



**Generation Interconnection
Feasibility Study Report
for
Queue Project AG1-129
US SILICA 69 KV
36 MW Capacity / 60 MW Energy**

January 2021

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1 Introduction

This Feasibility Study has been prepared in accordance with the PJM Open Access Transmission Tariff, 36.2, as well as the Feasibility Study Agreement between the Interconnection Customer (IC), and PJM Interconnection, LLC (PJM), Transmission Provider (TP). The Interconnected Transmission Owner (ITO) is AEC.

2 Preface

The intent of the feasibility study is to determine a plan, with ballpark cost and construction time estimates, to connect the subject generation to the PJM network at a location specified by the Interconnection Customer. The Interconnection Customer may request the interconnection of generation as a capacity resource or as an energy-only resource. As a requirement for interconnection, the Interconnection Customer may be responsible for the cost of constructing: (1) Direct Connections, which are new facilities and/or facilities upgrades needed to connect the generator to the PJM network, and (2) Network Upgrades, which are facility additions, or upgrades to existing facilities, that are needed to maintain the reliability of the PJM system.

In some instances a generator interconnection may not be responsible for 100% of the identified network upgrade cost because other transmission network uses, e.g. another generation interconnection, may also contribute to the need for the same network reinforcement. Cost allocation rules for network upgrades can be found in PJM Manual 14A, Attachment B. The possibility of sharing the reinforcement costs with other projects may be identified in the feasibility study, but the actual allocation will be deferred until the impact study is performed.

The Interconnection Customer seeking to interconnect a wind or solar generation facility shall maintain meteorological data facilities as well as provide that meteorological data which is required per Schedule H to the Interconnection Service Agreement and Section 8 of Manual 14D.

The Feasibility Study estimates do not include the feasibility, cost, or time required to obtain property rights and permits for construction of the required facilities. The project developer is responsible for the right of way, real estate, and construction permit issues. For properties currently owned by Transmission Owners, the costs may be included in the study.

3 General

The Interconnection Customer (IC), has proposed a Solar generating facility located in Cumberland County, New Jersey. The installed facilities will have a total capability of 60 MW with 36 MW of this output being recognized by PJM as Capacity. The proposed in-service date for this project is June 01, 2022. This study does not imply a TO commitment to this in-service date.

Queue Number	AG1-129
Project Name	US SILICA 69 KV
State	New Jersey
County	Cumberland
Transmission Owner	AEC
MFO	60
MWE	60
MWC	36
Fuel	Solar
Basecase Study Year	2024

Any new service customers who can feasibly be commercially operable prior to June 1st of the basecase study year are required to request interim deliverability analysis.

4 Point of Interconnection

AG1-129 will interconnect with the AEC transmission system tapping the 69 kV US Silica to Unimin line.

5 Cost Summary

The AG1-129 project will be responsible for the following costs:

Description	Total Cost
Total Physical Interconnection Costs	\$6,400,000
Total System Network Upgrade Costs	\$274,207,338
Total Costs	\$280,607,338

This cost excludes a Federal Income Tax Gross Up charges. This tax may or may not be charged based on whether this project meets the eligibility requirements of IRS Notice 2016-36, 2016-25 I.R.B. (6/20/2016). If at a future date it is determined that the Federal Income Tax Gross charge is required, the Transmission Owner shall be reimbursed by the Interconnection Customer for such taxes.

Cost allocations for any System Upgrades will be provided in the System Impact Study Report.

6 Transmission Owner Scope of Work

Substation Interconnection Estimate

Scope: Design and construct a new 3-breaker ring bus substation. Two terminals will be designated for the US Silica Tap-Unimin 69 kV line, with the third terminal being designated for the interconnecting generator.

Estimate Assumptions:

Developer responsible for land purchase for the substation, price is not included.

Site clearing and grading performed by Developer.

Assumed Greenfield Substation Site Area to develop of 250' x 250'

Relaying and communication adjustments cost not included.

Required Relaying and Communications

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).

The project may require re-wiring and adjustment of existing relay schemes at Newport and South Millville substations to accommodate the new 69 kV substation.

The total physical interconnection costs is given in the table below:

Description	Total Cost
Total Physical Interconnection Costs	\$6,400,000

7 Schedule

Construction Time: 36 to 48 months

8 Transmission Owner Analysis

None

9 Interconnection Customer Requirements

Interconnection Customer Scope of Direct Connection Work

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

ACE Interconnection Customer Scope of Direct Connection Work Requirements:

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

Special Operating Requirements

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

Additional Interconnection Customer Responsibilities:

1. An Interconnection Customer entering the New Services Queue on or after October 1, 2012 with a proposed new Customer Facility that has a Maximum Facility Output equal to or greater than 100 MW shall install and maintain, at its expense, phasor measurement units (PMUs). See Section 8.5.3 of Appendix 2 to the Interconnection Service Agreement as well as section 4.3 of PJM Manual 14D for additional information.

2. The Interconnection Customer may be required to install and/or pay for metering as necessary to properly track real time output of the facility as well as installing metering which shall be used for billing purposes. See Section 8 of Appendix 2 to the Interconnection Service Agreement as well as Section 4 of PJM Manual 14D for additional information.
3. The Interconnection Customer seeking to interconnect a wind generation facility shall maintain meteorological data facilities as well as provide that meteorological data which is required per item 5.IV of Schedule H to the Interconnection Service Agreement.

10 Revenue Metering and SCADA Requirements

10.1 PJM Requirements

The Interconnection Customer will be required to install equipment necessary to provide Revenue Metering (KWH, KVARH) and real time data (KW, KVAR) for IC's generating Resource. See PJM Manuals M-01 and M-14D, and PJM Tariff Section 8 of Attachment O.

10.2 Meteorological Data Reporting Requirements

The solar generation facility shall provide the Transmission Provider with site-specific meteorological data including:

- Back Panel temperature (Fahrenheit) - (Required for plants with Maximum Facility Output of 3 MW or higher)
- Irradiance (Watts/meter²) - (Required for plants with Maximum Facility Output of 3 MW or higher)
- Ambient air temperature (Fahrenheit) - (Accepted, not required)
- Wind speed (meters/second) - (Accepted, not required)
- Wind direction (decimal degrees from true north) - (Accepted, not required)

10.3 Interconnected Transmission Owner Requirements

The IC will be required to comply with all Interconnected Transmission Owner's revenue metering requirements for generation interconnection customers located at the following link:

<http://www.pjm.com/planning/design-engineering/to-tech-standards/>

A three phase 69 kV revenue metering point will need to be established within the Interconnection Customer Facilities at the Point of Interconnection. The Interconnection Customer 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 Interconnection Customer and inspected by ACE, while the connections at the metering enclosure will be completed by ACE. The metering control cable and meter cabinets will be supplied by ACE and installed by the Interconnection Customer. The Interconnection Customer will install conduit for the control cable between the instrument transformers and the metering enclosure. The location of the metering enclosure will be determined during construction. The

Interconnection Customer will provide 120V power to the meter cabinet. ACE will provide, program, install, and own the primary & backup solid state multi-function meters for the new metering position.

Each meter will be equipped with load profile, telemetry, and DNP outputs. The Interconnection Customer will be provided with one-meter DNP output for each meter. ACE will supply a wireless modem for MV90 interrogation. In the event that a wireless modem is unable to reliably communicate, the IC will be required to make provisions for a POTS (Plain Old Telephone Service) line or equivalent technology approved by ACE within approximately three feet of the ACE metering position to facilitate remote interrogation and data collection. It is the Interconnection Customer's responsibility to send the data that PJM and ACE require directly to PJM. The Interconnection Customer will grant permission for PJM to send ACE the following telemetry that the Interconnection Customer sends to PJM: real time MW, MVAR, volts, amperes, generator status, and interval MWH and MVARH.

ACE's revenue meters will be the official meters and must be the source for reporting generation output to PJM. The Interconnection Customer is responsible for installing telemetry equipment necessary to obtain the revenue meter data and submitting the data to PJM.

11 Summer Peak - Load Flow Analysis - Primary POI

The Queue Project AG1-129 was evaluated as a 60 MW (Capacity 36 MW) injection tapping the 69 kV US Silica to Unimin line in the AEC area. Project AG1-129 was evaluated for compliance with applicable reliability planning criteria (PJM, NERC, NERC Regional Reliability Councils, and Transmission Owners). Project AG1-129 was studied with a commercial probability of 53.0 %. Potential network impacts were as follows:

11.1 Generation Deliverability

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

ID	FROM BUS#	FROM BUS	kV	FROM BUS AREA	TO BUS#	TO BUS	kV	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC DC	MW IMPACT
167840612	228228	SO MVLE	69.0	AE	228215	BALFSTNT	69.0	AE	1	AE_P1-2 BUT-LINC	single	88.0	76.51	100.27	DC	20.91
167840591	228233	WHTN AT	69.0	AE	228225	2ND ST#1	69.0	AE	1	AE_P1-2 BUT-LINC	single	83.0	81.12	106.31	DC	20.91

11.2 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	kV	FROM BUS AREA	TO BUS#	TO BUS	kV	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC DC	MW IMPACT
166687254	228218	LAUREL	69.0	AE	228360	WOODTWN2	69.0	AE	1	AE_P7-1 AE7TOWER	tower	107.0	94.74	106.84	DC	12.94
166687255	228218	LAUREL	69.0	AE	228360	WOODTWN2	69.0	AE	1	AE_P7-1 AE18TOWER	tower	107.0	92.42	104.52	DC	12.95

11.3 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	kV	FROM BUS AREA	TO BUS#	TO BUS	kV	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC DC	MW IMPACT
165251682	214010	WANEETA2	230.0	PECO	213817	N PHILA	230.0	PECO	1	PECO_P2-2_CHI230B1 /* \$ DELCO \$ PECO_P2-2_CHI230B1 \$ B	bus	621.0	112.76	113.21	DC	6.4
165251664	214206	RICHRE29	230.0	PECO	214274	RICHMOND29	230.0	PECO	1	PECO_P2-2_CHI230B1 /* \$ DELCO \$ PECO_P2-2_CHI230B1 \$ B	bus	1344.0	117.99	118.33	DC	13.56
165251642	214277	RICHMOND35	230.0	PECO	214012	WANEETA3	230.0	PECO	1	PECO_P2-2_CHI230B1 /* \$ DELCO \$ PECO_P2-2_CHI230B1 \$ B	bus	1180.0	121.84	122.3	DC	12.67
165251942	214277	RICHMOND35	230.0	PECO	214012	WANEETA3	230.0	PECO	1	JC-P7-1-JCC-230-13	tower	1180.0	111.56	111.99	DC	11.82
165251827	227900	CARDIFF	230.0	AE	219100	NEWFRDM	230.0	PSE&G	1	JC-P7-1-JCC-230-13	tower	692.0	278.57	279.07	DC	7.57
165251831	227900	CARDIFF	230.0	AE	219100	NEWFRDM	230.0	PSE&G	1	AE_P7-1 AE3TOWER	tower	692.0	202.23	202.69	DC	6.94
166687252	228130	TUCKAHOE	69.0	AE	227946	MILL#2	69.0	AE	1	AE_P7-1 AE7TOWER	tower	146.0	107.96	109.08	DC	3.65
166687225	228217	DENNIS	69.0	AE	228130	TUCKAHOE	69.0	AE	1	AE_P7-1 AE7TOWER	tower	146.0	113.09	114.22	DC	3.65

ID	FROM BUS#	FROM BUS	kV	FROM BUS AREA	TO BUS#	TO BUS	kV	TO BUS AREA	CK T ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADIN G %	POST PROJECT LOADIN G %	AC D C	MW IMPACT
165251916	228313	BRIDGPRT	230.0	AE	228401	MCKLTON	230.0	AE	1	JC-P7-1-JCC-230-13	tower	804.0	122.74	123.28	DC	10.28
166687203	228714	CNTRL N	69.0	AE	228504	SHLDLY T	69.0	AE	1	AE_P7-1 AE7TOWER	tower	143.0	114.28	122.56	DC	11.83
166687204	228714	CNTRL N	69.0	AE	228504	SHLDLY T	69.0	AE	1	AE_P7-1 AE18TOWER	tower	143.0	111.07	119.36	DC	11.84
166687182	228716	S121TAP	69.0	AE	228714	CNTRL N	69.0	AE	1	AE_P7-1 AE7TOWER	tower	107.0	142.24	143.85	DC	3.81
166687183	228716	S121TAP	69.0	AE	228714	CNTRL N	69.0	AE	1	AE_P7-1 AE6TOWER	tower	107.0	115.65	117.26	DC	3.81

11.4 Potential Congestion due to Local Energy Deliverability

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.

Note: Only the most severely overloaded conditions are listed below. 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 shall study all overload conditions associated with the overloaded element(s) identified.

ID	FROM BUS#	FROM BUS	kV	FROM BUS AREA	TO BUS#	TO BUS	kV	TO BUS AREA	CK T ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADIN G %	POST PROJECT LOADIN G %	AC D C	MW IMPACT
167595231	214206	RICHRE29	230.0	PECO	214274	RICHMOND 29	230.0	PECO	1	Base Case	operation	1075.0	106.04	106.43	DC	12.22
167595232	214206	RICHRE29	230.0	PECO	214274	RICHMOND 29	230.0	PECO	1	JC-P1-2-JCC-500-003	operation	1344.0	103.51	103.87	DC	13.89
167595042	214277	RICHMOND 35	230.0	PECO	214012	WANEETA3	230.0	PECO	1	Base Case	operation	760.0	131.44	132.09	DC	11.34
167595043	214277	RICHMOND 35	230.0	PECO	214012	WANEETA3	230.0	PECO	1	JC-P1-2-JCC-500-003	operation	1180.0	102.45	102.91	DC	12.71
167595116	219108	CUTHBERT_1	230.0	PSE&G	219125	CAMDEN	230.0	PSE&G	1	PS_P1-2_U-2299_LT	operation	771.0	119.99	120.35	DC	8.64
167595118	219108	CUTHBERT_1	230.0	PSE&G	219125	CAMDEN	230.0	PSE&G	1	Base Case	operation	500.0	108.84	109.17	DC	5.14
167595068	219110	GLOUCSTR	230.0	PSE&G	219755	CUTHBERT_4	230.0	PSE&G	1	PS_P1-2_C-2308	operation	758.0	127.85	128.19	DC	8.07
167595107	219110	GLOUCSTR	230.0	PSE&G	219125	CAMDEN	230.0	PSE&G	1	Base Case	operation	500.0	122.88	123.22	DC	5.35
167595229	219125	CAMDEN	230.0	PSE&G	214206	RICHRE29	230.0	PECO	1	Base Case	operation	1075.0	106.05	106.44	DC	12.22
167595230	219125	CAMDEN	230.0	PSE&G	214206	RICHRE29	230.0	PECO	1	JC-P1-2-JCC-500-003	operation	1344.0	103.52	103.87	DC	13.89
167595150	219754	CUTHBERT_2	230.0	PSE&G	219125	CAMDEN	230.0	PSE&G	1	PS_P1-2_Z-2305_LT	operation	792.0	114.7	115.04	DC	8.43

ID	FROM BUS#	FROM BUS	kV	FROM BUS AREA	TO BUS#	TO BUS	kV	TO BUS AREA	CK T ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADIN G %	POST PROJECT LOADIN G %	AC D C	MW IMPAC T
1675949 41	22790 0	CARDIFF	230.0	AE	21910 0	NEWFRDM	230.0	PSE&G	1	JC-P1-2-JCC-230-044T	operation	692.0	199.08	199.59	DC	7.81
1675950 26	22790 3	MILL #1	138.0	AE	22790 2	LEWIS #1	138.0	AE	1	AE_P1-2 BLE-ML-LEW2	operation	306.0	139.14	140.29	DC	7.79
1675951 48	22790 4	MILL #2	138.0	AE	22794 5	LEWIS #2	138.0	AE	1	AE_P1-2 BLE-ML-LEW1	operation	282.0	116.05	117.1	DC	6.57
1675949 87	22790 5	SCULL#1	138.0	AE	22790 3	MILL #1	138.0	AE	1	AE_P1-2 BLE-SC-ML2	operation	306.0	156.97	158.24	DC	8.62
1675949 89	22790 5	SCULL#1	138.0	AE	22790 3	MILL #1	138.0	AE	1	Base Case	operation	218.0	122.66	123.68	DC	4.95
1675949 84	22790 6	SCULL#2	138.0	AE	22790 4	MILL #2	138.0	AE	1	AE_P1-2 BLE-SC-ML1	operation	306.0	158.4	159.67	DC	8.62
1675949 86	22790 6	SCULL#2	138.0	AE	22790 4	MILL #2	138.0	AE	1	Base Case	operation	218.0	123.67	124.69	DC	4.95
1675949 31	22795 5	CEDAR	230.0	AE	20630 2	28OYSTER C	230.0	JCP&L	1	PS_P1-2_2310	operation	564.0	222.69	223.26	DC	7.2
1675949 32	22795 5	CEDAR	230.0	AE	20630 2	28OYSTER C	230.0	JCP&L	1	Base Case	operation	464.0	207.33	207.87	DC	5.53
1675949 92	22811 0	BLE	138.0	AE	22790 5	SCULL#1	138.0	AE	1	AE_P1-2 BLE-SC-ML2	operation	331.0	152.45	153.63	DC	8.62
1675949 95	22811 0	BLE	138.0	AE	22790 6	SCULL#2	138.0	AE	1	AE_P1-2 BLE-SC-ML1	operation	331.0	151.63	152.8	DC	8.62
1678409 11	22821 0	UNION	138.0	AE	22810 8	CORSON 3	138.0	AE	1	AE_P1-2 CUMB-DENN	operation	478.0	106.33	107.29	DC	10.16
1678406 62	22821 5	BALFSTNT	69.0	AE	22823 3	WHTN A T	69.0	AE	1	AE_P1-2 BUT-LINC	operation	94.0	111.6	148.68	DC	34.85
1678406 01	22822 1	US SLC#1	69.0	AE	22822 2	US SLC T	69.0	AE	1	Base Case	operation	53.0	49.81	163.02	DC	60.0
1678407 07	22822 2	US SLC T	69.0	AE	93950 0	AE1-179 TAP	69.0	AE	1	CARLL-240 TAP-SHERM-B	operation	89.0	86.38	130.23	DC	39.02
1678406 10	22822 8	SO MVLE	69.0	AE	22821 5	BALFSTNT	69.0	AE	1	AE_P1-2 BUT-LINC	operation	88.0	119.21	158.81	DC	34.85
1678406 11	22822 8	SO MVLE	69.0	AE	22821 5	BALFSTNT	69.0	AE	1	Base Case	operation	64.0	84.64	118.16	DC	21.46
1678405 88	22823 3	WHTN A T	69.0	AE	22822 5	2ND ST#1	69.0	AE	1	AE_P1-2 BUT-LINC	operation	83.0	126.39	168.38	DC	34.85
1678405 90	22823 3	WHTN A T	69.0	AE	22822 5	2ND ST#1	69.0	AE	1	Base Case	operation	65.0	83.18	116.19	DC	21.46
1678408 48	22825 2	CRLS CR2	69.0	AE	94000 0	AE1-240 TAP	69.0	AE	1	AE_P1-2 ORCH-CUMB	operation	93.0	114.86	115.12	DC	3.11
1678408 17	22825 6	SHRMAN#1	69.0	AE	94573 0	AF1-238 TAP	69.0	AE	1	AE_P1-2 CNT-V-BUT	operation	132.0	115.01	122.13	DC	9.39
1678407 98	22831 1	CHAMBERS	230.0	AE	22831 2	PEDRKTWN	230.0	AE	1	AE_P1-2 ORCHAR D XF	operation	551.0	117.11	118.42	DC	16.59
1678408 10	22831 3	BRIDGPRT	230.0	AE	22840 1	MCKLTON	230.0	AE	1	AE_P1-2 ORCHAR D XF	operation	804.0	117.67	118.59	DC	16.48
1678408 11	22831 3	BRIDGPRT	230.0	AE	22840 1	MCKLTON	230.0	AE	1	Base Case	operation	650.0	116.35	117.77	DC	9.69

ID	FROM BUS#	FROM BUS	kV	FROM BUS AREA	TO BUS#	TO BUS	kV	TO BUS AREA	CK T ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADIN G %	POST PROJECT LOADIN G %	AC/D C	MW IMPAC T
167840701	228360	WOODTWN 2	69.0	AE	228332	WOODTWN 1	69.0	AE	1	CARLL-240 TAP-SHERM-B	operation	74.0	96.73	109.57	DC	9.5
167840829	228504	SHLDLY T	69.0	AE	228511	LANDIS T	69.0	AE	1	AE_P1-2 ORCH-CUMB	operation	158.0	108.51	117.53	DC	14.24
167840831	228511	LANDIS T	69.0	AE	228409	MONROE#3	69.0	AE	1	AE_P1-2 ORCH-CUMB	operation	158.0	108.45	117.47	DC	14.24
167840961	228714	CNTRL N	69.0	AE	228504	SHLDLY T	69.0	AE	1	AE_P1-2 WOOD-LAUR	operation	143.0	91.22	100.5	DC	13.26
167840902	228716	S121TAP	69.0	AE	228714	CNTRL N	69.0	AE	1	AE_P1-2 CORSON-UNION	operation	107.0	107.46	109.01	DC	3.65
167840945	228725	W2-039 TAP	69.0	AE	228703	BUTLER	69.0	AE	1	AE_P1-2 SS-SMLVIL	operation	132.0	77.46	102.42	DC	32.94
169580406	939500	AE1-179 TAP	69.0	AE	228228	SO MVLE	69.0	AE	1	CARLL-240 TAP-SHERM-A	operation	89.0	120.1	163.95	DC	39.02
169580407	939500	AE1-179 TAP	69.0	AE	228228	SO MVLE	69.0	AE	1	Base Case	operation	66.0	112.0	167.95	DC	36.92
169580451	940000	AE1-240 TAP	69.0	AE	228226	SHRMAN#2	69.0	AE	1	AE_P1-2 ORCH-CUMB	operation	93.0	152.18	152.44	DC	3.11
169580453	940000	AE1-240 TAP	69.0	AE	228226	SHRMAN#2	69.0	AE	1	Base Case	operation	82.0	118.56	121.46	DC	5.26
169883017	961620	AG1-001 TAP	69.0	AE	228221	US SLC#1	69.0	AE	1	Base Case	operation	46.0	59.35	189.78	DC	60.0

11.5 System Reinforcements - Summer Peak Load Flow - Primary POI

ID	Idx	Facility	Upgrade Description	Cost
166687225	9	DENNIS 69.0 kV - TUCKAHOE 69.0 kV Ckt 1	ACE: at0750r0001 (1665) : To mitigate the (ACE) Dennis Tuckahoe 69 kV line (from bus 228217 to bus 228130 ckt 1) overload, it will require increasing the emergency rating of the Dennis to Tuckahoe 69 kV line by rebuilding the circuit. The rebuild will include the installation of new poles, foundations, insulators, and conductor. In addition, various terminal reinforcements are required at Tuckahoe. Project Type : FAC Cost : \$7,000,000 Time Estimate : 36-60 Months	\$7,000,000
166687252	8	TUCKAHOE 69.0 kV - MILL#2 69.0 kV Ckt 1	ACE: at0750r0002 (1666) : To mitigate the (ACE) Tuckahoe Mill#2 69 kV line (from bus 228130 to bus 227946 ckt 1) overload, it will require increasing the emergency rating of the Tuckahoe to Mill#2 69 kV line by rebuilding the circuit. The rebuild will include the installation of new poles, foundations, insulators, and conductor. Project Type : FAC Cost : \$20,000,000 Time Estimate : 36-60 Months	\$20,000,000
165251682	4	WANEETA2 230.0 kV - N PHILA 230.0 kV Ckt 1	PECO: pe016 (148) : Reconductor the North Philadelphia-Waneeta 230 kV line with Pecos conductor (Does not include permitting) Project Type : FAC Cost : \$6,335,000 Time Estimate : 36.0 Months pe017 (149) : Replace 1 disconnect switch on Waneeta- N. Phila line Project Type : FAC Cost : \$207,000 Time Estimate : 24.0 Months pe018 (150) : Replace 6 pieces of station cable on Waneeta- N. Phila line Project Type : FAC Cost : \$272,000 Time Estimate : 36.0 Months	\$6,814,000

ID	Idx	Facility	Upgrade Description	Cost
165251831,165251827	7	CARDIFF 230.0 kV - NEWFRDM 230.0 kV Ckt 1	PSEG: r_PS_I004b_NF (1529) : Upgrade New Freedom 230kV terminal equipment to achieve a SER of 1992 MVA Project Type : FAC Cost : \$3,655,338 Time Estimate : 27.0 Months ACE: as2310r0001 (1617): To mitigate the (ACE) Cardiff New Freedom 230 kV line (from bus 227900 to bus 219100 ckt 1) overload, it will require various terminal reinforcements are required at Cardiff. Project Type : FAC Cost : \$400,000 Time Estimate : 24-36 Months as2310r0002 (1618): To mitigate the (ACE) Cardiff New Freedom 230 kV line (from bus 227900 to bus 219100 ckt 1) overload, it will require various terminal reinforcements at Cardiff. Project Type : FAC Cost : \$600,000 Time Estimate : 24-36 Months as2310r0003 (1619): To mitigate the (ACE) Cardiff New Freedom 230 kV line (from bus 227900 to bus 219100 ckt 1) overload, it will require various terminal reinforcements at Cardiff. Project Type : FAC Cost : \$600,000 Time Estimate : 24-36 Months as2310r0004_af1f (1620): To mitigate the (ACE) Cardiff New Freedom 230 kV line (from bus 227900 to bus 219100 ckt 1) overload, it will require various terminal reinforcements at Cardiff. Project Type : FAC Cost : \$600,000 Time Estimate : 24-36 Months at2310r0001 (1692) : To mitigate the (ACE) Cardiff New Freedom 230 kV line (from bus 227900 to bus 219100 ckt 1) overload, it will require increasing the emergency rating of the Cardiff to New Freedom 230 kV line by rebuilding the circuit. The rebuild will include the installation of new poles, foundations, insulators, and conductor. Project Type : FAC Cost : \$63,200,000 Time Estimate : 36-60 Months at2310r0002_af1f (1693) : To mitigate the (ACE) Cardiff New Freedom 230 kV line (from bus 227900 to bus 219100 ckt 1) overload, it will require increasing the emergency rating of the Cardiff to New Freedom 230 kV line by rebuilding the circuit. The rebuild will include the installation of new poles, foundations, insulators, and conductor. Project Type : FAC Cost : \$160,000,000 Time Estimate : 60-72 Months	\$165,855,338

ID	Idx	Facility	Upgrade Description	Cost
165251942,165251642	6	RICHMOND35 230.0 kV - WANEETA3 230.0 kV Ckt 1	PECO: pe010 (143) : Add a second pair of underground cables in parallel with the existing underground portion of the Richmond - Waneeta 230 kV line (Does not include permitting) Project Type : FAC Cost : \$19,000,000 Time Estimate : 84.0 Months pe011 (144) : Rebuild the aerial portion of the Richmond-Waneeta 230 kV line with bundled Pecos conductors (Does not include permitting) Project Type : FAC Cost : \$15,855,000 Time Estimate : 84.0 Months pe012 (145) : Replace 3 circuit breakers on Richmond-Waneeta line Project Type : FAC Cost : \$1,129,000 Time Estimate : 36.0 Months	\$35,984,000
166687204,166687203	11	CNTRL N 69.0 kV - SHLDLY T 69.0 kV Ckt 1	ACE: at0711r0004 (1662) : To mitigate the (ACE) Sheildalloy Tap Central Tap 69 kV line (from bus 228504 to bus 228714 ckt 1) overload, it will require increasing the emergency rating of the Sheildalloy Tap to Central North (Vineland) 230 kV line by rebuilding the circuit. The rebuild will include the installation of new poles, foundations, insulators, and conductor. Also, upgrades to the terminal equipment at Central North Substation will be required. Project Type : FAC Cost : \$4,600,000 Time Estimate : 24-48 Months	\$4,600,000
165251664	5	RICHRE29 230.0 kV - RICHMOND29 230.0 kV Ckt 1	PECO: pe002 (137) : Replace 1 piece of station cable in Richmond substation on Richmond-Camden tie line Project Type : FAC Cost : \$45,000 Time Estimate : 24.0 Months pe003 (138) : Replace reactor in Richmond substation on Richmond-Camden tie line Project Type : FAC Cost : \$2,254,000 Time Estimate : 36.0 Months pe004 (139) : Replace 2 circuit breakers in Richmond substation on Richmond-Camden tie line Project Type : FAC Cost : \$752,000 Time Estimate : 36.0 Months pe005 (140) : Replace 6 disconnect switches in Richmond substation on Richmond-Camden tie line Project Type : FAC Cost : \$1,241,000 Time Estimate : 36.0 Months	\$4,292,000

ID	Idx	Facility	Upgrade Description	Cost
166687254,166 687255	3	LAUREL 69.0 kV - WOODTWN2 69.0 kV Ckt 1	ACE: as0740r0001_af1f (1588) : To mitigate the (ACE) Laurel to Woodstown 69 kV line (from bus 228218 to bus 228360 ckt 1) overload, it will require reinforcement of terminal equipment at Woodstown #2 substation. Project Type : FAC Cost : \$100,000 Time Estimate : 12-24 Months as0740r0002_af1f (1589) : To mitigate the (ACE) Laurel to Woodstown 69 kV line (from bus 228218 to bus 228360 ckt 1) overload, it will require reinforcement of terminal equipment at Woodstown #2 substation. Project Type : FAC Cost : \$100,000 Time Estimate : 12-24 Months	\$200,000
166687182,166 687183	12	S121TAP 69.0 kV - CNTRL N 69.0 kV Ckt 1	City of Vineland: 20-095 (1554): Line Upgrade West Sherman Substation, including the installation of new poles, foundations, insulators, and conductor. Project Type : FAC Cost : \$3,125,000 Time Estimate : 18.0 Months 20-096 (1555): Ring Bus for AF1-238 & AF1-239- New 69kV class substation and associated relaying, fiber, etc. Project Type : CON Cost : \$7,405,000 Time Estimate : 34.0 Months 20-097 (1556): Line Upgrade CN-G10, including the installation of new poles, circuit breaker, relaying, foundations, insulators, and conductor. Project Type : FAC Cost : \$2,501,000 Time Estimate : 12.0 Months	\$26,062,000
167840612	1	SO MVLE 69.0 kV - BALFSTNT 69.0 kV Ckt 1	ACE: ACESoMillvilleBallsr01 (1577): To mitigate South Millve - Ball foster overload requires upgrading a 300 CU strand bus at South Millville. Project Type : FAC Cost : \$200,000 Time Estimate : 12-24 Months	\$200,000
167840591	2	WHTN A T 69.0 kV - 2ND ST#1 69.0 kV Ckt 1	ACE: ACE#2SecStWheatAlttapr01 (1557) : To mitigate the #2 Second Street-Wheaton alt tap overload requires rebuilding and reconductoring 0.93 miles of 69 kV line and upgrading a 600 amp CT at Second St. Project Type : FAC Cost : \$2,200,000 Time Estimate : 24-36 Months	\$2,200,000
165251916	10	BRIDGPRT 230.0 kV - MCKLTON 230.0 kV Ckt 1	ACE: as2315r0001_af1f (1625): To mitigate the (ACE) Bridgeport to Mickleton 230 kV line (from bus 228313 to bus 228401 ckt 1) overload, terminal reinforcement is required at both substation. Project Type : FAC Cost : \$1,000,000 Time Estimate : 12-24 Months	\$1,000,000
			TOTAL COST	\$274,207,338

11.6 Flow Gate Details - Primary POI

The following indices contain additional information about each facility presented in the body of the report. For each index, a description of the flowgate and its contingency was included for convenience. The intent of the indices is to provide more details on which projects/generators have contributions to the flowgate in question. All New Service Queue Requests, through the end of the Queue under study, that are contributors to a flowgate will be listed in the indices. Please note that there may be contributors that are subsequently queued after the queue under study that are not listed in the indices. Although this information is not used "as is" for cost allocation purposes, it can be used to gage the impact of other projects/generators. It should be noted the project/generator MW contributions presented in the body of the report are Full MW Impact contributions which are also noted in the indices column named "Full MW Impact", whereas the loading percentages reported in the body of the report, take into consideration the PJM Generator Deliverability Test rules such as commercial probability of each project as well as the ramping impact of "Adder" contributions. The MW Impact found and used in the analysis is shown in the indices column named "Gendeliv MW Impact".

