

Generation Interconnection Feasibility Study Report Queue Position AE2-091

The Interconnection Customer (IC) has proposed a 35.0 MW Energy (23.0 MW Capacity) combined solar and storage generating facility to be located at Latitude: 39.3194880, Longitude: -75.1732730 in Cumberland County, New Jersey. At the IC's request, PJM studied the AE2-091 project at both a Primary and Secondary Point of Interconnection. The project was studied at a commercial probability of 53% with the results provided below. The planned in-service date, as requested by the IC during the project kick-off call, is June 30, 2022. This date is dependent on completion of PJM studies (System Impact and Facilities) and the Transmission Owner's construction schedule for network upgrades.

Point(s) of Interconnection

The Interconnection Customer requested a Primary and Secondary Point of Interconnection (POI) be evaluated for the AE2-091 project.

Primary Point of Interconnection

PJM studied the AE2-091 project as an injection into the Atlantic City Electric Company (ACE) transmission system at the Newport 69 kV Substation (PSSE bus #228219) and evaluated it for compliance with reliability criteria for summer peak conditions in 2022. The AE2-091 project will connect with the ACE transmission system at the Newport 69 kV Substation at a new bus position.

Transmission Owner Scope of Attachment Facilities and Direct Connection Work

Substation Interconnection Estimate

Scope: Expand the ACE Newport 69 kV Substation into a five (5) position ring bus by constructing one (1) new 69 kV bus position to facilitate the interconnection of AE2-091.

NOTE: AE2-091 will incur the costs for the interconnection facilities of ACE's Supplemental Project# TBD in the event of a cancellation to ACE's Supplemental Project# TBD. Any delay in construction to the interconnection facilities for ACE's Supplemental Project# TBD will subsequently delay AE2-091. ACE's Supplemental Project# TBD has an estimated ISD of 12/30/2024.

Estimate: \$1,900,000

Construction Time: 24-36 months

Major Equipment Included in Estimate:

- | | |
|--|---------|
| • Power Circuit Breaker, 69 kV | Qty. 1 |
| • 2000A, Gang Switch, 69 kV Manually Operated Device | Qty. 5 |
| • Double 1590 ACSR (325') | Qty. 1 |
| • Potential Transformers, 3-phase | Qty. 3 |
| • Insulators, 69 kV | Qty. 15 |

• Disconnect Switch Stand, Low, 69 kV, Steel	Qty. 1
• Relay Panel, Transmission Line, FL/BU (20")	Qty. 2
• Relay Panel, Bus, FL/BU	Qty. 1
• Control Panel, 69 kV Circuit Breaker (10")	Qty. 1
• Take-off structure, 69 kV	Qty. 1
• 69 kV Lightning Arresters	Qty. 3
• 69 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.
- No additional land or substation expansion is required.
- Existing AC&DC systems are adequate.
- Ground grid adequate for new box structure.
- Storm water management is adequate.
- Reuse of major equipment from existing substation.

Required Relaying and Communications

New protection relays are required for the new terminals.

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

A breaker control relay on a breaker control panel will be required for the control and operation of each new 69 kV circuit breaker (1 total).

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

Metering

A three phase 69 kV revenue metering point will need to be established within the IC facility at the POI.

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

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

Interconnection Customer Scope of Direct Connection Work

The IC is responsible for all design and construction related to activities on their side of the Point of Interconnection. Site preparation, including grading and an access road, as necessary, is assumed to be by the IC. Route selection, line design, and right-of-way acquisition of the direct connect facilities is not included in this report, and is the responsibility of the IC. Protective relaying and metering design and installation must comply with ACE's applicable standards. The IC is also required to provide revenue metering and real-time telemetering data to PJM in conformance with the requirements contained in PJM Manuals M-01 and M-14 and the PJM Tariff.

