

Generation Interconnection Feasibility Study Report Queue Position AE2-023

The Interconnection Customer (IC), has proposed a 445.2 MW Energy (78.3 MW Capacity) offshore wind generating facility to be located at Latitude: 39.4145000, Longitude: -74.0521000 in the Atlantic Ocean off the coast of Atlantic County, New Jersey. At the IC's request, PJM studied the AE2-023 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 December 1, 2024. 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 AE2-023 project.

Primary Point of Interconnection

PJM studied the AE2-023 project as an injection into the Atlantic City Electric Company (ACE) transmission system at the BL England 138 kV Substation (PSSE bus #228110) and evaluated it for compliance with reliability criteria for summer peak conditions in 2022. The AE2-023 project will connect with the ACE transmission system at the BL England 138 kV Substation. AE2-023 will connect into the 138 kV substation via an open 138 kV line terminal.

Transmission Owner Scope of Direct Connect and Attachment Facilities Work

Substation Interconnection Estimate

Scope: Build a new position onto the 138 kV bus at BL England Substation. The new position will be connected to the AE2-023 generator. The project will require the addition of one (1) 138 kV breaker, three (3) 138 kV disconnect switches, three (3) CT/VT combination units, and substation bus.

NOTE: AE2-023 will incur the costs for the interconnection facilities of AE1-104 in the event of a cancellation to AE1-104. Any delay in upgrading breakers A & B for AE1-104 will subsequently delay AE2-023.

Estimate: \$5,500,000

Construction Time: 36-48 months

Major Equipment Included in Estimate:

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|---|--------|
| • 3000A Power Circuit Breaker, 138 kV, 3 cycle | Qty. 1 |
| • Disconnect Switch, 138 kV Motor Operated Device | Qty. 3 |
| • Double 1590 ACSR (325') | Qty. 1 |
| • Insulators, 138 kV | Qty. 3 |
| • Disconnect Switch Stand, Low, 138 kV, Steel | Qty. 1 |

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|---|--------|
| • Relay Panel, Transmission Bus, FL/BU (20") | Qty. 1 |
| • Control Panel, 138 kV Circuit Breaker (10") | Qty. 1 |
| • Take-off structure, 138 kV | Qty. 2 |
| • 138 kV Lightning Arresters | Qty. 3 |
| • 138 kV Lightning Arresters Stands | Qty. 3 |

Estimate Assumptions:

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

Required Relaying and Communications

New protection relays are required for the new terminals.

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

A breaker control relay on a breaker control panel will be required for the control and operation of each new 138 kV circuit breaker (1 total).

The project will require re-wiring and adjustment of existing relay schemes to accommodate the new 138 kV substation.

Metering

A three phase 138 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)

ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC DC	MW IMPACT
1979336	227905	SCULL#1	AE	227903	MILL #1	AE	1	Base Case	single	218.0	89.81	100.74	DC	23.83
1979328	227906	SCULL#2	AE	227904	MILL #2	AE	1	Base Case	single	219.0	90.33	101.22	DC	23.85
1979310	228110	BLE	AE	227905	SCULL#1	AE	1	Base Case	single	219.0	99.72	110.6	DC	23.83
1979319	228110	BLE	AE	227906	SCULL#2	AE	1	Base Case	single	219.0	97.73	108.62	DC	23.85

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
8279590	213922	RICHMOND	PECO	214012	WANEETA3	PECO	1	PECO_P2-2_CHI230B1/* \$ DELCO \$ PECO_P2-2_CHI230B1 \$ B	bus	1180.0	99.47	102.72	DC	84.89
8279878	213922	RICHMOND	PECO	214012	WANEETA3	PECO	1	PECO_P4_CHICH045/* \$ DELCO \$ PECO_P4_CHICH045 \$ STBK	breaker	1180.0	99.46	102.72	DC	84.89
8279592	214206	RICHRE29	PECO	213922	RICHMOND	PECO	1	PECO_P2-2_CHI230B1/* \$ DELCO \$ PECO_P2-2_CHI230B1 \$ B	bus	1336.0	98.89	101.93	DC	88.96
8279880	214206	RICHRE29	PECO	213922	RICHMOND	PECO	1	PECO_P4_CHICH045/* \$ DELCO \$ PECO_P4_CHICH045 \$ STBK	breaker	1336.0	98.88	101.91	DC	88.96
8279591	219125	CAMDEN	PSE&G	214206	RICHRE29	PECO	1	PECO_P2-2_CHI230B1/* \$ DELCO \$ PECO_P2-2_CHI230B1 \$ B	bus	1336.0	98.91	101.94	DC	88.96
8279879	219125	CAMDEN	PSE&G	214206	RICHRE29	PECO	1	PECO_P4_CHICH045/* \$ DELCO \$ PECO_P4_CHICH045 \$ STBK	breaker	1336.0	98.89	101.93	DC	88.96
1979223	227903	MILL #1	AE	227904	MILL #2	AE	1	AE_P4-2 AE29	breaker	478.0	76.03	108.71	DC	156.19
1979675	227904	MILL #2	AE	227946	MILL#2	AE	1	AE_P7-1 AE6TOWER	tower	279.0	78.14	112.8	DC	96.69
1979684	228106	CORSON 1	AE	228107	CORSON 2	AE	1	AE_P7-1 AE7TOWER	tower	478.0	64.18	103.66	DC	188.73
1979693	228107	CORSON 2	AE	228216	DENNIS	AE	1	AE_P7-1 AE7TOWER	tower	478.0	56.38	100.99	DC	213.22
1979224	228110	BLE	AE	228197	MERION	AE	1	AE_P4-2 AE29	breaker	482.0	92.78	129.85	DC	178.15
1979638	228110	BLE	AE	228197	MERION	AE	1	AE_P7-1 AE5TOWER	tower	482.0	81.37	111.7	DC	145.79
1979644	228110	BLE	AE	228111	MDLE TP	AE	1	AE_P7-1 AE7TOWER	tower	482.0	91.76	138.78	DC	226.64
1979243	228197	MERION	AE	228106	CORSON 1	AE	1	AE_P4-2 AE29	breaker	478.0	79.34	116.81	DC	178.6
1979647	228197	MERION	AE	228106	CORSON 1	AE	1	AE_P7-1 AE7TOWER	tower	478.0	88.63	134.12	DC	217.48
1979676	228207	CUMB	AE	228002	ORCHARD	AE	1	AE_P7-1 AE7TOWER	tower	799.0	73.17	110.38	DC	297.27
1979685	228216	DENNIS	AE	228213	DENNIS	AE	1	AE_P7-1 AE7TOWER	tower	468.0	57.59	103.15	DC	213.22
1979678	228714	CNTRL N	AE	228504	SHLDLY T	AE	1	AE_P7-1 AE7TOWER	tower	143.0	87.18	102.53	DC	48.58

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
8280357	206297	28MANITOU	JCP&L	206319	28WHITINGS	JCP&L	1	JC-P7-1-JCC-230-10A	tower	817.0	150.05	152.8	DC	49.88
8280358	206297	28MANITOU	JCP&L	206319	28WHITINGS	JCP&L	1	JC-P7-1-JCC-230-12	tower	817.0	143.6	146.57	DC	53.8
8279941	206302	28OYSTER C	JCP&L	206297	28MANITOU	JCP&L	1	JC-P1-2-JCC-230-022	single	817.0	107.75	109.26	DC	12.33
8279963	206302	28OYSTER C	JCP&L	206297	28MANITOU	JCP&L	2	JC-P1-2-JCC-230-021	single	869.0	101.33	102.75	DC	12.33
8280409	206318	28VANHISVL	JCP&L	206294	28LARRABEE	JCP&L	1	JC-P7-1-JCC-230-10A	tower	869.0	128.14	130.77	DC	50.67
8280410	206318	28VANHISVL	JCP&L	206294	28LARRABEE	JCP&L	1	JC-P7-1-JCC-230-12	tower	869.0	122.96	125.73	DC	53.54
8280386	206319	28WHITINGS	JCP&L	206720	28MANCHSTR	JCP&L	1	JC-P7-1-JCC-230-10A	tower	869.0	130.74	133.34	DC	49.97
8280387	206319	28WHITINGS	JCP&L	206720	28MANCHSTR	JCP&L	1	JC-P7-1-JCC-230-12	tower	869.0	122.76	125.51	DC	53.17
8279666	206323	28LAKEWOOD	JCP&L	206294	28LARRABEE	JCP&L	2	JC-P2-3-JCC-230-13D	breaker	817.0	161.65	164.67	DC	54.69
8280399	206720	28MANCHSTR	JCP&L	206318	28VANHISVL	JCP&L	1	JC-P7-1-JCC-230-10A	tower	869.0	129.01	131.6	DC	49.97
8280400	206720	28MANCHSTR	JCP&L	206318	28VANHISVL	JCP&L	1	JC-P7-1-JCC-230-12	tower	869.0	121.02	123.77	DC	53.17
1979646	227900	CARDIFF	AE	219100	NEWFRDM	PSE&G	1	AE_P7-1 AE13TOWER	tower	692.0	113.77	133.48	DC	136.28
8280352	227900	CARDIFF	AE	219100	NEWFRDM	PSE&G	1	JC-P7-1-JCC-230-13	tower	692.0	140.99	149.27	DC	127.2
1979342	227903	MILL #1	AE	227902	LEWIS #1	AE	1	AE_P1-2 BLE-ML-LEW2	single	306.0	100.79	112.95	DC	37.2
1979093	227904	MILL #2	AE	227945	LEWIS #2	AE	1	AE_P4-2 AE33	breaker	282.0	133.12	195.03	DC	174.56
1979068	227905	SCULL#1	AE	227903	MILL #1	AE	1	AE_P4-2 AE29	breaker	306.0	191.04	277.83	DC	265.52
1979334	227905	SCULL#1	AE	227903	MILL #1	AE	1	AE_P1-2 BLE-SC-ML2	single	306.0	115.15	128.74	DC	41.58
1979335	227905	SCULL#1	AE	227903	MILL #1	AE	1	AE_P1-2 BLE-ML-LEW2	single	306.0	100.83	112.98	DC	37.2
1979083	227906	SCULL#2	AE	227904	MILL #2	AE	1	AE_P4-2 AE28	breaker	307.0	178.59	255.56	DC	236.27
1979326	227906	SCULL#2	AE	227904	MILL #2	AE	1	AE_P1-2 BLE-SC-ML1	single	307.0	116.05	129.6	DC	41.59
1979327	227906	SCULL#2	AE	227904	MILL #2	AE	1	AE_P1-2 BLE-ML-LEW1	single	307.0	111.45	124.38	DC	39.7
1979130	228106	CORSON 1	AE	228185	CORSON#1	AE	1	AE_P4-2 AE16	breaker	168.0	114.56	162.08	DC	79.78
1979063	228110	BLE	AE	227905	SCULL#1	AE	1	AE_P4-2 AE29	breaker	307.0	197.78	284.28	DC	265.52
1979078	228110	BLE	AE	227906	SCULL#2	AE	1	AE_P4-2 AE28	breaker	307.0	183.87	260.84	DC	236.27
1979308	228110	BLE	AE	227905	SCULL#1	AE	1	AE_P1-2 BLE-SC-ML2	single	307.0	122.14	135.68	DC	41.58
1979309	228110	BLE	AE	227905	SCULL#1	AE	1	AE_P1-2 BLE-ML-LEW2	single	307.0	107.86	119.98	DC	37.2
1979317	228110	BLE	AE	227906	SCULL#2	AE	1	AE_P1-2 BLE-SC-ML1	single	307.0	121.33	134.88	DC	41.59
1979318	228110	BLE	AE	227906	SCULL#2	AE	1	AE_P1-2 BLE-ML-LEW1	single	307.0	116.72	129.66	DC	39.7
1979637	228110	BLE	AE	228197	MERION	AE	1	AE_P7-1 AE7TOWER	tower	482.0	101.98	146.99	DC	216.93
1979615	228111	MDLE TP	AE	228107	CORSON 2	AE	1	AE_P7-1 AE7TOWER	tower	315.0	109.52	179.28	DC	219.74
1979624	228130	TUCKAHOE	AE	227946	MILL#2	AE	1	AE_P7-1 AE7TOWER	tower	146.0	111.26	152.88	DC	60.75
1979621	228217	DENNIS	AE	228130	TUCKAHOE	AE	1	AE_P7-1 AE7TOWER	tower	146.0	116.06	157.67	DC	60.75
1979373	228502	MNOTLA 1	AE	228500	LANDIS	AE	1	AE_P1-2 OY CK-CEDAR	single	286.0	124.72	128.03	DC	9.47
1979374	228502	MNOTLA 1	AE	228500	LANDIS	AE	1	Base Case	single	230.0	135.01	138.52	DC	8.08
1979622	228502	MNOTLA 1	AE	228500	LANDIS	AE	1	AE_P7-1 AE6TOWER	tower	286.0	154.13	178.13	DC	68.52
8280341	228502	MNOTLA 1	AE	228500	LANDIS	AE	1	JC-P7-1-JCC-230-13	tower	286.0	151.46	159.81	DC	53.01
1979409	228503	MNOTLA 2	AE	228502	MNOTLA 1	AE	1	AE_P1-2 OY CK-CEDAR	single	311.0	116.42	119.47	DC	9.47
1979410	228503	MNOTLA 2	AE	228502	MNOTLA 1	AE	1	AE_P1-2 CARD-CEDAR-B	single	311.0	116.8	119.66	DC	8.92
1979413	228503	MNOTLA 2	AE	228502	MNOTLA 1	AE	1	Base Case	single	311.0	101.61	104.21	DC	8.08
1979630	228503	MNOTLA 2	AE	228502	MNOTLA 1	AE	1	AE_P7-1 AE6TOWER	tower	311.0	141.75	163.83	DC	68.53
8280367	228503	MNOTLA 2	AE	228502	MNOTLA 1	AE	1	JC-P7-1-JCC-230-13	tower	311.0	142.81	150.5	DC	53.02

Summer Peak Load Flow Analysis Reinforcements

System Reinforcements

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

ID	Index	Facility	Upgrade Description	Cost
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ID	Index	Facility	Upgrade Description	Cost
8279879,8279591	1	CAMDEN 230.0 kV - RICHRE29 230.0 kV Ckt 1	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 r_PS_AE2_FES_CamRich (730) : No Issue: PJM to update limiting ratings Project Type : FAC Cost : \$0 Time Estimate : 0.0 Months	\$3,000,000
1979676	2	CUMB 230.0 kV - ORCHARD 230.0 kV Ckt 1	at2314r0001 (46) : To mitigate the (ACE) Orchard Cumberland 230 kV line (from bus 228012 to bus 228207 ckt 1) overload, it will require increasing the emergency rating of the Orchard to Cumberland 230 kV line by rebuilding the circuit. The rebuild will include the installation of new poles, foundations, insulators, and conductor. In addition, various terminal reinforcements are required at Cumberland. Project Type : FAC Cost : \$46,600,000 Time Estimate : 36-60 Months	\$46,600,000
1979063,1979308,1979309,1979310	3	BLE 138.0 kV - SCULL#1 138.0 kV Ckt 1	at1407r0001 (8) : To mitigate the (ACE) B.L. England Scull#1 138 kV line (from bus 228110 to bus 227905 ckt 1) overload, it will require increasing the emergency rating of the B.L. England to Scull#1 138 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 Scull#1 Project Type : FAC Cost : \$5,900,000 Time Estimate : 36-60 Months at1407r0002 (9) : To mitigate the (ACE) B.L. England Scull#1 138 kV line (from bus 228110 to bus 227905 ckt 1) overload, it will require increasing the emergency rating of the B.L. England to Scull#1 138 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 B.L. England#1. Project Type : FAC Cost : \$5,300,000 Time Estimate : 36-60 Months <u>1979310</u> No Issue: PJM to update limiting ratings in model	\$11,200,000

