Generation Interconnection

System Impact Study Report

for

Queue Project AG1-450

AIREY-VIENNA 69 KV II

25 MW Capacity / 25 MW Energy

December 2021

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1 Introduction

This System Impact Study has been prepared in accordance with the PJM Open Access Transmission Tariff, 205, as well as the System Impact Study Agreement between the Interconnection Customer (IC), and PJM Interconnection, LLC (PJM), Transmission Provider (TP). The Interconnected Transmission Owner (ITO) is AEP.

2 Preface

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

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

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

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

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.

The conduct of light load analysis as required under the PJM planning process is not performed during the Generation Interconnection Feasibility Study phase of the PJM study process. Additional reinforcement requirements for this Interconnection Request may be defined during the conduct of the light load analysis which shall be performed following execution of the System Impact Study agreement.

3 General

The Interconnection Customer (IC) has proposed an uprate to a planned/existing Storage generating facility located in Dorchester, Maryland. This project is an increase to the Interconnection Customer's AF2-358 project, which will share the same point of interconnection. The AG1-450 queue position is a 25 MW uprate (25 MW Capacity uprate) to the previous project. The total installed facilities will have a capability of 125 MW with 85 MW of this output being recognized by PJM as Capacity. The proposed in-service date for this uprate project is December 31, 2022. This study does not imply a TO commitment to this in-service date.

Queue Number	AG1-450
Project Name	AIREY-VIENNA 69 KV II
State	Maryland
County	Dorchester
Transmission Owner	DPL
MFO	125
MWE	25
MWC	25
Fuel	Storage
Basecase Study Year	2024

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

4 Point of Interconnection

AG1-450 will interconnect with the DPL transmission system (via 3 breaker ring bus) at the Airey - Vienna 69 kV line as an uprate to AF2-358 project.

5 Cost Summary

The AG1-450 project will be responsible for the following costs:

Description	Total Cost
Total Physical Interconnection Costs	$0
Allocation towards System Network Upgrade Costs (PJM Identified - Summer Peak)*	$24,044,379
Allocation towards System Network Upgrade Costs (PJM Identified - Light Load)*	$52,000,000
Allocation towards System Network Upgrade Costs (TO Identified)*	$0
Total Costs	$76,044,379

*As your project progresses through the study process and other projects modify their request or withdraw, then your cost allocation could change.

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.

Note 1: PJM Open Access Transmission Tariff (OATT) section 217.3A outline cost allocation rules. The rules are further clarified in PJM Manual 14A Attachment B. The allocation of costs for a network upgrade will start with the first Queue project to cause the need for the upgrade. Later queue projects will receive cost allocation contingent on their contribution to the violation and are allocated to the queues that have not closed less than 5 years following the execution of the first Interconnection Service Agreement which identifies the need for this upgrade.

Note 2: For customers with System Reinforcements listed: If your present cost allocation to a System Reinforcement indicates $0, then please be aware that as changes to the interconnection process occur, such as prior queued projects withdrawing from the queue, reducing in size, etc, the cost responsibilities can change and a cost allocation may be assigned to your project. In addition, although your present cost allocation to a System Reinforcement is presently $0, your project may need this system reinforcement

completed to be deliverable to the PJM system. If your project comes into service prior to completion of the system reinforcement, an interim deliverability study for your project will be required.

6 Transmission Owner Scope of Work

AG1-450 will interconnect with the DPL system via a 3-breaker ring bus substation that will be established on the Airey – Vienna 69kV line as part of the AF2-358 project. No additional work is required to facilitate the physical interconnection of this project.

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

Description	Total Cost
Total Physical Interconnection Costs	$0

7 Schedule

The schedule for this project will coincide with the AF2-358 project and can be found in the latest study report for that project.

The schedule for any required Network Impact Reinforcements will be more clearly identified in future study phases. The estimated time to complete each of the required reinforcements is identified in the "System Reinforcements" section of the report.

8 Transmission Owner Analysis

None

9 Interconnection Customer Requirements

9.1 Required Relaying and Communications

Relaying and communications will be established as part of the AF2-358 project

Some re-wiring or adjustments to relay schemes may be required as part of this project.

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 Meteorological Data Reporting Requirements

None

10.3 Interconnected Transmission Owner Requirements

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

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

11 Summer Peak Analysis

The Queue Project AG1-450 was evaluated as a 25 MW (Capacity 25 MW) injection as an uprate to AF2-358 which taps the Airey - Vienna 69 kV line in the DPL area. Project AG1-450 was evaluated for compliance with applicable reliability planning criteria (PJM, NERC, NERC Regional Reliability Councils, and Transmission Owners). Project AG1-450 was studied with a commercial probability of 100.0 %. Potential network impacts were as follows:

11.1 Generation Deliverability

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

None

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	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC|DC	MW IMPACT
182552750	232005	VIENNA	230.0	DP&L	232000	STEELE	230.0	DP&L	1	DPL_P4-2_DP3	breaker	550.0	123.99	125.65	AC	9.27
182621260	232005	VIENNA	230.0	DP&L	232000	STEELE	230.0	DP&L	1	DPL_P4-2_DP6	breaker	550.0	118.49	120.22	AC	9.85
166822734	232100	CHURCH	138.0	DP&L	232107	TOWNSEND	138.0	DP&L	1	DPL_P7_1_DBL_1NCB_FSA	tower	348.0	179.15	180.74	AC	5.75
166822744	232106	MIDLTNTP	138.0	DP&L	232104	MT PLSNT	138.0	DP&L	1	DPL_P7_1_DBL_1NCB_FSA	tower	348.0	162.62	164.3	AC	5.75
166822729	232107	TOWNSEND	138.0	DP&L	232106	MIDLTNTP	138.0	DP&L	1	DPL_P7_1_DBL_1NCB_FSA	tower	348.0	186.76	188.44	AC	5.75
174309157	232112	FELTON	138.0	DP&L	232110	CHESWOLD	138.0	DP&L	1	DPL_P4-2_DP11	breaker	242.0	110.18	111.1	AC	2.74
174309128	232114	SHARNGTN	138.0	DP&L	232112	FELTON	138.0	DP&L	1	DPL_P4-2_DP11	breaker	242.0	118.35	119.27	AC	2.74
182477168	232116	VIENN138	138.0	DP&L	232005	VIENNA	230.0	DP&L	1	DPL_P4-2_DP3	breaker	530.0	129.2	130.93	AC	9.27
182543468	232116	VIENN138	138.0	DP&L	232005	VIENNA	230.0	DP&L	1	DPL_P4-2_DP6	breaker	530.0	122.98	124.8	AC	9.85
182361364	232117	VIENNA 8	138.0	DP&L	232116	VIENN138	138.0	DP&L	1	DPL_P4-2_DP3	breaker	482.0	141.26	143.16	AC	9.27
182399376	232117	VIENNA 8	138.0	DP&L	232116	VIENN138	138.0	DP&L	1	DPL_P4-2_DP6	breaker	482.0	134.72	136.71	AC	9.85
174100049	232121	INDRV2&3	138.0	DP&L	232119	NELSON	138.0	DP&L	1	DPL_P4-2_DPIR235	breaker	193.0	119.7	121.73	AC	3.79
174309072	232230	TRAP ALT	69.0	DP&L	232232	TRAPPETP	69.0	DP&L	1	DPL_P4-2_DP11	breaker	173.0	131.55	134.75	AC	5.86
174309070	232232	TRAPPETP	69.0	DP&L	232227	EASTN_69	69.0	DP&L	1	DPL_P4-2_DP11	breaker	173.0	131.93	135.23	AC	6.07
174309034	232233	PRESTON	69.0	DP&L	232821	TANYARD	69.0	DP&L	1	DPL_P4-2_DP11	breaker	173.0	145.85	149.18	AC	6.07

ID	FROM BUS#	FROM BUS	kV	FROM BUS AREA	TO BUS#	TO BUS	kV	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC|DC	MW IMPACT
174099941	232234	TODD	69.0	DP&L	232233	PRESTON	69.0	DP&L	1	DPL_P4-2_DP12	breaker	93.0	147.79	153.54	AC	5.54
179461140	232234	TODD	69.0	DP&L	232233	PRESTON	69.0	DP&L	1	DPL_P4-2_DP11	breaker	93.0	275.04	281.24	AC	6.07
174309076	232241	VIENN_69	69.0	DP&L	232234	TODD	69.0	DP&L	1	DPL_P4-2_DP11	breaker	143.0	132.93	133.78	AC	1.46
182296390	232241	VIENN_69	69.0	DP&L	232838	MARDELA	69.0	DP&L	1	DPL_P4-2_DP55	breaker	64.0	151.84	158.79	AC	4.61
182302136	232241	VIENN_69	69.0	DP&L	232838	MARDELA	69.0	DP&L	1	DPL_P4-2_DP56	breaker	64.0	150.97	157.77	AC	4.58
174309289	232291	ROCKAWLKN	69.0	DP&L	232271	NSALSBRY	69.0	DP&L	1	DPL_P4-2_DP55	breaker	123.0	106.54	110.11	AC	4.61
183000938	232291	ROCKAWLKN	69.0	DP&L	232271	NSALSBRY	69.0	DP&L	1	DPL_P4-2_DP56	breaker	123.0	105.84	109.3	AC	4.58
174309051	232820	TALBOT	69.0	DP&L	232230	TRAP ALT	69.0	DP&L	1	DPL_P4-2_DP11	breaker	173.0	140.49	143.8	AC	6.07
174309044	232821	TANYARD	69.0	DP&L	232820	TALBOT	69.0	DP&L	1	DPL_P4-2_DP11	breaker	173.0	142.84	146.16	AC	6.07
182350756	232838	MARDELA	69.0	DP&L	232270	HEBRON	69.0	DP&L	1	DPL_P4-2_DP55	breaker	64.0	142.57	149.52	AC	4.61
182357828	232838	MARDELA	69.0	DP&L	232270	HEBRON	69.0	DP&L	1	DPL_P4-2_DP56	breaker	64.0	141.76	148.56	AC	4.58
174309151	923960	AB2-037 TAP	230.0	DP&L	231003	KEEN_230	230.0	DP&L	2	DPL_P4-2_DP8	breaker	727.0	118.15	119.26	AC	8.3
182619934	923960	AB2-037 TAP	230.0	DP&L	231003	KEEN_230	230.0	DP&L	2	DPL_P4-2_DP10	breaker	727.0	118.02	119.13	AC	8.31

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 PROJECT LOADING %	POST PROJECT LOADING %	AC|DC	MW IMPACT
168001615	232000	STEELE	230.0	DP&L	231003	KEEN_230	230.0	DP&L	1	DPL_P1_2_AB2-037 KEENEY	operation	552.0	128.19	129.42	AC	6.98
182858614	232000	STEELE	230.0	DP&L	923960	AB2-037 TAP	230.0	DP&L	2	CKT 23032B	operation	727.0	106.46	107.43	AC	7.31
168001512	232001	COOLSPRS	230.0	DP&L	232927	BENNETT_230	230.0	DP&L	2	DPL_P1_2_CKT 23034	operation	678.0	151.49	152.45	AC	7.72
168001469	232002	CEDAR CK	230.0	DP&L	232013	SILVER RUN	230.0	PJM	1	CKT 23032B	operation	678.0	179.94	180.99	AC	8.74
168001471	232002	CEDAR CK	230.0	DP&L	232013	SILVER RUN	230.0	PJM	1	Base Case	operation	550.0	139.24	139.91	AC	6.31
182705682	232005	VIENNA	230.0	DP&L	232000	STEELE	230.0	DP&L	1	DPL_P1_2_CKT 23076	operation	550.0	115.58	117.16	AC	8.81
168001592	232006	INDRIV 4	230.0	DP&L	232001	COOLSPRS	230.0	DP&L	1	Base Case	operation	650.0	99.8	100.22	AC	3.25

ID	FROM BUS#	FROM BUS	kV	FROM BUS AREA	TO BUS#	TO BUS	kV	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC|DC	MW IMPACT
168001606	232100	CHURCH	138.0	DP&L	232107	TOWNSEND	138.0	DP&L	1	Base Case	operation	280.0	123.17	124.16	AC	2.88
168001715	232106	MIDLTNTP	138.0	DP&L	232104	MT PLSNT	138.0	DP&L	1	Base Case	operation	273.0	106.04	107.06	AC	2.88
168001555	232107	TOWNSEND	138.0	DP&L	232106	MIDLTNTP	138.0	DP&L	1	Base Case	operation	273.0	136.67	137.69	AC	2.88
168001784	232116	VIENN138	138.0	DP&L	232005	VIENNA	230.0	DP&L	1	Base Case	operation	460.0	105.09	107.07	AC	8.68
182602696	232116	VIENN138	138.0	DP&L	232005	VIENNA	230.0	DP&L	1	DPL_P1_2_CKT 23076	operation	530.0	120.53	122.17	AC	8.81
168001656	232117	VIENNA 8	138.0	DP&L	232116	VIENN138	138.0	DP&L	1	Base Case	operation	390.0	122.31	124.64	AC	8.68
168001838	232117	VIENNA 8	138.0	DP&L	232119	NELSON	138.0	DP&L	1	DPL_P1_2_23085 &13710	operation	247.0	102.0	104.32	AC	5.7
182446228	232117	VIENNA 8	138.0	DP&L	232116	VIENN138	138.0	DP&L	1	DPL_P1_2_CKT 23076	operation	482.0	131.69	133.49	AC	8.81
168001610	232119	NELSON	138.0	DP&L	232121	INDRV2&3	138.0	DP&L	1	DPL_P1_2_23085 &13710	operation	193.0	123.15	126.14	AC	6.01
168001907	232121	INDRV2&3	138.0	DP&L	232119	NELSON	138.0	DP&L	1	DPL_P1_2_CKT 23076	operation	193.0	98.58	100.14	AC	2.99
168001473	232128	PINEY138	138.0	DP&L	232127	LORETTO	138.0	DP&L	1	DPL_P1_2_CKT 13713	operation	158.0	168.26	169.65	AC	2.19
168001505	232234	TODD	69.0	DP&L	232233	PRESTON	69.0	DP&L	1	DPL_P1_2_23085 &13710	operation	93.0	147.04	152.81	AC	5.56
168001506	232234	TODD	69.0	DP&L	232233	PRESTON	69.0	DP&L	1	Base Case	operation	82.0	99.25	104.57	AC	4.44
168001571	232241	VIENN_69	69.0	DP&L	232838	MARDELA	69.0	DP&L	1	Base Case	operation	64.0	110.34	116.85	AC	4.38
168001643	232241	VIENN_69	69.0	DP&L	232239	SHARPTWN	69.0	DP&L	1	Base Case	operation	50.0	123.22	130.26	AC	3.9
168001644	232241	VIENN_69	69.0	DP&L	232239	SHARPTWN	69.0	DP&L	1	DPL_P1_2_CKT 13707	operation	71.0	111.33	116.63	AC	4.12
182300368	232241	VIENN_69	69.0	DP&L	232838	MARDELA	69.0	DP&L	1	DPL_P1_2_CKT 13780	operation	64.0	151.21	158.16	AC	4.61
182512528	232249	LAUREL	69.0	DP&L	232247	DUP-SFRD	69.0	DP&L	1	DPL_P1_2_23085 &13710	operation	93.0	115.64	119.09	AC	3.45
168001698	232275	LORET_69	69.0	DP&L	232288	FRUITLND	69.0	DP&L	1	DPL_P1_2_CKT 6728	operation	112.0	118.87	120.04	AC	1.33
168001761	232288	FRUITLND	69.0	DP&L	232273	PEMBERTN	69.0	DP&L	1	DPL_P1_2_CKT 6728	operation	90.0	106.42	107.88	AC	1.33
168001735	232292	BAYLY	69.0	DP&L	232237	CAMBRIDG	69.0	DP&L	1	Base Case	operation	50.0	105.12	113.22	AC	4.32
168001538	232838	MARDELA	69.0	DP&L	232270	HEBRON	69.0	DP&L	1	Base Case	operation	50.0	133.69	142.04	AC	4.38
182355176	232838	MARDELA	69.0	DP&L	232270	HEBRON	69.0	DP&L	1	DPL_P1_2_CKT 13780	operation	64.0	141.97	148.93	AC	4.61
168001522	232927	BENNETT_230	230.0	DP&L	232004	MILF_230	230.0	DP&L	2	DPL_P1_2_CKT 23034	operation	678.0	146.6	147.56	AC	7.72
169760020	923960	AB2-037 TAP	230.0	DP&L	231003	KEEN_230	230.0	DP&L	2	DPL_P1_2_CKT 23001	operation	727.0	117.89	119.0	AC	8.32
169760022	923960	AB2-037 TAP	230.0	DP&L	231003	KEEN_230	230.0	DP&L	2	Base Case	operation	650.0	99.75	100.68	AC	6.23
169760031	924830	AB2-136 TAP	69.0	DP&L	232292	BAYLY	69.0	DP&L	1	Base Case	operation	50.0	109.94	118.08	AC	4.32

