



**Generation Interconnection
Feasibility Study Report
For
Queue Project AF2-061
WATTSVILLE 69KV
40 MW Capacity / 40 MW Energy**

July 2020

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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 DPL.

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 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 Storage generating facility located in Accomack County, Virginia. The installed facilities will have a total capability of 40 MW with 40 MW of this output being recognized by PJM as Capacity. The proposed in-service date for this project is June 30, 2021. This study does not imply a TO commitment to this in-service date.

Queue Number	AF2-061
Project Name	WATTSVILLE 69KV
State	Virginia
County	Accomack
Transmission Owner	DPL
MFO	40
MWE	40
MWC	40
Fuel	Storage
Basecase Study Year	2023

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 Primary Point of Interconnection

AF2-061 will have a primary point of interconnection with the DPL transmission system at the Wattsville 69 kV substation via a new terminal position to be constructed as part of this project.

5 Cost Summary

The AF2-061 project will be responsible for the following costs:

Description	Total Cost
Total Physical Interconnection Costs	\$ 1,950,000
Total System Network Upgrade Costs	\$117,500,000
Total Costs	\$119,450,000

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 88-129. 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.

5.1 DPL Costs

Cost estimates will further be refined as a part of the Impact Study and Facilities Study for this project. The Interconnection Customer will be responsible for all costs incurred by DPL in connection with the AF2-061 project. DPL reserves the right to reassess issues presented in this document and, upon appropriate justification, submit additional costs related to the AF2-061 project.

6 Transmission Owner Scope of Work

Install a new 69 kV terminal position at the Wattsville 69/12 kV substation.

Major Equipment:

- One (1) 2000A 69 kV circuit breaker
- Three (3) 2000A 69 kV disconnect switches
- Associated Bus work
- Three Relay Panels
- FL & BU Bus relays
- Two (2) breaker control relays

Description	Total Cost
New terminal position at Wattsville 69/12 kV	\$1,950,000
Total Physical Interconnection Costs	\$1,950,000

Estimate Assumptions:

- Any additional land required will be provided by IC and is not included in the cost estimate
- Site prep to be performed by IC if additional land required
- Existing control house can accommodate necessary relaying equipment.

7 Schedule

DPL will take approximately 18-24 months to complete the work for the primary point of interconnection.

8 Transmission Owner Analysis

None

9 Interconnection Customer Requirements

9.1 Required Relaying and Communications

New protection relays are required for the new terminal.

Front line and back-up line protection will be required. A relay panel at the generator terminal will be required for front line and back-up protection.

A breaker control relay on a breaker control panel will be required for the control and operation of the new 69 kV circuit breaker as well as for the existing breaker on the terminal.

9.2 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 DPL'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.

9.3 DPL Interconnection Customer Scope of Direct Connection Work Requirements

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

9.4 Special Operating Requirements

1. DPL 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 DPL.
2. DPL 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 DPL.

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 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 the DPL's specifications. The secondary wiring connections at the instrument transformers will be completed by the Interconnection Customer and inspected by DPL, while the connections at the metering enclosure will be completed by the DPL. The metering control cable and meter cabinets will be supplied by the DPL 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. The DPL 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. DPL 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 DPL within approximately three feet of the DPL metering position to facilitate remote interrogation and data collection. It is the Interconnection Customer's responsibility to send the data that PJM and DPL require directly to PJM. The Interconnection Customer will grant permission for PJM to send DPL the following telemetry that the Interconnection Customer sends to PJM: real time MW, MVAR, volts, amperes, generator status, and interval MWH and MVARH.

DPL'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 AF2-061 was evaluated as a 40.0 MW (Capacity 40.0 MW) injection at the Wattsville 69 kV substation in the DPL area. Project AF2-061 was evaluated for compliance with applicable reliability planning criteria (PJM, NERC, NERC Regional Reliability Councils, and Transmission Owners). Project AF2-061 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	CK T ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC/D C	MW IMPACT
101575263	232128	PINEY138	138.0	DP&L	232127	LORETT O	138.0	DP&L	1	DPL_P2_1_CKT 13714-1	single	158.0	94.2	102.12	DC	12.52

11.2 Multiple Facility Contingency

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

None

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	CK T ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC/D C	MW IMPACT
101574845	231124	GLASGOW	138.0	DP&L	231130	CECIL138	138.0	DP&L	1	PECO_P4_PEACH215/* \$ CHESCO \$ PEACH215 \$ STBK	breaker	378.0	102.74	103.19	DC	3.8
101574846	231124	GLASGOW	138.0	DP&L	231130	CECIL138	138.0	DP&L	1	PECO_P4_PEACH205/* \$ CHESCO \$ PEACH205 \$ STBK	breaker	378.0	100.73	101.18	DC	3.8
99086521	232003	CARTANZA	230.0	DP&L	232013	SILVER RUN	230.0	PJM	1	DPL_P4-2_DP25B	breaker	804.0	106.52	108.22	DC	13.67
99086522	232003	CARTANZA	230.0	DP&L	232013	SILVER RUN	230.0	PJM	1	DPL_P4-2_DP23	breaker	804.0	106.39	108.1	DC	13.67
99086523	232003	CARTANZA	230.0	DP&L	232013	SILVER RUN	230.0	PJM	1	DPL_P4-2_DP24	breaker	804.0	106.38	108.08	DC	13.67
101575937	232100	CHURCH	138.0	DP&L	232107	TOWNSEND	138.0	DP&L	1	DPL_P7_1_DBL_1NCB_FSA-A	tower	348.0	101.15	102.18	DC	8.06
101575927	232107	TOWNSEND	138.0	DP&L	232106	MIDLTNT P	138.0	DP&L	1	DPL_P7_1_DBL_1NCB_FSA-A	tower	348.0	106.35	107.38	DC	8.06
101575259	232128	PINEY138	138.0	DP&L	232127	LORETTO	138.0	DP&L	1	DPL_P1_2_CKT 13787	single	158.0	102.11	110.03	DC	12.52
101574688	232233	PRESTON	69.0	DP&L	232821	TANYARD	69.0	DP&L	1	DPL_P4-2_DP11	breaker	93.0	159.64	161.82	DC	4.52
101574673	232234	TODD	69.0	DP&L	232233	PRESTON	69.0	DP&L	1	DPL_P4-2_DP11	breaker	93.0	164.59	166.77	DC	4.52
101574800	232241	VIENN_69	69.0	DP&L	232838	MARDEL A	69.0	DP&L	1	DPL_P4-2_DP56	breaker	64.0	103.07	106.37	DC	3.98
101574954	232274	PINEY_69	69.0	DP&L	232272	M HERMON	69.0	DP&L	1	DPL_P4-2_DP15	breaker	174.0	102.33	107.84	DC	10.07
101575315	232275	LORET_69	69.0	DP&L	232288	FRUITLN D	69.0	DP&L	1	DPL_P1_2_CKT 6728	single	112.0	109.32	112.45	DC	3.5

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 PROJECTIONS LOADING %	POST PROJECTIONS LOADING %	AC/DC	MW IMPACT
101574953	924680	AB2-120 TAP	138.0	DP&L	232128	PINEY138	138.0	DP&L	1	DPL_P4-2_DP60C	breaker	226.0	105.82	109.16	DC	16.75

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	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECTIONS LOADING %	POST PROJECTIONS LOADING %	AC/DC	MW IMPACT
101575291	231124	GLASGOW	138.0	DP&L	231130	CECIL138	138.0	DP&L	1	PECO_P1-2_5014/* \$ CHESCO \$ 5014 \$ L	operation	378.0	100.71	101.16	DC	3.8
99086927	232002	CEDAR CK	230.0	DP&L	232013	SILVER RUN	230.0	PJM	1	CKT 23032B	operation	679.0	109.44	110.48	DC	15.58
99087026	232003	CARTANZA	230.0	DP&L	232013	SILVER RUN	230.0	PJM	1	CKT 23030B	operation	804.0	107.81	108.57	DC	13.67
99087027	232003	CARTANZA	230.0	DP&L	232013	SILVER RUN	230.0	PJM	1	Base Case	operation	650.0	102.14	103.49	DC	8.78
99890605	232004	MILF_230	230.0	DP&L	232000	STEELE	230.0	DP&L	1	CKT 23032B	operation	550.0	108.58	110.24	DC	9.11
101575257	232128	PINEY138	138.0	DP&L	232127	LORETT O	138.0	DP&L	1	DPL_P1_2_CKT 13713	operation	158.0	109.54	113.13	DC	12.51
101575399	232133	WATTSVILLE	138.0	DP&L	232128	PINEY138	138.0	DP&L	1	DPL_P1_2_CKT 13787	operation	348.0	93.87	101.34	DC	27.28
101575366	232274	PINEY_69	69.0	DP&L	232272	M HERMON	69.0	DP&L	1	DPL_P1_2_CKT 23002	operation	174.0	101.94	107.48	DC	10.12
101575314	232275	LORET_69	69.0	DP&L	232288	FRUITLND	69.0	DP&L	1	DPL_P1_2_CKT 6728	operation	112.0	111.2	112.61	DC	3.5
101575106	232280	OAKHL_69	69.0	DP&L	232281	WATTSVILLE	69.0	DP&L	1	DPL_P1_2_CKT 13789	operation	88.0	178.14	192.86	DC	12.95
101575109	232280	OAKHL_69	69.0	DP&L	232281	WATTSVILLE	69.0	DP&L	1	Base Case	operation	67.0	106.55	123.83	DC	11.58
101575378	924680	AB2-120 TAP	138.0	DP&L	232128	PINEY138	138.0	DP&L	1	DPL_P1_2_PINEY 138-WATTSVILLE	operation	226.0	104.48	107.71	DC	16.17

11.5 System Reinforcements - Summer Peak Load Flow - Primary POI

ID	Idx	Facility	Upgrade Description	Cost
99086523,99086522,99086521	3	CARTANZA 230.0 kV - SILVER RUN 230.0 kV Ckt 1	<u>DP&L</u> dt23032r0001 (1916) : Rebuild Cartanza - Silver Run 230 kV line Project Type : FAC Cost : \$65,000,000 Time Estimate : 48-60 Months	\$65,000,000
101574688	6	PRESTON 69.0 kV - TANYARD 69.0 kV Ckt 1	<u>DP&L</u> b2946 (1016) : PJM baseline upgrade b2946 conversion of Preston station to a Ring Bus Project Type : CON Cost : \$0 Time Estimate : 30-36 Months	\$0
101574800	8	VIENN_69 69.0 kV - MARDELA 69.0 kV Ckt 1	<u>DP&L</u> s0835 (1032) : Rebuild the 6708 line from Vienna - Hebron (N. Salisbury to Hebron Section already completed) with new poles, conductor, foundations, insulators and OPGW Project Type : CON Cost : \$0 Time Estimate : 36-48 Months	\$0
101575927	5	TOWNSEND 138.0 kV - MIDLTNTP 138.0 kV Ckt 1	<u>DP&L</u> ds13808r0001 (1014) : Upgrade disconnect switch at Middletown Tap Project Type : FAC Cost : \$100,000 Time Estimate : 12.0 Months <u>DP&L</u> dt13808r0001 (1038) : To mitigate the (DP&L) TOWNSEND to MIDLTNTP 138 kV line (from bus 232107 to bus 232106 ckt 1) overload, it will require increasing the emergency rating of the Townsend to Middletown Tap 138 kV line by reconductoring a small portion of the line Project Type : FAC Cost : \$100,000 Time Estimate : 9-12 Months	\$200,000
101575937	4	CHURCH 138.0 kV - TOWNSEND 138.0 kV Ckt 1	<u>DP&L</u> ds13833r0001 (1034) : To mitigate the (DP&L) CHURCH to TOWNSEND 138 kV line (from bus 232100 to bus 232107 ckt 1) overload will require substation reinforcements at Church Substation. Project Type : FAC Cost : \$500,000 Time Estimate : 24-36 Months	\$500,000

ID	Idx	Facility	Upgrade Description	Cost
101574673	7	TODD 69.0 kV - PRESTON 69.0 kV Ckt 1	<u>DP&L</u> b2946 (1016) : PJM baseline upgrade b2946 conversion of Preston station to a Ring Bus Project Type : CON Cost : \$0 Time Estimate : 30-36 Months <u>DP&L</u> ds6716r0001 (1028) : Previously identified in AB2-172, To mitigate the (DP&L) TODD to PRESTON 69 kV line (from bus 232234 to bus 232233 ckt 1) overload will require substation reinforcements at Todd Substation. Replace 600A Disconnect Switch at Todd Project Type : FAC Cost : \$100,000 Time Estimate : 12.0 Months <u>DP&L</u> ds6716r0002 (1042) : To mitigate the (DP&L) Preston - Tanyard 69 kV line (from bus 232821 to bus 232233 ckt 1) overload, it will require increasing the emergency rating of the Preston-Tanyard 69 kV line by replacing the terminal equipment at the Tanyard Tap Project Type : FAC Cost : \$100,000 Time Estimate : 9-12 Months	\$200,000
101574953	11	AB2-120 TAP 138.0 kV - PINEY138 138.0 kV Ckt 1	<u>DP&L</u> dt13764r0001 (1018) : Rebuild 13764 138 kV line from Piney Grove to AB2-120 Tap Project Type : FAC Cost : \$15,000,000 Time Estimate : 36-48 Months	\$15,000,000
101574845,101574846	2	GLASGOW 138.0 kV - CECIL138 138.0 kV Ckt 1	<u>DP&L</u> dt13810r0001 (1031) : To mitigate the (DPL) Glasgow to Cecil 138 kV line 13810 (from bus 231124 to bus 231130 ckt 1) overload, it will require increasing the emergency rating of the Glasgow to Cecil 138 kV line by rebuilding the circuit. The rebuild will include the installation of new poles, foundations, insulators, and conductor. In addition, various terminal reinforcements are required at Glasgow. Project Type : FAC Cost : \$5,000,000 Time Estimate : 36-60 Months	\$5,000,000
101575263,101575259	1	PINEY138 138.0 kV - LORETTO 138.0 kV Ckt 1	<u>DP&L</u> dt13777r0001 (1026) : Reconductor Line Project Type : FAC Cost : \$17,300,000 Time Estimate : 32-48 Months	\$17,300,000

ID	Idx	Facility	Upgrade Description	Cost
101574954	9	PINEY_69 69.0 kV - M HERMON 69.0 kV Ckt 1	<u>DP&L</u> dt6728r0001 (1065) : To mitigate the (DPL) Piney Grove - Mt. Hermon 69 kV line (from bus 232272 to 232274) overload it will require increasing the emergency rating of the line by rebuilding the line with new poles, conductor, insulators and OPGW. Terminal upgrades will also be required at both substations Project Type : FAC Cost : \$14,000,000 Time Estimate : 36-48 Months <u>DP&L</u> dt6728r0002 (1066) : To mitigate the (DPL) Piney Grove - Mt. Hermon 69 kV line (from bus 232272 to 232274) overload it will require increasing the emergency rating of the line by replacing the line disconnect switch Project Type : FAC Cost : \$100,000 Time Estimate : 9-12 Months	\$14,100,000
101575315	10	LORET_69 69.0 kV - FRUITLND 69.0 kV Ckt 1	<u>DP&L</u> ds6711r0001 (1047) : To mitigate the (DPL) Loretto - Fruitland 69 kV line (from bus 232288 to 232275) overload, it will required increasing the emergency rating of the Loretto - Fruitland 69 kV line by replacing terminal equipment at the Loretto Substation Project Type : FAC Cost : \$100,000 Time Estimate : 9-12 Months <u>DP&L</u> ds6711r0002 (1048) : To mitigate the (DPL) Loretto - Fruitland 69 kV line (from bus 232288 to 232275) overload, it will required increasing the emergency rating of the Loretto - Fruitland 69 kV line by replacing terminal equipment at the Fruitland Substation Project Type : FAC Cost : \$100,000 Time Estimate : 9-12 Months	\$200,000
			TOTAL COST	\$117,500,000

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
101575259	232128	PINEY138	DP&L	232127	LORETTO	DP&L	1	DPL_P1_2_CKT 13787	single	158.0	102.11	110.03	DC	12.52

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
232404	W1-003 C	0.8470	80/20	0.8470
232406	W1-004 FULL	0.8470	80/20	0.8470
232408	W1-005 C	0.8470	80/20	0.8470
232410	W1-006 C	0.8470	80/20	0.8470
232904	IR4	4.5157	80/20	4.5157
232905	BAYVIEW1	0.6798	80/20	0.6798
232912	OH NUG1	1.7852	80/20	1.7852
232913	OH NUG2	1.7614	80/20	1.7614
232914	OH NUG3	1.7852	80/20	1.7852
232915	OH NUG4	1.7852	80/20	1.7852
232916	OH NUG5	1.7852	80/20	1.7852
232917	OH NUG6	1.7773	80/20	1.7773
232918	OH NUG7	1.7733	80/20	1.7733
232921	TASLEY2G	1.1912	80/20	1.1912
917081	Z2-012 C	0.4133	80/20	0.4133
924681	AB2-120 C OP	12.0650	80/20	12.0650
930201	AB1-056 C	4.0733	80/20	4.0733
939151	AE1-145	6.2608	80/20	6.2608
939621	AE1-192 C O1	14.8172	80/20	14.8172
943361	AF1-007 C	0.1202	80/20	0.1202
945661	AF1-231 C	2.4098	80/20	2.4098
945781	AF1-243	1.5763	80/20	1.5763
957611	AF2-055 C	11.0341	80/20	11.0341
957661	AF2-060	2.8174	80/20	2.8174
957671	AF2-061 O1	12.5216	80/20	12.5216
959021	AF2-193 C O1	7.5268	80/20	7.5268
959031	AF2-194 C O1	7.5268	80/20	7.5268
NEWTON	NEWTON	0.0731	Confirmed LTF	0.0731
FARMERCITY	FARMERCITY	0.0038	Confirmed LTF	0.0038
CALDERWOOD	CALDERWOOD	0.0338	Confirmed LTF	0.0338
NY	NY	0.0332	Confirmed LTF	0.0332
PRAIRIE	PRAIRIE	0.1756	Confirmed LTF	0.1756
CHEOAH	CHEOAH	0.0340	Confirmed LTF	0.0340
EDWARDS	EDWARDS	0.0238	Confirmed LTF	0.0238
TILTON	TILTON	0.0428	Confirmed LTF	0.0428
GIBSON	GIBSON	0.0371	Confirmed LTF	0.0371
BLUEG	BLUEG	0.1180	Confirmed LTF	0.1180
TRIMBLE	TRIMBLE	0.0378	Confirmed LTF	0.0378
CATAWBA	CATAWBA	0.0238	Confirmed LTF	0.0238

11.6.2 Index 2

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
101574845	231124	GLASGOW	DP&L	231130	CECIL138	DP&L	1	PECO_P4_PEACH215/ * \$ CHESCO \$ PEACH215 \$ STBK	breaker	378.0	102.74	103.19	DC	3.8

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
200062	SALEM G3	1.9750	Adder	2.32
231708	CHRIST3	0.9517	Adder	1.12
231902	DC CT7	1.0848	50/50	1.0848
231903	GEN4	1.0316	Adder	1.21
231904	DC1 NUG	3.1444	50/50	3.1444
231905	DC2 NUG	3.1444	50/50	3.1444
231906	DC3 NUG	1.3702	50/50	1.3702
231907	DC10	0.3388	50/50	0.3388
231915	DC CT6	1.0467	50/50	1.0467
232405	W1-003 E	0.3638	Adder	0.43
232407	W1-004 E	0.3638	Adder	0.43
232409	W1-005 E	0.3638	Adder	0.43
232411	W1-006 E	0.3638	Adder	0.43
232412	X1-032 E	0.3240	Adder	0.38
232416	X2-083	0.0546	50/50	0.0546
232418	X3-008 E	1.0574	Adder	1.24
232422	X3-066 FULL	0.0483	50/50	0.0483
232423	X3-066 E	0.4572	50/50	0.4572
232424	Y1-079 C	0.0757	50/50	0.0757
232425	Y1-079 E	0.7163	50/50	0.7163
232427	Y1-080 E	0.1755	Adder	0.21
232429	Y3-058 E	0.7590	Adder	0.89
232433	Z2-076 E	0.1606	Adder	0.19
232435	Z2-077 E	0.1606	Adder	0.19
232436	AB1-176 C	0.1856	50/50	0.1856
232922	MR3 (Deactivation : 01/06/2021)	7.5646	Adder	8.9
917082	Z2-012 E	1.0019	Adder	1.18
919831	AA2-069 (Suspended)	33.4473	Adder	39.35
923282	AB1-137 C	0.3347	Adder	0.39
923283	AB1-137 E	0.1434	Adder	0.17
923322	AB1-141 C OP	1.6670	50/50	1.6670
923323	AB1-141 E OP	0.7779	50/50	0.7779
923332	AB1-142 C OP	1.6670	50/50	1.6670
923603	AB1-176 E	0.3060	50/50	0.3060
923921	AB2-032 C	1.6793	50/50	1.6793
923922	AB2-032 E	0.7903	50/50	0.7903
923951	AB2-036 C	3.9842	50/50	3.9842
923952	AB2-036 E	6.5185	50/50	6.5185
923961	AB2-037 C	6.3826	Adder	7.51
923962	AB2-037 E	10.4268	Adder	12.27
924681	AB2-120 C OP	3.0698	Adder	3.61

