Generation Interconnection
Feasibility Study Report
Queue Position AE1-179

The Interconnection Customer (IC) has proposed a 59.7 MW Energy (35 MW Capacity) solar generating facility to be located coordinates: Latitude: 39.3494000, Longitude: -75.0524000. At the IC's request, PJM studied the AE1-179 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 September 30, 2021. This date may not be attainable due to required PJM studies (System Impact and Facilities) and the Transmission Owner's construction schedule.

Point(s) of Interconnection

The Interconnection Customer requested a Primary and Secondary Point of Interconnection (POI) be evaluated for the AE1-179 project.

Primary Point of Interconnection

PJM studied the AE1-179 project as an injection into the Atlantic City Electric Company (ACE) transmission system at a tap of the Silica (PSSE bus # 228222) to South Millville (PSSE bus #228228) 69 kV circuit and evaluated it for compliance with reliability criteria for summer peak conditions in 2022. The AE1-179 project will connect with the ACE transmission system at a new to be constructed 69 kV substation adjacent to the existing ACE South Millville – Newport 69 kV line.

Transmission Owner Scope of Attachment Facilities Work

Substation Interconnection Estimate

Scope: Build a new 69 kV substation with a 3-position ring bus. Two of the positions on the ring bus will be transmission line terminals for the tie-in of existing ACE Line 0762. The other position will be a terminal configured for the interconnection of the AE1-179 generation.

Estimate: $4,700,000

Construction Time: 32-48 months

Major Equipment Included in Estimate:

- Control Enclosure, 47' x 16' Qty. 1
- Power Circuit Breaker, 69 kV, 2000A, 40kA, 3 cycle Qty. 3
- Line Switch, 69 kV, 2000A, Manual, Arcing horns Qty. 9
- Disconnect Switch, 69 kV, 2000A, Manual Wormgear, Arcing Horns Qty. 18
- CT/VT Combination Units, 69 kV Qty. 3
- CVT, 69 kV Qty. 9
- Disconnect Switch Stand, High, 69 kV, Steel Qty. 8
- CT/VT Stand, Single Phase, High, 69 kV, Steel Qty. 3

- CVT Stand, Single Phase, High, 69 kV, Steel — Qty. 9
- SSVT, 69 kV/240-120 V — Qty. 1
- Relay Panel, Transmission Line, FL/BU (20") — Qty. 2
- Bus Differential, 69 kV — Qty. 1
- Control Panel, 69 kV Circuit Breaker (10") — Qty. 3
- Take-off structure, 69 kV — Qty. 3
- Bus Support Structure, 3 phase, 69 kV, Steel — Qty. 8
- 69 kV Al tub bus — Lot

Estimate Assumptions:

- The required land is available for use.
- Developer responsible for land purchase for the substation, price is not included.
- Site clearing and grading performed by Developer.
- Cost to accelerate system protection project not considered.

Required Relaying and Communications

New protection relays are required for the new terminals.

Front line and back-up line protection will be required. One 20" relay panel for each generator terminal will be required for front line and back-up protection.

New protection relays are required for the new line terminals. Frontline and Backup line protection will be required. A 20" relay panel will be required for each transmission line (2 total).

A breaker control relay on a 20" breaker control panel will be required for the control and operation of each new 69 kV circuit breaker (3 total).

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

Metering

Three phase 69 kV revenue metering points will need to be established. ACE will purchase and install all metering instrument transformers as well as construct a metering structure. The secondary wiring connections at the instrument transformers will be completed by ACE's metering technicians. The metering control cable and meter cabinets will be supplied and installed by ACE. ACE will install conduit for the control cable between the instrument transformers and the metering enclosure. The location of the metering enclosure will be determined in the construction phase. ACE will provide both the Primary and the Backup meters. ACE's meter technicians will program and install the Primary & Backup solid state multi-function meters for each new metering position. Each meter will be equipped with load profile, telemetry, and DNP outputs. The IC will be provided with one meter DNP output for each meter. ACE will own the metering equipment for the interconnection point, unless the IC asserts its right to install, own, and operate the metering system.

The IC will be required to make provisions for a voice quality phone line within approximately 3 feet of each Company metering position to facilitate remote interrogation and data collection.

It is the IC's responsibility to send the data that PJM and ACE requires directly to PJM. The IC will grant permission for PJM to send ACE the following telemetry that the IC sends to PJM: real time MW, MVAR, volts, amperes, generator status, and interval MWH and MVARH.
The estimate for ACE to design, purchase, and install metering as specified in the aforementioned scope for metering is included in the Substation Interconnection Estimate.

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)

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

793770	227903	MILL #1	AE	227902	LEWIS #1	AE	1	AE_P1-2 BLE-ML-LEW2	single	306.0	101.01	102.57	DC	4.78
793715	227905	SCULL#1	AE	227903	MILL #1	AE	1	AE_P1-2 BLE-SC-ML2	single	306.0	115.42	117.14	DC	5.28
793718	227905	SCULL#1	AE	227903	MILL #1	AE	1	AE_P1-2 BLE-ML-LEW2	single	306.0	101.04	102.6	DC	4.78
793708	227906	SCULL#2	AE	227904	MILL #2	AE	1	AE_P1-2 BLE-SC-ML1	single	307.0	116.32	118.04	DC	5.28
793709	227906	SCULL#2	AE	227904	MILL #2	AE	1	AE_P1-2 BLE-ML-LEW1	single	307.0	111.71	113.35	DC	5.02
793685	228110	BLE	AE	227905	SCULL#1	AE	1	AE_P1-2 BLE-SC-ML2	single	307.0	122.37	124.09	DC	5.28
793688	228110	BLE	AE	227905	SCULL#1	AE	1	AE_P1-2 BLE-ML-LEW2	single	307.0	108.07	109.63	DC	4.78
793689	228110	BLE	AE	227905	SCULL#1	AE	1	Base Case	single	219.0	99.94	101.32	DC	3.03
793693	228110	BLE	AE	227906	SCULL#2	AE	1	AE_P1-2 BLE-SC-ML1	single	307.0	121.6	123.32	DC	5.28
793694	228110	BLE	AE	227906	SCULL#2	AE	1	AE_P1-2 BLE-ML-LEW1	single	307.0	116.99	118.62	DC	5.02
793697	228110	BLE	AE	227906	SCULL#2	AE	1	Base Case	single	219.0	97.95	99.33	DC	3.03

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
792776	213922	RICHMOND	PECO	214012	WANEETA3	PECO	1	PECO_P2-2_CHI230B1/* $ DELCO $ PECO_P2-2_CHI230B1 $ B	bus	1180.0	100.34	100.81	DC	12.46

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
793499	213922	RICHMOND	PECO	214012	WANEETA3	PECO	1	PECO_P4_CHICH045 /* $ DELCO $ PECO_P4_CHICH045 $ STBK	breaker	1180.0	100.33	100.8	DC	12.46
793435	219110	GLOUCSTR	PSE&G	219125	CAMDEN	PSE&G	1	PS_P2-3_CUTB_1-2_LT	breaker	771.0	99.94	100.36	DC	7.02
793097	227904	MILL #2	AE	227945	LEWIS #2	AE	1	AE_P4-2 AE33	breaker	282.0	133.2	134.33	DC	7.06
792851	227905	SCULL#1	AE	227903	MILL #1	AE	1	AE_P4-2 AE29	breaker	306.0	191.64	192.77	DC	7.72
792880	227906	SCULL#2	AE	227904	MILL #2	AE	1	AE_P4-2 AE28	breaker	307.0	179.01	180.33	DC	9.01
792870	228110	BLE	AE	227906	SCULL#2	AE	1	AE_P4-2 AE28	breaker	307.0	184.28	185.6	DC	9.01
794706	228130	TUCKAHOE	AE	227946	MILL#2	AE	1	AE_P7-1 AE7TOWER	tower	146.0	111.39	112.54	DC	3.72
794654	228217	DENNIS	AE	228130	TUCKAHOE	AE	1	AE_P7-1 AE7TOWER	tower	146.0	116.11	117.26	DC	3.72
793327	228312	PEDRKTWN	AE	228313	BRIDGPRT	AE	1	AE_P4-2 AE45	breaker	552.0	100.87	102.37	DC	18.26
793328	228312	PEDRKTWN	AE	228313	BRIDGPRT	AE	1	AE_P4-2 AE47	breaker	552.0	102.2	102.86	DC	8.97
793472	228313	BRIDGPRT	AE	228401	MCKLTON	AE	1	AE_P4-2 AE45	breaker	805.0	94.77	95.71	DC	18.19
794739	228402	MONROE	AE	219100	NEWFRDM	PSE&G	1	AE_P7-1 W2275_O2241	tower	804.0	100.57	101.15	DC	12.95

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
792846	228110	BLE	AE	227905	SCULL#1	AE	1	AE_P4-2	breake	307.0	198.37	199.51	DC	7.72

								AE29	r					
794738	228402	MONROE	AE	219100	NEWFRDM	PSE&G	1	PS_P7-1_V2274+P2242_LT	tower	804.0	106.85	107.26	DC	12.92

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
793328,793327	11	**PEDRKTWN 230.0 kV - BRIDGPRT 230.0 kV Ckt 1**	**AE** Description : No Violation. Incorrect rating in case.	$0
792880,793708,793709	3	**SCULL#2 138.0 kV - MILL #2 138.0 kV Ckt 1**	**AE** Description : To mitigate the (ACE) Mill#2– Scull#2 138 kV line (from bus 228904 to bus 227906 ckt 1) overload, it will require increasing the emergency rating of the Mill#2 to Scull#2 138 kV line by rebuilding the circuit. The rebuild will include the installation of new poles, foundations, insulators, and conductor. In addition, various terminal reinforcements are required at both Mill#2 to Scull#2. Time Estimate : 36-60 Months Cost : $12,800,000	$12,800,000
794654	10	**DENNIS 69.0 kV - TUCKAHOE 69.0 kV Ckt 1**	**AE** Description : To mitigate the (ACE) Dennis – Tuckahoe 69 kV line (from bus 228217 to bus 228130 ckt 1) overload, it will require increasing the emergency rating of the Dennis to Tuckahoe 69 kV line by rebuilding the circuit. The rebuild will include the installation of new poles, foundations, insulators, and conductor. In addition, various terminal reinforcements are required at Tuckahoe. Time Estimate : 36-60 Months Cost : $7,000,000	$7,000,000
792776,793499	6	**RICHMOND 230.0 kV - WANEETA3 230.0 kV Ckt 1**	**PECO** Description : No Violation. Queue Project W4-016 withdrew from the queue after the AE1 analysis run. After removing W4-016's contribution, the flowgate loading is less than 100%.	$0
794738,794739	13	**MONROE 230.0 kV - NEWFRDM 230.0 kV Ckt 1**	**PSE&G** Description : No Violation. PSE&G Terminal Equipment is Not Limiting Component **AE** Description : To mitigate the (ACE) Monroe – 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. Time Estimate : 36-60 Months Cost : $13,400,000	$13,400,000

ID	Index	Facility	Upgrade Description	Cost
793435	7	GLOUCSTR 230.0 kV - CAMDEN 230.0 kV Ckt 1	**PSE&G** Description : No Violation. Facility loading does not exceed 100%.	$0
792851,793718,793715	2	SCULL#1 138.0 kV - MILL #1 138.0 kV Ckt 1	**AE** Description : To mitigate the (ACE) Scull#1-Mill#1 - 138 kV line (from bus 227905 to bus 227903 ckt 1) overload, it will require increasing the emergency rating of the Scull#1 to Mill#1 138 kV line by rebuilding the circuit. The rebuild will include the installation of new poles, foundations, insulators, and conductor. In addition, various terminal reinforcements at Mill#1. Time Estimate : 36-60 Months Cost : $12,800,000	$12,800,000
793770	1	MILL #1 138.0 kV - LEWIS #1 138.0 kV Ckt 1	**AE** Description : To mitigate the (ACE) Mill#1– Lewis#1 138 kV line (from bus 228903 to bus 227902 ckt 1) overload, it will require increasing the emergency rating of the Mill#1 to Lewis#1 138 kV line by rebuilding the circuit. The rebuild will include the installation of new poles, foundations, insulators, and conductor. Time Estimate : 36-60 Months Cost : $11,300,000	$11,300,000
794706	9	TUCKAHOE 69.0 kV - MILL#2 69.0 kV Ckt 1	**AE** Description : To mitigate the (ACE) Tuckahoe – Mill#2 69 kV line (from bus 228130 to bus 227946 ckt 1) overload, it will require increasing the emergency rating of the Tuckahoe to Mill#2 69 kV line by rebuilding the circuit. The rebuild will include the installation of new poles, foundations, insulators, and conductor. Time Estimate : 36-60 Months Cost : $20,000,000	$20,000,000
793697,793694,793693,792870	5	BLE 138.0 kV - SCULL#2 138.0 kV Ckt 1	**AE** Description : To mitigate the (ACE) B.L. England – Scull#2 138 kV line (from bus 228110 to bus 227906 ckt 1) overload, it will require increasing the emergency rating of the B.L. England to Scull#2 138 kV line by rebuilding the circuit. The rebuild will include the installation of new poles, foundations, insulators, and conductor. In addition, various terminal reinforcements are required at both B.L. England and Scull#2. Time Estimate : 36-60 Months Cost : $6,000,000	$6,000,000
793097	8	MILL #2 138.0 kV - LEWIS #2 138.0 kV Ckt 1	**AE** Description : To mitigate the (ACE) Mill#2– Lewis#2 138 kV line (from bus 228904 to bus 227945 ckt 1) overload, it will require increasing the emergency rating of the Mill#2 to Lewis#2 138 kV line by rebuilding the circuit. The rebuild will include the installation of new poles, foundations, insulators, and conductor. In addition, various terminal reinforcements are required at Lewis#2. Time Estimate : 36-60 Months Cost : $12,500,000	$12,500,000

ID	Index	Facility	Upgrade Description	Cost
793688,793689,793685,792846	4	BLE 138.0 kV - SCULL#1 138.0 kV Ckt 1	**AE** Description : To mitigate the (ACE) B.L. England – Scull#1 138 kV line (from bus 228110 to bus 227905 ckt 1) overload, it will require increasing the emergency rating of the B.L. England to Scull#1 138 kV line by rebuilding the circuit. The rebuild will include the installation of new poles, foundations, insulators, and conductor. In addition, various terminal reinforcements are required at both B.L. England and Scull#1. Time Estimate : 36-60 Months Cost : $5,900,000	$5,900,000
793472	12	BRIDGPRT 230.0 kV - MCKLTON 230.0 kV Ckt 1	**AE** Description : No Violation. Facility loading does not exceed 100%.	$0
			TOTAL COST	**$101,700,000**

Steady-State Voltage Requirements

To be performed during later study phases as required.

