# *Generation Interconnection*
# *Feasibility Study Report*
# *Queue Position AE2-335*

The Interconnection Customer (IC) has proposed a 60.0 MW Energy (41.5 MW Capacity) combined solar and storage generating facility to be located at Latitude: 39.6124090, Longitude: -75.0380200 in Gloucester County, New Jersey. At the IC's request, PJM studied the AE2-335 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 AE2-335 project.

## Primary Point of Interconnection

PJM studied the AE2-335 project as an injection into the Atlantic City Electric Company (ACE) transmission system at the Franklin 138 kV Substation (PSSE bus #228482) and evaluated it for compliance with reliability criteria for summer peak conditions in 2022. The AE2-335 project will connect with the ACE transmission system at the 138 kV Franklin Substation where it will connect to a new 138 kV bus position.

### Transmission Owner Scope of Attachment Facilities Work

### Substation Interconnection Estimate

**Scope:** Build a new position onto the 138 kV bus at Franklin Substation. The new position will facilitate the interconnection of AE2-335 facility.

**Estimate:** $2,600,000
**Construction Time:** 36-48 months

**Major Equipment Included in Estimate:**

- Power Circuit Breaker, 138 kV — Qty. 1
- Breaker Disconnect, 138 kV — Qty. 4
- Line Disconnect, 138 kV — Qty. 1
- Double 1590 ACSR (325') — Qty. 3
- Disconnect Switch Stand, Low, 138 kV, Steel — Qty. 1
- Relay Panel, Bus, FL/BU (20") — Qty. 1
- Control Panel, 138 kV Circuit Breaker (10") — Qty. 1
- Take-off structure, 138 kV — Qty. 1
- 138 kV Lightning Arresters — Qty. 3

- 138 kV Lightning Arresters Stands Qty. 3
- Potential Transformer, 3-phase Qty. 1

**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.
- Existing AC & DC systems are adequate
- Existing ground grid and storm water management requires southward expansion.

**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 position at Franklin 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.

# 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 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **8558747** | 228402 | MONROE | AE | 219100 | NEWFRDM | PSE&G | 1 | PS_P7-1_V2274+P2242_LT | tower | 804.0 | 96.29 | 100.03 | DC | 29.69 |

**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 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **8557804** | 213922 | RICHMOND | PECO | 214012 | WANEETA3 | PECO | 1 | PECO_P2-2_CHI230B1/* $ DELCO $ PECO_P2-2_CHI230B1 $ B | bus | 1180.0 | 107.07 | 107.6 | DC | 13.86 |
| **8558092** | 213922 | RICHMOND | PECO | 214012 | WANEETA3 | PECO | 1 | PECO_P4_CHICH045/* $ DELCO $ PECO_P4_CHICH045 $ STBK | breaker | 1180.0 | 107.06 | 107.59 | DC | 13.86 |
| **8557806** | 214206 | RICHRE29 | PECO | 213922 | RICHMOND | PECO | 1 | PECO_P2-2_CHI230B1/* $ DELCO $ PECO_P2-2_CHI230B1 $ B | bus | 1336.0 | 106.18 | 106.68 | DC | 14.79 |
| **8558094** | 214206 | RICHRE29 | PECO | 213922 | RICHMOND | PECO | 1 | PECO_P4_CHICH045/* $ DELCO $ PECO_P4_CHICH045 $ STBK | breaker | 1336.0 | 106.16 | 106.67 | DC | 14.79 |
| **8558689** | 219100 | NEWFRDM | PSE&G | 219704 | HILLTOP_3 | PSE&G | 1 | PS_P7-1_V2274+P2242_LT | tower | 740.0 | 123.86 | 124.88 | DC | 7.52 |
| **8558690** | 219100 | NEWFRDM | PSE&G | 219704 | HILLTOP_3 | PSE&G | 1 | AE_P7-1 W2275_O2241 | tower | 740.0 | 117.81 | 118.84 | DC | 7.55 |
| **8557805** | 219125 | CAMDEN | PSE&G | 214206 | RICHRE29 | PECO | 1 | PECO_P2-2_CHI230B1/* $ DELCO $ PECO_P2-2_CHI230B1 $ B | bus | 1336.0 | 106.19 | 106.7 | DC | 14.79 |
| **8558093** | 219125 | CAMDEN | PSE&G | 214206 | RICHRE29 | PECO | 1 | PECO_P4_CHICH045/* $ DELCO $ PECO_P4_CHICH045 $ STBK | breaker | 1336.0 | 106.18 | 106.68 | DC | 14.79 |

# 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 |
|---|---|---|---|---|
| **8557804,8558092** | 4 | **RICHMOND 230.0 kV - WANEETA3 230.0 kV Ckt 1** | **PECO**<br>**pe001 (678) : Change connection point for Chichester-Eddystone 220-36 line at Chichester from #1 bus to #2 kV bus**<br>**Project Type : CON**<br>**Cost : $3,000,000**<br>**Time Estimate : 24.0 Months**<br><br>**PSEG**<br>**r_PS_AE2_FES_CamRich (730) : No Violation. PSEG emergency rating 1497 MVA.**<br>**Project Type : FAC**<br>**Cost : $0**<br>**Time Estimate : 0.0 Months** | $3,000,000 |
| **8557806,8558094** | 5 | **RICHRE29 230.0 kV - RICHMOND 230.0 kV Ckt 1** | | |
| **8557805,8558093** | 7 | **CAMDEN 230.0 kV - RICHRE29 230.0 kV Ckt 1** | | |
| **8558690,8558689** | 6 | **NEWFRDM 230.0 kV - HILLTOP_3 230.0 kV Ckt 1** | **PSEG**<br>**r_PS_AE2_FES_11_NFreedHill (753) : Wreck and Rebuild**<br>**Project Type : FAC**<br>**Cost : $76,885,198**<br>**Time Estimate : 55.0 Months** | $76,885,198 |

| ID | Index | Facility | Upgrade Description | Cost |
|---|---|---|---|---|
| 8558747 | 2 | MONROE 230.0 kV - NEWFRDM 230.0 kV Ckt 1 | **AEC**<br>**at2305r0001 (52) : To mitigate the (ACE) Monroe to New Freedom 230 kV line (from bus 228402 to bus 219100 ckt 1) overload, it will require increasing the emergency rating of the Monroe to New Freedom 230 kV line by rebuilding the circuit. The rebuild will include the installation of new poles, foundations, insulators, and conductor.**<br>**Project Type : FAC**<br>**Cost : $13,400,000**<br>**Time Estimate : 30-60 Months**<br><br>**PSEG**<br>**r_PS_AE2_FES_MonroeNewFrdm (741) : No Violation. PSEG emergency rating 1572 MVA.**<br>**Project Type : FAC**<br>**Cost : $0**<br>**Time Estimate : 0.0 Months** | $13,400,000 |
| | | | **TOTAL COST** | **$93,285,198** |

## Steady-State Voltage Requirements

To be performed during later study phases as required.

## Short Circuit

No issues identified.

## Stability and Reactive Power Requirement

To be performed during later study phase.

## Light Load Analysis - 2022

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

## Delivery of Energy Portion of Interconnection Request

*PJM also studied the delivery of the energy portion of this interconnection request. Any problems identified below are likely to result in operational restrictions to the project under study. The developer can proceed with network upgrades to eliminate the operational restriction at their discretion by submitting a Merchant Transmission Interconnection request. Only the most severely overloaded conditions are listed. There is no guarantee of full delivery of energy for this project by fixing only the conditions listed in this section. With a Transmission Interconnection Request, a subsequent analysis will be performed, which will study all overload conditions associated with the overloaded element(s) identified.*

| ID | FROM BUS# | FROM BUS | FROM BUS AREA | TO BUS# | TO BUS | TO BUS AREA | CKT ID | CONT NAME | Type | Rating MVA | PRE PROJECT LOADING % | POST PROJECT LOADING % | AC\|DC | MW IMPACT |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|

| 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 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **8558485** | 213922 | RICHMOND | PECO | 214012 | WANEETA3 | PECO | 1 | Base Case | operation | 760.0 | 104.2 | 104.94 | DC | 12.32 |
| **8558486** | 219110 | GLOUCSTR | PSE&G | 219755 | CUTHBERT_4 | PSE&G | 1 | PS_P1-2_C-2308_LT | operation | 758.0 | 103.87 | 104.39 | DC | 8.57 |
| **8558221** | 227901 | DOROTHY | AE | 227949 | LEWIS #3 | AE | 1 | Base Case | operation | 154.0 | 181.92 | 187.82 | DC | 9.07 |
| **8558223** | 227901 | DOROTHY | AE | 227949 | LEWIS #3 | AE | 1 | AE_P1-1 913341[Y1-077]-1-GEN | operation | 205.0 | 156.42 | 160.85 | DC | 9.07 |
| **8558441** | 227902 | LEWIS #1 | AE | 227945 | LEWIS #2 | AE | 1 | AE_P1-2 BLE-ML-LEW2 | operation | 286.8 | 115.43 | 115.98 | DC | 3.48 |
| **8558469** | 228404 | MONROE | AE | 228402 | MONROE | AE | 2 | AE_P1-3 MON 3 XFR | operation | 274.0 | 97.66 | 110.41 | DC | 34.93 |
| **8558492** | 228404 | MONROE | AE | 228402 | MONROE | AE | 1 | AE_P1-3 MON 4 XFR | operation | 292.0 | 92.55 | 104.62 | DC | 35.27 |

### 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 AE2-335 project.

## Secondary Point of Interconnection

PJM studied the AE2-335 project into the Atlantic City Electric Company (ACE) system at a tap of the Monroe (PSSE bus # 228404) to Landis (PSSE bus #228500) 138 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 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **1834621** | 228404 | MONROE | AE | 228402 | MONROE | AE | 2 | AE_P1-3 MON 3 XFR | single | 274.0 | 93.74 | 102.34 | DC | 23.57 |

### 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 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **430568** | 200051 | ROCKSPGS | PJM | 200065 | PCHBTM2S | PJM | 1 | JC-P2-3-JCC-500-002D | breaker | 2905.0 | 99.81 | 100.12 | DC | 19.47 |
| **1621844** | 213922 | RICHMOND | PECO | 214012 | WANEETA3 | PECO | 1 | PECO_P2- | bus | 1180.0 | 119.47 | 120.0 | DC | 13.83 |

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | 2_CHI230B1/* $ DELCO $ PECO_P2-2_CHI230B1 $ B | | | | | | |
| **1715079** | 213922 | RICHMOND | PECO | 214012 | WANEETA3 | PECO | 1 | PECO_P4_CHICH045/* $ DELCO $ PECO_P4_CHICH045 $ STBK | breaker | 1180.0 | 119.46 | 119.99 | DC | 13.83 |
| **1715080** | 213922 | RICHMOND | PECO | 214012 | WANEETA3 | PECO | 1 | PECO_P4_PEACH215/* $ CHESCO $ PECO_P4_PEACH215 $ STBK | breaker | 1180.0 | 106.07 | 106.65 | DC | 15.19 |
| **1621854** | 214010 | WANEETA2 | PECO | 213817 | N PHILA | PECO | 1 | PECO_P2-2_CHI230B1/* $ DELCO $ PECO_P2-2_CHI230B1 $ B | bus | 621.0 | 107.65 | 108.16 | DC | 7.03 |
| **1715150** | 214010 | WANEETA2 | PECO | 213817 | N PHILA | PECO | 1 | PECO_P4_CHICH045/* $ DELCO $ PECO_P4_CHICH045 $ STBK | breaker | 621.0 | 107.6 | 108.11 | DC | 7.03 |
| **1621846** | 214206 | RICHRE29 | PECO | 213922 | RICHMOND | PECO | 1 | PECO_P2-2_CHI230B1/* $ DELCO $ PECO_P2-2_CHI230B1 $ B | bus | 1336.0 | 117.77 | 118.27 | DC | 14.75 |
| **1715087** | 214206 | RICHRE29 | PECO | 213922 | RICHMOND | PECO | 1 | PECO_P4_CHICH045/* $ DELCO $ PECO_P4_CHICH045 $ STBK | breaker | 1336.0 | 117.75 | 118.26 | DC | 14.75 |
| **1715088** | 214206 | RICHRE29 | PECO | 213922 | RICHMOND | PECO | 1 | PECO_P4_PEACH215/* $ CHESCO $ PECO_P4_PEACH215 $ STBK | breaker | 1336.0 | 105.77 | 106.32 | DC | 16.24 |
| **1715120** | 219110 | GLOUCSTR | PSE&G | 219125 | CAMDEN | PSE&G | 1 | PS_P2-3_CUTB_1-4_LT | breaker | 771.0 | 112.21 | 112.71 | DC | 8.35 |
| **1715121** | 219110 | GLOUCSTR | PSE&G | 219125 | CAMDEN | PSE&G | 1 | PS_P2-3_CUTB_3-4_LT | breaker | 771.0 | 110.68 | 111.17 | DC | 8.23 |
| **1715122** | 219110 | GLOUCSTR | PSE&G | 219125 | CAMDEN | PSE&G | 1 | PS_P2-3_CUTB_1-2_LT | breaker | 771.0 | 108.18 | 108.66 | DC | 8.06 |
| **1715123** | 219110 | GLOUCSTR | PSE&G | 219125 | CAMDEN | PSE&G | 1 | PS_P2-3_CUTB_2-3_LT | breaker | 771.0 | 106.49 | 106.96 | DC | 7.92 |
| **1621845** | 219125 | CAMDEN | PSE&G | 214206 | RICHRE29 | PECO | 1 | PECO_P2-2_CHI230B1/* $ DELCO $ PECO_P2-2_CHI230B1 $ B | bus | 1336.0 | 117.78 | 118.29 | DC | 14.75 |
| **1715082** | 219125 | CAMDEN | PSE&G | 214206 | RICHRE29 | PECO | 1 | PECO_P4_CHICH045/* $ DELCO $ PECO_P4_CHICH045 $ STBK | breaker | 1336.0 | 117.77 | 118.27 | DC | 14.75 |
| **1715083** | 219125 | CAMDEN | PSE&G | 214206 | RICHRE29 | PECO | 1 | PECO_P4_PEACH215/* $ CHESCO $ PECO_P4_PEACH215 $ STBK | breaker | 1336.0 | 105.78 | 106.34 | DC | 16.24 |
| **1714964** | 227902 | LEWIS #1 | AE | 227945 | LEWIS #2 | AE | 1 | AE_P4-2 AE33 | breaker | 286.8 | 161.07 | 163.86 | DC | 8.01 |
| **1899594** | 228312 | PEDRKTWN | AE | 228313 | BRIDGPRT | AE | 1 | AE_P7-1 AE10TOWER-A | tower | 552.0 | 107.47 | 110.51 | DC | 16.63 |
| **1899595** | 228312 | PEDRKTWN | AE | 228313 | BRIDGPRT | AE | 1 | AE_P7-1 AE8TOWER-A | tower | 552.0 | 106.78 | 109.82 | DC | 16.63 |
| **1899623** | 228313 | BRIDGPRT | AE | 228401 | MCKLTON | AE | 1 | AE_P7-1 AE10TOWER-A | tower | 805.0 | 99.66 | 101.75 | DC | 16.56 |
| **1899624** | 228313 | BRIDGPRT | AE | 228401 | MCKLTON | AE | 1 | AE_P7-1 AE8TOWER-A | tower | 805.0 | 99.2 | 101.29 | DC | 16.56 |
| **1899565** | 228500 | LANDIS | AE | 228211 | UPITTS | AE | 1 | AE_P7-1 AE10TOWER-A | tower | 205.0 | 104.58 | 119.44 | DC | 30.46 |
| **1899566** | 228500 | LANDIS | AE | 228211 | UPITTS | AE | 1 | AE_P7-1 AE8TOWER-A | tower | 205.0 | 101.6 | 116.46 | DC | 30.46 |

## 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 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **1714961** | 227901 | DOROTHY | AE | 227949 | LEWIS #3 | AE | 1 | AE_P4-2 AE46 | breaker | 205.0 | 163.42 | 168.01 | DC | 9.42 |
| **1834372** | 227901 | DOROTHY | AE | 227949 | LEWIS | AE | 1 | Base Case | single | 154.0 | 176.46 | 180.76 | DC | 6.62 |

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | #3 | | | | | | | | | |
| **1834375** | 227901 | DOROTHY | AE | 227949 | LEWIS #3 | AE | 1 | AE_P1-1 913341[Y1-077]-1-GEN | single | 205.0 | 152.27 | 155.5 | DC | 6.62 |
| **1899457** | 227901 | DOROTHY | AE | 227949 | LEWIS #3 | AE | 1 | AE_P7-1 AE10TOWER-A | tower | 205.0 | 205.14 | 219.55 | DC | 29.53 |
| **1899458** | 227901 | DOROTHY | AE | 227949 | LEWIS #3 | AE | 1 | AE_P7-1 AE8TOWER-A | tower | 205.0 | 202.34 | 216.74 | DC | 29.53 |