11.5 System Reinforcements

<table>
<tr><th>ID</th><th>Idx</th><th>Facility</th><th>Upgrade Description</th><th>Cost</th><th>Cost Allocated to AG1-450</th><th>Upgrade Number</th></tr>
<tr>
<td>174309044</td>
<td>18</td>
<td>TANYARD 69.0 kV - TALBOT 69.0 kV Ckt 1</td>
<td>
ProjectId : n7793 (dt6716r0007)
Description : To mitigate the (DP&L) Tanyard - Talbot 69 kV line (from bus 232820 to bus 232821 Ckt 1) overload, it will require increasing the emergency rating of the Tanyard - Talbot 69 kV line by rebuilding the line. This includes installation of new poles, foundations, insulators, (2) 954 ACSR conductor and OPGW.
Type : FAC
Total Cost : $9,000,000
Time Estimate : 36-48 Months
Ratings : 274.0/349.0/349.0
<table>
<tr><th>Queue</th><th>MW</th><th>Cost %</th><th>Cost $</th></tr>
<tr><td>AG1-429</td><td>6.42</td><td>51.40%</td><td>$4,626,101</td></tr>
<tr><td>AG1-450</td><td>6.07</td><td>48.60%</td><td>$4,373,899</td></tr>
</table>
ProjectId : n7040 (dt6716r0003)
Description : To mitigate the (DP&L) Tanyard - Talbot 69 kV line (from bus 232820 to bus 232821 Ckt 1) overload, it will require increasing the emergency rating of the Tanyard - Talbot 69 kV line by rebuilding the line. This includes installation of new poles, foundations, insulators and OPGW.
Type : FAC
Total Cost : $7,499,000
Time Estimate : 36-48 Months
Ratings : 164.0/186.0/186.0
<table>
<tr><th>Queue</th><th>MW</th><th>Cost %</th><th>Cost $</th></tr>
<tr><td>AF2-194</td><td>33.08</td><td>31.76%</td><td>$2,381,595</td></tr>
<tr><td>AF2-207</td><td>6.35</td><td>6.10%</td><td>$457,168</td></tr>
<tr><td>AF2-358</td><td>25.74</td><td>24.71%</td><td>$1,853,152</td></tr>
<tr><td>AF2-385</td><td>9.44</td><td>9.06%</td><td>$679,633</td></tr>
<tr><td>AG1-061</td><td>17.06</td><td>16.38%</td><td>$1,228,235</td></tr>
<tr><td>AG1-429</td><td>6.42</td><td>6.16%</td><td>$462,208</td></tr>
<tr><td>AG1-450</td><td>6.07</td><td>5.83%</td><td>$437,010</td></tr>
</table>
ProjectId : n7041 (ds6716r0003)
Description : To mitigate the (DP&L) Tanyard - Talbot 69 kV line (from bus 232820 to bus 232821 Ckt 1) overload, it will require increasing the emergency rating of the Tanyard - Talbot 69 kV line by replacing terminal equipment at the Tanyard and Talbot taps.
Type: FAC
Total Cost: $200,000
Time Estimate: 12-18 Months
Ratings: 195.0/241.0/241.0
Notes: Per PJM Cost Allocation rules, this upgrade stays in the AF2 Queue. AG1-450 does not receive CA for this upgrade. This may change with future re-tools as projects withdraw.
</td>
<td>$16,699,000</td>
<td>$4,810,909</td>
<td>N7793
N7040
N7041</td>
</tr>
<tr>
<td>182350756, 182357828</td>
<td>19</td>
<td>MARDELA 69.0 kV - HEBRON 69.0 kV Ckt 1</td>
<td>
ProjectId: n7784 (dt6708r0001)
Description: Rebuild the 6708 line from Vienna - Hebron (N. Salisbury to Hebron Section already completed) with new poles, conductor, foundations, insulators and OPGW
Type: CON
Total Cost: $15,000,000
Time Estimate: 36-48 Months
Ratings: 136.0/174.0/174.0
Notes: Per PJM Cost Allocation rules AG1-450 does not receive CA for this upgrade. This may change with future re-tools as projects withdraw.
</td>
<td>$15,000,000</td>
<td>$0</td>
<td>N7784</td>
</tr>
</table>

<table>
<tr><th>ID</th><th>Idx</th><th>Facility</th><th>Upgrade Description</th><th>Cost</th><th>Cost Allocated to AG1-450</th><th>Upgrade Number</th></tr>
<tr>
<td>174309034</td>
<td>12</td>
<td>PRESTON 69.0 kV - TANYARD 69.0 kV Ckt 1</td>
<td>
ProjectId: b2946
Description: Convert existing Preston 69 kV Substation to DPL's current design standard of a 3-breaker ring bus.
Time Estimate: 30-36 Months

ProjectId : n7105 (dt6716r0001)
Description : 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 rebuilding the line. This includes installation of new poles, foundations, insulators and OPGW.
Type : FAC
Total Cost : $11,000,000
Time Estimate : 36-48 Months
Ratings : 164.0/186.0/186.0

<table>
<tr><th>Queue</th><th>MW</th><th>Cost %</th><th>Cost $</th></tr>
<tr><td>AF2-194</td><td>33.08</td><td>31.76%</td><td>$3,493,472</td></tr>
<tr><td>AF2-207</td><td>6.35</td><td>6.10%</td><td>$670,603</td></tr>
<tr><td>AF2-358</td><td>25.74</td><td>24.71%</td><td>$2,718,318</td></tr>
<tr><td>AF2-385</td><td>9.44</td><td>9.06%</td><td>$996,928</td></tr>
<tr><td>AG1-061</td><td>17.06</td><td>16.38%</td><td>$1,801,651</td></tr>
<tr><td>AG1-429</td><td>6.42</td><td>6.16%</td><td>$677,995</td></tr>
<tr><td>AG1-450</td><td>6.07</td><td>5.83%</td><td>$641,033</td></tr>
</table>

ProjectId: n7106 (ds6716r0006)
Description : 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
Type : FAC
Total Cost : $100,000
Time Estimate : 9-12 Months
Ratings : 195.0/241.0/241.0
Notes: Per PJM cost allocation rules, this reinforcement cost is driven by previous AF2 queue. AG1-450 presently does not receive cost allocation for this upgrade. This may change with future re-tools as projects withdraw.

ProjectId: n7107 (dt6716r0002)
Description: To mitigate the (DP&L) Preston - Tanyard 69 kV line (from bus 232821 to bus 232233ckt 1) overload, it will require increasing the emergency rating of the Preston-Tanyard 69 kV line by rebuilding the line. This includes installation of new poles, foundations, insulators and OPGW.
Type : FAC
Total Cost : $12,000,000
Time Estimate : 36-48 Months
Ratings : 274.0/349.0/349.0

<table>
<tr><th>Queue</th><th>MW</th><th>Cost %</th><th>Cost $</th></tr>
<tr><td>AG1-429</td><td>6.42</td><td>51.40%</td><td>$6,168,135</td></tr>
<tr><td>AG1-450</td><td>6.07</td><td>48.60%</td><td>$5,831,865</td></tr>
</table>
</td>
<td>$23,100,000</td>
<td>$6,472,899</td>
<td>B2946
N7105
N7106
N7107</td>
</tr>
</table>

<table>
<tr><th>ID</th><th>Idx</th><th>Facility</th><th>Upgrade Description</th><th>Cost</th><th>Cost Allocated to AG1-450</th><th>Upgrade Number</th></tr>
<tr><td>174309151, 182619934</td><td>20</td><td>AB2-037 TAP 230.0 kV - KEEN_230 230.0 kV Ckt 2</td><td>ProjectId : n7744 (dt23009r0001)
Description : Rebuild approximately 2.98 mi. of Keeney - Steele 230kV line to upgrade existing conductor to bundled 1590 ACSR
Type : FAC
Total Cost : $9,000,000
Time Estimate : 36-48 Months
Ratings : 790.0/932.0/932.0
<table><tr><th>Queue</th><th>MW</th><th>Cost %</th><th>Cost $</th></tr><tr><td>AG1-087</td><td>24.06</td><td>38.49%</td><td>$3,464,086</td></tr><tr><td>AG1-150</td><td>12.2</td><td>19.52%</td><td>$1,756,519</td></tr><tr><td>AG1-429</td><td>17.95</td><td>28.72%</td><td>$2,584,386</td></tr><tr><td>AG1-450</td><td>8.3</td><td>13.28%</td><td>$1,195,009</td></tr></table>
ProjectId : n7138 (ds23009r0001)
Description : Upgrade relaying at Keeney Substation
Type : FAC
Total Cost : $230,000
Time Estimate : 12.0 Months
Ratings : 650.0/808.0/808.0
<table><tr><th>Queue</th><th>MW</th><th>Cost %</th><th>Cost $</th></tr><tr><td>AG1-072</td><td>18.04</td><td>11.03%</td><td>$25,370</td></tr><tr><td>AG1-087</td><td>107.06</td><td>65.46%</td><td>$150,558</td></tr><tr><td>AG1-150</td><td>12.2</td><td>7.46%</td><td>$17,157</td></tr><tr><td>AG1-429</td><td>17.95</td><td>10.98%</td><td>$25,243</td></tr><tr><td>AG1-450</td><td>8.3</td><td>5.07%</td><td>$11,672</td></tr></table></td><td>$9,230,000</td><td>$1,206,681</td><td>N7138
N7744</td></tr>
<tr><td>174309051</td><td>17</td><td>TALBOT 69.0 kV - TRAP ALT 69.0 kV Ckt 1</td><td>ProjectId : n7750 (dt6716r0009)
Description : To mitigate the (DPL) Talbot- Trappe Tap Alt 69 kV line (from bus 232820 to 232230) overload, it will require increasing the emergency rating of the line by rebuilding it with new poles, (2) 954 ACSR conductor, foundations, insulators, and OPGW. The disconnect switches will also need to be replaced at both ends of the line
Type : FAC
Total Cost : $5,250,000
Time Estimate : 36-48 Months
Ratings : 274.0/349.0/349.0
<table><tr><th>Queue</th><th>MW</th><th>Cost %</th><th>Cost $</th></tr><tr><td>AG1-429</td><td>2.16</td><td>26.25%</td><td>$1,377,886</td></tr><tr><td>AG1-450</td><td>6.07</td><td>73.75%</td><td>$3,872,114</td></tr></table>
ProjectId : n7749 (dt6716r0008)
Description : To mitigate the (DPL) Talbot- Trappe Tap Alt 69 kV line (from bus 232820 to 232230) overload, it will require increasing the emergency rating of the line by rebuilding it with new poles, 1590 ACSR conductor, foundations, insulators, and OPGW. The disconnect switches will also need to be replaced at both ends of the line
Type : FAC
Total Cost : $4,750,000
Time Estimate : 36-48 Months
Ratings : 195.0/241.0/241.0
Notes : AG1-072,AG1-150,AG1-461,AG1-529 does not meet CA rules
<table><tr><th>Queue</th><th>MW</th><th>Cost %</th><th>Cost $</th></tr><tr><td>AG1-000</td><td>39.25</td><td>57.05%</td><td>$2,709,847</td></tr><tr><td>AG1-061</td><td>17.06</td><td>24.80%</td><td>$1,177,834</td></tr><tr><td>AG1-429</td><td>6.42</td><td>9.33%</td><td>$443,241</td></tr><tr><td>AG1-450</td><td>6.07</td><td>8.82%</td><td>$419,077</td></tr></table></td><td>$5,250,000</td><td>$4,291,191</td><td>N7749
N7750</td></tr>
</table>

ID	Idx	Facility	Upgrade Description	Cost	Cost Allocated to AG1-450	Upgrade Number
174309157	5	**FELTON 138.0 kV - CHESWOLD 138.0 kV Ckt 1**	**ProjectId: n7791 (dt13704r0001)** **Description:** To mitigate the (DPL) Cheswold - Felton 138 kV line (from bus 232110 to 232112) overload, it will require increasing the emergency rating of the line by rebuilding it with new poles, conductor, foundations, insulators and OPGW **Type:** FAC **Total Cost:** $23,000,000 **Time Estimate:** 36-48 Months **Ratings:** 329.0/372.0/372.0 **Notes:** Per PJM cost allocation rules, AG1-450 presently does not receive cost allocation for this upgrade. This may change with future re-tools as projects withdraw.	$23,000,000	$0	N7791
174100049	9	**INDRV2&3 138.0 kV - NELSON 138.0 kV Ckt 1**	**ProjectId: dt13703r0001 (n7038)** **Description:** To mitigate the (DP&L) Indian River to Nelson 138 kV line (from bus 232121 to bus 232119 Ckt 1) overload, it will require increasing the emergency rating of the Indian River - Nelson 138 kV line by rebuilding the circuit. The rebuild will include the installation of new poles, foundations, insulators, and conductor. **Project Type** : FAC **Cost** : $43,000,000 **Time Estimate** : 48-60 Months **Ratings:** 183/247/247 **ProjectId: ds13703r0001 (n7039)** **Description:** To mitigate the (DPL) Indian River - Nelson 138 kV line (from bus 232121 to 232119) overload, it will require increasing the emergency rating of the Indian River - Nelson 138 kV line by replacing terminal equipment at Nelson (Upgrade 477AAC Stranded Bus to 954 ACSR) **Project Type** : FAC **Cost** : $250,000 **Time Estimate** : 9-12 Months **Ratings:** 139/293/293 ****Notes:** Per PJM cost allocation rules, AG1-450 presently does not receive cost allocation for this upgrade. This may change with future re-tools as projects withdraw.	$43,250,000	$0	N7038 N7039

<table>
<tr><th>ID</th><th>Idx</th><th>Facility</th><th>Upgrade Description</th><th>Cost</th><th>Cost Allocated to AG1-450</th><th>Upgrade Number</th></tr>
<tr><td>166822729</td><td>4</td><td>TOWNSEND 138.0 kV - MIDLTNTP 138.0 kV Ckt 1</td><td>ProjectId: n7139 (ds13808r0003)
Description: Upgrade terminal equipment at Townsend Substation
Type: FAC
Total Cost: $300,000
Time Estimate: 12.0 Months
Ratings: 390.0/482.0/482.0
Notes: This constraint is driven by a prior AE1 queue. Per PJM cost allocation rules, this project presently does not receive cost allocation for this upgrade.

ProjectId: n7140 (dt13808r0004)
Description : Rebuild the 13808-1 line from Townsend - Middletown Tap with new poles, conductor, foundations, insulators, and OPGW. Terminal equipment at Townsend would also need to be upgraded
Type : FAC
Total Cost : $7,500,000
Time Estimate : 36-48 Months
Ratings : 548.0/698.0/698.0<table><tr><th>Queue</th><th>MW</th><th>Cost %</th><th>Cost $</th></tr><tr><td>AF2-313</td><td>8.36</td><td>4.59%</td><td>$344,562</td></tr><tr><td>AF2-358</td><td>23.3</td><td>12.80%</td><td>$960,323</td></tr><tr><td>AF2-385</td><td>15.35</td><td>8.44%</td><td>$632,659</td></tr><tr><td>AG1-061</td><td>22.96</td><td>12.62%</td><td>$946,310</td></tr><tr><td>AG1-072</td><td>16.33</td><td>8.97%</td><td>$673,050</td></tr><tr><td>AG1-087</td><td>70.11</td><td>38.53%</td><td>$2,889,625</td></tr><tr><td>AG1-150</td><td>8.02</td><td>4.41%</td><td>$330,549</td></tr><tr><td>AG1-429</td><td>11.79</td><td>6.48%</td><td>$485,932</td></tr><tr><td>AG1-450</td><td>5.75</td><td>3.16%</td><td>$236,990</td></tr></table>
ProjectId: n6407 (dt13808r0001)
Description: 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
Type: FAC
Total Cost: $100,000
Time Estimate: 9-12 Months
Ratings: 329.0/372.0/372.0
Notes: This constraint is driven by a prior AE1 queue. Per PJM cost allocation rules, this project presently does not receive cost allocation for this upgrade.</td><td>$7,900,000</td><td>$236,990</td><td>N7139
N7140
N6407</td></tr>
<tr><td>182543468, 182477168</td><td>7</td><td>VIENN138 138.0 kV - VIENNA 230.0 kV Ckt 1</td><td>ProjectId: n7786 (dtx_vienna_AT21)
Description : Install a 2nd 230/138kV Auto Transformer at Vienna Substation to alleviate overload on existing transformer. Upgrade not feasible due to already larger than standard transformer currently installed at Vienna. Would require expansion of Vienna Substation including a new 230kV ring bus to accommodate 2nd Auto Transformer.
Type: FAC
Total Cost: $41,000,000
Time Estimate: 48-60 Months
Ratings: N/A
Notes: The driver is unknown and will be determined in future retools. The potential cost allocation table is as follows:
<table><tr><th>Queue</th><th>MW</th><th>Cost %</th><th>Cost $</th></tr><tr><td>Unknown Driver</td><td>47.7</td><td>24.59%</td><td>$10,083,527</td></tr><tr><td>AG1-061</td><td>40.36</td><td>20.81%</td><td>$8,531,890</td></tr><tr><td>AG1-087</td><td>60.74</td><td>31.32%</td><td>$12,840,113</td></tr><tr><td>AG1-150</td><td>14.49</td><td>7.47%</td><td>$3,063,109</td></tr><tr><td>AG1-429</td><td>21.39</td><td>11.03%</td><td>$4,521,732</td></tr><tr><td>AG1-450</td><td>9.27</td><td>4.78%</td><td>$1,959,629</td></tr></table></td><td>$41,000,000</td><td>$1,959,629</td><td>N7786</td></tr>
</table>

<table>
<tr><th>ID</th><th>Idx</th><th>Facility</th><th>Upgrade Description</th><th>Cost</th><th>Cost Allocated to AG1-450</th><th>Upgrade Number</th></tr>
<tr><td>166822734</td><td>2</td><td>CHURCH 138.0 kV - TOWNSEND 138.0 kV Ckt 1</td><td>ProjectId: n7102 (ds13833r0003)
Description : To mitigate the (DP&L) CHURCH to TOWNSEND 138 kV line (from bus 232100 to bus 232107 Ckt 1) overload will require substation reinforcements (on top of ds13833r001, ds13833r002) at Church Substation.
Type: FAC
Total Cost: $100,000
Time Estimate: 12-18 Months
Ratings: 395.0/478.0/478.0
Notes: This reinforcement in the AF2 queue. AG1-450 presently does not receive cost allocation for this upgrade.