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
924682	AB2-120 E OP	5.0086	Adder	5.89
924781	AB2-130 C OP	2.6140	Adder	3.08
924782	AB2-130 E OP	4.2649	Adder	5.02
924801	AB2-133 C OP	3.2088	50/50	3.2088
924802	AB2-133 E OP	4.0697	50/50	4.0697
924821	AB2-135 C	3.6915	50/50	3.6915
924822	AB2-135 E	4.2100	50/50	4.2100
924831	AB2-136 C	2.0852	Adder	2.45
924832	AB2-136 E	2.2114	Adder	2.6
924971	AB2-153 C	0.9384	50/50	0.9384
924972	AB2-153 E	1.5312	50/50	1.5312
925151	AB2-172 C OP	1.6202	Adder	1.91
925152	AB2-172 E OP	2.6434	Adder	3.11
925251	AB2-179 C OP	6.1901	50/50	6.1901
925252	AB2-179 E OP	2.0414	50/50	2.0414
925261	AB2-180 C	1.1425	Adder	1.34
925262	AB2-180 E	0.4897	Adder	0.58
925271	AB2-185 C OP	1.6174	50/50	1.6174
925272	AB2-185 E OP	0.6932	50/50	0.6932
926131	AC1-091 C	0.5588	Adder	0.66
926132	AC1-091 E	0.9165	Adder	1.08
926141	AC1-092 C	0.5588	Adder	0.66
926142	AC1-092 E	0.9165	Adder	1.08
926151	AC1-093 C	0.5290	Adder	0.62
926152	AC1-093 E	0.8718	Adder	1.03
926161	AC1-094 C	0.4471	Adder	0.53
926162	AC1-094 E	0.7377	Adder	0.87
927031	AC1-190 C	2.9774	Adder	3.5
927032	AC1-190 E	1.2760	Adder	1.5
927191	AC1-213 C	0.2598	Adder	0.31
927192	AC1-213 E	0.1705	Adder	0.2
930201	AB1-056 C	5.1165	Adder	6.02
930202	AB1-056 E	14.5710	Adder	17.14
930881	AB1-137 C	0.3347	Adder	0.39
930882	AB1-137 E	0.1434	Adder	0.17
930932	AB1-142 E OP	0.7779	50/50	0.7779
932082	AC2-018 E1	1.6551	Adder	1.95
932092	AC2-018 E2	1.6551	Adder	1.95
932161	AC2-023 C	2.1703	Adder	2.55
932162	AC2-023 E	1.5806	Adder	1.86
933631	AC2-185 C	1.1326	Adder	1.33
933632	AC2-185 E	1.8479	Adder	2.17
933641	AC2-186 C	1.5533	Adder	1.83
933642	AC2-186 E	2.5343	Adder	2.98
936451	AD2-059 C	0.0324	50/50	0.0324
936452	AD2-059 E	0.1015	50/50	0.1015
936611	AD2-076 C O1	2.3355	50/50	2.3355
936612	AD2-076 E O1	3.8106	50/50	3.8106
938651	AE1-087 C	1.3644	Adder	1.61
938652	AE1-087 E	0.3411	Adder	0.4
938811	AE1-107 C	4.9535	50/50	4.9535
938812	AE1-107 E	3.5314	50/50	3.5314

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
938891	AE1-117 C O1	3.3070	Adder	3.89
938892	AE1-117 E O1	8.8055	Adder	10.36
938901	AE1-118 C O1 (Withdrawn : 07/10/2020)	3.3074	Adder	3.89
938902	AE1-118 E O1 (Withdrawn : 07/10/2020)	8.8064	Adder	10.36
939151	AE1-145	1.6157	Adder	1.9
939621	AE1-192 C O1	3.7976	Adder	4.47
939622	AE1-192 E O1	1.8584	Adder	2.19
941021	AE2-093 C	1.7664	Adder	2.08
941022	AE2-093 E	2.8066	Adder	3.3
941181	AE2-112 C	0.8103	50/50	0.8103
941182	AE2-112 E	1.3220	50/50	1.3220
942441	AE2-257 C	2.6286	Adder	3.09
942442	AE2-257 E	6.9299	Adder	8.15
943361	AF1-007 C	0.1510	Adder	0.18
943362	AF1-007 E	0.4290	Adder	0.5
943441	AF1-015 C	0.5649	Adder	0.66
943442	AF1-015 E	0.7801	Adder	0.92
943651	AF1-036 C	1.0536	50/50	1.0536
943652	AF1-036 E	1.4550	50/50	1.4550
944921	AF1-157 C O1	1.2056	Adder	1.42
944922	AF1-157 E O1	0.8038	Adder	0.95
945661	AF1-231 C	0.6141	Adder	0.72
945662	AF1-231 E	0.9211	Adder	1.08
945781	AF1-243	0.4040	Adder	0.48
945791	AF1-244	0.6483	Adder	0.76
945931	AF1-258	0.2611	Adder	0.31
945941	AF1-259	0.0983	50/50	0.0983
946041	AF1-269 (Withdrawn : 05/12/2020)	0.9195	Adder	1.08
957611	AF2-055 C	1.4989	Adder	3.33
957612	AF2-055 E	0.6424	Adder	1.43
957661	AF2-060	0.3853	Adder	0.86
957671	AF2-061 O1	1.7126	Adder	3.8
958151	AF2-109 C	1.3044	50/50	1.3044
958152	AF2-109 E	1.3044	50/50	1.3044
959021	AF2-193 C O1	5.0109	Adder	11.12
959022	AF2-193 E O1	13.5167	Adder	30.0
959031	AF2-194 C O1	5.0109	Adder	11.12
959032	AF2-194 E O1	13.5167	Adder	30.0
959051	AF2-196 C	0.3799	Adder	0.84
959052	AF2-196 E	0.8865	Adder	1.97
959161	AF2-207 C O1	0.8668	Adder	1.92
959162	AF2-207 E O1	1.3002	Adder	2.89
959173	AF2-208 BAT	21.0864	50/50	21.0864
959571	AF2-248 C	0.1462	Adder	0.32
959572	AF2-248 E	0.1635	Adder	0.36
959581	AF2-249 C	0.0258	Adder	0.06
959582	AF2-249 E	0.1032	Adder	0.23
959591	AF2-250 C	0.0473	Adder	0.1

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
959592	AF2-250 E	0.0366	Adder	0.08
960221	AF2-313 C	1.5608	50/50	1.5608
960222	AF2-313 E	0.8849	50/50	0.8849
960341	AF2-325 C	0.1881	Adder	0.42
960342	AF2-325 E	0.2598	Adder	0.58
960671	AF2-358 C O1	2.6522	Adder	5.89
960672	AF2-358 E O1	1.7681	Adder	3.92
960871	AF2-378 C	0.0496	Adder	0.11
960872	AF2-378 E	0.0688	Adder	0.15
960881	AF2-379 C	0.0705	Adder	0.16
960882	AF2-379 E	0.0972	Adder	0.22
960941	AF2-385 C O1	2.0638	Adder	4.58
960942	AF2-385 E O1	1.1609	Adder	2.58
960961	AF2-387 C O1	3.2920	Adder	7.31
960962	AF2-387 E O1	1.6509	Adder	3.66
961181	AF2-409 O1	4.3635	Adder	9.69
NEWTON	NEWTON	0.7006	Confirmed LTF	0.7006
FARMERCITY	FARMERCITY	0.0367	Confirmed LTF	0.0367
G-007A	G-007A	4.2124	Confirmed LTF	4.2124
VFT	VFT	9.6686	Confirmed LTF	9.6686
CALDERWOOD	CALDERWOOD	0.3390	Confirmed LTF	0.3390
PRAIRIE	PRAIRIE	1.6970	Confirmed LTF	1.6970
CHEOAH	CHEOAH	0.3418	Confirmed LTF	0.3418
EDWARDS	EDWARDS	0.2268	Confirmed LTF	0.2268
TILTON	TILTON	0.4082	Confirmed LTF	0.4082
GIBSON	GIBSON	0.3554	Confirmed LTF	0.3554
BLUEG	BLUEG	1.1301	Confirmed LTF	1.1301
TRIMBLE	TRIMBLE	0.3623	Confirmed LTF	0.3623
CATAWBA	CATAWBA	0.2478	Confirmed LTF	0.2478

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
99086523	232003	CARTANZA	DP&L	232013	SILVER RUN	PJM	1	DPL_P4-2_DP24	breaker	804.0	106.38	108.08	DC	13.67

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
231940	T-011	0.3090	50/50	0.3090
232003	CARTANZA	35.0801	50/50	35.0801
232405	W1-003 E	1.3046	Adder	1.53
232407	W1-004 E	1.3046	Adder	1.53
232409	W1-005 E	1.3046	Adder	1.53
232411	W1-006 E	1.3046	Adder	1.53
232412	X1-032 E	1.1410	Adder	1.34
232418	X3-008 E	2.9466	Adder	3.47
232423	X3-066 E	0.5928	Adder	0.7
232425	Y1-079 E	1.0454	Adder	1.23
232427	Y1-080 E	0.5284	Adder	0.62
232429	Y3-058 E	2.5845	Adder	3.04
232432	Z2-076 C	0.2520	50/50	0.2520
232433	Z2-076 E	0.7361	50/50	0.7361
232434	Z2-077 C	0.2520	50/50	0.2520
232435	Z2-077 E	0.7361	50/50	0.7361
232436	AB1-176 C	0.2406	Adder	0.28
232616	GEN FOOD	1.7245	50/50	1.7245
232851	DUP-SFR1	0.6094	50/50	0.6094
232901	NORTHST	5.2189	50/50	5.2189
232904	IR4	26.9780	50/50	26.9780
232920	IR10	1.0356	50/50	1.0356
232921	TASLEY2G	1.2895	50/50	1.2895
232922	MR3 (Deactivation : 01/06/2021)	67.0885	50/50	67.0885
917082	Z2-012 E	3.5969	Adder	4.23
919831	AA2-069 (Suspended)	296.6362	50/50	296.6362
923282	AB1-137 C	1.5610	50/50	1.5610
923283	AB1-137 E	0.6690	50/50	0.6690
923322	AB1-141 C OP	2.0896	Adder	2.46
923323	AB1-141 E OP	0.9751	Adder	1.15
923332	AB1-142 C OP	2.0896	Adder	2.46
923603	AB1-176 E	0.3968	Adder	0.47
923921	AB2-032 C	2.1051	Adder	2.48
923922	AB2-032 E	0.9906	Adder	1.17
923951	AB2-036 C	5.8419	Adder	6.87
923952	AB2-036 E	9.5580	Adder	11.24
923961	AB2-037 C	12.7658	Adder	15.02
923962	AB2-037 E	20.8547	Adder	24.53
924681	AB2-120 C OP	12.9827	50/50	12.9827
924682	AB2-120 E OP	21.1823	50/50	21.1823
924781	AB2-130 C OP	11.1022	50/50	11.1022

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
924782	AB2-130 E OP	18.1140	50/50	18.1140
924801	AB2-133 C OP	3.6875	Adder	4.34
924802	AB2-133 E OP	4.6768	Adder	5.5
924821	AB2-135 C	5.2881	Adder	6.22
924822	AB2-135 E	6.0309	Adder	7.1
924831	AB2-136 C	6.1379	Adder	7.22
924832	AB2-136 E	6.5091	Adder	7.66
924971	AB2-153 C	1.1764	Adder	1.38
924972	AB2-153 E	1.9193	Adder	2.26
925151	AB2-172 C OP	4.5149	Adder	5.31
925152	AB2-172 E OP	7.3664	Adder	8.67
925261	AB2-180 C	3.8907	Adder	4.58
925262	AB2-180 E	1.6674	Adder	1.96
925271	AB2-185 C OP	2.3605	Adder	2.78
925272	AB2-185 E OP	1.0116	Adder	1.19
926131	AC1-091 C	2.1565	Adder	2.54
926132	AC1-091 E	3.5367	Adder	4.16
926141	AC1-092 C	2.1565	Adder	2.54
926142	AC1-092 E	3.5367	Adder	4.16
926151	AC1-093 C	2.0415	Adder	2.4
926152	AC1-093 E	3.3642	Adder	3.96
926161	AC1-094 C	1.7252	Adder	2.03
926162	AC1-094 E	2.8466	Adder	3.35
927031	AC1-190 C	8.3773	Adder	9.86
927032	AC1-190 E	3.5903	Adder	4.22
927191	AC1-213 C	0.9101	Adder	1.07
927192	AC1-213 E	0.5973	Adder	0.7
930201	AB1-056 C	24.3348	50/50	24.3348
930202	AB1-056 E	69.3014	50/50	69.3014
930881	AB1-137 C	1.5610	50/50	1.5610
930882	AB1-137 E	0.6690	50/50	0.6690
930932	AB1-142 E OP	0.9751	Adder	1.15
932161	AC2-023 C	7.2429	Adder	8.52
932162	AC2-023 E	5.2750	Adder	6.21
933631	AC2-185 C	4.3706	Adder	5.14
933632	AC2-185 E	7.1309	Adder	8.39
933641	AC2-186 C	6.6329	50/50	6.6329
933642	AC2-186 E	10.8221	50/50	10.8221
936611	AD2-076 C O1	2.8243	Adder	3.32
936612	AD2-076 E O1	4.6081	Adder	5.42
938651	AE1-087 C	3.8020	Adder	4.47
938652	AE1-087 E	0.9505	Adder	1.12
938891	AE1-117 C O1	15.4231	50/50	15.4231
938892	AE1-117 E O1	41.0662	50/50	41.0662
938901	AE1-118 C O1 (Withdrawn : 07/10/2020)	15.4123	50/50	15.4123
938902	AE1-118 E O1 (Withdrawn : 07/10/2020)	41.0375	50/50	41.0375
939151	AE1-145	6.8344	50/50	6.8344
939621	AE1-192 C O1	13.6333	Adder	16.04
939622	AE1-192 E O1	6.6716	Adder	7.85

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
941021	AE2-093 C	3.6397	Adder	4.28
941022	AE2-093 E	5.7829	Adder	6.8
941181	AE2-112 C	0.9799	Adder	1.15
941182	AE2-112 E	1.5987	Adder	1.88
942441	AE2-257 C	12.2951	50/50	12.2951
942442	AE2-257 E	32.4145	50/50	32.4145
943361	AF1-007 C	0.7180	50/50	0.7180
943362	AF1-007 E	2.0405	50/50	2.0405
943441	AF1-015 C	1.1640	Adder	1.37
943442	AF1-015 E	1.6074	Adder	1.89
943651	AF1-036 C	1.2741	Adder	1.5
943652	AF1-036 E	1.7595	Adder	2.07
944921	AF1-157 C O1	5.3508	50/50	5.3508
944922	AF1-157 E O1	3.5672	50/50	3.5672
945661	AF1-231 C	2.2040	Adder	2.59
945662	AF1-231 E	3.3060	Adder	3.89
945781	AF1-243	1.4504	Adder	1.71
945791	AF1-244	2.2732	Adder	2.67
945931	AF1-258	0.8893	Adder	1.05
945941	AF1-259	0.1275	Adder	0.15
946041	AF1-269 (Withdrawn : 05/12/2020)	2.7681	Adder	3.26
957611	AF2-055 C	5.3808	Adder	11.94
957612	AF2-055 E	2.3061	Adder	5.12
957661	AF2-060	3.0755	50/50	3.0755
957671	AF2-061 O1	13.6688	50/50	13.6688
958151	AF2-109 C	0.7945	Adder	1.76
958152	AF2-109 E	0.7945	Adder	1.76
959021	AF2-193 C O1	44.9665	50/50	44.9665
959022	AF2-193 E O1	121.2963	50/50	121.2963
959031	AF2-194 C O1	44.9665	50/50	44.9665
959032	AF2-194 E O1	121.2963	50/50	121.2963
959051	AF2-196 C	3.3532	50/50	3.3532
959052	AF2-196 E	7.8242	50/50	7.8242
959161	AF2-207 C O1	3.0476	Adder	6.76
959162	AF2-207 E O1	4.5714	Adder	10.15
959571	AF2-248 C	0.5134	Adder	1.14
959572	AF2-248 E	0.5738	Adder	1.27
959581	AF2-249 C	0.0906	Adder	0.2
959582	AF2-249 E	0.3624	Adder	0.8
959591	AF2-250 C	0.1661	Adder	0.37
959592	AF2-250 E	0.1284	Adder	0.29
960221	AF2-313 C	1.0726	Adder	2.38
960222	AF2-313 E	0.6081	Adder	1.35
960341	AF2-325 C	0.5432	Adder	1.21
960342	AF2-325 E	0.7501	Adder	1.67
960671	AF2-358 C O1	8.0503	Adder	17.87
960672	AF2-358 E O1	5.3669	Adder	11.91
960871	AF2-378 C	0.1447	Adder	0.32
960872	AF2-378 E	0.2007	Adder	0.45
960881	AF2-379 C	0.2454	Adder	0.54
960882	AF2-379 E	0.3382	Adder	0.75
960941	AF2-385 C O1	7.2561	Adder	16.11

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
960942	AF2-385 E O1	4.0816	Adder	9.06
960961	AF2-387 C O1	6.1759	Adder	13.71
960962	AF2-387 E O1	3.0972	Adder	6.88
961181	AF2-409 O1	13.3334	Adder	29.6
NEWTON	NEWTON	0.3804	Confirmed LTF	0.3804
FARMERCITY	FARMERCITY	0.0198	Confirmed LTF	0.0198
CALDERWOOD	CALDERWOOD	0.1754	Confirmed LTF	0.1754
NY	NY	0.2555	Confirmed LTF	0.2555
PRAIRIE	PRAIRIE	0.9144	Confirmed LTF	0.9144
O-066	O-066	3.3600	Confirmed LTF	3.3600
CHEOAH	CHEOAH	0.1767	Confirmed LTF	0.1767
EDWARDS	EDWARDS	0.1239	Confirmed LTF	0.1239
TILTON	TILTON	0.2230	Confirmed LTF	0.2230
G-007	G-007	0.5595	Confirmed LTF	0.5595
MADISON	MADISON	0.0020	Confirmed LTF	0.0020
GIBSON	GIBSON	0.1933	Confirmed LTF	0.1933
BLUEG	BLUEG	0.6145	Confirmed LTF	0.6145
TRIMBLE	TRIMBLE	0.1970	Confirmed LTF	0.1970
CATAWBA	CATAWBA	0.1228	Confirmed LTF	0.1228

11.6.4 Index 4

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
101575937	232100	CHURCH	DP&L	232107	TOWNSEND	DP&L	1	DPL_P7_1_DBL_1NCB_FS A-A	tower	348.0	101.15	102.18	DC	8.06

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
232404	W1-003 C	0.5398	50/50	0.5398
232405	W1-003 E	0.9090	50/50	0.9090
232406	W1-004 FULL	0.5398	50/50	0.5398
232407	W1-004 E	0.9090	50/50	0.9090
232408	W1-005 C	0.5398	50/50	0.5398
232409	W1-005 E	0.9090	50/50	0.9090
232410	W1-006 C	0.5398	50/50	0.5398
232411	W1-006 E	0.9090	50/50	0.9090
232412	X1-032 E	0.8192	50/50	0.8192
232417	X3-008 C	0.3307	50/50	0.3307
232418	X3-008 E	3.1277	50/50	3.1277
232422	X3-066 FULL	0.1653	50/50	0.1653
232423	X3-066 E	1.5632	50/50	1.5632
232424	Y1-079 C	0.2436	50/50	0.2436
232425	Y1-079 E	2.3039	50/50	2.3039
232426	Y1-080 FULL	0.0519	50/50	0.0519
232427	Y1-080 E	0.4932	50/50	0.4932
232428	Y3-058 C	0.2078	50/50	0.2078
232429	Y3-058 E	1.9655	50/50	1.9655
232433	Z2-076 E	0.3208	Adder	0.38
232435	Z2-077 E	0.3208	Adder	0.38
232436	AB1-176 C	0.6345	50/50	0.6345
232813	VAUGHN	0.1155	50/50	0.1155
232902	EASTMUNI	3.7067	50/50	3.7067
232907	VN8	5.9640	50/50	5.9640
232910	NRG_G1	1.8200	50/50	1.8200
232911	NRG_G2	1.8200	50/50	1.8200
232919	VN10	0.4079	50/50	0.4079
232922	MR3 (Deactivation : 01/06/2021)	9.0862	Adder	10.69
232926	CRISFLD1	0.3545	50/50	0.3545
293670	O-025 C	0.2133	50/50	0.2133
917082	Z2-012 E	2.1263	Adder	2.5
918831	AA1-102	1.3293	50/50	1.3293
919831	AA2-069 (Suspended)	40.1751	Adder	47.26
923282	AB1-137 C	0.6591	Adder	0.78
923283	AB1-137 E	0.2825	Adder	0.33
923322	AB1-141 C OP	5.7565	50/50	5.7565
923323	AB1-141 E OP	2.6864	50/50	2.6864
923332	AB1-142 C OP	5.7565	50/50	5.7565
923603	AB1-176 E	1.0463	50/50	1.0463
923921	AB2-032 C	5.7992	50/50	5.7992

