	0.12
CHEOAH	CHEOAH	0.17
CHILHOWEE	CHILHOWEE	0.06
COFFEEN	COFFEEN	0.19
COTTONWOOD	COTTONWOOD	0.73
DUCKCREEK	DUCKCREEK	0.41
EDWARDS	EDWARDS	0.19
ELMERSMITH	ELMERSMITH	0.19
FARMERCITY	FARMERCITY	0.12

Bus #	Bus	MW Impact
G-007A	G-007A	15.95
GIBSON	GIBSON	0.07
HAMLET	HAMLET	0.19
NEWTON	NEWTON	0.49
O-066	O-066	5.81
PRAIRIE	PRAIRIE	0.92
RENSSELAER	RENSSELAER	0.29
SANTEETLA	SANTEETLA	0.05
SMITHLAND	SMITHLAND	0.07
TATANKA	TATANKA	0.22
TILTON	TILTON	0.23
TRIMBLE	TRIMBLE	0.2
TVA	TVA	0.61
UNIONPOWER	UNIONPOWER	0.27

ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC DC	MW IMPACT
8456466	206294	28LARRABEE	JCP&L	206286	28ATLANTIC	JCP&L	1	JC-P7-1-JCC-230-7A	tower	956.0	104.59	105.91	DC	28.02

Bus #	Bus	MW Impact
206280	28LAKEHURS	0.5
206306	28LKWD G1	3.37
206308	28LKWD G2	3.37
206312	28LKWD G3	2.07
206325	28O C GEN	173.39
206360	28O CRK C1	1.17
206361	28O CRK C2	0.66
206366	28LKWD CT1	6.39
206367	28LKWD CT2	6.39
207145	28FRN_Y2-051	0.06
207207	28JCB_W1-129	0.05
207208	28JCB_W4-025	0.06
227801	ONTC&DCT	3.61
227843	MARINGEN E	0.37
227928	V4-067E	0.15
292063	V1-021 E	0.02
293404	V3-036	0.51
901981	W1-119 C	0.17
901982	W1-119 E	2.33
901991	W1-120C	1.58
901992	W1-120E	2.59
902082	W1-129E	0.61
902321	W2-019 C	0.05
902322	W2-019 E	0.72
902432	W2-030 E	0.57
902951	W2-082 C OP1	0.16
902952	W2-082 E OP1	2.08
903981	W3-079 C	0.08
903982	W3-079 E	1.14

Bus #	Bus	MW Impact
904432	W3-124 E	0.13
905252	W4-025 E	0.87
905792	W4-103 E	0.32
907272	X1-085 E	0.23
912101	X4-015 C	0.05
912102	X4-015 E	0.61
914092	Y2-051 E	0.86
915022	Y3-012 E	0.7
917611	Z2-102 C	0.13
917612	Z2-102 E	1.71
917682	Z2-109 E	1.97
918452	AA1-060 E	3.03
919662	AA2-048 E	1.81
919672	AA2-049 E	0.29
924701	AB2-122 C	0.07
924702	AB2-122 E	0.11
930002	AB1-001 E	0.13
930891	AB1-138 C	1.04
930892	AB1-138 E	1.74
931122	AB1-163 E	1.29
933962	AD1-019 E	0.71
934351	AD1-059	0.6
938781	AE1-104 C O1	11.24
938782	AE1-104 E O1	28.75
939121	AE1-142 C O1	2.5
939122	AE1-142 E O1	3.59
940161	AE2-000 C O2	79.2
940162	AE2-000 E O2	202.65
940311	AE2-015 C O2	0.66
940312	AE2-015 E O2	0.33
940361	AE2-020 C O2	10.67
940362	AE2-020 E O2	49.97
940371	AE2-021 C O2	10.67
940372	AE2-021 E O2	49.97
940381	AE2-022 C O2	6.23
940382	AE2-022 E O2	29.15
940391	AE2-023 C O2	7.14
940392	AE2-023 E O2	33.4
940401	AE2-024 C O2	43.72
940402	AE2-024 E O2	204.67
940411	AE2-025 C O2	17.59
940412	AE2-025 E O2	82.37
941091	AE2-103 C	0.27
941092	AE2-103 E	0.37
942101	AE2-222 C O2	7.98
942102	AE2-222 E O2	20.04
942201	AE2-232 C O2	11.27
942202	AE2-232 E O2	28.83
942381	AE2-251 C O2	33.81
942382	AE2-251 E O2	86.5
942941	AE2-314 C	4.33
942942	AE2-314 E	2.89