Short Circuit

No issues identified.

Stability and Reactive Power Requirement

To be performed during later study phases as required.

Light Load Analysis - 2022

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

Delivery of Energy Portion of Interconnection Request

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

ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC|DC	MW IMPACT
794239	219108	CUTHBERT	PSE&G	219125	CAMDEN	PSE&G	1	PS_P1-2_U-2299_LT	operation	771.0	106.9	107.37	DC	7.96

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
793767	227903	MILL #1	AE	227902	LEWIS #1	AE	1	AE_P1-2 BLE-ML-LEW2	operation	306.0	155.91	157.11	DC	8.15
793769	227903	MILL #1	AE	227902	LEWIS #1	AE	1	Base Case	operation	218.0	104.14	105.07	DC	4.51
793968	227904	MILL #2	AE	227945	LEWIS #2	AE	1	AE_P1-2 BLE-ML-LEW1	operation	282.0	126.45	127.55	DC	6.88
793969	227904	MILL #2	AE	227945	LEWIS #2	AE	1	Base Case	operation	219.0	103.41	104.33	DC	4.5
793712	227905	SCULL#1	AE	227903	MILL #1	AE	1	AE_P1-2 BLE-SC-ML2	operation	306.0	176.73	178.06	DC	9.01
793714	227905	SCULL#1	AE	227903	MILL #1	AE	1	Base Case	operation	218.0	139.33	140.4	DC	5.16
793705	227906	SCULL#2	AE	227904	MILL #2	AE	1	AE_P1-2 BLE-SC-ML1	operation	307.0	177.44	178.76	DC	9.01
793707	227906	SCULL#2	AE	227904	MILL #2	AE	1	Base Case	operation	219.0	139.65	140.71	DC	5.17
793682	228110	BLE	AE	227905	SCULL#1	AE	1	AE_P1-2 BLE-SC-ML2	operation	307.0	183.48	184.81	DC	9.01
793684	228110	BLE	AE	227905	SCULL#1	AE	1	Base Case	operation	219.0	149.01	150.08	DC	5.16
793690	228110	BLE	AE	227906	SCULL#2	AE	1	AE_P1-2 BLE-SC-ML1	operation	307.0	182.72	184.04	DC	9.01
793692	228110	BLE	AE	227906	SCULL#2	AE	1	Base Case	operation	219.0	147.05	148.11	DC	5.17
794190	228312	PEDRKTWN	AE	228313	BRIDGPRT	AE	1	AE_P1-2 CHUR-ORCH	operation	552.0	100.12	100.65	DC	7.22
794270	228313	BRIDGPRT	AE	228401	MCKLTON	AE	1	Base Case	operation	650.0	101.31	101.9	DC	8.57

Secondary Point of Interconnection

PJM studied the AE1-179 project into the Atlantic City Electric Company (DPL) system at a direct connection into the South Millville 69 kV Substation (PSSE bus #228228) 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
775290	228110	BLE	AE	227905	SCULL#1	AE	1	AE_P1-2 BLE-SC-ML2	single	307.0	98.28	100.09	DC	5.56

775298	228110	BLE	AE	227906	SCULL#2	AE	1	AE_P1-2 BLE-SC-ML1	single	307.0	97.5	99.31	DC	5.57
774692	228360	WOODTWN2	AE	228332	WOODTWN1	AE	1	AE_P1-2 MICK-BRIDG	single	74.0	57.08	61.69	DC	3.42
774693	228360	WOODTWN2	AE	228332	WOODTWN1	AE	1	AE_P1-2 PED-BRIDGE	single	74.0	47.85	52.47	DC	3.42

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
773835	213922	RICHMOND	PECO	214012	WANEETA3	PECO	1	PECO_P2-2_CHI230B1/* $ DELCO $ PECO_P2-2_CHI230B1 $ B	bus	1180.0	100.3	100.78	DC	12.35
774495	213922	RICHMOND	PECO	214012	WANEETA3	PECO	1	PECO_P4_CHICH045/* $ DELCO $ PECO_P4_CHICH045 $ STBK	breaker	1180.0	100.3	100.77	DC	12.35
774428	219110	GLOUCSTR	PSE&G	219125	CAMDEN	PSE&G	1	PS_P2-3_CUTB_1-2_LT	breaker	771.0	99.83	100.24	DC	6.87
774493	228110	BLE	AE	227906	SCULL#2	AE	1	AE_P4-2 AE28	breaker	307.0	98.52	99.92	DC	9.49
774354	228312	PEDRKTWN	AE	228313	BRIDGPRT	AE	1	AE_P4-2 AE47	breaker	552.0	102.16	102.73	DC	7.97
775635	228402	MONROE	AE	219100	NEWFRDM	PSE&G	1	AE_P7-1 W2275_O2241	tower	804.0	100.3	100.86	DC	12.6

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
774436	228110	BLE	AE	227905	SCULL#1	AE	1	AE_P4-2 AE29	breaker	307.0	102.0	103.19	DC	8.13
775634	228402	MONROE	AE	219100	NEWFRDM	PSE&G	1	PS_P7-1_V2274+P2242_LT	tower	804.0	106.55	106.93	DC	12.57

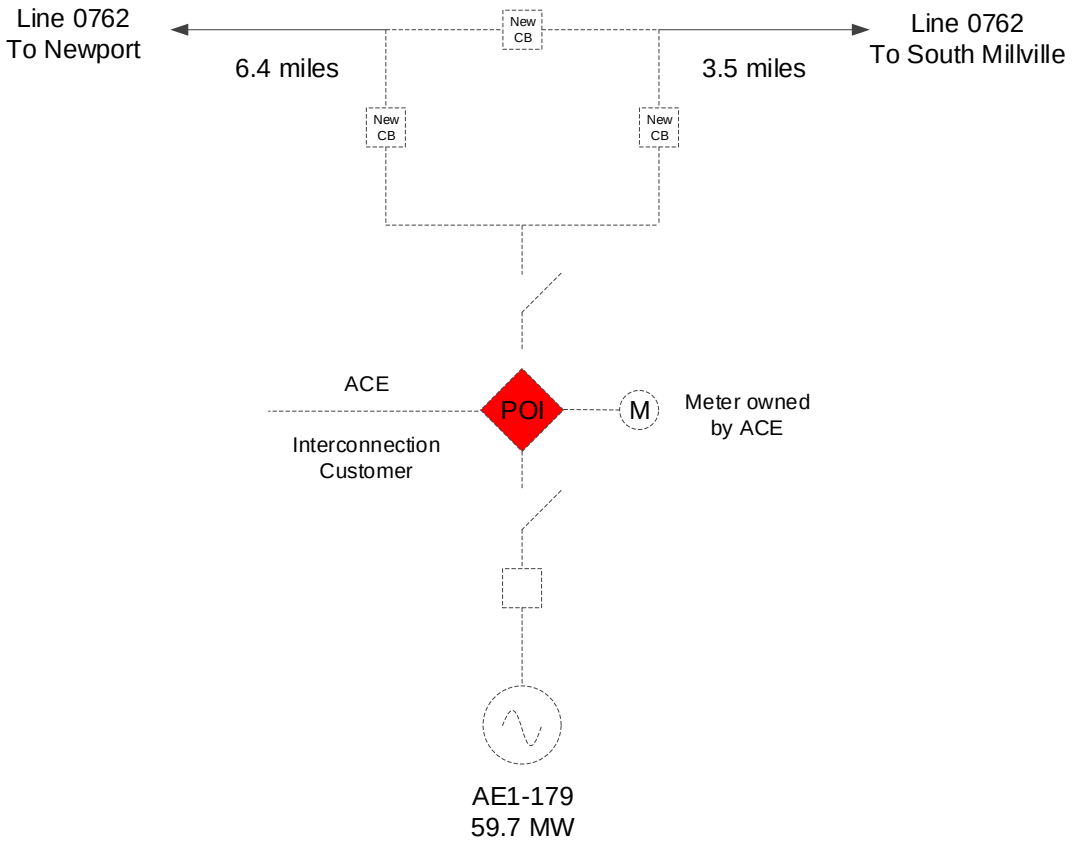
Delivery of Energy Portion of Interconnection Request

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
775157	219108	CUTHBERT	PSE&G	219125	CAMDEN	PSE&G	1	PS_P1-2_U-2299_LT	operation	771.0	106.77	107.23	DC	7.79
775289	228110	BLE	AE	227905	SCULL#1	AE	1	AE_P1-2 BLE-SC-ML2	operation	307.0	97.74	99.13	DC	9.49
775297	228110	BLE	AE	227906	SCULL#2	AE	1	AE_P1-2 BLE-SC-ML1	operation	307.0	96.96	98.36	DC	9.49
775132	228312	PEDRKTWN	AE	228313	BRIDGPRT	AE	1	AE_P1-2 CHUR-ORCH	operation	552.0	100.07	100.51	DC	6.13
775224	228313	BRIDGPRT	AE	228401	MCKLTON	AE	1	Base Case	operation	650.0	100.63	101.2	DC	8.21
774686	228360	WOODTWN2	AE	228332	WOODTWN1	AE	1	AE_P1-2 CHU-WOOD 2-A	operation	74.0	23.81	33.25	DC	6.99
774691	228360	WOODTWN2	AE	228332	WOODTWN1	AE	1	Base Case	operation	74.0	44.1	47.47	DC	5.52

Attachment 1

AE1-179
South Millville – Newport 69 kV
New 69 kV Substation



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 1

ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC|DC	MW IMPACT
793770	227903	MILL #1	AE	227902	LEWIS #1	AE	1	AE_P1-2 BLE-ML-LEW2	single	306.0	101.01	102.57	DC	4.78

Bus #	Bus	MW Impact
228200	CARL#1CT	0.44
228201	CARL#2CT	0.46
228202	CUMB CT	1.79
228203	P06	1.75
228206	SHRMN CT	1.6
228251	CARLLS#4	0.05
228260	V4-054C	0.13
228343	QUINTN#1	0.02
228702	WEST CT	0.54
228711	V2-041C	0.04
228717	S121	0.85
228727	W2-039G	1.4
292062	V1-021 C	0.1
913341	Y1-077	32.54
924531	AB2-102 C	38.94
936411	AD2-052 C	0.36
938421	AE1-061 C	0.3
938781	AE1-104 C O1	66.17
939501	AE1-179 C O1	4.78
940001	AE1-240 C O1	3.98
BAYOU	BAYOU	0.17
BIG_CAJUN1	BIG_CAJUN1	0.26
BIG_CAJUN2	BIG_CAJUN2	0.51
BLUEG	BLUEG	0.8
CALDERWOOD	CALDERWOOD	0.09
CANNELTON	CANNELTON	0.05
CARR	CARR	0.12
CATAWBA	CATAWBA	0.05
CHEOAH	CHEOAH	0.08

Bus #	Bus	MW Impact
CHILHOWEE	CHILHOWEE	0.03
CHOCTAW	CHOCTAW	0.17
COFFEEN	COFFEEN	0.08
COTTONWOOD	COTTONWOOD	0.66
DEARBORN	DEARBORN	0.14
DUCKCREEK	DUCKCREEK	0.18
EDWARDS	EDWARDS	0.08
ELMERSMITH	ELMERSMITH	0.08
FARMERCITY	FARMERCITY	0.06
GIBSON	GIBSON	0.03
HAMLET	HAMLET	0.18
NEWTON	NEWTON	0.22
PRAIRIE	PRAIRIE	0.41
RENSSELAER	RENSSELAER	0.09
SANTEETLA	SANTEETLA	0.02
SMITHLAND	SMITHLAND	0.03
TATANKA	TATANKA	0.1
TILTON	TILTON	0.1
TRIMBLE	TRIMBLE	0.09
TVA	TVA	0.28
UNIONPOWER	UNIONPOWER	0.12