11.6.1 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
167840612	228228	SO MVLLE	AE	228215	BALFSTNT	AE	1	AE_P1-2 BUT-LINC	single	88.0	76.51	100.27	DC	20.91

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
228200	CARL#1CT	0.5628	80/20	0.5628
228201	CARL#2CT	0.5957	80/20	0.5957
228251	CARLLS#4	0.5597	80/20	0.5597
228260	V4-054C	0.1698	80/20	0.1698
228343	QUINTN#1 (Deactivation : 26/04/2020)	0.1202	80/20	0.1202
228727	W2-039G	5.7883	80/20	5.7883
939501	AE1-179 C O1	24.9151	80/20	24.9151
945431	AF1-208 C O1	3.2918	80/20	3.2918
957261	AF2-020 C	0.9428	80/20	0.9428
958811	AF2-172 C (Withdrawn : 01/14/2021)	1.9666	80/20	1.9666
961621	AG1-001 C	6.8429	80/20	6.8429
962801	AG1-129 C O1	20.9120	80/20	20.9120
964011	AG1-255 C	2.0184	80/20	2.0184
CALDERWOOD	CALDERWOOD	0.0134	Confirmed LTF	0.0134
NY	NY	0.0166	Confirmed LTF	0.0166
PRAIRIE	PRAIRIE	0.0697	Confirmed LTF	0.0697
SIGE	SIGE	0.0006	Confirmed LTF	0.0006
CHEOAH	CHEOAH	0.0135	Confirmed LTF	0.0135
COTTONWOOD	COTTONWOOD	0.0567	Confirmed LTF	0.0567
HAMLET	HAMLET	0.0156	Confirmed LTF	0.0156
GIBSON	GIBSON	0.0147	Confirmed LTF	0.0147
BLUEG	BLUEG	0.0469	Confirmed LTF	0.0469
TRIMBLE	TRIMBLE	0.0150	Confirmed LTF	0.0150
CATAWBA	CATAWBA	0.0094	Confirmed LTF	0.0094

11.6.2 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
167840591	228233	WHTN A T	AE	228225	2ND ST#1	AE	1	AE_P1-2 BUT-LINC	single	83.0	81.12	106.31	DC	20.91

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
228200	CARL#1CT	0.5628	80/20	0.5628
228201	CARL#2CT	0.5957	80/20	0.5957
228251	CARLLS#4	0.5597	80/20	0.5597
228260	V4-054C	0.1698	80/20	0.1698
228343	QUINTN#1 (Deactivation : 26/04/2020)	0.1202	80/20	0.1202
228727	W2-039G	5.7883	80/20	5.7883
939501	AE1-179 C O1	24.9151	80/20	24.9151
945431	AF1-208 C O1	3.2918	80/20	3.2918
957261	AF2-020 C	0.9428	80/20	0.9428
958811	AF2-172 C (Withdrawn : 01/14/2021)	1.9666	80/20	1.9666
961621	AG1-001 C	6.8429	80/20	6.8429
962801	AG1-129 C O1	20.9120	80/20	20.9120
964011	AG1-255 C	2.0184	80/20	2.0184
CALDERWOOD	CALDERWOOD	0.0134	Confirmed LTF	0.0134
NY	NY	0.0166	Confirmed LTF	0.0166
PRAIRIE	PRAIRIE	0.0697	Confirmed LTF	0.0697
SIGE	SIGE	0.0006	Confirmed LTF	0.0006
CHEOAH	CHEOAH	0.0135	Confirmed LTF	0.0135
COTTONWOOD	COTTONWOOD	0.0567	Confirmed LTF	0.0567
HAMLET	HAMLET	0.0156	Confirmed LTF	0.0156
GIBSON	GIBSON	0.0147	Confirmed LTF	0.0147
BLUEG	BLUEG	0.0469	Confirmed LTF	0.0469
TRIMBLE	TRIMBLE	0.0150	Confirmed LTF	0.0150
CATAWBA	CATAWBA	0.0094	Confirmed LTF	0.0094

11.6.3 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
166687254	228218	LAUREL	AE	228360	WOODTWN2	AE	1	AE_P7-1 AE7TOWER	tower	107.0	94.74	106.84	DC	12.94

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
228102	BLE#2 ST (Deactivation : 30/04/2019)	7.3994	Adder	8.71
228200	CARL#1CT	1.4680	50/50	1.4680
228201	CARL#2CT	1.5539	50/50	1.5539
228251	CARLLS#4	1.4691	50/50	1.4691
228260	V4-054C	0.1811	50/50	0.1811
228261	V4-054E	1.8731	50/50	1.8731
228343	QUINTN#1 (Deactivation : 26/04/2020)	0.1843	50/50	0.1843
228702	WEST CT	0.4211	50/50	0.4211
228712	V2-041E	0.1770	Adder	0.21
228717	S121	0.7969	50/50	0.7969
228727	W2-039G	0.9241	50/50	0.9241
924531	AB2-102 C	9.8895	Adder	11.63
924532	AB2-102 E	0.2198	Adder	0.26
938781	AE1-104 C O1	6.8582	Adder	8.07
938782	AE1-104 E O1	17.5440	Adder	20.64
939501	AE1-179 C O1	6.2209	50/50	6.2209
939502	AE1-179 E O1	4.3902	50/50	4.3902
940001	AE1-240 C O1	5.4018	50/50	5.4018
940002	AE1-240 E O1	3.8558	50/50	3.8558
945431	AF1-208 C O1	6.9185	50/50	6.9185
945432	AF1-208 E O1	4.6123	50/50	4.6123
945731	AF1-238 C O1	6.1312	50/50	6.1312
945732	AF1-238 E O1	9.1968	50/50	9.1968
945741	AF1-239 C	1.4426	50/50	1.4426
945742	AF1-239 E	2.1640	50/50	2.1640
957251	AF2-019 C	0.3886	Adder	0.46
957252	AF2-019 E	0.5829	Adder	0.69
957261	AF2-020 C	2.4594	50/50	2.4594
957262	AF2-020 E	3.6892	50/50	3.6892
958811	AF2-172 C (Withdrawn : 01/14/2021)	0.8897	50/50	0.8897
958812	AF2-172 E (Withdrawn : 01/14/2021)	1.4515	50/50	1.4515
961621	AG1-001 C	2.5413	50/50	2.5413
961622	AG1-001 E	4.1463	50/50	4.1463
962801	AG1-129 C O1	7.7663	50/50	7.7663
962802	AG1-129 E O1	5.1775	50/50	5.1775
964003	AG1-254 BAT	2.1793	50/50	2.1793
964371	AG1-299 C	0.0587	Adder	0.13
964372	AG1-299 E	0.0391	Adder	0.09

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
964381	AG1-300 C	0.0978	Adder	0.22
964382	AG1-300 E	0.0652	Adder	0.14
CALDERWOOD	CALDERWOOD	0.0134	Confirmed LTF	0.0134
NY	NY	0.0155	Confirmed LTF	0.0155
PRAIRIE	PRAIRIE	0.0697	Confirmed LTF	0.0697
O-066	O-066	0.1817	Confirmed LTF	0.1817
CHEOAH	CHEOAH	0.0135	Confirmed LTF	0.0135
COTTONWOOD	COTTONWOOD	0.0567	Confirmed LTF	0.0567
G-007	G-007	0.0063	Confirmed LTF	0.0063
HAMLET	HAMLET	0.0156	Confirmed LTF	0.0156
GIBSON	GIBSON	0.0147	Confirmed LTF	0.0147
BLUEG	BLUEG	0.0469	Confirmed LTF	0.0469
TRIMBLE	TRIMBLE	0.0150	Confirmed LTF	0.0150
CATAWBA	CATAWBA	0.0094	Confirmed LTF	0.0094

11.6.4 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
165251682	214010	WANEETA2	PECO	213817	N PHILA	PECO	1	PECO_P2-2_CHI230B1/* \$ DELCO \$ PECO_P2-2_CHI230B1 \$ B	bus	621.0	112.76	113.21	DC	6.4

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
213554	DALEVILLE	-0.3030	Adder	-0.36
213606	FAIRLESS (Deactivation : 01/06/2020)	5.6636	Adder	6.66
213878	PENNSBRY (Deactivation : 01/06/2020)	0.5738	Adder	0.68
213918	RICHMD91	1.7133	50/50	1.7133
213919	RICHMD92	1.7133	50/50	1.7133
214030	WAYNEJCT	0.3565	50/50	0.3565
218661	EHAMPSOLAR E	0.1863	Adder	0.22
219117	HARTZZ_E	0.1956	Adder	0.23
219123	BCRR_COGEN (Deactivation : 26/04/2020)	0.5737	Adder	0.67
219124	CAMDEN_STG	1.7352	50/50	1.7352
219126	CAMDEN_CTG	2.1318	50/50	2.1318
219137	THOSOLAR C (Deactivation : 01/06/2015)	0.0858	50/50	0.0858
219138	THOSOLAR E	0.1400	50/50	0.1400
219229	EAGLEPT_ST1	1.0708	50/50	1.0708
219230	EAGLEPT_G1	2.1167	50/50	2.1167
219231	EAGLEPT_G2	2.1156	50/50	2.1156
219235	EAGLEPT_ST2	0.7649	50/50	0.7649
219236	SOUTHERNHQ C	0.0089	50/50	0.0089
219237	SOUTHERNHQ E	0.0938	50/50	0.0938
219240	MANTUACREK E	0.3374	50/50	0.3374
219241	PENNAS_GAS	0.1286	50/50	0.1286
219242	PENNAS_SOLA	0.0139	50/50	0.0139
219258	KINSLEYDEP C	0.0675	50/50	0.0675
219259	KINSLEYDEP E	0.4987	50/50	0.4987
219267	GLOU CO RR	0.3007	50/50	0.3007
219273	CLEANLIGHT E	0.1906	Adder	0.22
219286	CAMD CO RR	0.6387	50/50	0.6387
219288	REEVES ST E	0.6937	Adder	0.82
219292	REEVESSO E	0.0640	Adder	0.08
219305	NAMERICA E	0.3931	Adder	0.46
219349	LDSOLAR E	0.4343	Adder	0.51
219608	WPEMNERT E	0.4960	Adder	0.58
219611	FLORENCE E	1.4171	Adder	1.67
219615	MILLCREEK C	0.0276	50/50	0.0276

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
219619	MILLCREEK E	0.3169	50/50	0.3169
219623	KINSLEYBEA C	0.0578	50/50	0.0578
219624	KINSLEYBEA E	0.3776	50/50	0.3776
219647	COOPERSOLA E	0.0668	50/50	0.0668
219687	LUMSOLAR_N E	0.2136	Adder	0.25
219689	LUMSOLAR_S E	0.2234	Adder	0.26
219726	BAT.STORG E	0.1647	50/50	0.1647
219728	YARDVSOLFA C	0.1096	Adder	0.13
219729	YARDVSOLFA E	0.1788	Adder	0.21
219765	PARADISE E	0.5398	50/50	0.5398
219766	PARADISE C	0.0506	50/50	0.0506
219912	PENNSAU2 C	0.8815	50/50	0.8815
219913	PENNSAU2 E	1.4456	50/50	1.4456
219914	CINNAMSOL C	0.1057	50/50	0.1057
219915	CINNAMSOL E	1.0930	50/50	1.0930
227801	ONTC&DCT	3.1612	Adder	3.72
227842	MARINGEN	0.6389	Adder	0.75
227881	GRENWCHG	0.1918	Adder	0.23
227928	V4-067E	0.1297	Adder	0.15
228102	BLE#2 ST (Deactivation : 30/04/2019)	12.4439	Adder	14.64
228251	CARLLS#4	0.4453	Adder	0.52
228261	V4-054E	0.5751	Adder	0.68
228343	QUINTN#1 (Deactivation : 26/04/2020)	0.1664	Adder	0.2
228357	V2-046E	1.2174	Adder	1.43
228712	V2-041E	0.2116	Adder	0.25
228721	V2-035E	0.0330	Adder	0.04
230404	Q90 GT1-CC	4.5063	50/50	4.5063
230405	Q90 GT2-CC	4.5063	50/50	4.5063
230406	Q90 ST-CC	7.5560	50/50	7.5560
902092	W1-130E	0.5328	Adder	0.63
902432	W2-030 E	0.4910	Adder	0.58
902692	W2-056 E	0.7093	Adder	0.83
910862	OWENSCORIN E	0.2764	50/50	0.2764
917471	Z2-083	1.6559	50/50	1.6559
924051	AB2-049 C	0.1105	Adder	0.13
924052	AB2-049 E	0.1804	Adder	0.21
924531	AB2-102 C	18.7234	Adder	22.03
924532	AB2-102 E	0.4161	Adder	0.49
924702	AB2-122 E (Withdrawn : 05/05/2020)	0.0973	Adder	0.11
925391	AC1-010 C	1.0121	50/50	1.0121
925392	AC1-010 E	0.6410	50/50	0.6410
925451	AC1-017 C	0.0323	50/50	0.0323
925452	AC1-017 E	0.3373	50/50	0.3373
925561	AC1-030 C	0.0243	50/50	0.0243
925562	AC1-030 E	0.2429	50/50	0.2429
930002	AB1-001 E	0.1106	Adder	0.13
930722	AB1-116 E	0.0772	Adder	0.09
930732	AB1-119 E	0.0701	Adder	0.08
932361	AC2-050 C O1	0.3815	Adder	0.45
932362	AC2-050 E O1	0.6224	Adder	0.73

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
933962	AD1-019 E	0.6224	Adder	0.73
936501	AD2-065 C	0.1044	Adder	0.12
936502	AD2-065 E	0.1440	Adder	0.17
937011	AD2-135 C	0.0566	Adder	0.07
937012	AD2-135 E	0.0962	Adder	0.11
938421	AE1-061 C	0.2570	Adder	0.3
938422	AE1-061 E	0.2570	Adder	0.3
938431	AE1-062 C	0.9625	Adder	1.13
938781	AE1-104 C O1	11.5338	Adder	13.57
938782	AE1-104 E O1	29.5047	Adder	34.71
938871	AE1-115 C	1.0050	Adder	1.18
939301	AE1-161 C	1.9295	Adder	2.27
939302	AE1-161 E	2.8943	Adder	3.41
939501	AE1-179 C O1	3.1398	Adder	3.69
939502	AE1-179 E O1	2.2158	Adder	2.61
939821	AE1-218 C O1	0.0801	Adder	0.09
939822	AE1-218 E O1	0.1201	Adder	0.14
939931	AE1-229 C O1	8.6740	Adder	10.2
939932	AE1-229 E O1	5.8769	Adder	6.91
940001	AE1-240 C O1	2.6016	Adder	3.06
940002	AE1-240 E O1	1.8570	Adder	2.18
940361	AE2-020 C	8.5127	Adder	10.01
940362	AE2-020 E	39.8571	Adder	46.89
940371	AE2-021 C	8.5127	Adder	10.01
940372	AE2-021 E	39.8571	Adder	46.89
940381	AE2-022 C	4.9657	Adder	5.84
940382	AE2-022 E	23.2500	Adder	27.35
942101	AE2-222 C	6.9047	Adder	8.12
942102	AE2-222 E	17.6671	Adder	20.78
942381	AE2-251 C	26.9681	Adder	31.73
942382	AE2-251 E	69.0037	Adder	81.18
943071	AE2-334 C	2.6138	Adder	3.08
943072	AE2-334 E	1.7425	Adder	2.05
943732	AF1-041 E	0.1962	Adder	0.23
944951	AF1-160 C	0.9625	Adder	1.13
945431	AF1-208 C O1	2.5706	Adder	3.02
945432	AF1-208 E O1	1.7138	Adder	2.02
945731	AF1-238 C O1	4.5240	Adder	5.32
945732	AF1-238 E O1	6.7860	Adder	7.98
945741	AF1-239 C	1.0645	Adder	1.25
945742	AF1-239 E	1.5967	Adder	1.88
945961	AF1-261	0.1029	Adder	0.12
945971	AF1-262	0.0873	Adder	0.1
945991	AF1-264	0.2114	50/50	0.2114
957221	AF2-016 C	9.8797	Adder	11.62
957222	AF2-016 E	14.8196	Adder	17.43
957251	AF2-019 C	0.6651	Adder	0.78
957252	AF2-019 E	0.9977	Adder	1.17
957261	AF2-020 C	0.7425	Adder	0.87
957262	AF2-020 E	1.1137	Adder	1.31
957291	AF2-023 C	1.7089	Adder	2.01
957292	AF2-023 E	2.5633	Adder	3.02

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
957301	AF2-024 C	1.0952	Adder	1.29
957302	AF2-024 E	1.6429	Adder	1.93
957311	AF2-025 C	0.6552	Adder	0.77
957312	AF2-025 E	0.9828	Adder	1.16
957443	AF2-038 BAT	5.7958	50/50	5.7958
958811	AF2-172 C (Withdrawn : 01/14/2021)	0.3461	Adder	0.41
958812	AF2-172 E (Withdrawn : 01/14/2021)	0.5647	Adder	0.66
958831	AF2-174 C	0.1265	Adder	0.15
958832	AF2-174 E	0.1747	Adder	0.21
961621	AG1-001 C	0.5659	Adder	1.26
961622	AG1-001 E	0.9233	Adder	2.05
962311	AG1-080 C O1	1.7826	50/50	1.7826
962312	AG1-080 E O1	1.5327	50/50	1.5327
962611	AG1-110	1.0203	Adder	2.26
962621	AG1-111	0.5327	Adder	1.18
962801	AG1-129 C O1	1.7293	Adder	3.84
962802	AG1-129 E O1	1.1529	Adder	2.56
962811	AG1-130 C	0.1211	Adder	0.27
962812	AG1-130 E	0.1817	Adder	0.4
963411	AG1-190 C	0.3331	Adder	0.74
963412	AG1-190 E	0.4664	Adder	1.04
964001	AG1-254 C	1.3487	Adder	2.99
964002	AG1-254 E	0.6770	Adder	1.5
964011	AG1-255 C	2.0972	Adder	4.66
964012	AG1-255 E	1.0486	Adder	2.33
964081	AG1-263 C	1.3495	50/50	1.3495
964082	AG1-263 E	2.0243	50/50	2.0243
964371	AG1-299 C	0.0806	Adder	0.18
964372	AG1-299 E	0.0537	Adder	0.12
964381	AG1-300 C	0.1344	Adder	0.3
964382	AG1-300 E	0.0896	Adder	0.2
966061	AG1-475 C	1.2764	50/50	1.2764
966062	AG1-475 E	0.8509	50/50	0.8509
966071	AG1-476	4.6942	50/50	4.6942
966301	AG1-499 C	0.4225	Adder	0.94
966302	AG1-499 E	0.2816	Adder	0.63
G-007A	G-007A	8.7701	Confirmed LTF	8.7701
VFT	VFT	18.6469	Confirmed LTF	18.6469
CALDERWOOD	CALDERWOOD	0.2574	Confirmed LTF	0.2574
PRAIRIE	PRAIRIE	1.3096	Confirmed LTF	1.3096
CHEOAH	CHEOAH	0.2593	Confirmed LTF	0.2593
CBM-N	CBM-N	2.0988	Confirmed LTF	2.0988
COTTONWOOD	COTTONWOOD	1.0773	Confirmed LTF	1.0773
HAMLET	HAMLET	0.3090	Confirmed LTF	0.3090
GIBSON	GIBSON	0.2757	Confirmed LTF	0.2757
BLUEG	BLUEG	0.8767	Confirmed LTF	0.8767
TRIMBLE	TRIMBLE	0.2810	Confirmed LTF	0.2810
CATAWBA	CATAWBA	0.1851	Confirmed LTF	0.1851

11.6.5 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
165251664	214206	RICHRE29	PECO	214274	RICHMOND29	PECO	1	PECO_P2-2_CHI230B1/* \$ DELCO \$ PECO_P2-2_CHI230B1 \$ B	bus	1344.0	117.99	118.33	DC	13.56

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
200062	SALEM G3	4.5040	Adder	5.3
218661	EHAMPSOLAR E	0.3346	Adder	0.39
219123	BCRR_COGEN (Deactivation : 26/04/2020)	0.6958	Adder	0.82
219124	CAMDEN_STG	3.9521	50/50	3.9521
219126	CAMDEN_CTG	4.8553	50/50	4.8553
219137	THOSOLAR C (Deactivation : 01/06/2015)	0.1932	50/50	0.1932
219138	THOSOLAR E	0.3151	50/50	0.3151
219229	EAGLEPT_ST1	2.4284	50/50	2.4284
219230	EAGLEPT_G1	4.8003	50/50	4.8003
219231	EAGLEPT_G2	4.7977	50/50	4.7977
219235	EAGLEPT_ST2	1.7346	50/50	1.7346
219236	SOUTHERNHQ C	0.0178	50/50	0.0178
219237	SOUTHERNHQ E	0.1866	50/50	0.1866
219240	MANTUACREK E	0.7684	50/50	0.7684
219241	PENNAS_GAS	0.2946	50/50	0.2946
219242	PENNAS_SOLA	0.0319	50/50	0.0319
219258	KINSLEYDEP C	0.1530	50/50	0.1530
219259	KINSLEYDEP E	1.1304	50/50	1.1304
219267	GLOU CO RR	0.6849	50/50	0.6849
219273	CLEANLIGHT E	0.3631	Adder	0.43
219286	CAMD CO RR	1.4548	50/50	1.4548
219288	REEVES ST E	1.2671	Adder	1.49
219292	REEVESSO E	0.1156	Adder	0.14
219305	NAMERICA E	0.4897	Adder	0.58
219349	LDSOLAR E	0.5410	Adder	0.64
219608	WPEMNERT E	0.6178	Adder	0.73
219611	FLORENCE E	1.7652	Adder	2.08
219619	MILLCREEK E	0.4294	Adder	0.51
219623	KINSLEYBEA C	0.1304	50/50	0.1304
219624	KINSLEYBEA E	0.8521	50/50	0.8521
219647	COOPERSOLA E	0.1496	50/50	0.1496
219687	LUMSOLAR_N E	0.3903	Adder	0.46
219689	LUMSOLAR_S E	0.3850	Adder	0.45
219726	BAT.STORG E	0.3704	50/50	0.3704
219765	PARADISE E	1.2294	50/50	1.2294
219766	PARADISE C	0.1152	50/50	0.1152

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
219912	PENNSAU2 C	2.0189	50/50	2.0189
219913	PENNSAU2 E	3.3111	50/50	3.3111
219914	CINNAMSOL C	0.2421	50/50	0.2421
219915	CINNAMSOL E	2.5035	50/50	2.5035
227801	ONTC&DCT	6.4787	Adder	7.62
227842	MARINGEN	1.3092	Adder	1.54
227881	GRENWCHG	0.4982	50/50	0.4982
227928	V4-067E	0.2650	Adder	0.31
228102	BLE#2 ST (Deactivation : 30/04/2019)	25.7176	Adder	30.26
228251	CARLLS#4	0.9490	Adder	1.12
228261	V4-054E	1.2253	Adder	1.44
228343	QUINTN#1 (Deactivation : 26/04/2020)	0.3592	Adder	0.42
228357	V2-046E	2.6357	Adder	3.1
228400	MICK 1CT	2.4021	50/50	2.4021
228471	VALERO1	0.8210	50/50	0.8210
228472	VALERO2	0.4636	50/50	0.4636
228473	VALERO3	0.4636	50/50	0.4636
228484	VALERO4	0.4636	50/50	0.4636
228712	V2-041E	0.4437	Adder	0.52
228721	V2-035E	0.0706	Adder	0.08
230404	Q90 GT1-CC	10.0739	50/50	10.0739
230405	Q90 GT2-CC	10.0739	50/50	10.0739
230406	Q90 ST-CC	16.8915	50/50	16.8915
902082	W1-129E	0.3641	Adder	0.43
902092	W1-130E	1.1259	Adder	1.32
902322	W2-019 E	0.4367	Adder	0.51
902432	W2-030 E	1.0068	Adder	1.18
902692	W2-056 E	1.2628	Adder	1.49
902952	W2-082 E OP1	1.2255	Adder	1.44
905252	W4-025 E	0.5167	Adder	0.61
910862	OWENSCORIN E	0.6210	50/50	0.6210
912102	X4-015 E	0.3631	Adder	0.43
917471	Z2-083	3.7019	50/50	3.7019
924051	AB2-049 C	0.2294	Adder	0.27
924052	AB2-049 E	0.3743	Adder	0.44
924531	AB2-102 C	39.2005	Adder	46.12
924532	AB2-102 E	0.8711	Adder	1.02
924702	AB2-122 E (Withdrawn : 05/05/2020)	0.1988	Adder	0.23
925391	AC1-010 C	2.3052	50/50	2.3052
925392	AC1-010 E	1.4600	50/50	1.4600
925452	AC1-017 E	0.4571	Adder	0.54
925561	AC1-030 C	0.0484	50/50	0.0484
925562	AC1-030 E	0.4840	50/50	0.4840
930002	AB1-001 E	0.2221	Adder	0.26
930722	AB1-116 E	0.1620	Adder	0.19
930732	AB1-119 E	0.1441	Adder	0.17
932361	AC2-050 C O1	0.7233	Adder	0.85
932362	AC2-050 E O1	1.1801	Adder	1.39
933962	AD1-019 E	1.2756	Adder	1.5
934661	AD1-097 1	1.3760	Adder	1.62

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
934671	AD1-097 2	1.3760	Adder	1.62
934681	AD1-097 3	1.3774	Adder	1.62
934691	AD1-097 4	0.8154	Adder	0.96
936501	AD2-065 C	0.2114	Adder	0.25
936502	AD2-065 E	0.2916	Adder	0.34
937011	AD2-135 C	0.1170	Adder	0.14
937012	AD2-135 E	0.1989	Adder	0.23
938421	AE1-061 C	0.5432	Adder	0.64
938422	AE1-061 E	0.5432	Adder	0.64
938431	AE1-062 C	1.9502	Adder	2.29
938781	AE1-104 C O1	23.8366	Adder	28.04
938782	AE1-104 E O1	60.9766	Adder	71.74
938871	AE1-115 C	2.1835	Adder	2.57
939301	AE1-161 C	4.1048	Adder	4.83
939302	AE1-161 E	6.1572	Adder	7.24
939501	AE1-179 C O1	6.6393	Adder	7.81
939502	AE1-179 E O1	4.6855	Adder	5.51
939821	AE1-218 C O1	0.1697	Adder	0.2
939822	AE1-218 E O1	0.2545	Adder	0.3
939931	AE1-229 C O1	18.6560	Adder	21.95
939932	AE1-229 E O1	12.6400	Adder	14.87
940001	AE1-240 C O1	5.5034	Adder	6.47
940002	AE1-240 E O1	3.9283	Adder	4.62
940361	AE2-020 C	17.2995	Adder	20.35
940362	AE2-020 E	80.9977	Adder	95.29
940371	AE2-021 C	17.2995	Adder	20.35
940372	AE2-021 E	80.9977	Adder	95.29
940381	AE2-022 C	10.0914	Adder	11.87
940382	AE2-022 E	47.2487	Adder	55.59
942101	AE2-222 C	14.1490	Adder	16.65
942102	AE2-222 E	36.2033	Adder	42.59
942381	AE2-251 C	54.8046	Adder	64.48
942382	AE2-251 E	140.2296	Adder	164.98
943071	AE2-334 C	5.5447	Adder	6.52
943072	AE2-334 E	3.6965	Adder	4.35
943732	AF1-041 E	0.4017	Adder	0.47
944951	AF1-160 C	1.9502	Adder	2.29
945431	AF1-208 C O1	5.5119	Adder	6.48
945432	AF1-208 E O1	3.6746	Adder	4.32
945731	AF1-238 C O1	9.5340	Adder	11.22
945732	AF1-238 E O1	14.3009	Adder	16.82
945741	AF1-239 C	2.2433	Adder	2.64
945742	AF1-239 E	3.3649	Adder	3.96
945961	AF1-261	0.1281	Adder	0.15
945971	AF1-262	0.1868	Adder	0.22
945991	AF1-264	0.4749	50/50	0.4749
957221	AF2-016 C	20.2796	Adder	23.86
957222	AF2-016 E	30.4195	Adder	35.79
957251	AF2-019 C	1.3818	Adder	1.63
957252	AF2-019 E	2.0727	Adder	2.44
957261	AF2-020 C	1.5824	Adder	1.86
957262	AF2-020 E	2.3736	Adder	2.79

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
957271	AF2-021 C	0.9705	Adder	1.14
957272	AF2-021 E	1.4557	Adder	1.71
957291	AF2-023 C	3.7129	Adder	4.37
957292	AF2-023 E	5.5694	Adder	6.55
957301	AF2-024 C	2.8504	50/50	2.8504
957302	AF2-024 E	4.2756	50/50	4.2756
957311	AF2-025 C	1.3427	Adder	1.58
957312	AF2-025 E	2.0141	Adder	2.37
957443	AF2-038 BAT	4.2600	Merchant Transmission	4.2600
958811	AF2-172 C (Withdrawn : 01/14/2021)	0.7345	Adder	0.86
958812	AF2-172 E (Withdrawn : 01/14/2021)	1.1984	Adder	1.41
958831	AF2-174 C	0.2398	Adder	0.28
958832	AF2-174 E	0.3312	Adder	0.39
959631	AF2-254 C	0.4867	Adder	0.57
959632	AF2-254 E	0.6722	Adder	0.79
961621	AG1-001 C	1.1995	Adder	2.66
961622	AG1-001 E	1.9571	Adder	4.34
962311	AG1-080 C O1	3.9350	50/50	3.9350
962312	AG1-080 E O1	3.3834	50/50	3.3834
962611	AG1-110	2.0673	Adder	4.59
962621	AG1-111	1.1572	Adder	2.57
962801	AG1-129 C O1	3.6658	Adder	8.14
962802	AG1-129 E O1	2.4438	Adder	5.42
962811	AG1-130 C	0.1509	Adder	0.33
962812	AG1-130 E	0.2263	Adder	0.5
963411	AG1-190 C	0.4150	Adder	0.92
963412	AG1-190 E	0.5810	Adder	1.29
964001	AG1-254 C	2.9232	Adder	6.49
964002	AG1-254 E	1.4674	Adder	3.26
964011	AG1-255 C	4.5391	Adder	10.08
964012	AG1-255 E	2.2695	Adder	5.04
964081	AG1-263 C	3.0736	50/50	3.0736
964082	AG1-263 E	4.6104	50/50	4.6104
964371	AG1-299 C	0.1688	Adder	0.37
964372	AG1-299 E	0.1126	Adder	0.25
964381	AG1-300 C	0.2814	Adder	0.62
964382	AG1-300 E	0.1876	Adder	0.42
966061	AG1-475 C	2.8534	50/50	2.8534
966062	AG1-475 E	1.9022	50/50	1.9022
966071	AG1-476	10.4940	50/50	10.4940
966301	AG1-499 C	0.9224	Adder	2.05
966302	AG1-499 E	0.6149	Adder	1.36
G-007A	G-007A	11.3018	Confirmed LTF	11.3018
VFT	VFT	19.1758	Confirmed LTF	19.1758
CALDERWOOD	CALDERWOOD	0.5045	Confirmed LTF	0.5045
PRAIRIE	PRAIRIE	2.6295	Confirmed LTF	2.6295
CHEOAH	CHEOAH	0.5080	Confirmed LTF	0.5080
CBM-N	CBM-N	1.5396	Confirmed LTF	1.5396
COTTONWOOD	COTTONWOOD	2.1336	Confirmed LTF	2.1336
HAMLET	HAMLET	0.5833	Confirmed LTF	0.5833
GIBSON	GIBSON	0.5564	Confirmed LTF	0.5564

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
BLUEG	BLUEG	1.7690	Confirmed LTF	1.7690
TRIMBLE	TRIMBLE	0.5671	Confirmed LTF	0.5671
CATAWBA	CATAWBA	0.3542	Confirmed LTF	0.3542

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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
165251642	214277	RICHMOND35	PECO	214012	WANEETA3	PECO	1	PECO_P2-2_CHI230B1/* \$ DELCO \$ PECO_P2-2_CHI230B1 \$ B	bus	1180.0	121.84	122.3	DC	12.67

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
213606	FAIRLESS (Deactivation : 01/06/2020)	8.2926	Adder	9.76
213878	PENNSBRY (Deactivation : 01/06/2020)	0.8363	Adder	0.98
213918	RICHMD91	3.5797	50/50	3.5797
213919	RICHMD92	3.5797	50/50	3.5797
218661	EHAMPSOLAR E	0.3572	Adder	0.42
219117	HARTZZ_E	0.3416	Adder	0.4
219123	BCRR_COGEN (Deactivation : 26/04/2020)	1.0248	Adder	1.21
219124	CAMDEN_STG	3.5160	50/50	3.5160
219126	CAMDEN_CTG	4.3196	50/50	4.3196
219137	THOSOLAR C (Deactivation : 01/06/2015)	0.1733	50/50	0.1733
219138	THOSOLAR E	0.2828	50/50	0.2828
219229	EAGLEPT_ST1	2.1671	50/50	2.1671
219230	EAGLEPT_G1	4.2837	50/50	4.2837
219231	EAGLEPT_G2	4.2816	50/50	4.2816
219235	EAGLEPT_ST2	1.5480	50/50	1.5480
219236	SOUTHERNHQ C	0.0176	50/50	0.0176
219237	SOUTHERNHQ E	0.1847	50/50	0.1847
219240	MANTUACREK E	0.6836	50/50	0.6836
219241	PENNAS_GAS	0.2611	50/50	0.2611
219242	PENNAS_SOLA	0.0282	50/50	0.0282
219258	KINSLEYDEP C	0.1366	50/50	0.1366
219259	KINSLEYDEP E	1.0091	50/50	1.0091
219267	GLOU CO RR	0.6094	50/50	0.6094
219273	CLEANLIGHT E	0.3702	Adder	0.44
219286	CAMD CO RR	1.2943	50/50	1.2943
219288	REEVES ST E	1.3328	Adder	1.57
219292	REEVESSO E	0.1228	Adder	0.14
219305	NAMERICA E	0.7142	Adder	0.84
219349	LDSOLAR E	0.7890	Adder	0.93
219608	WPEMNERT E	0.9011	Adder	1.06
219611	FLORENCE E	2.5745	Adder	3.03
219615	MILLCREEK C	0.0522	50/50	0.0522
219619	MILLCREEK E	0.5982	50/50	0.5982
219623	KINSLEYBEA C	0.1168	50/50	0.1168

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
219624	KINSLEYBEA E	0.7629	50/50	0.7629
219647	COOPERSOLA E	0.1348	50/50	0.1348
219687	LUMSOLAR_N E	0.4105	Adder	0.48
219689	LUMSOLAR_S E	0.4257	Adder	0.5
219726	BAT.STORG E	0.3327	50/50	0.3327
219728	YARDVSOLFA C	0.1898	Adder	0.22
219729	YARDVSOLFA E	0.3096	Adder	0.36
219765	PARADISE E	1.0938	50/50	1.0938
219766	PARADISE C	0.1025	50/50	0.1025
219912	PENNSAU2 C	1.7890	50/50	1.7890
219913	PENNSAU2 E	2.9340	50/50	2.9340
219914	CINNAMSOL C	0.2145	50/50	0.2145
219915	CINNAMSOL E	2.2184	50/50	2.2184
227801	ONTC&DCT	6.1807	Adder	7.27
227842	MARINGEN	1.2490	Adder	1.47
227881	GRENWCHG	0.3850	Adder	0.45
227928	V4-067E	0.2533	Adder	0.3
228102	BLE#2 ST (Deactivation : 30/04/2019)	24.4034	Adder	28.71
228251	CARLLS#4	0.8833	Adder	1.04
228261	V4-054E	1.1405	Adder	1.34
228343	QUINTN#1 (Deactivation : 26/04/2020)	0.3314	Adder	0.39
228357	V2-046E	2.4279	Adder	2.86
228712	V2-041E	0.4172	Adder	0.49
228721	V2-035E	0.0655	Adder	0.08
230404	Q90 GT1-CC	9.0831	50/50	9.0831
230405	Q90 GT2-CC	9.0831	50/50	9.0831
230406	Q90 ST-CC	15.2303	50/50	15.2303
901982	W1-119 E	0.6665	Adder	0.78
901992	W1-120E	0.6665	Adder	0.78
902082	W1-129E	0.3921	Adder	0.46
902092	W1-130E	1.0539	Adder	1.24
902322	W2-019 E	0.4703	Adder	0.55
902432	W2-030 E	0.9602	Adder	1.13
902692	W2-056 E	1.3579	Adder	1.6
902952	W2-082 E OP1	1.3201	Adder	1.55
905252	W4-025 E	0.5565	Adder	0.65
910862	OWENSCORIN E	0.5581	50/50	0.5581
912102	X4-015 E	0.3911	Adder	0.46
917471	Z2-083	3.3378	50/50	3.3378
917612	Z2-102 E	0.9848	Adder	1.16
924051	AB2-049 C	0.2181	Adder	0.26
924052	AB2-049 E	0.3559	Adder	0.42
924531	AB2-102 C	36.8921	Adder	43.4
924532	AB2-102 E	0.8198	Adder	0.96
924702	AB2-122 E (Withdrawn : 05/05/2020)	0.1900	Adder	0.22
925391	AC1-010 C	2.0509	50/50	2.0509
925392	AC1-010 E	1.2989	50/50	1.2989
925451	AC1-017 C	0.0609	50/50	0.0609
925452	AC1-017 E	0.6368	50/50	0.6368
925561	AC1-030 C	0.0478	50/50	0.0478

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
925562	AC1-030 E	0.4782	50/50	0.4782
930002	AB1-001 E	0.2145	Adder	0.25
930722	AB1-116 E	0.1527	Adder	0.18
930732	AB1-119 E	0.1381	Adder	0.16
932361	AC2-050 C O1	0.7390	Adder	0.87
932362	AC2-050 E O1	1.2058	Adder	1.42
933962	AD1-019 E	1.2169	Adder	1.43
934661	AD1-097 1	1.2430	Adder	1.46
934671	AD1-097 2	1.2430	Adder	1.46
934681	AD1-097 3	1.2442	Adder	1.46
934691	AD1-097 4	0.7365	Adder	0.87
936501	AD2-065 C	0.2049	Adder	0.24
936502	AD2-065 E	0.2826	Adder	0.33
937011	AD2-135 C	0.1115	Adder	0.13
937012	AD2-135 E	0.1895	Adder	0.22
938421	AE1-061 C	0.5085	Adder	0.6
938422	AE1-061 E	0.5085	Adder	0.6
938431	AE1-062 C	1.8891	Adder	2.22
938781	AE1-104 C O1	22.6186	Adder	26.61
938782	AE1-104 E O1	57.8607	Adder	68.07
938871	AE1-115 C	2.0062	Adder	2.36
939301	AE1-161 C	3.8267	Adder	4.5
939302	AE1-161 E	5.7401	Adder	6.75
939501	AE1-179 C O1	6.2112	Adder	7.31
939502	AE1-179 E O1	4.3833	Adder	5.16
939821	AE1-218 C O1	0.1589	Adder	0.19
939822	AE1-218 E O1	0.2383	Adder	0.28
939931	AE1-229 C O1	17.2588	Adder	20.3
939932	AE1-229 E O1	11.6933	Adder	13.76
940001	AE1-240 C O1	5.1469	Adder	6.06
940002	AE1-240 E O1	3.6738	Adder	4.32
940361	AE2-020 C	16.5929	Adder	19.52
940362	AE2-020 E	77.6893	Adder	91.4
940371	AE2-021 C	16.5929	Adder	19.52
940372	AE2-021 E	77.6893	Adder	91.4
940381	AE2-022 C	9.6792	Adder	11.39
940382	AE2-022 E	45.3188	Adder	53.32
942101	AE2-222 C	13.4984	Adder	15.88
942102	AE2-222 E	34.5385	Adder	40.63
942381	AE2-251 C	52.5661	Adder	61.84
942382	AE2-251 E	134.5019	Adder	158.24
943071	AE2-334 C	5.1857	Adder	6.1
943072	AE2-334 E	3.4571	Adder	4.07
943732	AF1-041 E	0.3835	Adder	0.45
944951	AF1-160 C	1.8891	Adder	2.22
945431	AF1-208 C O1	5.1089	Adder	6.01
945432	AF1-208 E O1	3.4059	Adder	4.01
945731	AF1-238 C O1	8.9396	Adder	10.52
945732	AF1-238 E O1	13.4095	Adder	15.78
945741	AF1-239 C	2.1034	Adder	2.47
945742	AF1-239 E	3.1552	Adder	3.71
945961	AF1-261	0.1869	Adder	0.22