Bus #	Bus	MW Impact
BLUEG	BLUEG	0.49
CALDERWOOD	CALDERWOOD	0.04
CANNELTON	CANNELTON	0.03
CARR	CARR	0.64
CATAWBA	CATAWBA	0.02
CHEOAH	CHEOAH	0.04
CHILHOWEE	CHILHOWEE	0.01
COFFEEN	COFFEEN	0.05
COTTONWOOD	COTTONWOOD	0.18
DUCKCREEK	DUCKCREEK	0.11
EDWARDS	EDWARDS	0.05
ELMERSMITH	ELMERSMITH	0.05
FARMERCITY	FARMERCITY	0.03
G-007	G-007	9.23
GIBSON	GIBSON	0.02
HAMLET	HAMLET	0.03
NEWTON	NEWTON	0.13
O-066	O-066	18.16
PRAIRIE	PRAIRIE	0.24
RENSSELAER	RENSSELAER	0.51
SANTEETLA	SANTEETLA	0.01
SMITHLAND	SMITHLAND	0.02
TATANKA	TATANKA	0.06
TILTON	TILTON	0.06
TRIMBLE	TRIMBLE	0.05
TVA	TVA	0.15
UNIONPOWER	UNIONPOWER	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
8456455	206297	28MANITOU	JCP&L	206319	28WHITINGS	JCP&L	1	JC-P7-1-JCC-230-10A	tower	817.0	158.74	163.74	DC	40.82

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

Bus #	Bus	MW Impact
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
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

Bus #	Bus	MW Impact
NEWTON	NEWTON	0.33
O-066	O-066	9.67
PRAIRIE	PRAIRIE	0.61
RENSSELAER	RENSSELAER	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
8456039	206302	28OYSTER C	JCP&L	206297	28MANITOU	JCP&L	1	JC-P1-2-JCC-230-022	single	817.0	104.53	106.52	DC	16.22

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
940361	AE2-020 C O2	22.11
940371	AE2-021 C O2	22.11

Bus #	Bus	MW Impact
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
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
8456507	206318	28VANHISVL	JCP&L	206294	28LARRABEE	JCP&L	1	JC-P7-1-JCC-230-10A	tower	869.0	137.05	139.08	DC	39.16

Bus #	Bus	MW Impact
206280	28LAKEHURS	0.47
206306	28LKWD G1	4.04

Bus #	Bus	MW Impact
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
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

Bus #	Bus	MW Impact
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
940311	AE2-015 C O2	1.08
940312	AE2-015 E O2	0.53
940361	AE2-020 C O2	14.83
940362	AE2-020 E O2	69.45
940371	AE2-021 C O2	14.83
940372	AE2-021 E O2	69.45
940381	AE2-022 C O2	8.65
940382	AE2-022 E O2	40.51
940391	AE2-023 C O2	9.99
940392	AE2-023 E O2	46.79
940401	AE2-024 C O2	57.59
940402	AE2-024 E O2	269.63
940411	AE2-025 C O2	23.36
940412	AE2-025 E O2	109.35
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 O2	11.15
942102	AE2-222 E O2	28.01
942201	AE2-232 C O2	15.66
942202	AE2-232 E O2	40.08
942381	AE2-251 C O2	46.99
942382	AE2-251 E O2	120.24
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

Bus #	Bus	MW Impact
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

ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC DC	MW IMPACT
8456484	206319	28WHITINGS	JCP&L	206720	28MANCHSTR	JCP&L	1	JC-P7-1-JCC-230-10A	tower	869.0	138.92	143.62	DC	40.89

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

Bus #	Bus	MW Impact
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
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

Bus #	Bus	MW Impact
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
8455764	206323	28LAKEWOOD	JCP&L	206294	28LARRABEE	JCP&L	2	JC-P2-3-JCC-230-13D	breaker	817.0	171.3	176.71	DC	44.23