## 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 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **1834532** | 213922 | RICHMOND | PECO | 214012 | WANEETA3 | PECO | 1 | Base Case | operation | 760.0 | 121.28 | 122.01 | DC | 12.28 |
| **1834533** | 213922 | RICHMOND | PECO | 214012 | WANEETA3 | PECO | 1 | PECO_P1-2_5014/* $ CHESCO $ PECO_P1-2_5014 $ L | operation | 1180.0 | 103.07 | 103.65 | DC | 15.19 |
| **1834661** | 214206 | RICHRE29 | PECO | 213922 | RICHMOND | PECO | 1 | PECO_P1-2_5014/* $ CHESCO $ PECO_P1-2_5014 $ L | operation | 1336.0 | 103.36 | 103.91 | DC | 16.24 |
| **1834568** | 219108 | CUTHBERT | PSE&G | 219125 | CAMDEN | PSE&G | 1 | PS_P1-2_U-2299_LT | operation | 771.0 | 116.26 | 116.81 | DC | 9.14 |
| **1834570** | 219108 | CUTHBERT | PSE&G | 219125 | CAMDEN | PSE&G | 1 | Base Case | operation | 500.0 | 104.38 | 104.88 | DC | 5.43 |
| **1834537** | 219110 | GLOUCSTR | PSE&G | 219755 | CUTHBERT_4 | PSE&G | 1 | PS_P1-2_C-2308_LT | operation | 758.0 | 121.02 | 121.54 | DC | 8.54 |
| **1834540** | 219110 | GLOUCSTR | PSE&G | 219755 | CUTHBERT_4 | PSE&G | 1 | Base Case | operation | 550.0 | 108.58 | 109.04 | DC | 5.54 |
| **1834574** | 219110 | GLOUCSTR | PSE&G | 219125 | CAMDEN | PSE&G | 1 | Base Case | operation | 500.0 | 116.19 | 116.7 | DC | 5.6 |
| **1834609** | 219110 | GLOUCSTR | PSE&G | 219753 | CUTHBERT_2 | PSE&G | 1 | PS_P1-2_D-2282_LT | operation | 771.0 | 112.87 | 113.36 | DC | 8.1 |
| **1834657** | 219125 | CAMDEN | PSE&G | 214206 | RICHRE29 | PECO | 1 | PECO_P1-2_5014/* $ CHESCO $ PECO_P1-2_5014 $ L | operation | 1336.0 | 103.37 | 103.93 | DC | 16.24 |
| **1834625** | 219754 | CUTHBERT_3 | PSE&G | 219125 | CAMDEN | PSE&G | 1 | PS_P1-2_Z-2305_LT | operation | 792.0 | 110.55 | 111.07 | DC | 8.92 |
| **1834371** | 227901 | DOROTHY | AE | 227949 | LEWIS #3 | AE | 1 | Base Case | operation | 154.0 | 181.92 | 188.14 | DC | 9.57 |
| **1834373** | 227901 | DOROTHY | AE | 227949 | LEWIS #3 | AE | 1 | AE_P1-1 913341[Y1-077]-1-GEN | operation | 205.0 | 156.37 | 161.04 | DC | 9.57 |
| **1834649** | 228312 | PEDRKTWN | AE | 228313 | BRIDGPRT | AE | 1 | AE_P1-2 ORCHARD XF | operation | 552.0 | 106.09 | 106.67 | DC | 7.02 |
| **1834620** | 228404 | MONROE | AE | 228402 | MONROE | AE | 2 | AE_P1-3 MON 3 XFR | operation | 274.0 | 99.02 | 111.46 | DC | 34.08 |
| **1834653** | 228404 | MONROE | AE | 228402 | MONROE | AE | 1 | AE_P1-3 MON 4 XFR | operation | 292.0 | 93.84 | 105.62 | DC | 34.41 |

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **1834557** | 228500 | LANDIS | AE | 228482 | FRANKLIN | AE | 1 | AE_P1-2 MONROE-LANDIS_1-A | operation | 331.0 | 110.83 | 119.93 | DC | 30.12 |

# 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.

**Index 2**

| ID | FROM BUS# | FROM BUS | FROM BUS AREA | TO BUS# | TO BUS | TO BUS AREA | CKT ID | CONT NAME | Type | Rating MVA | PRE PROJECT LOADING % | POST PROJECT LOADING % | AC\|DC | MW IMPACT |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **8558747** | 228402 | MONROE | AE | 219100 | NEWFRDM | PSE&G | 1 | PS_P7-1_V2274+P2242_LT | tower | 804.0 | 96.29 | 100.03 | DC | 29.69 |

| Bus # | Bus | MW Impact |
|---|---|---|
| **219229** | EAGLEPT_G3 | 3.06 |
| **219230** | EAGLEPT_G1 | 4.53 |
| **219231** | EAGLEPT_G2 | 4.53 |
| **227801** | ONTC&DCT | 4.5 |
| **227843** | MARINGEN E | 0.47 |
| **227881** | GRENWCHG | 0.07 |
| **228261** | V4-054E | 1.49 |
| **228304** | LOGAN | 9.42 |
| **228306** | PCLP STM | 2.46 |
| **228357** | V2-046E | 3.93 |
| **228400** | MICK 1CT | 1.81 |
| **228423** | Q-090 2 | 39.66 |
| **228471** | VALERO1 | 0.61 |
| **228472** | VALERO2 | 0.48 |
| **228473** | VALERO3 | 0.48 |
| **228484** | VALERO4 | 0.36 |
| **228712** | V2-041E | 0.42 |
| **228720** | V2-035C | 0.04 |
| **228721** | V2-035E | 0.48 |
| **291995** | U4-036 C | 0.1 |
| **291996** | U4-036 E | 1.33 |
| **292063** | V1-021 E | 0.04 |
| **292104** | V1-030 C6 | 0.03 |

| Bus # | Bus | MW Impact |
|---|---|---|
| **292105** | V1-030 E6 | 0.39 |
| **293404** | V3-036 | 0.64 |
| **902091** | W1-130C | 0.17 |
| **902092** | W1-130E | 2.24 |
| **909032** | X2-013 E | 0.83 |
| **915022** | Y3-012 E | 0.87 |
| **924051** | AB2-049 C | 0.7 |
| **924052** | AB2-049 E | 1.14 |
| **924531** | AB2-102 C | 32.19 |
| **924532** | AB2-102 E | 0.72 |
| **930002** | AB1-001 E | 0.17 |
| **930722** | AB1-116 E | 0.21 |
| **930732** | AB1-119 E | 0.1 |
| **931191** | AB1-169A | 197.31 |
| **933962** | AD1-019 E | 0.89 |
| **936411** | AD2-052 C | 1.83 |
| **936412** | AD2-052 E | 0.9 |
| **936491** | AD2-064 C | 0.07 |
| **936492** | AD2-064 E | 0.1 |
| **938311** | AE1-046 C | 0.72 |
| **938312** | AE1-046 E | 0.36 |
| **938421** | AE1-061 C | 1.81 |
| **938422** | AE1-061 E | 1.81 |
| **938781** | AE1-104 C O1 | 17.91 |
| **938782** | AE1-104 E O1 | 45.81 |
| **938871** | AE1-115 C | 1.55 |
| **938872** | AE1-115 E | 1.55 |
| **939301** | AE1-161 C | 8.83 |
| **939302** | AE1-161 E | 13.25 |
| **939501** | AE1-179 C O1 | 7.6 |
| **939502** | AE1-179 E O1 | 5.37 |
| **939821** | AE1-218 C O1 | 0.3 |
| **939822** | AE1-218 E O1 | 0.45 |
| **939831** | AE1-219 C O1 | 0.68 |
| **939832** | AE1-219 E O1 | 0.98 |
| **939931** | AE1-229 C O1 | 30.55 |
| **939932** | AE1-229 E O1 | 20.7 |
| **940001** | AE1-240 C O1 | 6.26 |
| **940002** | AE1-240 E O1 | 4.46 |
| **940281** | AE2-011 C | 0.18 |
| **940282** | AE2-011 E | 0.25 |
| **940391** | AE2-023 C O1 | 10.07 |
| **940392** | AE2-023 E O1 | 47.12 |
| **940781** | AE2-065 C | 0.29 |
| **940782** | AE2-065 E | 0.46 |
| **940961** | AE2-087 C | 0.35 |
| **940962** | AE2-087 E | 0.49 |
| **940963** | AE2-087 BAT | 0.13 |
| **940971** | AE2-088 C | 0.37 |
| **940972** | AE2-088 E | 0.5 |
| **940973** | AE2-088 BAT | 0.39 |
| **941001** | AE2-091 C O1 | 5.23 |

| Bus # | Bus | MW Impact |
|---|---|---|
| **941002** | AE2-091 E O1 | 2.73 |
| **941071** | AE2-101 C | 0.55 |
| **941072** | AE2-101 E | 0.76 |
| **941121** | AE2-106 C | 0.39 |
| **941122** | AE2-106 E | 0.54 |
| **941123** | AE2-106 BAT | 0.13 |
| **941471** | AE2-144 C | 0.6 |
| **941472** | AE2-144 E | 1.06 |
| **941931** | AE2-205 C O1 | 6.7 |
| **941932** | AE2-205 E O1 | 4.46 |
| **942011** | AE2-213 C | 0.48 |
| **942012** | AE2-213 E | 0.82 |
| **942101** | AE2-222 C O1 | 9.96 |
| **942102** | AE2-222 E O1 | 25.02 |
| **942571** | AE2-272 | 0.43 |
| **943071** | AE2-334 C | 10.71 |
| **943072** | AE2-334 E | 5.71 |
| **943081** | AE2-335 C O1 | 20.53 |
| **943082** | AE2-335 E O1 | 9.15 |
| **BLUEG** | BLUEG | 2.36 |
| **CALDERWOOD** | CALDERWOOD | 0.25 |
| **CANNELTON** | CANNELTON | 0.14 |
| **CARR** | CARR | 0.39 |
| **CATAWBA** | CATAWBA | 0.16 |
| **CHEOAH** | CHEOAH | 0.23 |
| **CHILHOWEE** | CHILHOWEE | 0.08 |
| **COFFEEN** | COFFEEN | 0.25 |
| **COTTONWOOD** | COTTONWOOD | 0.98 |
| **DUCKCREEK** | DUCKCREEK | 0.54 |
| **EDWARDS** | EDWARDS | 0.25 |
| **ELMERSMITH** | ELMERSMITH | 0.25 |
| **FARMERCITY** | FARMERCITY | 0.16 |
| **G-007** | G-007 | 1.4 |
| **GIBSON** | GIBSON | 0.1 |
| **HAMLET** | HAMLET | 0.26 |
| **NEWTON** | NEWTON | 0.65 |
| **O-066** | O-066 | 8.96 |
| **PRAIRIE** | PRAIRIE | 1.22 |
| **RENSSELAER** | RENSSELAER | 0.31 |
| **SANTEETLA** | SANTEETLA | 0.07 |
| **SMITHLAND** | SMITHLAND | 0.1 |
| **TATANKA** | TATANKA | 0.3 |
| **TILTON** | TILTON | 0.3 |
| **TRIMBLE** | TRIMBLE | 0.26 |
| **TVA** | TVA | 0.82 |
| **UNIONPOWER** | UNIONPOWER | 0.36 |

**Index 4**

| ID | FROM BUS# | FROM BUS | FROM BUS AREA | TO BUS# | TO BUS | TO BUS AREA | CKT ID | CONT NAME | Type | Rating MVA | PRE PROJECT LOADING % | POST PROJECT LOADING % | AC\|DC | MW IMPACT |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **8558092** | 213922 | RICHMOND | PECO | 214012 | WANEETA3 | PECO | 1 | PECO_P4_CHICH045/* $ DELCO $ PECO_P4_CHICH045 $ STBK | breaker | 1180.0 | 107.06 | 107.59 | DC | 13.86 |

| Bus # | Bus | MW Impact |
|---|---|---|
| **213606** | FAIRLESS | 9.69 |
| **213878** | PENNSBRY | 0.92 |
| **213918** | RICHMD91 | 2.82 |
| **213919** | RICHMD92 | 2.82 |
| **219124** | CAMDEN_STG | 2.8 |
| **219126** | CAMDEN_CTG | 3.44 |
| **219128** | GLOUCSTR_26 | 1.52 |
| **219229** | EAGLEPT_G3 | 2.5 |
| **219230** | EAGLEPT_G1 | 3.7 |
| **219241** | CAMDEN1 | 0.21 |
| **219242** | CAMDEN2 | 0.02 |
| **227801** | ONTC&DCT | 7.26 |
| **227843** | MARINGEN E | 0.75 |
| **227928** | V4-067E | 0.3 |
| **228261** | V4-054E | 1.35 |
| **228357** | V2-046E | 3.06 |
| **228712** | V2-041E | 0.49 |
| **228721** | V2-035E | 0.28 |
| **291996** | U4-036 E | 1.01 |
| **292063** | V1-021 E | 0.06 |
| **292088** | V1-030 CB | 0.1 |
| **292099** | V1-030 E3 | 0.23 |
| **292105** | V1-030 E6 | 0.3 |
| **292115** | V1-030 EB | 1.33 |
| **292194** | V1-030 CE | 0.09 |
| **292195** | V1-030 EE | 1.23 |
| **293404** | V3-036 | 1.03 |
| **902092** | W1-130E | 1.35 |
| **902432** | W2-030 E | 1.17 |
| **902692** | W2-056 E | 1.64 |
| **902842** | W2-071E | 0.45 |
| **903152** | W2-102 E | 1.04 |
| **903991** | W3-080C | 1.96 |
| **903992** | W3-080E | 3.21 |
| **904042** | V4-005 E | 0.43 |
| **904432** | W3-124 E | 0.42 |
| **905792** | W4-103 E | 1.03 |
| **907382** | X1-070 E | 0.73 |
| **907392** | X1-071 E | 0.26 |
| **909032** | X2-013 E | 0.63 |
| **910862** | X3-075 E | 1.06 |
| **913242** | Y1-057 E | 0.32 |
| **913332** | Y1-075 E | 0.41 |
| **915022** | Y3-012 E | 1.41 |
| **915072** | Y3-026 E | 1.6 |

| Bus # | Bus | MW Impact |
|---|---|---|
| **915592** | Y3-087 E OP1 | 0.8 |
| **916292** | Z1-082 E | 0.34 |
| **917381** | Z2-062 | 0.13 |
| **924051** | AB2-049 C | 0.87 |
| **924052** | AB2-049 E | 1.41 |
| **924531** | AB2-102 C | 43.43 |
| **924532** | AB2-102 E | 0.97 |
| **924701** | AB2-122 C | 0.13 |
| **924702** | AB2-122 E | 0.22 |
| **925391** | AC1-010 C | 0.78 |
| **925392** | AC1-010 E | 1.34 |
| **925442** | AC1-016 E | 1.41 |
| **925452** | AC1-017 E | 0.67 |
| **925562** | AC1-030 E | 0.51 |
| **930002** | AB1-001 E | 0.27 |
| **930102** | AB1-025 E | 1.01 |
| **930242** | AB1-063 E | 0.14 |
| **930722** | AB1-116 E | 0.18 |
| **930732** | AB1-119 E | 0.17 |
| **931191** | AB1-169A | 119.56 |
| **932361** | AC2-050 C O1 | 0.89 |
| **932362** | AC2-050 E O1 | 1.46 |
| **933962** | AD1-019 E | 1.43 |
| **936211** | AD2-027 C | 1.4 |
| **936212** | AD2-027 E | 2.29 |
| **936321** | AD2-042 C | 1.85 |
| **936322** | AD2-042 E | 3.03 |
| **936411** | AD2-052 C | 1.54 |
| **936412** | AD2-052 E | 0.76 |
| **936491** | AD2-064 C | 0.12 |
| **936492** | AD2-064 E | 0.17 |
| **936501** | AD2-065 C | 0.5 |
| **936502** | AD2-065 E | 0.69 |
| **936541** | AD2-069 C | 0.52 |
| **936542** | AD2-069 E | 0.26 |
| **937011** | AD2-135 C | 0.13 |
| **937012** | AD2-135 E | 0.23 |
| **938311** | AE1-046 C | 0.43 |
| **938312** | AE1-046 E | 0.22 |
| **938421** | AE1-061 C | 0.58 |
| **938422** | AE1-061 E | 0.58 |
| **938431** | AE1-062 C | 1.2 |
| **938432** | AE1-062 E | 1.2 |
| **938611** | AE1-083 C | 0.51 |
| **938612** | AE1-083 E | 0.71 |
| **938781** | AE1-104 C O1 | 26.58 |
| **938782** | AE1-104 E O1 | 67.99 |
| **938871** | AE1-115 C | 1.26 |
| **938872** | AE1-115 E | 1.26 |
| **939301** | AE1-161 C | 2.41 |
| **939302** | AE1-161 E | 3.61 |
| **939501** | AE1-179 C O1 | 7.33 |

| Bus # | Bus | MW Impact |
|---|---|---|
| **939502** | AE1-179 E O1 | 5.17 |
| **939821** | AE1-218 C O1 | 0.19 |
| **939822** | AE1-218 E O1 | 0.28 |
| **939831** | AE1-219 C O1 | 0.42 |
| **939832** | AE1-219 E O1 | 0.61 |
| **939931** | AE1-229 C O1 | 20.42 |
| **939932** | AE1-229 E O1 | 13.83 |
| **940001** | AE1-240 C O1 | 6.08 |
| **940002** | AE1-240 E O1 | 4.34 |
| **940281** | AE2-011 C | 0.29 |
| **940282** | AE2-011 E | 0.41 |
| **940361** | AE2-020 C O1 | 17.4 |
| **940362** | AE2-020 E O1 | 81.45 |
| **940371** | AE2-021 C O1 | 17.4 |
| **940372** | AE2-021 E O1 | 81.45 |
| **940381** | AE2-022 C O1 | 10.15 |
| **940382** | AE2-022 E O1 | 47.51 |
| **940391** | AE2-023 C O1 | 14.94 |
| **940392** | AE2-023 E O1 | 69.95 |
| **940771** | AE2-064 C | 0.37 |
| **940772** | AE2-064 E | 0.5 |
| **940781** | AE2-065 C | 0.24 |
| **940782** | AE2-065 E | 0.37 |
| **940951** | AE2-085 C | 0.43 |
| **940952** | AE2-085 E | 0.41 |
| **940961** | AE2-087 C | 0.32 |
| **940962** | AE2-087 E | 0.44 |
| **940963** | AE2-087 BAT | 0.12 |
| **940971** | AE2-088 C | 0.17 |
| **940972** | AE2-088 E | 0.23 |
| **940973** | AE2-088 BAT | 0.1 |
| **941001** | AE2-091 C O1 | 4.9 |
| **941002** | AE2-091 E O1 | 2.56 |
| **941051** | AE2-097 C | 0.24 |
| **941052** | AE2-097 E | 0.38 |
| **941071** | AE2-101 C | 0.42 |
| **941072** | AE2-101 E | 0.58 |
| **941121** | AE2-106 C | 0.35 |
| **941122** | AE2-106 E | 0.49 |
| **941123** | AE2-106 BAT | 0.12 |
| **941441** | AE2-141 C | 0.27 |
| **941442** | AE2-141 E | 0.44 |
| **941471** | AE2-144 C | 0.49 |
| **941472** | AE2-144 E | 0.46 |
| **941931** | AE2-205 C O1 | 9.03 |
| **941932** | AE2-205 E O1 | 6.02 |
| **942011** | AE2-213 C | 0.37 |
| **942012** | AE2-213 E | 0.33 |
| **942101** | AE2-222 C O1 | 16.06 |
| **942102** | AE2-222 E O1 | 40.34 |
| **942571** | AE2-272 | 0.33 |
| **942941** | AE2-314 C | 7.91 |