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
923922	AB2-032 E	2.7290	50/50	2.7290
923951	AB2-036 C	12.6924	50/50	12.6924
923952	AB2-036 E	20.7661	50/50	20.7661
924681	AB2-120 C OP	6.5091	Adder	7.66
924682	AB2-120 E OP	10.6201	Adder	12.49
924781	AB2-130 C OP	5.4762	Adder	6.44
924782	AB2-130 E OP	8.9348	Adder	10.51
924801	AB2-133 C OP	11.5595	50/50	11.5595
924802	AB2-133 E OP	14.6609	50/50	14.6609
924821	AB2-135 C	12.3188	50/50	12.3188
924822	AB2-135 E	14.0492	50/50	14.0492
924831	AB2-136 C	5.9522	50/50	5.9522
924832	AB2-136 E	6.3123	50/50	6.3123
924971	AB2-153 C	3.2407	50/50	3.2407
924972	AB2-153 E	5.2875	50/50	5.2875
925151	AB2-172 C OP	4.7924	50/50	4.7924
925152	AB2-172 E OP	7.8191	50/50	7.8191
925251	AB2-179 C OP	-9.1300	Adder	-10.74
925261	AB2-180 C	2.9588	50/50	2.9588
925262	AB2-180 E	1.2680	50/50	1.2680
925271	AB2-185 C OP	5.2023	50/50	5.2023
925272	AB2-185 E OP	2.2295	50/50	2.2295
926131	AC1-091 C	0.6416	Adder	0.75
926132	AC1-091 E	1.0523	Adder	1.24
926141	AC1-092 C	0.6416	Adder	0.75
926142	AC1-092 E	1.0523	Adder	1.24
926151	AC1-093 C	0.6074	Adder	0.71
926152	AC1-093 E	1.0010	Adder	1.18
926161	AC1-094 C	0.5133	Adder	0.6
926162	AC1-094 E	0.8470	Adder	1.0
927031	AC1-190 C	8.7532	50/50	8.7532
927032	AC1-190 E	3.7514	50/50	3.7514
927191	AC1-213 C	0.6596	50/50	0.6596
927192	AC1-213 E	0.4328	50/50	0.4328
930201	AB1-056 C	9.9441	Adder	11.7
930202	AB1-056 E	28.3190	Adder	33.32
930881	AB1-137 C	0.6591	Adder	0.78
930882	AB1-137 E	0.2825	Adder	0.33
930932	AB1-142 E OP	2.6864	50/50	2.6864
932161	AC2-023 C	5.6983	50/50	5.6983
932162	AC2-023 E	4.1501	50/50	4.1501
933631	AC2-185 C	1.3004	Adder	1.53
933632	AC2-185 E	2.1217	Adder	2.5
933641	AC2-186 C	3.1357	Adder	3.69
933642	AC2-186 E	5.1161	Adder	6.02
936611	AD2-076 C O1	8.1874	50/50	8.1874
936612	AD2-076 E O1	13.3584	50/50	13.3584
938651	AE1-087 C	4.0357	50/50	4.0357
938652	AE1-087 E	1.0089	50/50	1.0089
938891	AE1-117 C O1	6.5135	Adder	7.66
938892	AE1-117 E O1	17.3433	Adder	20.4

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
938901	AE1-118 C O1 (Withdrawn : 07/10/2020)	6.5188	Adder	7.67
938902	AE1-118 E O1 (Withdrawn : 07/10/2020)	17.3573	Adder	20.42
939151	AE1-145	3.4253	Adder	4.03
939621	AE1-192 C O1	8.0595	Adder	9.48
939622	AE1-192 E O1	3.9440	Adder	4.64
941021	AE2-093 C	5.9738	50/50	5.9738
941022	AE2-093 E	9.4914	50/50	9.4914
941181	AE2-112 C	2.8405	50/50	2.8405
941182	AE2-112 E	4.6345	50/50	4.6345
942441	AE2-257 C	5.1662	Adder	6.08
942442	AE2-257 E	13.6201	Adder	16.02
943361	AF1-007 C	0.2934	Adder	0.35
943362	AF1-007 E	0.8338	Adder	0.98
943441	AF1-015 C	1.9104	50/50	1.9104
943442	AF1-015 E	2.6382	50/50	2.6382
943651	AF1-036 C	3.6936	50/50	3.6936
943652	AF1-036 E	5.1006	50/50	5.1006
944921	AF1-157 C O1	2.4567	Adder	2.89
944922	AF1-157 E O1	1.6378	Adder	1.93
945661	AF1-231 C	1.3034	Adder	1.53
945662	AF1-231 E	1.9552	Adder	2.3
945781	AF1-243	0.8574	Adder	1.01
945791	AF1-244	1.6440	50/50	1.6440
945931	AF1-258	0.6763	50/50	0.6763
945941	AF1-259	0.3362	50/50	0.3362
946041	AF1-269 (Withdrawn : 05/12/2020)	2.5836	50/50	2.5836
957611	AF2-055 C	3.1809	Adder	7.06
957612	AF2-055 E	1.3633	Adder	3.03
957661	AF2-060	0.8169	Adder	1.81
957671	AF2-061 O1	3.6308	Adder	8.06
958151	AF2-109 C	4.6990	50/50	4.6990
958152	AF2-109 E	4.6990	50/50	4.6990
959021	AF2-193 C O1	9.7387	Adder	21.62
959022	AF2-193 E O1	26.2699	Adder	58.31
959031	AF2-194 C O1	9.7387	Adder	21.62
959032	AF2-194 E O1	26.2699	Adder	58.31
959051	AF2-196 C	0.7468	Adder	1.66
959052	AF2-196 E	1.7424	Adder	3.87
959161	AF2-207 C O1	4.1274	50/50	4.1274
959162	AF2-207 E O1	6.1910	50/50	6.1910
959571	AF2-248 C	0.6978	50/50	0.6978
959572	AF2-248 E	0.7799	50/50	0.7799
959581	AF2-249 C	0.1231	50/50	0.1231
959582	AF2-249 E	0.4926	50/50	0.4926
959591	AF2-250 C	0.2258	50/50	0.2258
959592	AF2-250 E	0.1745	50/50	0.1745
960221	AF2-313 C	5.3367	50/50	5.3367
960222	AF2-313 E	3.0255	50/50	3.0255

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
960341	AF2-325 C	1.0261	50/50	1.0261
960342	AF2-325 E	1.4170	50/50	1.4170
960671	AF2-358 C O1	13.9800	50/50	13.9800
960672	AF2-358 E O1	9.3200	50/50	9.3200
960871	AF2-378 C	0.2686	50/50	0.2686
960872	AF2-378 E	0.3727	50/50	0.3727
960881	AF2-379 C	0.3393	50/50	0.3393
960882	AF2-379 E	0.4676	50/50	0.4676
960941	AF2-385 C O1	9.8270	50/50	9.8270
960942	AF2-385 E O1	5.5277	50/50	5.5277
960961	AF2-387 C O1	22.1865	50/50	22.1865
960962	AF2-387 E O1	11.1265	50/50	11.1265
961181	AF2-409 O1	22.5980	50/50	22.5980
NEWTON	NEWTON	0.1870	Confirmed LTF	0.1870
FARMERCITY	FARMERCITY	0.0097	Confirmed LTF	0.0097
CALDERWOOD	CALDERWOOD	0.0870	Confirmed LTF	0.0870
NY	NY	0.0603	Confirmed LTF	0.0603
PRAIRIE	PRAIRIE	0.4494	Confirmed LTF	0.4494
O-066	O-066	0.5309	Confirmed LTF	0.5309
CHEOAH	CHEOAH	0.0876	Confirmed LTF	0.0876
EDWARDS	EDWARDS	0.0609	Confirmed LTF	0.0609
TILTON	TILTON	0.1096	Confirmed LTF	0.1096
G-007	G-007	0.0530	Confirmed LTF	0.0530
GIBSON	GIBSON	0.0950	Confirmed LTF	0.0950
BLUEG	BLUEG	0.3021	Confirmed LTF	0.3021
TRIMBLE	TRIMBLE	0.0968	Confirmed LTF	0.0968
CATAWBA	CATAWBA	0.0619	Confirmed LTF	0.0619

11.6.5 Index 5

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
101575927	232107	TOWNSEND	DP&L	232106	MIDLTNT P	DP&L	1	DPL_P7_1_DBL_1NCB_FS A-A	tower	348.0	106.35	107.38	DC	8.06

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
232404	W1-003 C	0.5398	50/50	0.5398
232405	W1-003 E	0.9090	50/50	0.9090
232406	W1-004 FULL	0.5398	50/50	0.5398
232407	W1-004 E	0.9090	50/50	0.9090
232408	W1-005 C	0.5398	50/50	0.5398
232409	W1-005 E	0.9090	50/50	0.9090
232410	W1-006 C	0.5398	50/50	0.5398
232411	W1-006 E	0.9090	50/50	0.9090
232412	X1-032 E	0.8192	50/50	0.8192
232417	X3-008 C	0.3307	50/50	0.3307
232418	X3-008 E	3.1277	50/50	3.1277
232422	X3-066 FULL	0.1653	50/50	0.1653
232423	X3-066 E	1.5632	50/50	1.5632
232424	Y1-079 C	0.2436	50/50	0.2436
232425	Y1-079 E	2.3039	50/50	2.3039
232426	Y1-080 FULL	0.0519	50/50	0.0519
232427	Y1-080 E	0.4932	50/50	0.4932
232428	Y3-058 C	0.2078	50/50	0.2078
232429	Y3-058 E	1.9655	50/50	1.9655
232433	Z2-076 E	0.3208	Adder	0.38
232435	Z2-077 E	0.3208	Adder	0.38
232436	AB1-176 C	0.6345	50/50	0.6345
232813	VAUGHN	0.1155	50/50	0.1155
232902	EASTMUNI	3.7067	50/50	3.7067
232907	VN8	5.9640	50/50	5.9640
232910	NRG_G1	1.8200	50/50	1.8200
232911	NRG_G2	1.8200	50/50	1.8200
232919	VN10	0.4079	50/50	0.4079
232922	MR3 (Deactivation : 01/06/2021)	9.0862	Adder	10.69
232926	CRISFLD1	0.3545	50/50	0.3545
293670	O-025 C	0.2133	50/50	0.2133
917082	Z2-012 E	2.1263	Adder	2.5
918831	AA1-102	1.3293	50/50	1.3293
919831	AA2-069 (Suspended)	40.1751	Adder	47.26
923282	AB1-137 C	0.6591	Adder	0.78
923283	AB1-137 E	0.2825	Adder	0.33
923322	AB1-141 C OP	5.7565	50/50	5.7565
923323	AB1-141 E OP	2.6864	50/50	2.6864
923332	AB1-142 C OP	5.7565	50/50	5.7565
923603	AB1-176 E	1.0463	50/50	1.0463
923921	AB2-032 C	5.7992	50/50	5.7992

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
923922	AB2-032 E	2.7290	50/50	2.7290
923951	AB2-036 C	12.6924	50/50	12.6924
923952	AB2-036 E	20.7661	50/50	20.7661
924681	AB2-120 C OP	6.5091	Adder	7.66
924682	AB2-120 E OP	10.6201	Adder	12.49
924781	AB2-130 C OP	5.4762	Adder	6.44
924782	AB2-130 E OP	8.9348	Adder	10.51
924801	AB2-133 C OP	11.5595	50/50	11.5595
924802	AB2-133 E OP	14.6609	50/50	14.6609
924821	AB2-135 C	12.3188	50/50	12.3188
924822	AB2-135 E	14.0492	50/50	14.0492
924831	AB2-136 C	5.9522	50/50	5.9522
924832	AB2-136 E	6.3123	50/50	6.3123
924971	AB2-153 C	3.2407	50/50	3.2407
924972	AB2-153 E	5.2875	50/50	5.2875
925151	AB2-172 C OP	4.7924	50/50	4.7924
925152	AB2-172 E OP	7.8191	50/50	7.8191
925251	AB2-179 C OP	26.8588	50/50	26.8588
925252	AB2-179 E OP	8.8577	50/50	8.8577
925261	AB2-180 C	2.9588	50/50	2.9588
925262	AB2-180 E	1.2680	50/50	1.2680
925271	AB2-185 C OP	5.2023	50/50	5.2023
925272	AB2-185 E OP	2.2295	50/50	2.2295
927031	AC1-190 C	8.7532	50/50	8.7532
927032	AC1-190 E	3.7514	50/50	3.7514
927191	AC1-213 C	0.6596	50/50	0.6596
927192	AC1-213 E	0.4328	50/50	0.4328
930201	AB1-056 C	9.9441	Adder	11.7
930202	AB1-056 E	28.3190	Adder	33.32
930881	AB1-137 C	0.6591	Adder	0.78
930882	AB1-137 E	0.2825	Adder	0.33
930932	AB1-142 E OP	2.6864	50/50	2.6864
932161	AC2-023 C	5.6983	50/50	5.6983
932162	AC2-023 E	4.1501	50/50	4.1501
933641	AC2-186 C	3.1357	Adder	3.69
933642	AC2-186 E	5.1161	Adder	6.02
936611	AD2-076 C O1	8.1874	50/50	8.1874
936612	AD2-076 E O1	13.3584	50/50	13.3584
938651	AE1-087 C	4.0357	50/50	4.0357
938652	AE1-087 E	1.0089	50/50	1.0089
938891	AE1-117 C O1	6.5135	Adder	7.66
938892	AE1-117 E O1	17.3433	Adder	20.4
938901	AE1-118 C O1 (Withdrawn : 07/10/2020)	6.5188	Adder	7.67
938902	AE1-118 E O1 (Withdrawn : 07/10/2020)	17.3573	Adder	20.42
939151	AE1-145	3.4253	Adder	4.03
939621	AE1-192 C O1	8.0595	Adder	9.48
939622	AE1-192 E O1	3.9440	Adder	4.64
941021	AE2-093 C	5.9738	50/50	5.9738
941022	AE2-093 E	9.4914	50/50	9.4914

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
941181	AE2-112 C	2.8405	50/50	2.8405
941182	AE2-112 E	4.6345	50/50	4.6345
942441	AE2-257 C	5.1662	Adder	6.08
942442	AE2-257 E	13.6201	Adder	16.02
943361	AF1-007 C	0.2934	Adder	0.35
943362	AF1-007 E	0.8338	Adder	0.98
943441	AF1-015 C	1.9104	50/50	1.9104
943442	AF1-015 E	2.6382	50/50	2.6382
943651	AF1-036 C	3.6936	50/50	3.6936
943652	AF1-036 E	5.1006	50/50	5.1006
944921	AF1-157 C O1	2.4567	Adder	2.89
944922	AF1-157 E O1	1.6378	Adder	1.93
945661	AF1-231 C	1.3034	Adder	1.53
945662	AF1-231 E	1.9552	Adder	2.3
945781	AF1-243	0.8574	Adder	1.01
945791	AF1-244	1.6440	50/50	1.6440
945931	AF1-258	0.6763	50/50	0.6763
945941	AF1-259	0.3362	50/50	0.3362
946041	AF1-269 (Withdrawn : 05/12/2020)	2.5836	50/50	2.5836
957611	AF2-055 C	3.1809	Adder	7.06
957612	AF2-055 E	1.3633	Adder	3.03
957661	AF2-060	0.8169	Adder	1.81
957671	AF2-061 O1	3.6308	Adder	8.06
958151	AF2-109 C	4.6990	50/50	4.6990
958152	AF2-109 E	4.6990	50/50	4.6990
959021	AF2-193 C O1	9.7387	Adder	21.62
959022	AF2-193 E O1	26.2699	Adder	58.31
959031	AF2-194 C O1	9.7387	Adder	21.62
959032	AF2-194 E O1	26.2699	Adder	58.31
959051	AF2-196 C	0.7468	Adder	1.66
959052	AF2-196 E	1.7424	Adder	3.87
959161	AF2-207 C O1	4.1274	50/50	4.1274
959162	AF2-207 E O1	6.1910	50/50	6.1910
959571	AF2-248 C	0.6978	50/50	0.6978
959572	AF2-248 E	0.7799	50/50	0.7799
959581	AF2-249 C	0.1231	50/50	0.1231
959582	AF2-249 E	0.4926	50/50	0.4926
959591	AF2-250 C	0.2258	50/50	0.2258
959592	AF2-250 E	0.1745	50/50	0.1745
960221	AF2-313 C	5.3367	50/50	5.3367
960222	AF2-313 E	3.0255	50/50	3.0255
960341	AF2-325 C	1.0261	50/50	1.0261
960342	AF2-325 E	1.4170	50/50	1.4170
960671	AF2-358 C O1	13.9800	50/50	13.9800
960672	AF2-358 E O1	9.3200	50/50	9.3200
960871	AF2-378 C	0.2686	50/50	0.2686
960872	AF2-378 E	0.3727	50/50	0.3727
960881	AF2-379 C	0.3393	50/50	0.3393
960882	AF2-379 E	0.4676	50/50	0.4676
960941	AF2-385 C O1	9.8270	50/50	9.8270
960942	AF2-385 E O1	5.5277	50/50	5.5277
960961	AF2-387 C O1	22.1865	50/50	22.1865

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
960962	AF2-387 E O1	11.1265	50/50	11.1265
961181	AF2-409 O1	22.5980	50/50	22.5980
NEWTON	NEWTON	0.1870	Confirmed LTF	0.1870
FARMERCITY	FARMERCITY	0.0097	Confirmed LTF	0.0097
CALDERWOOD	CALDERWOOD	0.0870	Confirmed LTF	0.0870
NY	NY	0.0603	Confirmed LTF	0.0603
PRAIRIE	PRAIRIE	0.4494	Confirmed LTF	0.4494
O-066	O-066	0.5309	Confirmed LTF	0.5309
CHEOAH	CHEOAH	0.0876	Confirmed LTF	0.0876
EDWARDS	EDWARDS	0.0609	Confirmed LTF	0.0609
TILTON	TILTON	0.1096	Confirmed LTF	0.1096
G-007	G-007	0.0530	Confirmed LTF	0.0530
GIBSON	GIBSON	0.0950	Confirmed LTF	0.0950
BLUEG	BLUEG	0.3021	Confirmed LTF	0.3021
TRIMBLE	TRIMBLE	0.0968	Confirmed LTF	0.0968
CATAWBA	CATAWBA	0.0619	Confirmed LTF	0.0619

11.6.6 Index 6

ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC DC	MW IMPACT
101574688	232233	PRESTON	DP&L	232821	TANYARD	DP&L	1	DPL_P4-2_DP11	breaker	93.0	159.64	161.82	DC	4.52

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
232404	W1-003 C	0.3036	50/50	0.3036
232405	W1-003 E	0.5112	50/50	0.5112
232406	W1-004 FULL	0.3036	50/50	0.3036
232407	W1-004 E	0.5112	50/50	0.5112
232408	W1-005 C	0.3036	50/50	0.3036
232409	W1-005 E	0.5112	50/50	0.5112
232410	W1-006 C	0.3036	50/50	0.3036
232411	W1-006 E	0.5112	50/50	0.5112
232412	X1-032 E	0.4732	50/50	0.4732
232417	X3-008 C	0.5183	50/50	0.5183
232418	X3-008 E	4.9023	50/50	4.9023
232426	Y1-080 FULL	0.0598	50/50	0.0598
232427	Y1-080 E	0.5688	50/50	0.5688
232428	Y3-058 C	0.1521	50/50	0.1521
232429	Y3-058 E	1.4383	50/50	1.4383
232433	Z2-076 E	0.1512	Adder	0.18
232435	Z2-077 E	0.1512	Adder	0.18
232905	BAYVIEW1	0.2443	50/50	0.2443
232907	VN8	3.9453	50/50	3.9453
232919	VN10	0.3965	50/50	0.3965
232921	TASLEY2G	0.4282	50/50	0.4282
232926	CRISFLD1	0.2061	50/50	0.2061
293670	O-025 C	0.1383	50/50	0.1383
917081	Z2-012 C	0.1486	50/50	0.1486
917082	Z2-012 E	1.4052	50/50	1.4052
918831	AA1-102	0.7727	50/50	0.7727
923282	AB1-137 C	0.2879	Adder	0.34
923283	AB1-137 E	0.1234	Adder	0.15
924681	AB2-120 C OP	3.6460	Adder	4.29
924682	AB2-120 E OP	5.9488	Adder	7.0
924781	AB2-130 C OP	3.8511	50/50	3.8511
924782	AB2-130 E OP	6.2834	50/50	6.2834
924831	AB2-136 C	7.6302	50/50	7.6302
924832	AB2-136 E	8.0917	50/50	8.0917
925151	AB2-172 C OP	7.5117	50/50	7.5117
925152	AB2-172 E OP	12.2559	50/50	12.2559
925261	AB2-180 C	2.1652	50/50	2.1652
925262	AB2-180 E	0.9280	50/50	0.9280
927031	AC1-190 C	13.3011	50/50	13.3011
927032	AC1-190 E	5.7005	50/50	5.7005
927191	AC1-213 C	0.4276	50/50	0.4276
927192	AC1-213 E	0.2806	50/50	0.2806