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

Bus #	Bus	MW Impact
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
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
8456497	206720	28MANCHSTR	JCP&L	206318	28VANHISVL	JCP&L	1	JC-P7-1-JCC-230-10A	tower	869.0	137.19	141.9	DC	40.89

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
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

Bus #	Bus	MW Impact
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
8456450	227900	CARDIFF	AE	219100	NEWFRDM	PSE&G	1	JC-P7-1-JCC-230-13	tower	692.0	195.9	210.71	DC	102.45

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

Bus #	Bus	MW Impact
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
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

Bus #	Bus	MW Impact
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
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

ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC DC	MW IMPACT
14253856	227900	CARDIFF	AE	227955	CEDAR	AE	1	AE_P4-2 AE6	breaker	805.0	133.81	142.01	DC	66.0

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

Bus #	Bus	MW Impact
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
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

Bus #	Bus	MW Impact
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
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
14253907	227902	LEWIS #1	AE	227945	LEWIS #2	AE	1	AE_P4-2 AE33	breaker	286.8	156.7	161.07	DC	27.79

Bus #	Bus	MW Impact
227801	ONTC&DCT	3.58
227843	MARINGEN E	0.38
228014	PVILLEG	0.06
228720	V2-035C	0.01
228721	V2-035E	0.15
293404	V3-036	0.51
902091	W1-130C	0.14
902092	W1-130E	1.91
915022	Y3-012 E	0.72
930001	AB1-001 C	0.01
930002	AB1-001 E	0.18
931191	AB1-169A	171.55

Bus #	Bus	MW Impact
933962	AD1-019 E	0.7
938311	AE1-046 C	0.62
938312	AE1-046 E	0.31
938421	AE1-061 C	1.54
938422	AE1-061 E	1.54
939301	AE1-161 C	3.4
939302	AE1-161 E	5.1
939931	AE1-229 C O1	6.89
939932	AE1-229 E O1	4.67
940391	AE2-023 C O2	56.68
940392	AE2-023 E O2	265.37
940971	AE2-088 C	0.09
940972	AE2-088 E	0.13
940973	AE2-088 BAT	0.1
942101	AE2-222 C O2	7.91
942102	AE2-222 E O2	19.88
943081	AE2-335 C O2	5.32
943082	AE2-335 E O2	2.37
CARR	CARR	0.0
CBM-S1	CBM-S1	0.14
CBM-S2	CBM-S2	0.07
CBM-W1	CBM-W1	0.25
CBM-W2	CBM-W2	1.04
CIN	CIN	0.11
CPL	CPL	0.03
G-007	G-007	0.22
IPL	IPL	0.07
LGEE	LGEE	0.03
MEC	MEC	0.2
MECS	MECS	0.15
O-066	O-066	0.25
RENSSELAER	RENSSELAER	0.0
WEC	WEC	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
8455797	228106	CORSON 1	AE	228185	CORSON#1	AE	1	AE_P4-2 AE16	breaker	168.0	123.65	128.97	DC	19.7

Bus #	Bus	MW Impact
227801	ONTC&DCT	2.53
227843	MARINGEN E	0.26
227928	V4-067E	0.08
293404	V3-036	0.36
902432	W2-030 E	0.38
913341	Y1-077	9.76
915022	Y3-012 E	0.49
924701	AB2-122 C	0.04
924702	AB2-122 E	0.06
930002	AB1-001 E	0.1
933962	AD1-019 E	0.5