ProjectId: n7101 (ds13833r0002)
Description : To mitigate the (DP&L) CHURCH to TOWNSEND 138 kV line (from bus 232100 to bus 232107 ckt 1) overload will require substation reinforcements (on top of ds13833r001) at Church Substation.
Type: FAC
Total Cost: $200,000
Time Estimate: 24.0 Months
Ratings: 381.0/445.0/445.0
Notes: This reinforcement in the AF2 queue. AG1-450 presently does not receive cost allocation for this upgrade.

ProjectId: n7100 (ds13833r0001)
Description : 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.
Type: FAC
Total Cost: $500,000
Time Estimate: 24-36 Months
Ratings: 329.0/372.0/372.0
Notes: Per PJM cost allocation rules, this reinforcement cost is driven by previous AF2 queue. AG1-450 presently does not receive cost allocation for the three upgrades (n7100, n7101, n7102) upgrade. This may change with future re-tools as projects withdraw.

ProjectId : n7103 (dt13833r0001)
Description : To mitigate the (DP&L) CHURCH to TOWNSEND 138 kV line (from bus 232100 to bus 232107 Ckt 1) overload will require a rebuild of the 13833 Church to Townsend 138 kV Line along with substation reinforcements (on top of ds13833r001, ds13833r002, ds13833r003) at Church and Townsend Substations
Type : FAC
Total Cost : $26,000,000
Time Estimate : 48-60 Months
Ratings : 548.0/698.0/698.0
<table>
<tr><th>Queue</th><th>MW</th><th>Cost %</th><th>Cost $</th></tr>
<tr><td>AF2-358</td><td>21.4</td><td>12.46%</td><td>$3,240,347</td></tr>
<tr><td>AF2-385</td><td>15.35</td><td>8.94%</td><td>$2,324,268</td></tr>
<tr><td>AG1-061</td><td>22.96</td><td>13.37%</td><td>$3,476,559</td></tr>
<tr><td>AG1-072</td><td>16.33</td><td>9.51%</td><td>$2,472,657</td></tr>
<tr><td>AG1-087</td><td>70.11</td><td>40.83%</td><td>$10,615,922</td></tr>
<tr><td>AG1-150</td><td>8.02</td><td>4.67%</td><td>$1,214,373</td></tr>
<tr><td>AG1-429</td><td>11.79</td><td>6.87%</td><td>$1,785,219</td></tr>
<tr><td>AG1-450</td><td>5.75</td><td>3.35%</td><td>$870,654</td></tr>
</table></td><td>$26,800,000</td><td>$870,654</td><td>N7102
N7101
N7100
N7103</td></tr>
</table>

ID	Idx	Facility	Upgrade Description	Cost	Cost Allocated to AG1-450	Upgrade Number
182399376, 182361364	8	**VIENNA 8 138.0 kV - VIENN138 138.0 kV Ckt 1**	**ProjectId: n7090 (dt13710r0001)** **Description:** To mitigate the (DPL) Vienna - Vienna 8 138 kV line (from bus 232116 to 232117) overload, it will require increasing the emergency rating of the Vienna - Vienna 8 138 kV line by rebuilding the line with new poles, foundations, insulators and OPGW and replacing terminal equipment at Vienna **Type:** FAC **Total Cost:** $1,200,000 **Time Estimate:** 12-18 Months **Ratings:** 548.0/698.0/698.0 **Notes:** Per PJM cost allocation rules, this reinforcement cost is driven by previous AF2 queue. AG1-450 presently does not receive cost allocation for this upgrade. This may change with future re-tools as projects withdraw.	$1,200,000	$0	N7090
174309128	6	**SHARNGTN 138.0 kV - FELTON 138.0 kV Ckt 1**	**ProjectId : n7144 (dt13709r0001)** **Description :** To mitigate the (DP&L) Felton - S. Harrington 138 kV line (from bus 232112 to bus 232114 Ckt 1) overload, it will require increasing the emergency rating of the Felton - S. Harrington 138 kV line by rebuilding the line which includes the installation of new poles, foundations, 954 ACSR conductor, insulators and OPGW **Type :** FAC **Total Cost :** $17,000,000 **Time Estimate :** 36-48 Months **Ratings :** 241.0/295.0/295.0 **Notes:** Per PJM cost allocation rules, this reinforcement cost is driven by previous AF2 queue. AG1-450 presently does not receive cost allocation for this upgrade. This may change with future re-tools as projects withdraw.	$17,000,000	$0	N7144
174309072	10	**TRAP ALT 69.0 kV - TRAPPETP 69.0 kV Ckt 1**	**ProjectId : n7047 (dt6716r0004)** **Description :** To mitigate the (DPL) Trappe Tap - Trappe Tap Alt 69 kV line (from bus 232232 to 232230) overload, it will require increasing the emergency rating of the line by rebuilding it with new poles, conductor, foundations, insulators, and OPGW. The disconnect switches will also need to be replaced. **Type:** FAC **Total Cost:** $475,000 **Time Estimate:** 9-12 Months **Ratings:** 195.0/241.0/241.0 **Notes:** Per PJM cost allocation rules, this reinforcement cost is driven by previous AF2 queue. AG1-450 presently does not receive cost allocation for this upgrade. This may change with future re-tools as projects withdraw.	$475,000	$0	N7047

<table>
<tr>
<td>179461140, 174099941</td>
<td>13</td>
<td>TODD 69.0 kV - PRESTON 69.0 kV Ckt 1</td>
<td>
ProjectId : n7097 (dt6716r0005)
Description : To mitigate the (DP&L) Preston - Todd 69 kV line (from bus 232234 to bus 232233 Ckt 1) overload, it will require increasing the emergency rating of the Preston-Todd 69 kV line by rebuilding the line. This includes installation of new poles, conductor, foundations, insulators and OPGW.
Type : FAC
Total Cost : $9,000,000
Time Estimate : 36-48 Months
Ratings : 184.0/222.0/222.0
<table>
<tr><th>Queue</th><th>MW</th><th>Cost %</th><th>Cost $</th></tr>
<tr><td>AF2-194</td><td>33.08</td><td>31.76%</td><td>$2,858,295</td></tr>
<tr><td>AF2-207</td><td>6.35</td><td>6.10%</td><td>$548,675</td></tr>
<tr><td>AF2-358</td><td>25.74</td><td>24.71%</td><td>$2,224,078</td></tr>
<tr><td>AF2-385</td><td>9.44</td><td>9.06%</td><td>$815,668</td></tr>
<tr><td>AG1-061</td><td>17.06</td><td>16.38%</td><td>$1,474,078</td></tr>
<tr><td>AG1-429</td><td>6.42</td><td>6.16%</td><td>$554,724</td></tr>
<tr><td>AG1-450</td><td>6.07</td><td>5.83%</td><td>$524,482</td></tr>
</table>
ProjectId: n7098 (ds6716r0004)
Description : To mitigate the (DP&L) Preston - Todd 69 kV line (from bus 232234 to bus 232233 Ckt 1) overload, it will require increasing the emergency rating of the Preston-Todd 69 kV line by upgrading terminal equipment at the Todd Substation
Type : FAC
Total Cost: $100,000
Time Estimate: 9-12 Months
Ratings: 184.0/235.0/235.0
Notes: This constraint is driven by a prior AE1 queue. Per PJM cost allocation rules, AG1-450 project presently does not receive cost allocation for this upgrade. This may change with future Re-Tools and as projects ahead withdraw from queue.

ProjectId: n5788 (ds6716r0001)
Description : 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
Type: FAC
Total Cost: $100,000
Time Estimate: 12.0 Months
Ratings: 95.0/130.0/130.0
Notes: This constraint is driven by a prior AE1 queue. Per PJM cost allocation rules, AG1-450 project presently does not receive cost allocation for this upgrade. This may change with future Re-Tools and as projects ahead withdraw from queue.

ProjectId: n6231 (ds6716r0002)
Description : 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 Preston Substation and Todd Substation.
Type: FAC
Total Cost: $100,000
Time Estimate: 12.0 Months
Ratings: 136.0/173.0/173.0
Notes: This constraint is driven by a prior queue. Per PJM cost allocation rules, this project presently does not receive cost allocation for this upgrade.

ProjectId : n7099 (ds6716r0005)
Description : To mitigate the (DP&L) Preston - Todd 69 kV line (from bus 232234 to bus 232233 Ckt 1) overload, it will require increasing the emergency rating of the Preston-Todd 69 kV line by upgrading terminal equipment at the Todd Substation
Type : FAC
Total Cost : $250,000
Time Estimate : 12-18 Months
Ratings : 274.0/349.0/349.0
<table>
<tr><th>Queue</th><th>MW</th><th>Cost %</th><th>Cost $</th></tr>
<tr><td>AG1-061</td><td>17.06</td><td>57.73%</td><td>$144,332</td></tr>
<tr><td>AG1-429</td><td>6.42</td><td>21.73%</td><td>$54,315</td></tr>
<tr><td>AG1-450</td><td>6.07</td><td>20.54%</td><td>$51,354</td></tr>
</table>
</td>
<td>$9,550,000</td>
<td>$575,835</td>
<td>N7097
N7098
N5788
N6231
N7099</td>
</tr>
</table>

<table>
<tr><th>ID</th><th>Idx</th><th>Facility</th><th>Upgrade Description</th><th>Cost</th><th>Cost Allocated to AG1-450</th><th>Upgrade Number</th></tr>
<tr><td>174309076</td><td>14</td><td>VIENN_69 69.0 kV - TODD 69.0 kV Ckt 1</td><td>ProjectId : n7095 (ds6702r0001)
Description : To mitigate the (DPL) Vienna - Todd 69 kV line (from bus 232241 to 232234) it will require increasing the emergency rating of the line by upgrading the relays at both Todd and Vienna
Type : FAC
Total Cost : $450,000
Time Estimate : 12-18 Months
Ratings : 137.0/174.0/174.0

ProjectId: n7096 (dt6702r0001)
Description: To mitigate the (DPL) Vienna - Todd 69 kV line (from bus 232241 to 232234) 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 needed at Todd
Type : FAC
Total Cost : $19,000,000
Time Estimate : 36-48 Months
Ratings : 145.0/186.0/186.0

ProjectId : n7787 (ds6702r0002)
Description : To mitigate the (DPL) Vienna - Todd 69 kV line (from bus 232241 to 232234) it will require increasing the emergency rating of the line by upgrading terminal equipment (CBs and Disconnect Switches) at both Todd and Vienna
Type : FAC
Total Cost : $1,250,000
Time Estimate : 24-36 Months
Ratings : 195.0/239.0/239.0

** <u>Notes</u>: Per PJM cost allocation rules, AG1-450 project presently does not receive cost allocation for all three upgrades above. This may change with future Re-Tools and as projects ahead withdraw from queue.</td><td>$20,700,000</td><td>$0</td><td>N7095
N7096
N7787</td></tr>
<tr><td>182302136, 182296390</td><td>15</td><td>VIENN_69 69.0 kV - MARDELA 69.0 kV Ckt 1</td><td>Description: Not a violation, No Overload.</td><td>$0</td><td>$0</td><td></td></tr>
<tr><td>174309070</td><td>11</td><td>TRAPPETP 69.0 kV - EASTN_69 69.0 kV Ckt 1</td><td>ProjectId: n7048 (dt6716r0006)
Description : Rebuild the 6716-1 Easton - Trappe Tap 69 kV with new poles, conductor, foundations, insulators, and OPGW. Terminal equipment at Easton and the line disconnect at the Trappe Tap will also need to be upgraded.
Type : FAC
Total Cost : $6,500,000
Time Estimate : 36-48 Months
Ratings : 228.0/279.0/279.0
<table><tr><th>Queue</th><th>MW</th><th>Cost %</th><th>Cost $</th></tr><tr><td>AF2-358</td><td>25.74</td><td>39.77%</td><td>$2,584,737</td></tr><tr><td>AF2-385</td><td>9.44</td><td>14.58%</td><td>$947,938</td></tr><tr><td>AG1-061</td><td>17.06</td><td>26.36%</td><td>$1,713,116</td></tr><tr><td>AG1-429</td><td>6.42</td><td>9.92%</td><td>$644,678</td></tr><tr><td>AG1-450</td><td>6.07</td><td>9.38%</td><td>$609,532</td></tr></table></td><td>$6,500,000</td><td>$609,532</td><td>N7048</td></tr>
</table>

<table>
<tr><th>ID</th><th>Idx</th><th>Facility</th><th>Upgrade Description</th><th>Cost</th><th>Cost Allocated to AG1-450</th><th>Upgrade Number</th></tr>
<tr><td>182552750, 182621260</td><td>1</td><td>VIENNA 230.0 kV - STEELE 230.0 kV Ckt 1</td><td>ProjectId: n7109 (dt23085r0001)
Description : Rebuild Vienna - Steele 230kV line. Rebuild will include installations of new poles, foundations, insulators, conductor and OPGW
Type : FAC
Total Cost : $62,500,000
Time Estimate : 48-60 Months
Ratings : 650.0/804.0/804.0
<table><tr><th>Queue</th><th>MW</th><th>Cost %</th><th>Cost $</th></tr><tr><td>AF2-358</td><td>38.97</td><td>18.21%</td><td>$11,380,362</td></tr><tr><td>AF2-385</td><td>28.8</td><td>13.46%</td><td>$8,410,429</td></tr><tr><td>AG1-061</td><td>40.36</td><td>18.86%</td><td>$11,786,282</td></tr><tr><td>AG1-087</td><td>60.74</td><td>28.38%</td><td>$17,737,828</td></tr><tr><td>AG1-150</td><td>14.49</td><td>6.77%</td><td>$4,231,497</td></tr><tr><td>AG1-429</td><td>21.39</td><td>9.99%</td><td>$6,246,496</td></tr><tr><td>AG1-450</td><td>9.27</td><td>4.33%</td><td>$2,707,107</td></tr></table></td><td>$62,500,000</td><td>$2,707,107</td><td>N7109</td></tr>
<tr><td>166822744</td><td>3</td><td>MIDLTNTP 138.0 kV - MT PLSNT 138.0 kV Ckt 1</td><td>ProjectId: n7753 (ds13808r0002)
Description : Upgrade circuit breaker and associated Current Transformers and Switches from 2000A to 3000A at Mt. Pleasant Substation
Type : FAC
Total Cost : $400,000
Time Estimate : 12.0 Months
Ratings : 390.0/482.0/482.0
<table><tr><th>Queue</th><th>MW</th><th>Cost %</th><th>Cost $</th></tr><tr><td>AG1-072</td><td>16.33</td><td>14.58%</td><td>$58,321</td></tr><tr><td>AG1-087</td><td>70.11</td><td>62.60%</td><td>$250,393</td></tr><tr><td>AG1-150</td><td>8.02</td><td>7.16%</td><td>$28,643</td></tr><tr><td>AG1-429</td><td>11.79</td><td>10.53%</td><td>$42,107</td></tr><tr><td>AG1-450</td><td>5.75</td><td>5.13%</td><td>$20,536</td></tr></table>
ProjectId: n6450 (dt13808r0002)
Description : Partial Reconductor of 13808 line between Mt. Pleasant and Middletown Tap
Type : FAC
Total Cost : $110,000
Time Estimate : 9-12 Months
Ratings : 329.0/372.0/372.0
Notes: Per PJM cost allocation rules, this reinforcement cost is driven by previous AF2 queue. AG1-450 presently does not receive cost allocation for this upgrade. This may change with future re-tools as projects withdraw.

ProjectId: n7141 (dt13808r0003)
Description: To mitigate the (DPL) Mt. Pleasant - Middletown Tap 138 kV line (from bus 232104 to 232106) overload is will require increasing the emergency rating of the line by rebuilding the line with new poles, conductor, foundations, insulators and OPGW. In addition, terminal upgrades will be required at Mt. Pleasant
Type : FAC
Total Cost : $7,500,000
Time Estimate : 36-48 Months
Ratings : 548.0/621.0/621.0
<table><tr><th>Queue</th><th>MW</th><th>Cost %</th><th>Cost $</th></tr><tr><td>AF2-358</td><td>7.5</td><td>4.91%</td><td>$368,369</td></tr><tr><td>AF2-385</td><td>15.35</td><td>10.05%</td><td>$753,929</td></tr><tr><td>AF2-387</td><td>32.77</td><td>21.46%</td><td>$1,609,528</td></tr><tr><td>AG1-072</td><td>1.41</td><td>0.92%</td><td>$69,253</td></tr><tr><td>AG1-087</td><td>70.11</td><td>45.91%</td><td>$3,443,517</td></tr><tr><td>AG1-150</td><td>8.02</td><td>5.25%</td><td>$393,910</td></tr><tr><td>AG1-429</td><td>11.79</td><td>7.72%</td><td>$579,077</td></tr><tr><td>AG1-450</td><td>5.75</td><td>3.77%</td><td>$282,416</td></tr></table></td><td>$8,010,000</td><td>$302,952</td><td>N7753
N6450
N7141</td></tr>
<tr><td></td><td></td><td></td><td>TOTAL COST</td><td>$337,164,000</td><td>$24,044,379</td><td></td></tr>
</table>

Note: For customers with System Reinforcements listed: If your present cost allocation to a System Reinforcement indicates $0, then please be aware that as changes to the interconnection process occur, such as prior queued projects withdrawing from the queue, reducing in size, etc, the cost responsibilities can change and a cost allocation may be assigned to your project. In addition, although your present cost allocation to a System Reinforcement is presently $0, your project may need this system reinforcement completed to be deliverable to the PJM system. If your project comes into service prior to completion of the system reinforcement, an interim deliverability study for your project will be required.