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
930201	AB1-056 C	4.1164	Adder	4.84
930202	AB1-056 E	11.7229	Adder	13.79
930881	AB1-137 C	0.2879	Adder	0.34
930882	AB1-137 E	0.1234	Adder	0.15
932161	AC2-023 C	4.4912	50/50	4.4912
932162	AC2-023 E	3.2710	50/50	3.2710
938651	AE1-087 C	6.3256	50/50	6.3256
938652	AE1-087 E	1.5814	50/50	1.5814
938891	AE1-117 C O1	2.8516	Adder	3.35
938892	AE1-117 E O1	7.5929	Adder	8.93
938901	AE1-118 C O1 (Withdrawn : 07/10/2020)	2.8640	Adder	3.37
938902	AE1-118 E O1 (Withdrawn : 07/10/2020)	7.6258	Adder	8.97
939151	AE1-145	1.9210	Adder	2.26
939621	AE1-192 C O1	5.3260	50/50	5.3260
939622	AE1-192 E O1	2.6064	50/50	2.6064
942441	AE2-257 C	2.2451	Adder	2.64
942442	AE2-257 E	5.9190	Adder	6.96
943361	AF1-007 C	0.1214	Adder	0.14
943362	AF1-007 E	0.3452	Adder	0.41
944921	AF1-157 C O1	1.3116	Adder	1.54
944922	AF1-157 E O1	0.8744	Adder	1.03
945661	AF1-231 C	0.7320	Adder	0.86
945662	AF1-231 E	1.0980	Adder	1.29
945781	AF1-243	0.5666	50/50	0.5666
945791	AF1-244	0.9557	50/50	0.9557
945931	AF1-258	0.4949	50/50	0.4949
946041	AF1-269 (Withdrawn : 05/12/2020)	2.9792	50/50	2.9792
957611	AF2-055 C	3.9662	50/50	3.9662
957612	AF2-055 E	1.6998	50/50	1.6998
957661	AF2-060	0.4582	Adder	1.02
957671	AF2-061 O1	2.0363	Adder	4.52
959021	AF2-193 C O1	4.0314	Adder	8.95
959022	AF2-193 E O1	10.8747	Adder	24.14
959031	AF2-194 C O1	4.0314	Adder	8.95
959032	AF2-194 E O1	10.8747	Adder	24.14
959051	AF2-196 C	0.3245	Adder	0.72
959052	AF2-196 E	0.7572	Adder	1.68
959161	AF2-207 C O1	2.5390	50/50	2.5390
959162	AF2-207 E O1	3.8084	50/50	3.8084
959571	AF2-248 C	0.4379	50/50	0.4379
959572	AF2-248 E	0.4894	50/50	0.4894
959581	AF2-249 C	0.0773	50/50	0.0773
959582	AF2-249 E	0.3091	50/50	0.3091
959591	AF2-250 C	0.1417	50/50	0.1417
959592	AF2-250 E	0.1095	50/50	0.1095
960341	AF2-325 C	1.4218	50/50	1.4218
960342	AF2-325 E	1.9635	50/50	1.9635
960671	AF2-358 C O1	15.4410	50/50	15.4410

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
960672	AF2-358 E O1	10.2940	50/50	10.2940
960871	AF2-378 C	0.3573	50/50	0.3573
960872	AF2-378 E	0.4957	50/50	0.4957
960881	AF2-379 C	0.2067	50/50	0.2067
960882	AF2-379 E	0.2849	50/50	0.2849
960941	AF2-385 C O1	6.0451	50/50	6.0451
960942	AF2-385 E O1	3.4004	50/50	3.4004
961181	AF2-409 O1	14.9490	50/50	14.9490
NEWTON	NEWTON	0.0752	Confirmed LTF	0.0752
FARMERCITY	FARMERCITY	0.0039	Confirmed LTF	0.0039
CALDERWOOD	CALDERWOOD	0.0348	Confirmed LTF	0.0348
NY	NY	0.0288	Confirmed LTF	0.0288
PRAIRIE	PRAIRIE	0.1808	Confirmed LTF	0.1808
O-066	O-066	0.2890	Confirmed LTF	0.2890
CHEOAH	CHEOAH	0.0350	Confirmed LTF	0.0350
EDWARDS	EDWARDS	0.0245	Confirmed LTF	0.0245
TILTON	TILTON	0.0441	Confirmed LTF	0.0441
G-007	G-007	0.0374	Confirmed LTF	0.0374
GIBSON	GIBSON	0.0382	Confirmed LTF	0.0382
BLUEG	BLUEG	0.1215	Confirmed LTF	0.1215
TRIMBLE	TRIMBLE	0.0390	Confirmed LTF	0.0390
CATAWBA	CATAWBA	0.0245	Confirmed LTF	0.0245

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
101574673	232234	TODD	DP&L	232233	PRESTON	DP&L	1	DPL_P4-2_DP11	breaker	93.0	164.59	166.77	DC	4.52

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
232404	W1-003 C	0.3036	50/50	0.3036
232405	W1-003 E	0.5112	50/50	0.5112
232406	W1-004 FULL	0.3036	50/50	0.3036
232407	W1-004 E	0.5112	50/50	0.5112
232408	W1-005 C	0.3036	50/50	0.3036
232409	W1-005 E	0.5112	50/50	0.5112
232410	W1-006 C	0.3036	50/50	0.3036
232411	W1-006 E	0.5112	50/50	0.5112
232412	X1-032 E	0.4732	50/50	0.4732
232417	X3-008 C	0.5183	50/50	0.5183
232418	X3-008 E	4.9023	50/50	4.9023
232426	Y1-080 FULL	0.0598	50/50	0.0598
232427	Y1-080 E	0.5688	50/50	0.5688
232428	Y3-058 C	0.1521	50/50	0.1521
232429	Y3-058 E	1.4383	50/50	1.4383
232433	Z2-076 E	0.1512	Adder	0.18
232435	Z2-077 E	0.1512	Adder	0.18
232905	BAYVIEW1	0.2443	50/50	0.2443
232907	VN8	3.9453	50/50	3.9453
232919	VN10	0.3965	50/50	0.3965
232921	TASLEY2G	0.4282	50/50	0.4282
232926	CRISFLD1	0.2061	50/50	0.2061
293670	O-025 C	0.1383	50/50	0.1383
917081	Z2-012 C	0.1486	50/50	0.1486
917082	Z2-012 E	1.4052	50/50	1.4052
918831	AA1-102	0.7727	50/50	0.7727
923282	AB1-137 C	0.2879	Adder	0.34
923283	AB1-137 E	0.1234	Adder	0.15
924681	AB2-120 C OP	3.6460	Adder	4.29
924682	AB2-120 E OP	5.9488	Adder	7.0
924781	AB2-130 C OP	3.8511	50/50	3.8511
924782	AB2-130 E OP	6.2834	50/50	6.2834
924831	AB2-136 C	7.6302	50/50	7.6302
924832	AB2-136 E	8.0917	50/50	8.0917
925151	AB2-172 C OP	7.5117	50/50	7.5117
925152	AB2-172 E OP	12.2559	50/50	12.2559
925261	AB2-180 C	2.1652	50/50	2.1652
925262	AB2-180 E	0.9280	50/50	0.9280
927031	AC1-190 C	13.3011	50/50	13.3011
927032	AC1-190 E	5.7005	50/50	5.7005
927191	AC1-213 C	0.4276	50/50	0.4276
927192	AC1-213 E	0.2806	50/50	0.2806

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
930201	AB1-056 C	4.1164	Adder	4.84
930202	AB1-056 E	11.7229	Adder	13.79
930881	AB1-137 C	0.2879	Adder	0.34
930882	AB1-137 E	0.1234	Adder	0.15
932161	AC2-023 C	4.4912	50/50	4.4912
932162	AC2-023 E	3.2710	50/50	3.2710
938651	AE1-087 C	6.3256	50/50	6.3256
938652	AE1-087 E	1.5814	50/50	1.5814
938891	AE1-117 C O1	2.8516	Adder	3.35
938892	AE1-117 E O1	7.5929	Adder	8.93
938901	AE1-118 C O1 (Withdrawn : 07/10/2020)	2.8640	Adder	3.37
938902	AE1-118 E O1 (Withdrawn : 07/10/2020)	7.6258	Adder	8.97
939151	AE1-145	1.9210	Adder	2.26
939621	AE1-192 C O1	5.3260	50/50	5.3260
939622	AE1-192 E O1	2.6064	50/50	2.6064
942441	AE2-257 C	2.2451	Adder	2.64
942442	AE2-257 E	5.9190	Adder	6.96
943361	AF1-007 C	0.1214	Adder	0.14
943362	AF1-007 E	0.3452	Adder	0.41
944921	AF1-157 C O1	1.3116	Adder	1.54
944922	AF1-157 E O1	0.8744	Adder	1.03
945661	AF1-231 C	0.7320	Adder	0.86
945662	AF1-231 E	1.0980	Adder	1.29
945781	AF1-243	0.5666	50/50	0.5666
945791	AF1-244	0.9557	50/50	0.9557
945931	AF1-258	0.4949	50/50	0.4949
946041	AF1-269 (Withdrawn : 05/12/2020)	2.9792	50/50	2.9792
957611	AF2-055 C	3.9662	50/50	3.9662
957612	AF2-055 E	1.6998	50/50	1.6998
957661	AF2-060	0.4582	Adder	1.02
957671	AF2-061 O1	2.0363	Adder	4.52
959021	AF2-193 C O1	4.0314	Adder	8.95
959022	AF2-193 E O1	10.8747	Adder	24.14
959031	AF2-194 C O1	4.0314	Adder	8.95
959032	AF2-194 E O1	10.8747	Adder	24.14
959051	AF2-196 C	0.3245	Adder	0.72
959052	AF2-196 E	0.7572	Adder	1.68
959161	AF2-207 C O1	2.5390	50/50	2.5390
959162	AF2-207 E O1	3.8084	50/50	3.8084
959571	AF2-248 C	0.4379	50/50	0.4379
959572	AF2-248 E	0.4894	50/50	0.4894
959581	AF2-249 C	0.0773	50/50	0.0773
959582	AF2-249 E	0.3091	50/50	0.3091
959591	AF2-250 C	0.1417	50/50	0.1417
959592	AF2-250 E	0.1095	50/50	0.1095
960341	AF2-325 C	1.4218	50/50	1.4218
960342	AF2-325 E	1.9635	50/50	1.9635
960671	AF2-358 C O1	15.4410	50/50	15.4410

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
960672	AF2-358 E O1	10.2940	50/50	10.2940
960871	AF2-378 C	0.3573	50/50	0.3573
960872	AF2-378 E	0.4957	50/50	0.4957
960881	AF2-379 C	0.2067	50/50	0.2067
960882	AF2-379 E	0.2849	50/50	0.2849
960941	AF2-385 C O1	6.0451	50/50	6.0451
960942	AF2-385 E O1	3.4004	50/50	3.4004
961181	AF2-409 O1	14.9490	50/50	14.9490
NEWTON	NEWTON	0.0752	Confirmed LTF	0.0752
FARMERCITY	FARMERCITY	0.0039	Confirmed LTF	0.0039
CALDERWOOD	CALDERWOOD	0.0348	Confirmed LTF	0.0348
NY	NY	0.0288	Confirmed LTF	0.0288
PRAIRIE	PRAIRIE	0.1808	Confirmed LTF	0.1808
O-066	O-066	0.2890	Confirmed LTF	0.2890
CHEOAH	CHEOAH	0.0350	Confirmed LTF	0.0350
EDWARDS	EDWARDS	0.0245	Confirmed LTF	0.0245
TILTON	TILTON	0.0441	Confirmed LTF	0.0441
G-007	G-007	0.0374	Confirmed LTF	0.0374
GIBSON	GIBSON	0.0382	Confirmed LTF	0.0382
BLUEG	BLUEG	0.1215	Confirmed LTF	0.1215
TRIMBLE	TRIMBLE	0.0390	Confirmed LTF	0.0390
CATAWBA	CATAWBA	0.0245	Confirmed LTF	0.0245

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
101574800	232241	VIENN_69	DP&L	232838	MARDELA	DP&L	1	DPL_P4-2_DP56	breaker	64.0	103.07	106.37	DC	3.98

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
232417	X3-008 C	0.1889	50/50	0.1889
232418	X3-008 E	1.7872	50/50	1.7872
232426	Y1-080 FULL	0.0384	50/50	0.0384
232427	Y1-080 E	0.3652	50/50	0.3652
232919	VN10	0.3322	50/50	0.3322
924831	AB2-136 C	4.0942	50/50	4.0942
924832	AB2-136 E	4.3419	50/50	4.3419
925151	AB2-172 C OP	2.7385	50/50	2.7385
925152	AB2-172 E OP	4.4680	50/50	4.4680
927031	AC1-190 C	5.1726	50/50	5.1726
927032	AC1-190 E	2.2169	50/50	2.2169
938651	AE1-087 C	2.3061	50/50	2.3061
938652	AE1-087 E	0.5765	50/50	0.5765
939152	AE1-145 BAT	1.9916	Merchant Transmission	1.9916
945663	AF1-231 BAT	1.9002	50/50	1.9002
945782	AF1-243 BAT	0.5014	50/50	0.5014
945792	AF1-244 BAT	0.9508	50/50	0.9508
946041	AF1-269 (Withdrawn : 05/12/2020)	1.9129	50/50	1.9129
957613	AF2-055 BAT	3.0081	50/50	3.0081
957662	AF2-060 BAT	0.4750	Merchant Transmission	0.4750
957672	AF2-061 BAT	2.1111	Merchant Transmission	2.1111
959163	AF2-207 BAT	2.2740	Merchant Transmission	2.2740
959583	AF2-249 BAT	0.3913	50/50	0.3913
960341	AF2-325 C	0.6624	50/50	0.6624
960342	AF2-325 E	0.9147	50/50	0.9147
960671	AF2-358 C O1	10.6278	50/50	10.6278
960672	AF2-358 E O1	7.0852	50/50	7.0852
960871	AF2-378 C	0.1795	50/50	0.1795
960872	AF2-378 E	0.2490	50/50	0.2490
961181	AF2-409 O1	2.3120	Adder	5.13
WEC	WEC	0.0095	Confirmed LTF	0.0095
LGEE	LGEE	0.0171	Confirmed LTF	0.0171
CPLE	CPLE	0.0198	Confirmed LTF	0.0198
G-007A	G-007A	0.0527	Confirmed LTF	0.0527
VFT	VFT	0.1548	Confirmed LTF	0.1548
CBM-W2	CBM-W2	0.2457	Confirmed LTF	0.2457
CBM-W1	CBM-W1	0.3753	Confirmed LTF	0.3753
TVA	TVA	0.0420	Confirmed LTF	0.0420
CBM-S2	CBM-S2	0.1734	Confirmed LTF	0.1734
CBM-S1	CBM-S1	0.2556	Confirmed LTF	0.2556
MEC	MEC	0.0477	Confirmed LTF	0.0477

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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
101574954	232274	PINEY_69	DP&L	232272	M HERMON	DP&L	1	DPL_P4-2_DP15	breaker	174.0	102.33	107.84	DC	10.07

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
232405	W1-003 E	0.9141	Adder	1.08
232407	W1-004 E	0.9141	Adder	1.08
232409	W1-005 E	0.9141	Adder	1.08
232411	W1-006 E	0.9141	Adder	1.08
232412	X1-032 E	0.6828	Adder	0.8
232905	BAYVIEW1	0.5266	50/50	0.5266
232914	OH NUG3	1.3527	50/50	1.3527
232915	OH NUG4	1.3527	50/50	1.3527
232916	OH NUG5	1.3527	50/50	1.3527
232921	TASLEY2G	0.9228	50/50	0.9228
917081	Z2-012 C	0.3201	50/50	0.3201
917082	Z2-012 E	3.0282	50/50	3.0282
924681	AB2-120 C OP	9.2256	50/50	9.2256
924682	AB2-120 E OP	15.0524	50/50	15.0524
939151	AE1-145	5.0328	50/50	5.0328
939621	AE1-192 C O1	11.4779	50/50	11.4779
939622	AE1-192 E O1	5.6168	50/50	5.6168
945661	AF1-231 C	1.5520	Adder	1.83
945662	AF1-231 E	2.3280	Adder	2.74
945781	AF1-243	1.2211	50/50	1.2211
945791	AF1-244	1.3028	Adder	1.53
957611	AF2-055 C	8.5474	50/50	8.5474
957612	AF2-055 E	3.6632	50/50	3.6632
957661	AF2-060	2.2648	50/50	2.2648
957671	AF2-061 O1	10.0656	50/50	10.0656
959163	AF2-207 BAT	2.0662	Merchant Transmission	2.0662
959583	AF2-249 BAT	0.1722	Merchant Transmission	0.1722
960881	AF2-379 C	0.0456	Adder	0.1
960882	AF2-379 E	0.0628	Adder	0.14
NEWTON	NEWTON	0.0612	Confirmed LTF	0.0612
FARMERCITY	FARMERCITY	0.0032	Confirmed LTF	0.0032
CALDERWOOD	CALDERWOOD	0.0283	Confirmed LTF	0.0283
NY	NY	0.0332	Confirmed LTF	0.0332
PRAIRIE	PRAIRIE	0.1472	Confirmed LTF	0.1472
O-066	O-066	0.4032	Confirmed LTF	0.4032
CHEOAH	CHEOAH	0.0285	Confirmed LTF	0.0285
EDWARDS	EDWARDS	0.0199	Confirmed LTF	0.0199
TILTON	TILTON	0.0359	Confirmed LTF	0.0359
G-007	G-007	0.0624	Confirmed LTF	0.0624
GIBSON	GIBSON	0.0311	Confirmed LTF	0.0311
BLUEG	BLUEG	0.0990	Confirmed LTF	0.0990
TRIMBLE	TRIMBLE	0.0317	Confirmed LTF	0.0317

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
CATAWBA	CATAWBA	0.0199	Confirmed LTF	0.0199

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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
101575315	232275	LORET_69	DP&L	232288	FRUITLND	DP&L	1	DPL_P1_2_CKT 6728	single	112.0	109.32	112.45	DC	3.5

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
232404	W1-003 C	0.2404	80/20	0.2404
232406	W1-004 FULL	0.2404	80/20	0.2404
232408	W1-005 C	0.2404	80/20	0.2404
232410	W1-006 C	0.2404	80/20	0.2404
232905	BAYVIEW1	0.1918	80/20	0.1918
232912	OH NUG1	0.5026	80/20	0.5026
232913	OH NUG2	0.4959	80/20	0.4959
232914	OH NUG3	0.5026	80/20	0.5026
232915	OH NUG4	0.5026	80/20	0.5026
232916	OH NUG5	0.5026	80/20	0.5026
232917	OH NUG6	0.5004	80/20	0.5004
232918	OH NUG7	0.4993	80/20	0.4993
232921	TASLEY2G	0.3361	80/20	0.3361
232926	CRISFLD1	0.1846	80/20	0.1846
917081	Z2-012 C	0.1166	80/20	0.1166
918831	AA1-102	0.6922	80/20	0.6922
924681	AB2-120 C OP	3.3482	80/20	3.3482
939151	AE1-145	1.7518	80/20	1.7518
939621	AE1-192 C O1	4.1802	80/20	4.1802
945661	AF1-231 C	0.6785	80/20	0.6785
945781	AF1-243	0.4447	80/20	0.4447
945791	AF1-244	0.8561	80/20	0.8561
957611	AF2-055 C	3.1129	80/20	3.1129
957661	AF2-060	0.7883	80/20	0.7883
957671	AF2-061 O1	3.5036	80/20	3.5036
960881	AF2-379 C	0.5293	80/20	0.5293
NEWTON	NEWTON	0.0236	Confirmed LTF	0.0236
FARMERCITY	FARMERCITY	0.0012	Confirmed LTF	0.0012
CALDERWOOD	CALDERWOOD	0.0109	Confirmed LTF	0.0109
NY	NY	0.0122	Confirmed LTF	0.0122
PRAIRIE	PRAIRIE	0.0568	Confirmed LTF	0.0568
CHEOAH	CHEOAH	0.0110	Confirmed LTF	0.0110
EDWARDS	EDWARDS	0.0077	Confirmed LTF	0.0077
TILTON	TILTON	0.0139	Confirmed LTF	0.0139
GIBSON	GIBSON	0.0120	Confirmed LTF	0.0120
BLUEG	BLUEG	0.0382	Confirmed LTF	0.0382
TRIMBLE	TRIMBLE	0.0122	Confirmed LTF	0.0122
CATAWBA	CATAWBA	0.0077	Confirmed LTF	0.0077

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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
101574953	924680	AB2-120 TAP	DP&L	232128	PINEY138	DP&L	1	DPL_P4-2_DP60C	breaker	226.0	105.82	109.16	DC	16.75