ID	Index	Facility	Upgrade Description	Cost
1979068,1979336,1979335,1979334	4	SCULL#1 138.0 kV - MILL #1 138.0 kV Ckt 1	at1408r0003 (4) : To mitigate the (ACE) Mill#2 Scull#2 138 kV line (from bus 228904 to bus 227906 ckt 1) overload, it will require increasing the emergency rating of the Mill#2 to Scull#2 138 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 Mill#2 to Scull#2. Project Type : FAC Cost : \$12,800,000 Time Estimate : 36-60 Months at1407r0003 (10) : To mitigate the (ACE) Scull#1-Mill#1 - 138 kV line (from bus 227905 to bus 227903 ckt 1) overload, it will require increasing the emergency rating of the Scull#1 to Mill#1 138 kV line by rebuilding the circuit. The rebuild will include the installation of new poles, foundations, insulators, and conductor. In addition, various terminal reinforcements at both, Mill#1 & Scull#1. Project Type : FAC Cost : \$12,800,000 Time Estimate : 36-60 Months at1407r0004 (11) : To mitigate the (ACE) Scull#1-Mill#1 - 138 kV line (from bus 227905 to bus 227903 ckt 1) overload, it will require increasing the emergency rating of the Scull#1 to Mill#1 138 kV line by rebuilding the circuit. The rebuild will include the installation of new poles, foundations, insulators, and conductor. In addition, various terminal reinforcements at Mill#1. Project Type : FAC Cost : \$12,500,000 Time Estimate : 36-60 Months <u>1979336</u> No Issue: PJM to update limiting ratings in model	\$25,300,000
8279880,8279592	5	RICHRE29 230.0 kV - RICHMOND 230.0 kV Ckt 1	pe001 (678) : Change connection point for Chichester-Eddystone 220-36 line at Chichester from #1 bus to #2 kV bus Project Type : CON Cost : \$3,000,000 Time Estimate : 24.0 Months	\$3,000,000

ID	Index	Facility	Upgrade Description	Cost
1979328,1979083,1979326,1979327	6	SCULL#2 138.0 kV - MILL #2 138.0 kV Ckt 1	at1408r0003 (4) : To mitigate the (ACE) Mill#2 Scull#2 138 kV line (from bus 228904 to bus 227906 ckt 1) overload, it will require increasing the emergency rating of the Mill#2 to Scull#2 138 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 Mill#2 to Scull#2. Project Type : FAC Cost : \$12,800,000 Time Estimate : 36-60 Months at1408r0004 (5) : To mitigate the (ACE) Mill#2 Scull#2 138 kV line (from bus 228904 to bus 227906 ckt 1) overload, it will require increasing the emergency rating of the Mill#2 to Scull#2 138 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 Mill#2. Project Type : FAC Cost : \$12,500,000 Time Estimate : 36-60 Months <u>1979328</u> No Issue: PJM to update limiting ratings in model	\$25,300,000
1979093	7	MILL #2 138.0 kV - LEWIS #2 138.0 kV Ckt 1	at1424r0001 (6) : To mitigate the (ACE) Mill#2 Lewis#2 138 kV line (from bus 228904 to bus 227945 ckt 1) overload, it will require increasing the emergency rating of the Mill#2 to Lewis#2 138 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 Lewis#2. Project Type : FAC Cost : \$12,500,000 Time Estimate : 36-60 Months as1424r0001 (7) : To mitigate the (ACE) Mill#2 Lewis#2 138 kV line (from bus 228904 to bus 227945 ckt 1) overload will require substation reinforcements at both, Mill#2 & Lewis#2 Substation. Project Type : FAC Cost : \$1,000,000 Time Estimate : 24-36 Months	\$13,500,000
1979130	8	CORSON 1 138.0 kV - CORSON#1 69.0 kV Ckt 1	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	\$5,450,000

ID	Index	Facility	Upgrade Description	Cost
8280352,1979646	9	CARDIFF 230.0 kV - NEWFRDM 230.0 kV Ckt 1	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 r_PS_AE2_FES_09_Nfreed (751) : Replace Line Drops Project Type : FAC Cost : \$88,298 Time Estimate : 1.0 Months	\$64,288,298
1979675	10	MILL #2 138.0 kV - MILL#2 69.0 kV Ckt 1	asmillr0002 (35) : To mitigate the (ACE) AE2-020 TAP Cedar 230 kV line (from bus 940360 to bus 227955 ckt 1) overload, terminal reinforcement is required at Mill. Project Type : FAC Cost : \$200,000 Time Estimate : 24.0 Months	\$200,000
1979374,1979373,1979622,8280341	11	MNOTLA 1 138.0 kV - LANDIS 138.0 kV Ckt 1	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 <u>1979374,1979373,8280341</u> No Issue: PJM to update limiting ratings in model	\$12,800,000

ID	Index	Facility	Upgrade Description	Cost
1979685	12	DENNIS 138.0 kV - DENNIS 230.0 kV Ckt 1	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
1979647,1979243	13	MERION 138.0 kV - CORSON 1 138.0 kV Ckt 1	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
1979413,1979410,82 80367,1979409,1979 630	14	MNOTLA 2 138.0 kV - MNOTLA 1 138.0 kV Ckt 1	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
1979342	15	MILL #1 138.0 kV - LEWIS #1 138.0 kV Ckt 1	at1423r0001 (12) : To mitigate the (ACE) Mill#1 - Lewis#1 138 kV line (from bus 228903 to bus 227902 ckt 1) overload, it will require increasing the emergency rating of the Mill#1 to Lewis#1 138 kV line by rebuilding the circuit. The rebuild will include the installation of new poles, foundations, insulators, and conductor. Project Type : FAC Cost : \$11,300,000 Time Estimate : 36-60 Months as1423r0001 (13) : To mitigate the (ACE) Mill#1 - Lewis#1 138 kV line (from bus 228903 to bus 227902 ckt 1) overload, will require substation reinforcements at Lewis#1 Substation. Project Type : FAC Cost : \$500,000 Time Estimate : 12-24 Months	\$11,800,000

ID	Index	Facility	Upgrade Description	Cost
1979078,1979317,1979319,1979318	16	BLE 138.0 kV - SCULL#2 138.0 kV Ckt 1	at1408r0001 (2) : To mitigate the (ACE) B.L. England Scull#2 138 kV line (from bus 228110 to bus 227906 ckt 1) overload, it will require increasing the emergency rating of the B.L. England to Scull#2 138 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 Scull#2 Project Type : FAC Cost : \$6,000,000 Time Estimate : 36-60 Months at1408r0002 (3) : To mitigate the (ACE) B.L. England Scull#2 138 kV line (from bus 228110 to bus 227906 ckt 1) overload, it will require increasing the emergency rating of the B.L. England to Scull#2 138 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 Scull#2 Project Type : FAC Cost : \$5,600,000 Time Estimate : 36-60 Months <u>1979319</u> No Issue: PJM to update limiting ratings in model	\$11,600,000
1979223	17	MILL #1 138.0 kV - MILL #2 138.0 kV Ckt 1	asmillr0001 (34) : To mitigate the (ACE) Mill#1 138kV Mill#2 138kV line (from bus 227903 to bus 227904 ckt 1) overload, terminal reinforcement is required at Mill. Project Type : FAC Cost : \$200,000 Time Estimate : 24.0 Months	\$200,000
8279878,8279590	18	RICHMOND 230.0 kV - WANEETA3 230.0 kV Ckt 1	pe001 (678) : Change connection point for Chichester-Eddystone 220-36 line at Chichester from #1 bus to #2 kV bus Project Type : CON Cost : \$3,000,000 Time Estimate : 24.0 Months	\$3,000,000
1979693	19	CORSON 2 138.0 kV - DENNIS 138.0 kV Ckt 1	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
1979621	20	DENNIS 69.0 kV - TUCKAHOE 69.0 kV Ckt 1	at0750r0001 (18) : To mitigate the (ACE) Dennis Tuckahoe 69 kV line (from bus 228217 to bus 228130 ckt 1) overload, it will require increasing the emergency rating of the Dennis to Tuckahoe 69 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 Tuckahoe. Project Type : FAC Cost : \$7,000,000 Time Estimate : 36-60 Months as0750r0001 (19) : To mitigate the (AE - AE) Dennis Tuckahoe 69 kV line (from bus 228217 to bus 228130 ckt 1) overload will require substation reinforcements at Tuckahoe 69 kv Substation. Project Type : FAC Cost : \$800,000 Time Estimate : 24-32 Months	\$7,800,000
1979624	21	TUCKAHOE 69.0 kV - MILL#2 69.0 kV Ckt 1	at0750r0002 (20) : To mitigate the (ACE) Tuckahoe Mill#2 69 kV line (from bus 228130 to bus 227946 ckt 1) overload, it will require increasing the emergency rating of the Tuckahoe to Mill#2 69 kV line by rebuilding the circuit. The rebuild will include the installation of new poles, foundations, insulators, and conductor. Project Type : FAC Cost : \$20,000,000 Time Estimate : 36-60 Months as0750r0002 (21) : To mitigate the (ACE) Tuckahoe Mill#2 69 kV line (from bus 228130 to bus 227946 ckt 1) overload ,will require substation reinforcements at Tuckahoe 69 kv Substation. Project Type : FAC Cost : \$400,000 Time Estimate : 24-32 Months	\$20,400,000
1979615	22	MDLE TP 138.0 kV - CORSON 2 138.0 kV Ckt 1	at1403r0001 (22) : To mitigate the (ACE) Middle Tap Corson#2 138 kV line (from bus 228111 to bus 228107 ckt 1) overload, it will require increasing the emergency rating of the Middle Tap to Corson#2 138 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 Corson#2. Project Type : FAC Cost : \$400,000 Time Estimate : 24-48 Months at1403r0002 (23) : To mitigate the (ACE) Middle Tap Corson#2 138 kV line (from bus 228111 to bus 228107 ckt 1) overload, it will require increasing the emergency rating of the Middle Tap to Corson#2 138 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 Corson#2. Project Type : FAC Cost : \$1,000,000 Time Estimate : 24-48 Months	\$1,400,000

ID	Index	Facility	Upgrade Description	Cost
1979224,1979638,1979637	23	BLE 138.0 kV - MERION 138.0 kV Ckt 1	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
8279941	24	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
8279963	25	28OYSTER C 230.0 kV - 28MANITOU 230.0 kV Ckt 2	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
1979644	26	BLE 138.0 kV - MDLE TP 138.0 kV Ckt 1	at1403r0003 (24) : To mitigate the (ACE) Middle Tap Corson#1 138 kV line (from bus 228111 to bus 228110 ckt 1) overload, it will require increasing the emergency rating of the Middle Tap to Corson#1 138 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 Corson#1. Project Type : FAC Cost : \$19,000,000 Time Estimate : 36-60 Months	\$19,000,000

ID	Index	Facility	Upgrade Description	Cost
8279896,1979684	27	CORSON 1 138.0 kV - CORSON 2 138.0 kV Ckt 1	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 Coroson#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 <u>8279896</u> No Violation. The post queue loading is less than 100%.	\$1,400,000
1979678	28	CNTRL N 69.0 kV - SHLDLY T 69.0 kV Ckt 1	as0711r0001 (48) : To mitigate the (ACE) Sheildalloy Tap Central Tap 69 kV line (from bus 228504 to bus 228714 ckt 1) overload, terminal reinforcement is required at Central North (Vineland). Project Type : FAC Cost : \$200,000 Time Estimate : 24-36 Months	\$200,000
8279666	29	28LAKEWOOD 230.0 kV - 28LARRABEE 230.0 kV Ckt 2	JCP&L-020E (643) : 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 1346 MVA (Rate B). Project Type : FAC Cost : \$20,150,000 Time Estimate : 24.0 Months	\$20,150,000

ID	Index	Facility	Upgrade Description	Cost
8280358,8280357	30	28MANITOU 230.0 kV - 28WHITINGS 230.0 kV Ckt 1	JCP&L-007J (573) : 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 1249 MVA (Rate B). Project Type : FAC Cost : \$35,230,000 Time Estimate : 30.0 Months	\$35,230,000
8280410,8280409	31	28VANHISVL 230.0 kV - 28LARRABEE 230.0 kV Ckt 1	JCP&L-018G (619) : 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 and conductors should be rated above 1137 MVA (Rate B). Project Type : FAC Cost : \$29,575,000 Time Estimate : 30.0 Months	\$29,575,000

ID	Index	Facility	Upgrade Description	Cost
8280386,8280387	32	28WHITINGS 230.0 kV - 28MANCHSTR 230.0 kV Ckt 1	JCP&L-019G (633) : Reconductor existing sections 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 1159 MVA (Rate B). Project Type : FAC Cost : \$50,440,000 Time Estimate : 36.0 Months	\$50,440,000
8280399,8280400	33	28MANCHSTR 230.0 kV - 28VANHISVL 230.0 kV Ckt 1	JCP&L-024D (657) : Reconductor existing section of 1590 ACSR 45/7 with 1590 ACSS 45/7. Reconductor existing section of 2.5 SPS AL PIPE with conductor rated above 1144 MVA (Rate B). Project Type : FAC Cost : \$23,530,000 Time Estimate : 24.0 Months	\$23,530,000
			TOTAL COST	\$575,063,298

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 phases as required.

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
8280140	206295	28LEISUR D	JCP&L	206323	28LAKEWOOD	JCP&L	1	JC-P1-2-JCC-230-020	operation	869.0	102.17	104.91	DC	52.72
8280065	206296	28LEISUR U	JCP&L	206323	28LAKEWOOD	JCP&L	1	JC-P1-2-JCC-230-019	operation	817.0	117.75	120.64	DC	52.46
8280030	206297	28MANITOU	JCP&L	206296	28LEISUR U	JCP&L	1	JC-P1-2-JCC-230-019	operation	817.0	131.62	134.55	DC	53.23
8280036	206297	28MANITOU	JCP&L	206295	28LEISUR D	JCP&L	1	JC-P1-2-JCC-230-020	operation	817.0	130.97	133.91	DC	53.23
8279936	206302	28OYSTER C	JCP&L	206297	28MANITOU	JCP&L	1	JC-P1-2-JCC-230-022	operation	817.0	214.26	218.12	DC	70.06
8279938	206302	28OYSTER C	JCP&L	206297	28MANITOU	JCP&L	1	Base Case	operation	650.0	144.94	147.57	DC	37.81
8279958	206302	28OYSTER C	JCP&L	206297	28MANITOU	JCP&L	2	JC-P1-2-JCC-230-021	operation	869.0	201.48	205.12	DC	70.07
8279960	206302	28OYSTER C	JCP&L	206297	28MANITOU	JCP&L	2	Base Case	operation	709.0	133.06	135.46	DC	37.86
8279981	206323	28LAKEWOOD	JCP&L	206294	28LARRABEE	JCP&L	2	JC-P1-2-JCC-230-014	operation	817.0	161.27	164.29	DC	54.71
8279983	206323	28LAKEWOOD	JCP&L	206294	28LARRABEE	JCP&L	2	Base Case	operation	650.0	111.68	113.75	DC	29.91
8280013	206323	28LAKEWOOD	JCP&L	206294	28LARRABEE	JCP&L	1	JC-P1-2-JCC-230-013	operation	869.0	152.8	155.64	DC	54.72
8280015	206323	28LAKEWOOD	JCP&L	206294	28LARRABEE	JCP&L	1	Base Case	operation	709.0	102.65	104.55	DC	29.99
1979560	219100	NEWFRDM	PSE&G	219704	HILLTOP_3	PSE&G	1	PECO_P1-2_5014/* \$ CHESCO \$ PECO_P1-2_5014 \$ L	operation	740.0	103.16	105.67	DC	40.4
1979424	227900	CARDIFF	AE	219100	NEWFRDM	PSE&G	1	AE_P1-2 OY CK- CEDAR	operation	692.0	117.69	136.56	DC	130.55
1979468	227902	LEWIS #1	AE	227945	LEWIS #2	AE	1	AE_P1-2 BLE-ML-LEW2	operation	286.8	87.09	114.64	DC	78.98
1979337	227903	MILL #1	AE	227902	LEWIS #1	AE	1	AE_P1-2 BLE-ML-LEW2	operation	306.0	155.56	224.64	DC	211.35
1979339	227903	MILL #1	AE	227902	LEWIS #1	AE	1	Base Case	operation	218.0	104.18	155.11	DC	110.98
1979360	227904	MILL #2	AE	227945	LEWIS #2	AE	1	AE_P1-2 BLE-ML-LEW1	operation	282.0	126.23	185.84	DC	168.07

ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC DC	MW IMPACT
1979361	227904	MILL #2	AE	227945	LEWIS #2	AE	1	Base Case	operation	219.0	103.41	153.95	DC	110.65
1979329	227905	SCULL#1	AE	227903	MILL #1	AE	1	AE_P1-2 BLE-SC-ML2	operation	306.0	176.32	253.53	DC	236.23
1979331	227905	SCULL#1	AE	227903	MILL #1	AE	1	Base Case	operation	218.0	138.99	201.12	DC	135.41
1979321	227906	SCULL#2	AE	227904	MILL #2	AE	1	AE_P1-2 BLE-SC-ML1	operation	307.0	177.03	254.0	DC	236.27
1979323	227906	SCULL#2	AE	227904	MILL #2	AE	1	Base Case	operation	219.0	139.32	201.19	DC	135.48
1979484	227945	LEWIS #2	AE	227902	LEWIS #1	AE	1	AE_P1-2 BLE-ML-LEW1	operation	286.8	80.88	117.38	DC	104.64
1979518	227946	MILL#2	AE	227922	MILL #1	AE	1	AE_P1-2 ORCH-CUMB	operation	239.0	71.59	101.96	DC	72.56
1979293	227955	CEDAR	AE	206302	28OYSTER C	JCP&L	1	Base Case	operation	464.0	204.83	221.34	DC	76.63
1979303	228110	BLE	AE	227905	SCULL#1	AE	1	AE_P1-2 BLE-SC-ML2	operation	307.0	183.1	260.06	DC	236.23
1979305	228110	BLE	AE	227905	SCULL#1	AE	1	Base Case	operation	219.0	148.68	210.52	DC	135.41
1979312	228110	BLE	AE	227906	SCULL#2	AE	1	AE_P1-2 BLE-SC-ML1	operation	307.0	182.31	259.28	DC	236.27
1979314	228110	BLE	AE	227906	SCULL#2	AE	1	Base Case	operation	219.0	146.71	208.58	DC	135.48
1979508	228111	MDLE TP	AE	228107	CORSON 2	AE	1	AE_P1-2 MERION-CORSN	operation	315.0	75.27	121.56	DC	145.43
1979370	228502	MNOTLA 1	AE	228500	LANDIS	AE	1	AE_P1-2 OY CK-CEDAR	operation	286.0	143.03	151.51	DC	53.82
1979372	228502	MNOTLA 1	AE	228500	LANDIS	AE	1	Base Case	operation	230.0	155.43	164.42	DC	45.9
1979406	228503	MNOTLA 2	AE	228502	MNOTLA 1	AE	1	AE_P1-2 OY CK-CEDAR	operation	311.0	135.13	142.93	DC	53.82
1979411	228503	MNOTLA 2	AE	228502	MNOTLA 1	AE	1	Base Case	operation	311.0	115.03	121.68	DC	45.91
1979344	940360	AE2-020 TAP	AE	227955	CEDAR	AE	1	Base Case	operation	650.0	167.31	176.84	DC	62.0

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 AE2-023 project.

Secondary Point of Interconnection

PJM studied the AE2-023 project into the Atlantic City Electric Company (ACE) system at the Lewis 138 kV Substation (PSSE bus #227902) and evaluated it for compliance with reliability criteria for summer peak conditions in 2022.

Summer Peak Analysis - 2022

Transmission Network Impacts

Potential transmission network impacts are as follows:

Generator Deliverability

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

None

Multiple Facility Contingency

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

ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC DC	MW IMPACT
8279913	219110	GLOUCSTR	PSE&G	219125	CAMDEN	PSE&G	1	PS_P2-3_CUTB_1-4_LT	breaker	771.0	97.5	100.04	DC	42.61
8280352	227900	CARDIFF	AE	219100	NEWFRDM	PSE&G	1	JC-P7-1-JCC-230-13	tower	692.0	96.88	118.85	DC	152.08
14085971	227902	LEWIS #1	AE	227945	LEWIS #2	AE	1	AE_P4-2 AE33	breaker	286.8	44.3	156.59	DC	322.05
14086683	227902	LEWIS #1	AE	227945	LEWIS #2	AE	1	AE_P7-1 AE13TOWER	tower	286.8	71.82	143.94	DC	206.84
1979224	228110	BLE	AE	228197	MERION	AE	1	AE_P4-2 AE29	breaker	482.0	94.43	106.23	DC	56.42

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
8279590	213922	RICHMOND	PECO	214012	WANEETA3	PECO	1	PECO_P2-2_CHI230B1/* \$ DELCO \$ PECO_P2-2_CHI230B1 \$ B	bus	1180.0	100.64	103.87	DC	84.15
8279878	213922	RICHMOND	PECO	214012	WANEETA3	PECO	1	PECO_P4_CHICH045/* \$ DELCO \$ PECO_P4_CHICH045 \$ STBK	breaker	1180.0	100.64	103.86	DC	84.15
8279592	214206	RICHRE29	PECO	213922	RICHMOND	PECO	1	PECO_P2-2_CHI230B1/* \$ DELCO \$ PECO_P2-2_CHI230B1 \$ B	bus	1336.0	100.15	103.15	DC	87.79
8279880	214206	RICHRE29	PECO	213922	RICHMOND	PECO	1	PECO_P4_CHICH045/* \$ DELCO \$ PECO_P4_CHICH045 \$ STBK	breaker	1336.0	100.13	103.13	DC	87.79
1979250	219100	NEWFRDM	PSE&G	219704	HILLTOP_3	PSE&G	1	PECO_P4_PEACH215/* \$ CHESCO \$ PECO_P4_PEACH215 \$ STBK	breaker	740.0	117.54	120.12	DC	42.16
1979251	219100	NEWFRDM	PSE&G	219704	HILLTOP_3	PSE&G	1	PECO_P4_PEACH205/* \$ CHESCO \$ PECO_P4_PEACH205 \$ STBK	breaker	740.0	116.26	118.84	DC	42.15

ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC DC	MW IMPACT
8279591	219125	CAMDEN	PSE&G	214206	RICHRE29	PECO	1	PECO_P2-2_CHI230B1/* \$ DELCO \$ PECO_P2-2_CHI230B1 \$ B	bus	1336.0	100.16	103.16	DC	87.79
8279879	219125	CAMDEN	PSE&G	214206	RICHRE29	PECO	1	PECO_P4_CHICH045/* \$ DELCO \$ PECO_P4_CHICH045 \$ STBK	breaker	1336.0	100.15	103.15	DC	87.79
1979700	219702	HILLTOP_1	PSE&G	219101	BEAVERBK_1	PSE&G	1	PS_P7-1_V2274+P2242_LT	tower	740.0	102.99	105.69	DC	44.25
1979646	227900	CARDIFF	AE	219100	NEWFRDM	PSE&G	1	AE_P7-1 AE13TOWER	tower	692.0	128.31	153.76	DC	176.14
14085919	227900	CARDIFF	AE	227955	CEDAR	AE	1	AE_P4-2 AE7	breaker	805.0	119.28	132.25	DC	104.34
14085920	227900	CARDIFF	AE	227955	CEDAR	AE	1	AE_P4-2 AE6	breaker	805.0	119.27	132.23	DC	104.36
1979073	227955	CEDAR	AE	206302	28OYSTER C	JCP&L	1	JC-P2-3-JCC-500-002D	breaker	564.0	151.11	167.53	DC	92.63
1979074	227955	CEDAR	AE	206302	28OYSTER C	JCP&L	1	JC-P2-3-JCC-500-002B	breaker	564.0	149.27	165.81	DC	93.3
1979130	228106	CORSON 1	AE	228185	CORSON#1	AE	1	AE_P4-2 AE16	breaker	168.0	114.56	123.62	DC	33.55
1979373	228502	MNOTLA 1	AE	228500	LANDIS	AE	1	AE_P1-2 OY CK-CEDAR	single	286.0	124.51	128.88	DC	12.51
1979374	228502	MNOTLA 1	AE	228500	LANDIS	AE	1	Base Case	single	230.0	136.66	141.39	DC	10.89
1979622	228502	MNOTLA 1	AE	228500	LANDIS	AE	1	AE_P7-1 AE6TOWER	tower	286.0	158.03	183.17	DC	71.73
8280341	228502	MNOTLA 1	AE	228500	LANDIS	AE	1	JC-P7-1-JCC-230-13	tower	286.0	139.15	163.68	DC	70.15
1979409	228503	MNOTLA 2	AE	228502	MNOTLA 1	AE	1	AE_P1-2 OY CK-CEDAR	single	311.0	116.23	120.25	DC	12.51
1979413	228503	MNOTLA 2	AE	228502	MNOTLA 1	AE	1	Base Case	single	311.0	102.84	106.34	DC	10.89
1979630	228503	MNOTLA 2	AE	228502	MNOTLA 1	AE	1	AE_P7-1 AE6TOWER	tower	311.0	145.37	168.49	DC	71.74
8280367	228503	MNOTLA 2	AE	228502	MNOTLA 1	AE	1	JC-P7-1-JCC-230-13	tower	311.0	131.49	154.06	DC	70.16
14086271	228503	MNOTLA 2	AE	228502	MNOTLA 1	AE	1	AE_P1-2 CARD-CEDAR	single	311.0	116.83	120.64	DC	11.85

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
8279936	206302	28OYSTER C	JCP&L	206297	28MANITOU	JCP&L	1	JC-P1-2-JCC-230-022	operation	817.0	118.14	122.65	DC	81.76
8279958	206302	28OYSTER C	JCP&L	206297	28MANITOU	JCP&L	2	JC-P1-2-JCC-230-021	operation	869.0	111.09	115.33	DC	81.78
1979560	219100	NEWFRDM	PSE&G	219704	HILLTOP_3	PSE&G	1	PECO_P1-2_5014/* \$ CHESCO \$ PECO_P1-2_5014 \$ L	operation	740.0	116.26	118.84	DC	42.16
8280296	219108	CUTHBERT	PSE&G	219125	CAMDEN	PSE&G	1	PS_P1-2_U-2299_LT	operation	771.0	100.16	102.94	DC	46.63
1979561	219110	GLOUCSTR	PSE&G	219755	CUTHBERT_4	PSE&G	1	PS_P1-2_C-2308_LT	operation	758.0	105.72	108.35	DC	43.59

ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC DC	MW IMPACT
8280294	219110	GLOUCSTR	PSE&G	219125	CAMDEN	PSE&G	1	Base Case	operation	500.0	100.97	103.59	DC	28.59
8280298	219110	GLOUCSTR	PSE&G	219753	CUTHBERT_2	PSE&G	1	PS_P1-2_D-2282_LT	operation	771.0	98.61	101.07	DC	41.33
1979424	227900	CARDIFF	AE	219100	NEWFRDM	PSE&G	1	AE_P1-2_OY CK-CEDAR	operation	692.0	118.5	141.04	DC	155.98
8280061	227900	CARDIFF	AE	219100	NEWFRDM	PSE&G	1	Base Case	operation	650.0	88.88	106.94	DC	117.35
14086259	227900	CARDIFF	AE	227955	CEDAR	AE	1	PS_P1-2_2310A	operation	805.0	118.84	131.96	DC	105.61
14086260	227900	CARDIFF	AE	227955	CEDAR	AE	1	Base Case	operation	650.0	124.45	135.43	DC	71.33
14086358	227902	LEWIS #1	AE	227945	LEWIS #2	AE	1	AE_P1-2 LANDIS-MINO	operation	286.8	71.59	143.83	DC	207.19
1979293	227955	CEDAR	AE	206302	28OYSTER C	JCP&L	1	Base Case	operation	464.0	152.31	171.58	DC	89.41
1979294	227955	CEDAR	AE	206302	28OYSTER C	JCP&L	1	PECO_P1-2_5038/* \$ CHESCO \$ PECO_P1-2_5038 \$ L	operation	564.0	148.77	165.36	DC	93.55
1979370	228502	MNOTLA 1	AE	228500	LANDIS	AE	1	AE_P1-2_OY CK-CEDAR	operation	286.0	142.49	167.35	DC	71.09
1979372	228502	MNOTLA 1	AE	228500	LANDIS	AE	1	Base Case	operation	230.0	159.67	186.56	DC	61.85
1979406	228503	MNOTLA 2	AE	228502	MNOTLA 1	AE	1	AE_P1-2_OY CK-CEDAR	operation	311.0	134.64	157.5	DC	71.1
1979411	228503	MNOTLA 2	AE	228502	MNOTLA 1	AE	1	Base Case	operation	311.0	118.17	138.06	DC	61.86

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
1979068	227905	SCULL#1	AE	227903	MILL #1	AE	1	AE_P4-2 AE29	breaker	306.0	191.04	277.83	DC	265.52

Bus #	Bus	MW Impact
228202	CUMB CT	1.18
228203	P06	1.15
228206	SHRMN CT	1.05
228261	V4-054E	0.63
228711	V2-041C	0.03
228712	V2-041E	0.44
292062	V1-021 C	0.07
292063	V1-021 E	0.09
913341	Y1-077	32.48
924531	AB2-102 C	36.79
924532	AB2-102 E	0.82
938781	AE1-104 C O1	83.14
938782	AE1-104 E O1	212.68
939501	AE1-179 C O1	4.52
939502	AE1-179 E O1	3.19
940001	AE1-240 C O1	3.76
940002	AE1-240 E O1	2.69
940391	AE2-023 C O1	46.73
940392	AE2-023 E O1	218.79
940961	AE2-087 C	0.15
940962	AE2-087 E	0.21
940963	AE2-087 BAT	0.06
941001	AE2-091 C O1	2.69
941002	AE2-091 E O1	1.4
941121	AE2-106 C	0.17
941122	AE2-106 E	0.23
941123	AE2-106 BAT	0.06
941931	AE2-205 C O1	7.65
941932	AE2-205 E O1	5.1

Bus #	Bus	MW Impact
BLUEG	BLUEG	0.93
CALDERWOOD	CALDERWOOD	0.1
CANNELTON	CANNELTON	0.06
CARR	CARR	0.12
CATAWBA	CATAWBA	0.06
CHEOAH	CHEOAH	0.09
CHILHOWEE	CHILHOWEE	0.03
COFFEEN	COFFEEN	0.1
COTTONWOOD	COTTONWOOD	0.38
DUCKCREEK	DUCKCREEK	0.21
EDWARDS	EDWARDS	0.1
ELMERSMITH	ELMERSMITH	0.1
FARMERCITY	FARMERCITY	0.06
G-007	G-007	0.7
GIBSON	GIBSON	0.04
HAMLET	HAMLET	0.1
NEWTON	NEWTON	0.26
O-066	O-066	2.78
PRAIRIE	PRAIRIE	0.48
RENSSELAER	RENSSELAER	0.1
SANTEETLA	SANTEETLA	0.03
SMITHLAND	SMITHLAND	0.04
TATANKA	TATANKA	0.12
TILTON	TILTON	0.12
TRIMBLE	TRIMBLE	0.1
TVA	TVA	0.32
UNIONPOWER	UNIONPOWER	0.14

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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
1979083	227906	SCULL#2	AE	227904	MILL #2	AE	1	AE_P4-2 AE28	breaker	307.0	178.59	255.56	DC	236.27

Bus #	Bus	MW Impact
228202	CUMB CT	1.37
228203	P06	1.34
228206	SHRMN CT	1.22
228261	V4-054E	0.74
228711	V2-041C	0.04
228712	V2-041E	0.51
292062	V1-021 C	0.08
292063	V1-021 E	0.1
913341	Y1-077	28.91
924531	AB2-102 C	42.92
924532	AB2-102 E	0.95
936411	AD2-052 C	0.4
936412	AD2-052 E	0.2
938421	AE1-061 C	0.16
938422	AE1-061 E	0.16