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

**Index 5**

| ID | FROM BUS# | FROM BUS | FROM BUS AREA | TO BUS# | TO BUS | TO BUS AREA | CKT ID | CONT NAME | Type | Rating MVA | PRE PROJECT LOADING % | POST PROJECT LOADING % | AC\|DC | MW IMPACT |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **8558094** | 214206 | RICHRE29 | PECO | 213922 | RICHMOND | PECO | 1 | PECO_P4_CHICH045/* $ DELCO $ PECO_P4_CHICH045 $ STBK | breaker | 1336.0 | 106.16 | 106.67 | DC | 14.79 |

| 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 |

| Bus # | Bus | MW Impact |
|---|---|---|
| **227801** | ONTC&DCT | 7.56 |
| **227843** | MARINGEN E | 0.78 |
| **227928** | V4-067E | 0.31 |
| **228261** | V4-054E | 1.44 |
| **228357** | V2-046E | 3.3 |
| **228423** | Q-090 2 | 30.11 |
| **228712** | V2-041E | 0.52 |
| **228721** | V2-035E | 0.3 |
| **291995** | U4-036 C | 0.08 |
| **291996** | U4-036 E | 1.12 |
| **292063** | V1-021 E | 0.06 |
| **292088** | V1-030 CB | 0.11 |
| **292099** | V1-030 E3 | 0.22 |
| **292104** | V1-030 C6 | 0.02 |
| **292105** | V1-030 E6 | 0.33 |
| **292115** | V1-030 EB | 1.49 |
| **292194** | V1-030 CE | 0.1 |
| **292195** | V1-030 EE | 1.37 |
| **293404** | V3-036 | 1.08 |
| **902092** | W1-130E | 1.43 |
| **902432** | W2-030 E | 1.21 |
| **902692** | W2-056 E | 1.53 |
| **902842** | W2-071E | 0.44 |
| **903152** | W2-102 E | 0.98 |
| **903991** | W3-080C | 1.35 |
| **903992** | W3-080E | 2.2 |
| **904042** | V4-005 E | 0.4 |
| **904432** | W3-124 E | 0.4 |
| **905792** | W4-103 E | 0.97 |
| **907381** | X1-070 C | 0.05 |
| **907382** | X1-070 E | 0.77 |
| **907391** | X1-071 C | 0.01 |
| **907392** | X1-071 E | 0.26 |
| **909032** | X2-013 E | 0.7 |
| **910862** | X3-075 E | 1.18 |
| **913332** | Y1-075 E | 0.39 |
| **914231** | Y2-081 C OP1 | 1.35 |
| **914232** | Y2-081 E OP1 | 0.07 |
| **915022** | Y3-012 E | 1.47 |
| **915072** | Y3-026 E | 1.1 |
| **915591** | Y3-087 C OP1 | 0.06 |
| **915592** | Y3-087 E OP1 | 0.89 |
| **916292** | Z1-082 E | 0.38 |
| **917381** | Z2-062 | 0.14 |
| **919901** | AB1-000 1 | 1.04 |
| **919911** | AB1-000 2 | 1.04 |
| **919921** | AB1-000 3 | 1.04 |
| **924051** | AB2-049 C | 0.91 |
| **924052** | AB2-049 E | 1.48 |
| **924531** | AB2-102 C | 45.91 |
| **924532** | AB2-102 E | 1.02 |
| **924701** | AB2-122 C | 0.14 |

| Bus # | Bus | MW Impact |
|---|---|---|
| **924702** | AB2-122 E | 0.23 |
| **925391** | AC1-010 C | 0.87 |
| **925392** | AC1-010 E | 1.5 |
| **925442** | AC1-016 E | 0.97 |
| **925452** | AC1-017 E | 0.56 |
| **925561** | AC1-030 C | 0.04 |
| **925562** | AC1-030 E | 0.52 |
| **930002** | AB1-001 E | 0.28 |
| **930102** | AB1-025 E | 0.94 |
| **930242** | AB1-063 E | 0.15 |
| **930722** | AB1-116 E | 0.19 |
| **930732** | AB1-119 E | 0.17 |
| **931191** | AB1-169A | 126.85 |
| **932361** | AC2-050 C O1 | 0.86 |
| **932362** | AC2-050 E O1 | 1.41 |
| **933962** | AD1-019 E | 1.49 |
| **934661** | AD1-097 1 | 1.67 |
| **934671** | AD1-097 2 | 1.67 |
| **934681** | AD1-097 3 | 1.67 |
| **934691** | AD1-097 4 | 0.99 |
| **936211** | AD2-027 C | 1.57 |
| **936212** | AD2-027 E | 2.57 |
| **936321** | AD2-042 C | 2.07 |
| **936322** | AD2-042 E | 3.4 |
| **936411** | AD2-052 C | 1.66 |
| **936412** | AD2-052 E | 0.82 |
| **936491** | AD2-064 C | 0.12 |
| **936492** | AD2-064 E | 0.17 |
| **936501** | AD2-065 C | 0.51 |
| **936502** | AD2-065 E | 0.71 |
| **936541** | AD2-069 C | 0.51 |
| **936542** | AD2-069 E | 0.25 |
| **937011** | AD2-135 C | 0.14 |
| **937012** | AD2-135 E | 0.24 |
| **938311** | AE1-046 C | 0.46 |
| **938312** | AE1-046 E | 0.23 |
| **938421** | AE1-061 C | 0.61 |
| **938422** | AE1-061 E | 0.61 |
| **938431** | AE1-062 C | 1.23 |
| **938432** | AE1-062 E | 1.23 |
| **938611** | AE1-083 C | 0.35 |
| **938612** | AE1-083 E | 0.49 |
| **938781** | AE1-104 C O1 | 27.85 |
| **938782** | AE1-104 E O1 | 71.26 |
| **938871** | AE1-115 C | 1.36 |
| **938872** | AE1-115 E | 1.36 |
| **939301** | AE1-161 C | 2.57 |
| **939302** | AE1-161 E | 3.85 |
| **939501** | AE1-179 C O1 | 7.79 |
| **939502** | AE1-179 E O1 | 5.5 |
| **939821** | AE1-218 C O1 | 0.2 |
| **939822** | AE1-218 E O1 | 0.3 |

| Bus # | Bus | MW Impact |
|---|---|---|
| **939831** | AE1-219 C O1 | 0.44 |
| **939832** | AE1-219 E O1 | 0.64 |
| **939931** | AE1-229 C O1 | 21.94 |
| **939932** | AE1-229 E O1 | 14.86 |
| **940001** | AE1-240 C O1 | 6.46 |
| **940002** | AE1-240 E O1 | 4.61 |
| **940281** | AE2-011 C | 0.31 |
| **940282** | AE2-011 E | 0.42 |
| **940361** | AE2-020 C O1 | 17.69 |
| **940362** | AE2-020 E O1 | 82.8 |
| **940371** | AE2-021 C O1 | 17.69 |
| **940372** | AE2-021 E O1 | 82.8 |
| **940381** | AE2-022 C O1 | 10.32 |
| **940382** | AE2-022 E O1 | 48.3 |
| **940391** | AE2-023 C O1 | 15.66 |
| **940392** | AE2-023 E O1 | 73.3 |
| **940771** | AE2-064 C | 0.41 |
| **940772** | AE2-064 E | 0.56 |
| **940781** | AE2-065 C | 0.26 |
| **940782** | AE2-065 E | 0.41 |
| **940951** | AE2-085 C | 0.41 |
| **940952** | AE2-085 E | 0.39 |
| **940961** | AE2-087 C | 0.34 |
| **940962** | AE2-087 E | 0.47 |
| **940963** | AE2-087 BAT | 0.13 |
| **940971** | AE2-088 C | 0.18 |
| **940972** | AE2-088 E | 0.25 |
| **940973** | AE2-088 BAT | 0.1 |
| **941001** | AE2-091 C O1 | 5.22 |
| **941002** | AE2-091 E O1 | 2.72 |
| **941051** | AE2-097 C | 0.25 |
| **941052** | AE2-097 E | 0.41 |
| **941071** | AE2-101 C | 0.46 |
| **941072** | AE2-101 E | 0.63 |
| **941121** | AE2-106 C | 0.38 |
| **941122** | AE2-106 E | 0.52 |
| **941123** | AE2-106 BAT | 0.13 |
| **941441** | AE2-141 C | 0.26 |
| **941442** | AE2-141 E | 0.42 |
| **941471** | AE2-144 C | 0.55 |
| **941472** | AE2-144 E | 0.97 |
| **941931** | AE2-205 C O1 | 9.55 |
| **941932** | AE2-205 E O1 | 6.37 |
| **942011** | AE2-213 C | 0.41 |
| **942012** | AE2-213 E | 0.7 |
| **942101** | AE2-222 C O1 | 16.74 |
| **942102** | AE2-222 E O1 | 42.04 |
| **942571** | AE2-272 | 0.36 |
| **942941** | AE2-314 C | 8.2 |
| **942942** | AE2-314 E | 5.47 |
| **943071** | AE2-334 C | 7.11 |
| **943072** | AE2-334 E | 3.79 |

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

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| ID | FROM BUS# | FROM BUS | FROM BUS AREA | TO BUS# | TO BUS | TO BUS AREA | CKT ID | CONT NAME | Type | Rating MVA | PRE PROJECT LOADING % | POST PROJECT LOADING % | AC\|DC | MW IMPACT |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **8558689** | 219100 | NEWFRDM | PSE&G | 219704 | HILLTOP_3 | PSE&G | 1 | PS_P7-1_V2274+P2242_LT | tower | 740.0 | 123.86 | 124.88 | DC | 7.52 |

| Bus # | Bus | MW Impact |
|---|---|---|
| **227801** | ONTC&DCT | 4.03 |
| **227843** | MARINGEN E | 0.42 |
| **227928** | V4-067E | 0.17 |
| **228260** | V4-054C | 0.1 |
| **228261** | V4-054E | 0.67 |
| **228357** | V2-046E | 1.38 |
| **228702** | WEST CT | 0.35 |
| **228712** | V2-041E | 0.26 |
| **228717** | S121 | 0.5 |
| **228720** | V2-035C | 0.01 |
| **228721** | V2-035E | 0.14 |
| **228727** | W2-039G | 0.83 |

| Bus # | Bus | MW Impact |
|---|---|---|
| **291996** | U4-036 E | 0.32 |
| **292063** | V1-021 E | 0.03 |
| **292105** | V1-030 E6 | 0.09 |
| **293404** | V3-036 | 0.57 |
| **902091** | W1-130C | 0.05 |
| **902092** | W1-130E | 0.73 |
| **902432** | W2-030 E | 0.65 |
| **909032** | X2-013 E | 0.2 |
| **915022** | Y3-012 E | 0.78 |
| **916292** | Z1-082 E | 0.26 |
| **924051** | AB2-049 C | 0.5 |
| **924052** | AB2-049 E | 0.81 |
| **924531** | AB2-102 C | 23.15 |
| **924532** | AB2-102 E | 0.51 |
| **924701** | AB2-122 C | 0.07 |
| **924702** | AB2-122 E | 0.13 |
| **930002** | AB1-001 E | 0.15 |
| **930722** | AB1-116 E | 0.1 |
| **930732** | AB1-119 E | 0.09 |
| **931191** | AB1-169A | 64.54 |
| **933962** | AD1-019 E | 0.79 |
| **936411** | AD2-052 C | 0.7 |
| **936412** | AD2-052 E | 0.35 |
| **936491** | AD2-064 C | 0.07 |
| **936492** | AD2-064 E | 0.09 |
| **936501** | AD2-065 C | 0.25 |
| **936502** | AD2-065 E | 0.35 |
| **937011** | AD2-135 C | 0.09 |
| **937012** | AD2-135 E | 0.15 |
| **938311** | AE1-046 C | 0.23 |
| **938312** | AE1-046 E | 0.12 |
| **938421** | AE1-061 C | 0.59 |
| **938422** | AE1-061 E | 0.59 |
| **938431** | AE1-062 C | 1.19 |
| **938432** | AE1-062 E | 1.19 |
| **938781** | AE1-104 C O1 | 14.58 |
| **938782** | AE1-104 E O1 | 37.31 |
| **938871** | AE1-115 C | 0.55 |
| **938872** | AE1-115 E | 0.55 |
| **939301** | AE1-161 C | 2.43 |
| **939302** | AE1-161 E | 3.65 |
| **939501** | AE1-179 C O1 | 3.78 |
| **939502** | AE1-179 E O1 | 2.67 |
| **939821** | AE1-218 C O1 | 0.1 |
| **939822** | AE1-218 E O1 | 0.16 |
| **939831** | AE1-219 C O1 | 0.23 |
| **939832** | AE1-219 E O1 | 0.34 |
| **939931** | AE1-229 C O1 | 9.8 |
| **939932** | AE1-229 E O1 | 6.64 |
| **940001** | AE1-240 C O1 | 3.12 |
| **940002** | AE1-240 E O1 | 2.23 |
| **940281** | AE2-011 C | 0.17 |

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

| Bus # | Bus | MW Impact |
|---|---|---|
| **G-007** | G-007 | 0.19 |
| **GIBSON** | GIBSON | 0.03 |
| **HAMLET** | HAMLET | 0.05 |
| **NEWTON** | NEWTON | 0.18 |
| **O-066** | O-066 | 6.1 |
| **PRAIRIE** | PRAIRIE | 0.33 |
| **RENSSELAER** | RENSSELAER | 0.22 |
| **SANTEETLA** | SANTEETLA | 0.02 |
| **SMITHLAND** | SMITHLAND | 0.03 |
| **TATANKA** | TATANKA | 0.08 |
| **TILTON** | TILTON | 0.08 |
| **TRIMBLE** | TRIMBLE | 0.07 |
| **TVA** | TVA | 0.2 |
| **UNIONPOWER** | UNIONPOWER | 0.09 |