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
232405	W1-003 E	1.7476	Adder	2.06
232407	W1-004 E	1.7476	Adder	2.06
232409	W1-005 E	1.7476	Adder	2.06
232411	W1-006 E	1.7476	Adder	2.06
232412	X1-032 E	1.1231	Adder	1.32
232912	OH NUG1	2.7254	50/50	2.7254
232913	OH NUG2	2.6891	50/50	2.6891
232914	OH NUG3	2.7254	50/50	2.7254
232915	OH NUG4	2.7254	50/50	2.7254
232916	OH NUG5	2.7254	50/50	2.7254
232917	OH NUG6	2.7133	50/50	2.7133
232918	OH NUG7	2.7073	50/50	2.7073
917082	Z2-012 E	4.6462	Adder	5.47
924681	AB2-120 C OP	20.3004	50/50	20.3004
924682	AB2-120 E OP	33.1216	50/50	33.1216
939151	AE1-145	7.1177	Adder	8.37
939621	AE1-192 C O1	17.6108	Adder	20.72
939622	AE1-192 E O1	8.6180	Adder	10.14
945661	AF1-231 C	3.1271	Adder	3.68
945662	AF1-231 E	5.5184	50/50	5.5184
945781	AF1-243	1.8735	Adder	2.2
945791	AF1-244	2.0376	Adder	2.4
957611	AF2-055 C	6.9506	Adder	15.43
957612	AF2-055 E	2.9788	Adder	6.61
957661	AF2-060	1.6976	Adder	3.77
957671	AF2-061 O1	7.5448	Adder	16.75
960881	AF2-379 C	0.1160	Adder	0.26
960882	AF2-379 E	0.1599	Adder	0.35
NEWTON	NEWTON	0.1236	Confirmed LTF	0.1236
FARMERCITY	FARMERCITY	0.0064	Confirmed LTF	0.0064
CALDERWOOD	CALDERWOOD	0.0572	Confirmed LTF	0.0572
NY	NY	0.0664	Confirmed LTF	0.0664
PRAIRIE	PRAIRIE	0.2970	Confirmed LTF	0.2970
O-066	O-066	0.8131	Confirmed LTF	0.8131
CHEOAH	CHEOAH	0.0576	Confirmed LTF	0.0576
EDWARDS	EDWARDS	0.0403	Confirmed LTF	0.0403
TILTON	TILTON	0.0725	Confirmed LTF	0.0725
G-007	G-007	0.1279	Confirmed LTF	0.1279
GIBSON	GIBSON	0.0628	Confirmed LTF	0.0628
BLUEG	BLUEG	0.1996	Confirmed LTF	0.1996
TRIMBLE	TRIMBLE	0.0640	Confirmed LTF	0.0640
CATAWBA	CATAWBA	0.0403	Confirmed LTF	0.0403

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
AA1-102	Kings Creek-Loretto 138kV	Partially in Service - Under Construction
AA2-069	Cartanza 230kV	Suspended
AB1-056	Indian River 230kV I	Engineering and Procurement
AB1-137	Frankford 25kV	Engineering and Procurement
AB1-141	Church-Wye Mills 138 kV I	Engineering and Procurement
AB1-142	Church-Wye Mills 138 kV II	Engineering and Procurement
AB1-176	Price 25kV II	Active
AB2-032	Church-Wye Mills 138 kV	Engineering and Procurement
AB2-036	Church-Steele 138kV	Active
AB2-037	Keeney-Steele 230kV	Active
AB2-120	Piney Grove-New Church 138kV	Active
AB2-130	Laurel 69kV	Active
AB2-133	Chestertown-Church 69kV	Active
AB2-135	Church-Kent 69kV	Active
AB2-136	West Cambridge-Vienna 69kV	Active
AB2-153	Church-Wye Mills 138 kV	Engineering and Procurement
AB2-172	Todd 69kV	Active
AB2-179	Townsend 138kV	Engineering and Procurement
AB2-180	Rockawalkin 69kV	Active
AB2-185	Wye Mills 25kV	Active
AC1-091	Cedar Creek 138kV I	Active
AC1-092	Cedar Creek 138kV II	Active
AC1-093	Cedar Creek 138kV III	Active
AC1-094	Cedar Creek 138kV IV	Active
AC1-190	East New Market 69kV	Active
AC1-213	North Salisbury 25kV	Active
AC2-018	Rock Springs 500kV	In Service
AC2-023	Hebron 69kV	Active
AC2-185	Cedar Creek 138kV II	Active
AC2-186	Harrington 25kV	Active
AD2-059	Chapel Street 138 kV	Active
AD2-076	Centreville 69 kV	Active
AE1-087	Todd 69 kV	Active
AE1-107	Mt. Pleasant-Lums Pond 138 kV	Active
AE1-117	Bethany 138 kV	Active
AE1-118	Bethany-138th Street 138 kV	Withdrawn
AE1-145	Wallops Island 69 kV	Active
AE1-192	Belle Haven-Tasley 69 kV	Active
AE2-093	Easton-Steele 138 kV	Active

Queue Number	Project Name	Status
AE2-112	Carville 138 kV	Active
AE2-257	Cedar Neck 69 kV	Active
AF1-007	Indian River 230 kV I	Active
AF1-015	Easton-Steele 138 kV	Active
AF1-036	Carville 138 kV	Active
AF1-157	Laurel-Sussex 69 kV	Active
AF1-231	New Church 138 kV	Active
AF1-243	Tasley 25 kV	Active
AF1-244	Kingston 25 kV	Active
AF1-258	Rockawalkin 69 kV	Active
AF1-259	Price 25 kV	Active
AF1-269	Airey-Golden Hill 69 kV	Withdrawn
AF2-055	Plantation 69 kV	Active
AF2-060	Wattsville 12 kV	Active
AF2-061	Wattsville 69kV	Active
AF2-109	Church 69 kV	Active
AF2-193	Indian River 230 kV I	Active
AF2-194	Indian River 230 kV II	Active
AF2-196	Cedar Neck 69 kV II	Active
AF2-207	Nelson 69 kV	Active
AF2-208	Colora 230 kV	Active
AF2-248	Edgewood 12 kV I	Active
AF2-249	Edgewood 12 kV II	Active
AF2-250	Edgewood 12 kV III	Active
AF2-313	Price 69 kV	Active
AF2-325	Jacktown 12 kV	Active
AF2-358	Airey-Vienna 69 kV	Active
AF2-378	Cambridge 12 kV	Active
AF2-379	Princess Anne 25 kV	Active
AF2-385	Nelson 69 kV	Active
AF2-387	Hillsboro 138 kV	Active
AF2-409	Vienna 138 kV	Active
W1-003	Oak Hall	In Service
W1-004	Oak Hall	In Service
W1-005	Oak Hall	In Service
W1-006	Oak Hall	In Service
X1-032	Costen 25kV	In Service
X2-083	Newark 12kV	In Service
X3-008	Todd 69kV	Under Construction
X3-066	Church Hill 69kV	In Service
Y1-079	Wye Mills 69kV	In Service
Y1-080	Dorchester 12kV	In Service
Y3-058	Rockawalkin 69kV	In Service
Z2-012	Weirwood-Eastville 69kV	In Service
Z2-076	Worcester South 25kV	In Service
Z2-077	Worcester North 25kV	In Service

11.8 Contingency Descriptions - Primary POI

Contingency Name	Contingency Definition
DPL_P2_1_CKT 13714-1	CONTINGENCY 'DPL_P2_1_CKT 13714-1' OPEN LINE FROM BUS 232130 TO BUS 232807 CIRCUIT 1 / POCOMOKE - COSTEN 138 END
CKT 23030B	CONTINGENCY 'CKT 23030B' OPEN LINE FROM BUS 232002 TO BUS 232013 CIRCUIT 1 /CEDAR CREEK - SILVER RUN 230 END
DPL_P4-2_DP24	CONTINGENCY 'DPL_P4-2_DP24' /*CEDAR CREEK BUS BREAKER TO SILVER RUN DISCONNECT BRANCH FROM BUS 232013 TO BUS 232002 CKT 1 /*SILVER RUN CEDAR CK 230 230 DISCONNECT BRANCH FROM BUS 232002 TO BUS 232108 CKT 1 /*CEDAR CK CEDAR CK 230 138 AT20 END
PECO_P4_PEACH205/* \$ CHESCO \$ PEACH205 \$ STBK	CONTINGENCY 'PECO_P4_PEACH205/* \$ CHESCO \$ PEACH205 \$ STBK' TRIP BRANCH FROM BUS 200065 TO BUS 200066 CKT 1 /* PCHBTM2S 500.00 PCHBTM1N 500.00 \$ CHESCO \$ PEACH205 \$ STBK TRIP BRANCH FROM BUS 200064 TO BUS 200065 CKT Z1 /* PCHBTM1S 500.00 PCHBTM2S 500.00 \$ CHESCO \$ PEACH205 \$ STBK TRIP BRANCH FROM BUS 200013 TO BUS 200066 CKT Z1 /* PCHBTM2N 500.00 PCHBTM1N 500.00 \$ CHESCO \$ PEACH205 \$ STBK TRIP BRANCH FROM BUS 200065 TO BUS 200051 CKT 1 /* PCHBTM2S 500.00 ROCKSPGS 500.00 \$ CHESCO \$ PEACH205 \$ STBK END
DPL_P4-2_DP23	CONTINGENCY 'DPL_P4-2_DP23' /*CEDAR CREEK BUS BREAKER TO SILVER RUN DISCONNECT BRANCH FROM BUS 232002 TO BUS 232013 CKT 1 /*CEDAR CK SILVER RUN 230 230 DISCONNECT BRANCH FROM BUS 232002 TO BUS 232004 CKT 1 /*CEDAR CK MILFORD 230 230 END
DPL_P4-2_DP25B	CONTINGENCY 'DPL_P4-2_DP25B' /*CEDAR CREEK 230 BUS BREAKER TO MILFORD DISCONNECT BRANCH FROM BUS 232002 TO BUS 232004 CKT 1 /*CEDAR CK MILFORD 230 230 DISCONNECT BRANCH FROM BUS 232002 TO BUS 232108 CKT 1 /*CEDAR CK CEDAR CK 230 138 AT20 END

Contingency Name	Contingency Definition
DPL_P4-2_DP15	CONTINGENCY 'DPL_P4-2_DP15' /*INDIAN RIVER BUS BREAKER TO PINEY GROVE DISCONNECT BRANCH FROM BUS 232007 TO BUS 232006 CKT 1 /*PINEY GR INDIV 4 230 230 DISCONNECT BRANCH FROM BUS 232007 TO BUS 232128 CKT 1 /*PINEY GR PINEY GR 230 138 DISCONNECT BRANCH FROM BUS 232006 TO BUS 232004 CKT 1 /*MILFORD INDIAN RIVER 230 230 END
DPL_P1_2_CKT 6728	CONTINGENCY 'DPL_P1_2_CKT 6728' OPEN LINE FROM BUS 232272 TO BUS 232274 CIRCUIT 1 /MOUNT HERMON - PINEY GROVE 69 DISCONNECT BUS 230912 / PINEY GROVE 69 CAP END
DPL_P1_2_CKT 23002	CONTINGENCY 'DPL_P1_2_CKT 23002' DISCONNECT BUS 232007 /INDIAN RIVER - PINEY GROVE 230 & PNY GRV AT-20 XFMR END
DPL_P1_2_CKT 13713	CONTINGENCY 'DPL_P1_2_CKT 13713' OPEN LINE FROM BUS 232129 TO BUS 232127 CIRCUIT 1 /KINGS CREEK - LORETTO 138 END
CKT 23032B	CONTINGENCY 'CKT 23032B' OPEN LINE FROM BUS 232013 TO BUS 232003 CIRCUIT 1 /SILVER RUN - CARTANZA 230 END
DPL_P4-2_DP11	CONTINGENCY 'DPL_P4-2_DP11' /*STEELE BUS BREAKER TO MILFORD DISCONNECT BRANCH FROM BUS 232004 TO BUS 232000 CKT 1 /*MILFORD STEELE 230 230 DISCONNECT BRANCH FROM BUS 232000 TO BUS 232005 CKT 1 /*STEELE VIENNA 230 230 END
PECO_P4_PEACH215/* \$ CHESCO \$ PEACH215 \$ STBK	CONTINGENCY 'PECO_P4_PEACH215/* \$ CHESCO \$ PEACH215 \$ STBK' TRIP BRANCH FROM BUS 200065 TO BUS 200051 CKT 1 /* PCHBTM2S 500.00 ROCKSPGS 500.00 \$ CHESCO \$ PEACH215 \$ STBK REMOVE MACHINE 1 FROM BUS 200034 /* PCHBTM 2 22.00 \$ CHESCO \$ PEACH215 \$ STBK END

Contingency Name	Contingency Definition
DPL_P4-2_DP56	CONTINGENCY 'DPL_P4-2_DP56' /*LORETTO BUS BREAKER DISCONNECT BRANCH FROM BUS 232127 TO BUS 232117 CKT 1 /*LORETTO VIENNA 138 1380 DISCONNECT BRANCH FROM BUS 232127 TO BUS 232128 CKT 1 /*LORETTO PINEY GROVE 138 138 END
DPL_P1_2_CKT 13787	CONTINGENCY 'DPL_P1_2_CKT 13787' OPEN LINE FROM BUS 232132 TO BUS 232130 CIRCUIT 1 /OAK HALL - POCOMOKE 138 END
PECO_P1-2_5014/* \$ CHESCO \$ 5014 \$ L	CONTINGENCY 'PECO_P1-2_5014/* \$ CHESCO \$ 5014 \$ L' TRIP BRANCH FROM BUS 200065 TO BUS 200051 CKT 1 /* PCHBTM2S 500.00 ROCKSPGS 500.00 \$ CHESCO \$ 5014 \$ L END
Base Case	
DPL_P4-2_DP60C	CONTINGENCY 'DPL_P4-2_DP60C' /*PINEY GROVE BUS BREAKER DISCONNECT BRANCH FROM BUS 232128 TO BUS 232133 CKT 1 /*PINEY GROVE WATTSVILLE 138 138 DISCONNECT BRANCH FROM BUS 232128 TO BUS 232127 CKT 1 /*PINEY GROVE LORETTO 138 138 END
DPL_P1_2_PINEY138-WATTSVILLE	CONTINGENCY 'DPL_P1_2_PINEY138-WATTSVILLE' DISCONNECT BRANCH FROM BUS 232128 TO BUS 232133 CKT 1 END
DPL_P1_2_CKT 13789	CONTINGENCY 'DPL_P1_2_CKT 13789' OPEN LINE FROM BUS 232132 TO BUS 232133 CIRCUIT 1 /OAK HALL - WATTSVILLE 138 END
DPL_P7_1_DBL_1NCB_FSA-A	CONTINGENCY 'DPL_P7_1_DBL_1NCB_FSA-A' /* #1 & #2 KEENEY-STEELE 230 OPEN LINE FROM BUS 231003 TO BUS 232000 CKT 1 OPEN LINE FROM BUS 231003 TO BUS 923960 CKT 2 OPEN LINE FROM BUS 232000 TO BUS 923960 CKT 2 DISCONNECT BUS 923961 DISCONNECT BUS 923962 END

12 Short Circuit Analysis - Primary POI

Short circuit will be studied in the System Impact Study phase.

13 Secondary Point of Interconnection

AF2-061 will have a secondary point of interconnection with the DPL transmission system at the Wattsville 138 kV substation.

14 Summer Peak - Load Flow Analysis - Secondary POI

The Queue Project AF2-061 was evaluated as a 40.0 MW (Capacity 40.0 MW) injection at the Wattsville 138 kV substation in the DPL area. Project AF2-061 was evaluated for compliance with applicable reliability planning criteria (PJM, NERC, NERC Regional Reliability Councils, and Transmission Owners). Project AF2-061 was studied with a commercial probability of 53.0 %. Potential network impacts were as follows:

14.1 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	CK T ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADIN G %	POST PROJECT LOADIN G %	AC/D C	MW IMPACT
101575263	232128	PINEY138	138.0	DP&L	232127	LORETT O	138.0	DP&L	1	DPL_P2_1_CKT 13714-1	single	158.0	94.2	102.22	DC	12.68

14.2 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	CK T ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADIN G %	POST PROJECT LOADIN G %	AC/D C	MW IMPACT
101574801	232241	VIENN_69	69.0	DP&L	232838	MARDEL A	69.0	DP&L	1	DPL_P4 - 2_DP55	breaker	64.0	99.23	102.35	DC	3.76

14.3 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	CK T ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADIN G %	POST PROJECT LOADIN G %	AC/D C	MW IMPACT
101574845	231124	GLASGO W	138.0	DP&L	231130	CECIL138	138.0	DP&L	1	PECO_P4_Peach215/ * \$ CHESCO \$ PEACH215 \$ STBK	breaker	378.0	102.74	103.19	DC	3.8
101574846	231124	GLASGO W	138.0	DP&L	231130	CECIL138	138.0	DP&L	1	PECO_P4_Peach205/ * \$ CHESCO \$ PEACH205 \$ STBK	breaker	378.0	100.73	101.18	DC	3.8
99086521	232003	CARTANZ A	230.0	DP&L	232013	SILVER RUN	230.0	PJM	1	DPL_P4-2_DP25B	breaker	804.0	106.52	108.22	DC	13.68
99086522	232003	CARTANZ A	230.0	DP&L	232013	SILVER RUN	230.0	PJM	1	DPL_P4-2_DP23	breaker	804.0	106.39	108.1	DC	13.68
99086523	232003	CARTANZ A	230.0	DP&L	232013	SILVER RUN	230.0	PJM	1	DPL_P4-2_DP24	breaker	804.0	106.38	108.08	DC	13.68
101575937	232100	CHURCH	138.0	DP&L	232107	TOWNSE ND	138.0	DP&L	1	DPL_P7_1_DBL_1NCB _FSA-A	tower	348.0	101.15	102.18	DC	8.05

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 PROJECTIONS LOADING %	POST PROJECTIONS LOADING %	AC/D C	MW IMPACT
101575927	232107	TOWNSEND	138.0	DP&L	232106	MIDLTNT P	138.0	DP&L	1	DPL_P7_1_DBL_1NCB_FSA-A	tower	348.0	106.35	107.38	DC	8.05
101574827	232128	PINEY138	138.0	DP&L	232127	LORETTO	138.0	DP&L	1	DPL_P4-2_DP58	breaker	158.0	115.03	118.64	DC	12.68
101575259	232128	PINEY138	138.0	DP&L	232127	LORETTO	138.0	DP&L	1	DPL_P1_2_CKT 13787	single	158.0	102.11	110.13	DC	12.68
101574800	232241	VIENN_69	69.0	DP&L	232238	MARDEL A	69.0	DP&L	1	DPL_P4-2_DP56	breaker	64.0	103.07	106.31	DC	3.91
101574954	232274	PINEY_69	69.0	DP&L	232272	M HERMON	69.0	DP&L	1	DPL_P4-2_DP15	breaker	174.0	102.29	107.67	DC	9.86
101575315	232275	LORET_69	69.0	DP&L	232288	FRUITLN D	69.0	DP&L	1	DPL_P1_2_CKT 6728	single	112.0	109.32	112.43	DC	3.48
101574953	924680	AB2-120 TAP	138.0	DP&L	232128	PINEY138	138.0	DP&L	1	DPL_P4-2_DP60C	breaker	226.0	105.82	109.38	DC	17.87

14.4 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	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECTIONS LOADING %	POST PROJECTIONS LOADING %	AC/D C	MW IMPACT
101575291	231124	GLASGOW	138.0	DP&L	231130	CECIL138	138.0	DP&L	1	PECO_P1-2_5014/* \$ CHESCO \$ 5014 \$ L	operation	378.0	100.71	101.16	DC	3.8
99086927	232002	CEDAR CK	230.0	DP&L	232013	SILVER RUN	230.0	PJM	1	CKT 23032B	operation	679.0	109.44	110.48	DC	15.6
99087026	232003	CARTANZ A	230.0	DP&L	232013	SILVER RUN	230.0	PJM	1	CKT 23030B	operation	804.0	107.81	108.57	DC	13.68
99087027	232003	CARTANZ A	230.0	DP&L	232013	SILVER RUN	230.0	PJM	1	Base Case	operation	650.0	102.14	103.49	DC	8.79
99890605	232004	MILF_230	230.0	DP&L	232000	STEELE	230.0	DP&L	1	CKT 23032B	operation	550.0	108.58	110.24	DC	9.15
101575258	232128	PINEY138	138.0	DP&L	232127	LORETT O	138.0	DP&L	1	DPL_P1_2_CKT 13787	operation	158.0	115.02	118.63	DC	12.68
101575399	232133	WATTSVILLE	138.0	DP&L	232128	PINEY138	138.0	DP&L	1	DPL_P1_2_CKT 13787	operation	348.0	93.89	102.13	DC	30.04
101575366	232274	PINEY_69	69.0	DP&L	232272	M HERMON	69.0	DP&L	1	DPL_P1_2_CKT 23002	operation	174.0	101.91	107.31	DC	9.92
101575314	232275	LORET_69	69.0	DP&L	232288	FRUITLN D	69.0	DP&L	1	DPL_P1_2_CKT 6728	operation	112.0	111.2	112.61	DC	3.48
101575106	232280	OAKHL_69	69.0	DP&L	232281	WATTSVILLE	69.0	DP&L	1	DPL_P1_2_CKT 13789	operation	88.0	178.13	181.73	DC	5.99
153343287	232828	SHORT 1	69.0	DP&L	232249	LAUREL	69.0	DP&L	1	DPL_P1_2_CKT 23002	operation	57.0	97.21	104.28	DC	4.08
101575378	924680	AB2-120 TAP	138.0	DP&L	232128	PINEY138	138.0	DP&L	1	DPL_P1_2_PINEY 138-WATTSVILLE	operation	226.0	104.48	107.89	DC	17.1

14.5 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".