Bus #	Bus	MW Impact
938781	AE1-104 C O1	73.98
938782	AE1-104 E O1	189.25
939501	AE1-179 C O1	5.28
939502	AE1-179 E O1	3.73
940001	AE1-240 C O1	4.39
940002	AE1-240 E O1	3.14
940391	AE2-023 C O1	41.59
940392	AE2-023 E O1	194.69
940961	AE2-087 C	0.17
940962	AE2-087 E	0.24
940963	AE2-087 BAT	0.07
941001	AE2-091 C O1	3.14
941002	AE2-091 E O1	1.64
941121	AE2-106 C	0.19
941122	AE2-106 E	0.27
941123	AE2-106 BAT	0.07
941931	AE2-205 C O1	8.93
941932	AE2-205 E O1	5.95
BLUEG	BLUEG	0.88
CALDERWOOD	CALDERWOOD	0.09
CANNELTON	CANNELTON	0.05
CARR	CARR	0.13
CATAWBA	CATAWBA	0.06
CHEOAH	CHEOAH	0.09
CHILHOWEE	CHILHOWEE	0.03
COFFEEN	COFFEEN	0.09
COTTONWOOD	COTTONWOOD	0.36
DUCKCREEK	DUCKCREEK	0.2
EDWARDS	EDWARDS	0.09
ELMERSMITH	ELMERSMITH	0.09
FARMERCITY	FARMERCITY	0.06
G-007	G-007	0.77
GIBSON	GIBSON	0.04
HAMLET	HAMLET	0.1
NEWTON	NEWTON	0.24
O-066	O-066	2.97
PRAIRIE	PRAIRIE	0.45
RENSSELAER	RENSSELAER	0.1
SANTEETLA	SANTEETLA	0.03
SMITHLAND	SMITHLAND	0.04
TATANKA	TATANKA	0.11
TILTON	TILTON	0.11
TRIMBLE	TRIMBLE	0.1
TVA	TVA	0.3
UNIONPOWER	UNIONPOWER	0.14

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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
1979063	228110	BLE	AE	227905	SCULL#1	AE	1	AE_P4-2 AE29	breaker	307.0	197.78	284.28	DC	265.52

Bus #	Bus	MW Impact
228202	CUMB CT	1.18
228203	P06	1.15
228206	SHRMN CT	1.05
228261	V4-054E	0.63
228711	V2-041C	0.03
228712	V2-041E	0.44
292062	V1-021 C	0.07
292063	V1-021 E	0.09
913341	Y1-077	32.48
924531	AB2-102 C	36.79
924532	AB2-102 E	0.82
938781	AE1-104 C O1	83.14
938782	AE1-104 E O1	212.68
939501	AE1-179 C O1	4.52
939502	AE1-179 E O1	3.19
940001	AE1-240 C O1	3.76
940002	AE1-240 E O1	2.69
940391	AE2-023 C O1	46.73
940392	AE2-023 E O1	218.79
940961	AE2-087 C	0.15
940962	AE2-087 E	0.21
940963	AE2-087 BAT	0.06
941001	AE2-091 C O1	2.69
941002	AE2-091 E O1	1.4
941121	AE2-106 C	0.17
941122	AE2-106 E	0.23
941123	AE2-106 BAT	0.06
941931	AE2-205 C O1	7.65
941932	AE2-205 E O1	5.1
BLUEG	BLUEG	0.93
CALDERWOOD	CALDERWOOD	0.1
CANNELTON	CANNELTON	0.06
CARR	CARR	0.12
CATAWBA	CATAWBA	0.06
CHEOAH	CHEOAH	0.09
CHILHOWEE	CHILHOWEE	0.03
COFFEEN	COFFEEN	0.1
COTTONWOOD	COTTONWOOD	0.38
DUCKCREEK	DUCKCREEK	0.21
EDWARDS	EDWARDS	0.1
ELMERSMITH	ELMERSMITH	0.1
FARMERCITY	FARMERCITY	0.06
G-007	G-007	0.7
GIBSON	GIBSON	0.04
HAMLET	HAMLET	0.1
NEWTON	NEWTON	0.26
O-066	O-066	2.78
PRAIRIE	PRAIRIE	0.48
RENSSELAER	RENSSELAER	0.1
SANTEETLA	SANTEETLA	0.03
SMITHLAND	SMITHLAND	0.04

Bus #	Bus	MW Impact
TATANKA	TATANKA	0.12
TILTON	TILTON	0.12
TRIMBLE	TRIMBLE	0.1
TVA	TVA	0.32
UNIONPOWER	UNIONPOWER	0.14

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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
1979078	228110	BLE	AE	227906	SCULL#2	AE	1	AE_P4-2 AE28	breaker	307.0	183.87	260.84	DC	236.27

Bus #	Bus	MW Impact
228202	CUMB CT	1.37
228203	P06	1.34
228206	SHRMN CT	1.22
228261	V4-054E	0.74
228711	V2-041C	0.04
228712	V2-041E	0.51
292062	V1-021 C	0.08
292063	V1-021 E	0.1
913341	Y1-077	28.91
924531	AB2-102 C	42.92
924532	AB2-102 E	0.95
936411	AD2-052 C	0.4
936412	AD2-052 E	0.2
938421	AE1-061 C	0.16
938422	AE1-061 E	0.16
938781	AE1-104 C O1	73.98
938782	AE1-104 E O1	189.25
939501	AE1-179 C O1	5.28
939502	AE1-179 E O1	3.73
940001	AE1-240 C O1	4.39
940002	AE1-240 E O1	3.14
940391	AE2-023 C O1	41.59
940392	AE2-023 E O1	194.69
940961	AE2-087 C	0.17
940962	AE2-087 E	0.24
940963	AE2-087 BAT	0.07
941001	AE2-091 C O1	3.14
941002	AE2-091 E O1	1.64
941121	AE2-106 C	0.19
941122	AE2-106 E	0.27
941123	AE2-106 BAT	0.07
941931	AE2-205 C O1	8.93
941932	AE2-205 E O1	5.95
BLUEG	BLUEG	0.88
CALDERWOOD	CALDERWOOD	0.09
CANNELTON	CANNELTON	0.05
CARR	CARR	0.13

Bus #	Bus	MW Impact
CATAWBA	CATAWBA	0.06
CHEOAH	CHEOAH	0.09
CHILHOWEE	CHILHOWEE	0.03
COFFEEN	COFFEEN	0.09
COTTONWOOD	COTTONWOOD	0.36
DUCKCREEK	DUCKCREEK	0.2
EDWARDS	EDWARDS	0.09
ELMERSMITH	ELMERSMITH	0.09
FARMERCITY	FARMERCITY	0.06
G-007	G-007	0.77
GIBSON	GIBSON	0.04
HAMLET	HAMLET	0.1
NEWTON	NEWTON	0.24
O-066	O-066	2.97
PRAIRIE	PRAIRIE	0.45
RENSSELAER	RENSSELAER	0.1
SANTEETLA	SANTEETLA	0.03
SMITHLAND	SMITHLAND	0.04
TATANKA	TATANKA	0.11
TILTON	TILTON	0.11
TRIMBLE	TRIMBLE	0.1
TVA	TVA	0.3
UNIONPOWER	UNIONPOWER	0.14

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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
8279878	213922	RICHMOND	PECO	214012	WANEETA3	PECO	1	PECO_P4_CHICH045/* \$ DELCO \$ PECO_P4_CHICH045 \$ STBK	breaker	1180.0	99.46	102.72	DC	84.89

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

Bus #	Bus	MW Impact
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
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

Bus #	Bus	MW Impact
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
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

Bus #	Bus	MW Impact
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
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

Bus #	Bus	MW Impact
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
8279880	214206	RICHRE29	PECO	213922	RICHMOND	PECO	1	PECO_P4_CHICH045/* \$ DELCO \$ PECO_P4_CHICH045 \$ STBK	breaker	1336.0	98.88	101.91	DC	88.96

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

Bus #	Bus	MW Impact
904042	V4-005 E	0.4
904432	W3-124 E	0.4
905792	W4-103 E	0.97
907381	X1-070 C	0.05
907382	X1-070 E	0.77
907391	X1-071 C	0.01
907392	X1-071 E	0.26
909032	X2-013 E	0.7
910862	X3-075 E	1.18
913332	Y1-075 E	0.39
914231	Y2-081 C OP1	1.35
914232	Y2-081 E OP1	0.07
915022	Y3-012 E	1.47
915072	Y3-026 E	1.1
915591	Y3-087 C OP1	0.06
915592	Y3-087 E OP1	0.89
916292	Z1-082 E	0.38
917381	Z2-062	0.14
919901	AB1-000 1	1.04
919911	AB1-000 2	1.04
919921	AB1-000 3	1.04
924051	AB2-049 C	0.91
924052	AB2-049 E	1.48
924531	AB2-102 C	45.91
924532	AB2-102 E	1.02
924701	AB2-122 C	0.14
924702	AB2-122 E	0.23
925391	AC1-010 C	0.87
925392	AC1-010 E	1.5
925442	AC1-016 E	0.97
925452	AC1-017 E	0.56
925561	AC1-030 C	0.04
925562	AC1-030 E	0.52
930002	AB1-001 E	0.28
930102	AB1-025 E	0.94
930242	AB1-063 E	0.15
930722	AB1-116 E	0.19
930732	AB1-119 E	0.17
931191	AB1-169A	126.85
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

Bus #	Bus	MW Impact
936491	AD2-064 C	0.12
936492	AD2-064 E	0.17
936501	AD2-065 C	0.51
936502	AD2-065 E	0.71
936541	AD2-069 C	0.51
936542	AD2-069 E	0.25
937011	AD2-135 C	0.14
937012	AD2-135 E	0.24
938311	AE1-046 C	0.46
938312	AE1-046 E	0.23
938421	AE1-061 C	0.61
938422	AE1-061 E	0.61
938431	AE1-062 C	1.23
938432	AE1-062 E	1.23
938611	AE1-083 C	0.35
938612	AE1-083 E	0.49
938781	AE1-104 C O1	27.85
938782	AE1-104 E O1	71.26
938871	AE1-115 C	1.36
938872	AE1-115 E	1.36
939301	AE1-161 C	2.57
939302	AE1-161 E	3.85
939501	AE1-179 C O1	7.79
939502	AE1-179 E O1	5.5
939821	AE1-218 C O1	0.2
939822	AE1-218 E O1	0.3
939831	AE1-219 C O1	0.44
939832	AE1-219 E O1	0.64
939931	AE1-229 C O1	21.94
939932	AE1-229 E O1	14.86
940001	AE1-240 C O1	6.46
940002	AE1-240 E O1	4.61
940281	AE2-011 C	0.31
940282	AE2-011 E	0.42
940361	AE2-020 C O1	17.69
940362	AE2-020 E O1	82.8
940371	AE2-021 C O1	17.69
940372	AE2-021 E O1	82.8
940381	AE2-022 C O1	10.32
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

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

Bus #	Bus	MW Impact
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
8279879	219125	CAMDEN	PSE&G	214206	RICHRE29	PECO	1	PECO_P4_CHICH045/* \$ DELCO \$ PECO_P4_CHICH045 \$ STBK	breaker	1336.0	98.89	101.93	DC	88.96

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

Bus #	Bus	MW Impact
907382	X1-070 E	0.77
907391	X1-071 C	0.01
907392	X1-071 E	0.26
909032	X2-013 E	0.7
910862	X3-075 E	1.18
913332	Y1-075 E	0.39
914231	Y2-081 C OP1	1.35
914232	Y2-081 E OP1	0.07
915022	Y3-012 E	1.47
915072	Y3-026 E	1.1
915591	Y3-087 C OP1	0.06
915592	Y3-087 E OP1	0.89
916292	Z1-082 E	0.38
917381	Z2-062	0.14
919901	AB1-000 1	1.04
919911	AB1-000 2	1.04
919921	AB1-000 3	1.04
924051	AB2-049 C	0.91
924052	AB2-049 E	1.48
924531	AB2-102 C	45.91
924532	AB2-102 E	1.02
924701	AB2-122 C	0.14
924702	AB2-122 E	0.23
925391	AC1-010 C	0.87
925392	AC1-010 E	1.5
925442	AC1-016 E	0.97
925452	AC1-017 E	0.56
925561	AC1-030 C	0.04
925562	AC1-030 E	0.52
930002	AB1-001 E	0.28
930102	AB1-025 E	0.94
930242	AB1-063 E	0.15
930722	AB1-116 E	0.19
930732	AB1-119 E	0.17
931191	AB1-169A	126.85
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

Bus #	Bus	MW Impact
936541	AD2-069 C	0.51
936542	AD2-069 E	0.25
937011	AD2-135 C	0.14
937012	AD2-135 E	0.24
938311	AE1-046 C	0.46
938312	AE1-046 E	0.23
938421	AE1-061 C	0.61
938422	AE1-061 E	0.61
938431	AE1-062 C	1.23
938432	AE1-062 E	1.23
938611	AE1-083 C	0.35
938612	AE1-083 E	0.49
938781	AE1-104 C O1	27.85
938782	AE1-104 E O1	71.26
938871	AE1-115 C	1.36
938872	AE1-115 E	1.36
939301	AE1-161 C	2.57
939302	AE1-161 E	3.85
939501	AE1-179 C O1	7.79
939502	AE1-179 E O1	5.5
939821	AE1-218 C O1	0.2
939822	AE1-218 E O1	0.3
939831	AE1-219 C O1	0.44
939832	AE1-219 E O1	0.64
939931	AE1-229 C O1	21.94
939932	AE1-229 E O1	14.86
940001	AE1-240 C O1	6.46
940002	AE1-240 E O1	4.61
940281	AE2-011 C	0.31
940282	AE2-011 E	0.42
940361	AE2-020 C O1	17.69
940362	AE2-020 E O1	82.8
940371	AE2-021 C O1	17.69
940372	AE2-021 E O1	82.8
940381	AE2-022 C O1	10.32
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

Bus #	Bus	MW Impact
941051	AE2-097 C	0.25
941052	AE2-097 E	0.41
941071	AE2-101 C	0.46
941072	AE2-101 E	0.63
941121	AE2-106 C	0.38
941122	AE2-106 E	0.52
941123	AE2-106 BAT	0.13
941441	AE2-141 C	0.26
941442	AE2-141 E	0.42
941471	AE2-144 C	0.55
941472	AE2-144 E	0.97
941931	AE2-205 C O1	9.55
941932	AE2-205 E O1	6.37
942011	AE2-213 C	0.41
942012	AE2-213 E	0.7
942101	AE2-222 C O1	16.74
942102	AE2-222 E O1	42.04
942571	AE2-272	0.36
942941	AE2-314 C	8.2
942942	AE2-314 E	5.47
943071	AE2-334 C	7.11
943072	AE2-334 E	3.79
943081	AE2-335 C O1	10.23
943082	AE2-335 E O1	4.56
BLUEG	BLUEG	5.69
CALDERWOOD	CALDERWOOD	0.61
CANNELTON	CANNELTON	0.34
CATAWBA	CATAWBA	0.39
CBM-N	CBM-N	0.34
CHEOAH	CHEOAH	0.56
CHILHOWEE	CHILHOWEE	0.2
COFFEEN	COFFEEN	0.6
COTTONWOOD	COTTONWOOD	2.36
DUCKCREEK	DUCKCREEK	1.31
EDWARDS	EDWARDS	0.6
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
1979223	227903	MILL #1	AE	227904	MILL #2	AE	1	AE_P4-2 AE29	breaker	478.0	76.03	108.71	DC	156.19