11.6 Flow Gate Details

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
182552750	232005	VIENNA	DP&L	232000	STEELE	DP&L	1	DPL_P4-2_DP3	breaker	550.0	123.99	125.65	AC	9.27

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
232404	W1-003 C	0.8	80|50	0.8
232405	W1-003 E	4.53	80|50	4.53
232406	W1-004 C	0.8	80|50	0.8
232407	W1-004 E	4.53	80|50	4.53
232408	W1-005 C	0.8	80|50	0.8
232409	W1-005 E	4.53	80|50	4.53
232410	W1-006 C	0.8	80|50	0.8
232411	W1-006 E	4.53	80|50	4.53
232412	X1-032 E	1.53	80|50	1.53
232418	X3-008 E	2.9	Adder	3.41
232427	Y1-080 E	0.65	Adder	0.76
232428	Y3-058 C	0.34	80|50	0.34
232429	Y3-058 E	2.23	80|50	2.23
232433	Z2-076 E	0.48	Adder	0.56
232435	Z2-077 E	0.48	Adder	0.56
232851	DUP-SFR1	2.15	Adder	2.53
232907	VN8	13.06	80|50	13.06
232912	OH NUG1	2.12	80|50	2.12
232914	OH NUG3	2.12	80|50	2.12
232915	OH NUG4	2.12	80|50	2.12
232916	OH NUG5	2.12	80|50	2.12
232919	VN10	0.72	80|50	0.72
232926	CRISFLD1	0.64	80|50	0.64
233923	AA1-102 C	3.62	80|50	3.62
917082	CHERRYDALE E	3.84	Adder	4.52
918835	AA1-102 E	35.99	80|50	35.99
924831	AB2-136 C	6.81	Adder	8.01
924832	AB2-136 E	7.22	Adder	8.49
925151	AB2-172 C	4.44	Adder	5.22
925152	AB2-172 E	7.24	Adder	8.52
925261	AB2-180 C	5.13	80|50	5.13
925262	AB2-180 E	2.2	80|50	2.2
927031	AC1-190 C	8.43	Adder	9.92
927032	AC1-190 E	3.61	Adder	4.25
927191	**AC1-213 C (Withdrawn : 05/24/2021)**	**0.98**	**Adder**	**1.15**
927192	**AC1-213 E (Withdrawn : 05/24/2021)**	**0.64**	**Adder**	**0.75**
930201	AB1-056 C	13.93	Adder	16.39
930202	AB1-056 E	39.67	Adder	46.67
932161	AC2-023 C	9.83	80|50	9.83
932162	AC2-023 E	7.16	80|50	7.16

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
933641	AC2-186 C	2.41	Adder	2.84
933642	AC2-186 E	3.93	Adder	4.62
938651	AE1-087 C	3.74	Adder	4.4
938652	AE1-087 E	0.93	Adder	1.09
938895	AE1-117 C	10.84	Adder	12.75
938896	AE1-117 E	28.91	Adder	34.01
939151	AE1-145	6.16	Adder	7.25
942441	AE2-257 C	7.34	Adder	8.64
942442	AE2-257 E	19.36	Adder	22.78
943361	AF1-007 C	0.41	Adder	0.48
943362	AF1-007 E	1.17	Adder	1.38
945661	AF1-231 C	2.35	Adder	2.76
945662	AF1-231 E	3.53	Adder	4.15
945791	**AF1-244 (Withdrawn : 06/07/2021)**	**3.1**	**80|50**	**3.1**
945931	AF1-258	1.17	80|50	1.17
957611	AF2-055 C	10.83	Adder	12.74
957612	AF2-055 E	4.64	Adder	5.46
957661	AF2-060	2.77	Adder	3.26
957671	AF2-061 O1	12.32	Adder	14.49
959021	AF2-193 C	25.74	Adder	30.28
959022	AF2-193 E	69.43	Adder	81.68
959031	AF2-194 C	25.74	Adder	30.28
959032	AF2-194 E	69.43	Adder	81.68
959051	AF2-196 C	2.0	Adder	2.35
959052	AF2-196 E	4.67	Adder	5.49
959161	AF2-207 C O1	6.07	Adder	7.14
959162	AF2-207 E O1	9.11	Adder	10.72
959581	AF2-249 C	0.18	Adder	0.21
959582	AF2-249 E	0.73	Adder	0.86
959591	AF2-250 C	0.33	Adder	0.39
959592	AF2-250 E	0.26	Adder	0.31
960341	AF2-325 C	1.09	Adder	1.28
960342	AF2-325 E	1.51	Adder	1.78
960671	AF2-358 C O1	22.25	80|50	22.25
960672	AF2-358 E O1	14.84	80|50	14.84
960871	AF2-378 C	0.3	Adder	0.35
960872	AF2-378 E	0.41	Adder	0.48
960881	AF2-379 C	0.63	80|50	0.63
960882	AF2-379 E	0.87	80|50	0.87
960941	AF2-385 C	14.4	Adder	16.94
960942	AF2-385 E	8.19	Adder	9.64
961181	**AF2-409 O1 (Withdrawn : 07/06/2021)**	**52.03**	**80|50**	**52.03**
962161	AG1-061 C O1	18.88	Adder	22.21
962162	AG1-061 E O1	12.59	Adder	14.81
962381	AG1-087 C O1	13.96	Adder	16.42
962382	AG1-087 E O1	37.66	Adder	44.31
963001	**AG1-149 (Withdrawn : 06/07/2021)**	**1.16**	**80|50**	**1.16**
963011	AG1-150	12.32	Adder	14.49
964551	AG1-318 C	0.07	Adder	0.08
964552	AG1-318 E	0.16	Adder	0.19

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
964962	AG1-360 E	3.35	80|50	3.35
965321	AG1-397 C	1.2	Adder	1.41
965322	AG1-397 E	1.66	Adder	1.95
965611	AG1-429 C O1	10.91	Adder	12.84
965612	AG1-429 E O1	7.27	Adder	8.55
965821	AG1-450	9.27	80|50	9.27
965921	AG1-461 C O1	4.75	Adder	5.59
965922	AG1-461 E O1	2.56	Adder	3.01
965951	AG1-464 C O1	2.53	Adder	2.98
965952	AG1-464 E O1	3.8	Adder	4.47
966601	AG1-529 C	6.37	Adder	7.49
966602	AG1-529 E	3.4	Adder	4.0
LTFEXP_AC1-056	LTFEXP_AC1-056->LTFIMP_AC1-056	0.2443	Confirmed LTF	0.2443
LTFEXP_AC1-131	LTFEXP_AC1-131->LTFIMP_AC1-131	0.1854	Confirmed LTF	0.1854
LTFEXP_BlueG	LTFEXP_BlueG->LTFIMP_BlueG	0.4238	Confirmed LTF	0.4238
LTFEXP_CALDERWOOD	LTFEXP_CALDERWOOD->LTFIMP_CALDERWOOD	0.1219	Confirmed LTF	0.1219
LTFEXP_CATAWBA	LTFEXP_CATAWBA->LTFIMP_CATAWBA	0.0862	Confirmed LTF	0.0862
LTFEXP_CHEOAH	LTFEXP_CHEOAH->LTFIMP_CHEOAH	0.1228	Confirmed LTF	0.1228
LTFEXP_COTTONWOOD	LTFEXP_COTTONWOOD->LTFIMP_COTTONWOOD	0.5142	Confirmed LTF	0.5142
LTFEXP_G-007	LTFEXP_G-007->LTFIMP_G-007	0.1265	LTF/CMTX NF	0.1265
LTFEXP_GIBSON	LTFEXP_GIBSON->LTFIMP_GIBSON	0.1333	Confirmed LTF	0.1333
LTFEXP_HAMLET	LTFEXP_HAMLET->LTFIMP_HAMLET	0.1425	Confirmed LTF	0.1425
LTFEXP_NY	LTFEXP_NY->LTFIMP_NY	0.0969	Confirmed LTF	0.0969
LTFEXP_O-066	LTFEXP_O-066->LTFIMP_O-066	0.9609	LTF/CMTX NF	0.9609
LTFEXP_PRAIRIE	LTFEXP_PRAIRIE->LTFIMP_PRAIRIE	0.6311	Confirmed LTF	0.6311
LTFEXP_TRIMBLE	LTFEXP_TRIMBLE->LTFIMP_TRIMBLE	0.1358	Confirmed LTF	0.1358

11.6.2 Index 2

ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC|DC	MW IMPACT
166822734	232100	CHURCH	DP&L	232107	TOWNSEND	DP&L	1	DPL_P7_1_DBL_1NCB_FSA	tower	348.0	179.15	180.74	AC	5.75

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
232405	W1-003 E	2.12	Adder	2.49
232407	W1-004 E	2.12	Adder	2.49
232409	W1-005 E	2.12	Adder	2.49
232411	W1-006 E	2.12	Adder	2.49
232412	X1-032 E	0.69	Adder	0.81
232417	X3-008 C	0.31	50|50	0.31
232418	X3-008 E	3.1	50|50	3.1
232422	X3-066 C	0.16	50|50	0.16
232423	X3-066 E	1.23	50|50	1.23
232424	Y1-079 C	0.23	50|50	0.23
232425	Y1-079 E	2.3	50|50	2.3
232426	Y1-080 FULL	0.05	50|50	0.05
232427	Y1-080 E	0.49	50|50	0.49
232428	Y3-058 C	0.2	50|50	0.2
232429	Y3-058 E	1.28	50|50	1.28
232433	Z2-076 E	0.32	Adder	0.38
232435	Z2-077 E	0.32	Adder	0.38
232813	VAUGHN	0.11	50|50	0.11
232851	DUP-SFR1	1.63	Adder	1.92
232902	EASTMUNI	3.52	50|50	3.52
232907	VN8	5.63	50|50	5.63
232910	NRG_G1	1.73	50|50	1.73
232911	NRG_G2	1.73	50|50	1.73
232919	VN10	0.42	50|50	0.42
232922	**MR3 (Deactivation : 01/06/2021)**	**9.05**	**Adder**	**10.65**
232926	CRISFLD1	0.34	50|50	0.34
233915	AB1-141 C	1.02	50|50	1.02
233916	AB1-141 E	2.9	50|50	2.9
233918	AB1-142 C	1.02	50|50	1.02
233919	AB1-142 E	2.9	50|50	2.9
233923	AA1-102 C	1.91	50|50	1.91
233931	AB2-179 C	-9.25	Adder	-10.88
293670	O-025 C	0.2	80|50	0.2
917082	CHERRYDALE E	2.11	Adder	2.48
918835	AA1-102 E	19.0	80|50	19.0
919831	AA2-069	40.0	Adder	47.06
923921	AB2-032 C	6.27	80|50	6.27
923922	AB2-032 E	2.95	80|50	2.95
923951	AB2-036 C	12.66	80|50	12.66
923952	AB2-036 E	20.72	80|50	20.72
924801	AB2-133 C O1	11.54	80|50	11.54

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
924802	AB2-133 E O1	14.64	80|50	14.64
924821	AB2-135 C	12.3	80|50	12.3
924822	AB2-135 E	14.03	80|50	14.03
924831	AB2-136 C	5.96	80|50	5.96
924832	AB2-136 E	6.32	80|50	6.32
924971	AB2-153 C	3.5	80|50	3.5
924972	AB2-153 E	5.72	80|50	5.72
925151	AB2-172 C	4.76	80|50	4.76
925152	AB2-172 E	7.76	80|50	7.76
925261	AB2-180 C	2.94	80|50	2.94
925262	AB2-180 E	1.26	80|50	1.26
926131	AC1-091 C	0.64	Adder	0.75
926132	AC1-091 E	1.05	Adder	1.24
926141	AC1-092 C	0.64	Adder	0.75
926142	AC1-092 E	1.05	Adder	1.24
926151	AC1-093 C	0.61	Adder	0.72
926152	AC1-093 E	1.0	Adder	1.18
926161	AC1-094 C	0.51	Adder	0.6
926162	AC1-094 E	0.85	Adder	1.0
927031	AC1-190 C	8.7	80|50	8.7
927032	AC1-190 E	3.73	80|50	3.73
927191	AC1-213 C (Withdrawn : 05/24/2021)	0.66	80|50	0.66
927192	AC1-213 E (Withdrawn : 05/24/2021)	0.43	80|50	0.43
930201	AB1-056 C	9.9	Adder	11.65
930202	AB1-056 E	28.18	Adder	33.15
931261	AB1-176 C	0.64	80|50	0.64
931262	AB1-176 E	1.05	80|50	1.05
932161	AC2-023 C	5.64	80|50	5.64
932162	AC2-023 E	4.11	80|50	4.11
933631	AC2-185 C	1.3	Adder	1.53
933632	AC2-185 E	2.12	Adder	2.49
933641	AC2-186 C	3.14	Adder	3.69
933642	AC2-186 E	5.12	Adder	6.02
936611	AD2-076 C O1	8.17	80|50	8.17
936612	AD2-076 E O1	13.33	80|50	13.33
938651	AE1-087 C	4.0	80|50	4.0
938652	AE1-087 E	1.0	80|50	1.0
938895	AE1-117 C	7.5	Adder	8.82
938896	AE1-117 E	20.01	Adder	23.54
939151	AE1-145	3.41	Adder	4.01
941021	AE2-093 C	5.06	80|50	5.06
941022	AE2-093 E	8.25	80|50	8.25
941181	AE2-112 C	2.83	80|50	2.83
941182	AE2-112 E	4.63	80|50	4.63
942441	AE2-257 C	5.15	Adder	6.06
942442	AE2-257 E	13.57	Adder	15.96
943361	AF1-007 C	0.29	Adder	0.34
943362	AF1-007 E	0.83	Adder	0.98
943441	AF1-015 C	1.91	80|50	1.91
943442	AF1-015 E	2.63	80|50	2.63
943651	AF1-036 C	3.69	80|50	3.69

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
943652	AF1-036 E	5.09	80|50	5.09
945661	AF1-231 C	1.3	Adder	1.53
945662	AF1-231 E	1.94	Adder	2.28
945791	**AF1-244 (Withdrawn : 06/07/2021)**	**1.63**	**80|50**	**1.63**
945931	AF1-258	0.67	80|50	0.67
945941	AF1-259	0.34	80|50	0.34
957611	AF2-055 C	5.97	Adder	7.02
957612	AF2-055 E	2.56	Adder	3.01
957661	AF2-060	1.53	Adder	1.8
957671	AF2-061 O1	6.81	Adder	8.01
959021	AF2-193 C	18.29	Adder	21.52
959022	AF2-193 E	49.33	Adder	58.04
959031	AF2-194 C	18.29	Adder	21.52
959032	AF2-194 E	49.33	Adder	58.04
959051	AF2-196 C	1.4	Adder	1.65
959052	AF2-196 E	3.27	Adder	3.85
959161	AF2-207 C O1	3.49	Adder	4.11
959162	AF2-207 E O1	6.16	80|50	6.16
959581	AF2-249 C	0.12	80|50	0.12
959582	AF2-249 E	0.49	80|50	0.49
959591	AF2-250 C	0.22	80|50	0.22
959592	AF2-250 E	0.17	80|50	0.17
960221	AF2-313 C	5.36	80|50	5.36
960222	AF2-313 E	3.04	80|50	3.04
960341	AF2-325 C	1.02	80|50	1.02
960342	AF2-325 E	1.41	80|50	1.41
960671	AF2-358 C O1	13.81	80|50	13.81
960672	AF2-358 E O1	9.21	80|50	9.21
960871	AF2-378 C	0.27	80|50	0.27
960872	AF2-378 E	0.37	80|50	0.37
960881	AF2-379 C	0.34	80|50	0.34
960882	AF2-379 E	0.47	80|50	0.47
960941	AF2-385 C	9.74	80|50	9.74
960942	AF2-385 E	5.54	80|50	5.54
961181	**AF2-409 O1 (Withdrawn : 07/06/2021)**	**22.45**	**80|50**	**22.45**
962161	AG1-061 C O1	13.78	80|50	13.78
962162	AG1-061 E O1	9.19	80|50	9.19
962261	AG1-072	16.33	80|50	16.33
962302	**AG1-079 E (Withdrawn : 08/03/2021)**	**0.49**	**80|50**	**0.49**
962381	AG1-087 C O1	16.12	Adder	18.96
962382	AG1-087 E O1	43.48	Adder	51.15
963001	**AG1-149 (Withdrawn : 06/07/2021)**	**0.61**	**80|50**	**0.61**
963011	AG1-150	6.81	Adder	8.01
964551	AG1-318 C	0.05	Adder	0.06
964552	AG1-318 E	0.11	Adder	0.13
964962	AG1-360 E	1.51	Adder	1.78
965321	AG1-397 C	0.71	Adder	0.84
965322	AG1-397 E	0.98	Adder	1.15
965611	AG1-429 C O1	6.01	Adder	7.07