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| ID | FROM BUS# | FROM BUS | FROM BUS AREA | TO BUS# | TO BUS | TO BUS AREA | CKT ID | CONT NAME | Type | Rating MVA | PRE PROJECT LOADING % | POST PROJECT LOADING % | AC\|DC | MW IMPACT |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **8558093** | 219125 | CAMDEN | PSE&G | 214206 | RICHRE29 | PECO | 1 | PECO_P4_CHICH045/* $ DELCO $ PECO_P4_CHICH045 $ STBK | breaker | 1336.0 | 106.18 | 106.68 | DC | 14.79 |

| 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 |

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

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

| Bus # | Bus | MW Impact |
|---|---|---|
| **940781** | AE2-065 C | 0.26 |
| **940782** | AE2-065 E | 0.41 |
| **940951** | AE2-085 C | 0.41 |
| **940952** | AE2-085 E | 0.39 |
| **940961** | AE2-087 C | 0.34 |
| **940962** | AE2-087 E | 0.47 |
| **940963** | AE2-087 BAT | 0.13 |
| **940971** | AE2-088 C | 0.18 |
| **940972** | AE2-088 E | 0.25 |
| **940973** | AE2-088 BAT | 0.1 |
| **941001** | AE2-091 C O1 | 5.22 |
| **941002** | AE2-091 E O1 | 2.72 |
| **941051** | AE2-097 C | 0.25 |
| **941052** | AE2-097 E | 0.41 |
| **941071** | AE2-101 C | 0.46 |
| **941072** | AE2-101 E | 0.63 |
| **941121** | AE2-106 C | 0.38 |
| **941122** | AE2-106 E | 0.52 |
| **941123** | AE2-106 BAT | 0.13 |
| **941441** | AE2-141 C | 0.26 |
| **941442** | AE2-141 E | 0.42 |
| **941471** | AE2-144 C | 0.55 |
| **941472** | AE2-144 E | 0.97 |
| **941931** | AE2-205 C O1 | 9.55 |
| **941932** | AE2-205 E O1 | 6.37 |
| **942011** | AE2-213 C | 0.41 |
| **942012** | AE2-213 E | 0.7 |
| **942101** | AE2-222 C O1 | 16.74 |
| **942102** | AE2-222 E O1 | 42.04 |
| **942571** | AE2-272 | 0.36 |
| **942941** | AE2-314 C | 8.2 |
| **942942** | AE2-314 E | 5.47 |
| **943071** | AE2-334 C | 7.11 |
| **943072** | AE2-334 E | 3.79 |
| **943081** | AE2-335 C O1 | 10.23 |
| **943082** | AE2-335 E O1 | 4.56 |
| **BLUEG** | BLUEG | 5.69 |
| **CALDERWOOD** | CALDERWOOD | 0.61 |
| **CANNELTON** | CANNELTON | 0.34 |
| **CATAWBA** | CATAWBA | 0.39 |
| **CBM-N** | CBM-N | 0.34 |
| **CHEOAH** | CHEOAH | 0.56 |
| **CHILHOWEE** | CHILHOWEE | 0.2 |
| **COFFEEN** | COFFEEN | 0.6 |
| **COTTONWOOD** | COTTONWOOD | 2.36 |
| **DUCKCREEK** | DUCKCREEK | 1.31 |
| **EDWARDS** | EDWARDS | 0.6 |
| **ELMERSMITH** | ELMERSMITH | 0.59 |
| **FARMERCITY** | FARMERCITY | 0.4 |
| **G-007A** | G-007A | 9.86 |
| **GIBSON** | GIBSON | 0.23 |
| **HAMLET** | HAMLET | 0.63 |

| Bus # | Bus | MW Impact |
|---|---|---|
| **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 |

| Contingency Name | Contingency Definition |
|---|---|
| **AE_P1-3 MON 4 XFR** | CONTINGENCY 'AE_P1-3 MON 4 XFR'<br>OPEN LINE FROM BUS 228402 TO BUS 228404 CIRCUIT 2 /<br>END |
| **PS_P7-1_V2274+P2242_LT** | CONTINGENCY 'PS_P7-1_V2274+P2242_LT' /* EAGEL POINT - GLOUCESTER & DEPTFORD - GLOUCESTER<br>DISCONNECT BUS 219757 /* DEPTFORD SECTION 2<br>DISCONNECT BUS 219760 /* EAGLE POINT SECTION 4<br>TRIP LINE FROM BUS 219110 TO BUS 219128 CKT 1 /* DISCONNECT TRANSFORMER 26KV CKT 1<br>CLOSE LINE FROM BUS 219255 TO BUS 219256 CKT Z /* DEPTFORD<br>CLOSE LINE FROM BUS 219180 TO BUS 219181 CKT Z /* DEPTFORD<br>MOVE 8 MW LOAD FROM BUS 219180 TO BUS 219162 /* INTERSTATION TIE TRANSFER LOAD FROM DEPTFORD TO BEAVERBK T1<br>MOVE 8 MW LOAD FROM BUS 219181 TO BUS 219163 /* INTERSTATION TIE TRANSFER LOAD FROM DEPTFORD TO BEAVERBK T2<br>MOVE 8 MW LOAD FROM BUS 219255 TO BUS 219162 /* INTERSTATION TIE TRANSFER LOAD FROM DEPTFORD TO BEAVERBK T1<br>MOVE 8 MW LOAD FROM BUS 219256 TO BUS 219163 /* INTERSTATION TIE TRANSFER LOAD FROM DEPTFORD TO BEAVERBK T2<br>END |
| **PECO_P2-2_CHI230B1/* $ DELCO $ PECO_P2-2_CHI230B1 $ B** | CONTINGENCY 'PECO_P2-2_CHI230B1/* $ DELCO $ PECO_P2-2_CHI230B1 $ B'<br>DISCONNECT BUS 213489 /* CHICHST1 230.00 $ DELCO $ PECO_P2-2_CHI230B1 $ B<br>END |
| **PECO_P4_CHICH045/* $ DELCO $ PECO_P4_CHICH045 $ STBK** | CONTINGENCY 'PECO_P4_CHICH045/* $ DELCO $ PECO_P4_CHICH045 $ STBK'<br>DISCONNECT BUS 213489 /* CHICHST1 230.00 $ DELCO $ PECO_P4_CHICH045 $ STBK<br>DISCONNECT BUS 213627 /* FOULK8 230.00 $ DELCO $ PECO_P4_CHICH045 $ STBK<br>END |

| Contingency Name | Contingency Definition |
|---|---|
| **AE_P7-1 W2275_O2241** | CONTINGENCY 'AE_P7-1 W2275_O2241' /* DOUBLE CIRCUIT TOWER W-2275(MICKLETON - DEPTFORD) AND O-2241(MICKLETON - THOROFARE)<br>TRIP BRANCH FROM BUS 219762 TO BUS 228401 CKT 1 /* TRIP O-2241(MICKLETON - THOROFARE) 230KV<br>TRIP BRANCH FROM BUS 219121 TO BUS 228401 CKT 1 /* TRIP (MICKLETON - THOROFARE #2) 230KV<br>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 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **1834621** | 228404 | MONROE | AE | 228402 | MONROE | AE | 2 | AE_P1-3 MON 3 XFR | single | 274.0 | 93.74 | 102.34 | DC | 23.57 |

| Bus # | Bus | MW Impact |
|---|---|---|
| **227801** | ONTC&DCT | 3.23 |
| **227842** | MARINGEN | 0.04 |
| **227927** | V4-067C | 0.01 |
| **228014** | PVILLEG | 0.04 |
| **228720** | V2-035C | 0.03 |
| **292062** | V1-021 C | 0.02 |
| **902091** | W1-130C | 0.18 |
| **902431** | W2-030 C | 0.04 |
| **913341** | Y1-077 | 4.08 |
| **924701** | AB2-122 C | 0.05 |
| **930001** | AB1-001 C | 0.01 |
| **931191** | AB1-169A | 214.46 |
| **938311** | AE1-046 C | 0.78 |
| **938421** | AE1-061 C | 1.97 |
| **938781** | AE1-104 C O1 | 10.46 |
| **939301** | AE1-161 C | 9.86 |
| **939931** | AE1-229 C O1 | 21.62 |
| **940361** | AE2-020 C O2 | 5.64 |
| **940371** | AE2-021 C O2 | 5.64 |
| **940381** | AE2-022 C O2 | 3.29 |
| **940391** | AE2-023 C O2 | 7.34 |
| **940971** | AE2-088 C | 0.43 |
| **940973** | AE2-088 BAT | 0.45 |
| **942101** | AE2-222 C O2 | 7.14 |
| **942201** | AE2-232 C O2 | 5.95 |
| **942381** | AE2-251 C O2 | 17.86 |
| **942941** | AE2-314 C | 2.29 |
| **943081** | AE2-335 C O2 | 23.57 |
| **BLUEG** | BLUEG | 0.22 |
| **CALDERWOOD** | CALDERWOOD | 0.02 |

| Bus # | Bus | MW Impact |
|---|---|---|
| **CANNELTON** | CANNELTON | 0.01 |
| **CARR** | CARR | 0.0 |
| **CATAWBA** | CATAWBA | 0.02 |
| **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 | 0.02 |
| **G-007A** | G-007A | 0.52 |
| **GIBSON** | GIBSON | 0.01 |
| **HAMLET** | HAMLET | 0.03 |
| **NEWTON** | NEWTON | 0.06 |
| **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 | 0.15 |

| 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 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **430568** | 200051 | ROCKSPGS | PJM | 200065 | PCHBTM2S | PJM | 1 | JC-P2-3-JCC-500-002D | breaker | 2905.0 | 99.81 | 100.12 | DC | 19.47 |

| Bus # | Bus | MW Impact |
|---|---|---|
| **200052** | ROCKSP 1 | 9.91 |
| **200053** | ROCKSP 2 | 9.91 |
| **200054** | ROCKSP 3 | 10.0 |
| **200055** | ROCKSP 4 | 10.0 |
| **228261** | V4-054E | 2.09 |
| **228357** | V2-046E | 4.18 |
| **228712** | V2-041E | 0.86 |
| **228721** | V2-035E | 0.41 |
| **231708** | CHRIST3 | 4.51 |
| **231911** | HR5 | 7.89 |
| **231912** | HR6 | 7.89 |
| **231913** | HR7 | 7.89 |
| **231914** | HR8 | 11.99 |
| **232922** | MR3 | 51.57 |
| **292063** | V1-021 E | 0.1 |
| **901004** | W1-003 E | 2.27 |
| **901014** | W1-004 E | 2.27 |
| **901024** | W1-005 E | 2.27 |
| **901034** | W1-006 E | 2.27 |

| Bus # | Bus | MW Impact |
|---|---|---|
| **902092** | W1-130E | 2.01 |
| **902432** | W2-030 E | 2.0 |
| **907052** | X1-032 E | 2.0 |
| **910572** | X3-008 E | 6.17 |
| **910822** | X3-066 E | 1.79 |
| **913271** | Y1-065 C | 92.46 |
| **913362** | Y1-079 E | 3.02 |
| **913412** | Y1-080 E | 1.05 |
| **915542** | Y3-058 E | 4.65 |
| **917082** | Z2-012 E | 6.21 |
| **917432** | Z2-076 E | 1.01 |
| **917442** | Z2-077 E | 1.01 |
| **919831** | AA2-069 | 228.01 |
| **923921** | AB2-032 C | 6.49 |
| **923922** | AB2-032 E | 3.05 |
| **923951** | AB2-036 C | 17.02 |
| **923952** | AB2-036 E | 27.84 |
| **923961** | AB2-037 C | 38.3 |
| **923962** | AB2-037 E | 62.56 |
| **924051** | AB2-049 C | 1.25 |
| **924052** | AB2-049 E | 2.04 |
| **924191** | AB2-063 C | 3.65 |
| **924192** | AB2-063 E | 5.96 |
| **924531** | AB2-102 C | 79.87 |
| **924532** | AB2-102 E | 1.77 |
| **924681** | AB2-120 C | 19.03 |
| **924682** | AB2-120 E | 31.05 |
| **924781** | AB2-130 C O1 | 16.16 |
| **924782** | AB2-130 E O1 | 26.37 |
| **924801** | AB2-133 C O1 | 11.7 |
| **924802** | AB2-133 E O1 | 14.84 |
| **924821** | AB2-135 C | 14.37 |
| **924822** | AB2-135 E | 16.39 |
| **924831** | AB2-136 C | 12.35 |
| **924832** | AB2-136 E | 13.1 |
| **924971** | AB2-153 C | 3.63 |
| **924972** | AB2-153 E | 5.92 |
| **925111** | AB2-168 C | 1.57 |
| **925112** | AB2-168 E | 2.15 |
| **925151** | AB2-172 C | 9.45 |
| **925152** | AB2-172 E | 15.42 |
| **925251** | AB2-179 C | 16.99 |
| **925252** | AB2-179 E | 5.6 |
| **925261** | AB2-180 C | 7.0 |
| **925262** | AB2-180 E | 3.0 |
| **925271** | AB2-185 C | 6.81 |
| **925272** | AB2-185 E | 2.92 |
| **926131** | AC1-091 C | 3.79 |
| **926132** | AC1-091 E | 6.21 |
| **926141** | AC1-092 C | 3.79 |
| **926142** | AC1-092 E | 6.21 |
| **926151** | AC1-093 C | 3.59 |

| Bus # | Bus | MW Impact |
|---|---|---|
| **926152** | AC1-093 E | 5.91 |
| **926161** | AC1-094 C | 3.03 |
| **926162** | AC1-094 E | 5.0 |
| **926171** | AC1-095 C | 1.92 |
| **926172** | AC1-095 E | 3.08 |
| **926911** | AC1-177 | 2.0 |
| **927031** | AC1-190 C | 17.42 |
| **927032** | AC1-190 E | 7.46 |
| **927191** | AC1-213 C | 1.6 |
| **927192** | AC1-213 E | 1.05 |
| **930202** | AB1-056 E O1 | 92.01 |
| **930722** | AB1-116 E | 0.25 |
| **930732** | AB1-119 E | 0.24 |
| **930881** | AB1-137 C | 2.11 |
| **930882** | AB1-137 E | 0.9 |
| **930921** | AB1-141 C | 6.44 |
| **930922** | AB1-141 E | 3.01 |
| **930931** | AB1-142 C | 6.44 |
| **930932** | AB1-142 E | 3.01 |
| **931111** | AB1-162 C | 3.05 |
| **931112** | AB1-162 E | 4.98 |
| **931191** | AB1-169A | 178.35 |
| **931261** | AB1-176 C | 1.64 |
| **931262** | AB1-176 E | 2.69 |
| **932081** | AC2-018 C1 | 0.39 |
| **932082** | AC2-018 E1 | 20.99 |
| **932091** | AC2-018 C2 | 0.39 |
| **932092** | AC2-018 E2 | 20.99 |
| **932161** | AC2-023 C | 13.25 |
| **932162** | AC2-023 E | 9.65 |
| **933631** | AC2-185 C | 7.68 |
| **933632** | AC2-185 E | 12.53 |
| **933641** | AC2-186 C | 9.49 |
| **933642** | AC2-186 E | 15.49 |
| **936411** | AD2-052 C | 2.21 |
| **936412** | AD2-052 E | 1.09 |
| **936451** | AD2-059 C | 0.11 |
| **936452** | AD2-059 E | 0.33 |
| **936491** | AD2-064 C | 0.17 |
| **936492** | AD2-064 E | 0.24 |
| **936501** | AD2-065 C | 0.71 |
| **936502** | AD2-065 E | 0.98 |
| **936611** | AD2-076 C O1 | 8.93 |
| **936612** | AD2-076 E O1 | 14.56 |
| **936691** | AD2-088 C O1 | 9.01 |
| **936692** | AD2-088 E O1 | 6.01 |
| **937011** | AD2-135 C | 0.2 |
| **937012** | AD2-135 E | 0.34 |
| **937281** | AD2-167 | 41.98 |
| **938251** | AE1-038 C O1 | 4.25 |
| **938252** | AE1-038 E O1 | 5.86 |
| **938311** | AE1-046 C | 0.65 |

| Bus # | Bus | MW Impact |
|---|---|---|
| **938312** | AE1-046 E | 0.32 |
| **938421** | AE1-061 C | 0.86 |
| **938422** | AE1-061 E | 0.86 |
| **938431** | AE1-062 C | 1.72 |
| **938432** | AE1-062 E | 1.72 |
| **938651** | AE1-087 C | 4.22 |
| **938652** | AE1-087 E | 1.05 |
| **938781** | AE1-104 C O1 | 46.38 |
| **938782** | AE1-104 E O1 | 118.65 |
| **938811** | AE1-107 C | 14.01 |
| **938812** | AE1-107 E | 9.99 |
| **938871** | AE1-115 C | 1.73 |
| **938872** | AE1-115 E | 1.73 |
| **938891** | AE1-117 C O1 | 24.07 |
| **938892** | AE1-117 E O1 | 64.19 |
| **938901** | AE1-118 C O1 | 24.07 |
| **938902** | AE1-118 E O1 | 64.19 |
| **939151** | AE1-145 C1 | 6.01 |
| **939152** | AE1-145 C2 | 4.01 |
| **939153** | AE1-145 E | 0.1 |
| **939301** | AE1-161 C | 3.44 |
| **939302** | AE1-161 E | 5.17 |
| **939361** | AE1-167 C O1 | 3.0 |
| **939362** | AE1-167 E O1 | 2.5 |
| **939501** | AE1-179 C O1 | 11.95 |
| **939502** | AE1-179 E O1 | 8.43 |
| **939621** | AE1-192 C O1 | 23.53 |
| **939622** | AE1-192 E O1 | 11.52 |
| **939821** | AE1-218 C O1 | 0.26 |
| **939822** | AE1-218 E O1 | 0.39 |
| **939831** | AE1-219 C O1 | 0.59 |
| **939832** | AE1-219 E O1 | 0.85 |
| **939931** | AE1-229 C O1 | 29.31 |
| **939932** | AE1-229 E O1 | 19.86 |
| **940001** | AE1-240 C O1 | 9.9 |
| **940002** | AE1-240 E O1 | 7.07 |
| **940281** | AE2-011 C | 0.43 |
| **940282** | AE2-011 E | 0.59 |
| **940391** | AE2-023 C O2 | 25.26 |
| **940392** | AE2-023 E O2 | 118.25 |
| **940741** | AE2-061 | 5.65 |
| **940961** | AE2-087 C | 0.5 |
| **940962** | AE2-087 E | 0.68 |
| **940963** | AE2-087 BAT | 0.19 |
| **940971** | AE2-088 C | 0.24 |
| **940972** | AE2-088 E | 0.33 |
| **940973** | AE2-088 BAT | 0.13 |
| **941001** | AE2-091 C O2 | 7.79 |
| **941002** | AE2-091 E O2 | 4.07 |
| **941021** | AE2-093 C | 9.73 |
| **941022** | AE2-093 E | 15.46 |
| **941121** | AE2-106 C | 0.55 |