Bus #	Bus	MW Impact
228261	V4-054E	0.34
228712	V2-041E	0.24
292062	V1-021 C	0.04
292063	V1-021 E	0.05
913341	Y1-077	19.11
924531	AB2-102 C	19.48
924532	AB2-102 E	0.43
938781	AE1-104 C O1	48.9
938782	AE1-104 E O1	125.1
939501	AE1-179 C O1	2.43
939502	AE1-179 E O1	1.72
940001	AE1-240 C O1	2.02
940002	AE1-240 E O1	1.45
940391	AE2-023 C O1	27.49
940392	AE2-023 E O1	128.69
940961	AE2-087 C	0.08
940962	AE2-087 E	0.11
940963	AE2-087 BAT	0.03
941001	AE2-091 C O1	1.45
941002	AE2-091 E O1	0.75
941121	AE2-106 C	0.09
941122	AE2-106 E	0.12
941123	AE2-106 BAT	0.03
941931	AE2-205 C O1	4.05
941932	AE2-205 E O1	2.7
BLUEG	BLUEG	0.54
CALDERWOOD	CALDERWOOD	0.06
CANNELTON	CANNELTON	0.03
CARR	CARR	0.07
CATAWBA	CATAWBA	0.04
CHEOAH	CHEOAH	0.05
CHILHOWEE	CHILHOWEE	0.02
COFFEEN	COFFEEN	0.06
COTTONWOOD	COTTONWOOD	0.22
DUCKCREEK	DUCKCREEK	0.12
EDWARDS	EDWARDS	0.06
ELMERSMITH	ELMERSMITH	0.06
FARMERCITY	FARMERCITY	0.04
G-007	G-007	0.41
GIBSON	GIBSON	0.02
HAMLET	HAMLET	0.06
NEWTON	NEWTON	0.15
O-066	O-066	1.6
PRAIRIE	PRAIRIE	0.28

Bus #	Bus	MW Impact
RENSSELAER	RENSSELAER	0.06
SANTEETLA	SANTEETLA	0.02
SMITHLAND	SMITHLAND	0.02
TATANKA	TATANKA	0.07
TILTON	TILTON	0.07
TRIMBLE	TRIMBLE	0.06
TVA	TVA	0.19
UNIONPOWER	UNIONPOWER	0.08

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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
1979675	227904	MILL #2	AE	227946	MILL#2	AE	1	AE_P7-1 AE6TOWER	tower	279.0	78.14	112.8	DC	96.69

Bus #	Bus	MW Impact
913341	Y1-077	11.83
938781	AE1-104 C O1	30.27
938782	AE1-104 E O1	77.45
940391	AE2-023 C O1	17.02
940392	AE2-023 E O1	79.67
BLUEG	BLUEG	0.23
CALDERWOOD	CALDERWOOD	0.03
CANNELTON	CANNELTON	0.01
CARR	CARR	0.01
CATAWBA	CATAWBA	0.02
CHEOAH	CHEOAH	0.02
CHILHOWEE	CHILHOWEE	0.01
COFFEEN	COFFEEN	0.02
COTTONWOOD	COTTONWOOD	0.1
DUCKCREEK	DUCKCREEK	0.05
EDWARDS	EDWARDS	0.02
ELMERSMITH	ELMERSMITH	0.02
FARMERCITY	FARMERCITY	0.02
G-007A	G-007A	0.02
GIBSON	GIBSON	0.01
HAMLET	HAMLET	0.03
NEWTON	NEWTON	0.06
O-066	O-066	0.11
PRAIRIE	PRAIRIE	0.12
RENSSELAER	RENSSELAER	0.01
SANTEETLA	SANTEETLA	0.01
SMITHLAND	SMITHLAND	0.01
TATANKA	TATANKA	0.03
TILTON	TILTON	0.03
TRIMBLE	TRIMBLE	0.03
TVA	TVA	0.08
UNIONPOWER	UNIONPOWER	0.04

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ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC DC	MW IMPACT
1979684	228106	CORSON 1	AE	228107	CORSON 2	AE	1	AE_P7-1 AE7TOWER	tower	478.0	64.18	103.66	DC	188.73

Bus #	Bus	MW Impact
292062	V1-021 C	0.07
292063	V1-021 E	0.08
913341	Y1-077	23.09
938781	AE1-104 C O1	59.09
938782	AE1-104 E O1	151.17
940391	AE2-023 C O1	33.22
940392	AE2-023 E O1	155.51
BLUEG	BLUEG	0.51
CALDERWOOD	CALDERWOOD	0.06
CANNELTON	CANNELTON	0.03
CARR	CARR	0.03
CATAWBA	CATAWBA	0.04
CHEOAH	CHEOAH	0.05
CHILHOWEE	CHILHOWEE	0.02
COFFEEN	COFFEEN	0.05
COTTONWOOD	COTTONWOOD	0.21
DUCKCREEK	DUCKCREEK	0.12
EDWARDS	EDWARDS	0.05
ELMERSMITH	ELMERSMITH	0.05
FARMERCITY	FARMERCITY	0.04
G-007	G-007	0.07
GIBSON	GIBSON	0.02
HAMLET	HAMLET	0.06
NEWTON	NEWTON	0.14
O-066	O-066	0.57
PRAIRIE	PRAIRIE	0.26
RENSSELAER	RENSSELAER	0.03
SANTEETLA	SANTEETLA	0.01
SMITHLAND	SMITHLAND	0.02
TATANKA	TATANKA	0.06
TILTON	TILTON	0.06
TRIMBLE	TRIMBLE	0.06
TVA	TVA	0.18
UNIONPOWER	UNIONPOWER	0.08

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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
1979693	228107	CORSON 2	AE	228216	DENNIS	AE	1	AE_P7-1 AE7TOWER	tower	478.0	56.38	100.99	DC	213.22

Bus #	Bus	MW Impact
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Bus #	Bus	MW Impact
228712	V2-041E	0.21
292062	V1-021 C	0.08
292063	V1-021 E	0.1
913341	Y1-077	26.09
938781	AE1-104 C O1	66.76
938782	AE1-104 E O1	170.79
939501	AE1-179 C O1	1.92
939502	AE1-179 E O1	1.36
940001	AE1-240 C O1	1.6
940002	AE1-240 E O1	1.14
940391	AE2-023 C O1	37.53
940392	AE2-023 E O1	175.69
BLUEG	BLUEG	0.66
CALDERWOOD	CALDERWOOD	0.07
CANNELTON	CANNELTON	0.04
CARR	CARR	0.04
CATAWBA	CATAWBA	0.05
CHEOAH	CHEOAH	0.07
CHILHOWEE	CHILHOWEE	0.02
COFFEEN	COFFEEN	0.07
COTTONWOOD	COTTONWOOD	0.28
DUCKCREEK	DUCKCREEK	0.15
EDWARDS	EDWARDS	0.07
ELMERSMITH	ELMERSMITH	0.07
FARMERCITY	FARMERCITY	0.05
G-007	G-007	0.12
GIBSON	GIBSON	0.03
HAMLET	HAMLET	0.08
NEWTON	NEWTON	0.18
O-066	O-066	0.79
PRAIRIE	PRAIRIE	0.34
RENSSELAER	RENSSELAER	0.04
SANTEETLA	SANTEETLA	0.02
SMITHLAND	SMITHLAND	0.03
TATANKA	TATANKA	0.08
TILTON	TILTON	0.08
TRIMBLE	TRIMBLE	0.07
TVA	TVA	0.23
UNIONPOWER	UNIONPOWER	0.1

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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
1979637	228110	BLE	AE	228197	MERION	AE	1	AE_P7-1 AE7TOWER	tower	482.0	101.98	146.99	DC	216.93

Bus #	Bus	MW Impact
913341	Y1-077	26.54
938781	AE1-104 C O1	67.92
938782	AE1-104 E O1	173.76

Bus #	Bus	MW Impact
940391	AE2-023 C O1	38.18
940392	AE2-023 E O1	178.75
BLUEG	BLUEG	0.6
CALDERWOOD	CALDERWOOD	0.07
CANNELTON	CANNELTON	0.04
CARR	CARR	0.04
CATAWBA	CATAWBA	0.04
CHEOAH	CHEOAH	0.06
CHILHOWEE	CHILHOWEE	0.02
COFFEEN	COFFEEN	0.06
COTTONWOOD	COTTONWOOD	0.25
DUCKCREEK	DUCKCREEK	0.14
EDWARDS	EDWARDS	0.06
ELMERSMITH	ELMERSMITH	0.06
FARMERCITY	FARMERCITY	0.04
G-007	G-007	0.13
GIBSON	GIBSON	0.02
HAMLET	HAMLET	0.07
NEWTON	NEWTON	0.17
O-066	O-066	0.81
PRAIRIE	PRAIRIE	0.31
RENSSELAER	RENSSELAER	0.03
SANTEETLA	SANTEETLA	0.02
SMITHLAND	SMITHLAND	0.02
TATANKA	TATANKA	0.08
TILTON	TILTON	0.08
TRIMBLE	TRIMBLE	0.07
TVA	TVA	0.21
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
1979644	228110	BLE	AE	228111	MDLE TP	AE	1	AE_P7-1 AE7TOWER	tower	482.0	91.76	138.78	DC	226.64

Bus #	Bus	MW Impact
913341	Y1-077	27.73
938781	AE1-104 C O1	70.97
938782	AE1-104 E O1	181.54
940391	AE2-023 C O1	39.89
940392	AE2-023 E O1	186.75
BLUEG	BLUEG	0.63
CALDERWOOD	CALDERWOOD	0.07
CANNELTON	CANNELTON	0.04
CARR	CARR	0.05
CATAWBA	CATAWBA	0.04
CHEOAH	CHEOAH	0.06
CHILHOWEE	CHILHOWEE	0.02
COFFEEN	COFFEEN	0.07

Bus #	Bus	MW Impact
COTTONWOOD	COTTONWOOD	0.26
DUCKCREEK	DUCKCREEK	0.14
EDWARDS	EDWARDS	0.07
ELMERSMITH	ELMERSMITH	0.07
FARMERCITY	FARMERCITY	0.04
G-007	G-007	0.13
GIBSON	GIBSON	0.03
HAMLET	HAMLET	0.07
NEWTON	NEWTON	0.17
O-066	O-066	0.84
PRAIRIE	PRAIRIE	0.32
RENSSELAER	RENSSELAER	0.04
SANTEETLA	SANTEETLA	0.02
SMITHLAND	SMITHLAND	0.03
TATANKA	TATANKA	0.08
TILTON	TILTON	0.08
TRIMBLE	TRIMBLE	0.07
TVA	TVA	0.22
UNIONPOWER	UNIONPOWER	0.1

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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
1979647	228197	MERION	AE	228106	CORSON 1	AE	1	AE_P7-1 AE7TOWER	tower	478.0	88.63	134.12	DC	217.48

Bus #	Bus	MW Impact
913341	Y1-077	26.61
938781	AE1-104 C O1	68.1
938782	AE1-104 E O1	174.2
940391	AE2-023 C O1	38.28
940392	AE2-023 E O1	179.2
BLUEG	BLUEG	0.6
CALDERWOOD	CALDERWOOD	0.07
CANNELTON	CANNELTON	0.04
CARR	CARR	0.04
CATAWBA	CATAWBA	0.04
CHEOAH	CHEOAH	0.06
CHILHOWEE	CHILHOWEE	0.02
COFFEEN	COFFEEN	0.06
COTTONWOOD	COTTONWOOD	0.25
DUCKCREEK	DUCKCREEK	0.14
EDWARDS	EDWARDS	0.06
ELMERSMITH	ELMERSMITH	0.06
FARMERCITY	FARMERCITY	0.04
G-007	G-007	0.13
GIBSON	GIBSON	0.02
HAMLET	HAMLET	0.07
NEWTON	NEWTON	0.17
O-066	O-066	0.81

Bus #	Bus	MW Impact
PRAIRIE	PRAIRIE	0.31
RENSSELAER	RENSSELAER	0.03
SANTEETLA	SANTEETLA	0.02
SMITHLAND	SMITHLAND	0.02
TATANKA	TATANKA	0.08
TILTON	TILTON	0.08
TRIMBLE	TRIMBLE	0.07
TVA	TVA	0.21
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
1979676	228207	CUMB	AE	228002	ORCHARD	AE	1	AE_P7-1 AE7TOWER	tower	799.0	73.17	110.38	DC	297.27

Bus #	Bus	MW Impact
228202	CUMB CT	4.38
228203	P06	5.2
228206	SHRMN CT	3.82
228261	V4-054E	2.21
228711	V2-041C	0.12
228712	V2-041E	1.58
292062	V1-021 C	0.16
292063	V1-021 E	0.2
913341	Y1-077	36.37
924531	AB2-102 C	166.43
924532	AB2-102 E	3.7
936411	AD2-052 C	0.99
936412	AD2-052 E	0.49
938781	AE1-104 C O1	93.08
938782	AE1-104 E O1	238.11
939501	AE1-179 C O1	16.32
939502	AE1-179 E O1	11.51
940001	AE1-240 C O1	13.54
940002	AE1-240 E O1	9.67
940391	AE2-023 C O1	52.32
940392	AE2-023 E O1	244.95
940961	AE2-087 C	0.52
940962	AE2-087 E	0.72
940963	AE2-087 BAT	0.2
941001	AE2-091 C O1	9.58
941002	AE2-091 E O1	5.0
941121	AE2-106 C	0.58
941122	AE2-106 E	0.8
941123	AE2-106 BAT	0.2
941931	AE2-205 C O1	34.62
941932	AE2-205 E O1	23.08
BLUEG	BLUEG	1.7
CALDERWOOD	CALDERWOOD	0.19

Bus #	Bus	MW Impact
CANNELTON	CANNELTON	0.1
CARR	CARR	0.08
CATAWBA	CATAWBA	0.12
CHEOAH	CHEOAH	0.17
CHILHOWEE	CHILHOWEE	0.06
COFFEEN	COFFEEN	0.18
COTTONWOOD	COTTONWOOD	0.72
DUCKCREEK	DUCKCREEK	0.39
EDWARDS	EDWARDS	0.18
ELMERSMITH	ELMERSMITH	0.18
FARMERCITY	FARMERCITY	0.12
G-007	G-007	0.11
GIBSON	GIBSON	0.07
HAMLET	HAMLET	0.2
NEWTON	NEWTON	0.47
O-066	O-066	1.25
PRAIRIE	PRAIRIE	0.88
RENSSELAER	RENSSELAER	0.07
SANTEETLA	SANTEETLA	0.05
SMITHLAND	SMITHLAND	0.07
TATANKA	TATANKA	0.21
TILTON	TILTON	0.21
TRIMBLE	TRIMBLE	0.19
TVA	TVA	0.6
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
1979685	228216	DENNIS	AE	228213	DENNIS	AE	1	AE_P7-1 AE7TOWER	tower	468.0	57.59	103.15	DC	213.22

Bus #	Bus	MW Impact
228712	V2-041E	0.21
292062	V1-021 C	0.08
292063	V1-021 E	0.1
913341	Y1-077	26.09
938781	AE1-104 C O1	66.76
938782	AE1-104 E O1	170.79
939501	AE1-179 C O1	1.92
939502	AE1-179 E O1	1.36
940001	AE1-240 C O1	1.6
940002	AE1-240 E O1	1.14
940391	AE2-023 C O1	37.53
940392	AE2-023 E O1	175.69
BLUEG	BLUEG	0.66
CALDERWOOD	CALDERWOOD	0.07
CANNELTON	CANNELTON	0.04
CARR	CARR	0.04
CATAWBA	CATAWBA	0.05

Bus #	Bus	MW Impact
CHEOAH	CHEOAH	0.07
CHILHOWEE	CHILHOWEE	0.02
COFFEEN	COFFEEN	0.07
COTTONWOOD	COTTONWOOD	0.28
DUCKCREEK	DUCKCREEK	0.15
EDWARDS	EDWARDS	0.07
ELMERSMITH	ELMERSMITH	0.07
FARMERCITY	FARMERCITY	0.05
G-007	G-007	0.12
GIBSON	GIBSON	0.03
HAMLET	HAMLET	0.08
NEWTON	NEWTON	0.18
O-066	O-066	0.79
PRAIRIE	PRAIRIE	0.34
RENSSELAER	RENSSELAER	0.04
SANTEETLA	SANTEETLA	0.02
SMITHLAND	SMITHLAND	0.03
TATANKA	TATANKA	0.08
TILTON	TILTON	0.08
TRIMBLE	TRIMBLE	0.07
TVA	TVA	0.23
UNIONPOWER	UNIONPOWER	0.1