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
792851	227905	SCULL#1	AE	227903	MILL #1	AE	1	AE_P4-2 AE29	breaker	306.0	191.64	192.77	DC	7.72

Bus #	Bus	MW Impact
228202	CUMB CT	1.7
228203	P06	1.66
228206	SHRMN CT	1.51
228261	V4-054E	0.63
228711	V2-041C	0.04
228712	V2-041E	0.44
292062	V1-021 C	0.09
292063	V1-021 E	0.09
913341	Y1-077	40.88
924531	AB2-102 C	36.78
924532	AB2-102 E	0.82
936411	AD2-052 C	0.34
936412	AD2-052 E	0.17
938421	AE1-061 C	0.14
938422	AE1-061 E	0.14
938781	AE1-104 C O1	83.14
938782	AE1-104 E O1	212.68
939501	AE1-179 C O1	4.52
939502	AE1-179 E O1	3.19

Bus #	Bus	MW Impact
940001	AE1-240 C O1	3.76
940002	AE1-240 E O1	2.69
BAYOU	BAYOU	0.19
BIG_CAJUN1	BIG_CAJUN1	0.3
BIG_CAJUN2	BIG_CAJUN2	0.6
BLUEG	BLUEG	0.94
CALDERWOOD	CALDERWOOD	0.1
CANNELTON	CANNELTON	0.06
CARR	CARR	0.13
CATAWBA	CATAWBA	0.06
CHEOAH	CHEOAH	0.09
CHILHOWEE	CHILHOWEE	0.03
CHOCTAW	CHOCTAW	0.2
COFFEEN	COFFEEN	0.1
COTTONWOOD	COTTONWOOD	0.77
DEARBORN	DEARBORN	0.17
DUCKCREEK	DUCKCREEK	0.22
EDWARDS	EDWARDS	0.1
ELMERSMITH	ELMERSMITH	0.1
FARMERCITY	FARMERCITY	0.07
G-007	G-007	0.7
GIBSON	GIBSON	0.04
HAMLET	HAMLET	0.21
NEWTON	NEWTON	0.26
O-066	O-066	1.46
PRAIRIE	PRAIRIE	0.48
RENSSELAER	RENSSELAER	0.1
SANTEETLA	SANTEETLA	0.03
SMITHLAND	SMITHLAND	0.04
TATANKA	TATANKA	0.12
TILTON	TILTON	0.12
TRIMBLE	TRIMBLE	0.1
TVA	TVA	0.32
UNIONPOWER	UNIONPOWER	0.14

Index 3

ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC|DC	MW IMPACT
792880	227906	SCULL#2	AE	227904	MILL #2	AE	1	AE_P4-2 AE28	breaker	307.0	179.01	180.33	DC	9.01

Bus #	Bus	MW Impact
228202	CUMB CT	1.98
228203	P06	1.93
228206	SHRMN CT	1.76
228261	V4-054E	0.74
228711	V2-041C	0.05
228712	V2-041E	0.51

Bus #	Bus	MW Impact
292062	V1-021 C	0.1
292063	V1-021 E	0.1
913341	Y1-077	36.37
924531	AB2-102 C	42.91
924532	AB2-102 E	0.95
936411	AD2-052 C	0.4
936412	AD2-052 E	0.2
938421	AE1-061 C	0.16
938422	AE1-061 E	0.16
938781	AE1-104 C O1	73.98
938782	AE1-104 E O1	189.24
939501	AE1-179 C O1	5.28
939502	AE1-179 E O1	3.73
940001	AE1-240 C O1	4.39
940002	AE1-240 E O1	3.14
BAYOU	BAYOU	0.18
BIG_CAJUN1	BIG_CAJUN1	0.28
BIG_CAJUN2	BIG_CAJUN2	0.57
BLUEG	BLUEG	0.89
CALDERWOOD	CALDERWOOD	0.1
CANNELTON	CANNELTON	0.05
CARR	CARR	0.13
CATAWBA	CATAWBA	0.06
CHEOAH	CHEOAH	0.09
CHILHOWEE	CHILHOWEE	0.03
CHOCTAW	CHOCTAW	0.19
COFFEEN	COFFEEN	0.09
COTTONWOOD	COTTONWOOD	0.73
DEARBORN	DEARBORN	0.16
DUCKCREEK	DUCKCREEK	0.2
EDWARDS	EDWARDS	0.09
ELMERSMITH	ELMERSMITH	0.09
FARMERCITY	FARMERCITY	0.06
G-007	G-007	0.78
GIBSON	GIBSON	0.04
HAMLET	HAMLET	0.2
NEWTON	NEWTON	0.25
O-066	O-066	1.57
PRAIRIE	PRAIRIE	0.46
RENSSELAER	RENSSELAER	0.1
SANTEETLA	SANTEETLA	0.03
SMITHLAND	SMITHLAND	0.04
TATANKA	TATANKA	0.11
TILTON	TILTON	0.11
TRIMBLE	TRIMBLE	0.1
TVA	TVA	0.31
UNIONPOWER	UNIONPOWER	0.14

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
792846	228110	BLE	AE	227905	SCULL#1	AE	1	AE_P4-2 AE29	breaker	307.0	198.37	199.51	DC	7.72

Bus #	Bus	MW Impact
228202	CUMB CT	1.7
228203	P06	1.66
228206	SHRMN CT	1.51
228261	V4-054E	0.63
228711	V2-041C	0.04
228712	V2-041E	0.44
292062	V1-021 C	0.09
292063	V1-021 E	0.09
913341	Y1-077	40.88
924531	AB2-102 C	36.78
924532	AB2-102 E	0.82
936411	AD2-052 C	0.34
936412	AD2-052 E	0.17
938421	AE1-061 C	0.14
938422	AE1-061 E	0.14
938781	AE1-104 C O1	83.14
938782	AE1-104 E O1	212.68
939501	AE1-179 C O1	4.52
939502	AE1-179 E O1	3.19
940001	AE1-240 C O1	3.76
940002	AE1-240 E O1	2.69
BAYOU	BAYOU	0.19
BIG_CAJUN1	BIG_CAJUN1	0.3
BIG_CAJUN2	BIG_CAJUN2	0.6
BLUEG	BLUEG	0.94
CALDERWOOD	CALDERWOOD	0.1
CANNELTON	CANNELTON	0.06
CARR	CARR	0.13
CATAWBA	CATAWBA	0.06
CHEOAH	CHEOAH	0.09
CHILHOWEE	CHILHOWEE	0.03
CHOCTAW	CHOCTAW	0.2
COFFEEN	COFFEEN	0.1
COTTONWOOD	COTTONWOOD	0.77
DEARBORN	DEARBORN	0.17
DUCKCREEK	DUCKCREEK	0.22
EDWARDS	EDWARDS	0.1
ELMERSMITH	ELMERSMITH	0.1
FARMERCITY	FARMERCITY	0.07
G-007	G-007	0.7
GIBSON	GIBSON	0.04
HAMLET	HAMLET	0.21
NEWTON	NEWTON	0.26
O-066	O-066	1.46
PRAIRIE	PRAIRIE	0.48
RENSSELAER	RENSSELAER	0.1
SANTEETLA	SANTEETLA	0.03

Bus #	Bus	MW Impact
SMITHLAND	SMITHLAND	0.04
TATANKA	TATANKA	0.12
TILTON	TILTON	0.12
TRIMBLE	TRIMBLE	0.1
TVA	TVA	0.32
UNIONPOWER	UNIONPOWER	0.14

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
792870	228110	BLE	AE	227906	SCULL#2	AE	1	AE_P4-2 AE28	breaker	307.0	184.28	185.6	DC	9.01

Bus #	Bus	MW Impact
228202	CUMB CT	1.98
228203	P06	1.93
228206	SHRMN CT	1.76
228261	V4-054E	0.74
228711	V2-041C	0.05
228712	V2-041E	0.51
292062	V1-021 C	0.1
292063	V1-021 E	0.1
913341	Y1-077	36.37
924531	AB2-102 C	42.91
924532	AB2-102 E	0.95
936411	AD2-052 C	0.4
936412	AD2-052 E	0.2
938421	AE1-061 C	0.16
938422	AE1-061 E	0.16
938781	AE1-104 C O1	73.98
938782	AE1-104 E O1	189.24
939501	AE1-179 C O1	5.28
939502	AE1-179 E O1	3.73
940001	AE1-240 C O1	4.39
940002	AE1-240 E O1	3.14
BAYOU	BAYOU	0.18
BIG_CAJUN1	BIG_CAJUN1	0.28
BIG_CAJUN2	BIG_CAJUN2	0.57
BLUEG	BLUEG	0.89
CALDERWOOD	CALDERWOOD	0.1
CANNELTON	CANNELTON	0.05
CARR	CARR	0.13
CATAWBA	CATAWBA	0.06
CHEOAH	CHEOAH	0.09
CHILHOWEE	CHILHOWEE	0.03
CHOCTAW	CHOCTAW	0.19
COFFEEN	COFFEEN	0.09
COTTONWOOD	COTTONWOOD	0.73

Bus #	Bus	MW Impact
DEARBORN	DEARBORN	0.16
DUCKCREEK	DUCKCREEK	0.2
EDWARDS	EDWARDS	0.09
ELMERSMITH	ELMERSMITH	0.09
FARMERCITY	FARMERCITY	0.06
G-007	G-007	0.78
GIBSON	GIBSON	0.04
HAMLET	HAMLET	0.2
NEWTON	NEWTON	0.25
O-066	O-066	1.57
PRAIRIE	PRAIRIE	0.46
RENSSELAER	RENSSELAER	0.1
SANTEETLA	SANTEETLA	0.03
SMITHLAND	SMITHLAND	0.04
TATANKA	TATANKA	0.11
TILTON	TILTON	0.11
TRIMBLE	TRIMBLE	0.1
TVA	TVA	0.31
UNIONPOWER	UNIONPOWER	0.14

Index 6

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
793499	213922	RICHMOND	PECO	214012	WANEETA3	PECO	1	PECO_P4_CHICH045/* $ DELCO $ PECO_P4_CHICH045 $ STBK	breaker	1180.0	100.33	100.8	DC	12.46

Bus #	Bus	MW Impact
213918	RICHMD91	3.55
213919	RICHMD92	3.55
219124	CAMDEN_STG	3.52
219126	CAMDEN_CTG	4.33
219128	GLOUCSTR_26	1.91
219229	EAGLEPT_G3	3.14
219230	EAGLEPT_G1	4.65
219241	CAMDEN1	0.26
219242	CAMDEN2	0.03
227801	ONTC&DCT	7.23
227843	MARINGEN E	0.75
227928	V4-067E	0.3
228261	V4-054E	1.34
228357	V2-046E	3.05
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	0.12

Bus #	Bus	MW Impact
292099	V1-030 E3	0.23
292105	V1-030 E6	0.3
292115	V1-030 EB	1.32
292194	V1-030 CE	0.12
292195	V1-030 EE	1.22
292967	U2-045 E	3.26
293404	V3-036	1.03
902092	W1-130E	1.35
902432	W2-030 E	1.16
902692	W2-056 E	1.63
902842	W2-071E	0.45
903152	W2-102 E	1.03
903991	W3-080C	1.96
903992	W3-080E	3.2
904042	V4-005 E	0.43
904432	W3-124 E	0.42
905143	W4-016	67.01
905232	W4-029 E	0.44
905532	W4-063 E	0.81
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	1.4
915072	Y3-026 E	1.6
915592	Y3-087 E OP1	0.8
916292	Z1-082 E	0.34
917381	Z2-062	0.16
918852	AA1-104 E	5.7
924051	AB2-049 C	0.86
924052	AB2-049 E	1.41
924531	AB2-102 C	43.28
924532	AB2-102 E	0.96
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	1.0
930242	AB1-063 E	0.14
930722	AB1-116 E	0.18
930732	AB1-119 E	0.16
931191	AB1-169A	119.2
932361	AC2-050 C O1	0.89
932362	AC2-050 E O1	1.45
933962	AD1-019 E	1.42

Bus #	Bus	MW Impact
936211	AD2-027 C	1.4
936212	AD2-027 E	2.28
936321	AD2-042 C	1.84
936322	AD2-042 E	3.02
936411	AD2-052 C	1.54
936412	AD2-052 E	0.76
936491	AD2-064 C	0.12
936492	AD2-064 E	0.16
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
938301	AE1-045 C	0.43
938302	AE1-045 E	0.22
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	26.49
938782	AE1-104 E O1	67.76
938871	AE1-115 C	1.26
938872	AE1-115 E	1.26
939301	AE1-161 C	2.4
939302	AE1-161 E	3.6
939501	AE1-179 C O1	7.31
939502	AE1-179 E O1	5.16
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	0.6
939931	AE1-229 C O1	20.36
939932	AE1-229 E O1	13.79
940001	AE1-240 C O1	6.06
940002	AE1-240 E O1	4.32
BAYOU	BAYOU	1.46
BIG_CAJUN1	BIG_CAJUN1	2.24
BIG_CAJUN2	BIG_CAJUN2	4.51
BLUEG	BLUEG	6.97
CALDERWOOD	CALDERWOOD	0.76
CANNELTON	CANNELTON	0.42
CATAWBA	CATAWBA	0.48
CBM-N	CBM-N	0.79
CHEOAH	CHEOAH	0.69
CHILHOWEE	CHILHOWEE	0.25
CHOCTAW	CHOCTAW	1.49
COFFEEN	COFFEEN	0.74