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
945971	AF1-262	0.1734	Adder	0.2
945991	AF1-264	0.4268	50/50	0.4268
957221	AF2-016 C	19.3270	Adder	22.74
957222	AF2-016 E	28.9904	Adder	34.11
957251	AF2-019 C	1.3069	Adder	1.54
957252	AF2-019 E	1.9603	Adder	2.31
957261	AF2-020 C	1.4727	Adder	1.73
957262	AF2-020 E	2.2090	Adder	2.6
957271	AF2-021 C	0.9784	Adder	1.15
957272	AF2-021 E	1.4676	Adder	1.73
957291	AF2-023 C	3.4112	Adder	4.01
957292	AF2-023 E	5.1168	Adder	6.02
957301	AF2-024 C	2.2002	Adder	2.59
957302	AF2-024 E	3.3003	Adder	3.88
957311	AF2-025 C	1.2810	Adder	1.51
957312	AF2-025 E	1.9215	Adder	2.26
957443	AF2-038 BAT	4.6008	Merchant Transmission	4.6008
958811	AF2-172 C (Withdrawn : 01/14/2021)	0.6855	Adder	0.81
958812	AF2-172 E (Withdrawn : 01/14/2021)	1.1185	Adder	1.32
958831	AF2-174 C	0.2450	Adder	0.29
958832	AF2-174 E	0.3384	Adder	0.4
959631	AF2-254 C	0.5243	Adder	0.62
959632	AF2-254 E	0.7241	Adder	0.85
961621	AG1-001 C	1.1203	Adder	2.49
961622	AG1-001 E	1.8279	Adder	4.06
962311	AG1-080 C O1	3.5863	50/50	3.5863
962312	AG1-080 E O1	3.0836	50/50	3.0836
962611	AG1-110	2.0025	Adder	4.45
962621	AG1-111	1.0633	Adder	2.36
962801	AG1-129 C O1	3.4238	Adder	7.6
962802	AG1-129 E O1	2.2825	Adder	5.07
962811	AG1-130 C	0.2201	Adder	0.49
962812	AG1-130 E	0.3301	Adder	0.73
963411	AG1-190 C	0.6052	Adder	1.34
963412	AG1-190 E	0.8473	Adder	1.88
964001	AG1-254 C	2.6904	Adder	5.97
964002	AG1-254 E	1.3505	Adder	3.0
964011	AG1-255 C	4.1810	Adder	9.28
964012	AG1-255 E	2.0905	Adder	4.64
964081	AG1-263 C	2.7345	50/50	2.7345
964082	AG1-263 E	4.1017	50/50	4.1017
964371	AG1-299 C	0.1589	Adder	0.35
964372	AG1-299 E	0.1059	Adder	0.24
964381	AG1-300 C	0.2648	Adder	0.59
964382	AG1-300 E	0.1766	Adder	0.39
966061	AG1-475 C	2.5727	50/50	2.5727
966062	AG1-475 E	1.7152	50/50	1.7152
966071	AG1-476	9.4620	50/50	9.4620
966301	AG1-499 C	0.8449	Adder	1.88
966302	AG1-499 E	0.5633	Adder	1.25
G-007A	G-007A	13.9918	Confirmed LTF	13.9918

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
VFT	VFT	27.4254	Confirmed LTF	27.4254
CALDERWOOD	CALDERWOOD	0.5984	Confirmed LTF	0.5984
PRAIRIE	PRAIRIE	3.0996	Confirmed LTF	3.0996
CHEOAH	CHEOAH	0.6026	Confirmed LTF	0.6026
CBM-N	CBM-N	2.5260	Confirmed LTF	2.5260
COTTONWOOD	COTTONWOOD	2.5242	Confirmed LTF	2.5242
HAMLET	HAMLET	0.6988	Confirmed LTF	0.6988
GIBSON	GIBSON	0.6547	Confirmed LTF	0.6547
BLUEG	BLUEG	2.0815	Confirmed LTF	2.0815
TRIMBLE	TRIMBLE	0.6672	Confirmed LTF	0.6672
CATAWBA	CATAWBA	0.4228	Confirmed LTF	0.4228

11.6.7 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
165251827	227900	CARDIFF	AE	219100	NEWFRDM	PSE&G	1	JC-P7-1-JCC-230-13	tower	692.0	278.57	279.07	DC	7.57

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
206360	28O CRK C1	2.0809	50/50	2.0809
206361	28O CRK C2	1.5272	50/50	1.5272
227801	ONTC&DCT	12.9792	50/50	12.9792
227842	MARINGEN	2.6226	50/50	2.6226
227927	V4-067C	0.0573	50/50	0.0573
227928	V4-067E	0.5926	50/50	0.5926
228014	PVILLEG	0.6399	50/50	0.6399
228102	BLE#2 ST (Deactivation : 30/04/2019)	35.9678	Adder	42.32
228251	CARLLS#4	0.4613	Adder	0.54
228261	V4-054E	0.5956	Adder	0.7
228343	QUINTN#1 (Deactivation : 26/04/2020)	0.1174	Adder	0.14
228712	V2-041E	0.3583	Adder	0.42
228721	V2-035E	0.0251	Adder	0.03
228729	W2-030 C	0.1942	50/50	0.1942
228731	V3-036	0.2918	50/50	0.2918
228754	AB1-001 C	0.0482	50/50	0.0482
902092	W1-130E	0.6998	Adder	0.82
902432	W2-030 E	2.0229	50/50	2.0229
924531	AB2-102 C	33.1972	Adder	39.06
924532	AB2-102 E	0.7377	Adder	0.87
924701	AB2-122 C (Withdrawn : 05/05/2020)	0.0409	50/50	0.0409
924702	AB2-122 E (Withdrawn : 05/05/2020)	0.4444	50/50	0.4444
930002	AB1-001 E	0.5020	50/50	0.5020
933962	AD1-019 E	2.5555	50/50	2.5555
938421	AE1-061 C	0.3376	Adder	0.4
938422	AE1-061 E	0.3376	Adder	0.4
938781	AE1-104 C O1	33.3372	Adder	39.22
938782	AE1-104 E O1	100.3294	50/50	100.3294
939301	AE1-161 C	1.5791	Adder	1.86
939302	AE1-161 E	2.3687	Adder	2.79
939501	AE1-179 C O1	3.9276	Adder	4.62
939502	AE1-179 E O1	2.7718	Adder	3.26
939931	AE1-229 C O1	6.1617	Adder	7.25
939932	AE1-229 E O1	4.1747	Adder	4.91
940001	AE1-240 C O1	3.2757	Adder	3.85
940002	AE1-240 E O1	2.3382	Adder	2.75
940161	AE2-000 C O1	88.9501	50/50	88.9501
940162	AE2-000 E O1	227.5927	50/50	227.5927

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
940361	AE2-020 C	44.5622	50/50	44.5622
940362	AE2-020 E	208.6434	50/50	208.6434
940371	AE2-021 C	44.5622	50/50	44.5622
940372	AE2-021 E	208.6434	50/50	208.6434
940381	AE2-022 C	25.9946	50/50	25.9946
940382	AE2-022 E	121.7086	50/50	121.7086
942101	AE2-222 C	28.3433	50/50	28.3433
942102	AE2-222 E	72.5227	50/50	72.5227
942381	AE2-251 C	141.1722	50/50	141.1722
942382	AE2-251 E	361.2199	50/50	361.2199
943732	AF1-041 E	0.8216	50/50	0.8216
944331	AF1-101 C O1	87.2044	50/50	87.2044
944332	AF1-101 E O1	223.1316	50/50	223.1316
945431	AF1-208 C O1	2.2434	Adder	2.64
945432	AF1-208 E O1	1.4956	Adder	1.76
945731	AF1-238 C O1	5.9160	Adder	6.96
945732	AF1-238 E O1	8.8740	Adder	10.44
945741	AF1-239 C	1.3920	Adder	1.64
945742	AF1-239 E	2.0880	Adder	2.46
945971	AF1-262	0.0665	Adder	0.08
957221	AF2-016 C	40.2432	50/50	40.2432
957222	AF2-016 E	60.3648	50/50	60.3648
957251	AF2-019 C	1.6274	Adder	1.91
957252	AF2-019 E	2.4412	Adder	2.87
957261	AF2-020 C	0.7672	Adder	0.9
957262	AF2-020 E	1.1509	Adder	1.35
957271	AF2-021 C	3.1306	50/50	3.1306
957272	AF2-021 E	4.6958	50/50	4.6958
957311	AF2-025 C	2.6901	50/50	2.6901
957312	AF2-025 E	4.0351	50/50	4.0351
958811	AF2-172 C (Withdrawn : 01/14/2021)	0.3986	Adder	0.47
958812	AF2-172 E (Withdrawn : 01/14/2021)	0.6504	Adder	0.77
961621	AG1-001 C	0.6698	Adder	1.49
961622	AG1-001 E	1.0929	Adder	2.43
962801	AG1-129 C O1	2.0470	Adder	4.54
962802	AG1-129 E O1	1.3647	Adder	3.03
963391	AG1-188 C	0.7016	Adder	1.56
963392	AG1-188 E	0.9680	Adder	2.15
963401	AG1-189 C	0.5959	Adder	1.32
963402	AG1-189 E	0.8062	Adder	1.79
964011	AG1-255 C	1.3457	Adder	2.99
964012	AG1-255 E	0.6729	Adder	1.49
964371	AG1-299 C	0.1445	Adder	0.32
964372	AG1-299 E	0.0963	Adder	0.21
964381	AG1-300 C	0.2408	Adder	0.53
964382	AG1-300 E	0.1605	Adder	0.36
CALDERWOOD	CALDERWOOD	0.0363	Confirmed LTF	0.0363
NY	NY	0.1095	Confirmed LTF	0.1095
PRAIRIE	PRAIRIE	0.1911	Confirmed LTF	0.1911
O-066	O-066	1.7162	Confirmed LTF	1.7162
SIGE	SIGE	0.0190	Confirmed LTF	0.0190

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
CHEOAH	CHEOAH	0.0360	Confirmed LTF	0.0360
COTTONWOOD	COTTONWOOD	0.1533	Confirmed LTF	0.1533
G-007	G-007	0.2415	Confirmed LTF	0.2415
HAMLET	HAMLET	0.0404	Confirmed LTF	0.0404
GIBSON	GIBSON	0.0409	Confirmed LTF	0.0409
BLUEG	BLUEG	0.1302	Confirmed LTF	0.1302
TRIMBLE	TRIMBLE	0.0417	Confirmed LTF	0.0417
CATAWBA	CATAWBA	0.0248	Confirmed LTF	0.0248

11.6.8 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
166687252	228130	TUCKAHOE	AE	227946	MILL#2	AE	1	AE_P7-1 AE7TOWER	tower	146.0	107.96	109.08	DC	3.65

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
227842	MARINGEN	-0.4664	Adder	-0.55
228102	BLE#2 ST (Deactivation : 30/04/2019)	21.3929	50/50	21.3929
228251	CARLLS#4	0.2094	Adder	0.25
228261	V4-054E	0.2707	Adder	0.32
228712	V2-041E	0.1870	Adder	0.22
228732	V1-021 C	0.0526	50/50	0.0526
924531	AB2-102 C	16.6713	Adder	19.61
924532	AB2-102 E	0.3705	Adder	0.44
938781	AE1-104 C O1	19.8283	50/50	19.8283
938782	AE1-104 E O1	50.7228	50/50	50.7228
939501	AE1-179 C O1	1.9326	Adder	2.27
939502	AE1-179 E O1	1.3638	Adder	1.6
940001	AE1-240 C O1	1.6084	Adder	1.89
940002	AE1-240 E O1	1.1481	Adder	1.35
945731	AF1-238 C O1	2.9829	Adder	3.51
945732	AF1-238 E O1	4.4744	Adder	5.26
945741	AF1-239 C	0.7019	Adder	0.83
945742	AF1-239 E	1.0528	Adder	1.24
957223	AF2-016 BAT	16.5840	Merchant Transmission	16.5840
957251	AF2-019 C	1.2046	50/50	1.2046
957252	AF2-019 E	1.8070	50/50	1.8070
957261	AF2-020 C	0.3479	Adder	0.41
957262	AF2-020 E	0.5218	Adder	0.61
957313	AF2-025 BAT	1.4246	Merchant Transmission	1.4246
958811	AF2-172 C (Withdrawn : 01/14/2021)	0.1899	Adder	0.22
958812	AF2-172 E (Withdrawn : 01/14/2021)	0.3099	Adder	0.36
961621	AG1-001 C	0.3227	Adder	0.72
961622	AG1-001 E	0.5265	Adder	1.17
962801	AG1-129 C O1	0.9862	Adder	2.19
962802	AG1-129 E O1	0.6575	Adder	1.46
964371	AG1-299 C	0.0761	Adder	0.17
964372	AG1-299 E	0.0507	Adder	0.11
964381	AG1-300 C	0.1268	Adder	0.28
964382	AG1-300 E	0.0845	Adder	0.19
CALDERWOOD	CALDERWOOD	0.0084	Confirmed LTF	0.0084
NY	NY	0.0453	Confirmed LTF	0.0453
PRAIRIE	PRAIRIE	0.0465	Confirmed LTF	0.0465
O-066	O-066	0.7941	Confirmed LTF	0.7941
SIGE	SIGE	0.0105	Confirmed LTF	0.0105

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
CHEOAH	CHEOAH	0.0085	Confirmed LTF	0.0085
COTTONWOOD	COTTONWOOD	0.0357	Confirmed LTF	0.0357
G-007	G-007	0.2583	Confirmed LTF	0.2583
HAMLET	HAMLET	0.0092	Confirmed LTF	0.0092
GIBSON	GIBSON	0.0098	Confirmed LTF	0.0098
BLUEG	BLUEG	0.0312	Confirmed LTF	0.0312
TRIMBLE	TRIMBLE	0.0100	Confirmed LTF	0.0100
CATAWBA	CATAWBA	0.0056	Confirmed LTF	0.0056

11.6.9 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
166687225	228217	DENNIS	AE	228130	TUCKAHOE	AE	1	AE_P7-1 AE7TOWER	tower	146.0	113.09	114.22	DC	3.65

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
227842	MARINGEN	-0.4664	Adder	-0.55
228102	BLE#2 ST (Deactivation : 30/04/2019)	21.3929	50/50	21.3929
228251	CARLLS#4	0.2094	Adder	0.25
228261	V4-054E	0.2707	Adder	0.32
228712	V2-041E	0.1870	Adder	0.22
228732	V1-021 C	0.0526	50/50	0.0526
924531	AB2-102 C	16.6713	Adder	19.61
924532	AB2-102 E	0.3705	Adder	0.44
938781	AE1-104 C O1	19.8283	50/50	19.8283
938782	AE1-104 E O1	50.7228	50/50	50.7228
939501	AE1-179 C O1	1.9326	Adder	2.27
939502	AE1-179 E O1	1.3638	Adder	1.6
940001	AE1-240 C O1	1.6084	Adder	1.89
940002	AE1-240 E O1	1.1481	Adder	1.35
945731	AF1-238 C O1	2.9829	Adder	3.51
945732	AF1-238 E O1	4.4744	Adder	5.26
945741	AF1-239 C	0.7019	Adder	0.83
945742	AF1-239 E	1.0528	Adder	1.24
957223	AF2-016 BAT	16.5840	Merchant Transmission	16.5840
957251	AF2-019 C	1.2046	50/50	1.2046
957252	AF2-019 E	1.8070	50/50	1.8070
957261	AF2-020 C	0.3479	Adder	0.41
957262	AF2-020 E	0.5218	Adder	0.61
957313	AF2-025 BAT	1.4246	Merchant Transmission	1.4246
958811	AF2-172 C (Withdrawn : 01/14/2021)	0.1899	Adder	0.22
958812	AF2-172 E (Withdrawn : 01/14/2021)	0.3099	Adder	0.36
961621	AG1-001 C	0.3227	Adder	0.72
961622	AG1-001 E	0.5265	Adder	1.17
962801	AG1-129 C O1	0.9862	Adder	2.19
962802	AG1-129 E O1	0.6575	Adder	1.46
964371	AG1-299 C	0.0761	Adder	0.17
964372	AG1-299 E	0.0507	Adder	0.11
964381	AG1-300 C	0.1268	Adder	0.28
964382	AG1-300 E	0.0845	Adder	0.19
CALDERWOOD	CALDERWOOD	0.0084	Confirmed LTF	0.0084
NY	NY	0.0453	Confirmed LTF	0.0453
PRAIRIE	PRAIRIE	0.0465	Confirmed LTF	0.0465
O-066	O-066	0.7941	Confirmed LTF	0.7941
SIGE	SIGE	0.0105	Confirmed LTF	0.0105

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
CHEOAH	CHEOAH	0.0085	Confirmed LTF	0.0085
COTTONWOOD	COTTONWOOD	0.0357	Confirmed LTF	0.0357
G-007	G-007	0.2583	Confirmed LTF	0.2583
HAMLET	HAMLET	0.0092	Confirmed LTF	0.0092
GIBSON	GIBSON	0.0098	Confirmed LTF	0.0098
BLUEG	BLUEG	0.0312	Confirmed LTF	0.0312
TRIMBLE	TRIMBLE	0.0100	Confirmed LTF	0.0100
CATAWBA	CATAWBA	0.0056	Confirmed LTF	0.0056

11.6.10 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
165251916	228313	BRIDGPRT	AE	228401	MCKLTON	AE	1	JC-P7-1-JCC-230-13	tower	804.0	122.74	123.28	DC	10.28

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
219137	THOSOLAR C (Deactivation : 01/06/2015)	-0.0338	Adder	-0.04
227801	ONTC&DCT	3.9041	Adder	4.59
227842	MARINGEN	0.7884	Adder	0.93
227928	V4-067E	0.1604	Adder	0.19
228102	BLE#2 ST (Deactivation : 30/04/2019)	17.4847	Adder	20.57
228200	CARL#1CT	0.9069	50/50	0.9069
228201	CARL#2CT	0.9599	50/50	0.9599
228251	CARLLS#4	0.9103	50/50	0.9103
228260	V4-054C	0.1132	50/50	0.1132
228261	V4-054E	1.1705	50/50	1.1705
228304	LOGAN	24.5820	50/50	24.5820
228306	PCLP STM	6.0471	50/50	6.0471
228307	PCLP GT	6.0471	50/50	6.0471
228309	CCLP NUG	17.9285	50/50	17.9285
228343	QUINTN#1 (Deactivation : 26/04/2020)	0.4598	50/50	0.4598
228351	V2-046C	0.2768	50/50	0.2768
228357	V2-046E	2.7218	50/50	2.7218
228712	V2-041E	0.3407	Adder	0.4
228720	V2-035C	0.0241	50/50	0.0241
228721	V2-035E	0.0684	50/50	0.0684
902092	W1-130E	0.5445	Adder	0.64
902432	W2-030 E	0.6188	Adder	0.73
924531	AB2-102 C	32.8797	Adder	38.68
924532	AB2-102 E	0.7307	Adder	0.86
924702	AB2-122 E (Withdrawn : 05/05/2020)	0.1203	Adder	0.14
930002	AB1-001 E	0.1407	Adder	0.17
933962	AD1-019 E	0.7687	Adder	0.9
938421	AE1-061 C	0.2627	Adder	0.31
938422	AE1-061 E	0.2627	Adder	0.31
938781	AE1-104 C O1	16.2059	Adder	19.07
938782	AE1-104 E O1	41.4564	Adder	48.77
938871	AE1-115 C	3.1707	50/50	3.1707
939301	AE1-161 C	1.8765	Adder	2.21
939302	AE1-161 E	2.8147	Adder	3.31
939501	AE1-179 C O1	4.8710	Adder	5.73
939502	AE1-179 E O1	3.4375	Adder	4.04
939931	AE1-229 C O1	25.4513	50/50	25.4513

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
939932	AE1-229 E O1	17.2440	50/50	17.2440
940001	AE1-240 C O1	4.1148	Adder	4.84
940002	AE1-240 E O1	2.9371	Adder	3.46
940161	AE2-000 C O1	20.8724	Adder	24.56
940162	AE2-000 E O1	53.4052	Adder	62.83
940361	AE2-020 C	10.2181	Adder	12.02
940362	AE2-020 E	47.8421	Adder	56.28
940371	AE2-021 C	10.2181	Adder	12.02
940372	AE2-021 E	47.8421	Adder	56.28
940381	AE2-022 C	5.9606	Adder	7.01
940382	AE2-022 E	27.9079	Adder	32.83
942101	AE2-222 C	8.5219	Adder	10.03
942102	AE2-222 E	21.8052	Adder	25.65
942381	AE2-251 C	32.3709	Adder	38.08
942382	AE2-251 E	82.8279	Adder	97.44
943732	AF1-041 E	0.2406	Adder	0.28
944331	AF1-101 C O1	20.4628	Adder	24.07
944332	AF1-101 E O1	52.3584	Adder	61.6
945431	AF1-208 C O1	6.0305	50/50	6.0305
945432	AF1-208 E O1	4.0203	50/50	4.0203
945731	AF1-238 C O1	6.4539	Adder	7.59
945732	AF1-238 E O1	9.6809	Adder	11.39
945741	AF1-239 C	1.5186	Adder	1.79
945742	AF1-239 E	2.2779	Adder	2.68
945971	AF1-262	0.1811	50/50	0.1811
957221	AF2-016 C	12.2206	Adder	14.38
957222	AF2-016 E	18.3309	Adder	21.57
957251	AF2-019 C	1.0154	Adder	1.19
957252	AF2-019 E	1.5231	Adder	1.79
957261	AF2-020 C	1.5193	50/50	1.5193
957262	AF2-020 E	2.2789	50/50	2.2789
957271	AF2-021 C	0.7455	Adder	0.88
957272	AF2-021 E	1.1182	Adder	1.32
957291	AF2-023 C	5.4082	50/50	5.4082
957292	AF2-023 E	8.1123	50/50	8.1123
957311	AF2-025 C	0.8093	Adder	0.95
957312	AF2-025 E	1.2139	Adder	1.43
958811	AF2-172 C (Withdrawn : 01/14/2021)	0.6653	50/50	0.6653
958812	AF2-172 E (Withdrawn : 01/14/2021)	1.0856	50/50	1.0856
961621	AG1-001 C	0.9095	Adder	2.02
961622	AG1-001 E	1.4840	Adder	3.29
962621	AG1-111	3.1707	50/50	3.1707
962801	AG1-129 C O1	2.7796	Adder	6.17
962802	AG1-129 E O1	1.8531	Adder	4.11
963401	AG1-189 C	0.1631	Adder	0.36
963402	AG1-189 E	0.2207	Adder	0.49
964001	AG1-254 C	6.4609	50/50	6.4609
964002	AG1-254 E	3.2432	50/50	3.2432
964011	AG1-255 C	11.5644	50/50	11.5644
964012	AG1-255 E	5.7822	50/50	5.7822
964371	AG1-299 C	0.1323	Adder	0.29

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
964372	AG1-299 E	0.0882	Adder	0.2
964381	AG1-300 C	0.2205	Adder	0.49
964382	AG1-300 E	0.1470	Adder	0.33
966301	AG1-499 C	0.5071	Adder	1.13
966302	AG1-499 E	0.3381	Adder	0.75
CALDERWOOD	CALDERWOOD	0.0910	Confirmed LTF	0.0910
NY	NY	0.1880	Confirmed LTF	0.1880
PRAIRIE	PRAIRIE	0.4804	Confirmed LTF	0.4804
O-066	O-066	2.6314	Confirmed LTF	2.6314
SIGE	SIGE	0.0214	Confirmed LTF	0.0214
CHEOAH	CHEOAH	0.0916	Confirmed LTF	0.0916
COTTONWOOD	COTTONWOOD	0.3885	Confirmed LTF	0.3885
G-007	G-007	0.3255	Confirmed LTF	0.3255
HAMLET	HAMLET	0.1028	Confirmed LTF	0.1028
GIBSON	GIBSON	0.1021	Confirmed LTF	0.1021
BLUEG	BLUEG	0.3246	Confirmed LTF	0.3246
TRIMBLE	TRIMBLE	0.1041	Confirmed LTF	0.1041
CATAWBA	CATAWBA	0.0630	Confirmed LTF	0.0630

11.6.11 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
166687203	228714	CNTRL N	AE	228504	SHLDLY T	AE	1	AE_P7-1 AE7TOWER	tower	143.0	114.28	122.56	DC	11.83

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
228102	BLE#2 ST (Deactivation : 30/04/2019)	13.9039	Adder	16.36
228200	CARL#1CT	0.7389	50/50	0.7389
228201	CARL#2CT	0.7821	50/50	0.7821
228206	SHRMN CT	1.8441	50/50	1.8441
228251	CARLLS#4	0.7452	50/50	0.7452
228260	V4-054C	0.0952	50/50	0.0952
228261	V4-054E	0.9842	50/50	0.9842
228343	QUINTN#1 (Deactivation : 26/04/2020)	0.1005	Adder	0.12
228702	WEST CT	1.1161	50/50	1.1161
228712	V2-041E	0.3240	Adder	0.38
228717	S121	2.3380	50/50	2.3380
228727	W2-039G	1.7281	50/50	1.7281
924531	AB2-102 C	18.9376	Adder	22.28
924532	AB2-102 E	0.4208	Adder	0.5
938781	AE1-104 C O1	12.8870	Adder	15.16
938782	AE1-104 E O1	32.9662	Adder	38.78
939501	AE1-179 C O1	7.4900	50/50	7.4900
939502	AE1-179 E O1	5.2858	50/50	5.2858
940001	AE1-240 C O1	5.8249	50/50	5.8249
940002	AE1-240 E O1	4.1578	50/50	4.1578
945431	AF1-208 C O1	2.6514	Adder	3.12
945432	AF1-208 E O1	1.7676	Adder	2.08
945731	AF1-238 C O1	13.2126	50/50	13.2126
945732	AF1-238 E O1	19.8189	50/50	19.8189
945741	AF1-239 C	3.1088	50/50	3.1088
945742	AF1-239 E	4.6633	50/50	4.6633
957251	AF2-019 C	0.7304	Adder	0.86
957252	AF2-019 E	1.0956	Adder	1.29
957261	AF2-020 C	1.0522	Adder	1.24
957262	AF2-020 E	1.8568	50/50	1.8568
958811	AF2-172 C (Withdrawn : 01/14/2021)	0.7180	50/50	0.7180
958812	AF2-172 E (Withdrawn : 01/14/2021)	1.1715	50/50	1.1715
961621	AG1-001 C	2.3221	50/50	2.3221
961622	AG1-001 E	3.7886	50/50	3.7886
962801	AG1-129 C O1	7.0963	50/50	7.0963
962802	AG1-129 E O1	4.7309	50/50	4.7309
964011	AG1-255 C	0.9255	Adder	2.05
964012	AG1-255 E	0.4628	Adder	1.03

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
964371	AG1-299 C	0.1086	Adder	0.24
964372	AG1-299 E	0.0724	Adder	0.16
964381	AG1-300 C	0.1811	Adder	0.4
964382	AG1-300 E	0.1207	Adder	0.27
CALDERWOOD	CALDERWOOD	0.0244	Confirmed LTF	0.0244
NY	NY	0.0393	Confirmed LTF	0.0393
PRAIRIE	PRAIRIE	0.1266	Confirmed LTF	0.1266
O-066	O-066	0.5384	Confirmed LTF	0.5384
SIGE	SIGE	0.0033	Confirmed LTF	0.0033
CHEOAH	CHEOAH	0.0245	Confirmed LTF	0.0245
COTTONWOOD	COTTONWOOD	0.1029	Confirmed LTF	0.1029
G-007	G-007	0.0588	Confirmed LTF	0.0588
HAMLET	HAMLET	0.0277	Confirmed LTF	0.0277
GIBSON	GIBSON	0.0268	Confirmed LTF	0.0268
BLUEG	BLUEG	0.0851	Confirmed LTF	0.0851
TRIMBLE	TRIMBLE	0.0273	Confirmed LTF	0.0273
CATAWBA	CATAWBA	0.0172	Confirmed LTF	0.0172

11.6.12 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
166687182	228716	S121TAP	AE	228714	CNTRL N	AE	1	AE_P7-1 AE7TOWER	tower	107.0	142.24	143.85	DC	3.81

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
228102	BLE#2 ST (Deactivation : 30/04/2019)	7.3329	Adder	8.63
228251	CARLLS#4	0.3002	Adder	0.35
228261	V4-054E	0.3367	Adder	0.4
228702	WEST CT	1.8523	50/50	1.8523
228712	V2-041E	0.1710	Adder	0.2
228717	S121	4.4081	50/50	4.4081
924531	AB2-102 C	9.9794	Adder	11.74
924532	AB2-102 E	0.2218	Adder	0.26
938781	AE1-104 C O1	6.7966	Adder	8.0
938782	AE1-104 E O1	17.3864	Adder	20.45
939501	AE1-179 C O1	1.8835	Adder	2.22
939502	AE1-179 E O1	1.3292	Adder	1.56
940001	AE1-240 C O1	3.0508	50/50	3.0508
940002	AE1-240 E O1	2.1776	50/50	2.1776
945431	AF1-208 C O1	1.1996	Adder	1.41
945432	AF1-208 E O1	0.7997	Adder	0.94
945731	AF1-238 C O1	14.8252	50/50	14.8252
945732	AF1-238 E O1	22.2378	50/50	22.2378
945741	AF1-239 C	3.4883	50/50	3.4883
945742	AF1-239 E	5.2324	50/50	5.2324
957251	AF2-019 C	0.3852	Adder	0.45
957252	AF2-019 E	0.5778	Adder	0.68
957261	AF2-020 C	0.4979	Adder	0.59
957262	AF2-020 E	0.7468	Adder	0.88
958811	AF2-172 C (Withdrawn : 01/14/2021)	0.2053	Adder	0.24
958812	AF2-172 E (Withdrawn : 01/14/2021)	0.3350	Adder	0.39
961621	AG1-001 C	0.3369	Adder	0.75
961622	AG1-001 E	0.5497	Adder	1.22
962801	AG1-129 C O1	1.0297	Adder	2.29
962802	AG1-129 E O1	0.6865	Adder	1.52
964371	AG1-299 C	0.0573	Adder	0.13
964372	AG1-299 E	0.0382	Adder	0.08
964381	AG1-300 C	0.0956	Adder	0.21
964382	AG1-300 E	0.0637	Adder	0.14
CALDERWOOD	CALDERWOOD	0.0199	Confirmed LTF	0.0199
NY	NY	0.0288	Confirmed LTF	0.0288
PRAIRIE	PRAIRIE	0.1033	Confirmed LTF	0.1033
O-066	O-066	0.3769	Confirmed LTF	0.3769
SIGE	SIGE	0.0017	Confirmed LTF	0.0017

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
CHEOAH	CHEOAH	0.0200	Confirmed LTF	0.0200
COTTONWOOD	COTTONWOOD	0.0840	Confirmed LTF	0.0840
G-007	G-007	0.0451	Confirmed LTF	0.0451
HAMLET	HAMLET	0.0231	Confirmed LTF	0.0231
GIBSON	GIBSON	0.0218	Confirmed LTF	0.0218
BLUEG	BLUEG	0.0694	Confirmed LTF	0.0694
TRIMBLE	TRIMBLE	0.0223	Confirmed LTF	0.0223
CATAWBA	CATAWBA	0.0140	Confirmed LTF	0.0140

11.7 Queue Dependencies

The Queue Projects below are listed in one or more indices for the overloads identified in your report. These projects contribute to the loading of the overloaded facilities identified in your report. The percent overload of a facility and cost allocation you may have towards a particular reinforcement could vary depending on the action of these earlier projects. The status of each project at the time of the analysis is presented in the table. This list may change as earlier projects withdraw or modify their requests.

Queue Number	Project Name	Status
AB1-001	Absecon 12 kV	In Service
AB1-116	Egg Harbor Road 12kV	In Service
AB1-119	Tansboro Road 12kV	In Service
AB2-049	Gloucester Township 12kV	Engineering and Procurement
AB2-102	Cumberland 230kV	Active
AB2-122	Egg Harbor 12kV	Withdrawn
AC1-010	Gloucester 26kV	Engineering and Procurement
AC1-017	Levittown 13 kV	In Service
AC1-030	Cinnaminson 13kV	In Service
AC2-050	Tabernacle 12kV	Active
AD1-019	Ontario 23 kV	Active
AD1-097	Linwood 230 kV II	Engineering and Procurement
AD2-065	Berlin 12kV	Engineering and Procurement
AD2-135	Williamstown 12kV	Active
AE1-061	Minotola 12 kV	Active
AE1-062	Silver Lake 69 kV	Active
AE1-104	BL England 138 kV	Active
AE1-115	Churchtown 69 kV	Active
AE1-161	Landis 138 kV	Active
AE1-179	South Millville-Newport 69 kV	Active
AE1-218	Glassboro 12 kV	Engineering and Procurement
AE1-229	Deepwater-Upper Pittsgrove 138 kV	Active
AE1-240	Carlls Corner-Sherman Avenue 69 kV	Active
AE2-000	N/A	N/A
AE2-020	Cardiff 230 kV I	Active
AE2-021	Cardiff 230 kV II	Active
AE2-022	Cardiff 230 kV III	Active
AE2-222	Higbee 69 kV	Active
AE2-251	Cardiff 230 kV	Active
AE2-334	Clayton-Williamstown 69 kV	Active
AF1-041	Absecon 12.47 kV	In Service
AF1-101	Oyster Creek 230 kV III	Active
AF1-160	Silver Lake 69 kV	Active
AF1-208	Quinton-Roadstown 69 kV	Active
AF1-238	Sherman Ave. 69 kV	Active
AF1-239	Sherman Ave-Vineland 69 kV	Active
AF1-261	Burlington 26 kV	Engineering and Procurement
AF1-262	Upper Pittsgrove 12 kV	Active
AF1-264	Runnemede 13 kV	Engineering and Procurement

Queue Number	Project Name	Status
AF2-016	Lewis 138 kV	Active
AF2-019	Middle 69 kV	Active
AF2-020	Carll's Corner 69 kV	Active
AF2-021	Cedar 69 kV	Active
AF2-023	Churchtown 69 kV	Active
AF2-024	Mickleton 69 kV	Active
AF2-025	Missouri Ave 69 kV	Active
AF2-038	Printz 230 kV	Active
AF2-172	Newport 12 kV	Withdrawn
AF2-174	Tabernacle 12 kV	Active
AF2-254	Cookstown-New Lisbon 34.5 kV	Active
AG1-001	US Silica-Unimin 69 kV	Active
AG1-080	Delair-Locust Street 69 kV	Active
AG1-110	Silver Lake 69 kV	Active
AG1-111	Churchtown 69 kV	Active
AG1-129	US Silica 69 kV	Active
AG1-130	Burlington 26 kV	Active
AG1-188	Manitou-Oyster Creek 34.5 kV	Active
AG1-189	Oyster Creek-Bamber Lake 34.5	Active
AG1-190	Burlington 26 kV	Active
AG1-254	Salem-Woodstown 69 kV	Active
AG1-255	Churchtown-Orchard 230 kV	Active
AG1-263	Gloucester 230 kV	Active
AG1-299	U.S. Silica 12.47 kV	Active
AG1-300	U.S Silica II 12.47 kV	Active
AG1-475	Mickelton 230 kV	Active
AG1-476	Mickelton 230 kV II	Active
AG1-499	Henry Harris 69 kV	Active
V1-021	Cape May County 12kV	In Service
V2-035	Pittsgrove	In Service
V2-041	Clayville 12kV	In Service
V2-046	Pilesgrove Township 12kV	In Service
V3-036	Ontario 23kV	In Service
V4-054	Fairfield Township 12kV	In Service
V4-067	Cates Road Egg Harbor Township 12kV	In Service
W1-119	Pemberton Township 1 34.5 kV	In Service
W1-120	Pemberton Township 2 34.5 kV	In Service
W1-129	Cookstown 34.5kV	In Service
W1-130	Vine Road 12kV	In Service
W2-019	Wrightstown 34.5kV	In Service
W2-030	Egg Harbor Township	In Service
W2-039	Clayville 69kV	In Service
W2-056	Lumberton 13kV	In Service
W2-082	Fort Dix-McGuire 34.5kV	In Service
W4-025	Cookstown-Fort Dix 34.5kV	In Service
X4-015	Cookstown-Fort Dix 34kV	In Service
Z2-083	Mickleton 230kV	In Service
Z2-102	Argonne-New Lisbon 34.5kV	In Service

11.8 Contingency Descriptions - Primary POI

Contingency Name	Contingency Definition
PS_P1-2_U-2299_LT	CONTINGENCY 'PS_P1-2_U-2299_LT' DISCONNECT BUS 219754 /* CUTHBERT BS 2 CLOSE LINE FROM BUS 219176 TO BUS 219179 CKT Z /* CUTHBERT T30/40 MOVE 8 MW LOAD FROM BUS 219179 TO BUS 219724 MOVE 8 MW LOAD FROM BUS 219179 TO BUS 219640 MOVE 8 MW LOAD FROM BUS 219179 TO BUS 219640 END
AE_P7-1 AE7TOWER	CONTINGENCY 'AE_P7-1 AE7TOWER' DISCONNECT BUS 227905 /* #1 BLE TO SCULL TO MILL 138 KV DISCONNECT BUS 227929 /* #1 SCULL 12 KV DISCONNECT BUS 227906 /* #2 BLE TO SCULL TO MILL 138 KV DISCONNECT BUS 227930 /* #2 SCULL 12 KV END
AE_P1-2 ORCH-CUMB	CONTINGENCY 'AE_P1-2 ORCH-CUMB' OPEN LINE FROM BUS 228002 TO BUS 228207 CIRCUIT 1 / END
AE_P7-1 AE18TOWER	CONTINGENCY 'AE_P7-1 AE18TOWER' DISCONNECT BUS 227903 /* #1 MILL TO LEWIS 138 KV DISCONNECT BUS 227904 /* #2 MILL TO LEWIS 138 KV END
JC-P1-2-JCC-500-003	CONTINGENCY 'JC-P1-2-JCC-500-003' /* NEWFRDM - WINDSOR 500.00 LINE DISCONNECT BRANCH FROM BUS 200012 TO BUS 200028 CKT 1 /* NEWFRDM - WINDSOR 500.00 LINE END
PS_P1-2_C-2308	CONTINGENCY 'PS_P1-2_C-2308' DISCONNECT BUS 219753 /* CUTHBERT BS 3 CLOSE LINE FROM BUS 219177 TO BUS 219178 CKT Z /* CUTHBERT T10/20 END
AE_P1-2 CORSON-UNION	CONTINGENCY 'AE_P1-2 CORSON-UNION' OPEN LINE FROM BUS 228108 TO BUS 228210 CIRCUIT 1 / END
AE_P1-2 BUT-LINC	CONTINGENCY 'AE_P1-2 BUT-LINC' OPEN BRANCH FROM BUS 228703 TO BUS 228725 CKT 1 END