ACE Interconnection Customer Scope of Direct Connection Work Requirements:

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

Special Operating Requirements

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

Summer Peak Analysis - 2022

Transmission Network Impacts

Potential transmission network impacts are as follows:

Generator Deliverability

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

None

Multiple Facility Contingency

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

None

Contribution to Previously Identified Overloads

(This project contributes to the following contingency overloads, i.e. "Network Impacts", identified for earlier generation or transmission interconnection projects in the PJM Queue)

ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC DC	MW IMPACT
2023257	227904	MILL #2	AE	227945	LEWIS #2	AE	1	AE_P4-2 AE33	breaker	282.0	195.1	195.69	DC	3.74
2023232	227905	SCULL#1	AE	227903	MILL #1	AE	1	AE_P4-2 AE29	breaker	306.0	277.9	278.5	DC	4.09
2023498	227905	SCULL#1	AE	227903	MILL #1	AE	1	AE_P1-2 BLE-SC-ML2	single	306.0	128.83	129.86	DC	3.14
2023247	227906	SCULL#2	AE	227904	MILL #2	AE	1	AE_P4-2 AE28	breaker	307.0	255.65	256.35	DC	4.78
2023490	227906	SCULL#2	AE	227904	MILL #2	AE	1	AE_P1-2 BLE-SC-ML1	single	307.0	129.7	130.72	DC	3.14
2023227	228110	BLE	AE	227905	SCULL#1	AE	1	AE_P4-2 AE29	breaker	307.0	284.35	284.95	DC	4.09
2023242	228110	BLE	AE	227906	SCULL#2	AE	1	AE_P4-2 AE28	breaker	307.0	260.92	261.62	DC	4.78
2023472	228110	BLE	AE	227905	SCULL#1	AE	1	AE_P1-2 BLE-SC-ML2	single	307.0	135.78	136.8	DC	3.14
2023481	228110	BLE	AE	227906	SCULL#2	AE	1	AE_P1-2 BLE-SC-ML1	single	307.0	134.97	135.99	DC	3.14
2023788	228130	TUCKAHOE	AE	227946	MILL#2	AE	1	AE_P7-1 AE7TOWER	tower	146.0	152.88	153.49	DC	1.98
2023840	228207	CUMB	AE	228002	ORCHARD	AE	1	AE_P7-1 AE7TOWER	tower	799.0	110.47	111.3	DC	14.58
2023785	228217	DENNIS	AE	228130	TUCKAHOE	AE	1	AE_P7-1 AE7TOWER	tower	146.0	157.67	158.28	DC	1.98
2023842	228714	CNTRL N	AE	228504	SHLDLY T	AE	1	AE_P7-1 AE7TOWER	tower	143.0	103.02	107.7	DC	6.68

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
2023490,2023247	5	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	\$25,300,000
2023257	3	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
2023785	11	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

ID	Index	Facility	Upgrade Description	Cost
2023788	9	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
2023840	10	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 is required at Cumberland. Project Type : FAC Cost : \$46,600,000 Time Estimate : 36-60 Months	\$46,600,000
2023842	12	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

ID	Index	Facility	Upgrade Description	Cost
2023227,2023472	7	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	\$11,200,000
2023232,2023498	4	SCULL#1 138.0 kV - MILL #1 138.0 kV Ckt 1	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	\$25,300,000

ID	Index	Facility	Upgrade Description	Cost
2023242,2023481	8	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	\$11,600,000
			TOTAL COST	\$161,900,000