14.5.1 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
101574827	232128	PINEY138	DP&L	232127	LORETTO	DP&L	1	DPL_P4-2_DP58	breaker	158.0	115.03	118.64	DC	12.68

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
232405	W1-003 E	1.2123	Adder	1.43
232407	W1-004 E	1.2123	Adder	1.43
232409	W1-005 E	1.2123	Adder	1.43
232411	W1-006 E	1.2123	Adder	1.43
232912	OH NUG1	1.7860	50/50	1.7860
232913	OH NUG2	1.7622	50/50	1.7622
232914	OH NUG3	1.7860	50/50	1.7860
232915	OH NUG4	1.7860	50/50	1.7860
232916	OH NUG5	1.7860	50/50	1.7860
232917	OH NUG6	1.7780	50/50	1.7780
232918	OH NUG7	1.7741	50/50	1.7741
917082	Z2-012 E	3.3222	Adder	3.91
924681	AB2-120 C OP	12.0692	50/50	12.0692
924682	AB2-120 E OP	19.6918	50/50	19.6918
938653	AE1-087 BAT	1.4796	Merchant Transmission	1.4796
939151	AE1-145	5.3208	Adder	6.26
939621	AE1-192 C O1	12.5922	Adder	14.81
939622	AE1-192 E O1	6.1622	Adder	7.25
945661	AF1-231 C	2.0492	Adder	2.41
945662	AF1-231 E	3.6162	50/50	3.6162
945781	AF1-243	1.3396	Adder	1.58
945792	AF1-244 BAT	3.6111	50/50	3.6111
946042	AF1-269 BAT (Withdrawn : 05/12/2020)	0.9497	Merchant Transmission	0.9497
957611	AF2-055 C	4.9699	Adder	11.03
957612	AF2-055 E	2.1300	Adder	4.73
957661	AF2-060	1.2690	Adder	2.82
957671	AF2-061 O2	5.7111	Adder	12.68
959163	AF2-207 BAT	1.7275	Merchant Transmission	1.7275
961182	AF2-409 BAT	5.0435	Merchant Transmission	5.0435
NEWTON	NEWTON	0.0731	Confirmed LTF	0.0731
FARMERCITY	FARMERCITY	0.0038	Confirmed LTF	0.0038
CALDERWOOD	CALDERWOOD	0.0338	Confirmed LTF	0.0338
NY	NY	0.0332	Confirmed LTF	0.0332
PRAIRIE	PRAIRIE	0.1756	Confirmed LTF	0.1756
O-066	O-066	0.3763	Confirmed LTF	0.3763
CHEOAH	CHEOAH	0.0340	Confirmed LTF	0.0340
EDWARDS	EDWARDS	0.0238	Confirmed LTF	0.0238
TILTON	TILTON	0.0428	Confirmed LTF	0.0428
G-007	G-007	0.0551	Confirmed LTF	0.0551
GIBSON	GIBSON	0.0371	Confirmed LTF	0.0371
BLUEG	BLUEG	0.1180	Confirmed LTF	0.1180

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
TRIMBLE	TRIMBLE	0.0378	Confirmed LTF	0.0378
CATAWBA	CATAWBA	0.0238	Confirmed LTF	0.0238

14.5.2 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
101574800	232241	VIENN_69	DP&L	232838	MARDELA	DP&L	1	DPL_P4-2_DP56	breaker	64.0	103.07	106.31	DC	3.91

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
232417	X3-008 C	0.1889	50/50	0.1889
232418	X3-008 E	1.7872	50/50	1.7872
232426	Y1-080 FULL	0.0384	50/50	0.0384
232427	Y1-080 E	0.3652	50/50	0.3652
232919	VN10	0.3322	50/50	0.3322
924831	AB2-136 C	4.0942	50/50	4.0942
924832	AB2-136 E	4.3419	50/50	4.3419
925151	AB2-172 C OP	2.7385	50/50	2.7385
925152	AB2-172 E OP	4.4680	50/50	4.4680
927031	AC1-190 C	5.1726	50/50	5.1726
927032	AC1-190 E	2.2169	50/50	2.2169
938651	AE1-087 C	2.3061	50/50	2.3061
938652	AE1-087 E	0.5765	50/50	0.5765
939152	AE1-145 BAT	1.9916	Merchant Transmission	1.9916
945663	AF1-231 BAT	1.9002	50/50	1.9002
945782	AF1-243 BAT	0.5014	50/50	0.5014
945792	AF1-244 BAT	0.9508	50/50	0.9508
946041	AF1-269 (Withdrawn : 05/12/2020)	1.9129	50/50	1.9129
957613	AF2-055 BAT	3.0081	50/50	3.0081
957662	AF2-060 BAT	0.4750	Merchant Transmission	0.4750
957672	AF2-061 BAT	2.0721	Merchant Transmission	2.0721
959583	AF2-249 BAT	0.3913	50/50	0.3913
960341	AF2-325 C	0.6624	50/50	0.6624
960342	AF2-325 E	0.9147	50/50	0.9147
960671	AF2-358 C O2	9.1650	50/50	9.1650
960672	AF2-358 E O2	6.1100	50/50	6.1100
960871	AF2-378 C	0.1795	50/50	0.1795
960872	AF2-378 E	0.2490	50/50	0.2490
961181	AF2-409 O2	1.5015	Adder	3.33
WEC	WEC	0.0095	Confirmed LTF	0.0095
LGEE	LGEE	0.0171	Confirmed LTF	0.0171
CPLE	CPLE	0.0198	Confirmed LTF	0.0198
G-007A	G-007A	0.0527	Confirmed LTF	0.0527
VFT	VFT	0.1548	Confirmed LTF	0.1548
CBM-W2	CBM-W2	0.2457	Confirmed LTF	0.2457
CBM-W1	CBM-W1	0.3753	Confirmed LTF	0.3753
TVA	TVA	0.0420	Confirmed LTF	0.0420
CBM-S2	CBM-S2	0.1734	Confirmed LTF	0.1734
CBM-S1	CBM-S1	0.2556	Confirmed LTF	0.2556
MEC	MEC	0.0477	Confirmed LTF	0.0477

14.5.3 Index 3

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
101574845	231124	GLASGOW	DP&L	231130	CECIL138	DP&L	1	PECO_P4_PEACH215/ * \$ CHESCO \$ PEACH215 \$ STBK	breaker	378.0	102.74	103.19	DC	3.8

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
200062	SALEM G3	1.9750	Adder	2.32
231708	CHRIST3	0.9517	Adder	1.12
231902	DC CT7	1.0848	50/50	1.0848
231903	GEN4	1.0316	Adder	1.21
231904	DC1 NUG	3.1444	50/50	3.1444
231905	DC2 NUG	3.1444	50/50	3.1444
231906	DC3 NUG	1.3702	50/50	1.3702
231907	DC10	0.3388	50/50	0.3388
231915	DC CT6	1.0467	50/50	1.0467
232405	W1-003 E	0.3638	Adder	0.43
232407	W1-004 E	0.3638	Adder	0.43
232409	W1-005 E	0.3638	Adder	0.43
232411	W1-006 E	0.3638	Adder	0.43
232412	X1-032 E	0.3240	Adder	0.38
232416	X2-083	0.0546	50/50	0.0546
232418	X3-008 E	1.0574	Adder	1.24
232422	X3-066 FULL	0.0483	50/50	0.0483
232423	X3-066 E	0.4572	50/50	0.4572
232424	Y1-079 C	0.0757	50/50	0.0757
232425	Y1-079 E	0.7163	50/50	0.7163
232427	Y1-080 E	0.1755	Adder	0.21
232429	Y3-058 E	0.7590	Adder	0.89
232433	Z2-076 E	0.1606	Adder	0.19
232435	Z2-077 E	0.1606	Adder	0.19
232436	AB1-176 C	0.1856	50/50	0.1856
232922	MR3 (Deactivation : 01/06/2021)	7.5646	Adder	8.9
917082	Z2-012 E	1.0019	Adder	1.18
919831	AA2-069 (Suspended)	33.4473	Adder	39.35
923282	AB1-137 C	0.3347	Adder	0.39
923283	AB1-137 E	0.1434	Adder	0.17
923322	AB1-141 C OP	1.6670	50/50	1.6670
923323	AB1-141 E OP	0.7779	50/50	0.7779
923332	AB1-142 C OP	1.6670	50/50	1.6670
923603	AB1-176 E	0.3060	50/50	0.3060
923921	AB2-032 C	1.6793	50/50	1.6793
923922	AB2-032 E	0.7903	50/50	0.7903
923951	AB2-036 C	3.9842	50/50	3.9842
923952	AB2-036 E	6.5185	50/50	6.5185
923961	AB2-037 C	6.3826	Adder	7.51
923962	AB2-037 E	10.4268	Adder	12.27
924681	AB2-120 C OP	3.0698	Adder	3.61

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
924682	AB2-120 E OP	5.0086	Adder	5.89
924781	AB2-130 C OP	2.6140	Adder	3.08
924782	AB2-130 E OP	4.2649	Adder	5.02
924801	AB2-133 C OP	3.2088	50/50	3.2088
924802	AB2-133 E OP	4.0697	50/50	4.0697
924821	AB2-135 C	3.6915	50/50	3.6915
924822	AB2-135 E	4.2100	50/50	4.2100
924831	AB2-136 C	2.0852	Adder	2.45
924832	AB2-136 E	2.2114	Adder	2.6
924971	AB2-153 C	0.9384	50/50	0.9384
924972	AB2-153 E	1.5312	50/50	1.5312
925151	AB2-172 C OP	1.6202	Adder	1.91
925152	AB2-172 E OP	2.6434	Adder	3.11
925251	AB2-179 C OP	6.1901	50/50	6.1901
925252	AB2-179 E OP	2.0414	50/50	2.0414
925261	AB2-180 C	1.1425	Adder	1.34
925262	AB2-180 E	0.4897	Adder	0.58
925271	AB2-185 C OP	1.6174	50/50	1.6174
925272	AB2-185 E OP	0.6932	50/50	0.6932
926131	AC1-091 C	0.5588	Adder	0.66
926132	AC1-091 E	0.9165	Adder	1.08
926141	AC1-092 C	0.5588	Adder	0.66
926142	AC1-092 E	0.9165	Adder	1.08
926151	AC1-093 C	0.5290	Adder	0.62
926152	AC1-093 E	0.8718	Adder	1.03
926161	AC1-094 C	0.4471	Adder	0.53
926162	AC1-094 E	0.7377	Adder	0.87
927031	AC1-190 C	2.9774	Adder	3.5
927032	AC1-190 E	1.2760	Adder	1.5
927191	AC1-213 C	0.2598	Adder	0.31
927192	AC1-213 E	0.1705	Adder	0.2
930201	AB1-056 C	5.1165	Adder	6.02
930202	AB1-056 E	14.5710	Adder	17.14
930881	AB1-137 C	0.3347	Adder	0.39
930882	AB1-137 E	0.1434	Adder	0.17
930932	AB1-142 E OP	0.7779	50/50	0.7779
932082	AC2-018 E1	1.6551	Adder	1.95
932092	AC2-018 E2	1.6551	Adder	1.95
932161	AC2-023 C	2.1703	Adder	2.55
932162	AC2-023 E	1.5806	Adder	1.86
933631	AC2-185 C	1.1326	Adder	1.33
933632	AC2-185 E	1.8479	Adder	2.17
933641	AC2-186 C	1.5533	Adder	1.83
933642	AC2-186 E	2.5343	Adder	2.98
936451	AD2-059 C	0.0324	50/50	0.0324
936452	AD2-059 E	0.1015	50/50	0.1015
936611	AD2-076 C O1	2.3355	50/50	2.3355
936612	AD2-076 E O1	3.8106	50/50	3.8106
938651	AE1-087 C	1.3644	Adder	1.61
938652	AE1-087 E	0.3411	Adder	0.4
938811	AE1-107 C	4.9535	50/50	4.9535
938812	AE1-107 E	3.5314	50/50	3.5314

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
938891	AE1-117 C O1	3.3070	Adder	3.89
938892	AE1-117 E O1	8.8055	Adder	10.36
938901	AE1-118 C O1 (Withdrawn : 07/10/2020)	3.3074	Adder	3.89
938902	AE1-118 E O1 (Withdrawn : 07/10/2020)	8.8064	Adder	10.36
939151	AE1-145	1.6157	Adder	1.9
939621	AE1-192 C O1	3.7976	Adder	4.47
939622	AE1-192 E O1	1.8584	Adder	2.19
941021	AE2-093 C	1.7664	Adder	2.08
941022	AE2-093 E	2.8066	Adder	3.3
941181	AE2-112 C	0.8103	50/50	0.8103
941182	AE2-112 E	1.3220	50/50	1.3220
942441	AE2-257 C	2.6286	Adder	3.09
942442	AE2-257 E	6.9299	Adder	8.15
943361	AF1-007 C	0.1510	Adder	0.18
943362	AF1-007 E	0.4290	Adder	0.5
943441	AF1-015 C	0.5649	Adder	0.66
943442	AF1-015 E	0.7801	Adder	0.92
943651	AF1-036 C	1.0536	50/50	1.0536
943652	AF1-036 E	1.4550	50/50	1.4550
944921	AF1-157 C O1	1.2056	Adder	1.42
944922	AF1-157 E O1	0.8038	Adder	0.95
945661	AF1-231 C	0.6141	Adder	0.72
945662	AF1-231 E	0.9211	Adder	1.08
945781	AF1-243	0.4040	Adder	0.48
945791	AF1-244	0.6483	Adder	0.76
945931	AF1-258	0.2611	Adder	0.31
945941	AF1-259	0.0983	50/50	0.0983
946041	AF1-269 (Withdrawn : 05/12/2020)	0.9195	Adder	1.08
957611	AF2-055 C	1.4989	Adder	3.33
957612	AF2-055 E	0.6424	Adder	1.43
957661	AF2-060	0.3853	Adder	0.86
957671	AF2-061 O2	1.7123	Adder	3.8
958151	AF2-109 C	1.3044	50/50	1.3044
958152	AF2-109 E	1.3044	50/50	1.3044
959021	AF2-193 C O2	4.9600	Adder	11.01
959022	AF2-193 E O2	13.3794	Adder	29.7
959031	AF2-194 C O2	4.9600	Adder	11.01
959032	AF2-194 E O2	13.3794	Adder	29.7
959051	AF2-196 C	0.3799	Adder	0.84
959052	AF2-196 E	0.8865	Adder	1.97
959161	AF2-207 C O2	0.8681	Adder	1.93
959162	AF2-207 E O2	1.3021	Adder	2.89
959173	AF2-208 BAT	21.6196	50/50	21.6196
959571	AF2-248 C	0.1462	Adder	0.32
959572	AF2-248 E	0.1635	Adder	0.36
959581	AF2-249 C	0.0258	Adder	0.06
959582	AF2-249 E	0.1032	Adder	0.23
959591	AF2-250 C	0.0473	Adder	0.1

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
959592	AF2-250 E	0.0366	Adder	0.08
960221	AF2-313 C	1.5608	50/50	1.5608
960222	AF2-313 E	0.8849	50/50	0.8849
960341	AF2-325 C	0.1881	Adder	0.42
960342	AF2-325 E	0.2598	Adder	0.58
960671	AF2-358 C O2	2.6962	Adder	5.98
960672	AF2-358 E O2	1.7975	Adder	3.99
960871	AF2-378 C	0.0496	Adder	0.11
960872	AF2-378 E	0.0688	Adder	0.15
960881	AF2-379 C	0.0705	Adder	0.16
960882	AF2-379 E	0.0972	Adder	0.22
960941	AF2-385 C O2	2.0552	Adder	4.56
960942	AF2-385 E O2	1.1695	Adder	2.6
960961	AF2-387 C O2	3.2680	Adder	7.25
960962	AF2-387 E O2	1.6389	Adder	3.64
961181	AF2-409 O2	4.4059	Adder	9.78
NEWTON	NEWTON	0.7006	Confirmed LTF	0.7006
FARMERCITY	FARMERCITY	0.0367	Confirmed LTF	0.0367
G-007A	G-007A	4.2124	Confirmed LTF	4.2124
VFT	VFT	9.6686	Confirmed LTF	9.6686
CALDERWOOD	CALDERWOOD	0.3390	Confirmed LTF	0.3390
PRAIRIE	PRAIRIE	1.6970	Confirmed LTF	1.6970
CHEOAH	CHEOAH	0.3418	Confirmed LTF	0.3418
EDWARDS	EDWARDS	0.2268	Confirmed LTF	0.2268
TILTON	TILTON	0.4082	Confirmed LTF	0.4082
GIBSON	GIBSON	0.3554	Confirmed LTF	0.3554
BLUEG	BLUEG	1.1301	Confirmed LTF	1.1301
TRIMBLE	TRIMBLE	0.3623	Confirmed LTF	0.3623
CATAWBA	CATAWBA	0.2478	Confirmed LTF	0.2478

14.5.4 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
99086523	232003	CARTANZA	DP&L	232013	SILVER RUN	PJM	1	DPL_P4-2_DP24	breaker	804.0	106.38	108.08	DC	13.68

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
231940	T-011	0.3090	50/50	0.3090
232003	CARTANZA	35.0801	50/50	35.0801
232405	W1-003 E	1.3046	Adder	1.53
232407	W1-004 E	1.3046	Adder	1.53
232409	W1-005 E	1.3046	Adder	1.53
232411	W1-006 E	1.3046	Adder	1.53
232412	X1-032 E	1.1410	Adder	1.34
232418	X3-008 E	2.9466	Adder	3.47
232423	X3-066 E	0.5928	Adder	0.7
232425	Y1-079 E	1.0454	Adder	1.23
232427	Y1-080 E	0.5284	Adder	0.62
232429	Y3-058 E	2.5845	Adder	3.04
232432	Z2-076 C	0.2520	50/50	0.2520
232433	Z2-076 E	0.7361	50/50	0.7361
232434	Z2-077 C	0.2520	50/50	0.2520
232435	Z2-077 E	0.7361	50/50	0.7361
232436	AB1-176 C	0.2406	Adder	0.28
232616	GEN FOOD	1.7245	50/50	1.7245
232851	DUP-SFR1	0.6094	50/50	0.6094
232901	NORTHST	5.2189	50/50	5.2189
232904	IR4	26.9780	50/50	26.9780
232920	IR10	1.0356	50/50	1.0356
232921	TASLEY2G	1.2895	50/50	1.2895
232922	MR3 (Deactivation : 01/06/2021)	67.0885	50/50	67.0885
917082	Z2-012 E	3.5969	Adder	4.23
919831	AA2-069 (Suspended)	296.6362	50/50	296.6362
923282	AB1-137 C	1.5610	50/50	1.5610
923283	AB1-137 E	0.6690	50/50	0.6690
923322	AB1-141 C OP	2.0896	Adder	2.46
923323	AB1-141 E OP	0.9751	Adder	1.15
923332	AB1-142 C OP	2.0896	Adder	2.46
923603	AB1-176 E	0.3968	Adder	0.47
923921	AB2-032 C	2.1051	Adder	2.48
923922	AB2-032 E	0.9906	Adder	1.17
923951	AB2-036 C	5.8419	Adder	6.87
923952	AB2-036 E	9.5580	Adder	11.24
923961	AB2-037 C	12.7658	Adder	15.02
923962	AB2-037 E	20.8547	Adder	24.53
924681	AB2-120 C OP	12.9827	50/50	12.9827
924682	AB2-120 E OP	21.1823	50/50	21.1823
924781	AB2-130 C OP	11.1022	50/50	11.1022

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
924782	AB2-130 E OP	18.1140	50/50	18.1140
924801	AB2-133 C OP	3.6875	Adder	4.34
924802	AB2-133 E OP	4.6768	Adder	5.5
924821	AB2-135 C	5.2881	Adder	6.22
924822	AB2-135 E	6.0309	Adder	7.1
924831	AB2-136 C	6.1379	Adder	7.22
924832	AB2-136 E	6.5091	Adder	7.66
924971	AB2-153 C	1.1764	Adder	1.38
924972	AB2-153 E	1.9193	Adder	2.26
925151	AB2-172 C OP	4.5149	Adder	5.31
925152	AB2-172 E OP	7.3664	Adder	8.67
925261	AB2-180 C	3.8907	Adder	4.58
925262	AB2-180 E	1.6674	Adder	1.96
925271	AB2-185 C OP	2.3605	Adder	2.78
925272	AB2-185 E OP	1.0116	Adder	1.19
926131	AC1-091 C	2.1565	Adder	2.54
926132	AC1-091 E	3.5367	Adder	4.16
926141	AC1-092 C	2.1565	Adder	2.54
926142	AC1-092 E	3.5367	Adder	4.16
926151	AC1-093 C	2.0415	Adder	2.4
926152	AC1-093 E	3.3642	Adder	3.96
926161	AC1-094 C	1.7252	Adder	2.03
926162	AC1-094 E	2.8466	Adder	3.35
927031	AC1-190 C	8.3773	Adder	9.86
927032	AC1-190 E	3.5903	Adder	4.22
927191	AC1-213 C	0.9101	Adder	1.07
927192	AC1-213 E	0.5973	Adder	0.7
930201	AB1-056 C	24.3348	50/50	24.3348
930202	AB1-056 E	69.3014	50/50	69.3014
930881	AB1-137 C	1.5610	50/50	1.5610
930882	AB1-137 E	0.6690	50/50	0.6690
930932	AB1-142 E OP	0.9751	Adder	1.15
932161	AC2-023 C	7.2429	Adder	8.52
932162	AC2-023 E	5.2750	Adder	6.21
933631	AC2-185 C	4.3706	Adder	5.14
933632	AC2-185 E	7.1309	Adder	8.39
933641	AC2-186 C	6.6329	50/50	6.6329
933642	AC2-186 E	10.8221	50/50	10.8221
936611	AD2-076 C O1	2.8243	Adder	3.32
936612	AD2-076 E O1	4.6081	Adder	5.42
938651	AE1-087 C	3.8020	Adder	4.47
938652	AE1-087 E	0.9505	Adder	1.12
938891	AE1-117 C O1	15.4231	50/50	15.4231
938892	AE1-117 E O1	41.0662	50/50	41.0662
938901	AE1-118 C O1 (Withdrawn : 07/10/2020)	15.4123	50/50	15.4123
938902	AE1-118 E O1 (Withdrawn : 07/10/2020)	41.0375	50/50	41.0375
939151	AE1-145	6.8344	50/50	6.8344
939621	AE1-192 C O1	13.6333	Adder	16.04
939622	AE1-192 E O1	6.6716	Adder	7.85