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
965612	AG1-429 E O1	4.01	Adder	4.72
965821	AG1-450	5.75	80|50	5.75
965921	AG1-461 C O1	3.23	Adder	3.8
965922	AG1-461 E O1	1.74	Adder	2.05
965951	AG1-464 C O1	3.3	Adder	3.88
965952	AG1-464 E O1	4.96	Adder	5.84
966281	AG1-497 C O1	7.45	Adder	8.76
966282	AG1-497 E O1	3.19	Adder	3.75
966601	AG1-529 C	7.19	Adder	8.46
966602	AG1-529 E	3.84	Adder	4.52
LTFEXP_AC1-056	LTFEXP_AC1-056->LTFIMP_AC1-056	0.1833	Confirmed LTF	0.1833
LTFEXP_AC1-131	LTFEXP_AC1-131->LTFIMP_AC1-131	0.1408	Confirmed LTF	0.1408
LTFEXP_BlueG	LTFEXP_BlueG->LTFIMP_BlueG	0.3178	Confirmed LTF	0.3178
LTFEXP_CALDERWOOD	LTFEXP_CALDERWOOD->LTFIMP_CALDERWOOD	0.0919	Confirmed LTF	0.0919
LTFEXP_CATAWBA	LTFEXP_CATAWBA->LTFIMP_CATAWBA	0.0652	Confirmed LTF	0.0652
LTFEXP_CHEOAH	LTFEXP_CHEOAH->LTFIMP_CHEOAH	0.0925	Confirmed LTF	0.0925
LTFEXP_COTTONWOOD	LTFEXP_COTTONWOOD->LTFIMP_COTTONWOOD	0.3869	Confirmed LTF	0.3869
LTFEXP_G-007	LTFEXP_G-007->LTFIMP_G-007	0.0366	LTF/CMTX NF	0.0366
LTFEXP_GIBSON	LTFEXP_GIBSON->LTFIMP_GIBSON	0.1	Confirmed LTF	0.1
LTFEXP_HAMLET	LTFEXP_HAMLET->LTFIMP_HAMLET	0.1081	Confirmed LTF	0.1081
LTFEXP_NY	LTFEXP_NY->LTFIMP_NY	0.0577	Confirmed LTF	0.0577
LTFEXP_O-066	LTFEXP_O-066->LTFIMP_O-066	0.4445	LTF/CMTX NF	0.4445
LTFEXP_PRAIRIE	LTFEXP_PRAIRIE->LTFIMP_PRAIRIE	0.4739	Confirmed LTF	0.4739
LTFEXP_TRIMBLE	LTFEXP_TRIMBLE->LTFIMP_TRIMBLE	0.1019	Confirmed LTF	0.1019

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
166822744	232106	MIDLTNTP	DP&L	232104	MT PLSNT	DP&L	1	DPL_P7_1_DBL_1NCB_FSA	tower	348.0	162.62	164.3	AC	5.75

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
232405	W1-003 E	2.12	Adder	2.49
232407	W1-004 E	2.12	Adder	2.49
232409	W1-005 E	2.12	Adder	2.49
232411	W1-006 E	2.12	Adder	2.49
232412	X1-032 E	0.69	Adder	0.81
232417	X3-008 C	0.31	80|50	0.31
232418	X3-008 E	3.1	80|50	3.1
232422	X3-066 C	0.16	80|50	0.16
232423	X3-066 E	1.23	80|50	1.23
232424	Y1-079 C	0.23	80|50	0.23
232425	Y1-079 E	2.3	80|50	2.3
232426	Y1-080 FULL	0.05	80|50	0.05
232427	Y1-080 E	0.49	80|50	0.49
232428	Y3-058 C	0.2	80|50	0.2
232429	Y3-058 E	1.28	80|50	1.28
232433	Z2-076 E	0.32	Adder	0.38
232435	Z2-077 E	0.32	Adder	0.38
232813	VAUGHN	0.11	80|50	0.11
232851	DUP-SFR1	1.63	Adder	1.92
232902	EASTMUNI	3.52	80|50	3.52
232907	VN8	5.63	80|50	5.63
232910	NRG_G1	1.73	80|50	1.73
232911	NRG_G2	1.73	80|50	1.73
232919	VN10	0.42	80|50	0.42
232922	**MR3 (Deactivation : 01/06/2021)**	**9.05**	**Adder**	**10.65**
232926	CRISFLD1	0.34	80|50	0.34
233915	AB1-141 C	1.02	80|50	1.02
233916	AB1-141 E	2.9	80|50	2.9
233918	AB1-142 C	1.02	80|50	1.02
233919	AB1-142 E	2.9	80|50	2.9
233923	AA1-102 C	1.91	80|50	1.91
233931	AB2-179 C	27.12	80|50	27.12
293670	O-025 C	0.2	80|50	0.2
917082	CHERRYDALE E	2.11	Adder	2.48
918835	AA1-102 E	19.0	80|50	19.0
919831	AA2-069	40.0	Adder	47.06
923921	AB2-032 C	6.27	80|50	6.27
923922	AB2-032 E	2.95	80|50	2.95
923951	AB2-036 C	12.66	80|50	12.66
923952	AB2-036 E	20.72	80|50	20.72
924801	AB2-133 C O1	11.54	80|50	11.54

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
924802	AB2-133 E O1	14.64	80|50	14.64
924821	AB2-135 C	12.3	80|50	12.3
924822	AB2-135 E	14.03	80|50	14.03
924831	AB2-136 C	5.96	80|50	5.96
924832	AB2-136 E	6.32	80|50	6.32
924971	AB2-153 C	3.5	80|50	3.5
924972	AB2-153 E	5.72	80|50	5.72
925151	AB2-172 C	4.76	80|50	4.76
925152	AB2-172 E	7.76	80|50	7.76
925254	AB2-179 E	8.85	80|50	8.85
925261	AB2-180 C	2.94	80|50	2.94
925262	AB2-180 E	1.26	80|50	1.26
926131	AC1-091 C	0.64	Adder	0.75
926132	AC1-091 E	1.05	Adder	1.24
926141	AC1-092 C	0.64	Adder	0.75
926142	AC1-092 E	1.05	Adder	1.24
926151	AC1-093 C	0.61	Adder	0.72
926152	AC1-093 E	1.0	Adder	1.18
926161	AC1-094 C	0.51	Adder	0.6
926162	AC1-094 E	0.85	Adder	1.0
927031	AC1-190 C	8.7	80|50	8.7
927032	AC1-190 E	3.73	80|50	3.73
927191	**AC1-213 C (Withdrawn : 05/24/2021)**	**0.66**	**80|50**	**0.66**
927192	**AC1-213 E (Withdrawn : 05/24/2021)**	**0.43**	**80|50**	**0.43**
930201	AB1-056 C	9.9	Adder	11.65
930202	AB1-056 E	28.18	Adder	33.15
931261	AB1-176 C	0.64	80|50	0.64
931262	AB1-176 E	1.05	80|50	1.05
932161	AC2-023 C	5.64	80|50	5.64
932162	AC2-023 E	4.11	80|50	4.11
933631	AC2-185 C	1.3	Adder	1.53
933632	AC2-185 E	2.12	Adder	2.49
933641	AC2-186 C	3.14	Adder	3.69
933642	AC2-186 E	5.12	Adder	6.02
936611	AD2-076 C O1	8.17	80|50	8.17
936612	AD2-076 E O1	13.33	80|50	13.33
938651	AE1-087 C	4.0	80|50	4.0
938652	AE1-087 E	1.0	80|50	1.0
938895	AE1-117 C	7.5	Adder	8.82
938896	AE1-117 E	20.01	Adder	23.54
939151	AE1-145	3.41	Adder	4.01
941021	AE2-093 C	5.06	80|50	5.06
941022	AE2-093 E	8.25	80|50	8.25
941181	AE2-112 C	2.83	80|50	2.83
941182	AE2-112 E	4.63	80|50	4.63
942441	AE2-257 C	5.15	Adder	6.06
942442	AE2-257 E	13.57	Adder	15.96
943361	AF1-007 C	0.29	Adder	0.34
943362	AF1-007 E	0.83	Adder	0.98
943441	AF1-015 C	1.91	80|50	1.91
943442	AF1-015 E	2.63	80|50	2.63

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
943651	AF1-036 C	3.69	80|50	3.69
943652	AF1-036 E	5.09	80|50	5.09
945661	AF1-231 C	1.3	Adder	1.53
945662	AF1-231 E	1.94	Adder	2.28
945791	**AF1-244 (Withdrawn : 06/07/2021)**	**1.63**	**80|50**	**1.63**
945931	AF1-258	0.67	80|50	0.67
945941	AF1-259	0.34	80|50	0.34
957611	AF2-055 C	5.97	Adder	7.02
957612	AF2-055 E	2.56	Adder	3.01
957661	AF2-060	1.53	Adder	1.8
957671	AF2-061 O1	6.81	Adder	8.01
959021	AF2-193 C	18.29	Adder	21.52
959022	AF2-193 E	49.33	Adder	58.04
959031	AF2-194 C	18.29	Adder	21.52
959032	AF2-194 E	49.33	Adder	58.04
959051	AF2-196 C	1.4	Adder	1.65
959052	AF2-196 E	3.27	Adder	3.85
959161	AF2-207 C O1	3.49	Adder	4.11
959162	AF2-207 E O1	6.16	80|50	6.16
959581	AF2-249 C	0.12	80|50	0.12
959582	AF2-249 E	0.49	80|50	0.49
959591	AF2-250 C	0.22	80|50	0.22
959592	AF2-250 E	0.17	80|50	0.17
960221	AF2-313 C	5.36	80|50	5.36
960222	AF2-313 E	3.04	80|50	3.04
960341	AF2-325 C	1.02	80|50	1.02
960342	AF2-325 E	1.41	80|50	1.41
960671	AF2-358 C O1	13.81	80|50	13.81
960672	AF2-358 E O1	9.21	80|50	9.21
960871	AF2-378 C	0.27	80|50	0.27
960872	AF2-378 E	0.37	80|50	0.37
960881	AF2-379 C	0.34	80|50	0.34
960882	AF2-379 E	0.47	80|50	0.47
960941	AF2-385 C	9.74	80|50	9.74
960942	AF2-385 E	5.54	80|50	5.54
961181	**AF2-409 O1 (Withdrawn : 07/06/2021)**	**22.45**	**80|50**	**22.45**
962161	AG1-061 C O1	13.78	80|50	13.78
962162	AG1-061 E O1	9.19	80|50	9.19
962261	AG1-072	16.33	80|50	16.33
962302	**AG1-079 E (Withdrawn : 08/03/2021)**	**0.49**	**80|50**	**0.49**
962381	AG1-087 C O1	16.12	Adder	18.96
962382	AG1-087 E O1	43.48	Adder	51.15
963001	**AG1-149 (Withdrawn : 06/07/2021)**	**0.61**	**80|50**	**0.61**
963011	AG1-150	6.81	Adder	8.01
964551	AG1-318 C	0.05	Adder	0.06
964552	AG1-318 E	0.11	Adder	0.13
964962	AG1-360 E	1.51	Adder	1.78
965321	AG1-397 C	0.71	Adder	0.84
965322	AG1-397 E	0.98	Adder	1.15

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
965611	AG1-429 C O1	6.01	Adder	7.07
965612	AG1-429 E O1	4.01	Adder	4.72
965821	AG1-450	5.75	80|50	5.75
965921	AG1-461 C O1	3.23	Adder	3.8
965922	AG1-461 E O1	1.74	Adder	2.05
965951	AG1-464 C O1	3.3	Adder	3.88
965952	AG1-464 E O1	4.96	Adder	5.84
966281	AG1-497 C O1	7.45	Adder	8.76
966282	AG1-497 E O1	3.19	Adder	3.75
966601	AG1-529 C	7.19	Adder	8.46
966602	AG1-529 E	3.84	Adder	4.52
LTFEXP_AC1-056	LTFEXP_AC1-056->LTFIMP_AC1-056	0.1833	Confirmed LTF	0.1833
LTFEXP_AC1-131	LTFEXP_AC1-131->LTFIMP_AC1-131	0.1408	Confirmed LTF	0.1408
LTFEXP_BlueG	LTFEXP_BlueG->LTFIMP_BlueG	0.3178	Confirmed LTF	0.3178
LTFEXP_CALDERWOOD	LTFEXP_CALDERWOOD->LTFIMP_CALDERWOOD	0.0919	Confirmed LTF	0.0919
LTFEXP_CATAWBA	LTFEXP_CATAWBA->LTFIMP_CATAWBA	0.0652	Confirmed LTF	0.0652
LTFEXP_CHEOAH	LTFEXP_CHEOAH->LTFIMP_CHEOAH	0.0925	Confirmed LTF	0.0925
LTFEXP_COTTONWOOD	LTFEXP_COTTONWOOD->LTFIMP_COTTONWOOD	0.3869	Confirmed LTF	0.3869
LTFEXP_G-007	LTFEXP_G-007->LTFIMP_G-007	0.0366	LTF/CMTX NF	0.0366
LTFEXP_GIBSON	LTFEXP_GIBSON->LTFIMP_GIBSON	0.1	Confirmed LTF	0.1
LTFEXP_HAMLET	LTFEXP_HAMLET->LTFIMP_HAMLET	0.1081	Confirmed LTF	0.1081
LTFEXP_NY	LTFEXP_NY->LTFIMP_NY	0.0577	Confirmed LTF	0.0577
LTFEXP_O-066	LTFEXP_O-066->LTFIMP_O-066	0.4445	LTF/CMTX NF	0.4445
LTFEXP_PRAIRIE	LTFEXP_PRAIRIE->LTFIMP_PRAIRIE	0.4739	Confirmed LTF	0.4739
LTFEXP_TRIMBLE	LTFEXP_TRIMBLE->LTFIMP_TRIMBLE	0.1019	Confirmed LTF	0.1019

11.6.4 Index 4

ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC|DC	MW IMPACT
166822729	232107	TOWNSEND	DP&L	232106	MIDLTNTP	DP&L	1	DPL_P7_1_DBL_1NCB_FSA	tower	348.0	186.76	188.44	AC	5.75

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
232405	W1-003 E	2.12	Adder	2.49
232407	W1-004 E	2.12	Adder	2.49
232409	W1-005 E	2.12	Adder	2.49
232411	W1-006 E	2.12	Adder	2.49
232412	X1-032 E	0.69	Adder	0.81
232417	X3-008 C	0.31	80|50	0.31
232418	X3-008 E	3.1	80|50	3.1
232422	X3-066 C	0.16	80|50	0.16
232423	X3-066 E	1.23	80|50	1.23
232424	Y1-079 C	0.23	80|50	0.23
232425	Y1-079 E	2.3	80|50	2.3
232426	Y1-080 FULL	0.05	80|50	0.05
232427	Y1-080 E	0.49	80|50	0.49
232428	Y3-058 C	0.2	80|50	0.2
232429	Y3-058 E	1.28	80|50	1.28
232433	Z2-076 E	0.32	Adder	0.38
232435	Z2-077 E	0.32	Adder	0.38
232813	VAUGHN	0.11	80|50	0.11
232851	DUP-SFR1	1.63	Adder	1.92
232902	EASTMUNI	3.52	80|50	3.52
232907	VN8	5.63	80|50	5.63
232910	NRG_G1	1.73	80|50	1.73
232911	NRG_G2	1.73	80|50	1.73
232919	VN10	0.42	80|50	0.42
232922	**MR3 (Deactivation : 01/06/2021)**	**9.05**	**Adder**	**10.65**
232926	CRISFLD1	0.34	80|50	0.34
233915	AB1-141 C	1.02	80|50	1.02
233916	AB1-141 E	2.9	80|50	2.9
233918	AB1-142 C	1.02	80|50	1.02
233919	AB1-142 E	2.9	80|50	2.9
233923	AA1-102 C	1.91	80|50	1.91
233931	AB2-179 C	27.12	80|50	27.12
293670	O-025 C	0.2	80|50	0.2
917082	CHERRYDALE E	2.11	Adder	2.48
918835	AA1-102 E	19.0	80|50	19.0
919831	AA2-069	40.0	Adder	47.06
923921	AB2-032 C	6.27	80|50	6.27
923922	AB2-032 E	2.95	80|50	2.95
923951	AB2-036 C	12.66	80|50	12.66
923952	AB2-036 E	20.72	80|50	20.72
924801	AB2-133 C O1	11.54	80|50	11.54

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
924802	AB2-133 E O1	14.64	80|50	14.64
924821	AB2-135 C	12.3	80|50	12.3
924822	AB2-135 E	14.03	80|50	14.03
924831	AB2-136 C	5.96	80|50	5.96
924832	AB2-136 E	6.32	80|50	6.32
924971	AB2-153 C	3.5	80|50	3.5
924972	AB2-153 E	5.72	80|50	5.72
925151	AB2-172 C	4.76	80|50	4.76
925152	AB2-172 E	7.76	80|50	7.76
925254	AB2-179 E	8.85	80|50	8.85
925261	AB2-180 C	2.94	80|50	2.94
925262	AB2-180 E	1.26	80|50	1.26
926131	AC1-091 C	0.64	Adder	0.75
926132	AC1-091 E	1.05	Adder	1.24
926141	AC1-092 C	0.64	Adder	0.75
926142	AC1-092 E	1.05	Adder	1.24
926151	AC1-093 C	0.61	Adder	0.72
926152	AC1-093 E	1.0	Adder	1.18
926161	AC1-094 C	0.51	Adder	0.6
926162	AC1-094 E	0.85	Adder	1.0
927031	AC1-190 C	8.7	80|50	8.7
927032	AC1-190 E	3.73	80|50	3.73
927191	**AC1-213 C (Withdrawn : 05/24/2021)**	**0.66**	**80|50**	**0.66**
927192	**AC1-213 E (Withdrawn : 05/24/2021)**	**0.43**	**80|50**	**0.43**
930201	AB1-056 C	9.9	Adder	11.65
930202	AB1-056 E	28.18	Adder	33.15
931261	AB1-176 C	0.64	80|50	0.64
931262	AB1-176 E	1.05	80|50	1.05
932161	AC2-023 C	5.64	80|50	5.64
932162	AC2-023 E	4.11	80|50	4.11
933631	AC2-185 C	1.3	Adder	1.53
933632	AC2-185 E	2.12	Adder	2.49
933641	AC2-186 C	3.14	Adder	3.69
933642	AC2-186 E	5.12	Adder	6.02
936611	AD2-076 C O1	8.17	80|50	8.17
936612	AD2-076 E O1	13.33	80|50	13.33
938651	AE1-087 C	4.0	80|50	4.0
938652	AE1-087 E	1.0	80|50	1.0
938895	AE1-117 C	7.5	Adder	8.82
938896	AE1-117 E	20.01	Adder	23.54
939151	AE1-145	3.41	Adder	4.01
941021	AE2-093 C	5.06	80|50	5.06
941022	AE2-093 E	8.25	80|50	8.25
941181	AE2-112 C	2.83	80|50	2.83
941182	AE2-112 E	4.63	80|50	4.63
942441	AE2-257 C	5.15	Adder	6.06
942442	AE2-257 E	13.57	Adder	15.96
943361	AF1-007 C	0.29	Adder	0.34
943362	AF1-007 E	0.83	Adder	0.98
943441	AF1-015 C	1.91	80|50	1.91
943442	AF1-015 E	2.63	80|50	2.63