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
2023501	227903	MILL #1	AE	227902	LEWIS #1	AE	1	AE_P1-2 BLE-ML-LEW2	operation	306.0	224.72	225.35	DC	4.32
2023503	227903	MILL #1	AE	227902	LEWIS #1	AE	1	Base Case	operation	218.0	155.16	155.66	DC	2.39
2023524	227904	MILL #2	AE	227945	LEWIS #2	AE	1	AE_P1-2 BLE-ML-LEW1	operation	282.0	185.9	186.49	DC	3.64
2023525	227904	MILL #2	AE	227945	LEWIS #2	AE	1	Base Case	operation	219.0	154.01	154.5	DC	2.38
2023493	227905	SCULL#1	AE	227903	MILL #1	AE	1	AE_P1-2 BLE-SC-ML2	operation	306.0	253.61	254.31	DC	4.78
2023495	227905	SCULL#1	AE	227903	MILL #1	AE	1	Base Case	operation	218.0	201.18	201.75	DC	2.74
2023485	227906	SCULL#2	AE	227904	MILL #2	AE	1	AE_P1-2 BLE-SC-ML1	operation	307.0	254.08	254.78	DC	4.78
2023487	227906	SCULL#2	AE	227904	MILL #2	AE	1	Base Case	operation	219.0	201.25	201.82	DC	2.74
2023682	227946	MILL#2	AE	227922	MILL #1	AE	1	AE_P1-2 ORCH-CUMB	operation	239.0	102.03	102.65	DC	3.28
2023467	228110	BLE	AE	227905	SCULL#1	AE	1	AE_P1-2 BLE-SC-ML2	operation	307.0	260.14	260.84	DC	4.78
2023469	228110	BLE	AE	227905	SCULL#1	AE	1	Base Case	operation	219.0	210.58	211.15	DC	2.74
2023476	228110	BLE	AE	227906	SCULL#2	AE	1	AE_P1-2 BLE-SC-ML1	operation	307.0	259.36	260.06	DC	4.78
2023478	228110	BLE	AE	227906	SCULL#2	AE	1	Base Case	operation	219.0	208.65	209.21	DC	2.74

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 AE2-091 project.

Secondary Point of Interconnection

PJM studied the AE2-091 project into the Atlantic City Electric Company (ACE) system at a tap of the Newport (PSSE bus #228219) to Fairton (PSSE Bus # 228214) 69 kV circuit and evaluated it for compliance with reliability criteria for summer peak conditions in 2022.

Summer Peak Analysis - 2022

Transmission Network Impacts

Potential transmission network impacts are as follows:

Generator Deliverability

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

ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC DC	MW IMPACT
2023474	228110	BLE	AE	227905	SCULL#1	AE	1	Base Case	single	219.0	99.8	100.6	DC	1.76

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
8344069	219702	HILLTOP_1	PSE&G	219101	BEAVERBK_1	PSE&G	1	AE_P7-1 W2275_O2241	tower	740.0	99.89	100.38	DC	3.57

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
2023257	227904	MILL #2	AE	227945	LEWIS #2	AE	1	AE_P4-2 AE33	breaker	282.0	133.19	133.77	DC	3.66
2023232	227905	SCULL#1	AE	227903	MILL #1	AE	1	AE_P4-2 AE29	breaker	306.0	191.35	191.94	DC	4.01
2023498	227905	SCULL#1	AE	227903	MILL #1	AE	1	AE_P1-2 BLE-SC- ML2	single	306.0	115.25	116.25	DC	3.07
2023247	227906	SCULL#2	AE	227904	MILL #2	AE	1	AE_P4-2 AE28	breaker	307.0	178.68	179.36	DC	4.68
2023490	227906	SCULL#2	AE	227904	MILL #2	AE	1	AE_P1-2 BLE-SC- ML1	single	307.0	116.15	117.15	DC	3.07
2023227	228110	BLE	AE	227905	SCULL#1	AE	1	AE_P4-2 AE29	breaker	307.0	198.09	198.68	DC	4.01
2023242	228110	BLE	AE	227906	SCULL#2	AE	1	AE_P4-2 AE28	breaker	307.0	183.95	184.64	DC	4.68
2023472	228110	BLE	AE	227905	SCULL#1	AE	1	AE_P1-2 BLE-SC- ML2	single	307.0	122.2	123.2	DC	3.07
2023481	228110	BLE	AE	227906	SCULL#2	AE	1	AE_P1-2 BLE-SC- ML1	single	307.0	121.43	122.43	DC	3.07
2023788	228130	TUCKAHOE	AE	227946	MILL#2	AE	1	AE_P7-1 AE7TOWER	tower	146.0	111.26	111.86	DC	1.94
2023785	228217	DENNIS	AE	228130	TUCKAHOE	AE	1	AE_P7-1 AE7TOWER	tower	146.0	115.99	116.59	DC	1.94