Contingency Name	Contingency Definition
AE_P7-1 AE6TOWER	CONTINGENCY 'AE_P7-1 AE6TOWER' DISCONNECT BRANCH FROM BUS 228197 TO BUS 228106 CKT 1 /* MERION TO CORSON 138 KV DISCONNECT BUS 228111 /* BLE TO CORSON 138 KV END
PECO_P2-2_CHI230B1/* \$ DELCO \$ PECO_P2-2_CHI230B1 \$ B' PECO_P2-2_CHI230B1 \$ B	CONTINGENCY 'PECO_P2-2_CHI230B1/* \$ DELCO \$ PECO_P2-2_CHI230B1 \$ B' DISCONNECT BUS 213489 /* CHICHST1 230.00 \$ DELCO \$ PECO_P2- 2_CHI230B1 \$ B END
AE_P1-2 ORCHARD XF	CONTINGENCY 'AE_P1-2 ORCHARD XF' OPEN LINE FROM BUS 200063 TO BUS 228002 CIRCUIT 1 / END
AE_P7-1 AE3TOWER	CONTINGENCY 'AE_P7-1 AE3TOWER' DISCONNECT BRANCH FROM BUS 227900 TO BUS 227955 CKT 1 /* CARDIFF TO CEDAR 230 KV DISCONNECT BRANCH FROM BUS 227913 TO BUS 227902 CKT 1 /* CARDIFF TO LEWIS 138 KV END
AE_P1-2 CNT-V-BUT	CONTINGENCY 'AE_P1-2 CNT-V-BUT' DISCONNECT BUS 228713 / END
PS_P1-2_2310	CONTINGENCY 'PS_P1-2_2310' TRIP LINE FROM BUS 219100 TO BUS 227900 CKT 1 /* NEW FREEDOM TO CARDIFF END
AE_P1-2 WOOD-LAUR	CONTINGENCY 'AE_P1-2 WOOD-LAUR' OPEN LINE FROM BUS 228218 TO BUS 228360 CIRCUIT 1 / END
JC-P7-1-JCC-230-13	CONTINGENCY 'JC-P7-1-JCC-230-13' /* MANITOU-OYSTER CREEK 230 LINES & OYSTER GEN DISCONNECT BRANCH FROM BUS 206297 TO BUS 206302 CKT 1 DISCONNECT BRANCH FROM BUS 206297 TO BUS 206302 CKT 2 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 / END

Contingency Name	Contingency Definition
AE_P1-2 BLE-ML-LEW1	CONTINGENCY 'AE_P1-2 BLE-ML-LEW1' DISCONNECT BUS 227903 / DISCONNECT BUS 227905 / DISCONNECT BUS 227929 / END
PS_P1-2_Z-2305_LT	CONTINGENCY 'PS_P1-2_Z-2305_LT' DISCONNECT BUS 219108 /* CUTHBERT BS 1 CLOSE LINE FROM BUS 219176 TO BUS 219179 CKT Z /* CUTHBERT T30/40 MOVE 8 MW LOAD FROM BUS 219176 TO BUS 219640 MOVE 8 MW LOAD FROM BUS 219176 TO BUS 219678 MOVE 8 MW LOAD FROM BUS 219176 TO BUS 219629 MOVE 8 MW LOAD FROM BUS 219176 TO BUS 219170 END
JC-P1-2-JCC-230-044T	CONTINGENCY 'JC-P1-2-JCC-230-044T' /* OYSTER CREEK - CEDAR (S2045) 230 KV DISCONNECT BRANCH FROM BUS 206302 TO BUS 227955 CKT 1 /* 28OYSTER C 230 CEDAR 230 END
CARLL-240 TAP-SHERM-A	CONTINGENCY 'CARLL-240 TAP-SHERM-A' OPEN LINE FROM BUS 228252 TO BUS 940000 CIRCUIT 1 / END
CARLL-240 TAP-SHERM-B	CONTINGENCY 'CARLL-240 TAP-SHERM-B' OPEN LINE FROM BUS 940000 TO BUS 228226 CIRCUIT 1 / END
AE_P1-2 BLE-SC-ML1	CONTINGENCY 'AE_P1-2 BLE-SC-ML1' DISCONNECT BUS 227905 / DISCONNECT BUS 227929 / END
AE_P1-2 BLE-SC-ML2	CONTINGENCY 'AE_P1-2 BLE-SC-ML2' DISCONNECT BUS 227906 / DISCONNECT BUS 227930 / END
Base Case	
AE_P1-2 CUMB-DENN	CONTINGENCY 'AE_P1-2 CUMB-DENN' OPEN LINE FROM BUS 228207 TO BUS 228213 CIRCUIT 1 / END

Contingency Name	Contingency Definition
AE_P1-2 SS-SMLVIL	CONTINGENCY 'AE_P1-2 SS-SMLVIL' DISCONNECT BUS 228233 / DISCONNECT BUS 228215 / END

12 Short Circuit Analysis - Primary POI

None

13 Summer Peak - Load Flow Analysis - Secondary POI

The Queue Project AG1-129 was evaluated as a 60.0 MW (Capacity 36.0 MW) injection at the 69 kV US Silica #1 substation in the AEC area. Project AG1-129 was evaluated for compliance with applicable reliability planning criteria (PJM, NERC, NERC Regional Reliability Councils, and Transmission Owners). Project AG1-129 was studied with a commercial probability of 53.0 %. Potential network impacts were as follows:

13.1 Generation Deliverability

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

ID	FROM BUS#	FROM BUS	kV	FROM BUS AREA	TO BUS#	TO BUS	kV	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC DC	MW IMPACT
167840612	228228	SO MVLE	69.0	AE	228215	BALFSTNT	69.0	AE	1	AE_P1-2 BUT-LINC	single	88.0	76.51	100.27	DC	20.91
167840591	228233	WHTN AT	69.0	AE	228225	2ND ST#1	69.0	AE	1	AE_P1-2 BUT-LINC	single	83.0	81.12	106.31	DC	20.91

13.2 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	kV	FROM BUS AREA	TO BUS#	TO BUS	kV	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC DC	MW IMPACT
166687254	228218	LAUREL	69.0	AE	228360	WOODTWN2	69.0	AE	1	AE_P7-1 AE7TOWER	tower	107.0	94.74	106.84	DC	12.94
166687255	228218	LAUREL	69.0	AE	228360	WOODTWN2	69.0	AE	1	AE_P7-1 AE18TOWER	tower	107.0	92.42	104.52	DC	12.95
166687173	939500	AE1-179 TAP	69.0	AE	228228	SO MVLE	69.0	AE	1	AE_P7-1 AE9TOWER-A	tower	89.0	94.75	136.24	DC	36.92

13.3 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	kV	FROM BUS AREA	TO BUS#	TO BUS	kV	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC DC	MW IMPACT
165251682	214010	WANEETA2	230.0	PECO	213817	N PHILA	230.0	PECO	1	PECO_P2-2_CHI230B1/* \$ DELCO \$ PECO_P2-2_CHI230B1 \$ B	bus	621.0	112.77	113.22	DC	6.4
174185872	214010	WANEETA2	230.0	PECO	213817	N PHILA	230.0	PECO	1	PECO_P4_CHICH045/* \$ DELCO \$ PECO_P4_CHICH045 \$ STBK	breaker	621.0	112.77	113.22	DC	6.4
165251664	214206	RICHRE29	230.0	PECO	214274	RICHMOND29	230.0	PECO	1	PECO_P2-2_CHI230B1/* \$ DELCO \$ PECO_P2-2_CHI230B1 \$ B	bus	1344.0	118.0	118.34	DC	13.56
174185845	214206	RICHRE29	230.0	PECO	214274	RICHMOND29	230.0	PECO	1	PECO_P4_CHICH045/* \$ DELCO \$ PECO_P4_CHICH045 \$ STBK	breaker	1344.0	118.0	118.34	DC	13.56
165251642	214277	RICHMOND35	230.0	PECO	214012	WANEETA3	230.0	PECO	1	PECO_P2-2_CHI230B1/* \$ DELCO \$ PECO_P2-2_CHI230B1 \$ B	bus	1180.0	121.85	122.31	DC	12.67
165251942	214277	RICHMOND35	230.0	PECO	214012	WANEETA3	230.0	PECO	1	JC-P7-1-JCC-230-13	tower	1180.0	111.57	112.0	DC	11.82

ID	FROM BUS#	FROM BUS	kV	FROM BUS ARE A	TO BUS#	TO BUS	kV	TO BUS ARE A	CK T ID	CONT NAME	Type	Rating MVA	PRE PROJE CT LOADI NG %	POST PROJE CT LOADI NG %	AC DC	MW IMPA CT
174185815	214277	RICHMOND35	230.0	PECO	214012	WANEETA3	230.0	PECO	1	PECO_P4_CHICHO45/* \$ DELCO \$ PECO_P4_CHICHO45 \$ STBK	breaker	1180.0	121.84	122.3	DC	12.67
174185775	219110	GLOUCSTR	230.0	PSE&G	219755	CUTHBERT4	230.0	PSE&G	1	PS_P2-3_GLOU_2-4_LT	breaker	758.0	128.82	129.16	DC	8.08
174185841	219110	GLOUCSTR	230.0	PSE&G	219125	CAMDEN	230.0	PSE&G	1	PS_P2-3_CUTB_1-4_LT	breaker	771.0	118.16	118.49	DC	7.95
174185846	219125	CAMDEN	230.0	PSE&G	214206	RICHRE29	230.0	PECO	1	PECO_P4_CHICHO45/* \$ DELCO \$ PECO_P4_CHICHO45 \$ STBK	breaker	1344.0	118.0	118.34	DC	13.56
165251827	227900	CARDIFF	230.0	AE	219100	NEWFRDM	230.0	PSE&G	1	JC-P7-1-JCC-230-13	tower	692.0	278.57	279.07	DC	7.57
165251831	227900	CARDIFF	230.0	AE	219100	NEWFRDM	230.0	PSE&G	1	AE_P7-1 AE3TOWER	tower	692.0	202.23	202.69	DC	6.94
173989455	227904	MILL #2	138.0	AE	227945	LEWIS #2	138.0	AE	1	AE_P4-2 AE33	breaker	282.0	131.12	132.2	DC	6.77
173989363	227905	SCULL#1	138.0	AE	227903	MILL #1	138.0	AE	1	AE_P4-2 AE29	breaker	306.0	165.5	166.46	DC	6.5
173989364	227906	SCULL#2	138.0	AE	227904	MILL #2	138.0	AE	1	AE_P4-2 AE28	breaker	306.0	165.0	166.19	DC	8.05
173989324	227955	CEDAR	230.0	AE	206302	28OYSTERC	230.0	JCP&L	1	AE_P4-2 AE7	breaker	564.0	223.35	223.92	DC	7.15
173989379	228110	BLE	138.0	AE	227905	SCULL#1	138.0	AE	1	AE_P4-2 AE29	breaker	331.0	160.31	161.19	DC	6.5
173989385	228110	BLE	138.0	AE	227906	SCULL#2	138.0	AE	1	AE_P4-2 AE28	breaker	331.0	157.76	158.86	DC	8.05
166687252	228130	TUCKAHOE	69.0	AE	227946	MILL#2	69.0	AE	1	AE_P7-1 AE7TOWER	tower	146.0	107.96	109.08	DC	3.65
166687225	228217	DENNIS	69.0	AE	228130	TUCKAHOE	69.0	AE	1	AE_P7-1 AE7TOWER	tower	146.0	113.09	114.22	DC	3.65
173805291	228252	CRLS CR2	69.0	AE	940000	AE1-240 TAP	69.0	AE	1	AE_P4-2 AE46	breaker	93.0	122.77	123.18	DC	4.2
165251916	228313	BRIDGPRT	230.0	AE	228401	MCKLTON	230.0	AE	1	JC-P7-1-JCC-230-13	tower	804.0	122.74	123.28	DC	10.28
166687203	228714	CNTRL N	69.0	AE	228504	SHLDLY T	69.0	AE	1	AE_P7-1 AE7TOWER	tower	143.0	114.28	122.56	DC	11.83
166687204	228714	CNTRL N	69.0	AE	228504	SHLDLY T	69.0	AE	1	AE_P7-1 AE18TOWER	tower	143.0	111.07	119.36	DC	11.84
166687182	228716	S121TAP	69.0	AE	228714	CNTRL N	69.0	AE	1	AE_P7-1 AE7TOWER	tower	107.0	142.24	143.85	DC	3.81
166687183	228716	S121TAP	69.0	AE	228714	CNTRL N	69.0	AE	1	AE_P7-1 AE6TOWER	tower	107.0	115.65	117.26	DC	3.81
173805356	228716	S121TAP	69.0	AE	228714	CNTRL N	69.0	AE	1	AE_P4-2 AE51	breaker	107.0	110.94	112.7	DC	4.16
166687172	939500	AE1-179 TAP	69.0	AE	228228	SO MVLE	69.0	AE	1	AE_P7-1 AE2TOWER	tower	89.0	105.8	146.0	DC	35.78
173805204	939500	AE1-179 TAP	69.0	AE	228228	SO MVLE	69.0	AE	1	AE_P4-2 AE46	breaker	89.0	109.22	150.22	DC	36.48
173805188	940000	AE1-240 TAP	69.0	AE	228226	SHRMAN#2	69.0	AE	1	AE_P4-2 AE46	breaker	93.0	151.16	153.19	DC	4.2

13.4 Potential Congestion due to Local Energy Deliverability

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.

Note: Only the most severely overloaded conditions are listed below. 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 shall study all overload conditions associated with the overloaded element(s) identified.

ID	FROM BUS#	FROM BUS	kV	FROM BUS AREA	TO BUS#	TO BUS	kV	TO BUS AREA	CK T ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADIN G %	POST PROJECT LOADIN G %	AC/D C	MW IMPAC T
1675952 31	21420 6	RICHRE29	230.0	PECO	21427 4	RICHMOND 29	230.0	PECO	1	Base Case	operation	1075.0	106.06	106.45	DC	12.22
1675950 42	21427 7	RICHMOND 35	230.0	PECO	21401 2	WANEETA3	230.0	PECO	1	Base Case	operation	760.0	131.45	132.1	DC	11.34
1675951 16	21910 8	CUTHBERT_1	230.0	PSE& G	21912 5	CAMDEN	230.0	PSE& G	1	PS_P1-2_U-2299_LT	operation	771.0	120.01	120.36	DC	8.64
1675951 18	21910 8	CUTHBERT_1	230.0	PSE& G	21912 5	CAMDEN	230.0	PSE& G	1	Base Case	operation	500.0	108.84	109.17	DC	5.14
1675950 68	21911 0	GLOUCSTR	230.0	PSE& G	21975 5	CUTHBERT_4	230.0	PSE& G	1	PS_P1-2_C-2308	operation	758.0	127.85	128.19	DC	8.07
1675951 07	21911 0	GLOUCSTR	230.0	PSE& G	21912 5	CAMDEN	230.0	PSE& G	1	Base Case	operation	500.0	122.88	123.22	DC	5.35
1675952 29	21912 5	CAMDEN	230.0	PSE& G	21420 6	RICHRE29	230.0	PECO	1	Base Case	operation	1075.0	106.07	106.46	DC	12.22
1675951 50	21975 4	CUTHBERT_2	230.0	PSE& G	21912 5	CAMDEN	230.0	PSE& G	1	PS_P1-2_Z-2305_LT	operation	792.0	114.7	115.04	DC	8.43
1675949 41	22790 0	CARDIFF	230.0	AE	21910 0	NEWFRDM	230.0	PSE& G	1	JC-P1-2-JCC-230-044T	operation	692.0	199.08	199.59	DC	7.81
1675950 26	22790 3	MILL #1	138.0	AE	22790 2	LEWIS #1	138.0	AE	1	AE_P1-2 BLE-ML-LEW2	operation	306.0	139.14	140.29	DC	7.79
1675951 48	22790 4	MILL #2	138.0	AE	22794 5	LEWIS #2	138.0	AE	1	AE_P1-2 BLE-ML-LEW1	operation	282.0	116.05	117.1	DC	6.57
1675949 87	22790 5	SCULL#1	138.0	AE	22790 3	MILL #1	138.0	AE	1	AE_P1-2 BLE-SC-ML2	operation	306.0	156.97	158.24	DC	8.62
1675949 89	22790 5	SCULL#1	138.0	AE	22790 3	MILL #1	138.0	AE	1	Base Case	operation	218.0	122.66	123.68	DC	4.95
1675949 84	22790 6	SCULL#2	138.0	AE	22790 4	MILL #2	138.0	AE	1	AE_P1-2 BLE-SC-ML1	operation	306.0	158.4	159.67	DC	8.62
1675949 86	22790 6	SCULL#2	138.0	AE	22790 4	MILL #2	138.0	AE	1	Base Case	operation	218.0	123.67	124.69	DC	4.95
1675949 31	22795 5	CEDAR	230.0	AE	20630 2	28OYSTER C	230.0	JCP& L	1	PS_P1-2_2310	operation	564.0	222.69	223.26	DC	7.2
1675949 32	22795 5	CEDAR	230.0	AE	20630 2	28OYSTER C	230.0	JCP& L	1	Base Case	operation	464.0	207.33	207.87	DC	5.53
1675949 92	22811 0	BLE	138.0	AE	22790 5	SCULL#1	138.0	AE	1	AE_P1-2 BLE-SC-ML2	operation	331.0	152.45	153.63	DC	8.62
1675949 95	22811 0	BLE	138.0	AE	22790 6	SCULL#2	138.0	AE	1	AE_P1-2 BLE-SC-ML1	operation	331.0	151.63	152.8	DC	8.62
1678409 11	22821 0	UNION	138.0	AE	22810 8	CORSON 3	138.0	AE	1	AE_P1-2 CUMB-DENN	operation	478.0	106.33	107.29	DC	10.16
1678406 62	22821 5	BALFSTNT	69.0	AE	22823 3	WHTN A T	69.0	AE	1	AE_P1-2 BUT-LINC	operation	94.0	111.6	148.68	DC	34.85
1678406 01	22822 1	US SLC#1	69.0	AE	22822 2	US SLC T	69.0	AE	1	Base Case	operation	53.0	49.81	163.02	DC	60.0

ID	FROM BUS#	FROM BUS	kV	FROM BUS AREA	TO BUS#	TO BUS	kV	TO BUS AREA	CK T ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADIN G %	POST PROJECT LOADIN G %	AC D C	MW IMPAC T
167840707	228222	US SLC T	69.0	AE	939500	AE1-179 TAP	69.0	AE	1	CARLL-240 TAP-SHERM-B	operati on	89.0	86.38	130.23	DC	39.02
167840610	228228	SO MVLL E	69.0	AE	228215	BALFSTNT	69.0	AE	1	AE_P1-2 BUT-LINC	operati on	88.0	119.21	158.81	DC	34.85
167840611	228228	SO MVLL E	69.0	AE	228215	BALFSTNT	69.0	AE	1	Base Case	operati on	64.0	84.64	118.16	DC	21.46
167840588	228223	WHTN A T	69.0	AE	228225	2ND ST#1	69.0	AE	1	AE_P1-2 BUT-LINC	operati on	83.0	126.39	168.38	DC	34.85
167840590	228223	WHTN A T	69.0	AE	228225	2ND ST#1	69.0	AE	1	Base Case	operati on	65.0	83.18	116.19	DC	21.46
167840848	228225	CRLS CR2	69.0	AE	940000	AE1-240 TAP	69.0	AE	1	AE_P1-2 ORCH-CUMB	operati on	93.0	114.86	115.12	DC	3.11
167840817	228225	SHRMAN#1	69.0	AE	945730	AF1-238 TAP	69.0	AE	1	AE_P1-2 CNT-V-BUT	operati on	132.0	115.01	122.13	DC	9.39
167840798	228311	CHAMBERS	230.0	AE	228312	PEDRKTWN	230.0	AE	1	AE_P1-2 ORCHAR D XF	operati on	551.0	117.11	118.42	DC	16.59
167840810	228313	BRIDGPRT	230.0	AE	228401	MCKLTON	230.0	AE	1	AE_P1-2 ORCHAR D XF	operati on	804.0	117.67	118.59	DC	16.48
167840811	228313	BRIDGPRT	230.0	AE	228401	MCKLTON	230.0	AE	1	Base Case	operati on	650.0	116.35	117.77	DC	9.69
167840701	228360	WOODTWN 2	69.0	AE	228332	WOODTWN 1	69.0	AE	1	CARLL-240 TAP-SHERM-B	operati on	74.0	96.73	109.57	DC	9.5
167840829	228504	SHLDLY T	69.0	AE	228511	LANDIS T	69.0	AE	1	AE_P1-2 ORCH-CUMB	operati on	158.0	108.51	117.53	DC	14.24
167840831	228511	LANDIS T	69.0	AE	228409	MONROE#3	69.0	AE	1	AE_P1-2 ORCH-CUMB	operati on	158.0	108.45	117.47	DC	14.24
174611003	228703	BUTLER	69.0	AE	228713	VCLP TP	69.0	AE	1	AE_P1-2 SHERM-W VINE-A	operati on	132.0	102.3	110.04	DC	10.21
174611009	228713	VCLP TP	69.0	AE	228704	CENTRAL	69.0	AE	1	AE_P1-2 SHERM-W VINE-A	operati on	132.0	100.11	107.84	DC	10.21
167840945	228725	W2-039 TAP	69.0	AE	228703	BUTLER	69.0	AE	1	AE_P1-2 SS-SMLVL	operati on	132.0	77.46	102.42	DC	32.94
169580407	939500	AE1-179 TAP	69.0	AE	228228	SO MVLL E	69.0	AE	1	Base Case	operati on	66.0	112.0	167.95	DC	36.92
169580451	940000	AE1-240 TAP	69.0	AE	228226	SHRMAN#2	69.0	AE	1	AE_P1-2 ORCH-CUMB	operati on	93.0	152.18	152.44	DC	3.11
169580453	940000	AE1-240 TAP	69.0	AE	228226	SHRMAN#2	69.0	AE	1	Base Case	operati on	82.0	118.56	121.46	DC	5.26

13.5 Flow Gate Details - Secondary POI

The following indices contain additional information about each facility presented in the body of the report. For each index, a description of the flowgate and its contingency was included for convenience. The intent of the indices is to provide more details on which projects/generators have contributions to the flowgate in question. All New Service Queue Requests, through the end of the Queue under study, that are contributors to a flowgate will be listed in the indices. Please note that there may be contributors that are subsequently queued after the queue under study that are not listed in the indices. Although this information is not used "as is" for cost allocation purposes, it can be used to gage the impact of other projects/generators. It should be noted the project/generator MW contributions presented in the body of the report are Full MW Impact contributions which are also noted in the indices column named "Full MW Impact", whereas the loading percentages reported in the body of the report, take into consideration the PJM Generator Deliverability Test rules such as commercial probability of each project as well as the ramping impact of "Adder" contributions. The MW Impact found and used in the analysis is shown in the indices column named "Gendeliv MW Impact".

13.5.1 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
167840612	228228	SO MVLLE	AE	228215	BALFSTNT	AE	1	AE_P1-2 BUT-LINC	single	88.0	76.51	100.27	DC	20.91

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
228200	CARL#1CT	0.5628	80/20	0.5628
228201	CARL#2CT	0.5957	80/20	0.5957
228251	CARLLS#4	0.5597	80/20	0.5597
228260	V4-054C	0.1698	80/20	0.1698
228343	QUINTN#1 (Deactivation : 26/04/2020)	0.1202	80/20	0.1202
228727	W2-039G	5.7883	80/20	5.7883
939501	AE1-179 C O1	24.9151	80/20	24.9151
945431	AF1-208 C O1	3.2918	80/20	3.2918
957261	AF2-020 C	0.9428	80/20	0.9428
958811	AF2-172 C (Withdrawn : 01/14/2021)	1.9666	80/20	1.9666
961621	AG1-001 C	6.8429	80/20	6.8429
962801	AG1-129 C O2	20.9120	80/20	20.9120
964011	AG1-255 C	2.0184	80/20	2.0184
CALDERWOOD	CALDERWOOD	0.0134	Confirmed LTF	0.0134
NY	NY	0.0166	Confirmed LTF	0.0166
PRAIRIE	PRAIRIE	0.0697	Confirmed LTF	0.0697
SIGE	SIGE	0.0006	Confirmed LTF	0.0006
CHEOAH	CHEOAH	0.0135	Confirmed LTF	0.0135
COTTONWOOD	COTTONWOOD	0.0567	Confirmed LTF	0.0567
HAMLET	HAMLET	0.0156	Confirmed LTF	0.0156
GIBSON	GIBSON	0.0147	Confirmed LTF	0.0147
BLUEG	BLUEG	0.0469	Confirmed LTF	0.0469
TRIMBLE	TRIMBLE	0.0150	Confirmed LTF	0.0150
CATAWBA	CATAWBA	0.0094	Confirmed LTF	0.0094

13.5.2 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
167840591	228233	WHTN A T	AE	228225	2ND ST#1	AE	1	AE_P1-2 BUT-LINC	single	83.0	81.12	106.31	DC	20.91

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
228200	CARL#1CT	0.5628	80/20	0.5628
228201	CARL#2CT	0.5957	80/20	0.5957
228251	CARLLS#4	0.5597	80/20	0.5597
228260	V4-054C	0.1698	80/20	0.1698
228343	QUINTN#1 (Deactivation : 26/04/2020)	0.1202	80/20	0.1202
228727	W2-039G	5.7883	80/20	5.7883
939501	AE1-179 C O1	24.9151	80/20	24.9151
945431	AF1-208 C O1	3.2918	80/20	3.2918
957261	AF2-020 C	0.9428	80/20	0.9428
958811	AF2-172 C (Withdrawn : 01/14/2021)	1.9666	80/20	1.9666
961621	AG1-001 C	6.8429	80/20	6.8429
962801	AG1-129 C O2	20.9120	80/20	20.9120
964011	AG1-255 C	2.0184	80/20	2.0184
CALDERWOOD	CALDERWOOD	0.0134	Confirmed LTF	0.0134
NY	NY	0.0166	Confirmed LTF	0.0166
PRAIRIE	PRAIRIE	0.0697	Confirmed LTF	0.0697
SIGE	SIGE	0.0006	Confirmed LTF	0.0006
CHEOAH	CHEOAH	0.0135	Confirmed LTF	0.0135
COTTONWOOD	COTTONWOOD	0.0567	Confirmed LTF	0.0567
HAMLET	HAMLET	0.0156	Confirmed LTF	0.0156
GIBSON	GIBSON	0.0147	Confirmed LTF	0.0147
BLUEG	BLUEG	0.0469	Confirmed LTF	0.0469
TRIMBLE	TRIMBLE	0.0150	Confirmed LTF	0.0150
CATAWBA	CATAWBA	0.0094	Confirmed LTF	0.0094

13.5.3 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
166687254	228218	LAUREL	AE	228360	WOODTWN2	AE	1	AE_P7-1 AE7TOWER	tower	107.0	94.74	106.84	DC	12.94

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
228102	BLE#2 ST (Deactivation : 30/04/2019)	7.3994	Adder	8.71
228200	CARL#1CT	1.4680	50/50	1.4680
228201	CARL#2CT	1.5539	50/50	1.5539
228251	CARLLS#4	1.4691	50/50	1.4691
228260	V4-054C	0.1811	50/50	0.1811
228261	V4-054E	1.8731	50/50	1.8731
228343	QUINTN#1 (Deactivation : 26/04/2020)	0.1843	50/50	0.1843
228702	WEST CT	0.4211	50/50	0.4211
228712	V2-041E	0.1770	Adder	0.21
228717	S121	0.7969	50/50	0.7969
228727	W2-039G	0.9241	50/50	0.9241
924531	AB2-102 C	9.8895	Adder	11.63
924532	AB2-102 E	0.2198	Adder	0.26
938781	AE1-104 C O1	6.8582	Adder	8.07
938782	AE1-104 E O1	17.5440	Adder	20.64
939501	AE1-179 C O1	6.2209	50/50	6.2209
939502	AE1-179 E O1	4.3902	50/50	4.3902
940001	AE1-240 C O1	5.4018	50/50	5.4018
940002	AE1-240 E O1	3.8558	50/50	3.8558
945431	AF1-208 C O1	6.9185	50/50	6.9185
945432	AF1-208 E O1	4.6123	50/50	4.6123
945731	AF1-238 C O1	6.1312	50/50	6.1312
945732	AF1-238 E O1	9.1968	50/50	9.1968
945741	AF1-239 C	1.4426	50/50	1.4426
945742	AF1-239 E	2.1640	50/50	2.1640
957251	AF2-019 C	0.3886	Adder	0.46
957252	AF2-019 E	0.5829	Adder	0.69
957261	AF2-020 C	2.4594	50/50	2.4594
957262	AF2-020 E	3.6892	50/50	3.6892
958811	AF2-172 C (Withdrawn : 01/14/2021)	0.8897	50/50	0.8897
958812	AF2-172 E (Withdrawn : 01/14/2021)	1.4515	50/50	1.4515
961621	AG1-001 C	2.5413	50/50	2.5413
961622	AG1-001 E	4.1463	50/50	4.1463
962801	AG1-129 C O2	7.7663	50/50	7.7663
962802	AG1-129 E O2	5.1775	50/50	5.1775
964003	AG1-254 BAT	2.1793	50/50	2.1793
964371	AG1-299 C	0.0587	Adder	0.13
964372	AG1-299 E	0.0391	Adder	0.09

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
964381	AG1-300 C	0.0978	Adder	0.22
964382	AG1-300 E	0.0652	Adder	0.14
CALDERWOOD	CALDERWOOD	0.0134	Confirmed LTF	0.0134
NY	NY	0.0155	Confirmed LTF	0.0155
PRAIRIE	PRAIRIE	0.0697	Confirmed LTF	0.0697
O-066	O-066	0.1817	Confirmed LTF	0.1817
CHEOAH	CHEOAH	0.0135	Confirmed LTF	0.0135
COTTONWOOD	COTTONWOOD	0.0567	Confirmed LTF	0.0567
G-007	G-007	0.0063	Confirmed LTF	0.0063
HAMLET	HAMLET	0.0156	Confirmed LTF	0.0156
GIBSON	GIBSON	0.0147	Confirmed LTF	0.0147
BLUEG	BLUEG	0.0469	Confirmed LTF	0.0469
TRIMBLE	TRIMBLE	0.0150	Confirmed LTF	0.0150
CATAWBA	CATAWBA	0.0094	Confirmed LTF	0.0094

13.5.4 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
173805204	939500	AE1-179 TAP	AE	228228	SO MVLL	AE	1	AE_P4-2 AE46	breaker	89.0	109.22	150.22	DC	36.48

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
228200	CARL#1CT	0.5790	50/50	0.5790
228201	CARL#2CT	0.6129	50/50	0.6129
228251	CARLLS#4	0.5756	50/50	0.5756
228260	V4-054C	0.1773	50/50	0.1773
228261	V4-054E	1.8333	50/50	1.8333
228343	QUINTN#1 (Deactivation : 26/04/2020)	0.1116	Adder	0.13
939501	AE1-179 C O1	26.0911	50/50	26.0911
939502	AE1-179 E O1	18.4129	50/50	18.4129
945431	AF1-208 C O1	3.4592	50/50	3.4592
945432	AF1-208 E O1	2.3062	50/50	2.3062
945733	AF1-238 BAT	7.4626	Merchant Transmission	7.4626
945743	AF1-239 BAT	1.7559	Merchant Transmission	1.7559
957261	AF2-020 C	0.9701	50/50	0.9701
957262	AF2-020 E	1.4551	50/50	1.4551
958811	AF2-172 C (Withdrawn : 01/14/2021)	2.0579	50/50	2.0579
958812	AF2-172 E (Withdrawn : 01/14/2021)	3.3577	50/50	3.3577
961621	AG1-001 C	7.1628	50/50	7.1628
961622	AG1-001 E	11.6867	50/50	11.6867
962801	AG1-129 C O2	21.8898	50/50	21.8898
962802	AG1-129 E O2	14.5932	50/50	14.5932
964011	AG1-255 C	1.0284	Adder	2.28
964012	AG1-255 E	0.5142	Adder	1.14
WEC	WEC	0.0006	Confirmed LTF	0.0006
LGEE	LGEE	0.0013	Confirmed LTF	0.0013
CPL	CPL	0.0014	Confirmed LTF	0.0014
CBM-W2	CBM-W2	0.0179	Confirmed LTF	0.0179
NY	NY	0.0088	Confirmed LTF	0.0088
TVA	TVA	0.0028	Confirmed LTF	0.0028
O-066	O-066	0.1817	Confirmed LTF	0.1817
SIGE	SIGE	0.0030	Confirmed LTF	0.0030
CBM-S2	CBM-S2	0.0209	Confirmed LTF	0.0209
CBM-S1	CBM-S1	0.0008	Confirmed LTF	0.0008
G-007	G-007	0.0767	Confirmed LTF	0.0767
MEC	MEC	0.0032	Confirmed LTF	0.0032
LAGN	LAGN	0.0035	Confirmed LTF	0.0035
CBM-W1	CBM-W1	0.0280	Confirmed LTF	0.0280

13.5.5 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
174185872	214010	WANEETA2	PECO	213817	N PHILA	PECO	1	PECO_P4_CHICH045/* \$ DELCO \$ PECO_P4_CHICH045 \$ STBK	breaker	621.0	112.77	113.22	DC	6.4

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
213554	DALEVILLE	-0.3030	Adder	-0.36
213606	FAIRLESS (Deactivation : 01/06/2020)	5.6636	Adder	6.66
213878	PENNSBRY (Deactivation : 01/06/2020)	0.5738	Adder	0.68
213918	RICHMD91	1.7133	50/50	1.7133
213919	RICHMD92	1.7133	50/50	1.7133
214030	WAYNEJCT	0.3565	50/50	0.3565
218661	EHAMPSOLAR E	0.1863	Adder	0.22
219117	HARTZZ_E	0.1956	Adder	0.23
219123	BCRR_COGEN (Deactivation : 26/04/2020)	0.5737	Adder	0.67
219124	CAMDEN_STG	1.7352	50/50	1.7352
219126	CAMDEN_CTG	2.1318	50/50	2.1318
219137	THOSOLAR C (Deactivation : 01/06/2015)	0.0858	50/50	0.0858
219138	THOSOLAR E	0.1400	50/50	0.1400
219229	EAGLEPT_ST1	1.0708	50/50	1.0708
219230	EAGLEPT_G1	2.1167	50/50	2.1167
219231	EAGLEPT_G2	2.1156	50/50	2.1156
219235	EAGLEPT_ST2	0.7649	50/50	0.7649
219236	SOUTHERNHQ C	0.0089	50/50	0.0089
219237	SOUTHERNHQ E	0.0938	50/50	0.0938
219240	MANTUACREK E	0.3374	50/50	0.3374
219241	PENNAS_GAS	0.1286	50/50	0.1286
219242	PENNAS_SOLA	0.0139	50/50	0.0139
219258	KINSLEYDEP C	0.0675	50/50	0.0675
219259	KINSLEYDEP E	0.4987	50/50	0.4987
219267	GLOU CO RR	0.3007	50/50	0.3007
219273	CLEANLIGHT E	0.1906	Adder	0.22
219286	CAMD CO RR	0.6387	50/50	0.6387
219288	REEVES ST E	0.6937	Adder	0.82
219292	REEVESSO E	0.0640	Adder	0.08
219305	NAMERICA E	0.3931	Adder	0.46
219349	LDSOLAR E	0.4343	Adder	0.51
219608	WPEMNERT E	0.4960	Adder	0.58
219611	FLORENCE E	1.4171	Adder	1.67
219615	MILLCREEK C	0.0276	50/50	0.0276
219619	MILLCREEK E	0.3169	50/50	0.3169