Bus #	Bus	MW Impact
938781	AE1-104 C O1	24.98
938782	AE1-104 E O1	63.9
940391	AE2-023 C O2	5.91
940392	AE2-023 E O2	27.65
940963	AE2-087 BAT	0.03
941123	AE2-106 BAT	0.03
942101	AE2-222 C O2	5.61
942102	AE2-222 E O2	14.09
BLUEG	BLUEG	0.11
CALDERWOOD	CALDERWOOD	0.01
CANNELTON	CANNELTON	0.01
CATAWBA	CATAWBA	0.01
CBM-N	CBM-N	0.05
CHEOAH	CHEOAH	0.01
CHILHOWEE	CHILHOWEE	0.0
COFFEEN	COFFEEN	0.01
COTTONWOOD	COTTONWOOD	0.05
DUCKCREEK	DUCKCREEK	0.03
EDWARDS	EDWARDS	0.01
ELMERSMITH	ELMERSMITH	0.01
FARMERCITY	FARMERCITY	0.01
G-007A	G-007A	0.62
GIBSON	GIBSON	0.0
HAMLET	HAMLET	0.01
NEWTON	NEWTON	0.03
NYISO	NYISO	0.22
PRAIRIE	PRAIRIE	0.06
SANTEETLA	SANTEETLA	0.0
SMITHLAND	SMITHLAND	0.0
TATANKA	TATANKA	0.01
TILTON	TILTON	0.01
TRIMBLE	TRIMBLE	0.01
TVA	TVA	0.04
UNIONPOWER	UNIONPOWER	0.02
VFT	VFT	0.72

ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC DC	MW IMPACT
8456439	228502	MNOTLA 1	AE	228500	LANDIS	AE	1	JC-P7-1-JCC-230-13	tower	286.0	183.63	198.53	DC	42.62

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

Bus #	Bus	MW Impact
902431	W2-030 C	0.06
902432	W2-030 E	0.83
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	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

Bus #	Bus	MW Impact
GIBSON	GIBSON	0.01
HAMLET	HAMLET	0.02
NEWTON	NEWTON	0.05
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
8456465	228503	MNOTLA 2	AE	228502	MNOTLA 1	AE	1	JC-P7-1-JCC-230-13	tower	311.0	173.08	186.79	DC	42.63

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

Bus #	Bus	MW Impact
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
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
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	0.06
UNIONPOWER	UNIONPOWER	0.03

Contingency Name	Contingency Definition
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Contingency Name	Contingency Definition
JC-P7-1-JCC-230-7A	CONTINGENCY 'JC-P7-1-JCC-230-7A' /* SMITHBURG - LARRABEE 230 LINES DISCONNECT BRANCH FROM BUS 206309 TO BUS 206294 CKT 1 DISCONNECT BRANCH FROM BUS 206309 TO BUS 206294 CKT 2 END
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
PS_P2-3_CUTB_3-4_LT	CONTINGENCY 'PS_P2-3_CUTB_3-4_LT' DISCONNECT BUS 219754 /* CUTHBERTH SECTION 3 DISCONNECT BUS 219755 /* BUS SECTION 4 CUTHBERT CLOSE LINE FROM BUS 219177 TO BUS 219178 CKT Z /* CUTHBERT CLOSE LINE FROM BUS 219176 TO BUS 219179 CKT Z /* CUTHBERTH MOVE 8 MW LOAD FROM BUS 219176 TO BUS 219170 /* INTERSTATION TIE TRANSFER LOAD FROM CUTHBERT TO CINN T2 MOVE 8 MW LOAD FROM BUS 219176 TO BUS 219678 /* INTERSTATION TIE TRANSFER LOAD FROM CUTHBERT TO MAPLE SHADE MOVE 8 MW LOAD FROM BUS 219179 TO BUS 219678 /* INTERSTATION TIE TRANSFER LOAD FROM CUTHBERT TO MAPLE SHADE MOVE 8 MW LOAD FROM BUS 219178 TO BUS 219678 /* INTERSTATION TIE TRANSFER LOAD FROM CUTHBERT TO MAPLE SHADE MOVE 8 MW LOAD FROM BUS 219177 TO BUS 219677 /* INTERSTATION TIE TRANSFER LOAD FROM CUTHBERT TO MAPLE SHADE MOVE 8 MW LOAD FROM BUS 219179 TO BUS 219629 /* INTERSTATION TIE TRANSFER LOAD FROM CUTHBERT TO LAWNSIDE END