| Bus # | Bus | MW Impact |
|---|---|---|
| **941122** | AE2-106 E | 0.76 |
| **941123** | AE2-106 BAT | 0.19 |
| **941181** | AE2-112 C | 3.64 |
| **941182** | AE2-112 E | 5.94 |
| **941931** | AE2-205 C O2 | 16.35 |
| **941932** | AE2-205 E O2 | 10.9 |
| **941971** | AE2-209 C | 16.45 |
| **941972** | AE2-209 E | 11.47 |
| **942261** | AE2-238 C | 1.61 |
| **942262** | AE2-238 E | 2.23 |
| **942441** | AE2-257 C O2 | 16.55 |
| **942442** | AE2-257 E O2 | 43.63 |
| **942571** | AE2-272 | 0.45 |
| **942701** | AE2-286 C | 3.97 |
| **942702** | AE2-286 E | 5.76 |
| **942821** | AE2-301 C | 2.0 |
| **942822** | AE2-301 E | 3.05 |
| **943071** | AE2-334 C | 9.36 |
| **943072** | AE2-334 E | 4.99 |
| **943081** | AE2-335 C O2 | 13.47 |
| **943082** | AE2-335 E O2 | 6.0 |
| **BLUEG** | BLUEG | 28.52 |
| **CALDERWOOD** | CALDERWOOD | 3.2 |
| **CANNELTON** | CANNELTON | 1.74 |
| **CATAWBA** | CATAWBA | 2.1 |
| **CBM-N** | CBM-N | 3.04 |
| **CHEOAH** | CHEOAH | 2.93 |
| **CHILHOWEE** | CHILHOWEE | 1.05 |
| **COFFEEN** | COFFEEN | 3.01 |
| **COTTONWOOD** | COTTONWOOD | 12.18 |
| **DUCKCREEK** | DUCKCREEK | 6.54 |
| **EDWARDS** | EDWARDS | 2.98 |
| **ELMERSMITH** | ELMERSMITH | 3.0 |
| **FARMERCITY** | FARMERCITY | 2.0 |
| **G-007A** | G-007A | 25.54 |
| **GIBSON** | GIBSON | 1.18 |
| **HAMLET** | HAMLET | 3.48 |
| **NEWTON** | NEWTON | 7.88 |
| **NYISO** | NYISO | 13.13 |
| **PRAIRIE** | PRAIRIE | 14.79 |
| **SANTEETLA** | SANTEETLA | 0.86 |
| **SMITHLAND** | SMITHLAND | 1.19 |
| **TATANKA** | TATANKA | 3.59 |
| **TILTON** | TILTON | 3.58 |
| **TRIMBLE** | TRIMBLE | 3.17 |
| **TVA** | TVA | 10.17 |
| **UNIONPOWER** | UNIONPOWER | 4.55 |
| **VFT** | VFT | 52.17 |

| ID | FROM BUS# | FROM BUS | FROM BUS AREA | TO BUS# | TO BUS | TO BUS AREA | CKT ID | CONT NAME | Type | Rating MVA | PRE PROJECT LOADING % | POST PROJECT LOADING % | AC\|DC | MW IMPACT |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **1621844** | 213922 | RICHMOND | PECO | 214012 | WANEETA3 | PECO | 1 | PECO_P2-2_CHI230B1/* $ DELCO $ PECO_P2-2_CHI230B1 $ B | bus | 1180.0 | 119.47 | 120.0 | DC | 13.83 |

| Bus # | Bus | MW Impact |
|---|---|---|
| **213606** | FAIRLESS | 9.69 |
| **213878** | PENNSBRY | 0.92 |
| **213918** | RICHMD91 | 2.82 |
| **213919** | RICHMD92 | 2.82 |
| **219124** | CAMDEN_STG | 2.8 |
| **219126** | CAMDEN_CTG | 3.44 |
| **219128** | GLOUCSTR_26 | 1.52 |
| **219229** | EAGLEPT_G3 | 2.5 |
| **219230** | EAGLEPT_G1 | 3.7 |
| **219241** | CAMDEN1 | 0.21 |
| **219242** | CAMDEN2 | 0.02 |
| **227801** | ONTC&DCT | 7.26 |
| **227843** | MARINGEN E | 0.75 |
| **227928** | V4-067E | 0.3 |
| **228261** | V4-054E | 1.35 |
| **228357** | V2-046E | 3.06 |
| **228712** | V2-041E | 0.49 |
| **228721** | V2-035E | 0.28 |
| **291996** | U4-036 E | 1.01 |
| **292063** | V1-021 E | 0.06 |
| **292088** | V1-030 CB | 0.1 |
| **292099** | V1-030 E3 | 0.23 |
| **292105** | V1-030 E6 | 0.3 |
| **292115** | V1-030 EB | 1.33 |
| **292194** | V1-030 CE | 0.09 |
| **292195** | V1-030 EE | 1.23 |
| **293404** | V3-036 | 1.03 |
| **902092** | W1-130E | 1.35 |
| **902432** | W2-030 E | 1.17 |
| **902692** | W2-056 E | 1.64 |
| **902842** | W2-071E | 0.45 |
| **903152** | W2-102 E | 1.04 |
| **903991** | W3-080C | 1.96 |
| **903992** | W3-080E | 3.21 |
| **904042** | V4-005 E | 0.43 |
| **904432** | W3-124 E | 0.42 |
| **905792** | W4-103 E | 1.03 |
| **907382** | X1-070 E | 0.73 |
| **907392** | X1-071 E | 0.26 |
| **909032** | X2-013 E | 0.63 |
| **910862** | X3-075 E | 1.06 |
| **913242** | Y1-057 E | 0.32 |
| **913332** | Y1-075 E | 0.41 |

| Bus # | Bus | MW Impact |
|---|---|---|
| **915022** | Y3-012 E | 1.41 |
| **915072** | Y3-026 E | 1.6 |
| **915592** | Y3-087 E OP1 | 0.8 |
| **916292** | Z1-082 E | 0.34 |
| **917381** | Z2-062 | 0.13 |
| **924051** | AB2-049 C | 0.87 |
| **924052** | AB2-049 E | 1.41 |
| **924531** | AB2-102 C | 43.43 |
| **924532** | AB2-102 E | 0.97 |
| **924701** | AB2-122 C | 0.13 |
| **924702** | AB2-122 E | 0.22 |
| **925391** | AC1-010 C | 0.78 |
| **925392** | AC1-010 E | 1.34 |
| **925442** | AC1-016 E | 1.41 |
| **925452** | AC1-017 E | 0.67 |
| **925562** | AC1-030 E | 0.51 |
| **930002** | AB1-001 E | 0.27 |
| **930102** | AB1-025 E | 1.01 |
| **930242** | AB1-063 E | 0.14 |
| **930722** | AB1-116 E | 0.18 |
| **930732** | AB1-119 E | 0.17 |
| **931191** | AB1-169A | 119.56 |
| **932361** | AC2-050 C O1 | 0.89 |
| **932362** | AC2-050 E O1 | 1.46 |
| **933962** | AD1-019 E | 1.43 |
| **936211** | AD2-027 C | 1.4 |
| **936212** | AD2-027 E | 2.29 |
| **936321** | AD2-042 C | 1.85 |
| **936322** | AD2-042 E | 3.03 |
| **936411** | AD2-052 C | 1.54 |
| **936412** | AD2-052 E | 0.76 |
| **936491** | AD2-064 C | 0.12 |
| **936492** | AD2-064 E | 0.17 |
| **936501** | AD2-065 C | 0.5 |
| **936502** | AD2-065 E | 0.69 |
| **936541** | AD2-069 C | 0.52 |
| **936542** | AD2-069 E | 0.26 |
| **937011** | AD2-135 C | 0.13 |
| **937012** | AD2-135 E | 0.23 |
| **938311** | AE1-046 C | 0.43 |
| **938312** | AE1-046 E | 0.22 |
| **938421** | AE1-061 C | 0.58 |
| **938422** | AE1-061 E | 0.58 |
| **938431** | AE1-062 C | 1.2 |
| **938432** | AE1-062 E | 1.2 |
| **938611** | AE1-083 C | 0.51 |
| **938612** | AE1-083 E | 0.71 |
| **938781** | AE1-104 C O1 | 26.58 |
| **938782** | AE1-104 E O1 | 67.99 |
| **938871** | AE1-115 C | 1.26 |
| **938872** | AE1-115 E | 1.26 |
| **939301** | AE1-161 C | 2.41 |

| Bus # | Bus | MW Impact |
|---|---|---|
| **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 |
| **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 |

| Bus # | Bus | MW Impact |
|---|---|---|
| **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 | 9.56 |
| **943082** | AE2-335 E O2 | 4.26 |
| **BLUEG** | BLUEG | 6.64 |
| **CALDERWOOD** | CALDERWOOD | 0.72 |
| **CANNELTON** | CANNELTON | 0.4 |
| **CATAWBA** | CATAWBA | 0.46 |
| **CBM-N** | CBM-N | 0.84 |
| **CHEOAH** | CHEOAH | 0.66 |
| **CHILHOWEE** | CHILHOWEE | 0.24 |
| **COFFEEN** | COFFEEN | 0.7 |
| **COTTONWOOD** | COTTONWOOD | 2.77 |
| **DUCKCREEK** | DUCKCREEK | 1.53 |
| **EDWARDS** | EDWARDS | 0.7 |
| **ELMERSMITH** | ELMERSMITH | 0.7 |
| **FARMERCITY** | FARMERCITY | 0.46 |
| **G-007A** | G-007A | 12.57 |
| **GIBSON** | GIBSON | 0.27 |
| **HAMLET** | HAMLET | 0.75 |
| **NEWTON** | NEWTON | 1.83 |
| **NYISO** | NYISO | 3.63 |
| **PRAIRIE** | PRAIRIE | 3.42 |
| **SANTEETLA** | SANTEETLA | 0.19 |
| **SMITHLAND** | SMITHLAND | 0.27 |
| **TATANKA** | TATANKA | 0.83 |
| **TILTON** | TILTON | 0.83 |
| **TRIMBLE** | TRIMBLE | 0.74 |
| **TVA** | TVA | 2.31 |
| **UNIONPOWER** | UNIONPOWER | 1.03 |
| **VFT** | VFT | 22.63 |

| ID | FROM BUS# | FROM BUS | FROM BUS AREA | TO BUS# | TO BUS | TO BUS AREA | CKT ID | CONT NAME | Type | Rating MVA | PRE PROJECT LOADING % | POST PROJECT LOADING % | AC\|DC | MW IMPACT |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **1715150** | 214010 | WANEETA2 | PECO | 213817 | N PHILA | PECO | 1 | PECO_P4_CHICH045/* $ DELCO $ PECO_P4_CHICH045 $ STBK | breaker | 621.0 | 107.6 | 108.11 | DC | 7.03 |

| Bus # | Bus | MW Impact |
|---|---|---|
| **213606** | FAIRLESS | 6.63 |
| **213878** | PENNSBRY | 0.63 |
| **213918** | RICHMD91 | 1.37 |
| **213919** | RICHMD92 | 1.37 |
| **219124** | CAMDEN_STG | 1.4 |

| Bus # | Bus | MW Impact |
|---|---|---|
| **219126** | CAMDEN_CTG | 1.72 |
| **219128** | GLOUCSTR_26 | 0.76 |
| **219229** | EAGLEPT_G3 | 1.25 |
| **219230** | EAGLEPT_G1 | 1.85 |
| **219241** | CAMDEN1 | 0.1 |
| **219242** | CAMDEN2 | 0.01 |
| **227801** | ONTC&DCT | 3.75 |
| **227843** | MARINGEN E | 0.39 |
| **227928** | V4-067E | 0.16 |
| **228261** | V4-054E | 0.69 |
| **228357** | V2-046E | 1.55 |
| **228712** | V2-041E | 0.25 |
| **228721** | V2-035E | 0.14 |
| **291996** | U4-036 E | 0.51 |
| **292063** | V1-021 E | 0.03 |
| **292088** | V1-030 CB | 0.05 |
| **292099** | V1-030 E3 | 0.12 |
| **292105** | V1-030 E6 | 0.15 |
| **292115** | V1-030 EB | 0.66 |
| **292194** | V1-030 CE | 0.05 |
| **292195** | V1-030 EE | 0.61 |
| **293404** | V3-036 | 0.53 |
| **902092** | W1-130E | 0.69 |
| **902432** | W2-030 E | 0.6 |
| **902692** | W2-056 E | 0.86 |
| **902842** | W2-071E | 0.23 |
| **903152** | W2-102 E | 0.55 |
| **903991** | W3-080C | 1.09 |
| **903992** | W3-080E | 1.78 |
| **904042** | V4-005 E | 0.23 |
| **904432** | W3-124 E | 0.22 |
| **905792** | W4-103 E | 0.54 |
| **907382** | X1-070 E | 0.37 |
| **907391** | X1-071 C | 0.01 |
| **907392** | X1-071 E | 0.13 |
| **909032** | X2-013 E | 0.32 |
| **910862** | X3-075 E | 0.53 |
| **913332** | Y1-075 E | 0.22 |
| **915022** | Y3-012 E | 0.73 |
| **915072** | Y3-026 E | 0.89 |
| **915592** | Y3-087 E OP1 | 0.4 |
| **916292** | Z1-082 E | 0.17 |
| **917381** | Z2-062 | 0.06 |
| **924051** | AB2-049 C | 0.44 |
| **924052** | AB2-049 E | 0.72 |
| **924531** | AB2-102 C | 22.23 |
| **924532** | AB2-102 E | 0.49 |
| **924701** | AB2-122 C | 0.07 |
| **924702** | AB2-122 E | 0.12 |
| **925391** | AC1-010 C | 0.39 |
| **925392** | AC1-010 E | 0.67 |
| **925442** | AC1-016 E | 0.78 |

| Bus # | Bus | MW Impact |
|---|---|---|
| **925452** | AC1-017 E | 0.36 |
| **925561** | AC1-030 C | 0.02 |
| **925562** | AC1-030 E | 0.26 |
| **930002** | AB1-001 E | 0.14 |
| **930102** | AB1-025 E | 0.53 |
| **930242** | AB1-063 E | 0.07 |
| **930722** | AB1-116 E | 0.09 |
| **930732** | AB1-119 E | 0.08 |
| **931191** | AB1-169A | 61.04 |
| **932361** | AC2-050 C O1 | 0.47 |
| **932362** | AC2-050 E O1 | 0.76 |
| **933962** | AD1-019 E | 0.74 |
| **936211** | AD2-027 C | 0.7 |
| **936212** | AD2-027 E | 1.14 |
| **936321** | AD2-042 C | 0.92 |
| **936322** | AD2-042 E | 1.51 |
| **936411** | AD2-052 C | 0.78 |
| **936412** | AD2-052 E | 0.38 |
| **936491** | AD2-064 C | 0.06 |
| **936492** | AD2-064 E | 0.08 |
| **936501** | AD2-065 C | 0.26 |
| **936502** | AD2-065 E | 0.35 |
| **936541** | AD2-069 C | 0.27 |
| **936542** | AD2-069 E | 0.13 |
| **937011** | AD2-135 C | 0.07 |
| **937012** | AD2-135 E | 0.12 |
| **938311** | AE1-046 C | 0.22 |
| **938312** | AE1-046 E | 0.11 |
| **938421** | AE1-061 C | 0.29 |
| **938422** | AE1-061 E | 0.29 |
| **938431** | AE1-062 C | 0.62 |
| **938432** | AE1-062 E | 0.62 |
| **938611** | AE1-083 C | 0.29 |
| **938612** | AE1-083 E | 0.4 |
| **938781** | AE1-104 C O1 | 13.68 |
| **938782** | AE1-104 E O1 | 35.0 |
| **938871** | AE1-115 C | 0.64 |
| **938872** | AE1-115 E | 0.64 |
| **939301** | AE1-161 C | 1.23 |
| **939302** | AE1-161 E | 1.84 |
| **939501** | AE1-179 C O1 | 3.74 |
| **939502** | AE1-179 E O1 | 2.64 |
| **939821** | AE1-218 C O1 | 0.1 |
| **939822** | AE1-218 E O1 | 0.14 |
| **939831** | AE1-219 C O1 | 0.21 |
| **939832** | AE1-219 E O1 | 0.31 |
| **939931** | AE1-229 C O1 | 10.36 |
| **939932** | AE1-229 E O1 | 7.02 |
| **940001** | AE1-240 C O1 | 3.1 |
| **940002** | AE1-240 E O1 | 2.21 |
| **940281** | AE2-011 C | 0.15 |
| **940282** | AE2-011 E | 0.21 |