Bus #	Bus	MW Impact
COTTONWOOD	COTTONWOOD	5.78
DEARBORN	DEARBORN	1.22
DUCKCREEK	DUCKCREEK	1.6
EDWARDS	EDWARDS	0.73
ELMERSMITH	ELMERSMITH	0.73
FARMERCITY	FARMERCITY	0.49
G-007A	G-007A	12.41
GIBSON	GIBSON	0.29
HAMLET	HAMLET	1.59
NEWTON	NEWTON	1.92
NYISO	NYISO	3.41
O-066A	O-066A	3.17
PRAIRIE	PRAIRIE	3.59
SANTEETLA	SANTEETLA	0.2
SMITHLAND	SMITHLAND	0.29
TATANKA	TATANKA	0.88
TILTON	TILTON	0.88
TRIMBLE	TRIMBLE	0.77
TVA	TVA	2.43
UNIONPOWER	UNIONPOWER	1.08
VFT	VFT	22.21

Index 7

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
793435	219110	GLOUCSTR	PSE&G	219125	CAMDEN	PSE&G	1	PS_P2-3_CUTB_1-2_LT	breaker	771.0	99.94	100.36	DC	7.02

Bus #	Bus	MW Impact
219124	CAMDEN_STG	3.16
219126	CAMDEN_CTG	3.89
219128	GLOUCSTR_26	1.71
219229	EAGLEPT_G3	2.73
219230	EAGLEPT_G1	4.05
219231	EAGLEPT_G2	4.04
227801	ONTC&DCT	3.5
227843	MARINGEN E	0.36
227928	V4-067E	0.14
228261	V4-054E	0.79
228357	V2-046E	1.95
228423	Q-090 2	25.69
228712	V2-041E	0.26
228721	V2-035E	0.17
291995	U4-036 C	0.08
291996	U4-036 E	0.83
292063	V1-021 E	0.03
292104	V1-030 C6	0.02

Bus #	Bus	MW Impact
292105	V1-030 E6	0.25
292194	V1-030 CE	0.1
292195	V1-030 EE	1.1
292967	U2-045 E	1.58
293404	V3-036	0.5
902092	W1-130E	0.75
902432	W2-030 E	0.56
905143	W4-016	50.09
905532	W4-063 E	0.39
909032	X2-013 E	0.52
910862	X3-075 E	0.95
914231	Y2-081 C OP1	1.3
914232	Y2-081 E OP1	0.07
915022	Y3-012 E	0.68
915591	Y3-087 C OP1	0.06
915592	Y3-087 E OP1	0.68
916292	Z1-082 E	0.14
917381	Z2-062	0.15
918852	AA1-104 E	4.26
924051	AB2-049 C	0.41
924052	AB2-049 E	0.66
924531	AB2-102 C	23.2
924532	AB2-102 E	0.52
924701	AB2-122 C	0.06
924702	AB2-122 E	0.11
925391	AC1-010 C	0.7
925392	AC1-010 E	1.2
930002	AB1-001 E	0.13
930722	AB1-116 E	0.09
930732	AB1-119 E	0.07
931191	AB1-169A	66.8
933962	AD1-019 E	0.69
936411	AD2-052 C	0.97
936412	AD2-052 E	0.48
936491	AD2-064 C	0.05
936492	AD2-064 E	0.07
936501	AD2-065 C	0.18
936502	AD2-065 E	0.25
937011	AD2-135 C	0.06
937012	AD2-135 E	0.1
938301	AE1-045 C	0.24
938302	AE1-045 E	0.12
938311	AE1-046 C	0.24
938312	AE1-046 E	0.12
938421	AE1-061 C	0.32
938422	AE1-061 E	0.32
938431	AE1-062 C	0.44
938432	AE1-062 E	0.44
938781	AE1-104 C O1	13.36
938782	AE1-104 E O1	34.17
938871	AE1-115 C	0.82
938872	AE1-115 E	0.82

Bus #	Bus	MW Impact
939301	AE1-161 C	1.4
939302	AE1-161 E	2.09
939501	AE1-179 C O1	4.11
939502	AE1-179 E O1	2.9
939821	AE1-218 C O1	0.1
939822	AE1-218 E O1	0.15
939831	AE1-219 C O1	0.23
939832	AE1-219 E O1	0.33
939931	AE1-229 C O1	12.61
939932	AE1-229 E O1	8.55
940001	AE1-240 C O1	3.42
940002	AE1-240 E O1	2.44
BAYOU	BAYOU	0.36
BIG_CAJUN1	BIG_CAJUN1	0.55
BIG_CAJUN2	BIG_CAJUN2	1.11
BLUEG	BLUEG	1.77
CALDERWOOD	CALDERWOOD	0.18
CANNELTON	CANNELTON	0.11
CARR	CARR	0.38
CATAWBA	CATAWBA	0.11
CHEOAH	CHEOAH	0.17
CHILHOWEE	CHILHOWEE	0.06
CHOCTAW	CHOCTAW	0.37
COFFEEN	COFFEEN	0.19
COTTONWOOD	COTTONWOOD	1.42
DEARBORN	DEARBORN	0.32
DUCKCREEK	DUCKCREEK	0.41
EDWARDS	EDWARDS	0.19
ELMERSMITH	ELMERSMITH	0.18
FARMERCITY	FARMERCITY	0.12
G-007	G-007	0.77
GIBSON	GIBSON	0.07
HAMLET	HAMLET	0.36
NEWTON	NEWTON	0.49
O-066	O-066	4.38
PRAIRIE	PRAIRIE	0.9
RENSSELAER	RENSSELAER	0.3
SANTEETLA	SANTEETLA	0.05
SMITHLAND	SMITHLAND	0.07
TATANKA	TATANKA	0.22
TILTON	TILTON	0.22
TRIMBLE	TRIMBLE	0.2
TVA	TVA	0.6
UNIONPOWER	UNIONPOWER	0.26

Index 8

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

											%	%		
793097	227904	MILL #2	AE	227945	LEWIS #2	AE	1	AE_P4-2 AE33	breaker	282.0	133.2	134.33	DC	7.06

Bus #	Bus	MW Impact
228202	CUMB CT	1.56
228203	P06	1.55
228206	SHRMN CT	1.39
228261	V4-054E	0.58
228711	V2-041C	0.04
228712	V2-041E	0.4
292062	V1-021 C	0.08
292063	V1-021 E	0.08
902432	W2-030 E	0.5
913341	Y1-077	26.87
924531	AB2-102 C	34.31
924532	AB2-102 E	0.76
938421	AE1-061 C	0.27
938422	AE1-061 E	0.27
938781	AE1-104 C O1	54.66
938782	AE1-104 E O1	139.82
939301	AE1-161 C	0.57
939302	AE1-161 E	0.85
939501	AE1-179 C O1	4.14
939502	AE1-179 E O1	2.92
940001	AE1-240 C O1	3.44
940002	AE1-240 E O1	2.46
BAYOU	BAYOU	0.14
BIG_CAJUN1	BIG_CAJUN1	0.21
BIG_CAJUN2	BIG_CAJUN2	0.43
BLUEG	BLUEG	0.67
CALDERWOOD	CALDERWOOD	0.07
CANNELTON	CANNELTON	0.04
CARR	CARR	0.09
CATAWBA	CATAWBA	0.05
CHEOAH	CHEOAH	0.07
CHILHOWEE	CHILHOWEE	0.02
CHOCTAW	CHOCTAW	0.14
COFFEEN	COFFEEN	0.07
COTTONWOOD	COTTONWOOD	0.55
DEARBORN	DEARBORN	0.12
DUCKCREEK	DUCKCREEK	0.15
EDWARDS	EDWARDS	0.07
ELMERSMITH	ELMERSMITH	0.07
FARMERCITY	FARMERCITY	0.05
G-007	G-007	0.53
GIBSON	GIBSON	0.03
HAMLET	HAMLET	0.15
NEWTON	NEWTON	0.18
O-066	O-066	1.12
PRAIRIE	PRAIRIE	0.34
RENSSELAER	RENSSELAER	0.07
SANTEETLA	SANTEETLA	0.02
SMITHLAND	SMITHLAND	0.03

Bus #	Bus	MW Impact
TATANKA	TATANKA	0.08
TILTON	TILTON	0.08
TRIMBLE	TRIMBLE	0.07
TVA	TVA	0.23
UNIONPOWER	UNIONPOWER	0.1

Index 9

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
794706	228130	TUCKAHOE	AE	227946	MILL#2	AE	1	AE_P7-1 AE7TOWER	tower	146.0	111.39	112.54	DC	3.72

Bus #	Bus	MW Impact
228712	V2-041E	0.21
292062	V1-021 C	0.05
292063	V1-021 E	0.05
913341	Y1-077	9.35
924531	AB2-102 C	18.8
924532	AB2-102 E	0.42
938781	AE1-104 C O1	19.02
938782	AE1-104 E O1	48.65
939501	AE1-179 C O1	2.18
939502	AE1-179 E O1	1.54
940001	AE1-240 C O1	1.82
940002	AE1-240 E O1	1.3
BAYOU	BAYOU	0.06
BIG_CAJUN1	BIG_CAJUN1	0.09
BIG_CAJUN2	BIG_CAJUN2	0.17
BLUEG	BLUEG	0.27
CALDERWOOD	CALDERWOOD	0.03
CANNELTON	CANNELTON	0.02
CARR	CARR	0.05
CATAWBA	CATAWBA	0.02
CHEOAH	CHEOAH	0.03
CHILHOWEE	CHILHOWEE	0.01
CHOCTAW	CHOCTAW	0.06
COFFEEN	COFFEEN	0.03
COTTONWOOD	COTTONWOOD	0.22
DEARBORN	DEARBORN	0.05
DUCKCREEK	DUCKCREEK	0.06
EDWARDS	EDWARDS	0.03
ELMERSMITH	ELMERSMITH	0.03
FARMERCITY	FARMERCITY	0.02
G-007	G-007	0.32
GIBSON	GIBSON	0.01
HAMLET	HAMLET	0.06
NEWTON	NEWTON	0.07
O-066	O-066	0.61

Bus #	Bus	MW Impact
PRAIRIE	PRAIRIE	0.14
RENSSELAER	RENSSELAER	0.04
SANTEETLA	SANTEETLA	0.01
SMITHLAND	SMITHLAND	0.01
TATANKA	TATANKA	0.03
TILTON	TILTON	0.03
TRIMBLE	TRIMBLE	0.03
TVA	TVA	0.09
UNIONPOWER	UNIONPOWER	0.04

Index 10

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
794654	228217	DENNIS	AE	228130	TUCKAHOE	AE	1	AE_P7-1 AE7TOWER	tower	146.0	116.11	117.26	DC	3.72

Bus #	Bus	MW Impact
228712	V2-041E	0.21
292062	V1-021 C	0.05
292063	V1-021 E	0.05
913341	Y1-077	9.35
924531	AB2-102 C	18.8
924532	AB2-102 E	0.42
938781	AE1-104 C O1	19.02
938782	AE1-104 E O1	48.65
939501	AE1-179 C O1	2.18
939502	AE1-179 E O1	1.54
940001	AE1-240 C O1	1.82
940002	AE1-240 E O1	1.3
BAYOU	BAYOU	0.06
BIG_CAJUN1	BIG_CAJUN1	0.09
BIG_CAJUN2	BIG_CAJUN2	0.17
BLUEG	BLUEG	0.27
CALDERWOOD	CALDERWOOD	0.03
CANNELTON	CANNELTON	0.02
CARR	CARR	0.05
CATAWBA	CATAWBA	0.02
CHEOAH	CHEOAH	0.03
CHILHOWEE	CHILHOWEE	0.01
CHOCTAW	CHOCTAW	0.06
COFFEEN	COFFEEN	0.03
COTTONWOOD	COTTONWOOD	0.22
DEARBORN	DEARBORN	0.05
DUCKCREEK	DUCKCREEK	0.06
EDWARDS	EDWARDS	0.03
ELMERSMITH	ELMERSMITH	0.03
FARMERCITY	FARMERCITY	0.02
G-007	G-007	0.32

Bus #	Bus	MW Impact
GIBSON	GIBSON	0.01
HAMLET	HAMLET	0.06
NEWTON	NEWTON	0.07
O-066	O-066	0.61
PRAIRIE	PRAIRIE	0.14
RENSSELAER	RENSSELAER	0.04
SANTEETLA	SANTEETLA	0.01
SMITHLAND	SMITHLAND	0.01
TATANKA	TATANKA	0.03
TILTON	TILTON	0.03
TRIMBLE	TRIMBLE	0.03
TVA	TVA	0.09
UNIONPOWER	UNIONPOWER	0.04

Index 11

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
793328	228312	PEDRKTWN	AE	228313	BRIDGPRT	AE	1	AE_P4-2 AE47	breaker	552.0	102.2	102.86	DC	8.97