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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
1979678	228714	CNTRL N	AE	228504	SHLDLY T	AE	1	AE_P7-1 AE7TOWER	tower	143.0	87.18	102.53	DC	48.58

Bus #	Bus	MW Impact
228200	CARL#1CT	0.44
228201	CARL#2CT	0.47
228206	SHRMN CT	1.09
228251	CARLLS#4	0.06
228260	V4-054C	0.15
228261	V4-054E	0.99
228702	WEST CT	0.95
228711	V2-041C	0.03
228712	V2-041E	0.38
228717	S121	1.45
228727	W2-039G	1.87
292063	V1-021 E	0.03
924531	AB2-102 C	22.3
924532	AB2-102 E	0.5
936411	AD2-052 C	0.48
936412	AD2-052 E	0.24
938781	AE1-104 C O1	15.21
938782	AE1-104 E O1	38.92
939501	AE1-179 C O1	7.57
939502	AE1-179 E O1	5.34

Bus #	Bus	MW Impact
940001	AE1-240 C O1	5.84
940002	AE1-240 E O1	4.17
940391	AE2-023 C O1	8.55
940392	AE2-023 E O1	40.03
940961	AE2-087 C	0.23
940962	AE2-087 E	0.32
940963	AE2-087 BAT	0.16
941001	AE2-091 C O1	4.39
941002	AE2-091 E O1	2.29
941121	AE2-106 C	0.25
941122	AE2-106 E	0.35
941123	AE2-106 BAT	0.16
941931	AE2-205 C O1	4.64
941932	AE2-205 E O1	3.09
BLUEG	BLUEG	0.41
CALDERWOOD	CALDERWOOD	0.04
CANNELTON	CANNELTON	0.02
CARR	CARR	0.04
CATAWBA	CATAWBA	0.03
CHEOAH	CHEOAH	0.04
CHILHOWEE	CHILHOWEE	0.01
COFFEEN	COFFEEN	0.04
COTTONWOOD	COTTONWOOD	0.17
DUCKCREEK	DUCKCREEK	0.09
EDWARDS	EDWARDS	0.04
ELMERSMITH	ELMERSMITH	0.04
FARMERCITY	FARMERCITY	0.03
G-007	G-007	0.1
GIBSON	GIBSON	0.02
HAMLET	HAMLET	0.05
NEWTON	NEWTON	0.11
O-066	O-066	0.77
PRAIRIE	PRAIRIE	0.21
RENSSELAER	RENSSELAER	0.03
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

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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
8280357	206297	28MANITOU	JCP&L	206319	28WHITINGS	JCP&L	1	JC-P7-1-JCC-230-10A	tower	817.0	150.05	152.8	DC	49.88

Bus #	Bus	MW Impact
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Bus #	Bus	MW Impact
206280	28LAKEHURS	0.25
206306	28LKWD G1	5.65
206308	28LKWD G2	5.65
206312	28LKWD G3	3.48
206325	28O C GEN	312.75
206360	28O CRK C1	2.1
206361	28O CRK C2	1.18
206366	28LKWD CT1	10.71
206367	28LKWD CT2	10.71
227801	ONTC&DCT	5.25
227842	MARINGEN	0.06
227843	MARINGEN E	0.54
227927	V4-067C	0.02
227928	V4-067E	0.23
228014	PVILLEG	0.07
292063	V1-021 E	0.03
293404	V3-036	0.75
902432	W2-030 E	0.83
915022	Y3-012 E	1.02
924701	AB2-122 C	0.1
924702	AB2-122 E	0.17
930001	AB1-001 C	0.01
930002	AB1-001 E	0.2
930891	AB1-138 C	0.52
930892	AB1-138 E	0.87
933962	AD1-019 E	1.03
934351	AD1-059	1.01
938781	AE1-104 C O1	15.62
938782	AE1-104 E O1	39.95
939121	AE1-142 C O1	3.93
939122	AE1-142 E O1	5.66
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

Bus #	Bus	MW Impact
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
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
8279941	206302	28OYSTER C	JCP&L	206297	28MANITOU	JCP&L	1	JC-P1-2-JCC-230-022	single	817.0	107.75	109.26	DC	12.33

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

Bus #	Bus	MW Impact
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
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
CPLE	CPLE	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
8279963	206302	28OYSTER C	JCP&L	206297	28MANITOU	JCP&L	2	JC-P1-2-JCC-230-021	single	869.0	101.33	102.75	DC	12.33

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

Bus #	Bus	MW Impact
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
8280409	206318	28VANHISVL	JCP&L	206294	28LARRABEE	JCP&L	1	JC-P7-1-JCC-230-10A	tower	869.0	128.14	130.77	DC	50.67

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

Bus #	Bus	MW Impact
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
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

Bus #	Bus	MW Impact
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
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

Bus #	Bus	MW Impact
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
8280386	206319	28WHITINGS	JCP&L	206720	28MANCHSTR	JCP&L	1	JC-P7-1-JCC-230-10A	tower	869.0	130.74	133.34	DC	49.97

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

Bus #	Bus	MW Impact
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
8279666	206323	28LAKEWOOD	JCP&L	206294	28LARRABEE	JCP&L	2	JC-P2-3-JCC-230-13D	breaker	817.0	161.65	164.67	DC	54.69

Bus #	Bus	MW Impact
206280	28LAKEHURS	0.57
206306	28LKWD G1	7.36
206308	28LKWD G2	7.36
206312	28LKWD G3	4.53
206325	280 C GEN	321.99

Bus #	Bus	MW Impact
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
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

Bus #	Bus	MW Impact
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

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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
8280399	206720	28MANCHSTR	JCP&L	206318	28VANHISVL	JCP&L	1	JC-P7-1-JCC-230-10A	tower	869.0	129.01	131.6	DC	49.97

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

Bus #	Bus	MW Impact
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
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

Bus #	Bus	MW Impact
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
8280352	227900	CARDIFF	AE	219100	NEWFRDM	PSE&G	1	JC-P7-1-JCC-230-13	tower	692.0	140.99	149.27	DC	127.2

Bus #	Bus	MW Impact
206360	28O CRK C1	1.63
206361	28O CRK C2	0.91
227801	ONTC&DCT	13.18
227842	MARINGEN	0.16
227843	MARINGEN E	1.37
227927	V4-067C	0.04
227928	V4-067E	0.61
228261	V4-054E	0.69
228712	V2-041E	0.42
228721	V2-035E	0.1
292063	V1-021 E	0.07
293404	V3-036	1.88
902092	W1-130E	0.94
902431	W2-030 C	0.16
902432	W2-030 E	2.12
915022	Y3-012 E	2.56
924531	AB2-102 C	38.92
924532	AB2-102 E	0.86
924701	AB2-122 C	0.26
924702	AB2-122 E	0.45
930002	AB1-001 E	0.49
931191	AB1-169A	84.08
933962	AD1-019 E	2.6
936411	AD2-052 C	0.54
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

Bus #	Bus	MW Impact
940002	AE1-240 E O1	2.74
940161	AE2-000 C O1	90.07
940162	AE2-000 E O1	230.47
940361	AE2-020 C O1	44.03
940362	AE2-020 E O1	206.16
940371	AE2-021 C O1	44.03
940372	AE2-021 E O1	206.16
940381	AE2-022 C O1	25.69
940382	AE2-022 E O1	120.26
940391	AE2-023 C O1	22.39
940392	AE2-023 E O1	104.81
940961	AE2-087 C	0.16
940962	AE2-087 E	0.23
940963	AE2-087 BAT	0.06
941001	AE2-091 C O1	2.82
941002	AE2-091 E O1	1.47
941121	AE2-106 C	0.18
941122	AE2-106 E	0.25
941123	AE2-106 BAT	0.06
941931	AE2-205 C O1	8.1
941932	AE2-205 E O1	5.4
942101	AE2-222 C O1	29.17
942102	AE2-222 E O1	73.27
942201	AE2-232 C O1	44.15
942202	AE2-232 E O1	112.97
942941	AE2-314 C	18.32
942942	AE2-314 E	12.21
BLUEG	BLUEG	0.75
CALDERWOOD	CALDERWOOD	0.08
CANNELTON	CANNELTON	0.05
CARR	CARR	0.1
CATAWBA	CATAWBA	0.05
CHEOAH	CHEOAH	0.07
CHILHOWEE	CHILHOWEE	0.03
COFFEEN	COFFEEN	0.08
COTTONWOOD	COTTONWOOD	0.31
DUCKCREEK	DUCKCREEK	0.17
EDWARDS	EDWARDS	0.08
ELMERSMITH	ELMERSMITH	0.08
FARMERCITY	FARMERCITY	0.05
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

Bus #	Bus	MW Impact
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
1979342	227903	MILL #1	AE	227902	LEWIS #1	AE	1	AE_P1-2 BLE-ML-LEW2	single	306.0	100.79	112.95	DC	37.2

Bus #	Bus	MW Impact
228200	CARL#1CT	0.3
228201	CARL#2CT	0.32
228202	CUMB CT	1.24
228203	P06	1.22
228206	SHRMN CT	1.11
228251	CARLLS#4	0.04
228260	V4-054C	0.1
228343	QUINTN#1	0.01
228702	WEST CT	0.43
228711	V2-041C	0.03
228717	S121	0.59
228727	W2-039G	1.11
292062	V1-021 C	0.08
913341	Y1-077	25.86
924531	AB2-102 C	38.95
936411	AD2-052 C	0.37
938421	AE1-061 C	0.3
938781	AE1-104 C O1	66.18
939501	AE1-179 C O1	4.78
940001	AE1-240 C O1	3.98
940391	AE2-023 C O1	37.2
940961	AE2-087 C	0.16
940963	AE2-087 BAT	0.11
941001	AE2-091 C O1	2.84
941121	AE2-106 C	0.18
941123	AE2-106 BAT	0.11
941931	AE2-205 C O1	8.1
BLUEG	BLUEG	0.79
CALDERWOOD	CALDERWOOD	0.08
CANNELTON	CANNELTON	0.05
CARR	CARR	0.12
CATAWBA	CATAWBA	0.05
CHEOAH	CHEOAH	0.08
CHILHOWEE	CHILHOWEE	0.03
COFFEEN	COFFEEN	0.08
COTTONWOOD	COTTONWOOD	0.33
DUCKCREEK	DUCKCREEK	0.18
EDWARDS	EDWARDS	0.08
ELMERSMITH	ELMERSMITH	0.08

Bus #	Bus	MW Impact
FARMERCITY	FARMERCITY	0.05
GIBSON	GIBSON	0.03
HAMLET	HAMLET	0.09
NEWTON	NEWTON	0.22
PRAIRIE	PRAIRIE	0.41
RENSSELAER	RENSSELAER	0.09
SANTEETLA	SANTEETLA	0.02
SMITHLAND	SMITHLAND	0.03
TATANKA	TATANKA	0.1
TILTON	TILTON	0.1
TRIMBLE	TRIMBLE	0.09
TVA	TVA	0.27
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
1979093	227904	MILL #2	AE	227945	LEWIS #2	AE	1	AE_P4-2 AE33	breaker	282.0	133.12	195.03	DC	174.56

Bus #	Bus	MW Impact
228202	CUMB CT	1.08
228203	P06	1.07
228206	SHRMN CT	0.96
228261	V4-054E	0.58
228711	V2-041C	0.03
228712	V2-041E	0.4
292062	V1-021 C	0.07
292063	V1-021 E	0.08
902432	W2-030 E	0.5
913341	Y1-077	21.36
924531	AB2-102 C	34.31
924532	AB2-102 E	0.76
938421	AE1-061 C	0.27
938422	AE1-061 E	0.27
938781	AE1-104 C O1	54.66
938782	AE1-104 E O1	139.82
939301	AE1-161 C	0.57
939302	AE1-161 E	0.85
939501	AE1-179 C O1	4.14
939502	AE1-179 E O1	2.92
940001	AE1-240 C O1	3.44
940002	AE1-240 E O1	2.46
940391	AE2-023 C O1	30.73
940392	AE2-023 E O1	143.84
940961	AE2-087 C	0.14
940962	AE2-087 E	0.19
940963	AE2-087 BAT	0.05
941001	AE2-091 C O1	2.45
941002	AE2-091 E O1	1.28

Bus #	Bus	MW Impact
941121	AE2-106 C	0.15
941122	AE2-106 E	0.21
941123	AE2-106 BAT	0.05
941931	AE2-205 C O1	7.14
941932	AE2-205 E O1	4.76
BLUEG	BLUEG	0.66
CALDERWOOD	CALDERWOOD	0.07
CANNELTON	CANNELTON	0.04
CARR	CARR	0.09
CATAWBA	CATAWBA	0.04
CHEOAH	CHEOAH	0.07
CHILHOWEE	CHILHOWEE	0.02
COFFEEN	COFFEEN	0.07
COTTONWOOD	COTTONWOOD	0.27
DUCKCREEK	DUCKCREEK	0.15
EDWARDS	EDWARDS	0.07
ELMERSMITH	ELMERSMITH	0.07
FARMERCITY	FARMERCITY	0.05
G-007	G-007	0.53
GIBSON	GIBSON	0.03
HAMLET	HAMLET	0.07
NEWTON	NEWTON	0.18
O-066	O-066	2.11
PRAIRIE	PRAIRIE	0.34
RENSSELAER	RENSSELAER	0.07
SANTEETLA	SANTEETLA	0.02
SMITHLAND	SMITHLAND	0.03
TATANKA	TATANKA	0.08
TILTON	TILTON	0.08
TRIMBLE	TRIMBLE	0.07
TVA	TVA	0.23
UNIONPOWER	UNIONPOWER	0.1

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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
1979130	228106	CORSON 1	AE	228185	CORSON#1	AE	1	AE_P4-2 AE16	breaker	168.0	114.56	162.08	DC	79.78

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

Bus #	Bus	MW Impact
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
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
1979615	228111	MDLE TP	AE	228107	CORSON 2	AE	1	AE_P7-1 AE7TOWER	tower	315.0	109.52	179.28	DC	219.74

Bus #	Bus	MW Impact
292063	V1-021 E	0.02
913341	Y1-077	26.88
938781	AE1-104 C O1	68.8
938782	AE1-104 E O1	176.01
940391	AE2-023 C O1	38.68
940392	AE2-023 E O1	181.06

Bus #	Bus	MW Impact
BLUEG	BLUEG	0.61
CALDERWOOD	CALDERWOOD	0.07
CANNELTON	CANNELTON	0.04
CARR	CARR	0.04
CATAWBA	CATAWBA	0.04
CHEOAH	CHEOAH	0.06
CHILHOWEE	CHILHOWEE	0.02
COFFEEN	COFFEEN	0.06
COTTONWOOD	COTTONWOOD	0.25
DUCKCREEK	DUCKCREEK	0.14
EDWARDS	EDWARDS	0.06
ELMERSMITH	ELMERSMITH	0.06
FARMERCITY	FARMERCITY	0.04
G-007	G-007	0.12
GIBSON	GIBSON	0.03
HAMLET	HAMLET	0.07
NEWTON	NEWTON	0.17
O-066	O-066	0.79
PRAIRIE	PRAIRIE	0.31
RENSSELAER	RENSSELAER	0.03
SANTEETLA	SANTEETLA	0.02
SMITHLAND	SMITHLAND	0.03
TATANKA	TATANKA	0.08
TILTON	TILTON	0.08
TRIMBLE	TRIMBLE	0.07
TVA	TVA	0.21
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
1979624	228130	TUCKAHOE	AE	227946	MILL#2	AE	1	AE_P7-1 AE7TOWER	tower	146.0	111.26	152.88	DC	60.75

Bus #	Bus	MW Impact
228712	V2-041E	0.21
292062	V1-021 C	0.04
292063	V1-021 E	0.05
913341	Y1-077	7.43
924531	AB2-102 C	18.8
924532	AB2-102 E	0.42
938781	AE1-104 C O1	19.02
938782	AE1-104 E O1	48.66
939501	AE1-179 C O1	2.18
939502	AE1-179 E O1	1.54
940001	AE1-240 C O1	1.82
940002	AE1-240 E O1	1.3
940391	AE2-023 C O1	10.69
940392	AE2-023 E O1	50.06
941001	AE2-091 C O1	1.3