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
219623	KINSLEYBEA C	0.0578	50/50	0.0578
219624	KINSLEYBEA E	0.3776	50/50	0.3776
219647	COOPERSOLA E	0.0668	50/50	0.0668
219687	LUMSOLAR_N E	0.2136	Adder	0.25
219689	LUMSOLAR_S E	0.2234	Adder	0.26
219726	BAT.STORG E	0.1647	50/50	0.1647
219728	YARDVSOLFA C	0.1096	Adder	0.13
219729	YARDVSOLFA E	0.1788	Adder	0.21
219765	PARADISE E	0.5398	50/50	0.5398
219766	PARADISE C	0.0506	50/50	0.0506
219912	PENNSAU2 C	0.8815	50/50	0.8815
219913	PENNSAU2 E	1.4456	50/50	1.4456
219914	CINNAMSOL C	0.1057	50/50	0.1057
219915	CINNAMSOL E	1.0930	50/50	1.0930
227801	ONTC&DCT	3.1612	Adder	3.72
227842	MARINGEN	0.6389	Adder	0.75
227881	GRENWCHG	0.1918	Adder	0.23
227928	V4-067E	0.1297	Adder	0.15
228102	BLE#2 ST (Deactivation : 30/04/2019)	12.4439	Adder	14.64
228251	CARLLS#4	0.4453	Adder	0.52
228261	V4-054E	0.5751	Adder	0.68
228343	QUINTN#1 (Deactivation : 26/04/2020)	0.1664	Adder	0.2
228357	V2-046E	1.2174	Adder	1.43
228712	V2-041E	0.2116	Adder	0.25
228721	V2-035E	0.0330	Adder	0.04
230404	Q90 GT1-CC	4.5063	50/50	4.5063
230405	Q90 GT2-CC	4.5063	50/50	4.5063
230406	Q90 ST-CC	7.5560	50/50	7.5560
902092	W1-130E	0.5328	Adder	0.63
902432	W2-030 E	0.4910	Adder	0.58
902692	W2-056 E	0.7093	Adder	0.83
910862	OWENSCORIN E	0.2764	50/50	0.2764
917471	Z2-083	1.6559	50/50	1.6559
924051	AB2-049 C	0.1105	Adder	0.13
924052	AB2-049 E	0.1804	Adder	0.21
924531	AB2-102 C	18.7234	Adder	22.03
924532	AB2-102 E	0.4161	Adder	0.49
924702	AB2-122 E (Withdrawn : 05/05/2020)	0.0973	Adder	0.11
925391	AC1-010 C	1.0121	50/50	1.0121
925392	AC1-010 E	0.6410	50/50	0.6410
925451	AC1-017 C	0.0323	50/50	0.0323
925452	AC1-017 E	0.3373	50/50	0.3373
925561	AC1-030 C	0.0243	50/50	0.0243
925562	AC1-030 E	0.2429	50/50	0.2429
930002	AB1-001 E	0.1106	Adder	0.13
930722	AB1-116 E	0.0772	Adder	0.09
930732	AB1-119 E	0.0701	Adder	0.08
932361	AC2-050 C O1	0.3815	Adder	0.45
932362	AC2-050 E O1	0.6224	Adder	0.73
933962	AD1-019 E	0.6224	Adder	0.73

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
936501	AD2-065 C	0.1044	Adder	0.12
936502	AD2-065 E	0.1440	Adder	0.17
937011	AD2-135 C	0.0566	Adder	0.07
937012	AD2-135 E	0.0962	Adder	0.11
938421	AE1-061 C	0.2570	Adder	0.3
938422	AE1-061 E	0.2570	Adder	0.3
938431	AE1-062 C	0.9625	Adder	1.13
938781	AE1-104 C O1	11.5338	Adder	13.57
938782	AE1-104 E O1	29.5047	Adder	34.71
938871	AE1-115 C	1.0050	Adder	1.18
939301	AE1-161 C	1.9295	Adder	2.27
939302	AE1-161 E	2.8943	Adder	3.41
939501	AE1-179 C O1	3.1398	Adder	3.69
939502	AE1-179 E O1	2.2158	Adder	2.61
939821	AE1-218 C O1	0.0801	Adder	0.09
939822	AE1-218 E O1	0.1201	Adder	0.14
939931	AE1-229 C O1	8.6740	Adder	10.2
939932	AE1-229 E O1	5.8769	Adder	6.91
940001	AE1-240 C O1	2.6016	Adder	3.06
940002	AE1-240 E O1	1.8570	Adder	2.18
940361	AE2-020 C	8.5127	Adder	10.01
940362	AE2-020 E	39.8571	Adder	46.89
940371	AE2-021 C	8.5127	Adder	10.01
940372	AE2-021 E	39.8571	Adder	46.89
940381	AE2-022 C	4.9657	Adder	5.84
940382	AE2-022 E	23.2500	Adder	27.35
942101	AE2-222 C	6.9047	Adder	8.12
942102	AE2-222 E	17.6671	Adder	20.78
942381	AE2-251 C	26.9681	Adder	31.73
942382	AE2-251 E	69.0037	Adder	81.18
943071	AE2-334 C	2.6138	Adder	3.08
943072	AE2-334 E	1.7425	Adder	2.05
943732	AF1-041 E	0.1962	Adder	0.23
944951	AF1-160 C	0.9625	Adder	1.13
945431	AF1-208 C O1	2.5706	Adder	3.02
945432	AF1-208 E O1	1.7138	Adder	2.02
945731	AF1-238 C O1	4.5240	Adder	5.32
945732	AF1-238 E O1	6.7860	Adder	7.98
945741	AF1-239 C	1.0645	Adder	1.25
945742	AF1-239 E	1.5967	Adder	1.88
945961	AF1-261	0.1029	Adder	0.12
945971	AF1-262	0.0873	Adder	0.1
945991	AF1-264	0.2114	50/50	0.2114
957221	AF2-016 C	9.8797	Adder	11.62
957222	AF2-016 E	14.8196	Adder	17.43
957251	AF2-019 C	0.6651	Adder	0.78
957252	AF2-019 E	0.9977	Adder	1.17
957261	AF2-020 C	0.7425	Adder	0.87
957262	AF2-020 E	1.1137	Adder	1.31
957291	AF2-023 C	1.7089	Adder	2.01
957292	AF2-023 E	2.5633	Adder	3.02
957301	AF2-024 C	1.0952	Adder	1.29

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
957302	AF2-024 E	1.6429	Adder	1.93
957311	AF2-025 C	0.6552	Adder	0.77
957312	AF2-025 E	0.9828	Adder	1.16
957443	AF2-038 BAT	5.7958	50/50	5.7958
958811	AF2-172 C (Withdrawn : 01/14/2021)	0.3461	Adder	0.41
958812	AF2-172 E (Withdrawn : 01/14/2021)	0.5647	Adder	0.66
958831	AF2-174 C	0.1265	Adder	0.15
958832	AF2-174 E	0.1747	Adder	0.21
961621	AG1-001 C	0.5659	Adder	1.26
961622	AG1-001 E	0.9233	Adder	2.05
962311	AG1-080 C O2	1.8047	50/50	1.8047
962312	AG1-080 E O2	1.5517	50/50	1.5517
962611	AG1-110	1.0203	Adder	2.26
962621	AG1-111	0.5327	Adder	1.18
962801	AG1-129 C O2	1.7293	Adder	3.84
962802	AG1-129 E O2	1.1529	Adder	2.56
962811	AG1-130 C	0.1211	Adder	0.27
962812	AG1-130 E	0.1817	Adder	0.4
963411	AG1-190 C	0.3331	Adder	0.74
963412	AG1-190 E	0.4664	Adder	1.04
964001	AG1-254 C	1.3487	Adder	2.99
964002	AG1-254 E	0.6770	Adder	1.5
964011	AG1-255 C	2.0972	Adder	4.66
964012	AG1-255 E	1.0486	Adder	2.33
964081	AG1-263 C	1.3495	50/50	1.3495
964082	AG1-263 E	2.0243	50/50	2.0243
964371	AG1-299 C	0.0806	Adder	0.18
964372	AG1-299 E	0.0537	Adder	0.12
964381	AG1-300 C	0.1344	Adder	0.3
964382	AG1-300 E	0.0896	Adder	0.2
966061	AG1-475 C	1.2764	50/50	1.2764
966062	AG1-475 E	0.8509	50/50	0.8509
966071	AG1-476	4.6942	50/50	4.6942
966301	AG1-499 C	0.4225	Adder	0.94
966302	AG1-499 E	0.2816	Adder	0.63
G-007A	G-007A	8.7701	Confirmed LTF	8.7701
VFT	VFT	18.6469	Confirmed LTF	18.6469
CALDERWOOD	CALDERWOOD	0.2574	Confirmed LTF	0.2574
PRAIRIE	PRAIRIE	1.3096	Confirmed LTF	1.3096
CHEOAH	CHEOAH	0.2593	Confirmed LTF	0.2593
CBM-N	CBM-N	2.0988	Confirmed LTF	2.0988
COTTONWOOD	COTTONWOOD	1.0773	Confirmed LTF	1.0773
HAMLET	HAMLET	0.3090	Confirmed LTF	0.3090
GIBSON	GIBSON	0.2757	Confirmed LTF	0.2757
BLUEG	BLUEG	0.8767	Confirmed LTF	0.8767
TRIMBLE	TRIMBLE	0.2810	Confirmed LTF	0.2810
CATAWBA	CATAWBA	0.1851	Confirmed LTF	0.1851

13.5.6 Index 6

ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CK T ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADIN G %	POST PROJECT LOADIN G %	AC D C	MW IMPAC T
174185845	214206	RICHRE29	PECO	214274	RICHMOND29	PECO	1	PECO_P4_CHICH045/ * \$ DELCO \$ PECO_P4_CHICH045 \$ STBK	breaker	1344.0	118.0	118.34	DC	13.56

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
200062	SALEM G3	4.5040	Adder	5.3
218661	EHAMPSOLAR E	0.3346	Adder	0.39
219123	BCRR_COGEN (Deactivation : 26/04/2020)	0.6958	Adder	0.82
219124	CAMDEN_STG	3.9521	50/50	3.9521
219126	CAMDEN_CTG	4.8553	50/50	4.8553
219137	THOSOLAR C (Deactivation : 01/06/2015)	0.1932	50/50	0.1932
219138	THOSOLAR E	0.3151	50/50	0.3151
219229	EAGLEPT_ST1	2.4284	50/50	2.4284
219230	EAGLEPT_G1	4.8003	50/50	4.8003
219231	EAGLEPT_G2	4.7977	50/50	4.7977
219235	EAGLEPT_ST2	1.7346	50/50	1.7346
219236	SOUTHERNHQ C	0.0178	50/50	0.0178
219237	SOUTHERNHQ E	0.1866	50/50	0.1866
219240	MANTUACREK E	0.7684	50/50	0.7684
219241	PENNAS_GAS	0.2946	50/50	0.2946
219242	PENNAS_SOLA	0.0319	50/50	0.0319
219258	KINSLEYDEP C	0.1530	50/50	0.1530
219259	KINSLEYDEP E	1.1304	50/50	1.1304
219267	GLOU CO RR	0.6849	50/50	0.6849
219273	CLEANLIGHT E	0.3631	Adder	0.43
219286	CAMD CO RR	1.4548	50/50	1.4548
219288	REEVES ST E	1.2671	Adder	1.49
219292	REEVESSO E	0.1156	Adder	0.14
219305	NAMERICA E	0.4897	Adder	0.58
219349	LDSOLAR E	0.5410	Adder	0.64
219608	WPEMNERT E	0.6178	Adder	0.73
219611	FLORENCE E	1.7652	Adder	2.08
219619	MILLCREEK E	0.4294	Adder	0.51
219623	KINSLEYBEA C	0.1304	50/50	0.1304
219624	KINSLEYBEA E	0.8521	50/50	0.8521
219647	COOPERSOLA E	0.1496	50/50	0.1496
219687	LUMSOLAR_N E	0.3903	Adder	0.46
219689	LUMSOLAR_S E	0.3850	Adder	0.45
219726	BAT.STORG E	0.3704	50/50	0.3704
219765	PARADISE E	1.2294	50/50	1.2294
219766	PARADISE C	0.1152	50/50	0.1152
219912	PENNSAU2 C	2.0189	50/50	2.0189

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
219913	PENNSAU2 E	3.3111	50/50	3.3111
219914	CINNAM SOL C	0.2421	50/50	0.2421
219915	CINNAM SOL E	2.5035	50/50	2.5035
227801	ONTC&DCT	6.4787	Adder	7.62
227842	MARINGEN	1.3092	Adder	1.54
227881	GRENWCHG	0.4982	50/50	0.4982
227928	V4-067E	0.2650	Adder	0.31
228102	BLE#2 ST (Deactivation : 30/04/2019)	25.7176	Adder	30.26
228251	CARLLS#4	0.9490	Adder	1.12
228261	V4-054E	1.2253	Adder	1.44
228343	QUINTN#1 (Deactivation : 26/04/2020)	0.3592	Adder	0.42
228357	V2-046E	2.6357	Adder	3.1
228400	MICK 1CT	2.4021	50/50	2.4021
228471	VALERO1	0.8210	50/50	0.8210
228472	VALERO2	0.4636	50/50	0.4636
228473	VALERO3	0.4636	50/50	0.4636
228484	VALERO4	0.4636	50/50	0.4636
228712	V2-041E	0.4437	Adder	0.52
228721	V2-035E	0.0706	Adder	0.08
230404	Q90 GT1-CC	10.0739	50/50	10.0739
230405	Q90 GT2-CC	10.0739	50/50	10.0739
230406	Q90 ST-CC	16.8915	50/50	16.8915
902082	W1-129E	0.3641	Adder	0.43
902092	W1-130E	1.1259	Adder	1.32
902322	W2-019 E	0.4367	Adder	0.51
902432	W2-030 E	1.0068	Adder	1.18
902692	W2-056 E	1.2628	Adder	1.49
902952	W2-082 E OP1	1.2255	Adder	1.44
905252	W4-025 E	0.5167	Adder	0.61
910862	OWENSCORIN E	0.6210	50/50	0.6210
912102	X4-015 E	0.3631	Adder	0.43
917471	Z2-083	3.7019	50/50	3.7019
924051	AB2-049 C	0.2294	Adder	0.27
924052	AB2-049 E	0.3743	Adder	0.44
924531	AB2-102 C	39.2005	Adder	46.12
924532	AB2-102 E	0.8711	Adder	1.02
924702	AB2-122 E (Withdrawn : 05/05/2020)	0.1988	Adder	0.23
925391	AC1-010 C	2.3052	50/50	2.3052
925392	AC1-010 E	1.4600	50/50	1.4600
925452	AC1-017 E	0.4571	Adder	0.54
925561	AC1-030 C	0.0484	50/50	0.0484
925562	AC1-030 E	0.4840	50/50	0.4840
930002	AB1-001 E	0.2221	Adder	0.26
930722	AB1-116 E	0.1620	Adder	0.19
930732	AB1-119 E	0.1441	Adder	0.17
932361	AC2-050 C O1	0.7233	Adder	0.85
932362	AC2-050 E O1	1.1801	Adder	1.39
933962	AD1-019 E	1.2756	Adder	1.5
934661	AD1-097 1	1.3760	Adder	1.62
934671	AD1-097 2	1.3760	Adder	1.62

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
934681	AD1-097 3	1.3774	Adder	1.62
934691	AD1-097 4	0.8154	Adder	0.96
936501	AD2-065 C	0.2114	Adder	0.25
936502	AD2-065 E	0.2916	Adder	0.34
937011	AD2-135 C	0.1170	Adder	0.14
937012	AD2-135 E	0.1989	Adder	0.23
938421	AE1-061 C	0.5432	Adder	0.64
938422	AE1-061 E	0.5432	Adder	0.64
938431	AE1-062 C	1.9502	Adder	2.29
938781	AE1-104 C O1	23.8366	Adder	28.04
938782	AE1-104 E O1	60.9766	Adder	71.74
938871	AE1-115 C	2.1835	Adder	2.57
939301	AE1-161 C	4.1048	Adder	4.83
939302	AE1-161 E	6.1572	Adder	7.24
939501	AE1-179 C O1	6.6393	Adder	7.81
939502	AE1-179 E O1	4.6855	Adder	5.51
939821	AE1-218 C O1	0.1697	Adder	0.2
939822	AE1-218 E O1	0.2545	Adder	0.3
939931	AE1-229 C O1	18.6560	Adder	21.95
939932	AE1-229 E O1	12.6400	Adder	14.87
940001	AE1-240 C O1	5.5034	Adder	6.47
940002	AE1-240 E O1	3.9283	Adder	4.62
940361	AE2-020 C	17.2995	Adder	20.35
940362	AE2-020 E	80.9977	Adder	95.29
940371	AE2-021 C	17.2995	Adder	20.35
940372	AE2-021 E	80.9977	Adder	95.29
940381	AE2-022 C	10.0914	Adder	11.87
940382	AE2-022 E	47.2487	Adder	55.59
942101	AE2-222 C	14.1490	Adder	16.65
942102	AE2-222 E	36.2033	Adder	42.59
942381	AE2-251 C	54.8046	Adder	64.48
942382	AE2-251 E	140.2296	Adder	164.98
943071	AE2-334 C	5.5447	Adder	6.52
943072	AE2-334 E	3.6965	Adder	4.35
943732	AF1-041 E	0.4017	Adder	0.47
944951	AF1-160 C	1.9502	Adder	2.29
945431	AF1-208 C O1	5.5119	Adder	6.48
945432	AF1-208 E O1	3.6746	Adder	4.32
945731	AF1-238 C O1	9.5340	Adder	11.22
945732	AF1-238 E O1	14.3009	Adder	16.82
945741	AF1-239 C	2.2433	Adder	2.64
945742	AF1-239 E	3.3649	Adder	3.96
945961	AF1-261	0.1281	Adder	0.15
945971	AF1-262	0.1868	Adder	0.22
945991	AF1-264	0.4749	50/50	0.4749
957221	AF2-016 C	20.2796	Adder	23.86
957222	AF2-016 E	30.4195	Adder	35.79
957251	AF2-019 C	1.3818	Adder	1.63
957252	AF2-019 E	2.0727	Adder	2.44
957261	AF2-020 C	1.5824	Adder	1.86
957262	AF2-020 E	2.3736	Adder	2.79
957271	AF2-021 C	0.9705	Adder	1.14

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
957272	AF2-021 E	1.4557	Adder	1.71
957291	AF2-023 C	3.7129	Adder	4.37
957292	AF2-023 E	5.5694	Adder	6.55
957301	AF2-024 C	2.8504	50/50	2.8504
957302	AF2-024 E	4.2756	50/50	4.2756
957311	AF2-025 C	1.3427	Adder	1.58
957312	AF2-025 E	2.0141	Adder	2.37
957443	AF2-038 BAT	4.2600	Merchant Transmission	4.2600
958811	AF2-172 C (Withdrawn : 01/14/2021)	0.7345	Adder	0.86
958812	AF2-172 E (Withdrawn : 01/14/2021)	1.1984	Adder	1.41
958831	AF2-174 C	0.2398	Adder	0.28
958832	AF2-174 E	0.3312	Adder	0.39
959631	AF2-254 C	0.4867	Adder	0.57
959632	AF2-254 E	0.6722	Adder	0.79
961621	AG1-001 C	1.1995	Adder	2.66
961622	AG1-001 E	1.9571	Adder	4.34
962311	AG1-080 C O2	4.0470	50/50	4.0470
962312	AG1-080 E O2	3.4796	50/50	3.4796
962611	AG1-110	2.0673	Adder	4.59
962621	AG1-111	1.1572	Adder	2.57
962801	AG1-129 C O2	3.6658	Adder	8.14
962802	AG1-129 E O2	2.4438	Adder	5.42
962811	AG1-130 C	0.1509	Adder	0.33
962812	AG1-130 E	0.2263	Adder	0.5
963411	AG1-190 C	0.4150	Adder	0.92
963412	AG1-190 E	0.5810	Adder	1.29
964001	AG1-254 C	2.9232	Adder	6.49
964002	AG1-254 E	1.4674	Adder	3.26
964011	AG1-255 C	4.5391	Adder	10.08
964012	AG1-255 E	2.2695	Adder	5.04
964081	AG1-263 C	3.0736	50/50	3.0736
964082	AG1-263 E	4.6104	50/50	4.6104
964371	AG1-299 C	0.1688	Adder	0.37
964372	AG1-299 E	0.1126	Adder	0.25
964381	AG1-300 C	0.2814	Adder	0.62
964382	AG1-300 E	0.1876	Adder	0.42
966061	AG1-475 C	2.8534	50/50	2.8534
966062	AG1-475 E	1.9022	50/50	1.9022
966071	AG1-476	10.4940	50/50	10.4940
966301	AG1-499 C	0.9224	Adder	2.05
966302	AG1-499 E	0.6149	Adder	1.36
G-007A	G-007A	11.3018	Confirmed LTF	11.3018
VFT	VFT	19.1758	Confirmed LTF	19.1758
CALDERWOOD	CALDERWOOD	0.5045	Confirmed LTF	0.5045
PRAIRIE	PRAIRIE	2.6295	Confirmed LTF	2.6295
CHEOAH	CHEOAH	0.5080	Confirmed LTF	0.5080
CBM-N	CBM-N	1.5396	Confirmed LTF	1.5396
COTTONWOOD	COTTONWOOD	2.1336	Confirmed LTF	2.1336
HAMLET	HAMLET	0.5833	Confirmed LTF	0.5833
GIBSON	GIBSON	0.5564	Confirmed LTF	0.5564
BLUEG	BLUEG	1.7690	Confirmed LTF	1.7690

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
TRIMBLE	TRIMBLE	0.5671	Confirmed LTF	0.5671
CATAWBA	CATAWBA	0.3542	Confirmed LTF	0.3542

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ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CK T ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADIN G %	POST PROJECT LOADIN G %	ACID C	MW IMPACT
174185815	214277	RICHMOND35	PECO	214012	WANEETA3	PECO	1	PECO_P4_CHICH045/ * \$ DELCO \$ PECO_P4_CHICH045 \$ STBK	breaker	1180.0	121.84	122.3	DC	12.67

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
213606	FAIRLESS (Deactivation : 01/06/2020)	8.2926	Adder	9.76
213878	PENNSBRY (Deactivation : 01/06/2020)	0.8363	Adder	0.98
213918	RICHMD91	3.5797	50/50	3.5797
213919	RICHMD92	3.5797	50/50	3.5797
218661	EHAMPSOLAR E	0.3572	Adder	0.42
219117	HARTZZ_E	0.3416	Adder	0.4
219123	BCRR_COGEN (Deactivation : 26/04/2020)	1.0248	Adder	1.21
219124	CAMDEN_STG	3.5160	50/50	3.5160
219126	CAMDEN_CTG	4.3196	50/50	4.3196
219137	THOSOLAR C (Deactivation : 01/06/2015)	0.1733	50/50	0.1733
219138	THOSOLAR E	0.2828	50/50	0.2828
219229	EAGLEPT_ST1	2.1671	50/50	2.1671
219230	EAGLEPT_G1	4.2837	50/50	4.2837
219231	EAGLEPT_G2	4.2816	50/50	4.2816
219235	EAGLEPT_ST2	1.5480	50/50	1.5480
219236	SOUTHERNHQ C	0.0176	50/50	0.0176
219237	SOUTHERNHQ E	0.1847	50/50	0.1847
219240	MANTUACREK E	0.6836	50/50	0.6836
219241	PENNAS_GAS	0.2611	50/50	0.2611
219242	PENNAS_SOLA	0.0282	50/50	0.0282
219258	KINSLEYDEP C	0.1366	50/50	0.1366
219259	KINSLEYDEP E	1.0091	50/50	1.0091
219267	GLOU CO RR	0.6094	50/50	0.6094
219273	CLEANLIGHT E	0.3702	Adder	0.44
219286	CAMD CO RR	1.2943	50/50	1.2943
219288	REEVES ST E	1.3328	Adder	1.57
219292	REEVESSO E	0.1228	Adder	0.14
219305	NAMERICA E	0.7142	Adder	0.84
219349	LDSOLAR E	0.7890	Adder	0.93
219608	WPEMNERT E	0.9011	Adder	1.06
219611	FLORENCE E	2.5745	Adder	3.03
219615	MILLCREEK C	0.0522	50/50	0.0522
219619	MILLCREEK E	0.5982	50/50	0.5982
219623	KINSLEYBEA C	0.1168	50/50	0.1168
219624	KINSLEYBEA E	0.7629	50/50	0.7629

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
219647	COOPERSOLA E	0.1348	50/50	0.1348
219687	LUMSOLAR_N E	0.4105	Adder	0.48
219689	LUMSOLAR_S E	0.4257	Adder	0.5
219726	BAT.STORG E	0.3327	50/50	0.3327
219728	YARDVSOLFA C	0.1898	Adder	0.22
219729	YARDVSOLFA E	0.3096	Adder	0.36
219765	PARADISE E	1.0938	50/50	1.0938
219766	PARADISE C	0.1025	50/50	0.1025
219912	PENNSAU2 C	1.7890	50/50	1.7890
219913	PENNSAU2 E	2.9340	50/50	2.9340
219914	CINNAMSOL C	0.2145	50/50	0.2145
219915	CINNAMSOL E	2.2184	50/50	2.2184
227801	ONTC&DCT	6.1807	Adder	7.27
227842	MARINGEN	1.2490	Adder	1.47
227881	GRENWCHG	0.3850	Adder	0.45
227928	V4-067E	0.2533	Adder	0.3
228102	BLE#2 ST (Deactivation : 30/04/2019)	24.4034	Adder	28.71
228251	CARLLS#4	0.8833	Adder	1.04
228261	V4-054E	1.1405	Adder	1.34
228343	QUINTN#1 (Deactivation : 26/04/2020)	0.3314	Adder	0.39
228357	V2-046E	2.4279	Adder	2.86
228712	V2-041E	0.4172	Adder	0.49
228721	V2-035E	0.0655	Adder	0.08
230404	Q90 GT1-CC	9.0831	50/50	9.0831
230405	Q90 GT2-CC	9.0831	50/50	9.0831
230406	Q90 ST-CC	15.2303	50/50	15.2303
901982	W1-119 E	0.6665	Adder	0.78
901992	W1-120E	0.6665	Adder	0.78
902082	W1-129E	0.3921	Adder	0.46
902092	W1-130E	1.0539	Adder	1.24
902322	W2-019 E	0.4703	Adder	0.55
902432	W2-030 E	0.9602	Adder	1.13
902692	W2-056 E	1.3579	Adder	1.6
902952	W2-082 E OP1	1.3201	Adder	1.55
905252	W4-025 E	0.5565	Adder	0.65
910862	OWENSCORIN E	0.5581	50/50	0.5581
912102	X4-015 E	0.3911	Adder	0.46
917471	Z2-083	3.3378	50/50	3.3378
917612	Z2-102 E	0.9848	Adder	1.16
924051	AB2-049 C	0.2181	Adder	0.26
924052	AB2-049 E	0.3559	Adder	0.42
924531	AB2-102 C	36.8921	Adder	43.4
924532	AB2-102 E	0.8198	Adder	0.96
924702	AB2-122 E (Withdrawn : 05/05/2020)	0.1900	Adder	0.22
925391	AC1-010 C	2.0509	50/50	2.0509
925392	AC1-010 E	1.2989	50/50	1.2989
925451	AC1-017 C	0.0609	50/50	0.0609
925452	AC1-017 E	0.6368	50/50	0.6368
925561	AC1-030 C	0.0478	50/50	0.0478
925562	AC1-030 E	0.4782	50/50	0.4782

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
930002	AB1-001 E	0.2145	Adder	0.25
930722	AB1-116 E	0.1527	Adder	0.18
930732	AB1-119 E	0.1381	Adder	0.16
932361	AC2-050 C O1	0.7390	Adder	0.87
932362	AC2-050 E O1	1.2058	Adder	1.42
933962	AD1-019 E	1.2169	Adder	1.43
934661	AD1-097 1	1.2430	Adder	1.46
934671	AD1-097 2	1.2430	Adder	1.46
934681	AD1-097 3	1.2442	Adder	1.46
934691	AD1-097 4	0.7365	Adder	0.87
936501	AD2-065 C	0.2049	Adder	0.24
936502	AD2-065 E	0.2826	Adder	0.33
937011	AD2-135 C	0.1115	Adder	0.13
937012	AD2-135 E	0.1895	Adder	0.22
938421	AE1-061 C	0.5085	Adder	0.6
938422	AE1-061 E	0.5085	Adder	0.6
938431	AE1-062 C	1.8891	Adder	2.22
938781	AE1-104 C O1	22.6186	Adder	26.61
938782	AE1-104 E O1	57.8607	Adder	68.07
938871	AE1-115 C	2.0062	Adder	2.36
939301	AE1-161 C	3.8267	Adder	4.5
939302	AE1-161 E	5.7401	Adder	6.75
939501	AE1-179 C O1	6.2112	Adder	7.31
939502	AE1-179 E O1	4.3833	Adder	5.16
939821	AE1-218 C O1	0.1589	Adder	0.19
939822	AE1-218 E O1	0.2383	Adder	0.28
939931	AE1-229 C O1	17.2588	Adder	20.3
939932	AE1-229 E O1	11.6933	Adder	13.76
940001	AE1-240 C O1	5.1469	Adder	6.06
940002	AE1-240 E O1	3.6738	Adder	4.32
940361	AE2-020 C	16.5929	Adder	19.52
940362	AE2-020 E	77.6893	Adder	91.4
940371	AE2-021 C	16.5929	Adder	19.52
940372	AE2-021 E	77.6893	Adder	91.4
940381	AE2-022 C	9.6792	Adder	11.39
940382	AE2-022 E	45.3188	Adder	53.32
942101	AE2-222 C	13.4984	Adder	15.88
942102	AE2-222 E	34.5385	Adder	40.63
942381	AE2-251 C	52.5661	Adder	61.84
942382	AE2-251 E	134.5019	Adder	158.24
943071	AE2-334 C	5.1857	Adder	6.1
943072	AE2-334 E	3.4571	Adder	4.07
943732	AF1-041 E	0.3835	Adder	0.45
944951	AF1-160 C	1.8891	Adder	2.22
945431	AF1-208 C O1	5.1089	Adder	6.01
945432	AF1-208 E O1	3.4059	Adder	4.01
945731	AF1-238 C O1	8.9396	Adder	10.52
945732	AF1-238 E O1	13.4095	Adder	15.78
945741	AF1-239 C	2.1034	Adder	2.47
945742	AF1-239 E	3.1552	Adder	3.71
945961	AF1-261	0.1869	Adder	0.22
945971	AF1-262	0.1734	Adder	0.2

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
945991	AF1-264	0.4268	50/50	0.4268
957221	AF2-016 C	19.3270	Adder	22.74
957222	AF2-016 E	28.9904	Adder	34.11
957251	AF2-019 C	1.3069	Adder	1.54
957252	AF2-019 E	1.9603	Adder	2.31
957261	AF2-020 C	1.4727	Adder	1.73
957262	AF2-020 E	2.2090	Adder	2.6
957271	AF2-021 C	0.9784	Adder	1.15
957272	AF2-021 E	1.4676	Adder	1.73
957291	AF2-023 C	3.4112	Adder	4.01
957292	AF2-023 E	5.1168	Adder	6.02
957301	AF2-024 C	2.2002	Adder	2.59
957302	AF2-024 E	3.3003	Adder	3.88
957311	AF2-025 C	1.2810	Adder	1.51
957312	AF2-025 E	1.9215	Adder	2.26
957443	AF2-038 BAT	4.6008	Merchant Transmission	4.6008
958811	AF2-172 C (Withdrawn : 01/14/2021)	0.6855	Adder	0.81
958812	AF2-172 E (Withdrawn : 01/14/2021)	1.1185	Adder	1.32
958831	AF2-174 C	0.2450	Adder	0.29
958832	AF2-174 E	0.3384	Adder	0.4
959631	AF2-254 C	0.5243	Adder	0.62
959632	AF2-254 E	0.7241	Adder	0.85
961621	AG1-001 C	1.1203	Adder	2.49
961622	AG1-001 E	1.8279	Adder	4.06
962311	AG1-080 C O2	3.6439	50/50	3.6439
962312	AG1-080 E O2	3.1331	50/50	3.1331
962611	AG1-110	2.0025	Adder	4.45
962621	AG1-111	1.0633	Adder	2.36
962801	AG1-129 C O2	3.4238	Adder	7.6
962802	AG1-129 E O2	2.2825	Adder	5.07
962811	AG1-130 C	0.2201	Adder	0.49
962812	AG1-130 E	0.3301	Adder	0.73
963411	AG1-190 C	0.6052	Adder	1.34
963412	AG1-190 E	0.8473	Adder	1.88
964001	AG1-254 C	2.6904	Adder	5.97
964002	AG1-254 E	1.3505	Adder	3.0
964011	AG1-255 C	4.1810	Adder	9.28
964012	AG1-255 E	2.0905	Adder	4.64
964081	AG1-263 C	2.7345	50/50	2.7345
964082	AG1-263 E	4.1017	50/50	4.1017
964371	AG1-299 C	0.1589	Adder	0.35
964372	AG1-299 E	0.1059	Adder	0.24
964381	AG1-300 C	0.2648	Adder	0.59
964382	AG1-300 E	0.1766	Adder	0.39
966061	AG1-475 C	2.5727	50/50	2.5727
966062	AG1-475 E	1.7152	50/50	1.7152
966071	AG1-476	9.4620	50/50	9.4620
966301	AG1-499 C	0.8449	Adder	1.88
966302	AG1-499 E	0.5633	Adder	1.25
G-007A	G-007A	13.9918	Confirmed LTF	13.9918
VFT	VFT	27.4254	Confirmed LTF	27.4254

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
CALDERWOOD	CALDERWOOD	0.5984	Confirmed LTF	0.5984
PRAIRIE	PRAIRIE	3.0996	Confirmed LTF	3.0996
CHEOAH	CHEOAH	0.6026	Confirmed LTF	0.6026
CBM-N	CBM-N	2.5260	Confirmed LTF	2.5260
COTTONWOOD	COTTONWOOD	2.5242	Confirmed LTF	2.5242
HAMLET	HAMLET	0.6988	Confirmed LTF	0.6988
GIBSON	GIBSON	0.6547	Confirmed LTF	0.6547
BLUEG	BLUEG	2.0815	Confirmed LTF	2.0815
TRIMBLE	TRIMBLE	0.6672	Confirmed LTF	0.6672
CATAWBA	CATAWBA	0.4228	Confirmed LTF	0.4228

13.5.8 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
174185775	219110	GLOUCSTR	PSE&G	219755	CUTHBERT_4	PSE&G	1	PS_P2-3_GLOU_2-4_LT	breaker	758.0	128.82	129.16	DC	8.08

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
219124	CAMDEN_STG	3.4266	50/50	3.4266
219126	CAMDEN_CTG	4.2096	50/50	4.2096
219137	THOSOLAR C (Deactivation : 01/06/2015)	0.1539	50/50	0.1539
219138	THOSOLAR E	0.2510	50/50	0.2510
219229	EAGLEPT_ST1	2.0436	50/50	2.0436
219230	EAGLEPT_G1	4.0405	50/50	4.0405
219231	EAGLEPT_G2	4.0368	50/50	4.0368
219235	EAGLEPT_ST2	1.4597	50/50	1.4597
219240	MANTUACREK E	0.6662	50/50	0.6662
219258	KINSLEYDEP C	0.1284	50/50	0.1284
219259	KINSLEYDEP E	0.9482	50/50	0.9482
219267	GLOU CO RR	0.5939	50/50	0.5939
219286	CAMD CO RR	1.2613	50/50	1.2613
219623	KINSLEYBEA C	0.1074	50/50	0.1074
219624	KINSLEYBEA E	0.7017	50/50	0.7017
219726	BAT.STORG E	0.0913	Adder	0.11
219765	PARADISE E	1.0660	50/50	1.0660
219766	PARADISE C	0.0999	50/50	0.0999
227801	ONTC&DCT	3.3483	Adder	3.94
227842	MARINGEN	0.6766	Adder	0.8
227881	GRENWCHG	0.3576	50/50	0.3576
227928	V4-067E	0.1348	Adder	0.16
228102	BLE#2 ST (Deactivation : 30/04/2019)	13.7517	Adder	16.18
228251	CARLLS#4	0.5804	Adder	0.68
228261	V4-054E	0.7488	Adder	0.88
228343	QUINTN#1 (Deactivation : 26/04/2020)	0.2335	Adder	0.27
228357	V2-046E	1.7323	Adder	2.04
228400	MICK 1CT	1.7361	50/50	1.7361
228471	VALERO1	0.5901	50/50	0.5901
228472	VALERO2	0.3332	50/50	0.3332
228473	VALERO3	0.3332	50/50	0.3332
228484	VALERO4	0.3332	50/50	0.3332
228712	V2-041E	0.2516	Adder	0.3
228721	V2-035E	0.0439	Adder	0.05
230404	Q90 GT1-CC	7.6104	50/50	7.6104
230405	Q90 GT2-CC	7.6104	50/50	7.6104
230406	Q90 ST-CC	12.7608	50/50	12.7608
902092	W1-130E	0.6629	Adder	0.78