Bus #	Bus	MW Impact
228200	CARL#1CT	0.89
228201	CARL#2CT	0.95
228251	CARLLS#4	0.1
228260	V4-054C	0.25
228261	V4-054E	1.34
228306	PCLP STM	7.49
228307	PCLP GT	7.48
228309	CCLP NUG	26.0
228334	MANNMILG	0.49
228343	QUINTN#1	0.12
228351	V2-046C	0.36
228357	V2-046E	4.36
228712	V2-041E	0.26
228720	V2-035C	0.04
228721	V2-035E	0.4
902092	W1-130E	0.82
903963	W3-175	38.64
918891	AA1-108	16.46
924531	AB2-102 C	21.32
924532	AB2-102 E	0.47
931191	AB1-169A	72.23
936411	AD2-052 C	2.63
936412	AD2-052 E	1.29
938301	AE1-045 C	0.26
938302	AE1-045 E	0.13
938311	AE1-046 C	0.26
938312	AE1-046 E	0.13

Bus #	Bus	MW Impact
938421	AE1-061 C	0.35
938422	AE1-061 E	0.35
938871	AE1-115 C	5.0
938872	AE1-115 E	5.0
939301	AE1-161 C	1.67
939302	AE1-161 E	2.51
939501	AE1-179 C O1	5.26
939502	AE1-179 E O1	3.71
939931	AE1-229 C O1	40.4
939932	AE1-229 E O1	27.37
940001	AE1-240 C O1	4.52
940002	AE1-240 E O1	3.22
BAYOU	BAYOU	0.39
BIG_CAJUN1	BIG_CAJUN1	0.6
BIG_CAJUN2	BIG_CAJUN2	1.22
BLUEG	BLUEG	1.87
CALDERWOOD	CALDERWOOD	0.2
CANNELTON	CANNELTON	0.11
CARR	CARR	0.12
CATAWBA	CATAWBA	0.13
CHEOAH	CHEOAH	0.19
CHILHOWEE	CHILHOWEE	0.07
CHOCTAW	CHOCTAW	0.4
COFFEEN	COFFEEN	0.2
COTTONWOOD	COTTONWOOD	1.56
DEARBORN	DEARBORN	0.33
DUCKCREEK	DUCKCREEK	0.43
EDWARDS	EDWARDS	0.2
ELMERSMITH	ELMERSMITH	0.2
FARMERCITY	FARMERCITY	0.13
G-007	G-007	0.12
GIBSON	GIBSON	0.08
HAMLET	HAMLET	0.43
NEWTON	NEWTON	0.52
O-066	O-066	1.01
PRAIRIE	PRAIRIE	0.97
RENSSELAER	RENSSELAER	0.09
SANTEETLA	SANTEETLA	0.06
SMITHLAND	SMITHLAND	0.08
TATANKA	TATANKA	0.24
TILTON	TILTON	0.24
TRIMBLE	TRIMBLE	0.21
TVA	TVA	0.65
UNIONPOWER	UNIONPOWER	0.29

Index 12

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

											%	%		
793472	228313	BRIDGPRT	AE	228401	MCKLTON	AE	1	AE_P4-2 AE45	breaker	805.0	94.77	95.71	DC	18.19

Bus #	Bus	MW Impact
227801	ONTC&DCT	5.41
227843	MARINGEN E	0.56
227928	V4-067E	0.2
228203	P06	3.76
228261	V4-054E	1.99
228304	LOGAN	26.95
228306	PCLP STM	7.0
228307	PCLP GT	6.99
228309	CCLP NUG	23.14
228343	QUINTN#1	0.12
228357	V2-046E	4.22
228712	V2-041E	0.81
228721	V2-035E	0.36
292063	V1-021 E	0.08
292967	U2-045 E	2.44
293404	V3-036	0.77
902092	W1-130E	0.96
902432	W2-030 E	0.92
903963	W3-175	33.85
905532	W4-063 E	0.61
915022	Y3-012 E	1.05
918891	AA1-108	14.42
924531	AB2-102 C	83.6
924532	AB2-102 E	1.86
924701	AB2-122 C	0.09
924702	AB2-122 E	0.15
930002	AB1-001 E	0.2
931191	AB1-169A	84.66
933962	AD1-019 E	1.07
936411	AD2-052 C	2.67
936412	AD2-052 E	1.32
938301	AE1-045 C	0.31
938302	AE1-045 E	0.15
938311	AE1-046 C	0.31
938312	AE1-046 E	0.15
938421	AE1-061 C	0.41
938422	AE1-061 E	0.41
938781	AE1-104 C O1	30.0
938782	AE1-104 E O1	76.73
938871	AE1-115 C	4.48
938872	AE1-115 E	4.48
939301	AE1-161 C	1.68
939302	AE1-161 E	2.51
939501	AE1-179 C O1	10.66
939502	AE1-179 E O1	7.52
939931	AE1-229 C O1	36.16
939932	AE1-229 E O1	24.5
940001	AE1-240 C O1	8.98
940002	AE1-240 E O1	6.41

Bus #	Bus	MW Impact
BAYOU	BAYOU	0.57
BIG_CAJUN1	BIG_CAJUN1	0.88
BIG_CAJUN2	BIG_CAJUN2	1.77
BLUEG	BLUEG	2.72
CALDERWOOD	CALDERWOOD	0.3
CANNELTON	CANNELTON	0.17
CARR	CARR	0.13
CATAWBA	CATAWBA	0.19
CHEOAH	CHEOAH	0.27
CHILHOWEE	CHILHOWEE	0.1
CHOCTAW	CHOCTAW	0.59
COFFEEN	COFFEEN	0.29
COTTONWOOD	COTTONWOOD	2.26
DEARBORN	DEARBORN	0.47
DUCKCREEK	DUCKCREEK	0.62
EDWARDS	EDWARDS	0.28
ELMERSMITH	ELMERSMITH	0.28
FARMERCITY	FARMERCITY	0.19
G-007A	G-007A	0.39
GIBSON	GIBSON	0.11
HAMLET	HAMLET	0.63
NEWTON	NEWTON	0.75
O-066	O-066	0.93
PRAIRIE	PRAIRIE	1.4
RENSSELAER	RENSSELAER	0.11
SANTEETLA	SANTEETLA	0.08
SMITHLAND	SMITHLAND	0.11
TATANKA	TATANKA	0.34
TILTON	TILTON	0.34
TRIMBLE	TRIMBLE	0.3
TVA	TVA	0.95
UNIONPOWER	UNIONPOWER	0.42

Index 13

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
794738	228402	MONROE	AE	219100	NEWFRDM	PSE&G	1	PS_P7-1_V2274+P2242_LT	tower	804.0	106.85	107.26	DC	12.92

Bus #	Bus	MW Impact
219229	EAGLEPT_G3	3.84
219230	EAGLEPT_G1	5.68
219231	EAGLEPT_G2	5.68
227801	ONTC&DCT	4.46
227843	MARINGEN E	0.46
228261	V4-054E	1.48
228357	V2-046E	3.92
228400	MICK 1CT	2.61

Bus #	Bus	MW Impact
228423	Q-090 2	49.81
228471	VALERO1	0.88
228472	VALERO2	0.61
228473	VALERO3	0.61
228484	VALERO4	0.52
228712	V2-041E	0.41
228720	V2-035C	0.05
228721	V2-035E	0.48
291995	U4-036 C	0.12
291996	U4-036 E	1.32
292063	V1-021 E	0.04
292104	V1-030 C6	0.04
292105	V1-030 E6	0.38
292967	U2-045 E	2.01
293404	V3-036	0.64
902091	W1-130C	0.21
902092	W1-130E	2.23
902432	W2-030 E	0.69
905143	W4-016	97.12
905532	W4-063 E	0.5
909032	X2-013 E	0.83
915022	Y3-012 E	0.87
917471	Z2-083	4.69
918852	AA1-104 E	8.27
924051	AB2-049 C	0.69
924052	AB2-049 E	1.13
924531	AB2-102 C	32.0
924532	AB2-102 E	0.71
930002	AB1-001 E	0.17
930722	AB1-116 E	0.21
930732	AB1-119 E	0.1
931191	AB1-169A	196.86
933962	AD1-019 E	0.88
936411	AD2-052 C	1.83
936412	AD2-052 E	0.9
936491	AD2-064 C	0.07
936492	AD2-064 E	0.1
938301	AE1-045 C	0.72
938302	AE1-045 E	0.36
938311	AE1-046 C	0.72
938312	AE1-046 E	0.36
938421	AE1-061 C	0.96
938422	AE1-061 E	1.8
938781	AE1-104 C O1	17.79
938782	AE1-104 E O1	45.51
938871	AE1-115 C	1.54
938872	AE1-115 E	1.54
939301	AE1-161 C	8.82
939302	AE1-161 E	13.22
939501	AE1-179 C O1	7.57
939502	AE1-179 E O1	5.34
939821	AE1-218 C O1	0.3

Bus #	Bus	MW Impact
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	30.48
939932	AE1-229 E O1	20.65
940001	AE1-240 C O1	6.23
940002	AE1-240 E O1	4.45
BAYOU	BAYOU	0.58
BIG_CAJUN1	BIG_CAJUN1	0.89
BIG_CAJUN2	BIG_CAJUN2	1.79
BLUEG	BLUEG	2.79
CALDERWOOD	CALDERWOOD	0.3
CANNELTON	CANNELTON	0.17
CARR	CARR	0.42
CATAWBA	CATAWBA	0.19
CHEOAH	CHEOAH	0.27
CHILHOWEE	CHILHOWEE	0.1
CHOCTAW	CHOCTAW	0.59
COFFEEN	COFFEEN	0.29
COTTONWOOD	COTTONWOOD	2.29
DEARBORN	DEARBORN	0.49
DUCKCREEK	DUCKCREEK	0.64
EDWARDS	EDWARDS	0.29
ELMERSMITH	ELMERSMITH	0.29
FARMERCITY	FARMERCITY	0.19
G-007	G-007	1.48
GIBSON	GIBSON	0.12
HAMLET	HAMLET	0.62
NEWTON	NEWTON	0.77
O-066	O-066	5.0
PRAIRIE	PRAIRIE	1.43
RENSSELAER	RENSSELAER	0.33
SANTEETLA	SANTEETLA	0.08
SMITHLAND	SMITHLAND	0.11
TATANKA	TATANKA	0.35
TILTON	TILTON	0.35
TRIMBLE	TRIMBLE	0.31
TVA	TVA	0.96
UNIONPOWER	UNIONPOWER	0.43

Contingency Name	Contingency Definition
PECO_P4_CHICH045/* $ DELCO $ PECO_P4_CHICH045 $ STBK	CONTINGENCY 'PECO_P4_CHICH045/* $ DELCO $ PECO_P4_CHICH045 $ STBK' DISCONNECT BUS 213489 /* CHICHST1 230.00 $ DELCO $ PECO_P4_CHICH045 $ STBK DISCONNECT BUS 213627 /* FOULK8 230.00 $ DELCO $ PECO_P4_CHICH045 $ STBK END

Contingency Name	Contingency Definition
PS_P1-2_U-2299_LT	CONTINGENCY 'PS_P1-2_U-2299_LT' /* CAMDEN CUTBERTH DISCONNECT BUS 219754 /* CUTHBERTH SECTION 3 CLOSE LINE FROM BUS 219176 TO BUS 219179 CKT Z /* CUTBERTH MOVE 8 MW LOAD FROM BUS 219176 TO BUS 219170 /* INTERSTATION TIE TRANSFER LOAD FROM CUTHBERT TO CINN T2 MOVE 8 MW LOAD FROM BUS 219176 TO BUS 219676 /* INTERSTATION TIE TRANSFER LOAD FROM CUTHBERT TO MAPLE SHADE MOVE 8 MW LOAD FROM BUS 219179 TO BUS 219677 /* INTERSTATION TIE TRANSFER LOAD FROM CUTHBERT TO MAPLE SHADE MOVE 8 MW LOAD FROM BUS 219179 TO BUS 219724 /* INTERSTATION TIE TRANSFER LOAD FROM CUTHBERT TO LAWNSIDE END
AE_P1-2 CHUR-ORCH	CONTINGENCY 'AE_P1-2 CHUR-ORCH' / PJM FIXED OPEN LINE FROM BUS 228002 TO BUS 228310 CIRCUIT 1 / END
AE_P4-2 AE33	CONTINGENCY 'AE_P4-2 AE33' /*LEWIS TO CARDIFF BREAKER V DISCONNECT BRANCH FROM BUS 227902 TO BUS 227913 CKT 1 /*LEWIS CARDIFF 138 138 DISCONNECT BRANCH FROM BUS 227902 TO BUS 227903 CKT 1 /*LEWIS MILL #1 138 138 DISCONNECT BRANCH FROM BUS 227902 TO BUS 227918 CKT 1 /*LEWIS 138 69 T1 END
AE_P4-2 AE47	CONTINGENCY 'AE_P4-2 AE47' /*ORCHARD 230 BUS BREAKER NEW2 DISCONNECT BRANCH FROM BUS 228002 TO BUS 228310 CKT 1 /* ORCHARD TO CHURCHTOWN 230 230 DISCONNECT BRANCH FROM BUS 228002 TO BUS 228207 CKT 1 /* ORCHARD TO CUMBERLAND 230 230 END
AE_P1-2 BLE-ML-LEW2	CONTINGENCY 'AE_P1-2 BLE-ML-LEW2' DISCONNECT BUS 227904 / DISCONNECT BUS 227906 / DISCONNECT BUS 227930 / 227930 CIRCUIT 1 / CLOSE LINE FROM BUS 227929 TO BUS 227930 CIRCUIT 1 / END
AE_P1-2 BLE-ML-LEW1	CONTINGENCY 'AE_P1-2 BLE-ML-LEW1' DISCONNECT BUS 227903 / DISCONNECT BUS 227905 / DISCONNECT BUS 227929 / CLOSE LINE FROM BUS 227929 TO BUS 227930 CIRCUIT 1 / END
AE_P4-2 AE28	CONTINGENCY 'AE_P4-2 AE28' /*ENGLAND TO OCEAN CITY BREAKER C DISCONNECT BRANCH FROM BUS 228110 TO BUS 228660 CKT 1 /*ENGLAND OCEAN CITY 138 138 DISCONNECT BRANCH FROM BUS 228110 TO BUS 227905 CKT 1 /*ENGLAND #1 SCULL 138 138 END
AE_P4-2 AE29	CONTINGENCY 'AE_P4-2 AE29' /*ENGLAND TO CORSON BREAKER D DISCONNECT BRANCH FROM BUS 228110 TO BUS 228111 CKT 1 /*ENGLAND MIDDLE TAP 138 138 DISCONNECT BRANCH FROM BUS 228110 TO BUS 227906 CKT 1 /*ENGLAND #2 SCULL 138 138 END