Bus #	Bus	MW Impact
941002	AE2-091 E O1	0.68
941931	AE2-205 C O1	3.91
941932	AE2-205 E O1	2.61
BLUEG	BLUEG	0.26
CALDERWOOD	CALDERWOOD	0.03
CANNELTON	CANNELTON	0.02
CARR	CARR	0.05
CATAWBA	CATAWBA	0.02
CHEOAH	CHEOAH	0.03
CHILHOWEE	CHILHOWEE	0.01
COFFEEN	COFFEEN	0.03
COTTONWOOD	COTTONWOOD	0.11
DUCKCREEK	DUCKCREEK	0.06
EDWARDS	EDWARDS	0.03
ELMERSMITH	ELMERSMITH	0.03
FARMERCITY	FARMERCITY	0.02
G-007	G-007	0.32
GIBSON	GIBSON	0.01
HAMLET	HAMLET	0.03
NEWTON	NEWTON	0.07
O-066	O-066	1.15
PRAIRIE	PRAIRIE	0.13
RENSSELAER	RENSSELAER	0.04
SANTEETLA	SANTEETLA	0.01
SMITHLAND	SMITHLAND	0.01
TATANKA	TATANKA	0.03
TILTON	TILTON	0.03
TRIMBLE	TRIMBLE	0.03
TVA	TVA	0.09
UNIONPOWER	UNIONPOWER	0.04

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ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC DC	MW IMPACT
1979621	228217	DENNIS	AE	228130	TUCKAHOE	AE	1	AE_P7-1 AE7TOWER	tower	146.0	116.06	157.67	DC	60.75

Bus #	Bus	MW Impact
228712	V2-041E	0.21
292062	V1-021 C	0.04
292063	V1-021 E	0.05
913341	Y1-077	7.43
924531	AB2-102 C	18.8
924532	AB2-102 E	0.42
938781	AE1-104 C O1	19.02
938782	AE1-104 E O1	48.66
939501	AE1-179 C O1	2.18
939502	AE1-179 E O1	1.54
940001	AE1-240 C O1	1.82
940002	AE1-240 E O1	1.3

Bus #	Bus	MW Impact
940391	AE2-023 C O1	10.69
940392	AE2-023 E O1	50.06
941001	AE2-091 C O1	1.3
941002	AE2-091 E O1	0.68
941931	AE2-205 C O1	3.91
941932	AE2-205 E O1	2.61
BLUEG	BLUEG	0.26
CALDERWOOD	CALDERWOOD	0.03
CANNELTON	CANNELTON	0.02
CARR	CARR	0.05
CATAWBA	CATAWBA	0.02
CHEOAH	CHEOAH	0.03
CHILHOWEE	CHILHOWEE	0.01
COFFEEN	COFFEEN	0.03
COTTONWOOD	COTTONWOOD	0.11
DUCKCREEK	DUCKCREEK	0.06
EDWARDS	EDWARDS	0.03
ELMERSMITH	ELMERSMITH	0.03
FARMERCITY	FARMERCITY	0.02
G-007	G-007	0.32
GIBSON	GIBSON	0.01
HAMLET	HAMLET	0.03
NEWTON	NEWTON	0.07
O-066	O-066	1.15
PRAIRIE	PRAIRIE	0.13
RENSSELAER	RENSSELAER	0.04
SANTEETLA	SANTEETLA	0.01
SMITHLAND	SMITHLAND	0.01
TATANKA	TATANKA	0.03
TILTON	TILTON	0.03
TRIMBLE	TRIMBLE	0.03
TVA	TVA	0.09
UNIONPOWER	UNIONPOWER	0.04

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ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC DC	MW IMPACT
1979622	228502	MNOTLA 1	AE	228500	LANDIS	AE	1	AE_P7-1 AE6TOWER	tower	286.0	154.13	178.13	DC	68.52

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

Bus #	Bus	MW Impact
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
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

Bus #	Bus	MW Impact
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
1979630	228503	MNOTLA 2	AE	228502	MNOTLA 1	AE	1	AE_P7-1 AE6TOWER	tower	311.0	141.75	163.83	DC	68.53

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
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

Bus #	Bus	MW Impact
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
AE_P7-1 AE7TOWER	CONTINGENCY 'AE_P7-1 AE7TOWER' DISCONNECT BUS 227905 /* #1 BLE TO SCULL TO MILL 138 KV DISCONNECT BUS 227929 /* #1 SCULL 12 KV DISCONNECT BUS 227906 /* #2 BLE TO SCULL TO MILL 138 KV DISCONNECT BUS 227930 /* #2 SCULL 12 KV DISCONNECT BUS 227903 /* #1 MILL TO LEWIS 138 KV DISCONNECT BUS 227904 /* #2 MILL TO LEWIS 138 KV 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
AE_P4-2 AE28	CONTINGENCY 'AE_P4-2 AE28' /*ENGLAND TO OCEAN CITY BREAKER C DISCONNECT BRANCH FROM BUS 228110 TO BUS 228660 CKT 1 /*ENGLAND OCEAN CITY 138 138 DISCONNECT BRANCH FROM BUS 228110 TO BUS 227905 CKT 1 /*ENGLAND #1 SCULL 138 138 END

Contingency Name	Contingency Definition
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-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-P2-3-JCC-230-13D	CONTINGENCY 'JC-P2-3-JCC-230-13D' /* LARRABEE SE BUS & LARRABEE-LAKEWOOD (K2011) 230 KV DISCONNECT BRANCH FROM BUS 206294 TO BUS 206274 CKT 4 /* 28LARRABEE 230 28LARR AB 35 REMOVE SWSHUNT FROM BUS 206294 BLOCK 1 STEP 1 DISCONNECT BRANCH FROM BUS 206294 TO BUS 206323 CKT 1 /* 28LARRABEE 230 28LAKEWOOD 230 END
JC-P7-1-JCC-230-10A	CONTINGENCY 'JC-P7-1-JCC-230-10A' /* LAKEWOOD - LARRABEE 230 KV LINES DISCONNECT BRANCH FROM BUS 206323 TO BUS 206294 CKT 2 DISCONNECT BRANCH FROM BUS 206323 TO BUS 206294 CKT 1 DISCONNECT BRANCH FROM BUS 206294 TO BUS 206274 CKT 3 DISCONNECT BRANCH FROM BUS 206294 TO BUS 206275 CKT 12 /* LARRABEE 12 FUTURE BREAKER AND A HALF SET BUS 206294 LOAD TO 38 MW /* LARRABEE 8 FUTURE BREAKER AND A HALF END
AE_P7-1 AE13TOWER	CONTINGENCY 'AE_P7-1 AE13TOWER' DISCONNECT BRANCH FROM BUS 228500 TO BUS 228502 CKT 1 /* LANDIS TO MINO 138 KV DISCONNECT BRANCH FROM BUS 228002 TO BUS 227900 CKT 1 /* ORCH TO CARD 230 KV END
AE_P7-1 AE6TOWER	CONTINGENCY 'AE_P7-1 AE6TOWER' DISCONNECT BRANCH FROM BUS 228197 TO BUS 228106 CKT 1 /* MERION TO CORSON 138 KV DISCONNECT BUS 228111 /* BLE TO CORSON 138 KV END
PECO_P2-2_CHI230B1/* \$ DELCO \$ PECO_P2-2_CHI230B1 \$ B PECO_P2-2_CHI230B1 \$ B	CONTINGENCY 'PECO_P2-2_CHI230B1/* \$ DELCO \$ PECO_P2-2_CHI230B1 \$ B' DISCONNECT BUS 213489 /* CHICHST1 230.00 \$ DELCO \$ PECO_P2-2_CHI230B1 \$ B END

Contingency Name	Contingency Definition
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
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
AE_P1-2 BLE-ML-LEW2	CONTINGENCY 'AE_P1-2 BLE-ML-LEW2' DISCONNECT BUS 227904 / DISCONNECT BUS 227906 / DISCONNECT BUS 227930 / 227930 CIRCUIT 1 / CLOSE LINE FROM BUS 227929 TO BUS 227930 CIRCUIT 1 / END
AE_P1-2 BLE-ML-LEW1	CONTINGENCY 'AE_P1-2 BLE-ML-LEW1' DISCONNECT BUS 227903 / DISCONNECT BUS 227905 / DISCONNECT BUS 227929 / CLOSE LINE FROM BUS 227929 TO BUS 227930 CIRCUIT 1 / END
AE_P1-2 BLE-SC-ML1	CONTINGENCY 'AE_P1-2 BLE-SC-ML1' DISCONNECT BUS 227905 / DISCONNECT BUS 227929 / CLOSE LINE FROM BUS 227929 TO BUS 227930 CIRCUIT 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
AE_P1-2 BLE-SC-ML2	CONTINGENCY 'AE_P1-2 BLE-SC-ML2' DISCONNECT BUS 227906 / DISCONNECT BUS 227930 / CLOSE LINE FROM BUS 227929 TO BUS 227930 CIRCUIT 1 / END

Contingency Name	Contingency Definition
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_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_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
1979250	219100	NEWFRDM	PSE&G	219704	HILLTOP_3	PSE&G	1	PECO_P4_PEACH215/* \$ CHESCO \$ PECO_P4_PEACH215 \$ STBK	breaker	740.0	117.54	120.12	DC	42.16

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

Bus #	Bus	MW Impact
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
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

Bus #	Bus	MW Impact
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
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

Bus #	Bus	MW Impact
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
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

Bus #	Bus	MW Impact
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
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

Bus #	Bus	MW Impact
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
1979073	227955	CEDAR	AE	206302	28OYSTER C	JCP&L	1	JC-P2-3-JCC-500-002D	breaker	564.0	151.11	167.53	DC	92.63

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

Bus #	Bus	MW Impact
936412	AD2-052 E	0.26
938311	AE1-046 C	0.24
938312	AE1-046 E	0.12
938421	AE1-061 C	0.31
938422	AE1-061 E	0.31
938781	AE1-104 C O1	25.13
938782	AE1-104 E O1	64.28
938871	AE1-115 C	0.36
938872	AE1-115 E	0.36
939301	AE1-161 C	0.94
939302	AE1-161 E	1.41
939501	AE1-179 C O1	3.69
939502	AE1-179 E O1	2.61
939931	AE1-229 C O1	7.03
939932	AE1-229 E O1	4.77
940001	AE1-240 C O1	3.07
940002	AE1-240 E O1	2.19
940361	AE2-020 C O2	24.89
940362	AE2-020 E O2	116.53
940371	AE2-021 C O2	24.89
940372	AE2-021 E O2	116.53
940381	AE2-022 C O2	14.52
940382	AE2-022 E O2	67.98
940391	AE2-023 C O2	16.3
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

Bus #	Bus	MW Impact
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
CPL	CPL	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
8279878	213922	RICHMOND	PECO	214012	WANEETA3	PECO	1	PECO_P4_CHICH045/* \$ DELCO \$ PECO_P4_CHICH045 \$ STBK	breaker	1180.0	100.64	103.86	DC	84.15

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

Bus #	Bus	MW Impact
292105	V1-030 E6	0.3
292115	V1-030 EB	1.33
292194	V1-030 CE	0.09
292195	V1-030 EE	1.23
293404	V3-036	1.03
902092	W1-130E	1.35
902432	W2-030 E	1.17
902692	W2-056 E	1.64
902842	W2-071E	0.45
903152	W2-102 E	1.04
903991	W3-080C	1.96
903992	W3-080E	3.21
904042	V4-005 E	0.43
904432	W3-124 E	0.42
905792	W4-103 E	1.03
907382	X1-070 E	0.73
907392	X1-071 E	0.26
909032	X2-013 E	0.63
910862	X3-075 E	1.06
913242	Y1-057 E	0.32
913332	Y1-075 E	0.41
915022	Y3-012 E	1.41
915072	Y3-026 E	1.6
915592	Y3-087 E OP1	0.8
916292	Z1-082 E	0.34
917381	Z2-062	0.13
924051	AB2-049 C	0.87
924052	AB2-049 E	1.41
924531	AB2-102 C	43.43
924532	AB2-102 E	0.97
924701	AB2-122 C	0.13
924702	AB2-122 E	0.22
925391	AC1-010 C	0.78
925392	AC1-010 E	1.34
925442	AC1-016 E	1.41
925452	AC1-017 E	0.67
925562	AC1-030 E	0.51
930002	AB1-001 E	0.27
930102	AB1-025 E	1.01
930242	AB1-063 E	0.14
930722	AB1-116 E	0.18
930732	AB1-119 E	0.17
931191	AB1-169A	119.56
932361	AC2-050 C O1	0.89
932362	AC2-050 E O1	1.46
933962	AD1-019 E	1.43
936211	AD2-027 C	1.4
936212	AD2-027 E	2.29
936321	AD2-042 C	1.85
936322	AD2-042 E	3.03
936411	AD2-052 C	1.54
936412	AD2-052 E	0.76

Bus #	Bus	MW Impact
936491	AD2-064 C	0.12
936492	AD2-064 E	0.17
936501	AD2-065 C	0.5
936502	AD2-065 E	0.69
936541	AD2-069 C	0.52
936542	AD2-069 E	0.26
937011	AD2-135 C	0.13
937012	AD2-135 E	0.23
938311	AE1-046 C	0.43
938312	AE1-046 E	0.22
938421	AE1-061 C	0.58
938422	AE1-061 E	0.58
938431	AE1-062 C	1.2
938432	AE1-062 E	1.2
938611	AE1-083 C	0.51
938612	AE1-083 E	0.71
938781	AE1-104 C O1	26.58
938782	AE1-104 E O1	67.99
938871	AE1-115 C	1.26
938872	AE1-115 E	1.26
939301	AE1-161 C	2.41
939302	AE1-161 E	3.61
939501	AE1-179 C O1	7.33
939502	AE1-179 E O1	5.17
939821	AE1-218 C O1	0.19
939822	AE1-218 E O1	0.28
939831	AE1-219 C O1	0.42
939832	AE1-219 E O1	0.61
939931	AE1-229 C O1	20.42
939932	AE1-229 E O1	13.83
940001	AE1-240 C O1	6.08
940002	AE1-240 E O1	4.34
940281	AE2-011 C	0.29
940282	AE2-011 E	0.41
940361	AE2-020 C O2	19.49
940362	AE2-020 E O2	91.26
940371	AE2-021 C O2	19.49
940372	AE2-021 E O2	91.26
940381	AE2-022 C O2	11.37
940382	AE2-022 E O2	53.23
940391	AE2-023 C O2	14.81
940392	AE2-023 E O2	69.34
940771	AE2-064 C	0.37
940772	AE2-064 E	0.5
940781	AE2-065 C	0.24
940782	AE2-065 E	0.37
940951	AE2-085 C	0.43
940952	AE2-085 E	0.41
940961	AE2-087 C	0.32
940962	AE2-087 E	0.44
940963	AE2-087 BAT	0.12
940971	AE2-088 C	0.17