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
943651	AF1-036 C	3.69	80|50	3.69
943652	AF1-036 E	5.09	80|50	5.09
945661	AF1-231 C	1.3	Adder	1.53
945662	AF1-231 E	1.94	Adder	2.28
945791	**AF1-244 (Withdrawn : 06/07/2021)**	**1.63**	**80|50**	**1.63**
945931	AF1-258	0.67	80|50	0.67
945941	AF1-259	0.34	80|50	0.34
957611	AF2-055 C	5.97	Adder	7.02
957612	AF2-055 E	2.56	Adder	3.01
957661	AF2-060	1.53	Adder	1.8
957671	AF2-061 O1	6.81	Adder	8.01
959021	AF2-193 C	18.29	Adder	21.52
959022	AF2-193 E	49.33	Adder	58.04
959031	AF2-194 C	18.29	Adder	21.52
959032	AF2-194 E	49.33	Adder	58.04
959051	AF2-196 C	1.4	Adder	1.65
959052	AF2-196 E	3.27	Adder	3.85
959161	AF2-207 C O1	3.49	Adder	4.11
959162	AF2-207 E O1	6.16	80|50	6.16
959581	AF2-249 C	0.12	80|50	0.12
959582	AF2-249 E	0.49	80|50	0.49
959591	AF2-250 C	0.22	80|50	0.22
959592	AF2-250 E	0.17	80|50	0.17
960221	AF2-313 C	5.36	80|50	5.36
960222	AF2-313 E	3.04	80|50	3.04
960341	AF2-325 C	1.02	80|50	1.02
960342	AF2-325 E	1.41	80|50	1.41
960671	AF2-358 C O1	13.81	80|50	13.81
960672	AF2-358 E O1	9.21	80|50	9.21
960871	AF2-378 C	0.27	80|50	0.27
960872	AF2-378 E	0.37	80|50	0.37
960881	AF2-379 C	0.34	80|50	0.34
960882	AF2-379 E	0.47	80|50	0.47
960941	AF2-385 C	9.74	80|50	9.74
960942	AF2-385 E	5.54	80|50	5.54
961181	**AF2-409 O1 (Withdrawn : 07/06/2021)**	**22.45**	**80|50**	**22.45**
962161	AG1-061 C O1	13.78	80|50	13.78
962162	AG1-061 E O1	9.19	80|50	9.19
962261	AG1-072	16.33	80|50	16.33
962302	**AG1-079 E (Withdrawn : 08/03/2021)**	**0.49**	**80|50**	**0.49**
962381	AG1-087 C O1	16.12	Adder	18.96
962382	AG1-087 E O1	43.48	Adder	51.15
963001	**AG1-149 (Withdrawn : 06/07/2021)**	**0.61**	**80|50**	**0.61**
963011	AG1-150	6.81	Adder	8.01
964551	AG1-318 C	0.05	Adder	0.06
964552	AG1-318 E	0.11	Adder	0.13
964962	AG1-360 E	1.51	Adder	1.78
965321	AG1-397 C	0.71	Adder	0.84
965322	AG1-397 E	0.98	Adder	1.15

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
965611	AG1-429 C O1	6.01	Adder	7.07
965612	AG1-429 E O1	4.01	Adder	4.72
965821	AG1-450	5.75	80|50	5.75
965921	AG1-461 C O1	3.23	Adder	3.8
965922	AG1-461 E O1	1.74	Adder	2.05
965951	AG1-464 C O1	3.3	Adder	3.88
965952	AG1-464 E O1	4.96	Adder	5.84
966281	AG1-497 C O1	7.45	Adder	8.76
966282	AG1-497 E O1	3.19	Adder	3.75
966601	AG1-529 C	7.19	Adder	8.46
966602	AG1-529 E	3.84	Adder	4.52
LTFEXP_AC1-056	LTFEXP_AC1-056->LTFIMP_AC1-056	0.1833	Confirmed LTF	0.1833
LTFEXP_AC1-131	LTFEXP_AC1-131->LTFIMP_AC1-131	0.1408	Confirmed LTF	0.1408
LTFEXP_BlueG	LTFEXP_BlueG->LTFIMP_BlueG	0.3178	Confirmed LTF	0.3178
LTFEXP_CALDERWOOD	LTFEXP_CALDERWOOD->LTFIMP_CALDERWOOD	0.0919	Confirmed LTF	0.0919
LTFEXP_CATAWBA	LTFEXP_CATAWBA->LTFIMP_CATAWBA	0.0652	Confirmed LTF	0.0652
LTFEXP_CHEOAH	LTFEXP_CHEOAH->LTFIMP_CHEOAH	0.0925	Confirmed LTF	0.0925
LTFEXP_COTTONWOOD	LTFEXP_COTTONWOOD->LTFIMP_COTTONWOOD	0.3869	Confirmed LTF	0.3869
LTFEXP_G-007	LTFEXP_G-007->LTFIMP_G-007	0.0366	LTF/CMTX NF	0.0366
LTFEXP_GIBSON	LTFEXP_GIBSON->LTFIMP_GIBSON	0.1	Confirmed LTF	0.1
LTFEXP_HAMLET	LTFEXP_HAMLET->LTFIMP_HAMLET	0.1081	Confirmed LTF	0.1081
LTFEXP_NY	LTFEXP_NY->LTFIMP_NY	0.0577	Confirmed LTF	0.0577
LTFEXP_O-066	LTFEXP_O-066->LTFIMP_O-066	0.4445	LTF/CMTX NF	0.4445
LTFEXP_PRAIRIE	LTFEXP_PRAIRIE->LTFIMP_PRAIRIE	0.4739	Confirmed LTF	0.4739
LTFEXP_TRIMBLE	LTFEXP_TRIMBLE->LTFIMP_TRIMBLE	0.1019	Confirmed LTF	0.1019

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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
174309157	232112	FELTON	DP&L	232110	CHESWOLD	DP&L	1	DPL_P4-2_DP11	breaker	242.0	110.18	111.1	AC	2.74

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
231940	T-011	0.09	80|50	0.09
232405	W1-003 E	1.29	Adder	1.52
232407	W1-004 E	1.29	Adder	1.52
232409	W1-005 E	1.29	Adder	1.52
232411	W1-006 E	1.29	Adder	1.52
232412	X1-032 E	0.49	80|50	0.49
232418	X3-008 E	0.9	Adder	1.06
232427	Y1-080 E	0.19	Adder	0.22
232428	Y3-058 C	0.11	80|50	0.11
232429	Y3-058 E	0.75	80|50	0.75
232432	Z2-076 C	0.08	80|50	0.08
232433	Z2-076 E	0.26	80|50	0.26
232434	Z2-077 C	0.08	80|50	0.08
232435	Z2-077 E	0.26	80|50	0.26
232851	DUP-SFR1	1.74	80|50	1.74
232920	IR10	0.33	80|50	0.33
232921	TASLEY2G	0.47	80|50	0.47
232922	**MR3 (Deactivation : 01/06/2021)**	**4.91**	**Adder**	**5.78**
232926	CRISFLD1	0.2	80|50	0.2
233923	AA1-102 C	1.14	80|50	1.14
293670	O-025 C	0.12	80|50	0.12
917082	CHERRYDALE E	1.29	Adder	1.52
918835	AA1-102 E	11.37	80|50	11.37
919831	AA2-069	21.7	Adder	25.53
924831	AB2-136 C	2.06	Adder	2.42
924832	AB2-136 E	2.18	Adder	2.56
925151	AB2-172 C	1.39	Adder	1.64
925152	AB2-172 E	2.26	Adder	2.66
925261	AB2-180 C	1.72	80|50	1.72
925262	AB2-180 E	0.74	80|50	0.74
927031	AC1-190 C	2.62	Adder	3.08
927032	AC1-190 E	1.12	Adder	1.32
927191	**AC1-213 C (Withdrawn : 05/24/2021)**	**0.4**	**80|50**	**0.4**
927192	**AC1-213 E (Withdrawn : 05/24/2021)**	**0.26**	**80|50**	**0.26**
930201	AB1-056 C	6.61	Adder	7.78
930202	AB1-056 E	18.84	Adder	22.16
932161	AC2-023 C	2.73	Adder	3.21
932162	AC2-023 E	1.99	Adder	2.34
933641	AC2-186 C	2.8	80|50	2.8

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
933642	AC2-186 E	4.57	80|50	4.57
938651	AE1-087 C	1.17	Adder	1.38
938652	AE1-087 E	0.29	Adder	0.34
938895	AE1-117 C	6.1	80|50	6.1
938896	AE1-117 E	16.27	80|50	16.27
939151	AE1-145	2.45	80|50	2.45
942441	AE2-257 C	4.17	80|50	4.17
942442	AE2-257 E	11.0	80|50	11.0
943361	AF1-007 C	0.2	Adder	0.24
943362	AF1-007 E	0.55	Adder	0.65
945661	AF1-231 C	0.79	Adder	0.93
945662	AF1-231 E	1.18	Adder	1.39
945791	**AF1-244 (Withdrawn : 06/07/2021)**	**0.98**	**80|50**	**0.98**
945931	AF1-258	0.39	80|50	0.39
957611	AF2-055 C	3.64	Adder	4.28
957612	AF2-055 E	1.56	Adder	1.84
957661	AF2-060	1.1	80|50	1.1
957671	AF2-061 O1	4.89	80|50	4.89
959021	AF2-193 C	12.22	Adder	14.38
959022	AF2-193 E	32.97	Adder	38.79
959031	AF2-194 C	12.22	Adder	14.38
959032	AF2-194 E	32.97	Adder	38.79
959051	AF2-196 C	1.14	80|50	1.14
959052	AF2-196 E	2.66	80|50	2.66
959161	AF2-207 C O1	2.68	80|50	2.68
959162	AF2-207 E O1	4.01	80|50	4.01
959581	AF2-249 C	0.08	80|50	0.08
959582	AF2-249 E	0.31	80|50	0.31
959591	AF2-250 C	0.14	80|50	0.14
959592	AF2-250 E	0.11	80|50	0.11
960341	AF2-325 C	0.33	Adder	0.39
960342	AF2-325 E	0.46	Adder	0.54
960671	AF2-358 C O1	5.59	Adder	6.58
960672	AF2-358 E O1	3.73	Adder	4.39
960871	AF2-378 C	0.09	Adder	0.11
960872	AF2-378 E	0.13	Adder	0.15
960881	AF2-379 C	0.2	80|50	0.2
960882	AF2-379 E	0.28	80|50	0.28
960941	AF2-385 C	6.34	80|50	6.34
960942	AF2-385 E	3.61	80|50	3.61
961181	**AF2-409 O1 (Withdrawn : 07/06/2021)**	**10.34**	**Adder**	**12.16**
962161	AG1-061 C O1	8.76	80|50	8.76
962162	AG1-061 E O1	5.84	80|50	5.84
962381	AG1-087 C O1	9.98	Adder	11.74
962382	AG1-087 E O1	26.92	Adder	31.67
963001	**AG1-149 (Withdrawn : 06/07/2021)**	**0.37**	**80|50**	**0.37**
963011	AG1-150	4.89	80|50	4.89
964551	AG1-318 C	0.04	80|50	0.04
964552	AG1-318 E	0.09	80|50	0.09
964962	AG1-360 E	1.07	80|50	1.07

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
965321	AG1-397 C	0.53	80|50	0.53
965322	AG1-397 E	0.73	80|50	0.73
965611	AG1-429 C O1	3.66	Adder	4.31
965612	AG1-429 E O1	2.44	Adder	2.87
965821	AG1-450	2.33	Adder	2.74
965921	AG1-461 C O1	2.76	80|50	2.76
965922	AG1-461 E O1	1.49	80|50	1.49
965951	AG1-464 C O1	2.95	80|50	2.95
965952	AG1-464 E O1	4.43	80|50	4.43
966281	AG1-497 C O1	4.04	Adder	4.75
966282	AG1-497 E O1	1.73	Adder	2.04
966601	AG1-529 C	10.06	80|50	10.06
966602	AG1-529 E	5.37	80|50	5.37
LTFEXP_AC1-056	LTFEXP_AC1-056->LTFIMP_AC1-056	0.0652	Confirmed LTF	0.0652
LTFEXP_AC1-131	LTFEXP_AC1-131->LTFIMP_AC1-131	0.049	Confirmed LTF	0.049
LTFEXP_BlueG	LTFEXP_BlueG->LTFIMP_BlueG	0.113	Confirmed LTF	0.113
LTFEXP_CALDERWOOD	LTFEXP_CALDERWOOD->LTFIMP_CALDERWOOD	0.0324	Confirmed LTF	0.0324
LTFEXP_CATAWBA	LTFEXP_CATAWBA->LTFIMP_CATAWBA	0.0228	Confirmed LTF	0.0228
LTFEXP_CHEOAH	LTFEXP_CHEOAH->LTFIMP_CHEOAH	0.0326	Confirmed LTF	0.0326
LTFEXP_COTTONWOOD	LTFEXP_COTTONWOOD->LTFIMP_COTTONWOOD	0.1368	Confirmed LTF	0.1368
LTFEXP_G-007	LTFEXP_G-007->LTFIMP_G-007	0.0604	LTF/CMTX NF	0.0604
LTFEXP_GIBSON	LTFEXP_GIBSON->LTFIMP_GIBSON	0.0356	Confirmed LTF	0.0356
LTFEXP_HAMLET	LTFEXP_HAMLET->LTFIMP_HAMLET	0.0377	Confirmed LTF	0.0377
LTFEXP_NY	LTFEXP_NY->LTFIMP_NY	0.0337	Confirmed LTF	0.0337
LTFEXP_O-066	LTFEXP_O-066->LTFIMP_O-066	0.3973	LTF/CMTX NF	0.3973
LTFEXP_PRAIRIE	LTFEXP_PRAIRIE->LTFIMP_PRAIRIE	0.1682	Confirmed LTF	0.1682
LTFEXP_TRIMBLE	LTFEXP_TRIMBLE->LTFIMP_TRIMBLE	0.0362	Confirmed LTF	0.0362

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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
174309128	232114	SHARNGTN	DP&L	232112	FELTON	DP&L	1	DPL_P4-2_DP11	breaker	242.0	118.35	119.27	AC	2.74

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
231940	T-011	0.09	80|50	0.09
232405	W1-003 E	1.29	Adder	1.52
232407	W1-004 E	1.29	Adder	1.52
232409	W1-005 E	1.29	Adder	1.52
232411	W1-006 E	1.29	Adder	1.52
232412	X1-032 E	0.49	80|50	0.49
232418	X3-008 E	0.9	Adder	1.06
232427	Y1-080 E	0.19	Adder	0.22
232428	Y3-058 C	0.11	80|50	0.11
232429	Y3-058 E	0.75	80|50	0.75
232432	Z2-076 C	0.08	80|50	0.08
232433	Z2-076 E	0.26	80|50	0.26
232434	Z2-077 C	0.08	80|50	0.08
232435	Z2-077 E	0.26	80|50	0.26
232851	DUP-SFR1	1.74	80|50	1.74
232920	IR10	0.33	80|50	0.33
232921	TASLEY2G	0.47	80|50	0.47
232922	**MR3 (Deactivation : 01/06/2021)**	**4.91**	**Adder**	**5.78**
232926	CRISFLD1	0.2	80|50	0.2
233923	AA1-102 C	1.14	80|50	1.14
293670	O-025 C	0.12	80|50	0.12
917082	CHERRYDALE E	1.29	Adder	1.52
918835	AA1-102 E	11.37	80|50	11.37
919831	AA2-069	21.7	Adder	25.53
924831	AB2-136 C	2.06	Adder	2.42
924832	AB2-136 E	2.18	Adder	2.56
925151	AB2-172 C	1.39	Adder	1.64
925152	AB2-172 E	2.26	Adder	2.66
925261	AB2-180 C	1.72	80|50	1.72
925262	AB2-180 E	0.74	80|50	0.74
927031	AC1-190 C	2.62	Adder	3.08
927032	AC1-190 E	1.12	Adder	1.32
927191	**AC1-213 C (Withdrawn : 05/24/2021)**	**0.4**	**80|50**	**0.4**
927192	**AC1-213 E (Withdrawn : 05/24/2021)**	**0.26**	**80|50**	**0.26**
930201	AB1-056 C	6.61	Adder	7.78
930202	AB1-056 E	18.84	Adder	22.16
932161	AC2-023 C	2.73	Adder	3.21
932162	AC2-023 E	1.99	Adder	2.34
933641	AC2-186 C	2.8	80|50	2.8