| Bus # | Bus | MW Impact |
|---|---|---|
| **940361** | AE2-020 C O2 | 10.1 |
| **940362** | AE2-020 E O2 | 47.27 |
| **940371** | AE2-021 C O2 | 10.1 |
| **940372** | AE2-021 E O2 | 47.27 |
| **940381** | AE2-022 C O2 | 5.89 |
| **940382** | AE2-022 E O2 | 27.58 |
| **940391** | AE2-023 C O2 | 7.65 |
| **940392** | AE2-023 E O2 | 35.79 |
| **940771** | AE2-064 C | 0.18 |
| **940772** | AE2-064 E | 0.25 |
| **940781** | AE2-065 C | 0.12 |
| **940782** | AE2-065 E | 0.19 |
| **940951** | AE2-085 C | 0.23 |
| **940952** | AE2-085 E | 0.21 |
| **940961** | AE2-087 C | 0.16 |
| **940962** | AE2-087 E | 0.22 |
| **940963** | AE2-087 BAT | 0.06 |
| **940971** | AE2-088 C | 0.09 |
| **940972** | AE2-088 E | 0.12 |
| **940973** | AE2-088 BAT | 0.05 |
| **941001** | AE2-091 C O2 | 2.5 |
| **941002** | AE2-091 E O2 | 1.31 |
| **941051** | AE2-097 C | 0.12 |
| **941052** | AE2-097 E | 0.2 |
| **941071** | AE2-101 C | 0.21 |
| **941072** | AE2-101 E | 0.29 |
| **941121** | AE2-106 C | 0.18 |
| **941122** | AE2-106 E | 0.25 |
| **941123** | AE2-106 BAT | 0.06 |
| **941441** | AE2-141 C | 0.14 |
| **941442** | AE2-141 E | 0.23 |
| **941471** | AE2-144 C | 0.25 |
| **941472** | AE2-144 E | 0.23 |
| **941931** | AE2-205 C O2 | 4.7 |
| **941932** | AE2-205 E O2 | 3.13 |
| **942011** | AE2-213 C | 0.19 |
| **942012** | AE2-213 E | 0.17 |
| **942101** | AE2-222 C O2 | 8.29 |
| **942102** | AE2-222 E O2 | 20.83 |
| **942201** | AE2-232 C O2 | 10.66 |
| **942202** | AE2-232 E O2 | 27.28 |
| **942381** | AE2-251 C O2 | 31.99 |
| **942382** | AE2-251 E O2 | 81.85 |
| **942571** | AE2-272 | 0.17 |
| **942941** | AE2-314 C | 4.1 |
| **942942** | AE2-314 E | 2.73 |
| **943071** | AE2-334 C | 3.41 |
| **943072** | AE2-334 E | 1.82 |
| **943081** | AE2-335 C O2 | 4.86 |
| **943082** | AE2-335 E O2 | 2.17 |
| **BLUEG** | BLUEG | 2.88 |
| **CALDERWOOD** | CALDERWOOD | 0.32 |

| Bus # | Bus | MW Impact |
|---|---|---|
| **CANNELTON** | CANNELTON | 0.18 |
| **CATAWBA** | CATAWBA | 0.21 |
| **CBM-N** | CBM-N | 0.87 |
| **CHEOAH** | CHEOAH | 0.29 |
| **CHILHOWEE** | CHILHOWEE | 0.1 |
| **COFFEEN** | COFFEEN | 0.3 |
| **COTTONWOOD** | COTTONWOOD | 1.22 |
| **DUCKCREEK** | DUCKCREEK | 0.66 |
| **EDWARDS** | EDWARDS | 0.3 |
| **ELMERSMITH** | ELMERSMITH | 0.3 |
| **FARMERCITY** | FARMERCITY | 0.2 |
| **G-007A** | G-007A | 8.18 |
| **GIBSON** | GIBSON | 0.12 |
| **HAMLET** | HAMLET | 0.34 |
| **NEWTON** | NEWTON | 0.79 |
| **NYISO** | NYISO | 3.79 |
| **PRAIRIE** | PRAIRIE | 1.49 |
| **SANTEETLA** | SANTEETLA | 0.09 |
| **SMITHLAND** | SMITHLAND | 0.12 |
| **TATANKA** | TATANKA | 0.36 |
| **TILTON** | TILTON | 0.36 |
| **TRIMBLE** | TRIMBLE | 0.32 |
| **TVA** | TVA | 1.01 |
| **UNIONPOWER** | UNIONPOWER | 0.45 |
| **VFT** | VFT | 16.55 |

| ID | FROM BUS# | FROM BUS | FROM BUS AREA | TO BUS# | TO BUS | TO BUS AREA | CKT ID | CONT NAME | Type | Rating MVA | PRE PROJECT LOADING % | POST PROJECT LOADING % | AC\|DC | MW IMPACT |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **1715087** | 214206 | RICHRE29 | PECO | 213922 | RICHMOND | PECO | 1 | PECO_P4_CHICH045/* $ DELCO $ PECO_P4_CHICH045 $ STBK | breaker | 1336.0 | 117.75 | 118.26 | DC | 14.75 |

| 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 |

| Bus # | Bus | MW Impact |
|---|---|---|
| **292063** | V1-021 E | 0.06 |
| **292088** | V1-030 CB | 0.11 |
| **292099** | V1-030 E3 | 0.22 |
| **292104** | V1-030 C6 | 0.02 |
| **292105** | V1-030 E6 | 0.33 |
| **292115** | V1-030 EB | 1.49 |
| **292194** | V1-030 CE | 0.1 |
| **292195** | V1-030 EE | 1.37 |
| **293404** | V3-036 | 1.08 |
| **902092** | W1-130E | 1.43 |
| **902432** | W2-030 E | 1.21 |
| **902692** | W2-056 E | 1.53 |
| **902842** | W2-071E | 0.44 |
| **903152** | W2-102 E | 0.98 |
| **903991** | W3-080C | 1.35 |
| **903992** | W3-080E | 2.2 |
| **904042** | V4-005 E | 0.4 |
| **904432** | W3-124 E | 0.4 |
| **905792** | W4-103 E | 0.97 |
| **907381** | X1-070 C | 0.05 |
| **907382** | X1-070 E | 0.77 |
| **907391** | X1-071 C | 0.01 |
| **907392** | X1-071 E | 0.26 |
| **909032** | X2-013 E | 0.7 |
| **910862** | X3-075 E | 1.18 |
| **913332** | Y1-075 E | 0.39 |
| **914231** | Y2-081 C OP1 | 1.35 |
| **914232** | Y2-081 E OP1 | 0.07 |
| **915022** | Y3-012 E | 1.47 |
| **915072** | Y3-026 E | 1.1 |
| **915591** | Y3-087 C OP1 | 0.06 |
| **915592** | Y3-087 E OP1 | 0.89 |
| **916292** | Z1-082 E | 0.38 |
| **917381** | Z2-062 | 0.14 |
| **919901** | AB1-000 1 | 1.04 |
| **919911** | AB1-000 2 | 1.04 |
| **919921** | AB1-000 3 | 1.04 |
| **924051** | AB2-049 C | 0.91 |
| **924052** | AB2-049 E | 1.48 |
| **924531** | AB2-102 C | 45.91 |
| **924532** | AB2-102 E | 1.02 |
| **924701** | AB2-122 C | 0.14 |
| **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 |

| Bus # | Bus | MW Impact |
|---|---|---|
| **930722** | AB1-116 E | 0.19 |
| **930732** | AB1-119 E | 0.17 |
| **931191** | AB1-169A | 126.85 |
| **932361** | AC2-050 C O1 | 0.86 |
| **932362** | AC2-050 E O1 | 1.41 |
| **933962** | AD1-019 E | 1.49 |
| **934661** | AD1-097 1 | 1.67 |
| **934671** | AD1-097 2 | 1.67 |
| **934681** | AD1-097 3 | 1.67 |
| **934691** | AD1-097 4 | 0.99 |
| **936211** | AD2-027 C | 1.57 |
| **936212** | AD2-027 E | 2.57 |
| **936321** | AD2-042 C | 2.07 |
| **936322** | AD2-042 E | 3.4 |
| **936411** | AD2-052 C | 1.66 |
| **936412** | AD2-052 E | 0.82 |
| **936491** | AD2-064 C | 0.12 |
| **936492** | AD2-064 E | 0.17 |
| **936501** | AD2-065 C | 0.51 |
| **936502** | AD2-065 E | 0.71 |
| **936541** | AD2-069 C | 0.51 |
| **936542** | AD2-069 E | 0.25 |
| **937011** | AD2-135 C | 0.14 |
| **937012** | AD2-135 E | 0.24 |
| **938311** | AE1-046 C | 0.46 |
| **938312** | AE1-046 E | 0.23 |
| **938421** | AE1-061 C | 0.61 |
| **938422** | AE1-061 E | 0.61 |
| **938431** | AE1-062 C | 1.23 |
| **938432** | AE1-062 E | 1.23 |
| **938611** | AE1-083 C | 0.35 |
| **938612** | AE1-083 E | 0.49 |
| **938781** | AE1-104 C O1 | 27.85 |
| **938782** | AE1-104 E O1 | 71.26 |
| **938871** | AE1-115 C | 1.36 |
| **938872** | AE1-115 E | 1.36 |
| **939301** | AE1-161 C | 2.57 |
| **939302** | AE1-161 E | 3.85 |
| **939501** | AE1-179 C O1 | 7.79 |
| **939502** | AE1-179 E O1 | 5.5 |
| **939821** | AE1-218 C O1 | 0.2 |
| **939822** | AE1-218 E O1 | 0.3 |
| **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 |

| Bus # | Bus | MW Impact |
|---|---|---|
| **940371** | AE2-021 C O2 | 20.21 |
| **940372** | AE2-021 E O2 | 94.63 |
| **940381** | AE2-022 C O2 | 11.79 |
| **940382** | AE2-022 E O2 | 55.2 |
| **940391** | AE2-023 C O2 | 15.45 |
| **940392** | AE2-023 E O2 | 72.34 |
| **940771** | AE2-064 C | 0.41 |
| **940772** | AE2-064 E | 0.56 |
| **940781** | AE2-065 C | 0.26 |
| **940782** | AE2-065 E | 0.41 |
| **940951** | AE2-085 C | 0.41 |
| **940952** | AE2-085 E | 0.39 |
| **940961** | AE2-087 C | 0.34 |
| **940962** | AE2-087 E | 0.47 |
| **940963** | AE2-087 BAT | 0.13 |
| **940971** | AE2-088 C | 0.18 |
| **940972** | AE2-088 E | 0.25 |
| **940973** | AE2-088 BAT | 0.1 |
| **941001** | AE2-091 C O2 | 5.24 |
| **941002** | AE2-091 E O2 | 2.73 |
| **941051** | AE2-097 C | 0.25 |
| **941052** | AE2-097 E | 0.41 |
| **941071** | AE2-101 C | 0.46 |
| **941072** | AE2-101 E | 0.63 |
| **941121** | AE2-106 C | 0.38 |
| **941122** | AE2-106 E | 0.52 |
| **941123** | AE2-106 BAT | 0.13 |
| **941441** | AE2-141 C | 0.26 |
| **941442** | AE2-141 E | 0.42 |
| **941471** | AE2-144 C | 0.55 |
| **941472** | AE2-144 E | 0.97 |
| **941931** | AE2-205 C O2 | 9.7 |
| **941932** | AE2-205 E O2 | 6.47 |
| **942011** | AE2-213 C | 0.41 |
| **942012** | AE2-213 E | 0.7 |
| **942101** | AE2-222 C O2 | 16.74 |
| **942102** | AE2-222 E O2 | 42.04 |
| **942201** | AE2-232 C O2 | 21.34 |
| **942202** | AE2-232 E O2 | 54.61 |
| **942381** | AE2-251 C O2 | 64.03 |
| **942382** | AE2-251 E O2 | 163.83 |
| **942571** | AE2-272 | 0.36 |
| **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 | 10.2 |
| **943082** | AE2-335 E O2 | 4.55 |
| **BLUEG** | BLUEG | 5.69 |
| **CALDERWOOD** | CALDERWOOD | 0.61 |
| **CANNELTON** | CANNELTON | 0.34 |
| **CATAWBA** | CATAWBA | 0.39 |

| Bus # | Bus | MW Impact |
|---|---|---|
| **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 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **1715120** | 219110 | GLOUCSTR | PSE&G | 219125 | CAMDEN | PSE&G | 1 | PS_P2-3_CUTB_1-4_LT | breaker | 771.0 | 112.21 | 112.71 | DC | 8.35 |

| 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 |

| Bus # | Bus | MW Impact |
|---|---|---|
| **293404** | V3-036 | 0.52 |
| **902092** | W1-130E | 0.79 |
| **902432** | W2-030 E | 0.59 |
| **909032** | X2-013 E | 0.54 |
| **910862** | X3-075 E | 0.99 |
| **914231** | Y2-081 C OP1 | 1.07 |
| **914232** | Y2-081 E OP1 | 0.06 |
| **915022** | Y3-012 E | 0.71 |
| **915591** | Y3-087 C OP1 | 0.05 |
| **915592** | Y3-087 E OP1 | 0.7 |
| **916292** | Z1-082 E | 0.14 |
| **917381** | Z2-062 | 0.12 |
| **924051** | AB2-049 C | 0.42 |
| **924052** | AB2-049 E | 0.69 |
| **924531** | AB2-102 C | 24.15 |
| **924532** | AB2-102 E | 0.54 |
| **924701** | AB2-122 C | 0.06 |
| **924702** | AB2-122 E | 0.11 |
| **925391** | AC1-010 C | 0.72 |
| **925392** | AC1-010 E | 1.25 |
| **930002** | AB1-001 E | 0.14 |
| **930722** | AB1-116 E | 0.1 |
| **930732** | AB1-119 E | 0.07 |
| **931191** | AB1-169A | 69.49 |
| **933962** | AD1-019 E | 0.72 |
| **936411** | AD2-052 C | 1.01 |
| **936412** | AD2-052 E | 0.5 |
| **936491** | AD2-064 C | 0.05 |
| **936492** | AD2-064 E | 0.07 |
| **936501** | AD2-065 C | 0.19 |
| **936502** | AD2-065 E | 0.26 |
| **937011** | AD2-135 C | 0.06 |
| **937012** | AD2-135 E | 0.11 |
| **938311** | AE1-046 C | 0.25 |
| **938312** | AE1-046 E | 0.13 |
| **938421** | AE1-061 C | 0.34 |
| **938422** | AE1-061 E | 0.34 |
| **938431** | AE1-062 C | 0.46 |
| **938432** | AE1-062 E | 0.46 |
| **938781** | AE1-104 C O1 | 13.91 |
| **938782** | AE1-104 E O1 | 35.59 |
| **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 |

| Bus # | Bus | MW Impact |
|---|---|---|
| **939932** | AE1-229 E O1 | 8.89 |
| **940001** | AE1-240 C O1 | 3.56 |
| **940002** | AE1-240 E O1 | 2.54 |
| **940281** | AE2-011 C | 0.13 |
| **940282** | AE2-011 E | 0.18 |
| **940361** | AE2-020 C O2 | 9.37 |
| **940362** | AE2-020 E O2 | 43.85 |
| **940371** | AE2-021 C O2 | 9.37 |
| **940372** | AE2-021 E O2 | 43.85 |
| **940381** | AE2-022 C O2 | 5.46 |
| **940382** | AE2-022 E O2 | 25.58 |
| **940391** | AE2-023 C O2 | 7.5 |
| **940392** | AE2-023 E O2 | 35.11 |
| **940771** | AE2-064 C | 0.32 |
| **940772** | AE2-064 E | 0.44 |
| **940781** | AE2-065 C | 0.21 |
| **940782** | AE2-065 E | 0.33 |
| **940961** | AE2-087 C | 0.19 |
| **940962** | AE2-087 E | 0.27 |
| **940963** | AE2-087 BAT | 0.07 |
| **940971** | AE2-088 C | 0.1 |
| **940972** | AE2-088 E | 0.14 |
| **940973** | AE2-088 BAT | 0.06 |
| **941001** | AE2-091 C O2 | 2.94 |
| **941002** | AE2-091 E O2 | 1.53 |
| **941071** | AE2-101 C | 0.3 |
| **941072** | AE2-101 E | 0.41 |
| **941121** | AE2-106 C | 0.22 |
| **941122** | AE2-106 E | 0.3 |
| **941123** | AE2-106 BAT | 0.07 |
| **941471** | AE2-144 C | 0.44 |
| **941472** | AE2-144 E | 0.78 |
| **941931** | AE2-205 C O2 | 5.11 |
| **941932** | AE2-205 E O2 | 3.41 |
| **942011** | AE2-213 C | 0.32 |
| **942012** | AE2-213 E | 0.54 |
| **942101** | AE2-222 C O2 | 8.07 |
| **942102** | AE2-222 E O2 | 20.28 |
| **942201** | AE2-232 C O2 | 9.89 |
| **942202** | AE2-232 E O2 | 25.31 |
| **942381** | AE2-251 C O2 | 29.67 |
| **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 | 5.78 |
| **943082** | AE2-335 E O2 | 2.57 |
| **BLUEG** | BLUEG | 1.6 |
| **CALDERWOOD** | CALDERWOOD | 0.16 |
| **CANNELTON** | CANNELTON | 0.1 |

| Bus # | Bus | MW Impact |
|---|---|---|
| **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 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **1715082** | 219125 | CAMDEN | PSE&G | 214206 | RICHRE29 | PECO | 1 | PECO_P4_CHICH045/* $ DELCO $ PECO_P4_CHICH045 $ STBK | breaker | 1336.0 | 117.77 | 118.27 | DC | 14.75 |