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
8343833	213922	RICHMOND	PECO	214012	WANEETA3	PECO	1	Base Case	operation	760.0	99.84	100.23	DC	6.56
2023501	227903	MILL #1	AE	227902	LEWIS #1	AE	1	AE_P1-2 BLE-ML-LEW2	operation	306.0	155.64	156.26	DC	4.23
2023503	227903	MILL #1	AE	227902	LEWIS #1	AE	1	Base Case	operation	218.0	104.24	104.72	DC	2.34
2023524	227904	MILL #2	AE	227945	LEWIS #2	AE	1	AE_P1-2 BLE-ML-LEW1	operation	282.0	126.26	126.83	DC	3.57
2023525	227904	MILL #2	AE	227945	LEWIS #2	AE	1	Base Case	operation	219.0	103.46	103.94	DC	2.33
2023493	227905	SCULL#1	AE	227903	MILL #1	AE	1	AE_P1-2 BLE-SC-ML2	operation	306.0	176.4	177.09	DC	4.68
2023495	227905	SCULL#1	AE	227903	MILL #1	AE	1	Base Case	operation	218.0	139.06	139.62	DC	2.68
2023485	227906	SCULL#2	AE	227904	MILL #2	AE	1	AE_P1-2 BLE-SC-ML1	operation	307.0	177.11	177.8	DC	4.68
2023487	227906	SCULL#2	AE	227904	MILL #2	AE	1	Base Case	operation	219.0	139.38	139.93	DC	2.68
2023467	228110	BLE	AE	227905	SCULL#1	AE	1	AE_P1-2 BLE-SC-ML2	operation	307.0	183.15	183.84	DC	4.68
2023469	228110	BLE	AE	227905	SCULL#1	AE	1	Base Case	operation	219.0	148.75	149.3	DC	2.68
2023476	228110	BLE	AE	227906	SCULL#2	AE	1	AE_P1-2 BLE-SC-ML1	operation	307.0	182.39	183.08	DC	4.68
2023478	228110	BLE	AE	227906	SCULL#2	AE	1	Base Case	operation	219.0	146.78	147.33	DC	2.68

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
2023257	227904	MILL #2	AE	227945	LEWIS #2	AE	1	AE_P4-2 AE33	breaker	282.0	195.1	195.69	DC	3.74

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
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

Bus #	Bus	MW Impact
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
2023232	227905	SCULL#1	AE	227903	MILL #1	AE	1	AE_P4-2 AE29	breaker	306.0	277.9	278.5	DC	4.09

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

Bus #	Bus	MW Impact
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
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
2023247	227906	SCULL#2	AE	227904	MILL #2	AE	1	AE_P4-2 AE28	breaker	307.0	255.65	256.35	DC	4.78

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

Bus #	Bus	MW Impact
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
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

Bus #	Bus	MW Impact
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
2023227	228110	BLE	AE	227905	SCULL#1	AE	1	AE_P4-2 AE29	breaker	307.0	284.35	284.95	DC	4.09

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

Bus #	Bus	MW Impact
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
2023242	228110	BLE	AE	227906	SCULL#2	AE	1	AE_P4-2 AE28	breaker	307.0	260.92	261.62	DC	4.78

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

Bus #	Bus	MW Impact
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 AREA	TO BUS#	TO BUS AREA	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC DC	MW IMPACT
2023788	228130	TUCKAHOE	AE	227946	MILL#2	AE	1 AE_P7-1 AE7TOWER	tower	146.0	152.88	153.49	DC	1.98

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

Bus #	Bus	MW Impact
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
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
2023840	228207	CUMB	AE	228002	ORCHARD	AE	1	AE_P7-1 AE7TOWER	tower	799.0	110.47	111.3	DC	14.58

Bus #	Bus	MW Impact
228202	CUMB CT	4.38

Bus #	Bus	MW Impact
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
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