Contingency Name	Contingency Definition
PS_P2-3_CUTB_1-2_LT	CONTINGENCY 'PS_P2-3_CUTB_1-2_LT' DISCONNECT BUS 219753 /* CUTHBERTH SECTION 2 DISCONNECT BUS 219108 /* CUTHBERTH SECTION 1 CLOSE LINE FROM BUS 219176 TO BUS 219179 CKT Z /* CUTBERTH CLOSE LINE FROM BUS 219177 TO BUS 219178 CKT Z /* CUTHBERT MOVE 8 MW LOAD FROM BUS 219176 TO BUS 219170 /* INTERSTATION TIE TRANSFER LOAD FROM CUTHBERT TO CINN T2 MOVE 8 MW LOAD FROM BUS 219176 TO BUS 219678 /* INTERSTATION TIE TRANSFER LOAD FROM CUTHBERT TO MAPLE SHADE MOVE 8 MW LOAD FROM BUS 219179 TO BUS 219678 /* INTERSTATION TIE TRANSFER LOAD FROM CUTHBERT TO MAPLE SHADE MOVE 8 MW LOAD FROM BUS 219178 TO BUS 219678 /* INTERSTATION TIE TRANSFER LOAD FROM CUTHBERT TO MAPLE SHADE MOVE 8 MW LOAD FROM BUS 219177 TO BUS 219677 /* INTERSTATION TIE TRANSFER LOAD FROM CUTHBERT TO MAPLE SHADE MOVE 8 MW LOAD FROM BUS 219179 TO BUS 219629 /* INTERSTATION TIE TRANSFER LOAD FROM CUTHBERT TO LAWNSIDE END
PECO_P2-2_CHI230B1/* $ DELCO $ PECO_P2-2_CHI230B1 $ B	CONTINGENCY 'PECO_P2-2_CHI230B1/* $ DELCO $ PECO_P2-2_CHI230B1 $ B' DISCONNECT BUS 213489 /* CHICHST1 230.00 $ DELCO $ PECO_P2-2_CHI230B1 $ B END
AE_P4-2 AE45	CONTINGENCY 'AE_P4-2 AE45' /*ORCHARD 230 BUS BREAKER E DISCONNECT BRANCH FROM BUS 228002 TO BUS 227900 CKT 1 /* ORCHARD TO CARDIFF 230 230 DISCONNECT BRANCH FROM BUS 200063 TO BUS 228002 CKT 1 /*ORCHARD ORCHARD 500 230 T1 END
AE_P1-2 BLE-SC-ML1	CONTINGENCY 'AE_P1-2 BLE-SC-ML1' DISCONNECT BUS 227905 / DISCONNECT BUS 227929 / CLOSE LINE FROM BUS 227929 TO BUS 227930 CIRCUIT 1 / END
AE_P1-2 BLE-SC-ML2	CONTINGENCY 'AE_P1-2 BLE-SC-ML2' DISCONNECT BUS 227906 / DISCONNECT BUS 227930 / CLOSE LINE FROM BUS 227929 TO BUS 227930 CIRCUIT 1 / END
Base Case	
AE_P7-1 AE7TOWER	CONTINGENCY 'AE_P7-1 AE7TOWER' DISCONNECT BUS 227905 /* #1 BLE TO SCULL TO MILL 138 KV DISCONNECT BUS 227929 /* #1 SCULL 12 KV DISCONNECT BUS 227906 /* #2 BLE TO SCULL TO MILL 138 KV DISCONNECT BUS 227930 /* #2 SCULL 12 KV DISCONNECT BUS 227903 /* #1 MILL TO LEWIS 138 KV DISCONNECT BUS 227904 /* #2 MILL TO LEWIS 138 KV END

Contingency Name	Contingency Definition
AE_P7-1 W2275_O2241	CONTINGENCY 'AE_P7-1 W2275_O2241' /* DOUBLE CIRCUIT TOWER W-2275(MICKLETON - DEPTFORD) AND O-2241(MICKLETON - THOROFARE) TRIP BRANCH FROM BUS 219762 TO BUS 228401 CKT 1 /* TRIP O-2241(MICKLETON - THOROFARE) 230KV TRIP BRANCH FROM BUS 219121 TO BUS 228401 CKT 1 /* TRIP (MICKLETON - THOROFARE #2) 230KV END
PS_P7-1_V2274+P2242_LT	CONTINGENCY 'PS_P7-1_V2274+P2242_LT' /* EAGEL POINT - GLOUCESTER & DEPTFORD - GLOUCESTER DISCONNECT BUS 219757 /* DEPTFORD SECTION 2 DISCONNECT BUS 219760 /* EAGLE POINT SECTION 4 TRIP LINE FROM BUS 219110 TO BUS 219128 CKT 1 /* DISCONNECT TRANSFORMER 26KV CKT 1 CLOSE LINE FROM BUS 219255 TO BUS 219256 CKT Z /* DEPTFORD CLOSE LINE FROM BUS 219180 TO BUS 219181 CKT Z /* DEPTFORD MOVE 8 MW LOAD FROM BUS 219180 TO BUS 219162 /* INTERSTATION TIE TRANSFER LOAD FROM DEPTFORD TO BEAVERBK T1 MOVE 8 MW LOAD FROM BUS 219181 TO BUS 219163 /* INTERSTATION TIE TRANSFER LOAD FROM DEPTFORD TO BEAVERBK T2 MOVE 8 MW LOAD FROM BUS 219255 TO BUS 219162 /* INTERSTATION TIE TRANSFER LOAD FROM DEPTFORD TO BEAVERBK T1 MOVE 8 MW LOAD FROM BUS 219256 TO BUS 219163 /* INTERSTATION TIE TRANSFER LOAD FROM DEPTFORD TO BEAVERBK T2 END

Secondary POI Flow Gate Details

Index 1

ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC|DC	MW IMPACT
774436	228110	BLE	AE	227905	SCULL#1	AE	1	AE_P4-2 AE29	breaker	307.0	102.0	103.19	DC	8.13

Bus #	Bus	MW Impact
228202	CUMB CT	1.7
228203	P06	1.66
228206	SHRMN CT	1.51
228261	V4-054E	0.63
228711	V2-041C	0.04
228712	V2-041E	0.44
292062	V1-021 C	0.09
292063	V1-021 E	0.09
913341	Y1-077	40.88
924531	AB2-102 C	36.78
924532	AB2-102 E	0.82
936411	AD2-052 C	0.34
936412	AD2-052 E	0.17
938421	AE1-061 C	0.14
938422	AE1-061 E	0.14

Bus #	Bus	MW Impact
939501	AE1-179 C O2	4.77
939502	AE1-179 E O2	3.37
940001	AE1-240 C O2	4.17
940002	AE1-240 E O2	2.98
BAYOU	BAYOU	0.19
BIG_CAJUN1	BIG_CAJUN1	0.3
BIG_CAJUN2	BIG_CAJUN2	0.6
BLUEG	BLUEG	0.94
CALDERWOOD	CALDERWOOD	0.1
CANNELTON	CANNELTON	0.06
CARR	CARR	0.13
CATAWBA	CATAWBA	0.06
CHEOAH	CHEOAH	0.09
CHILHOWEE	CHILHOWEE	0.03
CHOCTAW	CHOCTAW	0.2
COFFEEN	COFFEEN	0.1
COTTONWOOD	COTTONWOOD	0.77
DEARBORN	DEARBORN	0.17
DUCKCREEK	DUCKCREEK	0.22
EDWARDS	EDWARDS	0.1
ELMERSMITH	ELMERSMITH	0.1
FARMERCITY	FARMERCITY	0.07
G-007	G-007	0.7
GIBSON	GIBSON	0.04
HAMLET	HAMLET	0.21
NEWTON	NEWTON	0.26
O-066	O-066	1.46
PRAIRIE	PRAIRIE	0.48
RENSSELAER	RENSSELAER	0.1
SANTEETLA	SANTEETLA	0.03
SMITHLAND	SMITHLAND	0.04
TATANKA	TATANKA	0.12
TILTON	TILTON	0.12
TRIMBLE	TRIMBLE	0.1
TVA	TVA	0.32
UNIONPOWER	UNIONPOWER	0.14

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
774493	228110	BLE	AE	227906	SCULL#2	AE	1	AE_P4-2 AE28	breaker	307.0	98.52	99.92	DC	9.49

Bus #	Bus	MW Impact
228202	CUMB CT	1.98
228203	P06	1.93
228206	SHRMN CT	1.76
228261	V4-054E	0.74

Bus #	Bus	MW Impact
228711	V2-041C	0.05
228712	V2-041E	0.51
292062	V1-021 C	0.1
292063	V1-021 E	0.1
913341	Y1-077	36.37
924531	AB2-102 C	42.91
924532	AB2-102 E	0.95
936411	AD2-052 C	0.4
936412	AD2-052 E	0.2
938421	AE1-061 C	0.16
938422	AE1-061 E	0.16
939501	AE1-179 C O2	5.57
939502	AE1-179 E O2	3.93
940001	AE1-240 C O2	4.87
940002	AE1-240 E O2	3.47
BAYOU	BAYOU	0.18
BIG_CAJUN1	BIG_CAJUN1	0.28
BIG_CAJUN2	BIG_CAJUN2	0.57
BLUEG	BLUEG	0.89
CALDERWOOD	CALDERWOOD	0.1
CANNELTON	CANNELTON	0.05
CARR	CARR	0.13
CATAWBA	CATAWBA	0.06
CHEOAH	CHEOAH	0.09
CHILHOWEE	CHILHOWEE	0.03
CHOCTAW	CHOCTAW	0.19
COFFEEN	COFFEEN	0.09
COTTONWOOD	COTTONWOOD	0.73
DEARBORN	DEARBORN	0.16
DUCKCREEK	DUCKCREEK	0.2
EDWARDS	EDWARDS	0.09
ELMERSMITH	ELMERSMITH	0.09
FARMERCITY	FARMERCITY	0.06
G-007	G-007	0.78
GIBSON	GIBSON	0.04
HAMLET	HAMLET	0.2
NEWTON	NEWTON	0.25
O-066	O-066	1.57
PRAIRIE	PRAIRIE	0.46
RENSSELAER	RENSSELAER	0.1
SANTEETLA	SANTEETLA	0.03
SMITHLAND	SMITHLAND	0.04
TATANKA	TATANKA	0.11
TILTON	TILTON	0.11
TRIMBLE	TRIMBLE	0.1
TVA	TVA	0.31
UNIONPOWER	UNIONPOWER	0.14

Index 3

ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC|DC	MW IMPACT
774692	228360	WOODTWN2	AE	228332	WOODTWN1	AE	1	AE_P1-2 MICK-BRIDG	single	74.0	57.08	61.69	DC	3.42