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
933642	AC2-186 E	4.57	80|50	4.57
938651	AE1-087 C	1.17	Adder	1.38
938652	AE1-087 E	0.29	Adder	0.34
938895	AE1-117 C	6.1	80|50	6.1
938896	AE1-117 E	16.27	80|50	16.27
939151	AE1-145	2.45	80|50	2.45
942441	AE2-257 C	4.17	80|50	4.17
942442	AE2-257 E	11.0	80|50	11.0
943361	AF1-007 C	0.2	Adder	0.24
943362	AF1-007 E	0.55	Adder	0.65
945661	AF1-231 C	0.79	Adder	0.93
945662	AF1-231 E	1.18	Adder	1.39
945791	**AF1-244 (Withdrawn : 06/07/2021)**	**0.98**	**80|50**	**0.98**
945931	AF1-258	0.39	80|50	0.39
957611	AF2-055 C	3.64	Adder	4.28
957612	AF2-055 E	1.56	Adder	1.84
957661	AF2-060	1.1	80|50	1.1
957671	AF2-061 O1	4.89	80|50	4.89
959021	AF2-193 C	12.22	Adder	14.38
959022	AF2-193 E	32.97	Adder	38.79
959031	AF2-194 C	12.22	Adder	14.38
959032	AF2-194 E	32.97	Adder	38.79
959051	AF2-196 C	1.14	80|50	1.14
959052	AF2-196 E	2.66	80|50	2.66
959161	AF2-207 C O1	2.68	80|50	2.68
959162	AF2-207 E O1	4.01	80|50	4.01
959581	AF2-249 C	0.08	80|50	0.08
959582	AF2-249 E	0.31	80|50	0.31
959591	AF2-250 C	0.14	80|50	0.14
959592	AF2-250 E	0.11	80|50	0.11
960341	AF2-325 C	0.33	Adder	0.39
960342	AF2-325 E	0.46	Adder	0.54
960671	AF2-358 C O1	5.59	Adder	6.58
960672	AF2-358 E O1	3.73	Adder	4.39
960871	AF2-378 C	0.09	Adder	0.11
960872	AF2-378 E	0.13	Adder	0.15
960881	AF2-379 C	0.2	80|50	0.2
960882	AF2-379 E	0.28	80|50	0.28
960941	AF2-385 C	6.34	80|50	6.34
960942	AF2-385 E	3.61	80|50	3.61
961181	**AF2-409 O1 (Withdrawn : 07/06/2021)**	**10.34**	**Adder**	**12.16**
962161	AG1-061 C O1	8.76	80|50	8.76
962162	AG1-061 E O1	5.84	80|50	5.84
962381	AG1-087 C O1	9.98	Adder	11.74
962382	AG1-087 E O1	26.92	Adder	31.67
963001	**AG1-149 (Withdrawn : 06/07/2021)**	**0.37**	**80|50**	**0.37**
963011	AG1-150	4.89	80|50	4.89
964551	AG1-318 C	0.04	80|50	0.04
964552	AG1-318 E	0.09	80|50	0.09
964962	AG1-360 E	1.07	80|50	1.07

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
965321	AG1-397 C	0.53	80|50	0.53
965322	AG1-397 E	0.73	80|50	0.73
965611	AG1-429 C O1	3.66	Adder	4.31
965612	AG1-429 E O1	2.44	Adder	2.87
965821	AG1-450	2.33	Adder	2.74
965921	AG1-461 C O1	2.76	80|50	2.76
965922	AG1-461 E O1	1.49	80|50	1.49
965951	AG1-464 C O1	2.95	80|50	2.95
965952	AG1-464 E O1	4.43	80|50	4.43
966281	AG1-497 C O1	4.04	Adder	4.75
966282	AG1-497 E O1	1.73	Adder	2.04
966601	AG1-529 C	10.06	80|50	10.06
966602	AG1-529 E	5.37	80|50	5.37
LTFEXP_AC1-056	LTFEXP_AC1-056->LTFIMP_AC1-056	0.0652	Confirmed LTF	0.0652
LTFEXP_AC1-131	LTFEXP_AC1-131->LTFIMP_AC1-131	0.049	Confirmed LTF	0.049
LTFEXP_BlueG	LTFEXP_BlueG->LTFIMP_BlueG	0.113	Confirmed LTF	0.113
LTFEXP_CALDERWOOD	LTFEXP_CALDERWOOD->LTFIMP_CALDERWOOD	0.0324	Confirmed LTF	0.0324
LTFEXP_CATAWBA	LTFEXP_CATAWBA->LTFIMP_CATAWBA	0.0228	Confirmed LTF	0.0228
LTFEXP_CHEOAH	LTFEXP_CHEOAH->LTFIMP_CHEOAH	0.0326	Confirmed LTF	0.0326
LTFEXP_COTTONWOOD	LTFEXP_COTTONWOOD->LTFIMP_COTTONWOOD	0.1368	Confirmed LTF	0.1368
LTFEXP_G-007	LTFEXP_G-007->LTFIMP_G-007	0.0604	LTF/CMTX NF	0.0604
LTFEXP_GIBSON	LTFEXP_GIBSON->LTFIMP_GIBSON	0.0356	Confirmed LTF	0.0356
LTFEXP_HAMLET	LTFEXP_HAMLET->LTFIMP_HAMLET	0.0377	Confirmed LTF	0.0377
LTFEXP_NY	LTFEXP_NY->LTFIMP_NY	0.0337	Confirmed LTF	0.0337
LTFEXP_O-066	LTFEXP_O-066->LTFIMP_O-066	0.3973	LTF/CMTX NF	0.3973
LTFEXP_PRAIRIE	LTFEXP_PRAIRIE->LTFIMP_PRAIRIE	0.1682	Confirmed LTF	0.1682
LTFEXP_TRIMBLE	LTFEXP_TRIMBLE->LTFIMP_TRIMBLE	0.0362	Confirmed LTF	0.0362

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
182477168	232116	VIENN138	DP&L	232005	VIENNA	DP&L	1	DPL_P4-2_DP3	breaker	530.0	129.2	130.93	AC	9.27

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
232404	W1-003 C	0.8	80|50	0.8
232405	W1-003 E	4.53	80|50	4.53
232406	W1-004 C	0.8	80|50	0.8
232407	W1-004 E	4.53	80|50	4.53
232408	W1-005 C	0.8	80|50	0.8
232409	W1-005 E	4.53	80|50	4.53
232410	W1-006 C	0.8	80|50	0.8
232411	W1-006 E	4.53	80|50	4.53
232412	X1-032 E	1.53	80|50	1.53
232418	X3-008 E	2.9	Adder	3.41
232427	Y1-080 E	0.65	Adder	0.76
232428	Y3-058 C	0.34	80|50	0.34
232429	Y3-058 E	2.23	80|50	2.23
232433	Z2-076 E	0.48	Adder	0.56
232435	Z2-077 E	0.48	Adder	0.56
232851	DUP-SFR1	2.15	Adder	2.53
232907	VN8	13.06	80|50	13.06
232912	OH NUG1	2.12	80|50	2.12
232914	OH NUG3	2.12	80|50	2.12
232915	OH NUG4	2.12	80|50	2.12
232916	OH NUG5	2.12	80|50	2.12
232919	VN10	0.72	80|50	0.72
232926	CRISFLD1	0.64	80|50	0.64
233923	AA1-102 C	3.62	80|50	3.62
917082	CHERRYDALE E	3.84	Adder	4.52
918835	AA1-102 E	35.99	80|50	35.99
924831	AB2-136 C	6.81	Adder	8.01
924832	AB2-136 E	7.22	Adder	8.49
925151	AB2-172 C	4.44	Adder	5.22
925152	AB2-172 E	7.24	Adder	8.52
925261	AB2-180 C	5.13	80|50	5.13
925262	AB2-180 E	2.2	80|50	2.2
927031	AC1-190 C	8.43	Adder	9.92
927032	AC1-190 E	3.61	Adder	4.25
927191	**AC1-213 C (Withdrawn : 05/24/2021)**	**0.98**	**Adder**	**1.15**
927192	**AC1-213 E (Withdrawn : 05/24/2021)**	**0.64**	**Adder**	**0.75**
930201	AB1-056 C	13.93	Adder	16.39
930202	AB1-056 E	39.67	Adder	46.67
932161	AC2-023 C	9.83	80|50	9.83
932162	AC2-023 E	7.16	80|50	7.16

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
933641	AC2-186 C	2.41	Adder	2.84
933642	AC2-186 E	3.93	Adder	4.62
938651	AE1-087 C	3.74	Adder	4.4
938652	AE1-087 E	0.93	Adder	1.09
938895	AE1-117 C	10.84	Adder	12.75
938896	AE1-117 E	28.91	Adder	34.01
939151	AE1-145	6.16	Adder	7.25
942441	AE2-257 C	7.34	Adder	8.64
942442	AE2-257 E	19.36	Adder	22.78
943361	AF1-007 C	0.41	Adder	0.48
943362	AF1-007 E	1.17	Adder	1.38
945661	AF1-231 C	2.35	Adder	2.76
945662	AF1-231 E	3.53	Adder	4.15
945791	**AF1-244 (Withdrawn : 06/07/2021)**	**3.1**	**80|50**	**3.1**
945931	AF1-258	1.17	80|50	1.17
957611	AF2-055 C	10.83	Adder	12.74
957612	AF2-055 E	4.64	Adder	5.46
957661	AF2-060	2.77	Adder	3.26
957671	AF2-061 O1	12.32	Adder	14.49
959021	AF2-193 C	25.74	Adder	30.28
959022	AF2-193 E	69.43	Adder	81.68
959031	AF2-194 C	25.74	Adder	30.28
959032	AF2-194 E	69.43	Adder	81.68
959051	AF2-196 C	2.0	Adder	2.35
959052	AF2-196 E	4.67	Adder	5.49
959161	AF2-207 C O1	6.07	Adder	7.14
959162	AF2-207 E O1	9.11	Adder	10.72
959581	AF2-249 C	0.18	Adder	0.21
959582	AF2-249 E	0.73	Adder	0.86
959591	AF2-250 C	0.33	Adder	0.39
959592	AF2-250 E	0.26	Adder	0.31
960341	AF2-325 C	1.09	Adder	1.28
960342	AF2-325 E	1.51	Adder	1.78
960671	AF2-358 C O1	22.25	80|50	22.25
960672	AF2-358 E O1	14.84	80|50	14.84
960871	AF2-378 C	0.3	Adder	0.35
960872	AF2-378 E	0.41	Adder	0.48
960881	AF2-379 C	0.63	80|50	0.63
960882	AF2-379 E	0.87	80|50	0.87
960941	AF2-385 C	14.4	Adder	16.94
960942	AF2-385 E	8.19	Adder	9.64
961181	**AF2-409 O1 (Withdrawn : 07/06/2021)**	**52.03**	**80|50**	**52.03**
962161	AG1-061 C O1	18.88	Adder	22.21
962162	AG1-061 E O1	12.59	Adder	14.81
962381	AG1-087 C O1	13.96	Adder	16.42
962382	AG1-087 E O1	37.66	Adder	44.31
963001	**AG1-149 (Withdrawn : 06/07/2021)**	**1.16**	**80|50**	**1.16**
963011	AG1-150	12.32	Adder	14.49
964551	AG1-318 C	0.07	Adder	0.08
964552	AG1-318 E	0.16	Adder	0.19

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
964962	AG1-360 E	3.35	80|50	3.35
965321	AG1-397 C	1.2	Adder	1.41
965322	AG1-397 E	1.66	Adder	1.95
965611	AG1-429 C O1	10.91	Adder	12.84
965612	AG1-429 E O1	7.27	Adder	8.55
965821	AG1-450	9.27	80|50	9.27
965921	AG1-461 C O1	4.75	Adder	5.59
965922	AG1-461 E O1	2.56	Adder	3.01
965951	AG1-464 C O1	2.53	Adder	2.98
965952	AG1-464 E O1	3.8	Adder	4.47
966601	AG1-529 C	6.37	Adder	7.49
966602	AG1-529 E	3.4	Adder	4.0
LTFEXP_AC1-056	LTFEXP_AC1-056->LTFIMP_AC1-056	0.2443	Confirmed LTF	0.2443
LTFEXP_AC1-131	LTFEXP_AC1-131->LTFIMP_AC1-131	0.1854	Confirmed LTF	0.1854
LTFEXP_BlueG	LTFEXP_BlueG->LTFIMP_BlueG	0.4238	Confirmed LTF	0.4238
LTFEXP_CALDERWOOD	LTFEXP_CALDERWOOD->LTFIMP_CALDERWOOD	0.1219	Confirmed LTF	0.1219
LTFEXP_CATAWBA	LTFEXP_CATAWBA->LTFIMP_CATAWBA	0.0862	Confirmed LTF	0.0862
LTFEXP_CHEOAH	LTFEXP_CHEOAH->LTFIMP_CHEOAH	0.1228	Confirmed LTF	0.1228
LTFEXP_COTTONWOOD	LTFEXP_COTTONWOOD->LTFIMP_COTTONWOOD	0.5142	Confirmed LTF	0.5142
LTFEXP_G-007	LTFEXP_G-007->LTFIMP_G-007	0.1265	LTF/CMTX NF	0.1265
LTFEXP_GIBSON	LTFEXP_GIBSON->LTFIMP_GIBSON	0.1333	Confirmed LTF	0.1333
LTFEXP_HAMLET	LTFEXP_HAMLET->LTFIMP_HAMLET	0.1425	Confirmed LTF	0.1425
LTFEXP_NY	LTFEXP_NY->LTFIMP_NY	0.0969	Confirmed LTF	0.0969
LTFEXP_O-066	LTFEXP_O-066->LTFIMP_O-066	0.9609	LTF/CMTX NF	0.9609
LTFEXP_PRAIRIE	LTFEXP_PRAIRIE->LTFIMP_PRAIRIE	0.6311	Confirmed LTF	0.6311
LTFEXP_TRIMBLE	LTFEXP_TRIMBLE->LTFIMP_TRIMBLE	0.1358	Confirmed LTF	0.1358

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
182361364	232117	VIENNA 8	DP&L	232116	VIENN138	DP&L	1	DPL_P4-2_DP3	breaker	482.0	141.26	143.16	AC	9.27

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
232404	W1-003 C	0.8	80|50	0.8
232405	W1-003 E	4.53	80|50	4.53
232406	W1-004 C	0.8	80|50	0.8
232407	W1-004 E	4.53	80|50	4.53
232408	W1-005 C	0.8	80|50	0.8
232409	W1-005 E	4.53	80|50	4.53
232410	W1-006 C	0.8	80|50	0.8
232411	W1-006 E	4.53	80|50	4.53
232412	X1-032 E	1.53	80|50	1.53
232418	X3-008 E	2.9	Adder	3.41
232427	Y1-080 E	0.65	Adder	0.76
232428	Y3-058 C	0.34	80|50	0.34
232429	Y3-058 E	2.23	80|50	2.23
232433	Z2-076 E	0.48	Adder	0.56
232435	Z2-077 E	0.48	Adder	0.56
232851	DUP-SFR1	2.15	Adder	2.53
232907	VN8	13.06	80|50	13.06
232912	OH NUG1	2.12	80|50	2.12
232914	OH NUG3	2.12	80|50	2.12
232915	OH NUG4	2.12	80|50	2.12
232916	OH NUG5	2.12	80|50	2.12
232919	VN10	0.72	80|50	0.72
232926	CRISFLD1	0.64	80|50	0.64
233923	AA1-102 C	3.62	80|50	3.62
917082	CHERRYDALE E	3.84	Adder	4.52
918835	AA1-102 E	35.99	80|50	35.99
924831	AB2-136 C	6.81	Adder	8.01
924832	AB2-136 E	7.22	Adder	8.49
925151	AB2-172 C	4.44	Adder	5.22
925152	AB2-172 E	7.24	Adder	8.52
925261	AB2-180 C	5.13	80|50	5.13
925262	AB2-180 E	2.2	80|50	2.2
927031	AC1-190 C	8.43	Adder	9.92
927032	AC1-190 E	3.61	Adder	4.25
927191	**AC1-213 C (Withdrawn : 05/24/2021)**	**0.98**	**Adder**	**1.15**
927192	**AC1-213 E (Withdrawn : 05/24/2021)**	**0.64**	**Adder**	**0.75**
930201	AB1-056 C	13.93	Adder	16.39
930202	AB1-056 E	39.67	Adder	46.67
932161	AC2-023 C	9.83	80|50	9.83
932162	AC2-023 E	7.16	80|50	7.16

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
933641	AC2-186 C	2.41	Adder	2.84
933642	AC2-186 E	3.93	Adder	4.62
938651	AE1-087 C	3.74	Adder	4.4
938652	AE1-087 E	0.93	Adder	1.09
938895	AE1-117 C	10.84	Adder	12.75
938896	AE1-117 E	28.91	Adder	34.01
939151	AE1-145	6.16	Adder	7.25
942441	AE2-257 C	7.34	Adder	8.64
942442	AE2-257 E	19.36	Adder	22.78
943361	AF1-007 C	0.41	Adder	0.48
943362	AF1-007 E	1.17	Adder	1.38
945661	AF1-231 C	2.35	Adder	2.76
945662	AF1-231 E	3.53	Adder	4.15
945791	**AF1-244 (Withdrawn : 06/07/2021)**	**3.1**	**80|50**	**3.1**
945931	AF1-258	1.17	80|50	1.17
957611	AF2-055 C	10.83	Adder	12.74
957612	AF2-055 E	4.64	Adder	5.46
957661	AF2-060	2.77	Adder	3.26
957671	AF2-061 O1	12.32	Adder	14.49
959021	AF2-193 C	25.74	Adder	30.28
959022	AF2-193 E	69.43	Adder	81.68
959031	AF2-194 C	25.74	Adder	30.28
959032	AF2-194 E	69.43	Adder	81.68
959051	AF2-196 C	2.0	Adder	2.35
959052	AF2-196 E	4.67	Adder	5.49
959161	AF2-207 C O1	6.07	Adder	7.14
959162	AF2-207 E O1	9.11	Adder	10.72
959581	AF2-249 C	0.18	Adder	0.21
959582	AF2-249 E	0.73	Adder	0.86
959591	AF2-250 C	0.33	Adder	0.39
959592	AF2-250 E	0.26	Adder	0.31
960341	AF2-325 C	1.09	Adder	1.28
960342	AF2-325 E	1.51	Adder	1.78
960671	AF2-358 C O1	22.25	80|50	22.25
960672	AF2-358 E O1	14.84	80|50	14.84
960871	AF2-378 C	0.3	Adder	0.35
960872	AF2-378 E	0.41	Adder	0.48
960881	AF2-379 C	0.63	80|50	0.63
960882	AF2-379 E	0.87	80|50	0.87
960941	AF2-385 C	14.4	Adder	16.94
960942	AF2-385 E	8.19	Adder	9.64
961181	**AF2-409 O1 (Withdrawn : 07/06/2021)**	**52.03**	**80|50**	**52.03**
962161	AG1-061 C O1	18.88	Adder	22.21
962162	AG1-061 E O1	12.59	Adder	14.81
962381	AG1-087 C O1	13.96	Adder	16.42
962382	AG1-087 E O1	37.66	Adder	44.31
963001	**AG1-149 (Withdrawn : 06/07/2021)**	**1.16**	**80|50**	**1.16**
963011	AG1-150	12.32	Adder	14.49
964551	AG1-318 C	0.07	Adder	0.08
964552	AG1-318 E	0.16	Adder	0.19