Contingency Name	Contingency Definition
PS_P2-3_CUTB_1-4_LT	CONTINGENCY 'PS_P2-3_CUTB_1-4_LT' DISCONNECT BUS 219108 /* CUTBERTH SECTION 1 DISCONNECT BUS 219755 /* BUS SECTION 4 CUTHBERT CLOSE LINE FROM BUS 219177 TO BUS 219178 CKT Z /* CUTHBERT CLOSE LINE FROM BUS 219176 TO BUS 219179 CKT Z /* CUTBERTH MOVE 8 MW LOAD FROM BUS 219176 TO BUS 219170 /* INTERSTATION TIE TRANSFER LOAD FROM CUTHBERT TO CINN T2 MOVE 8 MW LOAD FROM BUS 219176 TO BUS 219678 /* INTERSTATION TIE TRANSFER LOAD FROM CUTHBERT TO MAPLE SHADE MOVE 8 MW LOAD FROM BUS 219179 TO BUS 219678 /* INTERSTATION TIE TRANSFER LOAD FROM CUTHBERT TO MAPLE SHADE MOVE 8 MW LOAD FROM BUS 219178 TO BUS 219678 /* INTERSTATION TIE TRANSFER LOAD FROM CUTHBERT TO MAPLE SHADE MOVE 8 MW LOAD FROM BUS 219177 TO BUS 219677 /* INTERSTATION TIE TRANSFER LOAD FROM CUTHBERT TO MAPLE SHADE MOVE 8 MW LOAD FROM BUS 219179 TO BUS 219629 /* INTERSTATION TIE TRANSFER LOAD FROM CUTHBERT TO LAWNSIDE END
AE_P4-2 AE29	CONTINGENCY 'AE_P4-2 AE29' /*ENGLAND TO CORSON BREAKER D DISCONNECT BRANCH FROM BUS 228110 TO BUS 228111 CKT 1 /*ENGLAND MIDDLE TAP 138 138 DISCONNECT BRANCH FROM BUS 228110 TO BUS 227906 CKT 1 /*ENGLAND #2 SCULL 138 138 END
PECO_P4_CHICH045/* \$ DELCO \$ 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
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-P2-3-JCC-230-13G	CONTINGENCY 'JC-P2-3-JCC-230-13G' /* LARRABEE NW BUS & LARRABEE-SMITHBURG (D2004) 230 KV DISCONNECT BRANCH FROM BUS 206294 TO BUS 206309 CKT 2 /* 28LARRABEE 230 28SMITHBRG 230 REMOVE LOAD 7 FROM BUS 206294 /* 28LARRABEE 230 DISCONNECT BRANCH FROM BUS 206294 TO BUS 206275 CKT 9 /* 28LARRABEE 230 28LARR CD 35 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

Contingency Name	Contingency Definition
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
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 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

Contingency Name	Contingency Definition
AE_P4-2 AE33	CONTINGENCY 'AE_P4-2 AE33' /*LEWIS TO CARDIFF BREAKER V DISCONNECT BRANCH FROM BUS 227902 TO BUS 227913 CKT 1 /*LEWIS CARDIFF 138 138 DISCONNECT BRANCH FROM BUS 227902 TO BUS 227903 CKT 1 /*LEWIS MILL #1 138 138 DISCONNECT BRANCH FROM BUS 227902 TO BUS 227918 CKT 1 /*LEWIS 138 69 T1 END
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	
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 AE16	CONTINGENCY 'AE_P4-2 AE16' /*CORSON TO ENGLAND BREAKER R DISCONNECT BRANCH FROM BUS 228107 TO BUS 228216 CKT 1 /*CORSON DENNIS 138 138 DISCONNECT BRANCH FROM BUS 228111 TO BUS 228107 CKT 1 /*MIDDLETAP CORSON 138 138 DISCONNECT BRANCH FROM BUS 228111 TO BUS 228110 CKT 1 /*MIDDLETAP ENGLAND 138 138 DISCONNECT BRANCH FROM BUS 228111 TO BUS 228112 CKT 1 /*MIDDLETAP MIDDLE 138 138 DISCONNECT BRANCH FROM BUS 228107 TO BUS 228115 CKT 1 /*CORSON 138 69 T2 DISCONNECT BUS 228107 /*CORSON 138 #2 BUS SECTION 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
PECO_P4_PEACH215/* \$ CHESCO \$ PECO_P4_PEACH215 \$ STBK 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

Contingency Name	Contingency Definition
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
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
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