Bus #	Bus	MW Impact
940972	AE2-088 E	0.23
940973	AE2-088 BAT	0.1
941001	AE2-091 C O2	4.91
941002	AE2-091 E O2	2.56
941051	AE2-097 C	0.24
941052	AE2-097 E	0.38
941071	AE2-101 C	0.42
941072	AE2-101 E	0.58
941121	AE2-106 C	0.35
941122	AE2-106 E	0.49
941123	AE2-106 BAT	0.12
941441	AE2-141 C	0.27
941442	AE2-141 E	0.44
941471	AE2-144 C	0.49
941472	AE2-144 E	0.46
941931	AE2-205 C O2	9.18
941932	AE2-205 E O2	6.12
942011	AE2-213 C	0.37
942012	AE2-213 E	0.33
942101	AE2-222 C O2	16.06
942102	AE2-222 E O2	40.34
942201	AE2-232 C O2	20.58
942202	AE2-232 E O2	52.67
942381	AE2-251 C O2	61.75
942382	AE2-251 E O2	158.0
942571	AE2-272	0.33
942941	AE2-314 C	7.91
942942	AE2-314 E	5.27
943071	AE2-334 C	6.7
943072	AE2-334 E	3.57
943081	AE2-335 C O2	9.58
943082	AE2-335 E O2	4.27
BLUEG	BLUEG	6.64
CALDERWOOD	CALDERWOOD	0.72
CANNELTON	CANNELTON	0.4
CATAWBA	CATAWBA	0.46
CBM-N	CBM-N	0.84
CHEOAH	CHEOAH	0.66
CHILHOWEE	CHILHOWEE	0.24
COFFEEN	COFFEEN	0.7
COTTONWOOD	COTTONWOOD	2.77
DUCKCREEK	DUCKCREEK	1.53
EDWARDS	EDWARDS	0.7
ELMERSMITH	ELMERSMITH	0.7
FARMERCITY	FARMERCITY	0.46
G-007A	G-007A	12.57
GIBSON	GIBSON	0.27
HAMLET	HAMLET	0.75
NEWTON	NEWTON	1.83
NYISO	NYISO	3.63
PRAIRIE	PRAIRIE	3.42
SANTEETLA	SANTEETLA	0.19

Bus #	Bus	MW Impact
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
8279880	214206	RICHRE29	PECO	213922	RICHMOND	PECO	1	PECO_P4_CHICH045/* \$ DELCO \$ PECO_P4_CHICH045 \$ STBK	breaker	1336.0	100.13	103.13	DC	87.79

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

Bus #	Bus	MW Impact
903991	W3-080C	1.35
903992	W3-080E	2.2
904042	V4-005 E	0.4
904432	W3-124 E	0.4
905792	W4-103 E	0.97
907381	X1-070 C	0.05
907382	X1-070 E	0.77
907391	X1-071 C	0.01
907392	X1-071 E	0.26
909032	X2-013 E	0.7
910862	X3-075 E	1.18
913332	Y1-075 E	0.39
914231	Y2-081 C OP1	1.35
914232	Y2-081 E OP1	0.07
915022	Y3-012 E	1.47
915072	Y3-026 E	1.1
915591	Y3-087 C OP1	0.06
915592	Y3-087 E OP1	0.89
916292	Z1-082 E	0.38
917381	Z2-062	0.14
919901	AB1-000 1	1.04
919911	AB1-000 2	1.04
919921	AB1-000 3	1.04
924051	AB2-049 C	0.91
924052	AB2-049 E	1.48
924531	AB2-102 C	45.91
924532	AB2-102 E	1.02
924701	AB2-122 C	0.14
924702	AB2-122 E	0.23
925391	AC1-010 C	0.87
925392	AC1-010 E	1.5
925442	AC1-016 E	0.97
925452	AC1-017 E	0.56
925561	AC1-030 C	0.04
925562	AC1-030 E	0.52
930002	AB1-001 E	0.28
930102	AB1-025 E	0.94
930242	AB1-063 E	0.15
930722	AB1-116 E	0.19
930732	AB1-119 E	0.17
931191	AB1-169A	126.85
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

Bus #	Bus	MW Impact
936411	AD2-052 C	1.66
936412	AD2-052 E	0.82
936491	AD2-064 C	0.12
936492	AD2-064 E	0.17
936501	AD2-065 C	0.51
936502	AD2-065 E	0.71
936541	AD2-069 C	0.51
936542	AD2-069 E	0.25
937011	AD2-135 C	0.14
937012	AD2-135 E	0.24
938311	AE1-046 C	0.46
938312	AE1-046 E	0.23
938421	AE1-061 C	0.61
938422	AE1-061 E	0.61
938431	AE1-062 C	1.23
938432	AE1-062 E	1.23
938611	AE1-083 C	0.35
938612	AE1-083 E	0.49
938781	AE1-104 C O1	27.85
938782	AE1-104 E O1	71.26
938871	AE1-115 C	1.36
938872	AE1-115 E	1.36
939301	AE1-161 C	2.57
939302	AE1-161 E	3.85
939501	AE1-179 C O1	7.79
939502	AE1-179 E O1	5.5
939821	AE1-218 C O1	0.2
939822	AE1-218 E O1	0.3
939831	AE1-219 C O1	0.44
939832	AE1-219 E O1	0.64
939931	AE1-229 C O1	21.94
939932	AE1-229 E O1	14.86
940001	AE1-240 C O1	6.46
940002	AE1-240 E O1	4.61
940281	AE2-011 C	0.31
940282	AE2-011 E	0.42
940361	AE2-020 C 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

Bus #	Bus	MW Impact
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
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

Bus #	Bus	MW Impact
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
8279913	219110	GLOUCSTR	PSE&G	219125	CAMDEN	PSE&G	1	PS_P2-3_CUTB_1-4_LT	breaker	771.0	97.5	100.04	DC	42.61

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
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

Bus #	Bus	MW Impact
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
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

Bus #	Bus	MW Impact
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
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
8279879	219125	CAMDEN	PSE&G	214206	RICHRE29	PECO	1	PECO_P4_CHICH045/* \$ DELCO \$ PECO_P4_CHICH045 \$ STBK	breaker	1336.0	100.15	103.15	DC	87.79

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

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

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

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

ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC DC	MW IMPACT
1979700	219702	HILLTOP_1	PSE&G	219101	BEAVERBK_1	PSE&G	1	PS_P7-1_V2274+P2242_LT	tower	740.0	102.99	105.69	DC	44.25

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
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

Bus #	Bus	MW Impact
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
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

Bus #	Bus	MW Impact
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
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
1979646	227900	CARDIFF	AE	219100	NEWFRDM	PSE&G	1	AE_P7-1 AE13TOWER	tower	692.0	128.31	153.76	DC	176.14

Bus #	Bus	MW Impact
206325	280 C GEN	88.62
227801	ONTC&DCT	14.87
227842	MARINGEN	0.18

Bus #	Bus	MW Impact
227843	MARINGEN E	1.54
227927	V4-067C	0.05
227928	V4-067E	0.68
228014	PVILLEG	0.19
228712	V2-041E	0.34
292062	V1-021 C	0.06
292063	V1-021 E	0.07
293404	V3-036	2.12
902091	W1-130C	0.18
902092	W1-130E	2.45
902431	W2-030 C	0.18
902432	W2-030 E	2.38
913341	Y1-077	16.67
915022	Y3-012 E	2.89
924531	AB2-102 C	29.11
924532	AB2-102 E	0.65
924701	AB2-122 C	0.29
924702	AB2-122 E	0.5
930001	AB1-001 C	0.04
930002	AB1-001 E	0.55
931191	AB1-169A	217.57
933962	AD1-019 E	2.93
938311	AE1-046 C	0.79
938312	AE1-046 E	0.4
938421	AE1-061 C	1.98
938422	AE1-061 E	1.98
938781	AE1-104 C O1	42.67
938782	AE1-104 E O1	109.16
939121	AE1-142 C O1	0.79
939122	AE1-142 E O1	1.14
939501	AE1-179 C O1	3.39
939502	AE1-179 E O1	2.39
940001	AE1-240 C O1	2.82
940002	AE1-240 E O1	2.01
940361	AE2-020 C O2	50.42
940362	AE2-020 E O2	236.06
940371	AE2-021 C O2	50.42
940372	AE2-021 E O2	236.06
940381	AE2-022 C O2	29.41
940382	AE2-022 E O2	137.7
940391	AE2-023 C O2	31.0
940392	AE2-023 E O2	145.14
940401	AE2-024 C O2	22.34
940402	AE2-024 E O2	104.6
940411	AE2-025 C O2	19.17
940412	AE2-025 E O2	89.73
941931	AE2-205 C O2	6.76
941932	AE2-205 E O2	4.51
942101	AE2-222 C O2	32.92
942102	AE2-222 E O2	82.69
942201	AE2-232 C O2	53.24
942202	AE2-232 E O2	136.23

Bus #	Bus	MW Impact
942381	AE2-251 C O2	159.72
942382	AE2-251 E O2	408.69
942941	AE2-314 C	20.46
942942	AE2-314 E	13.64
BLUEG	BLUEG	0.82
CALDERWOOD	CALDERWOOD	0.09
CANNELTON	CANNELTON	0.05
CATAWBA	CATAWBA	0.06
CBM-N	CBM-N	0.41
CHEOAH	CHEOAH	0.09
CHILHOWEE	CHILHOWEE	0.03
COFFEEN	COFFEEN	0.09
COTTONWOOD	COTTONWOOD	0.36
DUCKCREEK	DUCKCREEK	0.19
EDWARDS	EDWARDS	0.09
ELMERSMITH	ELMERSMITH	0.09
FARMERCITY	FARMERCITY	0.06
G-007A	G-007A	6.08
GIBSON	GIBSON	0.03
HAMLET	HAMLET	0.11
NEWTON	NEWTON	0.23
NYISO	NYISO	1.79
PRAIRIE	PRAIRIE	0.43
SANTEETLA	SANTEETLA	0.03
SMITHLAND	SMITHLAND	0.03
TATANKA	TATANKA	0.1
TILTON	TILTON	0.1
TRIMBLE	TRIMBLE	0.09
TVA	TVA	0.3
UNIONPOWER	UNIONPOWER	0.13
VFT	VFT	5.72

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
14085971	227902	LEWIS #1	AE	227945	LEWIS #2	AE	1	AE_P4-2 AE33	breaker	286.8	44.3	156.59	DC	322.05

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
933962	AD1-019 E	0.7

Bus #	Bus	MW Impact
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
CPLE	CPLE	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
1979224	228110	BLE	AE	228197	MERION	AE	1	AE_P4-2 AE29	breaker	482.0	94.43	106.23	DC	56.42

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

Bus #	Bus	MW Impact
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
TATANKA	TATANKA	0.04
TILTON	TILTON	0.04
TRIMBLE	TRIMBLE	0.03
TVA	TVA	0.11

Bus #	Bus	MW Impact
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
14085920	227900	CARDIFF	AE	227955	CEDAR	AE	1	AE_P4-2 AE6	breaker	805.0	119.27	132.23	DC	104.36

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

Bus #	Bus	MW Impact
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
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

Bus #	Bus	MW Impact
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
1979130	228106	CORSON 1	AE	228185	CORSON#1	AE	1	AE_P4-2 AE16	breaker	168.0	114.56	123.62	DC	33.55

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 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

Bus #	Bus	MW Impact
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
1979622	228502	MNOTLA 1	AE	228500	LANDIS	AE	1	AE_P7-1 AE6TOWER	tower	286.0	158.03	183.17	DC	71.73

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 O2	9.01
940362	AE2-020 E O2	42.17

Bus #	Bus	MW Impact
940371	AE2-021 C O2	9.01
940372	AE2-021 E O2	42.17
940381	AE2-022 C O2	5.25
940382	AE2-022 E O2	24.6
940391	AE2-023 C O2	12.62
940392	AE2-023 E O2	59.1
940973	AE2-088 BAT	0.12
942101	AE2-222 C O2	12.2
942102	AE2-222 E O2	30.64
942201	AE2-232 C O2	9.51
942202	AE2-232 E O2	24.33
942381	AE2-251 C O2	28.53
942382	AE2-251 E O2	73.0
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
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

ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC DC	MW IMPACT
1979630	228503	MNOTLA 2	AE	228502	MNOTLA 1	AE	1	AE_P7-1 AE6TOWER	tower	311.0	145.37	168.49	DC	71.74

Bus #	Bus	MW Impact
227801	ONTC&DCT	5.51

Bus #	Bus	MW Impact
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
940361	AE2-020 C O2	9.01
940362	AE2-020 E O2	42.18
940371	AE2-021 C O2	9.01
940372	AE2-021 E O2	42.18
940381	AE2-022 C O2	5.25
940382	AE2-022 E O2	24.6
940391	AE2-023 C O2	12.63
940392	AE2-023 E O2	59.11
940973	AE2-088 BAT	0.12
942101	AE2-222 C O2	12.2
942102	AE2-222 E O2	30.64
942201	AE2-232 C O2	9.51
942202	AE2-232 E O2	24.34
942381	AE2-251 C O2	28.54
942382	AE2-251 E O2	73.02
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

Bus #	Bus	MW Impact
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 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

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 AE13TOWER	CONTINGENCY 'AE_P7-1 AE13TOWER' DISCONNECT BRANCH FROM BUS 228500 TO BUS 228502 CKT 1 /* LANDIS TO MINO 138 KV DISCONNECT BRANCH FROM BUS 228002 TO BUS 227900 CKT 1 /* ORCH TO CARD 230 KV END
AE_P7-1 AE6TOWER	CONTINGENCY 'AE_P7-1 AE6TOWER' DISCONNECT BRANCH FROM BUS 228197 TO BUS 228106 CKT 1 /* MERION TO CORSON 138 KV DISCONNECT BUS 228111 /* BLE TO CORSON 138 KV END
PECO_P2-2_CHI230B1/* \$ DELCO \$ PECO_P2-2_CHI230B1 \$ B	CONTINGENCY 'PECO_P2-2_CHI230B1/* \$ DELCO \$ PECO_P2-2_CHI230B1 \$ B' DISCONNECT BUS 213489 /* CHICHST1 230.00 \$ DELCO \$ PECO_P2-2_CHI230B1 \$ B END

Contingency Name	Contingency Definition
PECO_P4_PEACH205/* \$ CHESCO \$ PECO_P4_PEACH205 \$ STBK	CONTINGENCY 'PECO_P4_PEACH205/* \$ CHESCO \$ PECO_P4_PEACH205 \$ STBK' TRIP BRANCH FROM BUS 200065 TO BUS 200066 CKT 1 /* PCHBTM2S 500.00 PCHBTM1N 500.00 \$ CHESCO \$ PECO_P4_PEACH205 \$ STBK TRIP BRANCH FROM BUS 200064 TO BUS 200065 CKT Z1 /* PCHBTM1S 500.00 PCHBTM2S 500.00 \$ CHESCO \$ PECO_P4_PEACH205 \$ STBK TRIP BRANCH FROM BUS 200013 TO BUS 200066 CKT Z1 /* PCHBTM2N 500.00 PCHBTM1N 500.00 \$ CHESCO \$ PECO_P4_PEACH205 \$ STBK TRIP BRANCH FROM BUS 200065 TO BUS 200051 CKT 1 /* PCHBTM2S 500.00 ROCKSPGS 500.00 \$ CHESCO \$ PECO_P4_PEACH205 \$ STBK END
JC-P7-1-JCC-230-13	CONTINGENCY 'JC-P7-1-JCC-230-13' /* MANITOU-OYSTER CREEK 230 LINES & OYSTER GEN DISCONNECT BRANCH FROM BUS 206297 TO BUS 206302 CKT 1 DISCONNECT BRANCH FROM BUS 206297 TO BUS 206302 CKT 2 DISCONNECT BRANCH FROM BUS 206302 TO BUS 206325 CKT 1 END
AE_P4-2 AE33	CONTINGENCY 'AE_P4-2 AE33' /*LEWIS TO CARDIFF BREAKER V DISCONNECT BRANCH FROM BUS 227902 TO BUS 227913 CKT 1 /*LEWIS CARDIFF 138 138 DISCONNECT BRANCH FROM BUS 227902 TO BUS 227903 CKT 1 /*LEWIS MILL #1 138 138 DISCONNECT BRANCH FROM BUS 227902 TO BUS 227918 CKT 1 /*LEWIS 138 69 T1 END
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

Contingency Name	Contingency Definition
PECO_P4_PEACH215/* \$ CHESCO \$ PECO_P4_PEACH215 \$ STBK	CONTINGENCY 'PECO_P4_PEACH215/* \$ CHESCO \$ PECO_P4_PEACH215 \$ STBK' TRIP BRANCH FROM BUS 200065 TO BUS 200051 CKT 1 /* PCHBTM2S 500.00 ROCKSPGS 500.00 \$ CHESCO \$ PECO_P4_PEACH215 \$ STBK REMOVE MACHINE 1 FROM BUS 200034 /* PCHBTM 2 22.00 \$ CHESCO \$ PECO_P4_PEACH215 \$ STBK END
AE_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