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
941021	AE2-093 C	3.6397	Adder	4.28
941022	AE2-093 E	5.7829	Adder	6.8
941181	AE2-112 C	0.9799	Adder	1.15
941182	AE2-112 E	1.5987	Adder	1.88
942441	AE2-257 C	12.2951	50/50	12.2951
942442	AE2-257 E	32.4145	50/50	32.4145
943361	AF1-007 C	0.7180	50/50	0.7180
943362	AF1-007 E	2.0405	50/50	2.0405
943441	AF1-015 C	1.1640	Adder	1.37
943442	AF1-015 E	1.6074	Adder	1.89
943651	AF1-036 C	1.2741	Adder	1.5
943652	AF1-036 E	1.7595	Adder	2.07
944921	AF1-157 C O1	5.3508	50/50	5.3508
944922	AF1-157 E O1	3.5672	50/50	3.5672
945661	AF1-231 C	2.2040	Adder	2.59
945662	AF1-231 E	3.3060	Adder	3.89
945781	AF1-243	1.4504	Adder	1.71
945791	AF1-244	2.2732	Adder	2.67
945931	AF1-258	0.8893	Adder	1.05
945941	AF1-259	0.1275	Adder	0.15
946041	AF1-269 (Withdrawn : 05/12/2020)	2.7681	Adder	3.26
957611	AF2-055 C	5.3808	Adder	11.94
957612	AF2-055 E	2.3061	Adder	5.12
957661	AF2-060	3.0755	50/50	3.0755
957671	AF2-061 O2	13.6812	50/50	13.6812
958151	AF2-109 C	0.7945	Adder	1.76
958152	AF2-109 E	0.7945	Adder	1.76
959021	AF2-193 C O2	47.5619	50/50	47.5619
959022	AF2-193 E O2	128.2973	50/50	128.2973
959031	AF2-194 C O2	47.5619	50/50	47.5619
959032	AF2-194 E O2	128.2973	50/50	128.2973
959051	AF2-196 C	3.3532	50/50	3.3532
959052	AF2-196 E	7.8242	50/50	7.8242
959161	AF2-207 C O2	2.9803	Adder	6.62
959162	AF2-207 E O2	4.4704	Adder	9.92
959571	AF2-248 C	0.5134	Adder	1.14
959572	AF2-248 E	0.5738	Adder	1.27
959581	AF2-249 C	0.0906	Adder	0.2
959582	AF2-249 E	0.3624	Adder	0.8
959591	AF2-250 C	0.1661	Adder	0.37
959592	AF2-250 E	0.1284	Adder	0.29
960221	AF2-313 C	1.0726	Adder	2.38
960222	AF2-313 E	0.6081	Adder	1.35
960341	AF2-325 C	0.5432	Adder	1.21
960342	AF2-325 E	0.7501	Adder	1.67
960671	AF2-358 C O2	7.6854	Adder	17.06
960672	AF2-358 E O2	5.1236	Adder	11.37
960871	AF2-378 C	0.1447	Adder	0.32
960872	AF2-378 E	0.2007	Adder	0.45
960881	AF2-379 C	0.2454	Adder	0.54
960882	AF2-379 E	0.3382	Adder	0.75
960941	AF2-385 C O2	7.2289	Adder	16.05

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
960942	AF2-385 E O2	4.1135	Adder	9.13
960961	AF2-387 C O2	6.2125	Adder	13.79
960962	AF2-387 E O2	3.1156	Adder	6.92
961181	AF2-409 O2	11.9067	Adder	26.43
NEWTON	NEWTON	0.3804	Confirmed LTF	0.3804
FARMERCITY	FARMERCITY	0.0198	Confirmed LTF	0.0198
CALDERWOOD	CALDERWOOD	0.1754	Confirmed LTF	0.1754
NY	NY	0.2555	Confirmed LTF	0.2555
PRAIRIE	PRAIRIE	0.9144	Confirmed LTF	0.9144
O-066	O-066	3.3600	Confirmed LTF	3.3600
CHEOAH	CHEOAH	0.1767	Confirmed LTF	0.1767
EDWARDS	EDWARDS	0.1239	Confirmed LTF	0.1239
TILTON	TILTON	0.2230	Confirmed LTF	0.2230
G-007	G-007	0.5595	Confirmed LTF	0.5595
MADISON	MADISON	0.0020	Confirmed LTF	0.0020
GIBSON	GIBSON	0.1933	Confirmed LTF	0.1933
BLUEG	BLUEG	0.6145	Confirmed LTF	0.6145
TRIMBLE	TRIMBLE	0.1970	Confirmed LTF	0.1970
CATAWBA	CATAWBA	0.1228	Confirmed LTF	0.1228

14.5.5 Index 5

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
101575937	232100	CHURCH	DP&L	232107	TOWNSEND	DP&L	1	DPL_P7_1_DBL_1NCB_FS A-A	tower	348.0	101.15	102.18	DC	8.05

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
232404	W1-003 C	0.5398	50/50	0.5398
232405	W1-003 E	0.9090	50/50	0.9090
232406	W1-004 FULL	0.5398	50/50	0.5398
232407	W1-004 E	0.9090	50/50	0.9090
232408	W1-005 C	0.5398	50/50	0.5398
232409	W1-005 E	0.9090	50/50	0.9090
232410	W1-006 C	0.5398	50/50	0.5398
232411	W1-006 E	0.9090	50/50	0.9090
232412	X1-032 E	0.8192	50/50	0.8192
232417	X3-008 C	0.3307	50/50	0.3307
232418	X3-008 E	3.1277	50/50	3.1277
232422	X3-066 FULL	0.1653	50/50	0.1653
232423	X3-066 E	1.5632	50/50	1.5632
232424	Y1-079 C	0.2436	50/50	0.2436
232425	Y1-079 E	2.3039	50/50	2.3039
232426	Y1-080 FULL	0.0519	50/50	0.0519
232427	Y1-080 E	0.4932	50/50	0.4932
232428	Y3-058 C	0.2078	50/50	0.2078
232429	Y3-058 E	1.9655	50/50	1.9655
232433	Z2-076 E	0.3208	Adder	0.38
232435	Z2-077 E	0.3208	Adder	0.38
232436	AB1-176 C	0.6345	50/50	0.6345
232813	VAUGHN	0.1155	50/50	0.1155
232902	EASTMUNI	3.7067	50/50	3.7067
232907	VN8	5.9640	50/50	5.9640
232910	NRG_G1	1.8200	50/50	1.8200
232911	NRG_G2	1.8200	50/50	1.8200
232919	VN10	0.4079	50/50	0.4079
232922	MR3 (Deactivation : 01/06/2021)	9.0862	Adder	10.69
232926	CRISFLD1	0.3545	50/50	0.3545
293670	O-025 C	0.2133	50/50	0.2133
917082	Z2-012 E	2.1263	Adder	2.5
918831	AA1-102	1.3293	50/50	1.3293
919831	AA2-069 (Suspended)	40.1751	Adder	47.26
923282	AB1-137 C	0.6591	Adder	0.78
923283	AB1-137 E	0.2825	Adder	0.33
923322	AB1-141 C OP	5.7565	50/50	5.7565
923323	AB1-141 E OP	2.6864	50/50	2.6864
923332	AB1-142 C OP	5.7565	50/50	5.7565
923603	AB1-176 E	1.0463	50/50	1.0463
923921	AB2-032 C	5.7992	50/50	5.7992

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
923922	AB2-032 E	2.7290	50/50	2.7290
923951	AB2-036 C	12.6924	50/50	12.6924
923952	AB2-036 E	20.7661	50/50	20.7661
924681	AB2-120 C OP	6.5091	Adder	7.66
924682	AB2-120 E OP	10.6201	Adder	12.49
924781	AB2-130 C OP	5.4762	Adder	6.44
924782	AB2-130 E OP	8.9348	Adder	10.51
924801	AB2-133 C OP	11.5595	50/50	11.5595
924802	AB2-133 E OP	14.6609	50/50	14.6609
924821	AB2-135 C	12.3188	50/50	12.3188
924822	AB2-135 E	14.0492	50/50	14.0492
924831	AB2-136 C	5.9522	50/50	5.9522
924832	AB2-136 E	6.3123	50/50	6.3123
924971	AB2-153 C	3.2407	50/50	3.2407
924972	AB2-153 E	5.2875	50/50	5.2875
925151	AB2-172 C OP	4.7924	50/50	4.7924
925152	AB2-172 E OP	7.8191	50/50	7.8191
925251	AB2-179 C OP	-9.1300	Adder	-10.74
925261	AB2-180 C	2.9588	50/50	2.9588
925262	AB2-180 E	1.2680	50/50	1.2680
925271	AB2-185 C OP	5.2023	50/50	5.2023
925272	AB2-185 E OP	2.2295	50/50	2.2295
926131	AC1-091 C	0.6416	Adder	0.75
926132	AC1-091 E	1.0523	Adder	1.24
926141	AC1-092 C	0.6416	Adder	0.75
926142	AC1-092 E	1.0523	Adder	1.24
926151	AC1-093 C	0.6074	Adder	0.71
926152	AC1-093 E	1.0010	Adder	1.18
926161	AC1-094 C	0.5133	Adder	0.6
926162	AC1-094 E	0.8470	Adder	1.0
927031	AC1-190 C	8.7532	50/50	8.7532
927032	AC1-190 E	3.7514	50/50	3.7514
927191	AC1-213 C	0.6596	50/50	0.6596
927192	AC1-213 E	0.4328	50/50	0.4328
930201	AB1-056 C	9.9441	Adder	11.7
930202	AB1-056 E	28.3190	Adder	33.32
930881	AB1-137 C	0.6591	Adder	0.78
930882	AB1-137 E	0.2825	Adder	0.33
930932	AB1-142 E OP	2.6864	50/50	2.6864
932161	AC2-023 C	5.6983	50/50	5.6983
932162	AC2-023 E	4.1501	50/50	4.1501
933631	AC2-185 C	1.3004	Adder	1.53
933632	AC2-185 E	2.1217	Adder	2.5
933641	AC2-186 C	3.1357	Adder	3.69
933642	AC2-186 E	5.1161	Adder	6.02
936611	AD2-076 C O1	8.1874	50/50	8.1874
936612	AD2-076 E O1	13.3584	50/50	13.3584
938651	AE1-087 C	4.0357	50/50	4.0357
938652	AE1-087 E	1.0089	50/50	1.0089
938891	AE1-117 C O1	6.5135	Adder	7.66
938892	AE1-117 E O1	17.3433	Adder	20.4

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
938901	AE1-118 C O1 (Withdrawn : 07/10/2020)	6.5188	Adder	7.67
938902	AE1-118 E O1 (Withdrawn : 07/10/2020)	17.3573	Adder	20.42
939151	AE1-145	3.4253	Adder	4.03
939621	AE1-192 C O1	8.0595	Adder	9.48
939622	AE1-192 E O1	3.9440	Adder	4.64
941021	AE2-093 C	5.9738	50/50	5.9738
941022	AE2-093 E	9.4914	50/50	9.4914
941181	AE2-112 C	2.8405	50/50	2.8405
941182	AE2-112 E	4.6345	50/50	4.6345
942441	AE2-257 C	5.1662	Adder	6.08
942442	AE2-257 E	13.6201	Adder	16.02
943361	AF1-007 C	0.2934	Adder	0.35
943362	AF1-007 E	0.8338	Adder	0.98
943441	AF1-015 C	1.9104	50/50	1.9104
943442	AF1-015 E	2.6382	50/50	2.6382
943651	AF1-036 C	3.6936	50/50	3.6936
943652	AF1-036 E	5.1006	50/50	5.1006
944921	AF1-157 C O1	2.4567	Adder	2.89
944922	AF1-157 E O1	1.6378	Adder	1.93
945661	AF1-231 C	1.3034	Adder	1.53
945662	AF1-231 E	1.9552	Adder	2.3
945781	AF1-243	0.8574	Adder	1.01
945791	AF1-244	1.6440	50/50	1.6440
945931	AF1-258	0.6763	50/50	0.6763
945941	AF1-259	0.3362	50/50	0.3362
946041	AF1-269 (Withdrawn : 05/12/2020)	2.5836	50/50	2.5836
957611	AF2-055 C	3.1809	Adder	7.06
957612	AF2-055 E	1.3633	Adder	3.03
957661	AF2-060	0.8169	Adder	1.81
957671	AF2-061 O2	3.6278	Adder	8.05
958151	AF2-109 C	4.6990	50/50	4.6990
958152	AF2-109 E	4.6990	50/50	4.6990
959021	AF2-193 C O2	9.1506	Adder	20.31
959022	AF2-193 E O2	24.6836	Adder	54.79
959031	AF2-194 C O2	9.1506	Adder	20.31
959032	AF2-194 E O2	24.6836	Adder	54.79
959051	AF2-196 C	0.7468	Adder	1.66
959052	AF2-196 E	1.7424	Adder	3.87
959161	AF2-207 C O2	4.2028	50/50	4.2028
959162	AF2-207 E O2	6.3041	50/50	6.3041
959571	AF2-248 C	0.6978	50/50	0.6978
959572	AF2-248 E	0.7799	50/50	0.7799
959581	AF2-249 C	0.1231	50/50	0.1231
959582	AF2-249 E	0.4926	50/50	0.4926
959591	AF2-250 C	0.2258	50/50	0.2258
959592	AF2-250 E	0.1745	50/50	0.1745
960221	AF2-313 C	5.3367	50/50	5.3367
960222	AF2-313 E	3.0255	50/50	3.0255

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
960341	AF2-325 C	1.0261	50/50	1.0261
960342	AF2-325 E	1.4170	50/50	1.4170
960671	AF2-358 C O2	14.8320	50/50	14.8320
960672	AF2-358 E O2	9.8880	50/50	9.8880
960871	AF2-378 C	0.2686	50/50	0.2686
960872	AF2-378 E	0.3727	50/50	0.3727
960881	AF2-379 C	0.3393	50/50	0.3393
960882	AF2-379 E	0.4676	50/50	0.4676
960941	AF2-385 C O2	9.7813	50/50	9.7813
960942	AF2-385 E O2	5.5659	50/50	5.5659
960961	AF2-387 C O2	21.8288	50/50	21.8288
960962	AF2-387 E O2	10.9472	50/50	10.9472
961181	AF2-409 O2	24.1230	50/50	24.1230
NEWTON	NEWTON	0.1870	Confirmed LTF	0.1870
FARMERCITY	FARMERCITY	0.0097	Confirmed LTF	0.0097
CALDERWOOD	CALDERWOOD	0.0870	Confirmed LTF	0.0870
NY	NY	0.0603	Confirmed LTF	0.0603
PRAIRIE	PRAIRIE	0.4494	Confirmed LTF	0.4494
O-066	O-066	0.5309	Confirmed LTF	0.5309
CHEOAH	CHEOAH	0.0876	Confirmed LTF	0.0876
EDWARDS	EDWARDS	0.0609	Confirmed LTF	0.0609
TILTON	TILTON	0.1096	Confirmed LTF	0.1096
G-007	G-007	0.0530	Confirmed LTF	0.0530
GIBSON	GIBSON	0.0950	Confirmed LTF	0.0950
BLUEG	BLUEG	0.3021	Confirmed LTF	0.3021
TRIMBLE	TRIMBLE	0.0968	Confirmed LTF	0.0968
CATAWBA	CATAWBA	0.0619	Confirmed LTF	0.0619

14.5.6 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 %	ACID C	MW IMPACT
101575927	232107	TOWNSEND	DP&L	232106	MIDLTNT P	DP&L	1	DPL_P7_1_DBL_1NCB_FS A-A	tower	348.0	106.35	107.38	DC	8.05

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
232404	W1-003 C	0.5398	50/50	0.5398
232405	W1-003 E	0.9090	50/50	0.9090
232406	W1-004 FULL	0.5398	50/50	0.5398
232407	W1-004 E	0.9090	50/50	0.9090
232408	W1-005 C	0.5398	50/50	0.5398
232409	W1-005 E	0.9090	50/50	0.9090
232410	W1-006 C	0.5398	50/50	0.5398
232411	W1-006 E	0.9090	50/50	0.9090
232412	X1-032 E	0.8192	50/50	0.8192
232417	X3-008 C	0.3307	50/50	0.3307
232418	X3-008 E	3.1277	50/50	3.1277
232422	X3-066 FULL	0.1653	50/50	0.1653
232423	X3-066 E	1.5632	50/50	1.5632
232424	Y1-079 C	0.2436	50/50	0.2436
232425	Y1-079 E	2.3039	50/50	2.3039
232426	Y1-080 FULL	0.0519	50/50	0.0519
232427	Y1-080 E	0.4932	50/50	0.4932
232428	Y3-058 C	0.2078	50/50	0.2078
232429	Y3-058 E	1.9655	50/50	1.9655
232433	Z2-076 E	0.3208	Adder	0.38
232435	Z2-077 E	0.3208	Adder	0.38
232436	AB1-176 C	0.6345	50/50	0.6345
232813	VAUGHN	0.1155	50/50	0.1155
232902	EASTMUNI	3.7067	50/50	3.7067
232907	VN8	5.9640	50/50	5.9640
232910	NRG_G1	1.8200	50/50	1.8200
232911	NRG_G2	1.8200	50/50	1.8200
232919	VN10	0.4079	50/50	0.4079
232922	MR3 (Deactivation : 01/06/2021)	9.0862	Adder	10.69
232926	CRISFLD1	0.3545	50/50	0.3545
293670	O-025 C	0.2133	50/50	0.2133
917082	Z2-012 E	2.1263	Adder	2.5
918831	AA1-102	1.3293	50/50	1.3293
919831	AA2-069 (Suspended)	40.1751	Adder	47.26
923282	AB1-137 C	0.6591	Adder	0.78
923283	AB1-137 E	0.2825	Adder	0.33
923322	AB1-141 C OP	5.7565	50/50	5.7565
923323	AB1-141 E OP	2.6864	50/50	2.6864
923332	AB1-142 C OP	5.7565	50/50	5.7565
923603	AB1-176 E	1.0463	50/50	1.0463
923921	AB2-032 C	5.7992	50/50	5.7992

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
923922	AB2-032 E	2.7290	50/50	2.7290
923951	AB2-036 C	12.6924	50/50	12.6924
923952	AB2-036 E	20.7661	50/50	20.7661
924681	AB2-120 C OP	6.5091	Adder	7.66
924682	AB2-120 E OP	10.6201	Adder	12.49
924781	AB2-130 C OP	5.4762	Adder	6.44
924782	AB2-130 E OP	8.9348	Adder	10.51
924801	AB2-133 C OP	11.5595	50/50	11.5595
924802	AB2-133 E OP	14.6609	50/50	14.6609
924821	AB2-135 C	12.3188	50/50	12.3188
924822	AB2-135 E	14.0492	50/50	14.0492
924831	AB2-136 C	5.9522	50/50	5.9522
924832	AB2-136 E	6.3123	50/50	6.3123
924971	AB2-153 C	3.2407	50/50	3.2407
924972	AB2-153 E	5.2875	50/50	5.2875
925151	AB2-172 C OP	4.7924	50/50	4.7924
925152	AB2-172 E OP	7.8191	50/50	7.8191
925251	AB2-179 C OP	26.8588	50/50	26.8588
925252	AB2-179 E OP	8.8577	50/50	8.8577
925261	AB2-180 C	2.9588	50/50	2.9588
925262	AB2-180 E	1.2680	50/50	1.2680
925271	AB2-185 C OP	5.2023	50/50	5.2023
925272	AB2-185 E OP	2.2295	50/50	2.2295
927031	AC1-190 C	8.7532	50/50	8.7532
927032	AC1-190 E	3.7514	50/50	3.7514
927191	AC1-213 C	0.6596	50/50	0.6596
927192	AC1-213 E	0.4328	50/50	0.4328
930201	AB1-056 C	9.9441	Adder	11.7
930202	AB1-056 E	28.3190	Adder	33.32
930881	AB1-137 C	0.6591	Adder	0.78
930882	AB1-137 E	0.2825	Adder	0.33
930932	AB1-142 E OP	2.6864	50/50	2.6864
932161	AC2-023 C	5.6983	50/50	5.6983
932162	AC2-023 E	4.1501	50/50	4.1501
933641	AC2-186 C	3.1357	Adder	3.69
933642	AC2-186 E	5.1161	Adder	6.02
936611	AD2-076 C O1	8.1874	50/50	8.1874
936612	AD2-076 E O1	13.3584	50/50	13.3584
938651	AE1-087 C	4.0357	50/50	4.0357
938652	AE1-087 E	1.0089	50/50	1.0089
938891	AE1-117 C O1	6.5135	Adder	7.66
938892	AE1-117 E O1	17.3433	Adder	20.4
938901	AE1-118 C O1 (Withdrawn : 07/10/2020)	6.5188	Adder	7.67
938902	AE1-118 E O1 (Withdrawn : 07/10/2020)	17.3573	Adder	20.42
939151	AE1-145	3.4253	Adder	4.03
939621	AE1-192 C O1	8.0595	Adder	9.48
939622	AE1-192 E O1	3.9440	Adder	4.64
941021	AE2-093 C	5.9738	50/50	5.9738
941022	AE2-093 E	9.4914	50/50	9.4914