Bus #	Bus	MW Impact
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
2023785	228217	DENNIS	AE	228130	TUCKAHOE	AE	1	AE_P7-1 AE7TOWER	tower	146.0	157.67	158.28	DC	1.98

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
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

Bus #	Bus	MW Impact
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
2023842	228714	CNTRL N	AE	228504	SHLDLY T	AE	1	AE_P7-1 AE7TOWER	tower	143.0	103.02	107.7	DC	6.68

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
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

Bus #	Bus	MW Impact
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

Contingency Name	Contingency Definition
AE_P4-2 AE33	CONTINGENCY 'AE_P4-2 AE33' /*LEWIS TO CARDIFF BREAKER V DISCONNECT BRANCH FROM BUS 227902 TO BUS 227913 CKT 1 /*LEWIS CARDIFF 138 138 DISCONNECT BRANCH FROM BUS 227902 TO BUS 227903 CKT 1 /*LEWIS MILL #1 138 138 DISCONNECT BRANCH FROM BUS 227902 TO BUS 227918 CKT 1 /*LEWIS 138 69 T1 END
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
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

Contingency Name	Contingency Definition
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
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
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

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
2023227	228110	BLE	AE	227905	SCULL#1	AE	1	AE_P4-2 AE29	breaker	307.0	198.09	198.68	DC	4.01

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
936411	AD2-052 C	0.34
936412	AD2-052 E	0.17
938421	AE1-061 C	0.14
938422	AE1-061 E	0.14
938781	AE1-104 C O1	83.14
938782	AE1-104 E O1	212.68
939501	AE1-179 C O1	4.52

Bus #	Bus	MW Impact
939502	AE1-179 E O1	3.19
940001	AE1-240 C O1	3.76
940002	AE1-240 E O1	2.69
940961	AE2-087 C	0.15
940962	AE2-087 E	0.21
940963	AE2-087 BAT	0.06
941001	AE2-091 C O2	2.63
941002	AE2-091 E O2	1.37
941121	AE2-106 C	0.17
941122	AE2-106 E	0.23
941123	AE2-106 BAT	0.06
941931	AE2-205 C O2	8.82
941932	AE2-205 E O2	5.88
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

ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC DC	MW IMPACT
8344069	219702	HILLTOP_1	PSE&G	219101	BEAVERBK_1	PSE&G	1	AE_P7-1 W2275_Q2241	tower	740.0	99.89	100.38	DC	3.57

Bus #	Bus	MW Impact
227801	ONTC&DCT	3.82
227843	MARINGEN E	0.4
227928	V4-067E	0.16
228260	V4-054C	0.09

Bus #	Bus	MW Impact
228261	V4-054E	0.63
228357	V2-046E	1.31
228702	WEST CT	0.33
228712	V2-041E	0.25
228717	S121	0.47
228720	V2-035C	0.01
228721	V2-035E	0.14
228727	W2-039G	0.79
292063	V1-021 E	0.03
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	0.42
915022	Y3-012 E	0.74
924051	AB2-049 C	0.47
924052	AB2-049 E	0.77
924531	AB2-102 C	21.93
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	61.12
933962	AD1-019 E	0.75
936411	AD2-052 C	0.67
936412	AD2-052 E	0.33
936491	AD2-064 C	0.06
936492	AD2-064 E	0.09
936501	AD2-065 C	0.24
936502	AD2-065 E	0.33
937011	AD2-135 C	0.08
937012	AD2-135 E	0.14
938311	AE1-046 C	0.22
938312	AE1-046 E	0.11
938421	AE1-061 C	0.56
938422	AE1-061 E	0.56
938431	AE1-062 C	1.13
938432	AE1-062 E	1.13
938781	AE1-104 C O1	13.82
938782	AE1-104 E O1	35.36
938871	AE1-115 C	0.52
938872	AE1-115 E	0.52
939301	AE1-161 C	2.3
939302	AE1-161 E	3.45
939501	AE1-179 C O1	3.58
939502	AE1-179 E O1	2.53
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