| 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 |

| Bus # | Bus | MW Impact |
|---|---|---|
| **292088** | V1-030 CB | 0.11 |
| **292099** | V1-030 E3 | 0.22 |
| **292104** | V1-030 C6 | 0.02 |
| **292105** | V1-030 E6 | 0.33 |
| **292115** | V1-030 EB | 1.49 |
| **292194** | V1-030 CE | 0.1 |
| **292195** | V1-030 EE | 1.37 |
| **293404** | V3-036 | 1.08 |
| **902092** | W1-130E | 1.43 |
| **902432** | W2-030 E | 1.21 |
| **902692** | W2-056 E | 1.53 |
| **902842** | W2-071E | 0.44 |
| **903152** | W2-102 E | 0.98 |
| **903991** | W3-080C | 1.35 |
| **903992** | W3-080E | 2.2 |
| **904042** | V4-005 E | 0.4 |
| **904432** | W3-124 E | 0.4 |
| **905792** | W4-103 E | 0.97 |
| **907381** | X1-070 C | 0.05 |
| **907382** | X1-070 E | 0.77 |
| **907391** | X1-071 C | 0.01 |
| **907392** | X1-071 E | 0.26 |
| **909032** | X2-013 E | 0.7 |
| **910862** | X3-075 E | 1.18 |
| **913332** | Y1-075 E | 0.39 |
| **914231** | Y2-081 C OP1 | 1.35 |
| **914232** | Y2-081 E OP1 | 0.07 |
| **915022** | Y3-012 E | 1.47 |
| **915072** | Y3-026 E | 1.1 |
| **915591** | Y3-087 C OP1 | 0.06 |
| **915592** | Y3-087 E OP1 | 0.89 |
| **916292** | Z1-082 E | 0.38 |
| **917381** | Z2-062 | 0.14 |
| **919901** | AB1-000 1 | 1.04 |
| **919911** | AB1-000 2 | 1.04 |
| **919921** | AB1-000 3 | 1.04 |
| **924051** | AB2-049 C | 0.91 |
| **924052** | AB2-049 E | 1.48 |
| **924531** | AB2-102 C | 45.91 |
| **924532** | AB2-102 E | 1.02 |
| **924701** | AB2-122 C | 0.14 |
| **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 |

| Bus # | Bus | MW Impact |
|---|---|---|
| **930732** | AB1-119 E | 0.17 |
| **931191** | AB1-169A | 126.85 |
| **932361** | AC2-050 C O1 | 0.86 |
| **932362** | AC2-050 E O1 | 1.41 |
| **933962** | AD1-019 E | 1.49 |
| **934661** | AD1-097 1 | 1.67 |
| **934671** | AD1-097 2 | 1.67 |
| **934681** | AD1-097 3 | 1.67 |
| **934691** | AD1-097 4 | 0.99 |
| **936211** | AD2-027 C | 1.57 |
| **936212** | AD2-027 E | 2.57 |
| **936321** | AD2-042 C | 2.07 |
| **936322** | AD2-042 E | 3.4 |
| **936411** | AD2-052 C | 1.66 |
| **936412** | AD2-052 E | 0.82 |
| **936491** | AD2-064 C | 0.12 |
| **936492** | AD2-064 E | 0.17 |
| **936501** | AD2-065 C | 0.51 |
| **936502** | AD2-065 E | 0.71 |
| **936541** | AD2-069 C | 0.51 |
| **936542** | AD2-069 E | 0.25 |
| **937011** | AD2-135 C | 0.14 |
| **937012** | AD2-135 E | 0.24 |
| **938311** | AE1-046 C | 0.46 |
| **938312** | AE1-046 E | 0.23 |
| **938421** | AE1-061 C | 0.61 |
| **938422** | AE1-061 E | 0.61 |
| **938431** | AE1-062 C | 1.23 |
| **938432** | AE1-062 E | 1.23 |
| **938611** | AE1-083 C | 0.35 |
| **938612** | AE1-083 E | 0.49 |
| **938781** | AE1-104 C O1 | 27.85 |
| **938782** | AE1-104 E O1 | 71.26 |
| **938871** | AE1-115 C | 1.36 |
| **938872** | AE1-115 E | 1.36 |
| **939301** | AE1-161 C | 2.57 |
| **939302** | AE1-161 E | 3.85 |
| **939501** | AE1-179 C O1 | 7.79 |
| **939502** | AE1-179 E O1 | 5.5 |
| **939821** | AE1-218 C O1 | 0.2 |
| **939822** | AE1-218 E O1 | 0.3 |
| **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 |

| Bus # | Bus | MW Impact |
|---|---|---|
| **940372** | AE2-021 E O2 | 94.63 |
| **940381** | AE2-022 C O2 | 11.79 |
| **940382** | AE2-022 E O2 | 55.2 |
| **940391** | AE2-023 C O2 | 15.45 |
| **940392** | AE2-023 E O2 | 72.34 |
| **940771** | AE2-064 C | 0.41 |
| **940772** | AE2-064 E | 0.56 |
| **940781** | AE2-065 C | 0.26 |
| **940782** | AE2-065 E | 0.41 |
| **940951** | AE2-085 C | 0.41 |
| **940952** | AE2-085 E | 0.39 |
| **940961** | AE2-087 C | 0.34 |
| **940962** | AE2-087 E | 0.47 |
| **940963** | AE2-087 BAT | 0.13 |
| **940971** | AE2-088 C | 0.18 |
| **940972** | AE2-088 E | 0.25 |
| **940973** | AE2-088 BAT | 0.1 |
| **941001** | AE2-091 C O2 | 5.24 |
| **941002** | AE2-091 E O2 | 2.73 |
| **941051** | AE2-097 C | 0.25 |
| **941052** | AE2-097 E | 0.41 |
| **941071** | AE2-101 C | 0.46 |
| **941072** | AE2-101 E | 0.63 |
| **941121** | AE2-106 C | 0.38 |
| **941122** | AE2-106 E | 0.52 |
| **941123** | AE2-106 BAT | 0.13 |
| **941441** | AE2-141 C | 0.26 |
| **941442** | AE2-141 E | 0.42 |
| **941471** | AE2-144 C | 0.55 |
| **941472** | AE2-144 E | 0.97 |
| **941931** | AE2-205 C O2 | 9.7 |
| **941932** | AE2-205 E O2 | 6.47 |
| **942011** | AE2-213 C | 0.41 |
| **942012** | AE2-213 E | 0.7 |
| **942101** | AE2-222 C O2 | 16.74 |
| **942102** | AE2-222 E O2 | 42.04 |
| **942201** | AE2-232 C O2 | 21.34 |
| **942202** | AE2-232 E O2 | 54.61 |
| **942381** | AE2-251 C O2 | 64.03 |
| **942382** | AE2-251 E O2 | 163.83 |
| **942571** | AE2-272 | 0.36 |
| **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 | 10.2 |
| **943082** | AE2-335 E O2 | 4.55 |
| **BLUEG** | BLUEG | 5.69 |
| **CALDERWOOD** | CALDERWOOD | 0.61 |
| **CANNELTON** | CANNELTON | 0.34 |
| **CATAWBA** | CATAWBA | 0.39 |
| **CBM-N** | CBM-N | 0.34 |

| Bus # | Bus | MW Impact |
|---|---|---|
| **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 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **1714964** | 227902 | LEWIS #1 | AE | 227945 | LEWIS #2 | AE | 1 | AE_P4-2 AE33 | breaker | 286.8 | 161.07 | 163.86 | DC | 8.01 |

| 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 |
| **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 |

| Bus # | Bus | MW Impact |
|---|---|---|
| **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 | 5.54 |
| **943082** | AE2-335 E O2 | 2.47 |
| **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 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **1899594** | 228312 | PEDRKTWN | AE | 228313 | BRIDGPRT | AE | 1 | AE_P7-1 AE10TOWER-A | tower | 552.0 | 107.47 | 110.51 | DC | 16.63 |

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

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

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

| ID | FROM BUS# | FROM BUS | FROM BUS AREA | TO BUS# | TO BUS | TO BUS AREA | CKT ID | CONT NAME | Type | Rating MVA | PRE PROJECT LOADING % | POST PROJECT LOADING % | AC\|DC | MW IMPACT |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **1899624** | 228313 | BRIDGPRT | AE | 228401 | MCKLTON | AE | 1 | AE_P7-1 AE8TOWER-A | tower | 805.0 | 99.2 | 101.29 | DC | 16.56 |

| Bus # | Bus | MW Impact |
|---|---|---|
| **227801** | ONTC&DCT | 4.71 |
| **227843** | MARINGEN E | 0.49 |
| **227928** | V4-067E | 0.19 |
| **228261** | V4-054E | 1.12 |
| **228304** | LOGAN | 18.88 |
| **228306** | PCLP STM | 4.76 |
| **228307** | PCLP GT | 4.75 |
| **228309** | CCLP NUG | 13.97 |
| **228334** | MANNMILG | 0.24 |

| Bus # | Bus | MW Impact |
|---|---|---|
| **228343** | QUINTN#1 | 0.06 |
| **228351** | V2-046C | 0.18 |
| **228357** | V2-046E | 2.71 |
| **228712** | V2-041E | 0.4 |
| **228720** | V2-035C | 0.03 |
| **228721** | V2-035E | 0.4 |
| **292063** | V1-021 E | 0.05 |
| **293404** | V3-036 | 0.67 |
| **902091** | W1-130C | 0.11 |
| **902092** | W1-130E | 1.48 |
| **902432** | W2-030 E | 0.76 |
| **915022** | Y3-012 E | 0.91 |
| **924531** | AB2-102 C | 38.52 |
| **924532** | AB2-102 E | 0.86 |
| **924701** | AB2-122 C | 0.08 |
| **924702** | AB2-122 E | 0.14 |
| **930002** | AB1-001 E | 0.17 |
| **931191** | AB1-169A | 130.71 |
| **933962** | AD1-019 E | 0.93 |
| **936411** | AD2-052 C | 1.75 |
| **936412** | AD2-052 E | 0.86 |
| **938311** | AE1-046 C | 0.48 |
| **938312** | AE1-046 E | 0.24 |
| **938421** | AE1-061 C | 1.19 |
| **938422** | AE1-061 E | 1.19 |
| **938781** | AE1-104 C O1 | 19.54 |
| **938782** | AE1-104 E O1 | 49.98 |
| **938871** | AE1-115 C | 3.11 |
| **938872** | AE1-115 E | 3.11 |
| **939301** | AE1-161 C | 5.52 |
| **939302** | AE1-161 E | 8.28 |
| **939501** | AE1-179 C O1 | 5.51 |
| **939502** | AE1-179 E O1 | 3.89 |
| **939931** | AE1-229 C O1 | 32.52 |
| **939932** | AE1-229 E O1 | 22.03 |
| **940001** | AE1-240 C O1 | 4.67 |
| **940002** | AE1-240 E O1 | 3.34 |
| **940361** | AE2-020 C O2 | 10.95 |
| **940362** | AE2-020 E O2 | 51.29 |
| **940371** | AE2-021 C O2 | 10.95 |
| **940372** | AE2-021 E O2 | 51.29 |
| **940381** | AE2-022 C O2 | 6.39 |
| **940382** | AE2-022 E O2 | 29.92 |
| **940391** | AE2-023 C O2 | 9.98 |
| **940392** | AE2-023 E O2 | 46.71 |
| **940961** | AE2-087 C | 0.27 |
| **940962** | AE2-087 E | 0.37 |
| **940963** | AE2-087 BAT | 0.1 |
| **940971** | AE2-088 C | 0.2 |
| **940972** | AE2-088 E | 0.28 |
| **940973** | AE2-088 BAT | 0.22 |
| **941001** | AE2-091 C O2 | 3.91 |

| Bus # | Bus | MW Impact |
|---|---|---|
| **941002** | AE2-091 E O2 | 2.04 |
| **941071** | AE2-101 C | 0.3 |
| **941072** | AE2-101 E | 0.42 |
| **941121** | AE2-106 C | 0.3 |
| **941122** | AE2-106 E | 0.41 |
| **941123** | AE2-106 BAT | 0.1 |
| **941931** | AE2-205 C O2 | 7.58 |
| **941932** | AE2-205 E O2 | 5.05 |
| **942101** | AE2-222 C O2 | 10.42 |
| **942102** | AE2-222 E O2 | 26.18 |
| **942201** | AE2-232 C O2 | 11.57 |
| **942202** | AE2-232 E O2 | 29.6 |
| **942381** | AE2-251 C O2 | 34.7 |
| **942382** | AE2-251 E O2 | 88.8 |
| **942571** | AE2-272 | 0.29 |
| **942941** | AE2-314 C | 4.45 |
| **942942** | AE2-314 E | 2.96 |
| **943081** | AE2-335 C O2 | 11.45 |
| **943082** | AE2-335 E O2 | 5.11 |
| **BLUEG** | BLUEG | 1.13 |
| **CALDERWOOD** | CALDERWOOD | 0.12 |
| **CANNELTON** | CANNELTON | 0.07 |
| **CARR** | CARR | 0.11 |
| **CATAWBA** | CATAWBA | 0.08 |
| **CHEOAH** | CHEOAH | 0.11 |
| **CHILHOWEE** | CHILHOWEE | 0.04 |
| **COFFEEN** | COFFEEN | 0.12 |
| **COTTONWOOD** | COTTONWOOD | 0.47 |
| **DUCKCREEK** | DUCKCREEK | 0.26 |
| **EDWARDS** | EDWARDS | 0.12 |
| **ELMERSMITH** | ELMERSMITH | 0.12 |
| **FARMERCITY** | FARMERCITY | 0.08 |
| **G-007A** | G-007A | 0.29 |
| **GIBSON** | GIBSON | 0.05 |
| **HAMLET** | HAMLET | 0.12 |
| **NEWTON** | NEWTON | 0.31 |
| **O-066** | O-066 | 1.95 |
| **PRAIRIE** | PRAIRIE | 0.58 |
| **RENSSELAER** | RENSSELAER | 0.09 |
| **SANTEETLA** | SANTEETLA | 0.03 |
| **SMITHLAND** | SMITHLAND | 0.05 |
| **TATANKA** | TATANKA | 0.14 |
| **TILTON** | TILTON | 0.14 |
| **TRIMBLE** | TRIMBLE | 0.13 |
| **TVA** | TVA | 0.39 |
| **UNIONPOWER** | UNIONPOWER | 0.17 |

| ID | FROM BUS# | FROM BUS | FROM BUS AREA | TO BUS# | TO BUS | TO BUS AREA | CKT ID | CONT NAME | Type | Rating MVA | PRE PROJECT LOADING % | POST PROJECT LOADING % | AC\|DC | MW IMPACT |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **1899565** | 228500 | LANDIS | AE | 228211 | UPITTS | AE | 1 | AE_P7-1 AE10TOWER-A | tower | 205.0 | 104.58 | 119.44 | DC | 30.46 |

| Bus # | Bus | MW Impact |
|---|---|---|
| **227801** | ONTC&DCT | 2.85 |
| **227843** | MARINGEN E | 0.3 |
| **227928** | V4-067E | 0.09 |
| **293404** | V3-036 | 0.41 |
| **902091** | W1-130C | 0.19 |
| **902092** | W1-130E | 2.49 |
| **902432** | W2-030 E | 0.42 |
| **915022** | Y3-012 E | 0.55 |
| **924701** | AB2-122 C | 0.04 |
| **924702** | AB2-122 E | 0.07 |
| **930002** | AB1-001 E | 0.11 |
| **931191** | AB1-169A | 219.19 |
| **933962** | AD1-019 E | 0.56 |
| **938311** | AE1-046 C | 0.8 |
| **938312** | AE1-046 E | 0.4 |
| **938421** | AE1-061 C | 2.01 |
| **938422** | AE1-061 E | 2.01 |
| **938781** | AE1-104 C O1 | 8.25 |
| **938782** | AE1-104 E O1 | 21.1 |
| **939301** | AE1-161 C | 10.15 |
| **939302** | AE1-161 E | 15.23 |
| **940391** | AE2-023 C O2 | 6.58 |
| **940392** | AE2-023 E O2 | 30.83 |
| **942101** | AE2-222 C O2 | 6.31 |
| **942102** | AE2-222 E O2 | 15.84 |
| **943081** | AE2-335 C O2 | 21.07 |
| **943082** | AE2-335 E O2 | 9.39 |
| **BLUEG** | BLUEG | 0.05 |
| **CALDERWOOD** | CALDERWOOD | 0.01 |
| **CANNELTON** | CANNELTON | 0.0 |
| **CATAWBA** | CATAWBA | 0.0 |
| **CBM-N** | CBM-N | 0.06 |
| **CHEOAH** | CHEOAH | 0.01 |
| **CHILHOWEE** | CHILHOWEE | 0.0 |
| **COFFEEN** | COFFEEN | 0.01 |
| **COTTONWOOD** | COTTONWOOD | 0.02 |
| **DUCKCREEK** | DUCKCREEK | 0.01 |
| **EDWARDS** | EDWARDS | 0.01 |
| **ELMERSMITH** | ELMERSMITH | 0.01 |
| **FARMERCITY** | FARMERCITY | 0.0 |
| **G-007A** | G-007A | 0.7 |
| **GIBSON** | GIBSON | 0.0 |
| **HAMLET** | HAMLET | 0.01 |
| **NEWTON** | NEWTON | 0.01 |
| **NYISO** | NYISO | 0.24 |
| **PRAIRIE** | PRAIRIE | 0.03 |
| **SANTEETLA** | SANTEETLA | 0.0 |
| **SMITHLAND** | SMITHLAND | 0.0 |
| **TATANKA** | TATANKA | 0.01 |
| **TILTON** | TILTON | 0.01 |
| **TRIMBLE** | TRIMBLE | 0.01 |

| Bus # | Bus | MW Impact |
|---|---|---|
| **TVA** | TVA | 0.02 |
| **UNIONPOWER** | UNIONPOWER | 0.01 |
| **VFT** | VFT | 0.75 |

| ID | FROM BUS# | FROM BUS | FROM BUS AREA | TO BUS# | TO BUS | TO BUS AREA | CKT ID | CONT NAME | Type | Rating MVA | PRE PROJECT LOADING % | POST PROJECT LOADING % | AC\|DC | MW IMPACT |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **1899457** | 227901 | DOROTHY | AE | 227949 | LEWIS #3 | AE | 1 | AE_P7-1 AE10TOWER-A | tower | 205.0 | 205.14 | 219.55 | DC | 29.53 |

| Bus # | Bus | MW Impact |
|---|---|---|
| **228720** | V2-035C | 0.03 |
| **228721** | V2-035E | 0.44 |
| **902091** | W1-130C | 0.28 |
| **902092** | W1-130E | 3.71 |
| **931191** | AB1-169A | 330.8 |
| **938311** | AE1-046 C | 1.2 |
| **938312** | AE1-046 E | 0.6 |
| **938421** | AE1-061 C | 2.99 |
| **938422** | AE1-061 E | 2.99 |
| **939301** | AE1-161 C | 9.84 |
| **939302** | AE1-161 E | 14.77 |
| **939931** | AE1-229 C O1 | 21.12 |
| **939932** | AE1-229 E O1 | 14.31 |
| **943081** | AE2-335 C O2 | 20.43 |
| **943082** | AE2-335 E O2 | 9.11 |
| **CARR** | CARR | 0.03 |
| **CBM-S1** | CBM-S1 | 0.03 |
| **CBM-S2** | CBM-S2 | 0.02 |
| **CBM-W1** | CBM-W1 | 0.05 |
| **CBM-W2** | CBM-W2 | 0.21 |
| **CIN** | CIN | 0.02 |
| **CPLE** | CPLE | 0.01 |
| **G-007** | G-007 | 0.31 |
| **IPL** | IPL | 0.01 |
| **LGEE** | LGEE | 0.01 |
| **MEC** | MEC | 0.04 |
| **MECS** | MECS | 0.03 |
| **O-066** | O-066 | 0.8 |
| **RENSSELAER** | RENSSELAER | 0.02 |
| **WEC** | WEC | 0.01 |

| Contingency Name | Contingency Definition |
|---|---|
| **PS_P1-2_U-2299_LT** | CONTINGENCY 'PS_P1-2_U-2299_LT' /* CAMDEN CUTBERTH<br>DISCONNECT BUS 219754 /* CUTHBERTH SECTION 3<br>CLOSE LINE FROM BUS 219176 TO BUS 219179 CKT Z /* CUTBERTH<br>MOVE 8 MW LOAD FROM BUS 219176 TO BUS 219170 /* INTERSTATION TIE TRANSFER LOAD FROM CUTHBERT TO CINN T2<br>MOVE 8 MW LOAD FROM BUS 219176 TO BUS 219676 /* INTERSTATION TIE TRANSFER LOAD |