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
941181	AE2-112 C	2.8405	50/50	2.8405
941182	AE2-112 E	4.6345	50/50	4.6345
942441	AE2-257 C	5.1662	Adder	6.08
942442	AE2-257 E	13.6201	Adder	16.02
943361	AF1-007 C	0.2934	Adder	0.35
943362	AF1-007 E	0.8338	Adder	0.98
943441	AF1-015 C	1.9104	50/50	1.9104
943442	AF1-015 E	2.6382	50/50	2.6382
943651	AF1-036 C	3.6936	50/50	3.6936
943652	AF1-036 E	5.1006	50/50	5.1006
944921	AF1-157 C O1	2.4567	Adder	2.89
944922	AF1-157 E O1	1.6378	Adder	1.93
945661	AF1-231 C	1.3034	Adder	1.53
945662	AF1-231 E	1.9552	Adder	2.3
945781	AF1-243	0.8574	Adder	1.01
945791	AF1-244	1.6440	50/50	1.6440
945931	AF1-258	0.6763	50/50	0.6763
945941	AF1-259	0.3362	50/50	0.3362
946041	AF1-269 (Withdrawn : 05/12/2020)	2.5836	50/50	2.5836
957611	AF2-055 C	3.1809	Adder	7.06
957612	AF2-055 E	1.3633	Adder	3.03
957661	AF2-060	0.8169	Adder	1.81
957671	AF2-061 O2	3.6278	Adder	8.05
958151	AF2-109 C	4.6990	50/50	4.6990
958152	AF2-109 E	4.6990	50/50	4.6990
959021	AF2-193 C O2	9.1506	Adder	20.31
959022	AF2-193 E O2	24.6836	Adder	54.79
959031	AF2-194 C O2	9.1506	Adder	20.31
959032	AF2-194 E O2	24.6836	Adder	54.79
959051	AF2-196 C	0.7468	Adder	1.66
959052	AF2-196 E	1.7424	Adder	3.87
959161	AF2-207 C O2	4.2028	50/50	4.2028
959162	AF2-207 E O2	6.3041	50/50	6.3041
959571	AF2-248 C	0.6978	50/50	0.6978
959572	AF2-248 E	0.7799	50/50	0.7799
959581	AF2-249 C	0.1231	50/50	0.1231
959582	AF2-249 E	0.4926	50/50	0.4926
959591	AF2-250 C	0.2258	50/50	0.2258
959592	AF2-250 E	0.1745	50/50	0.1745
960221	AF2-313 C	5.3367	50/50	5.3367
960222	AF2-313 E	3.0255	50/50	3.0255
960341	AF2-325 C	1.0261	50/50	1.0261
960342	AF2-325 E	1.4170	50/50	1.4170
960671	AF2-358 C O2	14.8320	50/50	14.8320
960672	AF2-358 E O2	9.8880	50/50	9.8880
960871	AF2-378 C	0.2686	50/50	0.2686
960872	AF2-378 E	0.3727	50/50	0.3727
960881	AF2-379 C	0.3393	50/50	0.3393
960882	AF2-379 E	0.4676	50/50	0.4676
960941	AF2-385 C O2	9.7813	50/50	9.7813
960942	AF2-385 E O2	5.5659	50/50	5.5659
960961	AF2-387 C O2	21.8288	50/50	21.8288

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
960962	AF2-387 E O2	10.9472	50/50	10.9472
961181	AF2-409 O2	24.1230	50/50	24.1230
NEWTON	NEWTON	0.1870	Confirmed LTF	0.1870
FARMERCITY	FARMERCITY	0.0097	Confirmed LTF	0.0097
CALDERWOOD	CALDERWOOD	0.0870	Confirmed LTF	0.0870
NY	NY	0.0603	Confirmed LTF	0.0603
PRAIRIE	PRAIRIE	0.4494	Confirmed LTF	0.4494
O-066	O-066	0.5309	Confirmed LTF	0.5309
CHEOAH	CHEOAH	0.0876	Confirmed LTF	0.0876
EDWARDS	EDWARDS	0.0609	Confirmed LTF	0.0609
TILTON	TILTON	0.1096	Confirmed LTF	0.1096
G-007	G-007	0.0530	Confirmed LTF	0.0530
GIBSON	GIBSON	0.0950	Confirmed LTF	0.0950
BLUEG	BLUEG	0.3021	Confirmed LTF	0.3021
TRIMBLE	TRIMBLE	0.0968	Confirmed LTF	0.0968
CATAWBA	CATAWBA	0.0619	Confirmed LTF	0.0619

14.5.7 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
101574954	232274	PINEY_69	DP&L	232272	M HERMON	DP&L	1	DPL_P4-2_DP15	breaker	174.0	102.29	107.67	DC	9.86

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
232405	W1-003 E	0.9141	Adder	1.08
232407	W1-004 E	0.9141	Adder	1.08
232409	W1-005 E	0.9141	Adder	1.08
232411	W1-006 E	0.9141	Adder	1.08
232412	X1-032 E	0.6828	Adder	0.8
232905	BAYVIEW1	0.5266	50/50	0.5266
232914	OH NUG3	1.3527	50/50	1.3527
232915	OH NUG4	1.3527	50/50	1.3527
232916	OH NUG5	1.3527	50/50	1.3527
232921	TASLEY2G	0.9228	50/50	0.9228
917081	Z2-012 C	0.3201	50/50	0.3201
917082	Z2-012 E	3.0282	50/50	3.0282
924681	AB2-120 C OP	9.2256	50/50	9.2256
924682	AB2-120 E OP	15.0524	50/50	15.0524
939151	AE1-145	5.0328	50/50	5.0328
939621	AE1-192 C O1	11.4779	50/50	11.4779
939622	AE1-192 E O1	5.6168	50/50	5.6168
945661	AF1-231 C	1.5520	Adder	1.83
945662	AF1-231 E	2.3280	Adder	2.74
945781	AF1-243	1.2211	50/50	1.2211
945791	AF1-244	1.3028	Adder	1.53
957611	AF2-055 C	8.5474	50/50	8.5474
957612	AF2-055 E	3.6632	50/50	3.6632
957661	AF2-060	2.2648	50/50	2.2648
957671	AF2-061 O2	9.8584	50/50	9.8584
959583	AF2-249 BAT	0.1722	Merchant Transmission	0.1722
960881	AF2-379 C	0.0456	Adder	0.1
960882	AF2-379 E	0.0628	Adder	0.14
NEWTON	NEWTON	0.0612	Confirmed LTF	0.0612
FARMERCITY	FARMERCITY	0.0032	Confirmed LTF	0.0032
CALDERWOOD	CALDERWOOD	0.0283	Confirmed LTF	0.0283
NY	NY	0.0332	Confirmed LTF	0.0332
PRAIRIE	PRAIRIE	0.1472	Confirmed LTF	0.1472
O-066	O-066	0.4032	Confirmed LTF	0.4032
CHEOAH	CHEOAH	0.0285	Confirmed LTF	0.0285
EDWARDS	EDWARDS	0.0199	Confirmed LTF	0.0199
TILTON	TILTON	0.0359	Confirmed LTF	0.0359
G-007	G-007	0.0624	Confirmed LTF	0.0624
GIBSON	GIBSON	0.0311	Confirmed LTF	0.0311
BLUEG	BLUEG	0.0990	Confirmed LTF	0.0990
TRIMBLE	TRIMBLE	0.0317	Confirmed LTF	0.0317
CATAWBA	CATAWBA	0.0199	Confirmed LTF	0.0199

14.5.8 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
101575315	232275	LORET_69	DP&L	232288	FRUITLND	DP&L	1	DPL_P1_2_CKT 6728	single	112.0	109.32	112.43	DC	3.48

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
232404	W1-003 C	0.2404	80/20	0.2404
232406	W1-004 FULL	0.2404	80/20	0.2404
232408	W1-005 C	0.2404	80/20	0.2404
232410	W1-006 C	0.2404	80/20	0.2404
232905	BAYVIEW1	0.1918	80/20	0.1918
232912	OH NUG1	0.5026	80/20	0.5026
232913	OH NUG2	0.4959	80/20	0.4959
232914	OH NUG3	0.5026	80/20	0.5026
232915	OH NUG4	0.5026	80/20	0.5026
232916	OH NUG5	0.5026	80/20	0.5026
232917	OH NUG6	0.5004	80/20	0.5004
232918	OH NUG7	0.4993	80/20	0.4993
232921	TASLEY2G	0.3361	80/20	0.3361
232926	CRISFLD1	0.1846	80/20	0.1846
917081	Z2-012 C	0.1166	80/20	0.1166
918831	AA1-102	0.6922	80/20	0.6922
924681	AB2-120 C OP	3.3482	80/20	3.3482
939151	AE1-145	1.7518	80/20	1.7518
939621	AE1-192 C O1	4.1802	80/20	4.1802
945661	AF1-231 C	0.6785	80/20	0.6785
945781	AF1-243	0.4447	80/20	0.4447
945791	AF1-244	0.8561	80/20	0.8561
957611	AF2-055 C	3.1129	80/20	3.1129
957661	AF2-060	0.7883	80/20	0.7883
957671	AF2-061 O2	3.4836	80/20	3.4836
960881	AF2-379 C	0.5293	80/20	0.5293
NEWTON	NEWTON	0.0236	Confirmed LTF	0.0236
FARMERCITY	FARMERCITY	0.0012	Confirmed LTF	0.0012
CALDERWOOD	CALDERWOOD	0.0109	Confirmed LTF	0.0109
NY	NY	0.0122	Confirmed LTF	0.0122
PRAIRIE	PRAIRIE	0.0568	Confirmed LTF	0.0568
CHEOAH	CHEOAH	0.0110	Confirmed LTF	0.0110
EDWARDS	EDWARDS	0.0077	Confirmed LTF	0.0077
TILTON	TILTON	0.0139	Confirmed LTF	0.0139
GIBSON	GIBSON	0.0120	Confirmed LTF	0.0120
BLUEG	BLUEG	0.0382	Confirmed LTF	0.0382
TRIMBLE	TRIMBLE	0.0122	Confirmed LTF	0.0122
CATAWBA	CATAWBA	0.0077	Confirmed LTF	0.0077

14.5.9 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
101574953	924680	AB2-120 TAP	DP&L	232128	PINEY138	DP&L	1	DPL_P4-2_DP60C	breaker	226.0	105.82	109.38	DC	17.87

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
232405	W1-003 E	1.7476	Adder	2.06
232407	W1-004 E	1.7476	Adder	2.06
232409	W1-005 E	1.7476	Adder	2.06
232411	W1-006 E	1.7476	Adder	2.06
232412	X1-032 E	1.1231	Adder	1.32
232912	OH NUG1	2.7254	50/50	2.7254
232913	OH NUG2	2.6891	50/50	2.6891
232914	OH NUG3	2.7254	50/50	2.7254
232915	OH NUG4	2.7254	50/50	2.7254
232916	OH NUG5	2.7254	50/50	2.7254
232917	OH NUG6	2.7133	50/50	2.7133
232918	OH NUG7	2.7073	50/50	2.7073
917082	Z2-012 E	4.6462	Adder	5.47
924681	AB2-120 C OP	20.3004	50/50	20.3004
924682	AB2-120 E OP	33.1216	50/50	33.1216
939151	AE1-145	7.1177	Adder	8.37
939621	AE1-192 C O1	17.6108	Adder	20.72
939622	AE1-192 E O1	8.6180	Adder	10.14
945661	AF1-231 C	3.1271	Adder	3.68
945662	AF1-231 E	5.5184	50/50	5.5184
945781	AF1-243	1.8735	Adder	2.2
945791	AF1-244	2.0376	Adder	2.4
957611	AF2-055 C	6.9506	Adder	15.43
957612	AF2-055 E	2.9788	Adder	6.61
957661	AF2-060	1.6976	Adder	3.77
957671	AF2-061 O2	8.0490	Adder	17.87
960881	AF2-379 C	0.1160	Adder	0.26
960882	AF2-379 E	0.1599	Adder	0.35
NEWTON	NEWTON	0.1236	Confirmed LTF	0.1236
FARMERCITY	FARMERCITY	0.0064	Confirmed LTF	0.0064
CALDERWOOD	CALDERWOOD	0.0572	Confirmed LTF	0.0572
NY	NY	0.0664	Confirmed LTF	0.0664
PRAIRIE	PRAIRIE	0.2970	Confirmed LTF	0.2970
O-066	O-066	0.8131	Confirmed LTF	0.8131
CHEOAH	CHEOAH	0.0576	Confirmed LTF	0.0576
EDWARDS	EDWARDS	0.0403	Confirmed LTF	0.0403
TILTON	TILTON	0.0725	Confirmed LTF	0.0725
G-007	G-007	0.1279	Confirmed LTF	0.1279
GIBSON	GIBSON	0.0628	Confirmed LTF	0.0628
BLUEG	BLUEG	0.1996	Confirmed LTF	0.1996
TRIMBLE	TRIMBLE	0.0640	Confirmed LTF	0.0640
CATAWBA	CATAWBA	0.0403	Confirmed LTF	0.0403

14.6 Contingency Descriptions - Secondary POI

Contingency Name	Contingency Definition
DPL_P2_1_CKT 13714-1	CONTINGENCY 'DPL_P2_1_CKT 13714-1' OPEN LINE FROM BUS 232130 TO BUS 232807 CIRCUIT 1 / POCOMOKE - COSTEN 138 END
CKT 23030B	CONTINGENCY 'CKT 23030B' OPEN LINE FROM BUS 232002 TO BUS 232013 CIRCUIT 1 /CEDAR CREEK - SILVER RUN 230 END
DPL_P4-2_DP24	CONTINGENCY 'DPL_P4-2_DP24' /*CEDAR CREEK BUS BREAKER TO SILVER RUN DISCONNECT BRANCH FROM BUS 232013 TO BUS 232002 CKT 1 /*SILVER RUN CEDAR CK 230 230 DISCONNECT BRANCH FROM BUS 232002 TO BUS 232108 CKT 1 /*CEDAR CK CEDAR CK 230 138 AT20 END
PECO_P4_PEACH205/* \$ CHESCO \$ PEACH205 \$ STBK	CONTINGENCY 'PECO_P4_PEACH205/* \$ CHESCO \$ PEACH205 \$ STBK' TRIP BRANCH FROM BUS 200065 TO BUS 200066 CKT 1 /* PCHBTM2S 500.00 PCHBTM1N 500.00 \$ CHESCO \$ PEACH205 \$ STBK TRIP BRANCH FROM BUS 200064 TO BUS 200065 CKT Z1 /* PCHBTM1S 500.00 PCHBTM2S 500.00 \$ CHESCO \$ PEACH205 \$ STBK TRIP BRANCH FROM BUS 200013 TO BUS 200066 CKT Z1 /* PCHBTM2N 500.00 PCHBTM1N 500.00 \$ CHESCO \$ PEACH205 \$ STBK TRIP BRANCH FROM BUS 200065 TO BUS 200051 CKT 1 /* PCHBTM2S 500.00 ROCKSPGS 500.00 \$ CHESCO \$ PEACH205 \$ STBK END
DPL_P4-2_DP23	CONTINGENCY 'DPL_P4-2_DP23' /*CEDAR CREEK BUS BREAKER TO SILVER RUN DISCONNECT BRANCH FROM BUS 232002 TO BUS 232013 CKT 1 /*CEDAR CK SILVER RUN 230 230 DISCONNECT BRANCH FROM BUS 232002 TO BUS 232004 CKT 1 /*CEDAR CK MILFORD 230 230 END
DPL_P4-2_DP25B	CONTINGENCY 'DPL_P4-2_DP25B' /*CEDAR CREEK 230 BUS BREAKER TO MILFORD DISCONNECT BRANCH FROM BUS 232002 TO BUS 232004 CKT 1 /*CEDAR CK MILFORD 230 230 DISCONNECT BRANCH FROM BUS 232002 TO BUS 232108 CKT 1 /*CEDAR CK CEDAR CK 230 138 AT20 END

Contingency Name	Contingency Definition
DPL_P4-2_DP15	CONTINGENCY 'DPL_P4-2_DP15' /*INDIAN RIVER BUS BREAKER TO PINEY GROVE DISCONNECT BRANCH FROM BUS 232007 TO BUS 232006 CKT 1 /*PINEY GR INDRIV 4 230 230 DISCONNECT BRANCH FROM BUS 232007 TO BUS 232128 CKT 1 /*PINEY GR PINEY GR 230 138 DISCONNECT BRANCH FROM BUS 232006 TO BUS 232004 CKT 1 /*MILFORD INDIAN RIVER 230 230 END
DPL_P1_2_CKT 6728	CONTINGENCY 'DPL_P1_2_CKT 6728' OPEN LINE FROM BUS 232272 TO BUS 232274 CIRCUIT 1 /MOUNT HERMON - PINEY GROVE 69 DISCONNECT BUS 230912 / PINEY GROVE 69 CAP END
DPL_P1_2_CKT 23002	CONTINGENCY 'DPL_P1_2_CKT 23002' DISCONNECT BUS 232007 /INDIAN RIVER - PINEY GROVE 230 & PNY GRV AT-20 XFMR END
DPL_P1_2_PINEY138-WATTSVILLE	CONTINGENCY 'DPL_P1_2_PINEY138-WATTSVILLE' DISCONNECT BRANCH FROM BUS 232128 TO BUS 232133 CKT 1 END
CKT 23032B	CONTINGENCY 'CKT 23032B' OPEN LINE FROM BUS 232013 TO BUS 232003 CIRCUIT 1 /SILVER RUN - CARTANZA 230 END
PECO_P4_PEACH215/* \$ CHESCO \$ PEACH215 \$ STBK	CONTINGENCY 'PECO_P4_PEACH215/* \$ CHESCO \$ PEACH215 \$ STBK' TRIP BRANCH FROM BUS 200065 TO BUS 200051 CKT 1 /* PCHBTM2S 500.00 ROCKSPGS 500.00 \$ CHESCO \$ PEACH215 \$ STBK REMOVE MACHINE 1 FROM BUS 200034 /* PCHBTM 2 22.00 \$ CHESCO \$ PEACH215 \$ STBK END
DPL_P4-2_DP56	CONTINGENCY 'DPL_P4-2_DP56' /*LORETTO BUS BREAKER DISCONNECT BRANCH FROM BUS 232127 TO BUS 232117 CKT 1 /*LORETTO VIENNA 138 1380 DISCONNECT BRANCH FROM BUS 232127 TO BUS 232128 CKT 1 /*LORETTO PINEY GROVE 138 138 END

Contingency Name	Contingency Definition
DPL_P4-2_DP55	CONTINGENCY 'DPL_P4-2_DP55' /*LORETTO BUS BREAKER DISCONNECT BRANCH FROM BUS 232117 TO BUS 232127 CKT 1 /*VIENNA LORETTO 138 138 DISCONNECT BRANCH FROM BUS 232129 TO BUS 232127 CKT 1 /*LORETTO KINGS CREEK 138 138 END
DPL_P1_2_CKT 13787	CONTINGENCY 'DPL_P1_2_CKT 13787' OPEN LINE FROM BUS 232132 TO BUS 232130 CIRCUIT 1 /OAK HALL - POCOMOKE 138 END
PECO_P1-2_5014/* \$ CHESCO \$ 5014 \$ L	CONTINGENCY 'PECO_P1-2_5014/* \$ CHESCO \$ 5014 \$ L' TRIP BRANCH FROM BUS 200065 TO BUS 200051 CKT 1 /* PCHBTM2S 500.00 ROCKSPGS 500.00 \$ CHESCO \$ 5014 \$ L END
Base Case	
DPL_P4-2_DP60C	CONTINGENCY 'DPL_P4-2_DP60C' /*PINEY GROVE BUS BREAKER DISCONNECT BRANCH FROM BUS 232128 TO BUS 232133 CKT 1 /*PINEY GROVE WATTSVILLE 138 138 DISCONNECT BRANCH FROM BUS 232128 TO BUS 232127 CKT 1 /*PINEY GROVE LORETTO 138 138 END
DPL_P1_2_CKT 13789	CONTINGENCY 'DPL_P1_2_CKT 13789' OPEN LINE FROM BUS 232132 TO BUS 232133 CIRCUIT 1 /OAK HALL - WATTSVILLE 138 END
DPL_P7_1_DBL_1NCB_FSA-A	CONTINGENCY 'DPL_P7_1_DBL_1NCB_FSA-A' /* #1 & #2 KEENEY-STEELE 230 OPEN LINE FROM BUS 231003 TO BUS 232000 CKT 1 OPEN LINE FROM BUS 231003 TO BUS 923960 CKT 2 OPEN LINE FROM BUS 232000 TO BUS 923960 CKT 2 DISCONNECT BUS 923961 DISCONNECT BUS 923962 END
DPL_P4-2_DP58	CONTINGENCY 'DPL_P4-2_DP58' /*OAK HALL BUS BREAKER DISCONNECT BRANCH FROM BUS 232132 TO BUS 232130 CKT 1 /*OAK HALL POCOMOKE 138 138 DISCONNECT BRANCH FROM BUS 232132 TO BUS 232131 CKT 1 /*OAK HALL NEW CHURCH 138 138 END

15 Affected Systems

None