Bus #	Bus	MW Impact
939931	AE1-229 C O1	9.28
939932	AE1-229 E O1	6.29
940001	AE1-240 C O1	2.96
940002	AE1-240 E O1	2.11
940281	AE2-011 C	0.16
940282	AE2-011 E	0.22
940361	AE2-020 C O2	10.57
940362	AE2-020 E O2	49.47
940371	AE2-021 C O2	10.57
940372	AE2-021 E O2	49.47
940381	AE2-022 C O2	6.16
940382	AE2-022 E O2	28.86
940391	AE2-023 C O2	7.82
940392	AE2-023 E O2	36.61
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	2.35
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
941472	AE2-144 E	0.17
941931	AE2-205 C O2	4.63
941932	AE2-205 E O2	3.09
942012	AE2-213 E	0.11
942101	AE2-222 C O2	8.45
942102	AE2-222 E O2	21.23
942201	AE2-232 C O2	11.16
942202	AE2-232 E O2	28.55
942381	AE2-251 C O2	33.47
942382	AE2-251 E O2	85.64
942571	AE2-272	0.14
942941	AE2-314 C	4.29
942942	AE2-314 E	2.86
943071	AE2-334 C	3.46
943072	AE2-334 E	1.84
943081	AE2-335 C O2	4.92
943082	AE2-335 E O2	2.19
BLUEG	BLUEG	0.42
CALDERWOOD	CALDERWOOD	0.03
CANNELTON	CANNELTON	0.02
CARR	CARR	0.24
CATAWBA	CATAWBA	0.02
CHEOAH	CHEOAH	0.03
CHILHOWEE	CHILHOWEE	0.01
COFFEEN	COFFEEN	0.04

Bus #	Bus	MW Impact
COTTONWOOD	COTTONWOOD	0.15
DUCKCREEK	DUCKCREEK	0.1
EDWARDS	EDWARDS	0.04
ELMERSMITH	ELMERSMITH	0.04
FARMERCITY	FARMERCITY	0.03
G-007	G-007	0.11
GIBSON	GIBSON	0.02
HAMLET	HAMLET	0.02
NEWTON	NEWTON	0.11
O-066	O-066	5.39
PRAIRIE	PRAIRIE	0.2
RENSSELAER	RENSSELAER	0.19
SANTEETLA	SANTEETLA	0.01
SMITHLAND	SMITHLAND	0.02
TATANKA	TATANKA	0.05
TILTON	TILTON	0.05
TRIMBLE	TRIMBLE	0.05
TVA	TVA	0.12
UNIONPOWER	UNIONPOWER	0.05

ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC DC	MW IMPACT
2023257	227904	MILL #2	AE	227945	LEWIS #2	AE	1	AE_P4-2 AE33	breaker	282.0	133.19	133.77	DC	3.66

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
940961	AE2-087 C	0.14
940962	AE2-087 E	0.19
940963	AE2-087 BAT	0.05

Bus #	Bus	MW Impact
941001	AE2-091 C O2	2.4
941002	AE2-091 E O2	1.25
941121	AE2-106 C	0.15
941122	AE2-106 E	0.21
941123	AE2-106 BAT	0.05
941931	AE2-205 C O2	8.11
941932	AE2-205 E O2	5.41
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

ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC DC	MW IMPACT
2023232	227905	SCULL#1	AE	227903	MILL #1	AE	1	AE_P4-2 AE29	breaker	306.0	191.35	191.94	DC	4.01

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

Bus #	Bus	MW Impact
924532	AB2-102 E	0.82
936411	AD2-052 C	0.34
936412	AD2-052 E	0.17
938421	AE1-061 C	0.14
938422	AE1-061 E	0.14
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
940961	AE2-087 C	0.15
940962	AE2-087 E	0.21
940963	AE2-087 BAT	0.06
941001	AE2-091 C O2	2.63
941002	AE2-091 E O2	1.37
941121	AE2-106 C	0.17
941122	AE2-106 E	0.23
941123	AE2-106 BAT	0.06
941931	AE2-205 C O2	8.82
941932	AE2-205 E O2	5.88
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

ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC DC	MW IMPACT
2023247	227906	SCULL#2	AE	227904	MILL #2	AE	1	AE_P4-2 AE28	breaker	307.0	178.68	179.36	DC	4.68

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
940961	AE2-087 C	0.17
940962	AE2-087 E	0.24
940963	AE2-087 BAT	0.07
941001	AE2-091 C O2	3.07
941002	AE2-091 E O2	1.6
941121	AE2-106 C	0.19
941122	AE2-106 E	0.27
941123	AE2-106 BAT	0.07
941931	AE2-205 C O2	10.29
941932	AE2-205 E O2	6.86
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

Bus #	Bus	MW Impact
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

ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC DC	MW IMPACT
2023242	228110	BLE	AE	227906	SCULL#2	AE	1	AE_P4-2 AE28	breaker	307.0	183.95	184.64	DC	4.68

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
940961	AE2-087 C	0.17
940962	AE2-087 E	0.24
940963	AE2-087 BAT	0.07
941001	AE2-091 C O2	3.07
941002	AE2-091 E O2	1.6
941121	AE2-106 C	0.19
941122	AE2-106 E	0.27
941123	AE2-106 BAT	0.07
941931	AE2-205 C O2	10.29
941932	AE2-205 E O2	6.86
BLUEG	BLUEG	0.88
CALDERWOOD	CALDERWOOD	0.09

Bus #	Bus	MW Impact
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

ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC DC	MW IMPACT
2023788	228130	TUCKAHOE	AE	227946	MILL#2	AE	1	AE_P7-1 AE7TOWER	tower	146.0	111.26	111.86	DC	1.94

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
941001	AE2-091 C O2	1.27
941002	AE2-091 E O2	0.66
941931	AE2-205 C O2	4.21
941932	AE2-205 E O2	2.81
BLUEG	BLUEG	0.26
CALDERWOOD	CALDERWOOD	0.03
CANNELTON	CANNELTON	0.02

Bus #	Bus	MW Impact
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

ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC DC	MW IMPACT
2023785	228217	DENNIS	AE	228130	TUCKAHOE	AE	1	AE_P7-1 AE7TOWER	tower	146.0	115.99	116.59	DC	1.94

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
941001	AE2-091 C O2	1.27
941002	AE2-091 E O2	0.66
941931	AE2-205 C O2	4.21
941932	AE2-205 E O2	2.81
BLUEG	BLUEG	0.26
CALDERWOOD	CALDERWOOD	0.03
CANNELTON	CANNELTON	0.02
CARR	CARR	0.05

Bus #	Bus	MW Impact
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

Contingency Name	Contingency Definition
AE_P4-2 AE33	CONTINGENCY 'AE_P4-2 AE33' /*LEWIS TO CARDIFF BREAKER V DISCONNECT BRANCH FROM BUS 227902 TO BUS 227913 CKT 1 /*LEWIS CARDIFF 138 138 DISCONNECT BRANCH FROM BUS 227902 TO BUS 227903 CKT 1 /*LEWIS MILL #1 138 138 DISCONNECT BRANCH FROM BUS 227902 TO BUS 227918 CKT 1 /*LEWIS 138 69 T1 END
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_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
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

Contingency Name	Contingency Definition
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
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
AE_P7-1 W2275_O2241	CONTINGENCY 'AE_P7-1 W2275_O2241' /* DOUBLE CIRCUIT TOWER W- 2275(MICKLETON - DEPTFORD) AND O-2241(MICKLETON - THOROFARE) TRIP BRANCH FROM BUS 219762 TO BUS 228401 CKT 1 /* TRIP O-2241(MICKLETON - THOROFARE) 230KV TRIP BRANCH FROM BUS 219121 TO BUS 228401 CKT 1 /* TRIP (MICKLETON - THOROFARE #2) 230KV END