Bus #	Bus	MW Impact
228200	CARL#1CT	0.87
228201	CARL#2CT	0.92
228206	SHRMN CT	0.59
228251	CARLLS#4	0.1
228260	V4-054C	0.24
228334	MANNMILG	0.57
228343	QUINTN#1	0.04
228351	V2-046C	0.61
228702	WEST CT	0.3
228711	V2-041C	0.01
228717	S121	0.47
228727	W2-039G	0.86
936411	AD2-052 C	0.84
939501	AE1-179 C O2	3.42
939931	AE1-229 C O2	39.48
940001	AE1-240 C O2	2.48
BAYOU	BAYOU	0.05
BIG_CAJUN1	BIG_CAJUN1	0.07
BIG_CAJUN2	BIG_CAJUN2	0.15
BLUEG	BLUEG	0.23
CALDERWOOD	CALDERWOOD	0.03
CANNELTON	CANNELTON	0.01
CARR	CARR	0.02
CATAWBA	CATAWBA	0.02
CHEOAH	CHEOAH	0.02
CHILHOWEE	CHILHOWEE	0.01
CHOCTAW	CHOCTAW	0.05
COFFEEN	COFFEEN	0.02
COTTONWOOD	COTTONWOOD	0.19
DEARBORN	DEARBORN	0.04
DUCKCREEK	DUCKCREEK	0.05
EDWARDS	EDWARDS	0.02
ELMERSMITH	ELMERSMITH	0.02
FARMERCITY	FARMERCITY	0.02
GIBSON	GIBSON	0.01
HAMLET	HAMLET	0.05
NEWTON	NEWTON	0.06
PRAIRIE	PRAIRIE	0.12
RENSSELAER	RENSSELAER	0.02
SANTEETLA	SANTEETLA	0.01
SMITHLAND	SMITHLAND	0.01
TATANKA	TATANKA	0.03
TILTON	TILTON	0.03
TRIMBLE	TRIMBLE	0.03
TVA	TVA	0.08

Bus #	Bus	MW Impact
UNIONPOWER	UNIONPOWER	0.04

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
774495	213922	RICHMOND	PECO	214012	WANEETA3	PECO	1	PECO_P4_CHICH045/* $ DELCO $ PECO_P4_CHICH045 $ STBK	breaker	1180.0	100.3	100.77	DC	12.35

Bus #	Bus	MW Impact
213918	RICHMD91	3.55
213919	RICHMD92	3.55
219124	CAMDEN_STG	3.52
219126	CAMDEN_CTG	4.33
219128	GLOUCSTR_26	1.91
219229	EAGLEPT_G3	3.14
219230	EAGLEPT_G1	4.65
219241	CAMDEN1	0.26
219242	CAMDEN2	0.03
227801	ONTC&DCT	7.23
227843	MARINGEN E	0.75
227928	V4-067E	0.3
228261	V4-054E	1.34
228357	V2-046E	3.05
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	0.12
292099	V1-030 E3	0.23
292105	V1-030 E6	0.3
292115	V1-030 EB	1.32
292194	V1-030 CE	0.12
292195	V1-030 EE	1.22
292967	U2-045 E	3.26
293404	V3-036	1.03
902092	W1-130E	1.35
902432	W2-030 E	1.16
902692	W2-056 E	1.63
902842	W2-071E	0.45
903152	W2-102 E	1.03
903991	W3-080C	1.96
903992	W3-080E	3.2
904042	V4-005 E	0.43
904432	W3-124 E	0.42
905143	W4-016	67.01
905232	W4-029 E	0.44

Bus #	Bus	MW Impact
905532	W4-063 E	0.81
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	1.4
915072	Y3-026 E	1.6
915592	Y3-087 E OP1	0.8
916292	Z1-082 E	0.34
917381	Z2-062	0.16
918852	AA1-104 E	5.7
924051	AB2-049 C	0.86
924052	AB2-049 E	1.41
924531	AB2-102 C	43.28
924532	AB2-102 E	0.96
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	1.0
930242	AB1-063 E	0.14
930722	AB1-116 E	0.18
930732	AB1-119 E	0.16
931191	AB1-169A	119.2
932361	AC2-050 C O1	0.89
932362	AC2-050 E O1	1.45
933962	AD1-019 E	1.42
936211	AD2-027 C	1.4
936212	AD2-027 E	2.28
936321	AD2-042 C	1.84
936322	AD2-042 E	3.02
936411	AD2-052 C	1.54
936412	AD2-052 E	0.76
936491	AD2-064 C	0.12
936492	AD2-064 E	0.16
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
938301	AE1-045 C	0.43
938302	AE1-045 E	0.22
938311	AE1-046 C	0.43
938312	AE1-046 E	0.22

Bus #	Bus	MW Impact
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 O2	26.26
938782	AE1-104 E O2	67.17
938871	AE1-115 C	1.26
938872	AE1-115 E	1.26
939301	AE1-161 C	2.4
939302	AE1-161 E	3.6
939501	AE1-179 C O2	7.24
939502	AE1-179 E O2	5.11
939821	AE1-218 C O2	0.19
939822	AE1-218 E O2	0.28
939831	AE1-219 C O2	0.42
939832	AE1-219 E O2	0.6
939931	AE1-229 C O2	21.08
939932	AE1-229 E O2	14.28
940001	AE1-240 C O2	5.94
940002	AE1-240 E O2	4.24
BAYOU	BAYOU	1.46
BIG_CAJUN1	BIG_CAJUN1	2.24
BIG_CAJUN2	BIG_CAJUN2	4.51
BLUEG	BLUEG	6.97
CALDERWOOD	CALDERWOOD	0.76
CANNELTON	CANNELTON	0.42
CATAWBA	CATAWBA	0.48
CBM-N	CBM-N	0.79
CHEOAH	CHEOAH	0.69
CHILHOWEE	CHILHOWEE	0.25
CHOCTAW	CHOCTAW	1.49
COFFEEN	COFFEEN	0.74
COTTONWOOD	COTTONWOOD	5.78
DEARBORN	DEARBORN	1.22
DUCKCREEK	DUCKCREEK	1.6
EDWARDS	EDWARDS	0.73
ELMERSMITH	ELMERSMITH	0.73
FARMERCITY	FARMERCITY	0.49
G-007A	G-007A	12.41
GIBSON	GIBSON	0.29
HAMLET	HAMLET	1.59
NEWTON	NEWTON	1.92
NYISO	NYISO	3.41
O-066A	O-066A	3.17
PRAIRIE	PRAIRIE	3.59
SANTEETLA	SANTEETLA	0.2
SMITHLAND	SMITHLAND	0.29
TATANKA	TATANKA	0.88
TILTON	TILTON	0.88
TRIMBLE	TRIMBLE	0.77

Bus #	Bus	MW Impact
TVA	TVA	2.43
UNIONPOWER	UNIONPOWER	1.08
VFT	VFT	22.21

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
774428	219110	GLOUCSTR	PSE&G	219125	CAMDEN	PSE&G	1	PS_P2-3_CUTB_1-2_LT	breaker	771.0	99.83	100.24	DC	6.87

Bus #	Bus	MW Impact
219124	CAMDEN_STG	3.16
219126	CAMDEN_CTG	3.89
219128	GLOUCSTR_26	1.71
219229	EAGLEPT_G3	2.73
219230	EAGLEPT_G1	4.05
219231	EAGLEPT_G2	4.04
227801	ONTC&DCT	3.5
227843	MARINGEN E	0.36
227928	V4-067E	0.14
228261	V4-054E	0.79
228357	V2-046E	1.95
228423	Q-090 2	25.69
228712	V2-041E	0.26
228721	V2-035E	0.17
291995	U4-036 C	0.08
291996	U4-036 E	0.83
292063	V1-021 E	0.03
292104	V1-030 C6	0.02
292105	V1-030 E6	0.25
292194	V1-030 CE	0.1
292195	V1-030 EE	1.1
292967	U2-045 E	1.58
293404	V3-036	0.5
902092	W1-130E	0.75
902432	W2-030 E	0.56
905143	W4-016	50.09
905532	W4-063 E	0.39
909032	X2-013 E	0.52
910862	X3-075 E	0.95
914231	Y2-081 C OP1	1.3
914232	Y2-081 E OP1	0.07
915022	Y3-012 E	0.68
915591	Y3-087 C OP1	0.06
915592	Y3-087 E OP1	0.68
916292	Z1-082 E	0.14
917381	Z2-062	0.15

Bus #	Bus	MW Impact
918852	AA1-104 E	4.26
924051	AB2-049 C	0.41
924052	AB2-049 E	0.66
924531	AB2-102 C	23.2
924532	AB2-102 E	0.52
924701	AB2-122 C	0.06
924702	AB2-122 E	0.11
925391	AC1-010 C	0.7
925392	AC1-010 E	1.2
930002	AB1-001 E	0.13
930722	AB1-116 E	0.09
930732	AB1-119 E	0.07
931191	AB1-169A	66.8
933962	AD1-019 E	0.69
936411	AD2-052 C	0.97
936412	AD2-052 E	0.48
936491	AD2-064 C	0.05
936492	AD2-064 E	0.07
936501	AD2-065 C	0.18
936502	AD2-065 E	0.25
937011	AD2-135 C	0.06
937012	AD2-135 E	0.1
938301	AE1-045 C	0.24
938302	AE1-045 E	0.12
938311	AE1-046 C	0.24
938312	AE1-046 E	0.12
938421	AE1-061 C	0.32
938422	AE1-061 E	0.32
938431	AE1-062 C	0.44
938432	AE1-062 E	0.44
938781	AE1-104 C O2	12.81
938782	AE1-104 E O2	32.77
938871	AE1-115 C	0.82
938872	AE1-115 E	0.82
939301	AE1-161 C	1.4
939302	AE1-161 E	2.09
939501	AE1-179 C O2	4.03
939502	AE1-179 E O2	2.84
939821	AE1-218 C O2	0.1
939822	AE1-218 E O2	0.15
939831	AE1-219 C O2	0.23
939832	AE1-219 E O2	0.33
939931	AE1-229 C O2	13.53
939932	AE1-229 E O2	9.16
940001	AE1-240 C O2	3.28
940002	AE1-240 E O2	2.34
BAYOU	BAYOU	0.36
BIG_CAJUN1	BIG_CAJUN1	0.55
BIG_CAJUN2	BIG_CAJUN2	1.11
BLUEG	BLUEG	1.77
CALDERWOOD	CALDERWOOD	0.18
CANNELTON	CANNELTON	0.11

Bus #	Bus	MW Impact
CARR	CARR	0.38
CATAWBA	CATAWBA	0.11
CHEOAH	CHEOAH	0.17
CHILHOWEE	CHILHOWEE	0.06
CHOCTAW	CHOCTAW	0.37
COFFEEN	COFFEEN	0.19
COTTONWOOD	COTTONWOOD	1.42
DEARBORN	DEARBORN	0.32
DUCKCREEK	DUCKCREEK	0.41
EDWARDS	EDWARDS	0.19
ELMERSMITH	ELMERSMITH	0.18
FARMERCITY	FARMERCITY	0.12
G-007	G-007	0.77
GIBSON	GIBSON	0.07
HAMLET	HAMLET	0.36
NEWTON	NEWTON	0.49
O-066	O-066	4.38
PRAIRIE	PRAIRIE	0.9
RENSSELAER	RENSSELAER	0.3
SANTEETLA	SANTEETLA	0.05
SMITHLAND	SMITHLAND	0.07
TATANKA	TATANKA	0.22
TILTON	TILTON	0.22
TRIMBLE	TRIMBLE	0.2
TVA	TVA	0.6
UNIONPOWER	UNIONPOWER	0.26

Index 6

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
774354	228312	PEDRKTWN	AE	228313	BRIDGPRT	AE	1	AE_P4-2 AE47	breaker	552.0	102.16	102.73	DC	7.97

Bus #	Bus	MW Impact
228200	CARL#1CT	0.89
228201	CARL#2CT	0.95
228251	CARLLS#4	0.1
228260	V4-054C	0.25
228261	V4-054E	1.34
228306	PCLP STM	7.49
228307	PCLP GT	7.48
228309	CCLP NUG	26.0
228334	MANNMILG	0.49
228343	QUINTN#1	0.12
228351	V2-046C	0.36
228357	V2-046E	4.36
228712	V2-041E	0.26
228720	V2-035C	0.04

Bus #	Bus	MW Impact
228721	V2-035E	0.4
902092	W1-130E	0.82
903963	W3-175	38.64
918891	AA1-108	16.46
924531	AB2-102 C	21.32
924532	AB2-102 E	0.47
931191	AB1-169A	72.23
936411	AD2-052 C	2.63
936412	AD2-052 E	1.29
938301	AE1-045 C	0.26
938302	AE1-045 E	0.13
938311	AE1-046 C	0.26
938312	AE1-046 E	0.13
938421	AE1-061 C	0.35
938422	AE1-061 E	0.35
938871	AE1-115 C	5.0
938872	AE1-115 E	5.0
939301	AE1-161 C	1.67
939302	AE1-161 E	2.51
939501	AE1-179 C O2	4.67
939502	AE1-179 E O2	3.3
939931	AE1-229 C O2	33.44
939932	AE1-229 E O2	22.66
940001	AE1-240 C O2	3.62
940002	AE1-240 E O2	2.58
BAYOU	BAYOU	0.39
BIG_CAJUN1	BIG_CAJUN1	0.6
BIG_CAJUN2	BIG_CAJUN2	1.22
BLUEG	BLUEG	1.87
CALDERWOOD	CALDERWOOD	0.2
CANNELTON	CANNELTON	0.11
CARR	CARR	0.12
CATAWBA	CATAWBA	0.13
CHEOAH	CHEOAH	0.19
CHILHOWEE	CHILHOWEE	0.07
CHOCTAW	CHOCTAW	0.4
COFFEEN	COFFEEN	0.2
COTTONWOOD	COTTONWOOD	1.56
DEARBORN	DEARBORN	0.33
DUCKCREEK	DUCKCREEK	0.43
EDWARDS	EDWARDS	0.2
ELMERSMITH	ELMERSMITH	0.2
FARMERCITY	FARMERCITY	0.13
G-007	G-007	0.12
GIBSON	GIBSON	0.08
HAMLET	HAMLET	0.43
NEWTON	NEWTON	0.52
O-066	O-066	1.01
PRAIRIE	PRAIRIE	0.97
RENSSELAER	RENSSELAER	0.09
SANTEETLA	SANTEETLA	0.06
SMITHLAND	SMITHLAND	0.08