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| | FROM CUTHBERT TO MAPLE SHADE<br>MOVE 8 MW LOAD FROM BUS 219179 TO BUS 219677 /* INTERSTATION TIE TRANSFER LOAD FROM CUTHBERT TO MAPLE SHADE<br>MOVE 8 MW LOAD FROM BUS 219179 TO BUS 219724 /* INTERSTATION TIE TRANSFER LOAD FROM CUTHBERT TO LAWNSIDE<br>END |
| **PS_P1-2_D-2282_LT** | CONTINGENCY 'PS_P1-2_D-2282_LT' /* CUTHBERT TO GLOUCESTER<br>DISCONNECT BUS 219755 /* BUS SECTION 4 CUTHBERT<br>CLOSE LINE FROM BUS 219177 TO BUS 219178 CKT Z /* CUTHBERT<br>MOVE 8 MW LOAD FROM BUS 219178 TO BUS 219678 /* INTERSTATION TIE TRANSFER LOAD FROM CUTHBERT TO MAPLE SHADE<br>MOVE 8 MW LOAD FROM BUS 219177 TO BUS 219677 /* INTERSTATION TIE TRANSFER LOAD FROM CUTHBERT TO MAPLE SHADE<br>END |
| **PS_P2-3_CUTB_3-4_LT** | CONTINGENCY 'PS_P2-3_CUTB_3-4_LT'<br>DISCONNECT BUS 219754 /* CUTHBERTH SECTION 3<br>DISCONNECT BUS 219755 /* BUS SECTION 4 CUTHBERT<br>CLOSE LINE FROM BUS 219177 TO BUS 219178 CKT Z /* CUTHBERT<br>CLOSE LINE FROM BUS 219176 TO BUS 219179 CKT Z /* CUTBERTH<br>MOVE 8 MW LOAD FROM BUS 219176 TO BUS 219170 /* INTERSTATION TIE TRANSFER LOAD FROM CUTHBERT TO CINN T2<br>MOVE 8 MW LOAD FROM BUS 219176 TO BUS 219678 /* INTERSTATION TIE TRANSFER LOAD FROM CUTHBERT TO MAPLE SHADE<br>MOVE 8 MW LOAD FROM BUS 219179 TO BUS 219678 /* INTERSTATION TIE TRANSFER LOAD FROM CUTHBERT TO MAPLE SHADE<br>MOVE 8 MW LOAD FROM BUS 219178 TO BUS 219678 /* INTERSTATION TIE TRANSFER LOAD FROM CUTHBERT TO MAPLE SHADE<br>MOVE 8 MW LOAD FROM BUS 219177 TO BUS 219677 /* INTERSTATION TIE TRANSFER LOAD FROM CUTHBERT TO MAPLE SHADE<br>MOVE 8 MW LOAD FROM BUS 219179 TO BUS 219629 /* INTERSTATION TIE TRANSFER LOAD FROM CUTHBERT TO LAWNSIDE<br>END |
| **PS_P2-3_CUTB_1-4_LT** | CONTINGENCY 'PS_P2-3_CUTB_1-4_LT'<br>DISCONNECT BUS 219108 /* CUTBERTH SECTION 1<br>DISCONNECT BUS 219755 /* BUS SECTION 4 CUTHBERT<br>CLOSE LINE FROM BUS 219177 TO BUS 219178 CKT Z /* CUTHBERT<br>CLOSE LINE FROM BUS 219176 TO BUS 219179 CKT Z /* CUTBERTH<br>MOVE 8 MW LOAD FROM BUS 219176 TO BUS 219170 /* INTERSTATION TIE TRANSFER LOAD FROM CUTHBERT TO CINN T2<br>MOVE 8 MW LOAD FROM BUS 219176 TO BUS 219678 /* INTERSTATION TIE TRANSFER LOAD FROM CUTHBERT TO MAPLE SHADE<br>MOVE 8 MW LOAD FROM BUS 219179 TO BUS 219678 /* INTERSTATION TIE TRANSFER LOAD FROM CUTHBERT TO MAPLE SHADE<br>MOVE 8 MW LOAD FROM BUS 219178 TO BUS 219678 /* INTERSTATION TIE TRANSFER LOAD FROM CUTHBERT TO MAPLE SHADE<br>MOVE 8 MW LOAD FROM BUS 219177 TO BUS 219677 /* INTERSTATION TIE TRANSFER LOAD FROM CUTHBERT TO MAPLE SHADE<br>MOVE 8 MW LOAD FROM BUS 219179 TO BUS 219629 /* INTERSTATION TIE TRANSFER LOAD FROM CUTHBERT TO LAWNSIDE<br>END |
| **PS_P2-3_CUTB_1-2_LT** | CONTINGENCY 'PS_P2-3_CUTB_1-2_LT'<br>DISCONNECT BUS 219753 /* CUTHBERTH SECTION 2<br>DISCONNECT BUS 219108 /* CUTHBERTH SECTION 1<br>CLOSE LINE FROM BUS 219176 TO BUS 219179 CKT Z /* CUTBERTH<br>CLOSE LINE FROM BUS 219177 TO BUS 219178 CKT Z /* CUTHBERT<br>MOVE 8 MW LOAD FROM BUS 219176 TO BUS 219170 /* INTERSTATION TIE TRANSFER LOAD FROM CUTHBERT TO CINN T2 |

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| | MOVE 8 MW LOAD FROM BUS 219176 TO BUS 219678 /* INTERSTATION TIE TRANSFER LOAD FROM CUTHBERT TO MAPLE SHADE<br>MOVE 8 MW LOAD FROM BUS 219179 TO BUS 219678 /* INTERSTATION TIE TRANSFER LOAD FROM CUTHBERT TO MAPLE SHADE<br>MOVE 8 MW LOAD FROM BUS 219178 TO BUS 219678 /* INTERSTATION TIE TRANSFER LOAD FROM CUTHBERT TO MAPLE SHADE<br>MOVE 8 MW LOAD FROM BUS 219177 TO BUS 219677 /* INTERSTATION TIE TRANSFER LOAD FROM CUTHBERT TO MAPLE SHADE<br>MOVE 8 MW LOAD FROM BUS 219179 TO BUS 219629 /* INTERSTATION TIE TRANSFER LOAD FROM CUTHBERT TO LAWNSIDE<br>END |
| **JC-P2-3-JCC-500-002D** | CONTINGENCY 'JC-P2-3-JCC-500-002D' /* E.WINDSOR CB16<br>DISCONNECT BRANCH FROM BUS 200006 TO BUS 200028 CKT 1 /* DEANS - WINDSOR 500.00 LINE<br>DISCONNECT BRANCH FROM BUS 200012 TO BUS 200028 CKT 1 /* NEWFRDM - WINDSOR 500.00 LINE<br>END |
| **AE_P1-3 MON 4 XFR** | CONTINGENCY 'AE_P1-3 MON 4 XFR'<br>OPEN LINE FROM BUS 228402 TO BUS 228404 CIRCUIT 2 /<br>END |
| **AE_P1-3 MON 3 XFR** | CONTINGENCY 'AE_P1-3 MON 3 XFR'<br>OPEN LINE FROM BUS 228402 TO BUS 228404 CIRCUIT 1 /<br>END |
| **AE_P7-1 AE8TOWER-A** | CONTINGENCY 'AE_P7-1 AE8TOWER-A'<br>DISCONNECT BRANCH FROM BUS 228404 TO BUS 228482 CKT 1 /* MONROE TO FRANK 138 KV<br>DISCONNECT BRANCH FROM BUS 228404 TO BUS 943080 CKT 1 /* MONROE TO AE2-335 TAP 138 138 KV<br>END |
| **AE_P1-1 913341[Y1-077]-1-GEN** | CONTINGENCY 'AE_P1-1 913341[Y1-077]-1-GEN'<br>REMOVE MACHINE 1 FROM BUS 913341 /* PMAX = 73.0 MW<br>END |
| **PECO_P2-2_CHI230B1/* $ DELCO $ PECO_P2-2_CHI230B1 $ B** | CONTINGENCY 'PECO_P2-2_CHI230B1/* $ DELCO $ PECO_P2-2_CHI230B1 $ B'<br>DISCONNECT BUS 213489 /* CHICHST1 230.00 $ DELCO $ PECO_P2-2_CHI230B1 $ B<br>END |
| **AE_P1-2 ORCHARD XF** | CONTINGENCY 'AE_P1-2 ORCHARD XF'<br>OPEN LINE FROM BUS 200063 TO BUS 228002 CIRCUIT 1 /<br>END |
| **AE_P7-1 AE10TOWER-A** | CONTINGENCY 'AE_P7-1 AE10TOWER-A'<br>DISCONNECT BRANCH FROM BUS 228482 TO BUS 228500 CKT 1 /* FRANK TO LANDIS 138 KV<br>DISCONNECT BRANCH FROM BUS 228404 TO BUS 943080 CKT 1 /* MONROE TO AE2-335 TAP 138 138 KV<br>END |
| **PECO_P1-2_5014/* $ CHESCO $ PECO_P1-2_5014 $ L** | CONTINGENCY 'PECO_P1-2_5014/* $ CHESCO $ PECO_P1-2_5014 $ L'<br>TRIP BRANCH FROM BUS 200065 TO BUS 200051 CKT 1 /* PCHBTM2S 500.00 ROCKSPGS 500.00 $ CHESCO $ PECO_P1-2_5014 $ L |

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| | END |
| **AE_P4-2 AE33** | CONTINGENCY 'AE_P4-2 AE33' /*LEWIS TO CARDIFF BREAKER V<br>DISCONNECT BRANCH FROM BUS 227902 TO BUS 227913 CKT 1 /*LEWIS CARDIFF 138 138<br>DISCONNECT BRANCH FROM BUS 227902 TO BUS 227903 CKT 1 /*LEWIS MILL #1 138 138<br>DISCONNECT BRANCH FROM BUS 227902 TO BUS 227918 CKT 1 /*LEWIS 138 69 T1<br>END |
| **PS_P1-2_Z-2305_LT** | CONTINGENCY 'PS_P1-2_Z-2305_LT' /* CAMDEN TO CUTBERTH<br>DISCONNECT BUS 219108 /* CUTBERTH SECTION 1<br>CLOSE LINE FROM BUS 219176 TO BUS 219179 CKT Z /* CUTBERTH<br>MOVE 8 MW LOAD FROM BUS 219176 TO BUS 219170 /* INTERSTATION TIE TRANSFER LOAD FROM CUTHBERT TO CINN T2<br>MOVE 8 MW LOAD FROM BUS 219176 TO BUS 219678 /* INTERSTATION TIE TRANSFER LOAD FROM CUTHBERT TO MAPLE SHADE<br>MOVE 8 MW LOAD FROM BUS 219179 TO BUS 219677 /* INTERSTATION TIE TRANSFER LOAD FROM CUTHBERT TO MAPLE SHADE<br>MOVE 8 MW LOAD FROM BUS 219179 TO BUS 219678 /* INTERSTATION TIE TRANSFER LOAD FROM CUTHBERT TO LAWNSIDE<br>END |
| **PECO_P4_CHICH045/* $ DELCO $ PECO_P4_CHICH045 $ STBK** | CONTINGENCY 'PECO_P4_CHICH045/* $ DELCO $ PECO_P4_CHICH045 $ STBK'<br>DISCONNECT BUS 213489 /* CHICHST1 230.00 $ DELCO $ PECO_P4_CHICH045 $ STBK<br>DISCONNECT BUS 213627 /* FOULK8 230.00 $ DELCO $ PECO_P4_CHICH045 $ STBK<br>END |
| **Base Case** | |
| **AE_P1-2 MONROE-LANDIS_1-A** | CONTINGENCY 'AE_P1-2 MONROE-LANDIS_1-A'<br>OPEN BRANCH FROM BUS 228404 TO BUS 943080 CKT 1<br>END |
| **PS_P2-3_CUTB_2-3_LT** | CONTINGENCY 'PS_P2-3_CUTB_2-3_LT'<br>DISCONNECT BUS 219753 /* CUTHBERTH SECTION 2<br>DISCONNECT BUS 219754 /* CUTHBERTH SECTION 3<br>CLOSE LINE FROM BUS 219176 TO BUS 219179 CKT Z /* CUTBERTH<br>CLOSE LINE FROM BUS 219177 TO BUS 219178 CKT Z /* CUTHBERT<br>MOVE 8 MW LOAD FROM BUS 219176 TO BUS 219170 /* INTERSTATION TIE TRANSFER LOAD FROM CUTHBERT TO CINN T2<br>MOVE 8 MW LOAD FROM BUS 219176 TO BUS 219678 /* INTERSTATION TIE TRANSFER LOAD FROM CUTHBERT TO MAPLE SHADE<br>MOVE 8 MW LOAD FROM BUS 219179 TO BUS 219678 /* INTERSTATION TIE TRANSFER LOAD FROM CUTHBERT TO MAPLE SHADE<br>MOVE 8 MW LOAD FROM BUS 219178 TO BUS 219678 /* INTERSTATION TIE TRANSFER LOAD FROM CUTHBERT TO MAPLE SHADE<br>MOVE 8 MW LOAD FROM BUS 219177 TO BUS 219677 /* INTERSTATION TIE TRANSFER LOAD FROM CUTHBERT TO MAPLE SHADE<br>MOVE 8 MW LOAD FROM BUS 219179 TO BUS 219629 /* INTERSTATION TIE TRANSFER LOAD FROM CUTHBERT TO LAWNSIDE<br>END |
| **PECO_P4_PEACH215/* $ CHESCO $ PECO_P4_PEACH215 $ STBK** | CONTINGENCY 'PECO_P4_PEACH215/* $ CHESCO $ PECO_P4_PEACH215 $ STBK'<br>TRIP BRANCH FROM BUS 200065 TO BUS 200051 CKT 1 /* PCHBTM2S 500.00 ROCKSPGS 500.00 $ CHESCO $ PECO_P4_PEACH215 $ STBK<br>REMOVE MACHINE 1 FROM BUS 200034 /* PCHBTM 2 22.00 $ CHESCO $ |

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| | PECO_P4_PEACH215 $ STBK<br>END |
| **PS_P1-2_C-2308_LT** | CONTINGENCY 'PS_P1-2_C-2308_LT' /* CUTHBERT TO GLOUCESTER<br>DISCONNECT BUS 219753 /* CUTHBERTH SECTOIN 2<br>CLOSE LINE FROM BUS 219177 TO BUS 219178 CKT Z /* CUTHBERT<br>MOVE 8 MW LOAD FROM BUS 219178 TO BUS 219678 /* INTERSTATION TIE TRANSFER LOAD FROM CUTHBERT TO MAPLE SHADE<br>MOVE 8 MW LOAD FROM BUS 219177 TO BUS 219677 /* INTERSTATION TIE TRANSFER LOAD FROM CUTHBERT TO MAPLE SHADE<br>END |
| **AE_P4-2 AE46** | CONTINGENCY 'AE_P4-2 AE46' /*ORCHARD 230 BUS BREAKER D<br>DISCONNECT BRANCH FROM BUS 228002 TO BUS 228310 CKT 1 /* ORCHARD TO CHURCHTOWN 230 230<br>DISCONNECT BRANCH FROM BUS 200063 TO BUS 228002 CKT 1 /*ORCHARD ORCHARD 500 230 T1<br>END |