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
902432	W2-030 E	0.5212	Adder	0.61
910862	OWENSCORIN E	0.1928	Adder	0.23
917471	Z2-083	2.7966	50/50	2.7966
924051	AB2-049 C	0.1153	Adder	0.14
924052	AB2-049 E	0.1881	Adder	0.22
924531	AB2-102 C	22.0358	Adder	25.92
924532	AB2-102 E	0.4897	Adder	0.58
924702	AB2-122 E (Withdrawn : 05/05/2020)	0.1011	Adder	0.12
925391	AC1-010 C	1.9987	50/50	1.9987
925392	AC1-010 E	1.2658	50/50	1.2658
930002	AB1-001 E	0.1071	Adder	0.13
930722	AB1-116 E	0.0882	Adder	0.1
930732	AB1-119 E	0.0675	Adder	0.08
933962	AD1-019 E	0.6592	Adder	0.78
936501	AD2-065 C	0.0874	Adder	0.1
936502	AD2-065 E	0.1206	Adder	0.14
937011	AD2-135 C	0.0577	Adder	0.07
937012	AD2-135 E	0.0981	Adder	0.12
938421	AE1-061 C	0.3198	Adder	0.38
938422	AE1-061 E	0.3198	Adder	0.38
938431	AE1-062 C	0.7963	Adder	0.94
938781	AE1-104 C O1	12.7460	Adder	15.0
938782	AE1-104 E O1	32.6055	Adder	38.36
938871	AE1-115 C	1.4605	Adder	1.72
939301	AE1-161 C	2.4795	Adder	2.92
939302	AE1-161 E	3.7192	Adder	4.38
939501	AE1-179 C O1	3.9077	Adder	4.6
939502	AE1-179 E O1	2.7577	Adder	3.24
939821	AE1-218 C O1	0.0980	Adder	0.12
939822	AE1-218 E O1	0.1471	Adder	0.17
939931	AE1-229 C O1	11.9118	Adder	14.01
939932	AE1-229 E O1	8.0706	Adder	9.49
940001	AE1-240 C O1	3.2464	Adder	3.82
940002	AE1-240 E O1	2.3173	Adder	2.73
940361	AE2-020 C	8.5724	Adder	10.09
940362	AE2-020 E	40.1367	Adder	47.22
940371	AE2-021 C	8.5724	Adder	10.09
940372	AE2-021 E	40.1367	Adder	47.22
940381	AE2-022 C	5.0006	Adder	5.88
940382	AE2-022 E	23.4131	Adder	27.54
942101	AE2-222 C	7.3124	Adder	8.6
942102	AE2-222 E	18.7104	Adder	22.01
942381	AE2-251 C	27.1572	Adder	31.95
942382	AE2-251 E	69.4878	Adder	81.75
943071	AE2-334 C	3.2392	Adder	3.81
943072	AE2-334 E	2.1595	Adder	2.54
943732	AF1-041 E	0.2069	Adder	0.24
944951	AF1-160 C	0.7963	Adder	0.94
945431	AF1-208 C O1	3.4719	Adder	4.08
945432	AF1-208 E O1	2.3146	Adder	2.72
945731	AF1-238 C O1	5.5107	Adder	6.48
945732	AF1-238 E O1	8.2660	Adder	9.72

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
945741	AF1-239 C	1.2966	Adder	1.53
945742	AF1-239 E	1.9449	Adder	2.29
945961	AF1-261	-0.0688	Adder	-0.08
945971	AF1-262	0.1162	Adder	0.14
945991	AF1-264	0.1474	Adder	0.17
957221	AF2-016 C	10.5488	Adder	12.41
957222	AF2-016 E	15.8233	Adder	18.62
957251	AF2-019 C	0.7545	Adder	0.89
957252	AF2-019 E	1.1317	Adder	1.33
957261	AF2-020 C	0.9682	Adder	1.14
957262	AF2-020 E	1.4523	Adder	1.71
957291	AF2-023 C	2.4844	Adder	2.92
957292	AF2-023 E	3.7266	Adder	4.38
957301	AF2-024 C	2.0604	50/50	2.0604
957302	AF2-024 E	3.0905	50/50	3.0905
957311	AF2-025 C	0.6939	Adder	0.82
957312	AF2-025 E	1.0409	Adder	1.22
958811	AF2-172 C (Withdrawn : 01/14/2021)	0.4400	Adder	0.52
958812	AF2-172 E (Withdrawn : 01/14/2021)	0.7179	Adder	0.84
961621	AG1-001 C	0.7145	Adder	1.59
961622	AG1-001 E	1.1657	Adder	2.59
962611	AG1-110	0.8441	Adder	1.87
962621	AG1-111	0.7740	Adder	1.72
962801	AG1-129 C O2	2.1834	Adder	4.85
962802	AG1-129 E O2	1.4556	Adder	3.23
962813	AG1-130 BAT	0.2384	Merchant Transmission	0.2384
964001	AG1-254 C	1.9325	Adder	4.29
964002	AG1-254 E	0.9701	Adder	2.15
964011	AG1-255 C	2.9857	Adder	6.63
964012	AG1-255 E	1.4929	Adder	3.31
964081	AG1-263 C	2.6649	50/50	2.6649
964082	AG1-263 E	3.9973	50/50	3.9973
964371	AG1-299 C	0.0952	Adder	0.21
964372	AG1-299 E	0.0634	Adder	0.14
964381	AG1-300 C	0.1586	Adder	0.35
964382	AG1-300 E	0.1057	Adder	0.23
966061	AG1-475 C	2.1556	50/50	2.1556
966062	AG1-475 E	1.4371	50/50	1.4371
966071	AG1-476	7.9278	50/50	7.9278
966301	AG1-499 C	0.6301	Adder	1.4
966302	AG1-499 E	0.4200	Adder	0.93
CALDERWOOD	CALDERWOOD	0.1456	Confirmed LTF	0.1456
NY	NY	0.4983	Confirmed LTF	0.4983
PRAIRIE	PRAIRIE	0.7878	Confirmed LTF	0.7878
O-066	O-066	7.6520	Confirmed LTF	7.6520
SIGE	SIGE	0.0871	Confirmed LTF	0.0871
CHEOAH	CHEOAH	0.1461	Confirmed LTF	0.1461
COTTONWOOD	COTTONWOOD	0.6258	Confirmed LTF	0.6258
G-007	G-007	0.5649	Confirmed LTF	0.5649
HAMLET	HAMLET	0.1577	Confirmed LTF	0.1577
GIBSON	GIBSON	0.1682	Confirmed LTF	0.1682

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
BLUEG	BLUEG	0.5347	Confirmed LTF	0.5347
TRIMBLE	TRIMBLE	0.1714	Confirmed LTF	0.1714
CATAWBA	CATAWBA	0.0980	Confirmed LTF	0.0980

13.5.9 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
174185841	219110	GLOUCSTR	PSE&G	219125	CAMDEN	PSE&G	1	PS_P2-3_CUTB_1-4_LT	breaker	771.0	118.16	118.49	DC	7.95

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
219124	CAMDEN_STG	3.3597	50/50	3.3597
219126	CAMDEN_CTG	4.1275	50/50	4.1275
219137	THOSOLAR C (Deactivation : 01/06/2015)	0.1509	50/50	0.1509
219138	THOSOLAR E	0.2462	50/50	0.2462
219229	EAGLEPT_ST1	2.0041	50/50	2.0041
219230	EAGLEPT_G1	3.9622	50/50	3.9622
219231	EAGLEPT_G2	3.9586	50/50	3.9586
219235	EAGLEPT_ST2	1.4315	50/50	1.4315
219240	MANTUACREK E	0.6532	50/50	0.6532
219258	KINSLEYDEP C	0.1259	50/50	0.1259
219259	KINSLEYDEP E	0.9298	50/50	0.9298
219267	GLOU CO RR	0.5823	50/50	0.5823
219286	CAMD CO RR	1.2367	50/50	1.2367
219623	KINSLEYBEA C	0.1057	50/50	0.1057
219624	KINSLEYBEA E	0.6905	50/50	0.6905
219647	COOPERSOLA E	0.0315	Adder	0.04
219726	BAT.STORG E	0.1279	Adder	0.15
219765	PARADISE E	1.0452	50/50	1.0452
219766	PARADISE C	0.0979	50/50	0.0979
227801	ONTC&DCT	3.2981	Adder	3.88
227842	MARINGEN	0.6664	Adder	0.78
227881	GRENWCHG	0.3510	50/50	0.3510
227928	V4-067E	0.1328	Adder	0.16
228102	BLE#2 ST (Deactivation : 30/04/2019)	13.5408	Adder	15.93
228251	CARLLS#4	0.5707	Adder	0.67
228261	V4-054E	0.7363	Adder	0.87
228343	QUINTN#1 (Deactivation : 26/04/2020)	0.2295	Adder	0.27
228357	V2-046E	1.7021	Adder	2.0
228400	MICK 1CT	1.7041	50/50	1.7041
228471	VALERO1	0.5793	50/50	0.5793
228472	VALERO2	0.3271	50/50	0.3271
228473	VALERO3	0.3271	50/50	0.3271
228484	VALERO4	0.3271	50/50	0.3271
228712	V2-041E	0.2476	Adder	0.29
228721	V2-035E	0.0432	Adder	0.05
230404	Q90 GT1-CC	7.4671	50/50	7.4671
230405	Q90 GT2-CC	7.4671	50/50	7.4671
230406	Q90 ST-CC	12.5205	50/50	12.5205

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
902092	W1-130E	0.6523	Adder	0.77
902432	W2-030 E	0.5134	Adder	0.6
910862	OWENSCORIN E	0.2511	Adder	0.3
917471	Z2-083	2.7439	50/50	2.7439
924051	AB2-049 C	0.1136	Adder	0.13
924052	AB2-049 E	0.1854	Adder	0.22
924531	AB2-102 C	21.6858	Adder	25.51
924532	AB2-102 E	0.4819	Adder	0.57
924702	AB2-122 E (Withdrawn : 05/05/2020)	0.0996	Adder	0.12
925391	AC1-010 C	1.9597	50/50	1.9597
925392	AC1-010 E	1.2411	50/50	1.2411
930002	AB1-001 E	0.1055	Adder	0.12
930722	AB1-116 E	0.0869	Adder	0.1
930732	AB1-119 E	0.0666	Adder	0.08
933962	AD1-019 E	0.6494	Adder	0.76
936501	AD2-065 C	0.0863	Adder	0.1
936502	AD2-065 E	0.1191	Adder	0.14
937011	AD2-135 C	0.0570	Adder	0.07
937012	AD2-135 E	0.0968	Adder	0.11
938421	AE1-061 C	0.3147	Adder	0.37
938422	AE1-061 E	0.3147	Adder	0.37
938431	AE1-062 C	0.7862	Adder	0.92
938781	AE1-104 C O1	12.5505	Adder	14.77
938782	AE1-104 E O1	32.1054	Adder	37.77
938871	AE1-115 C	1.4346	Adder	1.69
939301	AE1-161 C	2.4392	Adder	2.87
939302	AE1-161 E	3.6587	Adder	4.3
939501	AE1-179 C O1	3.8440	Adder	4.52
939502	AE1-179 E O1	2.7128	Adder	3.19
939821	AE1-218 C O1	0.0965	Adder	0.11
939822	AE1-218 E O1	0.1447	Adder	0.17
939931	AE1-229 C O1	11.7084	Adder	13.77
939932	AE1-229 E O1	7.9327	Adder	9.33
940001	AE1-240 C O1	3.1934	Adder	3.76
940002	AE1-240 E O1	2.2794	Adder	2.68
940361	AE2-020 C	8.4476	Adder	9.94
940362	AE2-020 E	39.5521	Adder	46.53
940371	AE2-021 C	8.4476	Adder	9.94
940372	AE2-021 E	39.5521	Adder	46.53
940381	AE2-022 C	4.9277	Adder	5.8
940382	AE2-022 E	23.0721	Adder	27.14
942101	AE2-222 C	7.2028	Adder	8.47
942102	AE2-222 E	18.4298	Adder	21.68
942381	AE2-251 C	26.7617	Adder	31.48
942382	AE2-251 E	68.4757	Adder	80.56
943071	AE2-334 C	3.1878	Adder	3.75
943072	AE2-334 E	2.1252	Adder	2.5
943732	AF1-041 E	0.2038	Adder	0.24
944951	AF1-160 C	0.7862	Adder	0.92
945431	AF1-208 C O1	3.4129	Adder	4.02
945432	AF1-208 E O1	2.2753	Adder	2.68
945731	AF1-238 C O1	5.4222	Adder	6.38

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
945732	AF1-238 E O1	8.1333	Adder	9.57
945741	AF1-239 C	1.2758	Adder	1.5
945742	AF1-239 E	1.9137	Adder	2.25
945961	AF1-261	-0.0676	Adder	-0.08
945971	AF1-262	0.1142	Adder	0.13
945991	AF1-264	0.1920	Adder	0.23
957221	AF2-016 C	10.3907	Adder	12.22
957222	AF2-016 E	15.5861	Adder	18.34
957251	AF2-019 C	0.7428	Adder	0.87
957252	AF2-019 E	1.1141	Adder	1.31
957261	AF2-020 C	0.9520	Adder	1.12
957262	AF2-020 E	1.4280	Adder	1.68
957291	AF2-023 C	2.4405	Adder	2.87
957292	AF2-023 E	3.6607	Adder	4.31
957301	AF2-024 C	2.0224	50/50	2.0224
957302	AF2-024 E	3.0336	50/50	3.0336
957311	AF2-025 C	0.6835	Adder	0.8
957312	AF2-025 E	1.0253	Adder	1.21
958811	AF2-172 C (Withdrawn : 01/14/2021)	0.4328	Adder	0.51
958812	AF2-172 E (Withdrawn : 01/14/2021)	0.7061	Adder	0.83
961621	AG1-001 C	0.7027	Adder	1.56
961622	AG1-001 E	1.1466	Adder	2.55
962611	AG1-110	0.8333	Adder	1.85
962621	AG1-111	0.7604	Adder	1.69
962801	AG1-129 C O2	2.1476	Adder	4.77
962802	AG1-129 E O2	1.4317	Adder	3.18
962813	AG1-130 BAT	0.2343	Merchant Transmission	0.2343
964001	AG1-254 C	1.8986	Adder	4.21
964002	AG1-254 E	0.9531	Adder	2.12
964011	AG1-255 C	2.9335	Adder	6.51
964012	AG1-255 E	1.4667	Adder	3.26
964081	AG1-263 C	2.6129	50/50	2.6129
964082	AG1-263 E	3.9193	50/50	3.9193
964371	AG1-299 C	0.0936	Adder	0.21
964372	AG1-299 E	0.0624	Adder	0.14
964381	AG1-300 C	0.1561	Adder	0.35
964382	AG1-300 E	0.1040	Adder	0.23
966061	AG1-475 C	2.1150	50/50	2.1150
966062	AG1-475 E	1.4100	50/50	1.4100
966071	AG1-476	7.7785	50/50	7.7785
966301	AG1-499 C	0.6188	Adder	1.37
966302	AG1-499 E	0.4126	Adder	0.92
CALDERWOOD	CALDERWOOD	0.1431	Confirmed LTF	0.1431
NY	NY	0.4889	Confirmed LTF	0.4889
PRAIRIE	PRAIRIE	0.7749	Confirmed LTF	0.7749
O-066	O-066	7.4972	Confirmed LTF	7.4972
SIGE	SIGE	0.0853	Confirmed LTF	0.0853
CHEOAH	CHEOAH	0.1436	Confirmed LTF	0.1436
COTTONWOOD	COTTONWOOD	0.6153	Confirmed LTF	0.6153
G-007	G-007	0.5481	Confirmed LTF	0.5481
HAMLET	HAMLET	0.1553	Confirmed LTF	0.1553

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
GIBSON	GIBSON	0.1654	Confirmed LTF	0.1654
BLUEG	BLUEG	0.5260	Confirmed LTF	0.5260
TRIMBLE	TRIMBLE	0.1686	Confirmed LTF	0.1686
CATAWBA	CATAWBA	0.0962	Confirmed LTF	0.0962

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ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CK T ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADIN G %	POST PROJECT LOADIN G %	AC D C	MW IMPAC T
174185846	219125	CAMDEN	PSE&G	214206	RICHRE29	PECO	1	PECO_P4_CHICH045/ * \$ DELCO \$ PECO_P4_CHICH045 \$ STBK	breaker	1344.0	118.0	118.34	DC	13.56

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
200062	SALEM G3	4.5040	Adder	5.3
218661	EHAMPSOLAR E	0.3346	Adder	0.39
219123	BCRR_COGEN (Deactivation : 26/04/2020)	0.6958	Adder	0.82
219124	CAMDEN_STG	3.9521	50/50	3.9521
219126	CAMDEN_CTG	4.8553	50/50	4.8553
219137	THOSOLAR C (Deactivation : 01/06/2015)	0.1932	50/50	0.1932
219138	THOSOLAR E	0.3151	50/50	0.3151
219229	EAGLEPT_ST1	2.4284	50/50	2.4284
219230	EAGLEPT_G1	4.8003	50/50	4.8003
219231	EAGLEPT_G2	4.7977	50/50	4.7977
219235	EAGLEPT_ST2	1.7346	50/50	1.7346
219236	SOUTHERNHQ C	0.0178	50/50	0.0178
219237	SOUTHERNHQ E	0.1866	50/50	0.1866
219240	MANTUACREK E	0.7684	50/50	0.7684
219241	PENNAS_GAS	0.2946	50/50	0.2946
219242	PENNAS_SOLA	0.0319	50/50	0.0319
219258	KINSLEYDEP C	0.1530	50/50	0.1530
219259	KINSLEYDEP E	1.1304	50/50	1.1304
219267	GLOU CO RR	0.6849	50/50	0.6849
219273	CLEANLIGHT E	0.3631	Adder	0.43
219286	CAMD CO RR	1.4548	50/50	1.4548
219288	REEVES ST E	1.2671	Adder	1.49
219292	REEVESSO E	0.1156	Adder	0.14
219305	NAMERICA E	0.4897	Adder	0.58
219349	LDSOLAR E	0.5410	Adder	0.64
219608	WPEMNERT E	0.6178	Adder	0.73
219611	FLORENCE E	1.7652	Adder	2.08
219619	MILLCREEK E	0.4294	Adder	0.51
219623	KINSLEYBEA C	0.1304	50/50	0.1304
219624	KINSLEYBEA E	0.8521	50/50	0.8521
219647	COOPERSOLA E	0.1496	50/50	0.1496
219687	LUMSOLAR_N E	0.3903	Adder	0.46
219689	LUMSOLAR_S E	0.3850	Adder	0.45
219726	BAT.STORG E	0.3704	50/50	0.3704
219765	PARADISE E	1.2294	50/50	1.2294
219766	PARADISE C	0.1152	50/50	0.1152
219912	PENNSAU2 C	2.0189	50/50	2.0189

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
219913	PENNSAU2 E	3.3111	50/50	3.3111
219914	CINNAM SOL C	0.2421	50/50	0.2421
219915	CINNAM SOL E	2.5035	50/50	2.5035
227801	ONTC&DCT	6.4787	Adder	7.62
227842	MARINGEN	1.3092	Adder	1.54
227881	GRENWCHG	0.4982	50/50	0.4982
227928	V4-067E	0.2650	Adder	0.31
228102	BLE#2 ST (Deactivation : 30/04/2019)	25.7176	Adder	30.26
228251	CARLLS#4	0.9490	Adder	1.12
228261	V4-054E	1.2253	Adder	1.44
228343	QUINTN#1 (Deactivation : 26/04/2020)	0.3592	Adder	0.42
228357	V2-046E	2.6357	Adder	3.1
228400	MICK 1CT	2.4021	50/50	2.4021
228471	VALERO1	0.8210	50/50	0.8210
228472	VALERO2	0.4636	50/50	0.4636
228473	VALERO3	0.4636	50/50	0.4636
228484	VALERO4	0.4636	50/50	0.4636
228712	V2-041E	0.4437	Adder	0.52
228721	V2-035E	0.0706	Adder	0.08
230404	Q90 GT1-CC	10.0739	50/50	10.0739
230405	Q90 GT2-CC	10.0739	50/50	10.0739
230406	Q90 ST-CC	16.8915	50/50	16.8915
902082	W1-129E	0.3641	Adder	0.43
902092	W1-130E	1.1259	Adder	1.32
902322	W2-019 E	0.4367	Adder	0.51
902432	W2-030 E	1.0068	Adder	1.18
902692	W2-056 E	1.2628	Adder	1.49
902952	W2-082 E OP1	1.2255	Adder	1.44
905252	W4-025 E	0.5167	Adder	0.61
910862	OWENSCORIN E	0.6210	50/50	0.6210
912102	X4-015 E	0.3631	Adder	0.43
917471	Z2-083	3.7019	50/50	3.7019
924051	AB2-049 C	0.2294	Adder	0.27
924052	AB2-049 E	0.3743	Adder	0.44
924531	AB2-102 C	39.2005	Adder	46.12
924532	AB2-102 E	0.8711	Adder	1.02
924702	AB2-122 E (Withdrawn : 05/05/2020)	0.1988	Adder	0.23
925391	AC1-010 C	2.3052	50/50	2.3052
925392	AC1-010 E	1.4600	50/50	1.4600
925452	AC1-017 E	0.4571	Adder	0.54
925561	AC1-030 C	0.0484	50/50	0.0484
925562	AC1-030 E	0.4840	50/50	0.4840
930002	AB1-001 E	0.2221	Adder	0.26
930722	AB1-116 E	0.1620	Adder	0.19
930732	AB1-119 E	0.1441	Adder	0.17
932361	AC2-050 C O1	0.7233	Adder	0.85
932362	AC2-050 E O1	1.1801	Adder	1.39
933962	AD1-019 E	1.2756	Adder	1.5
934661	AD1-097 1	1.3760	Adder	1.62
934671	AD1-097 2	1.3760	Adder	1.62

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
934681	AD1-097 3	1.3774	Adder	1.62
934691	AD1-097 4	0.8154	Adder	0.96
936501	AD2-065 C	0.2114	Adder	0.25
936502	AD2-065 E	0.2916	Adder	0.34
937011	AD2-135 C	0.1170	Adder	0.14
937012	AD2-135 E	0.1989	Adder	0.23
938421	AE1-061 C	0.5432	Adder	0.64
938422	AE1-061 E	0.5432	Adder	0.64
938431	AE1-062 C	1.9502	Adder	2.29
938781	AE1-104 C O1	23.8366	Adder	28.04
938782	AE1-104 E O1	60.9766	Adder	71.74
938871	AE1-115 C	2.1835	Adder	2.57
939301	AE1-161 C	4.1048	Adder	4.83
939302	AE1-161 E	6.1572	Adder	7.24
939501	AE1-179 C O1	6.6393	Adder	7.81
939502	AE1-179 E O1	4.6855	Adder	5.51
939821	AE1-218 C O1	0.1697	Adder	0.2
939822	AE1-218 E O1	0.2545	Adder	0.3
939931	AE1-229 C O1	18.6560	Adder	21.95
939932	AE1-229 E O1	12.6400	Adder	14.87
940001	AE1-240 C O1	5.5034	Adder	6.47
940002	AE1-240 E O1	3.9283	Adder	4.62
940361	AE2-020 C	17.2995	Adder	20.35
940362	AE2-020 E	80.9977	Adder	95.29
940371	AE2-021 C	17.2995	Adder	20.35
940372	AE2-021 E	80.9977	Adder	95.29
940381	AE2-022 C	10.0914	Adder	11.87
940382	AE2-022 E	47.2487	Adder	55.59
942101	AE2-222 C	14.1490	Adder	16.65
942102	AE2-222 E	36.2033	Adder	42.59
942381	AE2-251 C	54.8046	Adder	64.48
942382	AE2-251 E	140.2296	Adder	164.98
943071	AE2-334 C	5.5447	Adder	6.52
943072	AE2-334 E	3.6965	Adder	4.35
943732	AF1-041 E	0.4017	Adder	0.47
944951	AF1-160 C	1.9502	Adder	2.29
945431	AF1-208 C O1	5.5119	Adder	6.48
945432	AF1-208 E O1	3.6746	Adder	4.32
945731	AF1-238 C O1	9.5340	Adder	11.22
945732	AF1-238 E O1	14.3009	Adder	16.82
945741	AF1-239 C	2.2433	Adder	2.64
945742	AF1-239 E	3.3649	Adder	3.96
945961	AF1-261	0.1281	Adder	0.15
945971	AF1-262	0.1868	Adder	0.22
945991	AF1-264	0.4749	50/50	0.4749
957221	AF2-016 C	20.2796	Adder	23.86
957222	AF2-016 E	30.4195	Adder	35.79
957251	AF2-019 C	1.3818	Adder	1.63
957252	AF2-019 E	2.0727	Adder	2.44
957261	AF2-020 C	1.5824	Adder	1.86
957262	AF2-020 E	2.3736	Adder	2.79
957271	AF2-021 C	0.9705	Adder	1.14

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
957272	AF2-021 E	1.4557	Adder	1.71
957291	AF2-023 C	3.7129	Adder	4.37
957292	AF2-023 E	5.5694	Adder	6.55
957301	AF2-024 C	2.8504	50/50	2.8504
957302	AF2-024 E	4.2756	50/50	4.2756
957311	AF2-025 C	1.3427	Adder	1.58
957312	AF2-025 E	2.0141	Adder	2.37
957443	AF2-038 BAT	4.2600	Merchant Transmission	4.2600
958811	AF2-172 C (Withdrawn : 01/14/2021)	0.7345	Adder	0.86
958812	AF2-172 E (Withdrawn : 01/14/2021)	1.1984	Adder	1.41
958831	AF2-174 C	0.2398	Adder	0.28
958832	AF2-174 E	0.3312	Adder	0.39
959631	AF2-254 C	0.4867	Adder	0.57
959632	AF2-254 E	0.6722	Adder	0.79
961621	AG1-001 C	1.1995	Adder	2.66
961622	AG1-001 E	1.9571	Adder	4.34
962311	AG1-080 C O2	4.0470	50/50	4.0470
962312	AG1-080 E O2	3.4796	50/50	3.4796
962611	AG1-110	2.0673	Adder	4.59
962621	AG1-111	1.1572	Adder	2.57
962801	AG1-129 C O2	3.6658	Adder	8.14
962802	AG1-129 E O2	2.4438	Adder	5.42
962811	AG1-130 C	0.1509	Adder	0.33
962812	AG1-130 E	0.2263	Adder	0.5
963411	AG1-190 C	0.4150	Adder	0.92
963412	AG1-190 E	0.5810	Adder	1.29
964001	AG1-254 C	2.9232	Adder	6.49
964002	AG1-254 E	1.4674	Adder	3.26
964011	AG1-255 C	4.5391	Adder	10.08
964012	AG1-255 E	2.2695	Adder	5.04
964081	AG1-263 C	3.0736	50/50	3.0736
964082	AG1-263 E	4.6104	50/50	4.6104
964371	AG1-299 C	0.1688	Adder	0.37
964372	AG1-299 E	0.1126	Adder	0.25
964381	AG1-300 C	0.2814	Adder	0.62
964382	AG1-300 E	0.1876	Adder	0.42
966061	AG1-475 C	2.8534	50/50	2.8534
966062	AG1-475 E	1.9022	50/50	1.9022
966071	AG1-476	10.4940	50/50	10.4940
966301	AG1-499 C	0.9224	Adder	2.05
966302	AG1-499 E	0.6149	Adder	1.36
G-007A	G-007A	11.3018	Confirmed LTF	11.3018
VFT	VFT	19.1758	Confirmed LTF	19.1758
CALDERWOOD	CALDERWOOD	0.5045	Confirmed LTF	0.5045
PRAIRIE	PRAIRIE	2.6295	Confirmed LTF	2.6295
CHEOAH	CHEOAH	0.5080	Confirmed LTF	0.5080
CBM-N	CBM-N	1.5396	Confirmed LTF	1.5396
COTTONWOOD	COTTONWOOD	2.1336	Confirmed LTF	2.1336
HAMLET	HAMLET	0.5833	Confirmed LTF	0.5833
GIBSON	GIBSON	0.5564	Confirmed LTF	0.5564
BLUEG	BLUEG	1.7690	Confirmed LTF	1.7690

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
TRIMBLE	TRIMBLE	0.5671	Confirmed LTF	0.5671
CATAWBA	CATAWBA	0.3542	Confirmed LTF	0.3542

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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
165251827	227900	CARDIFF	AE	219100	NEWFRDM	PSE&G	1	JC-P7-1-JCC-230-13	tower	692.0	278.57	279.07	DC	7.57

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
206360	28O CRK C1	2.0809	50/50	2.0809
206361	28O CRK C2	1.5272	50/50	1.5272
227801	ONTC&DCT	12.9792	50/50	12.9792
227842	MARINGEN	2.6226	50/50	2.6226
227927	V4-067C	0.0573	50/50	0.0573
227928	V4-067E	0.5926	50/50	0.5926
228014	PVILLEG	0.6399	50/50	0.6399
228102	BLE#2 ST (Deactivation : 30/04/2019)	35.9678	Adder	42.32
228251	CARLLS#4	0.4613	Adder	0.54
228261	V4-054E	0.5956	Adder	0.7
228343	QUINTN#1 (Deactivation : 26/04/2020)	0.1174	Adder	0.14
228712	V2-041E	0.3583	Adder	0.42
228721	V2-035E	0.0251	Adder	0.03
228729	W2-030 C	0.1942	50/50	0.1942
228731	V3-036	0.2918	50/50	0.2918
228754	AB1-001 C	0.0482	50/50	0.0482
902092	W1-130E	0.6998	Adder	0.82
902432	W2-030 E	2.0229	50/50	2.0229
924531	AB2-102 C	33.1972	Adder	39.06
924532	AB2-102 E	0.7377	Adder	0.87
924701	AB2-122 C (Withdrawn : 05/05/2020)	0.0409	50/50	0.0409
924702	AB2-122 E (Withdrawn : 05/05/2020)	0.4444	50/50	0.4444
930002	AB1-001 E	0.5020	50/50	0.5020
933962	AD1-019 E	2.5555	50/50	2.5555
938421	AE1-061 C	0.3376	Adder	0.4
938422	AE1-061 E	0.3376	Adder	0.4
938781	AE1-104 C O1	33.3372	Adder	39.22
938782	AE1-104 E O1	100.3294	50/50	100.3294
939301	AE1-161 C	1.5791	Adder	1.86
939302	AE1-161 E	2.3687	Adder	2.79
939501	AE1-179 C O1	3.9276	Adder	4.62
939502	AE1-179 E O1	2.7718	Adder	3.26
939931	AE1-229 C O1	6.1617	Adder	7.25
939932	AE1-229 E O1	4.1747	Adder	4.91
940001	AE1-240 C O1	3.2757	Adder	3.85
940002	AE1-240 E O1	2.3382	Adder	2.75
940161	AE2-000 C O1	88.9501	50/50	88.9501
940162	AE2-000 E O1	227.5927	50/50	227.5927

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
940361	AE2-020 C	44.5622	50/50	44.5622
940362	AE2-020 E	208.6434	50/50	208.6434
940371	AE2-021 C	44.5622	50/50	44.5622
940372	AE2-021 E	208.6434	50/50	208.6434
940381	AE2-022 C	25.9946	50/50	25.9946
940382	AE2-022 E	121.7086	50/50	121.7086
942101	AE2-222 C	28.3433	50/50	28.3433
942102	AE2-222 E	72.5227	50/50	72.5227
942381	AE2-251 C	141.1722	50/50	141.1722
942382	AE2-251 E	361.2199	50/50	361.2199
943732	AF1-041 E	0.8216	50/50	0.8216
944331	AF1-101 C O1	87.2044	50/50	87.2044
944332	AF1-101 E O1	223.1316	50/50	223.1316
945431	AF1-208 C O1	2.2434	Adder	2.64
945432	AF1-208 E O1	1.4956	Adder	1.76
945731	AF1-238 C O1	5.9160	Adder	6.96
945732	AF1-238 E O1	8.8740	Adder	10.44
945741	AF1-239 C	1.3920	Adder	1.64
945742	AF1-239 E	2.0880	Adder	2.46
945971	AF1-262	0.0665	Adder	0.08
957221	AF2-016 C	40.2432	50/50	40.2432
957222	AF2-016 E	60.3648	50/50	60.3648
957251	AF2-019 C	1.6274	Adder	1.91
957252	AF2-019 E	2.4412	Adder	2.87
957261	AF2-020 C	0.7672	Adder	0.9
957262	AF2-020 E	1.1509	Adder	1.35
957271	AF2-021 C	3.1306	50/50	3.1306
957272	AF2-021 E	4.6958	50/50	4.6958
957311	AF2-025 C	2.6901	50/50	2.6901
957312	AF2-025 E	4.0351	50/50	4.0351
958811	AF2-172 C (Withdrawn : 01/14/2021)	0.3986	Adder	0.47
958812	AF2-172 E (Withdrawn : 01/14/2021)	0.6504	Adder	0.77
961621	AG1-001 C	0.6698	Adder	1.49
961622	AG1-001 E	1.0929	Adder	2.43
962801	AG1-129 C O2	2.0470	Adder	4.54
962802	AG1-129 E O2	1.3647	Adder	3.03
963391	AG1-188 C	0.7016	Adder	1.56
963392	AG1-188 E	0.9680	Adder	2.15
963401	AG1-189 C	0.5959	Adder	1.32
963402	AG1-189 E	0.8062	Adder	1.79
964011	AG1-255 C	1.3457	Adder	2.99
964012	AG1-255 E	0.6729	Adder	1.49
964371	AG1-299 C	0.1445	Adder	0.32
964372	AG1-299 E	0.0963	Adder	0.21
964381	AG1-300 C	0.2408	Adder	0.53
964382	AG1-300 E	0.1605	Adder	0.36
CALDERWOOD	CALDERWOOD	0.0363	Confirmed LTF	0.0363
NY	NY	0.1095	Confirmed LTF	0.1095
PRAIRIE	PRAIRIE	0.1911	Confirmed LTF	0.1911
O-066	O-066	1.7162	Confirmed LTF	1.7162
SIGE	SIGE	0.0190	Confirmed LTF	0.0190

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
CHEOAH	CHEOAH	0.0360	Confirmed LTF	0.0360
COTTONWOOD	COTTONWOOD	0.1533	Confirmed LTF	0.1533
G-007	G-007	0.2415	Confirmed LTF	0.2415
HAMLET	HAMLET	0.0404	Confirmed LTF	0.0404
GIBSON	GIBSON	0.0409	Confirmed LTF	0.0409
BLUEG	BLUEG	0.1302	Confirmed LTF	0.1302
TRIMBLE	TRIMBLE	0.0417	Confirmed LTF	0.0417
CATAWBA	CATAWBA	0.0248	Confirmed LTF	0.0248

13.5.12 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
173989455	227904	MILL #2	AE	227945	LEWIS #2	AE	1	AE_P4-2 AE33	breaker	282.0	131.12	132.2	DC	6.77

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
227842	MARINGEN	-0.4363	Adder	-0.51
228102	BLE#2 ST (Deactivation : 30/04/2019)	59.2380	50/50	59.2380
228202	CUMB CT	1.8544	50/50	1.8544
228203	P06	1.8330	50/50	1.8330
228206	SHRMN CT	1.6651	50/50	1.6651
228251	CARLLS#4	0.3861	Adder	0.45
228261	V4-054E	0.4991	Adder	0.59
228711	V2-041C	0.0399	50/50	0.0399
228712	V2-041E	0.4131	50/50	0.4131
228732	V1-021 C	0.0885	50/50	0.0885
902432	W2-030 E	0.4347	Adder	0.51
924531	AB2-102 C	35.0325	50/50	35.0325
924532	AB2-102 E	0.7785	50/50	0.7785
938423	AE1-061 BAT	0.5226	Merchant Transmission	0.5226
938781	AE1-104 C O1	54.9055	50/50	54.9055
938782	AE1-104 E O1	140.4540	50/50	140.4540
939303	AE1-161 BAT	2.8060	Merchant Transmission	2.8060
939501	AE1-179 C O1	3.5914	Adder	4.23
939502	AE1-179 E O1	2.5345	Adder	2.98
940001	AE1-240 C O1	2.9896	Adder	3.52
940002	AE1-240 E O1	2.1339	Adder	2.51
945431	AF1-208 C O1	1.6496	Adder	1.94
945432	AF1-208 E O1	1.0998	Adder	1.29
945731	AF1-238 C O1	6.5331	50/50	6.5331
945732	AF1-238 E O1	9.7996	50/50	9.7996
945741	AF1-239 C	1.3066	Adder	1.54
945742	AF1-239 E	2.3058	50/50	2.3058
957223	AF2-016 BAT	71.7330	50/50	71.7330
957251	AF2-019 C	2.3181	50/50	2.3181
957252	AF2-019 E	3.4771	50/50	3.4771
957261	AF2-020 C	0.6414	Adder	0.75
957262	AF2-020 E	0.9622	Adder	1.13
957313	AF2-025 BAT	1.2052	Merchant Transmission	1.2052
958811	AF2-172 C (Withdrawn : 01/14/2021)	0.3518	Adder	0.41
958812	AF2-172 E (Withdrawn : 01/14/2021)	0.5741	Adder	0.68
961621	AG1-001 C	0.5985	Adder	1.33
961622	AG1-001 E	0.9765	Adder	2.17
962801	AG1-129 C O2	1.8291	Adder	4.06
962802	AG1-129 E O2	1.2194	Adder	2.71