Bus #	Bus	MW Impact
TATANKA	TATANKA	0.24
TILTON	TILTON	0.24
TRIMBLE	TRIMBLE	0.21
TVA	TVA	0.65
UNIONPOWER	UNIONPOWER	0.29

Index 7

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
775634	228402	MONROE	AE	219100	NEWFRDM	PSE&G	1	PS_P7-1_V2274+P2242_LT	tower	804.0	106.55	106.93	DC	12.57

Bus #	Bus	MW Impact
219229	EAGLEPT_G3	3.84
219230	EAGLEPT_G1	5.68
219231	EAGLEPT_G2	5.68
227801	ONTC&DCT	4.46
227843	MARINGEN E	0.46
228261	V4-054E	1.48
228357	V2-046E	3.92
228400	MICK 1CT	2.61
228423	Q-090 2	49.81
228471	VALERO1	0.88
228472	VALERO2	0.61
228473	VALERO3	0.61
228484	VALERO4	0.52
228712	V2-041E	0.41
228720	V2-035C	0.05
228721	V2-035E	0.48
291995	U4-036 C	0.12
291996	U4-036 E	1.32
292063	V1-021 E	0.04
292104	V1-030 C6	0.04
292105	V1-030 E6	0.38
292967	U2-045 E	2.01
293404	V3-036	0.64
902091	W1-130C	0.21
902092	W1-130E	2.23
902432	W2-030 E	0.69
905143	W4-016	97.12
905532	W4-063 E	0.5
909032	X2-013 E	0.83
915022	Y3-012 E	0.87
917471	Z2-083	4.69
918852	AA1-104 E	8.27
924051	AB2-049 C	0.69
924052	AB2-049 E	1.13
924531	AB2-102 C	32.0

Bus #	Bus	MW Impact
924532	AB2-102 E	0.71
930002	AB1-001 E	0.17
930722	AB1-116 E	0.21
930732	AB1-119 E	0.1
931191	AB1-169A	196.86
933962	AD1-019 E	0.88
936411	AD2-052 C	1.83
936412	AD2-052 E	0.9
936491	AD2-064 C	0.07
936492	AD2-064 E	0.1
938301	AE1-045 C	0.72
938302	AE1-045 E	0.36
938311	AE1-046 C	0.72
938312	AE1-046 E	0.36
938421	AE1-061 C	0.96
938422	AE1-061 E	1.8
938781	AE1-104 C O2	16.64
938782	AE1-104 E O2	42.57
938871	AE1-115 C	1.54
938872	AE1-115 E	1.54
939301	AE1-161 C	8.82
939302	AE1-161 E	13.22
939501	AE1-179 C O2	7.37
939502	AE1-179 E O2	5.2
939821	AE1-218 C O2	0.3
939822	AE1-218 E O2	0.45
939831	AE1-219 C O2	0.68
939832	AE1-219 E O2	0.98
939931	AE1-229 C O2	26.77
939932	AE1-229 E O2	18.14
940001	AE1-240 C O2	5.88
940002	AE1-240 E O2	4.2
BAYOU	BAYOU	0.58
BIG_CAJUN1	BIG_CAJUN1	0.89
BIG_CAJUN2	BIG_CAJUN2	1.79
BLUEG	BLUEG	2.79
CALDERWOOD	CALDERWOOD	0.3
CANNELTON	CANNELTON	0.17
CARR	CARR	0.42
CATAWBA	CATAWBA	0.19
CHEOAH	CHEOAH	0.27
CHILHOWEE	CHILHOWEE	0.1
CHOCTAW	CHOCTAW	0.59
COFFEEN	COFFEEN	0.29
COTTONWOOD	COTTONWOOD	2.29
DEARBORN	DEARBORN	0.49
DUCKCREEK	DUCKCREEK	0.64
EDWARDS	EDWARDS	0.29
ELMERSMITH	ELMERSMITH	0.29
FARMERCITY	FARMERCITY	0.19
G-007	G-007	1.48
GIBSON	GIBSON	0.12

Bus #	Bus	MW Impact
HAMLET	HAMLET	0.62
NEWTON	NEWTON	0.77
O-066	O-066	5.0
PRAIRIE	PRAIRIE	1.43
RENSSELAER	RENSSELAER	0.33
SANTEETLA	SANTEETLA	0.08
SMITHLAND	SMITHLAND	0.11
TATANKA	TATANKA	0.35
TILTON	TILTON	0.35
TRIMBLE	TRIMBLE	0.31
TVA	TVA	0.96
UNIONPOWER	UNIONPOWER	0.43

Contingency Name	Contingency Definition
Base Case	
PS_P1-2_U-2299_LT	CONTINGENCY 'PS_P1-2_U-2299_LT' /* CAMDEN CUTBERTH DISCONNECT BUS 219754 /* CUTHBERTH SECTION 3 CLOSE LINE FROM BUS 219176 TO BUS 219179 CKT Z /* CUTBERTH MOVE 8 MW LOAD FROM BUS 219176 TO BUS 219170 /* INTERSTATION TIE TRANSFER LOAD FROM CUTHBERT TO CINN T2 MOVE 8 MW LOAD FROM BUS 219176 TO BUS 219676 /* INTERSTATION TIE TRANSFER LOAD FROM CUTHBERT TO MAPLE SHADE MOVE 8 MW LOAD FROM BUS 219179 TO BUS 219677 /* INTERSTATION TIE TRANSFER LOAD FROM CUTHBERT TO MAPLE SHADE MOVE 8 MW LOAD FROM BUS 219179 TO BUS 219724 /* INTERSTATION TIE TRANSFER LOAD FROM CUTHBERT TO LAWNSIDE END
AE_P1-2 PED-BRIDGE	CONTINGENCY 'AE_P1-2 PED-BRIDGE' OPEN LINE FROM BUS 228312 TO BUS 228313 CIRCUIT 1 / END
AE_P1-2 CHUR-ORCH	CONTINGENCY 'AE_P1-2 CHUR-ORCH' / PJM FIXED OPEN LINE FROM BUS 228002 TO BUS 228310 CIRCUIT 1 / END
AE_P1-2 MICK-BRIDG	CONTINGENCY 'AE_P1-2 MICK-BRIDG' OPEN LINE FROM BUS 228313 TO BUS 228401 CIRCUIT 1 / END
AE_P4-2 AE47	CONTINGENCY 'AE_P4-2 AE47' /*ORCHARD 230 BUS BREAKER NEW2 DISCONNECT BRANCH FROM BUS 228002 TO BUS 228310 CKT 1 /* ORCHARD TO CHURCHTOWN 230 230 DISCONNECT BRANCH FROM BUS 228002 TO BUS 228207 CKT 1 /* ORCHARD TO CUMBERLAND 230 230 END

Contingency Name	Contingency Definition
PS_P7-1_V2274+P2242_LT	CONTINGENCY 'PS_P7-1_V2274+P2242_LT' /* EAGEL POINT - GLOUCESTER & DEPTFORD - GLOUCESTER DISCONNECT BUS 219757 /* DEPTFORD SECTION 2 DISCONNECT BUS 219760 /* EAGLE POINT SECTION 4 TRIP LINE FROM BUS 219110 TO BUS 219128 CKT 1 /* DISCONNECT TRANSFORMER 26KV CKT 1 CLOSE LINE FROM BUS 219255 TO BUS 219256 CKT Z /* DEPTFORD CLOSE LINE FROM BUS 219180 TO BUS 219181 CKT Z /* DEPTFORD MOVE 8 MW LOAD FROM BUS 219180 TO BUS 219162 /* INTERSTATION TIE TRANSFER LOAD FROM DEPTFORD TO BEAVERBK T1 MOVE 8 MW LOAD FROM BUS 219181 TO BUS 219163 /* INTERSTATION TIE TRANSFER LOAD FROM DEPTFORD TO BEAVERBK T2 MOVE 8 MW LOAD FROM BUS 219255 TO BUS 219162 /* INTERSTATION TIE TRANSFER LOAD FROM DEPTFORD TO BEAVERBK T1 MOVE 8 MW LOAD FROM BUS 219256 TO BUS 219163 /* INTERSTATION TIE TRANSFER LOAD FROM DEPTFORD TO BEAVERBK T2 END
AE_P4-2 AE28	CONTINGENCY 'AE_P4-2 AE28' /*ENGLAND TO OCEAN CITY BREAKER C DISCONNECT BRANCH FROM BUS 228110 TO BUS 228660 CKT 1 /*ENGLAND OCEAN CITY 138 138 DISCONNECT BRANCH FROM BUS 228110 TO BUS 227905 CKT 1 /*ENGLAND #1 SCULL 138 138 END
AE_P4-2 AE29	CONTINGENCY 'AE_P4-2 AE29' /*ENGLAND TO CORSON BREAKER D DISCONNECT BRANCH FROM BUS 228110 TO BUS 228111 CKT 1 /*ENGLAND MIDDLE TAP 138 138 DISCONNECT BRANCH FROM BUS 228110 TO BUS 227906 CKT 1 /*ENGLAND #2 SCULL 138 138 END
PS_P2-3_CUTB_1-2_LT	CONTINGENCY 'PS_P2-3_CUTB_1-2_LT' DISCONNECT BUS 219753 /* CUTHBERTH SECTION 2 DISCONNECT BUS 219108 /* CUTHBERTH SECTION 1 CLOSE LINE FROM BUS 219176 TO BUS 219179 CKT Z /* CUTBERTH CLOSE LINE FROM BUS 219177 TO BUS 219178 CKT Z /* CUTHBERT MOVE 8 MW LOAD FROM BUS 219176 TO BUS 219170 /* INTERSTATION TIE TRANSFER LOAD FROM CUTHBERT TO CINN T2 MOVE 8 MW LOAD FROM BUS 219176 TO BUS 219678 /* INTERSTATION TIE TRANSFER LOAD FROM CUTHBERT TO MAPLE SHADE MOVE 8 MW LOAD FROM BUS 219179 TO BUS 219678 /* INTERSTATION TIE TRANSFER LOAD FROM CUTHBERT TO MAPLE SHADE MOVE 8 MW LOAD FROM BUS 219178 TO BUS 219678 /* INTERSTATION TIE TRANSFER LOAD FROM CUTHBERT TO MAPLE SHADE MOVE 8 MW LOAD FROM BUS 219177 TO BUS 219677 /* INTERSTATION TIE TRANSFER LOAD FROM CUTHBERT TO MAPLE SHADE MOVE 8 MW LOAD FROM BUS 219179 TO BUS 219629 /* INTERSTATION TIE TRANSFER LOAD FROM CUTHBERT TO LAWNSIDE END
PECO_P2-2_CHI230B1/* $ DELCO $ PECO_P2-2_CHI230B1 $ B	CONTINGENCY 'PECO_P2-2_CHI230B1/* $ DELCO $ PECO_P2-2_CHI230B1 $ B' DISCONNECT BUS 213489 /* CHICHST1 230.00 $ DELCO $ PECO_P2-2_CHI230B1 $ B END
AE_P1-2 CHU-WOOD 2-A	CONTINGENCY 'AE_P1-2 CHU-WOOD 2-A' OPEN LINE FROM BUS 228319 TO BUS 939930 CIRCUIT 1 / END

Contingency Name	Contingency Definition
AE_P1-2 BLE-SC-ML1	CONTINGENCY 'AE_P1-2 BLE-SC-ML1' DISCONNECT BUS 227905 / DISCONNECT BUS 227929 / CLOSE LINE FROM BUS 227929 TO BUS 227930 CIRCUIT 1 / END
AE_P1-2 BLE-SC-ML2	CONTINGENCY 'AE_P1-2 BLE-SC-ML2' DISCONNECT BUS 227906 / DISCONNECT BUS 227930 / CLOSE LINE FROM BUS 227929 TO BUS 227930 CIRCUIT 1 / END
PECO_P4_CHICH045/* $ DELCO $ PECO_P4_CHICH045 $ STBK	CONTINGENCY 'PECO_P4_CHICH045/* $ DELCO $ PECO_P4_CHICH045 $ STBK' DISCONNECT BUS 213489 /* CHICHST1 230.00 $ DELCO $ PECO_P4_CHICH045 $ STBK DISCONNECT BUS 213627 /* FOULK8 230.00 $ DELCO $ PECO_P4_CHICH045 $ STBK END
AE_P7-1 W2275_O2241	CONTINGENCY 'AE_P7-1 W2275_O2241' /* DOUBLE CIRCUIT TOWER W-2275(MICKLETON - DEPTFORD) AND O-2241(MICKLETON - THOROFARE) TRIP BRANCH FROM BUS 219762 TO BUS 228401 CKT 1 /* TRIP O-2241(MICKLETON - THOROFARE) 230KV TRIP BRANCH FROM BUS 219121 TO BUS 228401 CKT 1 /* TRIP (MICKLETON - THOROFARE #2) 230KV END