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
964371	AG1-299 C	0.3183	50/50	0.3183
964372	AG1-299 E	0.2122	50/50	0.2122
964381	AG1-300 C	0.5305	50/50	0.5305
964382	AG1-300 E	0.3537	50/50	0.3537
CALDERWOOD	CALDERWOOD	0.0164	Confirmed LTF	0.0164
NY	NY	0.0724	Confirmed LTF	0.0724
PRAIRIE	PRAIRIE	0.0878	Confirmed LTF	0.0878
O-066	O-066	1.2383	Confirmed LTF	1.2383
SIGE	SIGE	0.0158	Confirmed LTF	0.0158
CHEOAH	CHEOAH	0.0165	Confirmed LTF	0.0165
COTTONWOOD	COTTONWOOD	0.0693	Confirmed LTF	0.0693
G-007	G-007	0.3770	Confirmed LTF	0.3770
HAMLET	HAMLET	0.0179	Confirmed LTF	0.0179
GIBSON	GIBSON	0.0186	Confirmed LTF	0.0186
BLUEG	BLUEG	0.0590	Confirmed LTF	0.0590
TRIMBLE	TRIMBLE	0.0189	Confirmed LTF	0.0189
CATAWBA	CATAWBA	0.0109	Confirmed LTF	0.0109

13.5.13 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
173989363	227905	SCULL#1	AE	227903	MILL #1	AE	1	AE_P4-2 AE29	breaker	306.0	165.5	166.46	DC	6.5

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
227842	MARINGEN	-0.6659	Adder	-0.78
228102	BLE#2 ST (Deactivation : 30/04/2019)	97.0291	50/50	97.0291
228202	CUMB CT	1.7645	50/50	1.7645
228203	P06	1.7238	50/50	1.7238
228206	SHRMN CT	1.5890	50/50	1.5890
228251	CARLLS#4	0.3725	Adder	0.44
228261	V4-054E	0.4816	Adder	0.57
228711	V2-041C	0.0381	50/50	0.0381
228712	V2-041E	0.3942	50/50	0.3942
228732	V1-021 C	0.0829	50/50	0.0829
924531	AB2-102 C	32.9445	50/50	32.9445
924532	AB2-102 E	0.7321	50/50	0.7321
938781	AE1-104 C O1	89.9325	50/50	89.9325
938782	AE1-104 E O1	230.0569	50/50	230.0569
939501	AE1-179 C O1	3.4459	Adder	4.05
939502	AE1-179 E O1	2.4319	Adder	2.86
940001	AE1-240 C O1	2.8678	Adder	3.37
940002	AE1-240 E O1	2.0470	Adder	2.41
945431	AF1-208 C O1	1.6047	Adder	1.89
945432	AF1-208 E O1	1.0698	Adder	1.26
945731	AF1-238 C O1	6.2618	50/50	6.2618
945732	AF1-238 E O1	9.3927	50/50	9.3927
945741	AF1-239 C	1.2524	Adder	1.47
945742	AF1-239 E	2.2100	50/50	2.2100
957223	AF2-016 BAT	33.3330	Merchant Transmission	33.3330
957251	AF2-019 C	2.2164	50/50	2.2164
957252	AF2-019 E	3.3246	50/50	3.3246
957261	AF2-020 C	0.6189	Adder	0.73
957262	AF2-020 E	0.9284	Adder	1.09
957313	AF2-025 BAT	2.0064	Merchant Transmission	2.0064
958811	AF2-172 C (Withdrawn : 01/14/2021)	0.3383	Adder	0.4
958812	AF2-172 E (Withdrawn : 01/14/2021)	0.5520	Adder	0.65
961621	AG1-001 C	0.5751	Adder	1.28
961622	AG1-001 E	0.9382	Adder	2.08
962801	AG1-129 C O2	1.7574	Adder	3.9
962802	AG1-129 E O2	1.1716	Adder	2.6
964371	AG1-299 C	0.3036	50/50	0.3036
964372	AG1-299 E	0.2024	50/50	0.2024
964381	AG1-300 C	0.5060	50/50	0.5060

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
964382	AG1-300 E	0.3373	50/50	0.3373
CALDERWOOD	CALDERWOOD	0.0154	Confirmed LTF	0.0154
NY	NY	0.0763	Confirmed LTF	0.0763
PRAIRIE	PRAIRIE	0.0827	Confirmed LTF	0.0827
O-066	O-066	1.3393	Confirmed LTF	1.3393
SIGE	SIGE	0.0175	Confirmed LTF	0.0175
CHEOAH	CHEOAH	0.0155	Confirmed LTF	0.0155
COTTONWOOD	COTTONWOOD	0.0651	Confirmed LTF	0.0651
G-007	G-007	0.4294	Confirmed LTF	0.4294
HAMLET	HAMLET	0.0167	Confirmed LTF	0.0167
GIBSON	GIBSON	0.0175	Confirmed LTF	0.0175
BLUEG	BLUEG	0.0556	Confirmed LTF	0.0556
TRIMBLE	TRIMBLE	0.0178	Confirmed LTF	0.0178
CATAWBA	CATAWBA	0.0101	Confirmed LTF	0.0101

13.5.14 Index 14

ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC DC	MW IMPACT
173989364	227906	SCULL#2	AE	227904	MILL #2	AE	1	AE_P4-2 AE28	breaker	306.0	165.0	166.19	DC	8.05

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
227842	MARINGEN	-0.8248	Adder	-0.97
228102	BLE#2 ST (Deactivation : 30/04/2019)	84.3533	50/50	84.3533
228202	CUMB CT	2.1852	50/50	2.1852
228203	P06	2.1343	50/50	2.1343
228206	SHRMN CT	1.9679	50/50	1.9679
228251	CARLLS#4	0.4613	Adder	0.54
228261	V4-054E	0.5964	Adder	0.7
228343	QUINTN#1 (Deactivation : 26/04/2020)	0.0813	Adder	0.1
228711	V2-041C	0.0472	50/50	0.0472
228712	V2-041E	0.4882	50/50	0.4882
228732	V1-021 C	0.1021	50/50	0.1021
924531	AB2-102 C	40.7903	50/50	40.7903
924532	AB2-102 E	0.9065	50/50	0.9065
938423	AE1-061 BAT	0.2869	Merchant Transmission	0.2869
938781	AE1-104 C O1	78.1839	50/50	78.1839
938782	AE1-104 E O1	200.0027	50/50	200.0027
939501	AE1-179 C O1	4.2673	Adder	5.02
939502	AE1-179 E O1	3.0115	Adder	3.54
940001	AE1-240 C O1	3.5513	Adder	4.18
940002	AE1-240 E O1	2.5349	Adder	2.98
945431	AF1-208 C O1	1.9870	Adder	2.34
945432	AF1-208 E O1	1.3247	Adder	1.56
945731	AF1-238 C O1	7.7551	50/50	7.7551
945732	AF1-238 E O1	11.6326	50/50	11.6326
945741	AF1-239 C	1.5510	Adder	1.82
945742	AF1-239 E	2.7371	50/50	2.7371
957223	AF2-016 BAT	41.2650	Merchant Transmission	41.2650
957251	AF2-019 C	2.7570	50/50	2.7570
957252	AF2-019 E	4.1354	50/50	4.1354
957261	AF2-020 C	0.7665	Adder	0.9
957262	AF2-020 E	1.1497	Adder	1.35
957313	AF2-025 BAT	2.4850	Merchant Transmission	2.4850
958811	AF2-172 C (Withdrawn : 01/14/2021)	0.4190	Adder	0.49
958812	AF2-172 E (Withdrawn : 01/14/2021)	0.6836	Adder	0.8
961621	AG1-001 C	0.7121	Adder	1.58
961622	AG1-001 E	1.1619	Adder	2.58
962801	AG1-129 C O2	2.1763	Adder	4.83
962802	AG1-129 E O2	1.4509	Adder	3.22

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
964371	AG1-299 C	0.3760	50/50	0.3760
964372	AG1-299 E	0.2507	50/50	0.2507
964381	AG1-300 C	0.6266	50/50	0.6266
964382	AG1-300 E	0.4178	50/50	0.4178
CALDERWOOD	CALDERWOOD	0.0194	Confirmed LTF	0.0194
NY	NY	0.0951	Confirmed LTF	0.0951
PRAIRIE	PRAIRIE	0.1033	Confirmed LTF	0.1033
O-066	O-066	1.6623	Confirmed LTF	1.6623
SIGE	SIGE	0.0217	Confirmed LTF	0.0217
CHEOAH	CHEOAH	0.0195	Confirmed LTF	0.0195
COTTONWOOD	COTTONWOOD	0.0819	Confirmed LTF	0.0819
G-007	G-007	0.5323	Confirmed LTF	0.5323
HAMLET	HAMLET	0.0208	Confirmed LTF	0.0208
GIBSON	GIBSON	0.0218	Confirmed LTF	0.0218
BLUEG	BLUEG	0.0694	Confirmed LTF	0.0694
TRIMBLE	TRIMBLE	0.0228	Confirmed LTF	0.0228
CATAWBA	CATAWBA	0.0129	Confirmed LTF	0.0129

13.5.15 Index 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
173989324	227955	CEDAR	AE	206302	28OYSTER C	JCP&L	1	AE_P4-2 AE7	breaker	564.0	223.35	223.92	DC	7.15

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
227801	ONTC&DCT	10.7937	50/50	10.7937
227842	MARINGEN	2.1821	50/50	2.1821
227927	V4-067C	0.0446	50/50	0.0446
227928	V4-067E	0.4616	50/50	0.4616
228014	PVILLEG	0.5366	50/50	0.5366
228102	BLE#2 ST (Deactivation : 30/04/2019)	35.1034	50/50	35.1034
228202	CUMB CT	1.6785	50/50	1.6785
228251	CARLLS#4	0.4459	Adder	0.52
228261	V4-054E	0.5759	Adder	0.68
228343	QUINTN#1 (Deactivation : 26/04/2020)	0.1225	Adder	0.14
228357	V2-046E	0.7363	Adder	0.87
228712	V2-041E	0.3177	Adder	0.37
228721	V2-035E	0.0268	Adder	0.03
228729	W2-030 C	0.1584	50/50	0.1584
228731	V3-036	0.2427	50/50	0.2427
228732	V1-021 C	0.0635	50/50	0.0635
228754	AB1-001 C	0.0511	50/50	0.0511
902092	W1-130E	0.6617	Adder	0.78
902432	W2-030 E	1.6499	50/50	1.6499
919663	AA2-048 BAT	0.5763	Merchant Transmission	0.5763
924531	AB2-102 C	29.1599	Adder	34.31
924532	AB2-102 E	0.6480	Adder	0.76
924701	AB2-122 C (Withdrawn : 05/05/2020)	0.0319	50/50	0.0319
924702	AB2-122 E (Withdrawn : 05/05/2020)	0.3462	50/50	0.3462
930002	AB1-001 E	0.5326	50/50	0.5326
933962	AD1-019 E	2.1252	50/50	2.1252
938421	AE1-061 C	0.3192	Adder	0.38
938422	AE1-061 E	0.3192	Adder	0.38
938781	AE1-104 C O1	32.5360	50/50	32.5360
938782	AE1-104 E O1	83.2304	50/50	83.2304
938871	AE1-115 C	0.6127	Adder	0.72
939301	AE1-161 C	1.6861	Adder	1.98
939302	AE1-161 E	2.5291	Adder	2.98
939501	AE1-179 C O1	3.6780	Adder	4.33
939502	AE1-179 E O1	2.5956	Adder	3.05
939931	AE1-229 C O1	6.5657	Adder	7.72
939932	AE1-229 E O1	4.4484	Adder	5.23
940001	AE1-240 C O1	3.0598	Adder	3.6

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
940002	AE1-240 E O1	2.1841	Adder	2.57
940361	AE2-020 C	34.8932	50/50	34.8932
940362	AE2-020 E	163.3724	50/50	163.3724
940371	AE2-021 C	34.8932	50/50	34.8932
940372	AE2-021 E	163.3724	50/50	163.3724
940381	AE2-022 C	20.3543	50/50	20.3543
940382	AE2-022 E	95.3006	50/50	95.3006
940691	AE2-056 C	-0.0894	Adder	-0.11
940921	AE2-081 C	-0.0950	Adder	-0.11
942101	AE2-222 C	23.5821	50/50	23.5821
942102	AE2-222 E	60.3399	50/50	60.3399
942381	AE2-251 C	110.5409	50/50	110.5409
942382	AE2-251 E	282.8431	50/50	282.8431
943732	AF1-041 E	0.6802	50/50	0.6802
945431	AF1-208 C O1	2.2392	Adder	2.63
945432	AF1-208 E O1	1.4928	Adder	1.76
945731	AF1-238 C O1	5.5180	Adder	6.49
945732	AF1-238 E O1	8.2770	Adder	9.74
945741	AF1-239 C	1.2984	Adder	1.53
945742	AF1-239 E	1.9475	Adder	2.29
945971	AF1-262	0.0710	Adder	0.08
957221	AF2-016 C	33.0060	50/50	33.0060
957222	AF2-016 E	49.5090	50/50	49.5090
957251	AF2-019 C	1.6144	50/50	1.6144
957252	AF2-019 E	2.4216	50/50	2.4216
957261	AF2-020 C	0.7419	Adder	0.87
957262	AF2-020 E	1.1129	Adder	1.31
957271	AF2-021 C	4.9518	50/50	4.9518
957272	AF2-021 E	7.4276	50/50	7.4276
957291	AF2-023 C	1.0407	Adder	1.22
957292	AF2-023 E	1.5610	Adder	1.84
957311	AF2-025 C	2.2367	50/50	2.2367
957312	AF2-025 E	3.3551	50/50	3.3551
957783	AF2-072 BAT	4.2430	Merchant Transmission	4.2430
958811	AF2-172 C (Withdrawn : 01/14/2021)	0.3783	Adder	0.45
958812	AF2-172 E (Withdrawn : 01/14/2021)	0.6172	Adder	0.73
961621	AG1-001 C	0.6328	Adder	1.4
961622	AG1-001 E	1.0325	Adder	2.29
962621	AG1-111	0.3247	Adder	0.72
962801	AG1-129 C O2	1.9340	Adder	4.29
962802	AG1-129 E O2	1.2893	Adder	2.86
964001	AG1-254 C	0.8179	Adder	1.82
964002	AG1-254 E	0.4106	Adder	0.91
964011	AG1-255 C	1.4360	Adder	3.19
964012	AG1-255 E	0.7180	Adder	1.59
964371	AG1-299 C	0.2817	50/50	0.2817
964372	AG1-299 E	0.1878	50/50	0.1878
964381	AG1-300 C	0.4695	50/50	0.4695
964382	AG1-300 E	0.3130	50/50	0.3130
WEC	WEC	0.0006	Confirmed LTF	0.0006
LGEE	LGEE	0.0025	Confirmed LTF	0.0025

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
CPL	CPL	0.0253	Confirmed LTF	0.0253
CBM-W2	CBM-W2	0.0806	Confirmed LTF	0.0806
NY	NY	0.5287	Confirmed LTF	0.5287
TVA	TVA	0.0182	Confirmed LTF	0.0182
O-066	O-066	10.2902	Confirmed LTF	10.2902
SIG	SIG	0.1610	Confirmed LTF	0.1610
CBM-S2	CBM-S2	0.3132	Confirmed LTF	0.3132
CBM-S1	CBM-S1	0.0042	Confirmed LTF	0.0042
G-007	G-007	4.0813	Confirmed LTF	4.0813
MEC	MEC	0.0079	Confirmed LTF	0.0079
LAGN	LAGN	0.0210	Confirmed LTF	0.0210

13.5.16 Index 16

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
173989379	228110	BLE	AE	227905	SCULL#1	AE	1	AE_P4-2 AE29	breaker	331.0	160.31	161.19	DC	6.5

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
227842	MARINGEN	-0.6659	Adder	-0.78
228102	BLE#2 ST (Deactivation : 30/04/2019)	97.0291	50/50	97.0291
228202	CUMB CT	1.7645	50/50	1.7645
228203	P06	1.7238	50/50	1.7238
228206	SHRMN CT	1.5890	50/50	1.5890
228251	CARLLS#4	0.3725	Adder	0.44
228261	V4-054E	0.4816	Adder	0.57
228711	V2-041C	0.0381	50/50	0.0381
228712	V2-041E	0.3942	50/50	0.3942
228732	V1-021 C	0.0829	50/50	0.0829
924531	AB2-102 C	32.9445	50/50	32.9445
924532	AB2-102 E	0.7321	50/50	0.7321
938781	AE1-104 C O1	89.9325	50/50	89.9325
938782	AE1-104 E O1	230.0569	50/50	230.0569
939501	AE1-179 C O1	3.4459	Adder	4.05
939502	AE1-179 E O1	2.4319	Adder	2.86
940001	AE1-240 C O1	2.8678	Adder	3.37
940002	AE1-240 E O1	2.0470	Adder	2.41
945431	AF1-208 C O1	1.6047	Adder	1.89
945432	AF1-208 E O1	1.0698	Adder	1.26
945731	AF1-238 C O1	6.2618	50/50	6.2618
945732	AF1-238 E O1	9.3927	50/50	9.3927
945741	AF1-239 C	1.2524	Adder	1.47
945742	AF1-239 E	2.2100	50/50	2.2100
957223	AF2-016 BAT	33.3330	Merchant Transmission	33.3330
957251	AF2-019 C	2.2164	50/50	2.2164
957252	AF2-019 E	3.3246	50/50	3.3246
957261	AF2-020 C	0.6189	Adder	0.73
957262	AF2-020 E	0.9284	Adder	1.09
957313	AF2-025 BAT	2.0064	Merchant Transmission	2.0064
958811	AF2-172 C (Withdrawn : 01/14/2021)	0.3383	Adder	0.4
958812	AF2-172 E (Withdrawn : 01/14/2021)	0.5520	Adder	0.65
961621	AG1-001 C	0.5751	Adder	1.28
961622	AG1-001 E	0.9382	Adder	2.08
962801	AG1-129 C O2	1.7574	Adder	3.9
962802	AG1-129 E O2	1.1716	Adder	2.6
964371	AG1-299 C	0.3036	50/50	0.3036
964372	AG1-299 E	0.2024	50/50	0.2024
964381	AG1-300 C	0.5060	50/50	0.5060

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
964382	AG1-300 E	0.3373	50/50	0.3373
CALDERWOOD	CALDERWOOD	0.0154	Confirmed LTF	0.0154
NY	NY	0.0763	Confirmed LTF	0.0763
PRAIRIE	PRAIRIE	0.0827	Confirmed LTF	0.0827
O-066	O-066	1.3393	Confirmed LTF	1.3393
SIGE	SIGE	0.0175	Confirmed LTF	0.0175
CHEOAH	CHEOAH	0.0155	Confirmed LTF	0.0155
COTTONWOOD	COTTONWOOD	0.0651	Confirmed LTF	0.0651
G-007	G-007	0.4294	Confirmed LTF	0.4294
HAMLET	HAMLET	0.0167	Confirmed LTF	0.0167
GIBSON	GIBSON	0.0175	Confirmed LTF	0.0175
BLUEG	BLUEG	0.0556	Confirmed LTF	0.0556
TRIMBLE	TRIMBLE	0.0178	Confirmed LTF	0.0178
CATAWBA	CATAWBA	0.0101	Confirmed LTF	0.0101

13.5.17 Index 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
173989385	228110	BLE	AE	227906	SCULL#2	AE	1	AE_P4-2 AE28	breaker	331.0	157.76	158.86	DC	8.05

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
227842	MARINGEN	-0.8248	Adder	-0.97
228102	BLE#2 ST (Deactivation : 30/04/2019)	84.3533	50/50	84.3533
228202	CUMB CT	2.1852	50/50	2.1852
228203	P06	2.1343	50/50	2.1343
228206	SHRMN CT	1.9679	50/50	1.9679
228251	CARLLS#4	0.4613	Adder	0.54
228261	V4-054E	0.5964	Adder	0.7
228343	QUINTN#1 (Deactivation : 26/04/2020)	0.0813	Adder	0.1
228711	V2-041C	0.0472	50/50	0.0472
228712	V2-041E	0.4882	50/50	0.4882
228732	V1-021 C	0.1021	50/50	0.1021
924531	AB2-102 C	40.7903	50/50	40.7903
924532	AB2-102 E	0.9065	50/50	0.9065
938423	AE1-061 BAT	0.2869	Merchant Transmission	0.2869
938781	AE1-104 C O1	78.1839	50/50	78.1839
938782	AE1-104 E O1	200.0027	50/50	200.0027
939501	AE1-179 C O1	4.2673	Adder	5.02
939502	AE1-179 E O1	3.0115	Adder	3.54
940001	AE1-240 C O1	3.5513	Adder	4.18
940002	AE1-240 E O1	2.5349	Adder	2.98
945431	AF1-208 C O1	1.9870	Adder	2.34
945432	AF1-208 E O1	1.3247	Adder	1.56
945731	AF1-238 C O1	7.7551	50/50	7.7551
945732	AF1-238 E O1	11.6326	50/50	11.6326
945741	AF1-239 C	1.5510	Adder	1.82
945742	AF1-239 E	2.7371	50/50	2.7371
957223	AF2-016 BAT	41.2650	Merchant Transmission	41.2650
957251	AF2-019 C	2.7570	50/50	2.7570
957252	AF2-019 E	4.1354	50/50	4.1354
957261	AF2-020 C	0.7665	Adder	0.9
957262	AF2-020 E	1.1497	Adder	1.35
957313	AF2-025 BAT	2.4850	Merchant Transmission	2.4850
958811	AF2-172 C (Withdrawn : 01/14/2021)	0.4190	Adder	0.49
958812	AF2-172 E (Withdrawn : 01/14/2021)	0.6836	Adder	0.8
961621	AG1-001 C	0.7121	Adder	1.58
961622	AG1-001 E	1.1619	Adder	2.58
962801	AG1-129 C O2	2.1763	Adder	4.83
962802	AG1-129 E O2	1.4509	Adder	3.22

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
964371	AG1-299 C	0.3760	50/50	0.3760
964372	AG1-299 E	0.2507	50/50	0.2507
964381	AG1-300 C	0.6266	50/50	0.6266
964382	AG1-300 E	0.4178	50/50	0.4178
CALDERWOOD	CALDERWOOD	0.0194	Confirmed LTF	0.0194
NY	NY	0.0951	Confirmed LTF	0.0951
PRAIRIE	PRAIRIE	0.1033	Confirmed LTF	0.1033
O-066	O-066	1.6623	Confirmed LTF	1.6623
SIGE	SIGE	0.0217	Confirmed LTF	0.0217
CHEOAH	CHEOAH	0.0195	Confirmed LTF	0.0195
COTTONWOOD	COTTONWOOD	0.0819	Confirmed LTF	0.0819
G-007	G-007	0.5323	Confirmed LTF	0.5323
HAMLET	HAMLET	0.0208	Confirmed LTF	0.0208
GIBSON	GIBSON	0.0218	Confirmed LTF	0.0218
BLUEG	BLUEG	0.0694	Confirmed LTF	0.0694
TRIMBLE	TRIMBLE	0.0228	Confirmed LTF	0.0228
CATAWBA	CATAWBA	0.0129	Confirmed LTF	0.0129

13.5.18 Index 18

ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC DC	MW IMPACT
166687252	228130	TUCKAHOE	AE	227946	MILL#2	AE	1	AE_P7-1 AE7TOWER	tower	146.0	107.96	109.08	DC	3.65

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
227842	MARINGEN	-0.4664	Adder	-0.55
228102	BLE#2 ST (Deactivation : 30/04/2019)	21.3929	50/50	21.3929
228251	CARLLS#4	0.2094	Adder	0.25
228261	V4-054E	0.2707	Adder	0.32
228712	V2-041E	0.1870	Adder	0.22
228732	V1-021 C	0.0526	50/50	0.0526
924531	AB2-102 C	16.6713	Adder	19.61
924532	AB2-102 E	0.3705	Adder	0.44
938781	AE1-104 C O1	19.8283	50/50	19.8283
938782	AE1-104 E O1	50.7228	50/50	50.7228
939501	AE1-179 C O1	1.9326	Adder	2.27
939502	AE1-179 E O1	1.3638	Adder	1.6
940001	AE1-240 C O1	1.6084	Adder	1.89
940002	AE1-240 E O1	1.1481	Adder	1.35
945731	AF1-238 C O1	2.9829	Adder	3.51
945732	AF1-238 E O1	4.4744	Adder	5.26
945741	AF1-239 C	0.7019	Adder	0.83
945742	AF1-239 E	1.0528	Adder	1.24
957223	AF2-016 BAT	16.5840	Merchant Transmission	16.5840
957251	AF2-019 C	1.2046	50/50	1.2046
957252	AF2-019 E	1.8070	50/50	1.8070
957261	AF2-020 C	0.3479	Adder	0.41
957262	AF2-020 E	0.5218	Adder	0.61
957313	AF2-025 BAT	1.4246	Merchant Transmission	1.4246
958811	AF2-172 C (Withdrawn : 01/14/2021)	0.1899	Adder	0.22
958812	AF2-172 E (Withdrawn : 01/14/2021)	0.3099	Adder	0.36
961621	AG1-001 C	0.3227	Adder	0.72
961622	AG1-001 E	0.5265	Adder	1.17
962801	AG1-129 C O2	0.9862	Adder	2.19
962802	AG1-129 E O2	0.6575	Adder	1.46
964371	AG1-299 C	0.0761	Adder	0.17
964372	AG1-299 E	0.0507	Adder	0.11
964381	AG1-300 C	0.1268	Adder	0.28
964382	AG1-300 E	0.0845	Adder	0.19
CALDERWOOD	CALDERWOOD	0.0084	Confirmed LTF	0.0084
NY	NY	0.0453	Confirmed LTF	0.0453
PRAIRIE	PRAIRIE	0.0465	Confirmed LTF	0.0465
O-066	O-066	0.7941	Confirmed LTF	0.7941
SIGE	SIGE	0.0105	Confirmed LTF	0.0105

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
CHEOAH	CHEOAH	0.0085	Confirmed LTF	0.0085
COTTONWOOD	COTTONWOOD	0.0357	Confirmed LTF	0.0357
G-007	G-007	0.2583	Confirmed LTF	0.2583
HAMLET	HAMLET	0.0092	Confirmed LTF	0.0092
GIBSON	GIBSON	0.0098	Confirmed LTF	0.0098
BLUEG	BLUEG	0.0312	Confirmed LTF	0.0312
TRIMBLE	TRIMBLE	0.0100	Confirmed LTF	0.0100
CATAWBA	CATAWBA	0.0056	Confirmed LTF	0.0056

13.5.19 Index 19

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
166687225	228217	DENNIS	AE	228130	TUCKAHOE	AE	1	AE_P7-1 AE7TOWER	tower	146.0	113.09	114.22	DC	3.65

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
227842	MARINGEN	-0.4664	Adder	-0.55
228102	BLE#2 ST (Deactivation : 30/04/2019)	21.3929	50/50	21.3929
228251	CARLLS#4	0.2094	Adder	0.25
228261	V4-054E	0.2707	Adder	0.32
228712	V2-041E	0.1870	Adder	0.22
228732	V1-021 C	0.0526	50/50	0.0526
924531	AB2-102 C	16.6713	Adder	19.61
924532	AB2-102 E	0.3705	Adder	0.44
938781	AE1-104 C O1	19.8283	50/50	19.8283
938782	AE1-104 E O1	50.7228	50/50	50.7228
939501	AE1-179 C O1	1.9326	Adder	2.27
939502	AE1-179 E O1	1.3638	Adder	1.6
940001	AE1-240 C O1	1.6084	Adder	1.89
940002	AE1-240 E O1	1.1481	Adder	1.35
945731	AF1-238 C O1	2.9829	Adder	3.51
945732	AF1-238 E O1	4.4744	Adder	5.26
945741	AF1-239 C	0.7019	Adder	0.83
945742	AF1-239 E	1.0528	Adder	1.24
957223	AF2-016 BAT	16.5840	Merchant Transmission	16.5840
957251	AF2-019 C	1.2046	50/50	1.2046
957252	AF2-019 E	1.8070	50/50	1.8070
957261	AF2-020 C	0.3479	Adder	0.41
957262	AF2-020 E	0.5218	Adder	0.61
957313	AF2-025 BAT	1.4246	Merchant Transmission	1.4246
958811	AF2-172 C (Withdrawn : 01/14/2021)	0.1899	Adder	0.22
958812	AF2-172 E (Withdrawn : 01/14/2021)	0.3099	Adder	0.36
961621	AG1-001 C	0.3227	Adder	0.72
961622	AG1-001 E	0.5265	Adder	1.17
962801	AG1-129 C O2	0.9862	Adder	2.19
962802	AG1-129 E O2	0.6575	Adder	1.46
964371	AG1-299 C	0.0761	Adder	0.17
964372	AG1-299 E	0.0507	Adder	0.11
964381	AG1-300 C	0.1268	Adder	0.28
964382	AG1-300 E	0.0845	Adder	0.19
CALDERWOOD	CALDERWOOD	0.0084	Confirmed LTF	0.0084
NY	NY	0.0453	Confirmed LTF	0.0453
PRAIRIE	PRAIRIE	0.0465	Confirmed LTF	0.0465
O-066	O-066	0.7941	Confirmed LTF	0.7941
SIGE	SIGE	0.0105	Confirmed LTF	0.0105

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
CHEOAH	CHEOAH	0.0085	Confirmed LTF	0.0085
COTTONWOOD	COTTONWOOD	0.0357	Confirmed LTF	0.0357
G-007	G-007	0.2583	Confirmed LTF	0.2583
HAMLET	HAMLET	0.0092	Confirmed LTF	0.0092
GIBSON	GIBSON	0.0098	Confirmed LTF	0.0098
BLUEG	BLUEG	0.0312	Confirmed LTF	0.0312
TRIMBLE	TRIMBLE	0.0100	Confirmed LTF	0.0100
CATAWBA	CATAWBA	0.0056	Confirmed LTF	0.0056

13.5.20 Index 20

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
173805291	228252	CRLS CR2	AE	940000	AE1-240 TAP	AE	1	AE_P4-2 AE46	breaker	93.0	122.77	123.18	DC	4.2

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
228200	CARL#1CT	2.0661	50/50	2.0661
228201	CARL#2CT	2.1870	50/50	2.1870
228251	CARLLS#4	2.0921	50/50	2.0921
228260	V4-054C	0.1583	50/50	0.1583
228261	V4-054E	1.6375	50/50	1.6375
228343	QUINTN#1 (Deactivation : 26/04/2020)	0.2934	50/50	0.2934
228351	V2-046C	0.1303	50/50	0.1303
228357	V2-046E	1.2813	50/50	1.2813
938871	AE1-115 C	0.5153	Adder	0.61
945431	AF1-208 C O1	7.7155	50/50	7.7155
945432	AF1-208 E O1	5.1437	50/50	5.1437
945733	AF1-238 BAT	16.8313	50/50	16.8313
945743	AF1-239 BAT	3.9603	50/50	3.9603
957253	AF2-019 BAT	2.5800	Merchant Transmission	2.5800
957261	AF2-020 C	3.4614	50/50	3.4614
957262	AF2-020 E	5.1922	50/50	5.1922
957291	AF2-023 C	0.8617	Adder	1.01
957292	AF2-023 E	1.2925	Adder	1.52
958811	AF2-172 C (Withdrawn : 01/14/2021)	0.4231	50/50	0.4231
958812	AF2-172 E (Withdrawn : 01/14/2021)	0.6902	50/50	0.6902
961621	AG1-001 C	0.3716	Adder	0.82
961622	AG1-001 E	0.6063	Adder	1.35
962621	AG1-111	0.2731	Adder	0.61
962801	AG1-129 C O2	1.1356	Adder	2.52
962802	AG1-129 E O2	0.7571	Adder	1.68
964001	AG1-254 C	1.0365	Adder	2.3
964002	AG1-254 E	0.5203	Adder	1.15
964011	AG1-255 C	5.1120	50/50	5.1120
964012	AG1-255 E	2.5560	50/50	2.5560
966301	AG1-499 C	0.2530	Adder	0.56
966302	AG1-499 E	0.1687	Adder	0.37
CALDERWOOD	CALDERWOOD	0.0025	Confirmed LTF	0.0025
NY	NY	0.0260	Confirmed LTF	0.0260
PRAIRIE	PRAIRIE	0.0129	Confirmed LTF	0.0129
O-066	O-066	0.4913	Confirmed LTF	0.4913
SIGE	SIGE	0.0071	Confirmed LTF	0.0071
CHEOAH	CHEOAH	0.0025	Confirmed LTF	0.0025
COTTONWOOD	COTTONWOOD	0.0105	Confirmed LTF	0.0105
G-007	G-007	0.1943	Confirmed LTF	0.1943

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
HAMLET	HAMLET	0.0023	Confirmed LTF	0.0023
GIBSON	GIBSON	0.0027	Confirmed LTF	0.0027
BLUEG	BLUEG	0.0087	Confirmed LTF	0.0087
TRIMBLE	TRIMBLE	0.0028	Confirmed LTF	0.0028
CATAWBA	CATAWBA	0.0017	Confirmed LTF	0.0017

13.5.21 Index 21

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
165251916	228313	BRIDGPRT	AE	228401	MCKLTON	AE	1	JC-P7-1-JCC-230-13	tower	804.0	122.74	123.28	DC	10.28

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
219137	THOSOLAR C (Deactivation : 01/06/2015)	-0.0338	Adder	-0.04
227801	ONTC&DCT	3.9041	Adder	4.59
227842	MARINGEN	0.7884	Adder	0.93
227928	V4-067E	0.1604	Adder	0.19
228102	BLE#2 ST (Deactivation : 30/04/2019)	17.4847	Adder	20.57
228200	CARL#1CT	0.9069	50/50	0.9069
228201	CARL#2CT	0.9599	50/50	0.9599
228251	CARLLS#4	0.9103	50/50	0.9103
228260	V4-054C	0.1132	50/50	0.1132
228261	V4-054E	1.1705	50/50	1.1705
228304	LOGAN	24.5820	50/50	24.5820
228306	PCLP STM	6.0471	50/50	6.0471
228307	PCLP GT	6.0471	50/50	6.0471
228309	CCLP NUG	17.9285	50/50	17.9285
228343	QUINTN#1 (Deactivation : 26/04/2020)	0.4598	50/50	0.4598
228351	V2-046C	0.2768	50/50	0.2768
228357	V2-046E	2.7218	50/50	2.7218
228712	V2-041E	0.3407	Adder	0.4
228720	V2-035C	0.0241	50/50	0.0241
228721	V2-035E	0.0684	50/50	0.0684
902092	W1-130E	0.5445	Adder	0.64
902432	W2-030 E	0.6188	Adder	0.73
924531	AB2-102 C	32.8797	Adder	38.68
924532	AB2-102 E	0.7307	Adder	0.86
924702	AB2-122 E (Withdrawn : 05/05/2020)	0.1203	Adder	0.14
930002	AB1-001 E	0.1407	Adder	0.17
933962	AD1-019 E	0.7687	Adder	0.9
938421	AE1-061 C	0.2627	Adder	0.31
938422	AE1-061 E	0.2627	Adder	0.31
938781	AE1-104 C O1	16.2059	Adder	19.07
938782	AE1-104 E O1	41.4564	Adder	48.77
938871	AE1-115 C	3.1707	50/50	3.1707
939301	AE1-161 C	1.8765	Adder	2.21
939302	AE1-161 E	2.8147	Adder	3.31
939501	AE1-179 C O1	4.8710	Adder	5.73
939502	AE1-179 E O1	3.4375	Adder	4.04
939931	AE1-229 C O1	25.4513	50/50	25.4513

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
939932	AE1-229 E O1	17.2440	50/50	17.2440
940001	AE1-240 C O1	4.1148	Adder	4.84
940002	AE1-240 E O1	2.9371	Adder	3.46
940161	AE2-000 C O1	20.8724	Adder	24.56
940162	AE2-000 E O1	53.4052	Adder	62.83
940361	AE2-020 C	10.2181	Adder	12.02
940362	AE2-020 E	47.8421	Adder	56.28
940371	AE2-021 C	10.2181	Adder	12.02
940372	AE2-021 E	47.8421	Adder	56.28
940381	AE2-022 C	5.9606	Adder	7.01
940382	AE2-022 E	27.9079	Adder	32.83
942101	AE2-222 C	8.5219	Adder	10.03
942102	AE2-222 E	21.8052	Adder	25.65
942381	AE2-251 C	32.3709	Adder	38.08
942382	AE2-251 E	82.8279	Adder	97.44
943732	AF1-041 E	0.2406	Adder	0.28
944331	AF1-101 C O1	20.4628	Adder	24.07
944332	AF1-101 E O1	52.3584	Adder	61.6
945431	AF1-208 C O1	6.0305	50/50	6.0305
945432	AF1-208 E O1	4.0203	50/50	4.0203
945731	AF1-238 C O1	6.4539	Adder	7.59
945732	AF1-238 E O1	9.6809	Adder	11.39
945741	AF1-239 C	1.5186	Adder	1.79
945742	AF1-239 E	2.2779	Adder	2.68
945971	AF1-262	0.1811	50/50	0.1811
957221	AF2-016 C	12.2206	Adder	14.38
957222	AF2-016 E	18.3309	Adder	21.57
957251	AF2-019 C	1.0154	Adder	1.19
957252	AF2-019 E	1.5231	Adder	1.79
957261	AF2-020 C	1.5193	50/50	1.5193
957262	AF2-020 E	2.2789	50/50	2.2789
957271	AF2-021 C	0.7455	Adder	0.88
957272	AF2-021 E	1.1182	Adder	1.32
957291	AF2-023 C	5.4082	50/50	5.4082
957292	AF2-023 E	8.1123	50/50	8.1123
957311	AF2-025 C	0.8093	Adder	0.95
957312	AF2-025 E	1.2139	Adder	1.43
958811	AF2-172 C (Withdrawn : 01/14/2021)	0.6653	50/50	0.6653
958812	AF2-172 E (Withdrawn : 01/14/2021)	1.0856	50/50	1.0856
961621	AG1-001 C	0.9095	Adder	2.02
961622	AG1-001 E	1.4840	Adder	3.29
962621	AG1-111	3.1707	50/50	3.1707
962801	AG1-129 C O2	2.7796	Adder	6.17
962802	AG1-129 E O2	1.8531	Adder	4.11
963401	AG1-189 C	0.1631	Adder	0.36
963402	AG1-189 E	0.2207	Adder	0.49
964001	AG1-254 C	6.4609	50/50	6.4609
964002	AG1-254 E	3.2432	50/50	3.2432
964011	AG1-255 C	11.5644	50/50	11.5644
964012	AG1-255 E	5.7822	50/50	5.7822
964371	AG1-299 C	0.1323	Adder	0.29

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
964372	AG1-299 E	0.0882	Adder	0.2
964381	AG1-300 C	0.2205	Adder	0.49
964382	AG1-300 E	0.1470	Adder	0.33
966301	AG1-499 C	0.5071	Adder	1.13
966302	AG1-499 E	0.3381	Adder	0.75
CALDERWOOD	CALDERWOOD	0.0910	Confirmed LTF	0.0910
NY	NY	0.1880	Confirmed LTF	0.1880
PRAIRIE	PRAIRIE	0.4804	Confirmed LTF	0.4804
O-066	O-066	2.6314	Confirmed LTF	2.6314
SIGE	SIGE	0.0214	Confirmed LTF	0.0214
CHEOAH	CHEOAH	0.0916	Confirmed LTF	0.0916
COTTONWOOD	COTTONWOOD	0.3885	Confirmed LTF	0.3885
G-007	G-007	0.3255	Confirmed LTF	0.3255
HAMLET	HAMLET	0.1028	Confirmed LTF	0.1028
GIBSON	GIBSON	0.1021	Confirmed LTF	0.1021
BLUEG	BLUEG	0.3246	Confirmed LTF	0.3246
TRIMBLE	TRIMBLE	0.1041	Confirmed LTF	0.1041
CATAWBA	CATAWBA	0.0630	Confirmed LTF	0.0630

13.5.22 Index 22

ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC DC	MW IMPACT
166687203	228714	CNTRL N	AE	228504	SHLDLY T	AE	1	AE_P7-1 AE7TOWER	tower	143.0	114.28	122.56	DC	11.83

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
228102	BLE#2 ST (Deactivation : 30/04/2019)	13.9039	Adder	16.36
228200	CARL#1CT	0.7389	50/50	0.7389
228201	CARL#2CT	0.7821	50/50	0.7821
228206	SHRMN CT	1.8441	50/50	1.8441
228251	CARLLS#4	0.7452	50/50	0.7452
228260	V4-054C	0.0952	50/50	0.0952
228261	V4-054E	0.9842	50/50	0.9842
228343	QUINTN#1 (Deactivation : 26/04/2020)	0.1005	Adder	0.12
228702	WEST CT	1.1161	50/50	1.1161
228712	V2-041E	0.3240	Adder	0.38
228717	S121	2.3380	50/50	2.3380
228727	W2-039G	1.7281	50/50	1.7281
924531	AB2-102 C	18.9376	Adder	22.28
924532	AB2-102 E	0.4208	Adder	0.5
938781	AE1-104 C O1	12.8870	Adder	15.16
938782	AE1-104 E O1	32.9662	Adder	38.78
939501	AE1-179 C O1	7.4900	50/50	7.4900
939502	AE1-179 E O1	5.2858	50/50	5.2858
940001	AE1-240 C O1	5.8249	50/50	5.8249
940002	AE1-240 E O1	4.1578	50/50	4.1578
945431	AF1-208 C O1	2.6514	Adder	3.12
945432	AF1-208 E O1	1.7676	Adder	2.08
945731	AF1-238 C O1	13.2126	50/50	13.2126
945732	AF1-238 E O1	19.8189	50/50	19.8189
945741	AF1-239 C	3.1088	50/50	3.1088
945742	AF1-239 E	4.6633	50/50	4.6633
957251	AF2-019 C	0.7304	Adder	0.86
957252	AF2-019 E	1.0956	Adder	1.29
957261	AF2-020 C	1.0522	Adder	1.24
957262	AF2-020 E	1.8568	50/50	1.8568
958811	AF2-172 C (Withdrawn : 01/14/2021)	0.7180	50/50	0.7180
958812	AF2-172 E (Withdrawn : 01/14/2021)	1.1715	50/50	1.1715
961621	AG1-001 C	2.3221	50/50	2.3221
961622	AG1-001 E	3.7886	50/50	3.7886
962801	AG1-129 C O2	7.0963	50/50	7.0963
962802	AG1-129 E O2	4.7309	50/50	4.7309
964011	AG1-255 C	0.9255	Adder	2.05
964012	AG1-255 E	0.4628	Adder	1.03

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
964371	AG1-299 C	0.1086	Adder	0.24
964372	AG1-299 E	0.0724	Adder	0.16
964381	AG1-300 C	0.1811	Adder	0.4
964382	AG1-300 E	0.1207	Adder	0.27
CALDERWOOD	CALDERWOOD	0.0244	Confirmed LTF	0.0244
NY	NY	0.0393	Confirmed LTF	0.0393
PRAIRIE	PRAIRIE	0.1266	Confirmed LTF	0.1266
O-066	O-066	0.5384	Confirmed LTF	0.5384
SIGE	SIGE	0.0033	Confirmed LTF	0.0033
CHEOAH	CHEOAH	0.0245	Confirmed LTF	0.0245
COTTONWOOD	COTTONWOOD	0.1029	Confirmed LTF	0.1029
G-007	G-007	0.0588	Confirmed LTF	0.0588
HAMLET	HAMLET	0.0277	Confirmed LTF	0.0277
GIBSON	GIBSON	0.0268	Confirmed LTF	0.0268
BLUEG	BLUEG	0.0851	Confirmed LTF	0.0851
TRIMBLE	TRIMBLE	0.0273	Confirmed LTF	0.0273
CATAWBA	CATAWBA	0.0172	Confirmed LTF	0.0172

13.5.23 Index 23

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
166687182	228716	S121TAP	AE	228714	CNTRL N	AE	1	AE_P7-1 AE7TOWER	tower	107.0	142.24	143.85	DC	3.81

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
228102	BLE#2 ST (Deactivation : 30/04/2019)	7.3329	Adder	8.63
228251	CARLLS#4	0.3002	Adder	0.35
228261	V4-054E	0.3367	Adder	0.4
228702	WEST CT	1.8523	50/50	1.8523
228712	V2-041E	0.1710	Adder	0.2
228717	S121	4.4081	50/50	4.4081
924531	AB2-102 C	9.9794	Adder	11.74
924532	AB2-102 E	0.2218	Adder	0.26
938781	AE1-104 C O1	6.7966	Adder	8.0
938782	AE1-104 E O1	17.3864	Adder	20.45
939501	AE1-179 C O1	1.8835	Adder	2.22
939502	AE1-179 E O1	1.3292	Adder	1.56
940001	AE1-240 C O1	3.0508	50/50	3.0508
940002	AE1-240 E O1	2.1776	50/50	2.1776
945431	AF1-208 C O1	1.1996	Adder	1.41
945432	AF1-208 E O1	0.7997	Adder	0.94
945731	AF1-238 C O1	14.8252	50/50	14.8252
945732	AF1-238 E O1	22.2378	50/50	22.2378
945741	AF1-239 C	3.4883	50/50	3.4883
945742	AF1-239 E	5.2324	50/50	5.2324
957251	AF2-019 C	0.3852	Adder	0.45
957252	AF2-019 E	0.5778	Adder	0.68
957261	AF2-020 C	0.4979	Adder	0.59
957262	AF2-020 E	0.7468	Adder	0.88
958811	AF2-172 C (Withdrawn : 01/14/2021)	0.2053	Adder	0.24
958812	AF2-172 E (Withdrawn : 01/14/2021)	0.3350	Adder	0.39
961621	AG1-001 C	0.3369	Adder	0.75
961622	AG1-001 E	0.5497	Adder	1.22
962801	AG1-129 C O2	1.0297	Adder	2.29
962802	AG1-129 E O2	0.6865	Adder	1.52
964371	AG1-299 C	0.0573	Adder	0.13
964372	AG1-299 E	0.0382	Adder	0.08
964381	AG1-300 C	0.0956	Adder	0.21
964382	AG1-300 E	0.0637	Adder	0.14
CALDERWOOD	CALDERWOOD	0.0199	Confirmed LTF	0.0199
NY	NY	0.0288	Confirmed LTF	0.0288
PRAIRIE	PRAIRIE	0.1033	Confirmed LTF	0.1033
O-066	O-066	0.3769	Confirmed LTF	0.3769
SIGE	SIGE	0.0017	Confirmed LTF	0.0017

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
CHEOAH	CHEOAH	0.0200	Confirmed LTF	0.0200
COTTONWOOD	COTTONWOOD	0.0840	Confirmed LTF	0.0840
G-007	G-007	0.0451	Confirmed LTF	0.0451
HAMLET	HAMLET	0.0231	Confirmed LTF	0.0231
GIBSON	GIBSON	0.0218	Confirmed LTF	0.0218
BLUEG	BLUEG	0.0694	Confirmed LTF	0.0694
TRIMBLE	TRIMBLE	0.0223	Confirmed LTF	0.0223
CATAWBA	CATAWBA	0.0140	Confirmed LTF	0.0140

13.5.24 Index 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
173805188	940000	AE1-240 TAP	AE	228226	SHRMAN#2	AE	1	AE_P4-2 AE46	breaker	93.0	151.16	153.19	DC	4.2

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
228200	CARL#1CT	2.0661	50/50	2.0661
228201	CARL#2CT	2.1870	50/50	2.1870
228251	CARLLS#4	2.0921	50/50	2.0921
228260	V4-054C	0.1583	50/50	0.1583
228261	V4-054E	1.6375	50/50	1.6375
228343	QUINTN#1 (Deactivation : 26/04/2020)	0.2934	50/50	0.2934
228351	V2-046C	0.1303	50/50	0.1303
228357	V2-046E	1.2813	50/50	1.2813
938871	AE1-115 C	0.5153	Adder	0.61
940001	AE1-240 C O1	20.7982	50/50	20.7982
940002	AE1-240 E O1	14.8456	50/50	14.8456
945431	AF1-208 C O1	7.7155	50/50	7.7155
945432	AF1-208 E O1	5.1437	50/50	5.1437
945733	AF1-238 BAT	16.8313	50/50	16.8313
945743	AF1-239 BAT	3.9603	50/50	3.9603
957253	AF2-019 BAT	2.5800	Merchant Transmission	2.5800
957261	AF2-020 C	3.4614	50/50	3.4614
957262	AF2-020 E	5.1922	50/50	5.1922
957291	AF2-023 C	0.8617	Adder	1.01
957292	AF2-023 E	1.2925	Adder	1.52
958811	AF2-172 C (Withdrawn : 01/14/2021)	0.4231	50/50	0.4231
958812	AF2-172 E (Withdrawn : 01/14/2021)	0.6902	50/50	0.6902
961621	AG1-001 C	0.3716	Adder	0.82
961622	AG1-001 E	0.6063	Adder	1.35
962621	AG1-111	0.2731	Adder	0.61
962801	AG1-129 C O2	1.1356	Adder	2.52
962802	AG1-129 E O2	0.7571	Adder	1.68
964001	AG1-254 C	1.0365	Adder	2.3
964002	AG1-254 E	0.5203	Adder	1.15
964011	AG1-255 C	5.1120	50/50	5.1120
964012	AG1-255 E	2.5560	50/50	2.5560
966301	AG1-499 C	0.2530	Adder	0.56
966302	AG1-499 E	0.1687	Adder	0.37
CALDERWOOD	CALDERWOOD	0.0025	Confirmed LTF	0.0025
NY	NY	0.0260	Confirmed LTF	0.0260
PRAIRIE	PRAIRIE	0.0129	Confirmed LTF	0.0129
O-066	O-066	0.4913	Confirmed LTF	0.4913
SIGE	SIGE	0.0071	Confirmed LTF	0.0071
CHEOAH	CHEOAH	0.0025	Confirmed LTF	0.0025

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
COTTONWOOD	COTTONWOOD	0.0105	Confirmed LTF	0.0105
G-007	G-007	0.1943	Confirmed LTF	0.1943
HAMLET	HAMLET	0.0023	Confirmed LTF	0.0023
GIBSON	GIBSON	0.0027	Confirmed LTF	0.0027
BLUEG	BLUEG	0.0087	Confirmed LTF	0.0087
TRIMBLE	TRIMBLE	0.0028	Confirmed LTF	0.0028
CATAWBA	CATAWBA	0.0017	Confirmed LTF	0.0017

13.6 Contingency Descriptions - Secondary POI

Contingency Name	Contingency Definition
PS_P1-2_U-2299_LT	CONTINGENCY 'PS_P1-2_U-2299_LT' / 1354 OPEN BRANCH FROM BUS 219125 TO BUS 219754 CKT 1 / 219125 CAMDEN 230 219754 CUTHBERT_2 230 1 OPEN BRANCH FROM BUS 219753 TO BUS 219754 CKT Z / 219753 CUTHBERT_3 230 219754 CUTHBERT_2 230 Z OPEN BRANCH FROM BUS 219754 TO BUS 219755 CKT Z / 219754 CUTHBERT_2 230 219755 CUTHBERT_4 230 Z OPEN BRANCH FROM BUS 219179 TO BUS 219754 CKT 1 / 219179 CUTHBERT_L3 13.2 219754 CUTHBERT_2 230 1 CLOSE BRANCH FROM BUS 219176 TO BUS 219179 CKT Z / 219176 CUTHBERT_L4 13.2 219179 CUTHBERT_L3 13.2 Z MOVE 8.00 MW LOAD FROM BUS 219179 TO BUS 219724 / FROM 219179 CUTHBERT_L3 13.2 TO 219724 LAWNSIDE_L1 13.2 . LOAD=32.25 MOVE 8.00 MW LOAD FROM BUS 219179 TO BUS 219640 / FROM 219179 CUTHBERT_L3 13.2 TO 219640 LOCUST_L1 13.2 . LOAD=32.25 MOVE 8.00 MW LOAD FROM BUS 219179 TO BUS 219640 / FROM 219179 CUTHBERT_L3 13.2 TO 219640 LOCUST_L1 13.2 . LOAD=32.25 END
AE_P7-1 AE7TOWER	CONTINGENCY 'AE_P7-1 AE7TOWER' DISCONNECT BUS 227905 /* #1 BLE TO SCULL TO MILL 138 KV DISCONNECT BUS 227929 /* #1 SCULL 12 KV DISCONNECT BUS 227906 /* #2 BLE TO SCULL TO MILL 138 KV DISCONNECT BUS 227930 /* #2 SCULL 12 KV END
AE_P1-2 ORCH-CUMB	CONTINGENCY 'AE_P1-2 ORCH-CUMB' / 184 OPEN BRANCH FROM BUS 228002 TO BUS 228207 CKT 1 / 228002 ORCHARD 230 228207 CUMB 230 1 END
AE_P7-1 AE18TOWER	CONTINGENCY 'AE_P7-1 AE18TOWER' DISCONNECT BUS 227903 /* #1 MILL TO LEWIS 138 KV DISCONNECT BUS 227904 /* #2 MILL TO LEWIS 138 KV END

Contingency Name	Contingency Definition
PS_P2-3_CUTB_1-4_LT	CONTINGENCY 'PS_P2-3_CUTB_1-4_LT' / 1431 OPEN BRANCH FROM BUS 219108 TO BUS 219125 CKT 1 / 219108 CUTHBERT_1 230 219125 CAMDEN 230 1 OPEN BRANCH FROM BUS 219108 TO BUS 219753 CKT Z / 219108 CUTHBERT_1 230 219753 CUTHBERT_3 230 Z OPEN BRANCH FROM BUS 219108 TO BUS 219755 CKT Z / 219108 CUTHBERT_1 230 219755 CUTHBERT_4 230 Z OPEN BRANCH FROM BUS 219176 TO BUS 219108 CKT 1 / 219176 CUTHBERT_L4 13.2 219108 CUTHBERT_1 230 1 OPEN BRANCH FROM BUS 219110 TO BUS 219755 CKT 1 / 219110 GLOUCSTR 230 219755 CUTHBERT_4 230 1 OPEN BRANCH FROM BUS 219754 TO BUS 219755 CKT Z / 219754 CUTHBERT_2 230 219755 CUTHBERT_4 230 Z OPEN BRANCH FROM BUS 219177 TO BUS 219755 CKT 1 / 219177 CUTHBERT_L1 13.2 219755 CUTHBERT_4 230 1 CLOSE BRANCH FROM BUS 219176 TO BUS 219179 CKT Z / 219176 CUTHBERT_L4 13.2 219179 CUTHBERT_L3 13.2 Z MOVE 8.00 MW LOAD FROM BUS 219176 TO BUS 219640 / FROM 219176 CUTHBERT_L4 13.2 TO 219640 LOCUST_L1 13.2 . LOAD=35.35 MOVE 8.00 MW LOAD FROM BUS 219176 TO BUS 219678 / FROM 219176 CUTHBERT_L4 13.2 TO 219678 MAPLESHADEL3 13.2 . LOAD=35.35 MOVE 8.00 MW LOAD FROM BUS 219176 TO BUS 219629 / FROM 219176 CUTHBERT_L4 13.2 TO 219629 LAWNSIDE_L3 13.2 . LOAD=35.35 MOVE 8.00 MW LOAD FROM BUS 219176 TO BUS 219170 / FROM 219176 CUTHBERT_L4 13.2 TO 219170 CINN_L2 13.2 . LOAD=35.35 CLOSE BRANCH FROM BUS 219177 TO BUS 219178 CKT Z / 219177 CUTHBERT_L1 13.2 219178 CUTHBERT_L2 13.2 Z MOVE 8.00 MW LOAD FROM BUS 219177 TO BUS 219677 / FROM 219177 CUTHBERT_L1 13.2 TO 219677 MAPLESHADEL2 13.2 . LOAD=33.63 END
AE_P4-2 AE28	CONTINGENCY 'AE_P4-2 AE28' / 535 OPEN BRANCH FROM BUS 228110 TO BUS 228197 CKT 1 / 228110 BLE 138 228197 MERION 138 1 OPEN BRANCH FROM BUS 227905 TO BUS 228110 CKT 1 / 227905 SCULL#1 138 228110 BLE 138 1 END
AE_P4-2 AE29	CONTINGENCY 'AE_P4-2 AE29' / 531 OPEN BRANCH FROM BUS 228110 TO BUS 228111 CKT 1 / 228110 BLE 138 228111 MDLE TP 138 1 OPEN BRANCH FROM BUS 227906 TO BUS 228110 CKT 1 / 227906 SCULL#2 138 228110 BLE 138 1 END

Contingency Name	Contingency Definition
PECO_P4_CHICH045/* \$ DELCO \$ PECO_P4_CHICH045 \$ STBK	CONTINGENCY 'PECO_P4_CHICH045/* \$ DELCO \$ PECO_P4_CHICH045 \$ STBK' / 269 OPEN BRANCH FROM BUS 213489 TO BUS 213490 CKT Z / 213489 CHICHST1 230 213490 CHICHST2 230 Z OPEN BRANCH FROM BUS 213489 TO BUS 213588 CKT 1 / 213489 CHICHST1 230 213588 EDDYSTN4 230 1 OPEN BRANCH FROM BUS 213489 TO BUS 213627 CKT 1 / 213489 CHICHST1 230 213627 FOULK8 230 1 OPEN BRANCH FROM BUS 213489 TO BUS 214221 CKT 1 / 213489 CHICHST1 230 214221 CHIREACT_43 230 1 OPEN BRANCH FROM BUS 213488 TO BUS 213489 CKT 3 / 213488 CHICH3-5 13.8 213489 CHICHST1 230 3 OPEN THREEWINDING AT BUS 213489 TO BUS 214203 TO BUS 214154 CKT 9A/ OPEN THREEWINDING AT BUS 213489 TO BUS 214203 TO BUS 214204 CKT 9B/ OPEN BRANCH FROM BUS 213624 TO BUS 213627 CKT Z / 213624 FOULK 230 213627 FOULK8 230 Z OPEN BRANCH FROM BUS 213626 TO BUS 213627 CKT 2 / 213626 FOULK 2 13.8 213627 FOULK8 230 2 END
PS_P2-3_GLOU_2-4_LT	CONTINGENCY 'PS_P2-3_GLOU_2-4_LT' / 1177 OPEN BRANCH FROM BUS 219110 TO BUS 219184 CKT 1 / 219110 GLOUCSTR 230 219184 GLOUCSTR_69 69.0 1 OPEN BRANCH FROM BUS 219108 TO BUS 219753 CKT Z / 219108 CUTHBERT_1 230 219753 CUTHBERT_3 230 Z OPEN BRANCH FROM BUS 219110 TO BUS 219753 CKT 1 / 219110 GLOUCSTR 230 219753 CUTHBERT_3 230 1 OPEN BRANCH FROM BUS 219753 TO BUS 219754 CKT Z / 219753 CUTHBERT_3 230 219754 CUTHBERT_2 230 Z OPEN BRANCH FROM BUS 219178 TO BUS 219753 CKT 1 / 219178 CUTHBERT_L2 13.2 219753 CUTHBERT_3 230 1 CLOSE BRANCH FROM BUS 219177 TO BUS 219178 CKT Z / 219177 CUTHBERT_L1 13.2 219178 CUTHBERT_L2 13.2 Z MOVE 8.00 MW LOAD FROM BUS 219178 TO BUS 219678 / FROM 219178 CUTHBERT_L2 13.2 TO 219678 MAPLESHADEL3 13.2 . LOAD=37.51 MOVE 8.00 MW LOAD FROM BUS 219178 TO BUS 219678 / FROM 219178 CUTHBERT_L2 13.2 TO 219678 MAPLESHADEL3 13.2 . LOAD=37.51 MOVE 8.00 MW LOAD FROM BUS 219178 TO BUS 219676 / FROM 219178 CUTHBERT_L2 13.2 TO 219676 MAPLESHADEL1 13.2 . LOAD=37.51 END
PS_P1-2_C-2308	CONTINGENCY 'PS_P1-2_C-2308' / 1119 OPEN BRANCH FROM BUS 219108 TO BUS 219753 CKT Z / 219108 CUTHBERT_1 230 219753 CUTHBERT_3 230 Z OPEN BRANCH FROM BUS 219110 TO BUS 219753 CKT 1 / 219110 GLOUCSTR 230 219753 CUTHBERT_3 230 1 OPEN BRANCH FROM BUS 219753 TO BUS 219754 CKT Z / 219753 CUTHBERT_3 230 219754 CUTHBERT_2 230 Z OPEN BRANCH FROM BUS 219178 TO BUS 219753 CKT 1 / 219178 CUTHBERT_L2 13.2 219753 CUTHBERT_3 230 1 CLOSE BRANCH FROM BUS 219177 TO BUS 219178 CKT Z / 219177 CUTHBERT_L1 13.2 219178 CUTHBERT_L2 13.2 Z END

Contingency Name	Contingency Definition
AE_P1-2 SHERM-W VINE-A	CONTINGENCY 'AE_P1-2 SHERM-W VINE-A' / 23 OPEN BRANCH FROM BUS 228256 TO BUS 945730 CKT 1 / 228256 SHRMAN#1 69.0 945730 AF1-238 TAP 69.0 1 END
AE_P1-2 BUT-LINC	CONTINGENCY 'AE_P1-2 BUT-LINC' / 43 OPEN BRANCH FROM BUS 228703 TO BUS 228725 CKT 1 / 228703 BUTLER 69.0 228725 W2-039 TAP 69.0 1 END
AE_P7-1 AE6TOWER	CONTINGENCY 'AE_P7-1 AE6TOWER' DISCONNECT BRANCH FROM BUS 228197 TO BUS 228106 CKT 1 /* MERION TO CORSON 138 KV DISCONNECT BUS 228111 /* BLE TO CORSON 138 KV END
AE_P4-2 AE51	CONTINGENCY 'AE_P4-2 AE51' / 131 OPEN BRANCH FROM BUS 228210 TO BUS 228709 CKT 1 / 228210 UNION 138 228709 LINCOLN 138 1 OPEN BRANCH FROM BUS 228210 TO BUS 228262 CKT 1 / 228210 UNION 138 228262 CUMB 138 1 END
PECO_P2-2_CHI230B1/* \$ DELCO \$ PECO_P2-2_CHI230B1 \$ B	CONTINGENCY 'PECO_P2-2_CHI230B1/* \$ DELCO \$ PECO_P2-2_CHI230B1 \$ B' DISCONNECT BUS 213489 /* CHICHST1 230.00 \$ DELCO \$ PECO_P2- 2_CHI230B1 \$ B END
AE_P7-1 AE9TOWER-A	CONTINGENCY 'AE_P7-1 AE9TOWER-A' DISCONNECT BRANCH FROM BUS 228314 TO BUS 939930 CKT 1 /* CHURCH TO AE1-229 TAP 138 KV DISCONNECT BRANCH FROM BUS 228310 TO BUS 228002 CKT 1 /* CHURCH TO ORCHARD 230 KV END
AE_P1-2 ORCHARD XF	CONTINGENCY 'AE_P1-2 ORCHARD XF' / 515 OPEN BRANCH FROM BUS 200063 TO BUS 228002 CKT 1 / 200063 ORCHARD 500 228002 ORCHARD 230 1 END
AE_P7-1 AE3TOWER	CONTINGENCY 'AE_P7-1 AE3TOWER' DISCONNECT BRANCH FROM BUS 227900 TO BUS 227955 CKT 1 /* CARDIFF TO CEDAR 230 KV DISCONNECT BRANCH FROM BUS 227913 TO BUS 227902 CKT 1 /* CARDIFF TO LEWIS 138 KV END

Contingency Name	Contingency Definition
AE_P1-2 CNT-V-BUT	CONTINGENCY 'AE_P1-2 CNT-V-BUT' / 1527 OPEN BRANCH FROM BUS 228703 TO BUS 228713 CKT 1 / 228703 BUTLER 69.0 228713 VCLP TP 69.0 1 OPEN BRANCH FROM BUS 228704 TO BUS 228713 CKT 1 / 228704 CENTRAL 69.0 228713 VCLP TP 69.0 1 END
PS_P1-2_2310	CONTINGENCY 'PS_P1-2_2310' / 467 OPEN BRANCH FROM BUS 219100 TO BUS 227900 CKT 1 / 219100 NEWFRDM 230 227900 CARDIFF 230 1 END
JC-P7-1-JCC-230-13	CONTINGENCY 'JC-P7-1-JCC-230-13' /* MANITOU-OYSTER CREEK 230 LINES & OYSTER GEN DISCONNECT BRANCH FROM BUS 206297 TO BUS 206302 CKT 1 DISCONNECT BRANCH FROM BUS 206297 TO BUS 206302 CKT 2 END
AE_P4-2 AE33	CONTINGENCY 'AE_P4-2 AE33' / 49 OPEN BRANCH FROM BUS 227902 TO BUS 227913 CKT 1 / 227902 LEWIS #1 138 227913 CARDIFF 138 1 OPEN BRANCH FROM BUS 227902 TO BUS 227903 CKT 1 / 227902 LEWIS #1 138 227903 MILL #1 138 1 OPEN BRANCH FROM BUS 227902 TO BUS 227918 CKT 1 / 227902 LEWIS #1 138 227918 LEWIS #1 69.0 1 END
AE_P1-2 BLE-ML-LEW2	CONTINGENCY 'AE_P1-2 BLE-ML-LEW2' / 580 OPEN BRANCH FROM BUS 227903 TO BUS 227904 CKT 1 / 227903 MILL #1 138 227904 MILL #2 138 1 OPEN BRANCH FROM BUS 227904 TO BUS 227906 CKT 1 / 227904 MILL #2 138 227906 SCULL#2 138 1 OPEN BRANCH FROM BUS 227904 TO BUS 227945 CKT 1 / 227904 MILL #2 138 227945 LEWIS #2 138 1 OPEN BRANCH FROM BUS 227904 TO BUS 227946 CKT 1 / 227904 MILL #2 138 227946 MILL#2 69.0 1 OPEN BRANCH FROM BUS 227906 TO BUS 228110 CKT 1 / 227906 SCULL#2 138 228110 BLE 138 1 OPEN BRANCH FROM BUS 227930 TO BUS 227906 CKT 1 / 227930 SCULL #2 12.9 227906 SCULL#2 138 1 END

Contingency Name	Contingency Definition
AE_P1-2 BLE-ML-LEW1	CONTINGENCY 'AE_P1-2 BLE-ML-LEW1' / 1790 OPEN BRANCH FROM BUS 227902 TO BUS 227903 CKT 1 / 227902 LEWIS #1 138 227903 MILL #1 138 1 OPEN BRANCH FROM BUS 227903 TO BUS 227904 CKT 1 / 227903 MILL #1 138 227904 MILL #2 138 1 OPEN BRANCH FROM BUS 227903 TO BUS 227905 CKT 1 / 227903 MILL #1 138 227905 SCULL#1 138 1 OPEN BRANCH FROM BUS 227905 TO BUS 228110 CKT 1 / 227905 SCULL#1 138 228110 BLE 138 1 OPEN BRANCH FROM BUS 227929 TO BUS 227905 CKT 1 / 227929 SCULL #1 12.9 227905 SCULL#1 138 1 END
PS_P1-2_Z-2305_LT	CONTINGENCY 'PS_P1-2_Z-2305_LT' / 1427 OPEN BRANCH FROM BUS 219108 TO BUS 219125 CKT 1 / 219108 CUTHBERT_1 230 219125 CAMDEN 230 1 OPEN BRANCH FROM BUS 219108 TO BUS 219753 CKT Z / 219108 CUTHBERT_1 230 219753 CUTHBERT_3 230 Z OPEN BRANCH FROM BUS 219108 TO BUS 219755 CKT Z / 219108 CUTHBERT_1 230 219755 CUTHBERT_4 230 Z OPEN BRANCH FROM BUS 219176 TO BUS 219108 CKT 1 / 219176 CUTHBERT_L4 13.2 219108 CUTHBERT_1 230 1 CLOSE BRANCH FROM BUS 219176 TO BUS 219179 CKT Z / 219176 CUTHBERT_L4 13.2 219179 CUTHBERT_L3 13.2 Z MOVE 8.00 MW LOAD FROM BUS 219176 TO BUS 219640 / FROM 219176 CUTHBERT_L4 13.2 TO 219640 LOCUST_L1 13.2 . LOAD=35.35 MOVE 8.00 MW LOAD FROM BUS 219176 TO BUS 219678 / FROM 219176 CUTHBERT_L4 13.2 TO 219678 MAPLESHADEL3 13.2 . LOAD=35.35 MOVE 8.00 MW LOAD FROM BUS 219176 TO BUS 219629 / FROM 219176 CUTHBERT_L4 13.2 TO 219629 LAWNSIDE_L3 13.2 . LOAD=35.35 MOVE 8.00 MW LOAD FROM BUS 219176 TO BUS 219170 / FROM 219176 CUTHBERT_L4 13.2 TO 219170 CINN_L2 13.2 . LOAD=35.35 END
JC-P1-2-JCC-230-044T	CONTINGENCY 'JC-P1-2-JCC-230-044T' / 1615 OPEN BRANCH FROM BUS 206302 TO BUS 227955 CKT 1 / 206302 28OYSTER C 230 227955 CEDAR 230 1 END
CARLL-240 TAP-SHERM-B	CONTINGENCY 'CARLL-240 TAP-SHERM-B' / 178 OPEN BRANCH FROM BUS 228226 TO BUS 940000 CKT 1 / 228226 SHRMAN#2 69.0 940000 AE1-240 TAP 69.0 1 END

Contingency Name	Contingency Definition
AE_P1-2 BLE-SC-ML1	CONTINGENCY 'AE_P1-2 BLE-SC-ML1' / 512 OPEN BRANCH FROM BUS 227903 TO BUS 227905 CKT 1 / 227903 MILL #1 138 227905 SCULL#1 138 1 OPEN BRANCH FROM BUS 227905 TO BUS 228110 CKT 1 / 227905 SCULL#1 138 228110 BLE 138 1 OPEN BRANCH FROM BUS 227929 TO BUS 227905 CKT 1 / 227929 SCULL #1 12.9 227905 SCULL#1 138 1 END
AE_P1-2 BLE-SC-ML2	CONTINGENCY 'AE_P1-2 BLE-SC-ML2' / 516 OPEN BRANCH FROM BUS 227904 TO BUS 227906 CKT 1 / 227904 MILL #2 138 227906 SCULL#2 138 1 OPEN BRANCH FROM BUS 227906 TO BUS 228110 CKT 1 / 227906 SCULL#2 138 228110 BLE 138 1 OPEN BRANCH FROM BUS 227930 TO BUS 227906 CKT 1 / 227930 SCULL #2 12.9 227906 SCULL#2 138 1 END
Base Case	
AE_P4-2 AE7	CONTINGENCY 'AE_P4-2 AE7' / 895 OPEN BRANCH FROM BUS 219100 TO BUS 227900 CKT 1 / 219100 NEWFRDM 230 227900 CARDIFF 230 1 OPEN BRANCH FROM BUS 227910 TO BUS 227900 CKT 1 / 227910 CARDIFF1 69.0 227900 CARDIFF 230 1 END
AE_P7-1 AE2TOWER	CONTINGENCY 'AE_P7-1 AE2TOWER' / PJM FIXED DISCONNECT BRANCH FROM BUS 228262 TO BUS 228253 CKT 1 /* SHERMAN TO CUMBERLAND 138 KV DISCONNECT BRANCH FROM BUS 228207 TO BUS 228002 CKT 1 /* ORCHARD TO CUMBERLAND 230 KV END
AE_P4-2 AE46	CONTINGENCY 'AE_P4-2 AE46' / 33 OPEN BRANCH FROM BUS 228002 TO BUS 228310 CKT 1 / 228002 ORCHARD 230 228310 CHURCHTN 230 1 OPEN BRANCH FROM BUS 200063 TO BUS 228002 CKT 1 / 200063 ORCHARD 500 228002 ORCHARD 230 1 END
AE_P1-2 CUMB-DENN	CONTINGENCY 'AE_P1-2 CUMB-DENN' / 360 OPEN BRANCH FROM BUS 228207 TO BUS 228213 CKT 1 / 228207 CUMB 230 228213 DENNIS 230 1 END

Contingency Name	Contingency Definition
AE_P1-2 SS-SMLVIL	CONTINGENCY 'AE_P1-2 SS-SMLVIL' / 156 OPEN BRANCH FROM BUS 228215 TO BUS 228233 CKT 1 / 228215 BALFSTNT 69.0 228233 WHTN A T 69.0 1 OPEN BRANCH FROM BUS 228225 TO BUS 228233 CKT 1 / 228225 2ND ST#1 69.0 228233 WHTN A T 69.0 1 OPEN BRANCH FROM BUS 228215 TO BUS 228228 CKT 1 / 228215 BALFSTNT 69.0 228228 SO MVLLE 69.0 1 END

14 Affected Systems

None

15 Attachment 1: One Line Diagram