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
964962	AG1-360 E	3.35	80|50	3.35
965321	AG1-397 C	1.2	Adder	1.41
965322	AG1-397 E	1.66	Adder	1.95
965611	AG1-429 C O1	10.91	Adder	12.84
965612	AG1-429 E O1	7.27	Adder	8.55
965821	AG1-450	9.27	80|50	9.27
965921	AG1-461 C O1	4.75	Adder	5.59
965922	AG1-461 E O1	2.56	Adder	3.01
965951	AG1-464 C O1	2.53	Adder	2.98
965952	AG1-464 E O1	3.8	Adder	4.47
966601	AG1-529 C	6.37	Adder	7.49
966602	AG1-529 E	3.4	Adder	4.0
LTFEXP_AC1-056	LTFEXP_AC1-056->LTFIMP_AC1-056	0.2443	Confirmed LTF	0.2443
LTFEXP_AC1-131	LTFEXP_AC1-131->LTFIMP_AC1-131	0.1854	Confirmed LTF	0.1854
LTFEXP_BlueG	LTFEXP_BlueG->LTFIMP_BlueG	0.4238	Confirmed LTF	0.4238
LTFEXP_CALDERWOOD	LTFEXP_CALDERWOOD->LTFIMP_CALDERWOOD	0.1219	Confirmed LTF	0.1219
LTFEXP_CATAWBA	LTFEXP_CATAWBA->LTFIMP_CATAWBA	0.0862	Confirmed LTF	0.0862
LTFEXP_CHEOAH	LTFEXP_CHEOAH->LTFIMP_CHEOAH	0.1228	Confirmed LTF	0.1228
LTFEXP_COTTONWOOD	LTFEXP_COTTONWOOD->LTFIMP_COTTONWOOD	0.5142	Confirmed LTF	0.5142
LTFEXP_G-007	LTFEXP_G-007->LTFIMP_G-007	0.1265	LTF/CMTX NF	0.1265
LTFEXP_GIBSON	LTFEXP_GIBSON->LTFIMP_GIBSON	0.1333	Confirmed LTF	0.1333
LTFEXP_HAMLET	LTFEXP_HAMLET->LTFIMP_HAMLET	0.1425	Confirmed LTF	0.1425
LTFEXP_NY	LTFEXP_NY->LTFIMP_NY	0.0969	Confirmed LTF	0.0969
LTFEXP_O-066	LTFEXP_O-066->LTFIMP_O-066	0.9609	LTF/CMTX NF	0.9609
LTFEXP_PRAIRIE	LTFEXP_PRAIRIE->LTFIMP_PRAIRIE	0.6311	Confirmed LTF	0.6311
LTFEXP_TRIMBLE	LTFEXP_TRIMBLE->LTFIMP_TRIMBLE	0.1358	Confirmed LTF	0.1358

11.6.9 Index 9

ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC|DC	MW IMPACT
174100049	232121	INDRV2&3	DP&L	232119	NELSON	DP&L	1	DPL_P4-2_DPIR235	breaker	193.0	119.7	121.73	AC	3.79

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
232432	Z2-076 C	0.07	80|50	0.07
232433	Z2-076 E	0.22	80|50	0.22
232434	Z2-077 C	0.07	80|50	0.07
232435	Z2-077 E	0.22	80|50	0.22
232904	IR4	9.17	80|50	9.17
232920	IR10	0.39	80|50	0.39
925151	AB2-172 C	-2.03	Adder	-2.39
925261	AB2-180 C	-1.83	Adder	-2.15
930201	AB1-056 C	8.74	80|50	8.74
930202	AB1-056 E	24.89	80|50	24.89
938651	AE1-087 C	-1.71	Adder	-2.01
938653	AE1-087 BAT	2.52	80|50	2.52
938895	AE1-117 C	7.24	80|50	7.24
938896	AE1-117 E	19.31	80|50	19.31
939152	AE1-145 BAT	3.63	80|50	3.63
942441	AE2-257 C	4.8	80|50	4.8
942442	AE2-257 E	12.65	80|50	12.65
943361	AF1-007 C	0.26	80|50	0.26
943362	AF1-007 E	0.73	80|50	0.73
945663	AF1-231 BAT	3.46	80|50	3.46
945792	**AF1-244 BAT (Withdrawn : 06/07/2021)**	**1.48**	**80|50**	**1.48**
945931	AF1-258	-0.42	Adder	-0.49
957613	AF2-055 BAT	5.46	80|50	5.46
957662	AF2-060 BAT	1.63	80|50	1.63
957672	AF2-061 BAT	7.27	80|50	7.27
959021	AF2-193 C	16.15	80|50	16.15
959022	AF2-193 E	43.56	80|50	43.56
959031	AF2-194 C	16.15	80|50	16.15
959032	AF2-194 E	43.56	80|50	43.56
959051	AF2-196 C	1.31	80|50	1.31
959052	AF2-196 E	3.05	80|50	3.05
959163	AF2-207 BAT	9.96	80|50	9.96
959583	AF2-249 BAT	0.54	80|50	0.54
960881	AF2-379 C	-0.24	Adder	-0.28
961182	**AF2-409 BAT (Withdrawn : 07/06/2021)**	**20.68**	**80|50**	**20.68**
963002	**AG1-149 BAT (Withdrawn : 06/07/2021)**	**0.55**	**80|50**	**0.55**
963012	AG1-150 BAT	7.27	80|50	7.27
964551	AG1-318 C	0.04	80|50	0.04
964552	AG1-318 E	0.1	80|50	0.1

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
965822	AG1-450 BAT	3.79	80|50	3.79
LTFEXP_AA2-074	LTFEXP_AA2-074->LTFIMP_AA2-074	0.0128	Confirmed LTF	0.0128
LTFEXP_CBM-N	LTFEXP_CBM-N->LTFIMP_CBM-N	0.0597	LTF/CBM	0.0597
LTFEXP_CBM-S1	LTFEXP_CBM-S1->LTFIMP_CBM-S1	0.0109	LTF/CBM	0.0109
LTFEXP_CBM-S2	LTFEXP_CBM-S2->LTFIMP_CBM-S2	0.2955	LTF/CBM	0.2955
LTFEXP_CBM-W1	LTFEXP_CBM-W1->LTFIMP_CBM-W1	0.4055	LTF/CBM	0.4055
LTFEXP_CBM-W2	LTFEXP_CBM-W2->LTFIMP_CBM-W2	0.2575	LTF/CBM	0.2575
LTFEXP_CPLE	LTFEXP_CPLE->LTFIMP_CPLE	0.0192	Confirmed LTF	0.0192
LTFEXP_G-007A	LTFEXP_G-007A->LTFIMP_G-007A	0.1383	LTF/CMTX	0.1383
LTFEXP_LAGN	LTFEXP_LAGN->LTFIMP_LAGN	0.0502	Confirmed LTF	0.0502
LTFEXP_LGEE	LTFEXP_LGEE->LTFIMP_LGEE	0.0181	Confirmed LTF	0.0181
LTFEXP_MEC	LTFEXP_MEC->LTFIMP_MEC	0.0458	Confirmed LTF	0.0458
LTFEXP_SIGE	LTFEXP_SIGE->LTFIMP_SIGE	0.003	Confirmed LTF	0.003
LTFEXP_TVA	LTFEXP_TVA->LTFIMP_TVA	0.0401	Confirmed LTF	0.0401
LTFEXP_VFT	LTFEXP_VFT->LTFIMP_VFT	0.3468	Confirmed LTF	0.3468
LTFEXP_WEC	LTFEXP_WEC->LTFIMP_WEC	0.0091	Confirmed LTF	0.0091

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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
174309072	232230	TRAP ALT	DP&L	232232	TRAPPETP	DP&L	1	DPL_P4-2_DP11	breaker	173.0	131.55	134.75	AC	5.86

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
232404	W1-003 C	0.23	80|50	0.23
232405	W1-003 E	1.31	80|50	1.31
232406	W1-004 C	0.23	80|50	0.23
232407	W1-004 E	1.31	80|50	1.31
232408	W1-005 C	0.23	80|50	0.23
232409	W1-005 E	1.31	80|50	1.31
232410	W1-006 C	0.23	80|50	0.23
232411	W1-006 E	1.31	80|50	1.31
232412	X1-032 E	0.44	80|50	0.44
232417	X3-008 C	0.47	80|50	0.47
232418	X3-008 E	4.64	80|50	4.64
232426	Y1-080 FULL	0.05	80|50	0.05
232427	Y1-080 E	0.52	80|50	0.52
232428	Y3-058 C	0.13	80|50	0.13
232429	Y3-058 E	0.87	80|50	0.87
232433	Z2-076 E	0.14	Adder	0.16
232435	Z2-077 E	0.14	Adder	0.16
232851	DUP-SFR1	0.76	Adder	0.89
232905	BAYVIEW1	0.22	80|50	0.22
232907	VN8	3.47	80|50	3.47
232912	OH NUG1	0.61	80|50	0.61
232919	VN10	0.38	80|50	0.38
232921	TASLEY2G	0.41	80|50	0.41
232926	CRISFLD1	0.18	80|50	0.18
233923	AA1-102 C	1.04	80|50	1.04
293670	O-025 C	0.12	80|50	0.12
917081	CHERRYDALE C	0.13	80|50	0.13
917082	CHERRYDALE E	1.31	80|50	1.31
918835	AA1-102 E	10.34	80|50	10.34
924831	AB2-136 C	7.55	80|50	7.55
924832	AB2-136 E	8.0	80|50	8.0
925151	AB2-172 C	7.11	80|50	7.11
925152	AB2-172 E	11.61	80|50	11.61
925261	AB2-180 C	2.01	80|50	2.01
925262	AB2-180 E	0.86	80|50	0.86
927031	AC1-190 C	12.67	80|50	12.67
927032	AC1-190 E	5.43	80|50	5.43
927191	AC1-213 C (Withdrawn : 05/24/2021)	0.4	80|50	0.4
927192	AC1-213 E (Withdrawn : 05/24/2021)	0.26	80|50	0.26
930201	AB1-056 C	3.85	Adder	4.53

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
930202	AB1-056 E	10.96	Adder	12.89
932161	AC2-023 C	4.12	80|50	4.12
932162	AC2-023 E	3.0	80|50	3.0
938651	AE1-087 C	5.99	80|50	5.99
938652	AE1-087 E	1.5	80|50	1.5
938895	AE1-117 C	3.09	Adder	3.64
938896	AE1-117 E	8.24	Adder	9.69
939151	AE1-145	1.79	Adder	2.11
942441	AE2-257 C	2.1	Adder	2.47
942442	AE2-257 E	5.55	Adder	6.53
943361	AF1-007 C	0.11	Adder	0.13
943362	AF1-007 E	0.32	Adder	0.38
945661	AF1-231 C	0.68	Adder	0.8
945662	AF1-231 E	1.02	Adder	1.2
945791	**AF1-244 (Withdrawn : 06/07/2021)**	**0.89**	**80|50**	**0.89**
945931	AF1-258	0.46	80|50	0.46
957611	AF2-055 C	3.69	80|50	3.69
957612	AF2-055 E	1.58	80|50	1.58
957661	AF2-060	0.81	Adder	0.95
957671	AF2-061 O1	3.58	Adder	4.21
959021	AF2-193 C	7.11	Adder	8.36
959022	AF2-193 E	19.19	Adder	22.58
959031	AF2-194 C	7.11	Adder	8.36
959032	AF2-194 E	19.19	Adder	22.58
959051	AF2-196 C	0.57	Adder	0.67
959052	AF2-196 E	1.34	Adder	1.58
959161	AF2-207 C O1	2.37	80|50	2.37
959162	AF2-207 E O1	3.56	80|50	3.56
959581	AF2-249 C	0.07	80|50	0.07
959582	AF2-249 E	0.29	80|50	0.29
959591	AF2-250 C	0.13	80|50	0.13
959592	AF2-250 E	0.1	80|50	0.1
960341	AF2-325 C	1.38	80|50	1.38
960342	AF2-325 E	1.91	80|50	1.91
960671	AF2-358 C O1	14.06	80|50	14.06
960672	AF2-358 E O1	9.37	80|50	9.37
960871	AF2-378 C	0.35	80|50	0.35
960872	AF2-378 E	0.49	80|50	0.49
960881	AF2-379 C	0.19	80|50	0.19
960882	AF2-379 E	0.27	80|50	0.27
960941	AF2-385 C	5.63	80|50	5.63
960942	AF2-385 E	3.2	80|50	3.2
961181	**AF2-409 O1 (Withdrawn : 07/06/2021)**	**13.84**	**80|50**	**13.84**
962161	AG1-061 C O1	9.89	80|50	9.89
962162	AG1-061 E O1	6.59	80|50	6.59
962262	AG1-072 BAT	2.66	Adder	3.13
963001	**AG1-149 (Withdrawn : 06/07/2021)**	**0.33**	**80|50**	**0.33**
963011	AG1-150	3.58	Adder	4.21
964551	AG1-318 C	0.02	Adder	0.02
964552	AG1-318 E	0.05	Adder	0.06

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
964962	AG1-360 E	0.96	80|50	0.96
965321	AG1-397 C	0.48	80|50	0.48
965322	AG1-397 E	0.66	80|50	0.66
965611	AG1-429 C O1	3.72	80|50	3.72
965612	AG1-429 E O1	2.48	80|50	2.48
965821	AG1-450	5.86	80|50	5.86
965921	AG1-461 C O1	1.7	Adder	2.0
965922	AG1-461 E O1	0.92	Adder	1.08
966601	AG1-529 C	2.14	Adder	2.52
966602	AG1-529 E	1.14	Adder	1.34
LTFEXP_AC1-056	LTFEXP_AC1-056->LTFIMP_AC1-056	0.0662	Confirmed LTF	0.0662
LTFEXP_AC1-131	LTFEXP_AC1-131->LTFIMP_AC1-131	0.0504	Confirmed LTF	0.0504
LTFEXP_BlueG	LTFEXP_BlueG->LTFIMP_BlueG	0.1147	Confirmed LTF	0.1147
LTFEXP_CALDERWOOD	LTFEXP_CALDERWOOD->LTFIMP_CALDERWOOD	0.0331	Confirmed LTF	0.0331
LTFEXP_CATAWBA	LTFEXP_CATAWBA->LTFIMP_CATAWBA	0.0234	Confirmed LTF	0.0234
LTFEXP_CHEOAH	LTFEXP_CHEOAH->LTFIMP_CHEOAH	0.0333	Confirmed LTF	0.0333
LTFEXP_COTTONWOOD	LTFEXP_COTTONWOOD->LTFIMP_COTTONWOOD	0.1394	Confirmed LTF	0.1394
LTFEXP_G-007	LTFEXP_G-007->LTFIMP_G-007	0.0252	LTF/CMTX NF	0.0252
LTFEXP_GIBSON	LTFEXP_GIBSON->LTFIMP_GIBSON	0.0361	Confirmed LTF	0.0361
LTFEXP_HAMLET	LTFEXP_HAMLET->LTFIMP_HAMLET	0.0387	Confirmed LTF	0.0387
LTFEXP_NY	LTFEXP_NY->LTFIMP_NY	0.0237	Confirmed LTF	0.0237
LTFEXP_O-066	LTFEXP_O-066->LTFIMP_O-066	0.2138	LTF/CMTX NF	0.2138
LTFEXP_PRAIRIE	LTFEXP_PRAIRIE->LTFIMP_PRAIRIE	0.1709	Confirmed LTF	0.1709
LTFEXP_TRIMBLE	LTFEXP_TRIMBLE->LTFIMP_TRIMBLE	0.0368	Confirmed LTF	0.0368

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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
174309070	232232	TRAPPETP	DP&L	232227	EASTN_69	DP&L	1	DPL_P4-2_DP11	breaker	173.0	131.93	135.23	AC	6.07

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
232404	W1-003 C	0.24	80|50	0.24
232405	W1-003 E	1.36	80|50	1.36
232406	W1-004 C	0.24	80|50	0.24
232407	W1-004 E	1.36	80|50	1.36
232408	W1-005 C	0.24	80|50	0.24
232409	W1-005 E	1.36	80|50	1.36
232410	W1-006 C	0.24	80|50	0.24
232411	W1-006 E	1.36	80|50	1.36
232412	X1-032 E	0.46	80|50	0.46
232417	X3-008 C	0.48	80|50	0.48
232418	X3-008 E	4.81	80|50	4.81
232426	Y1-080 FULL	0.05	80|50	0.05
232427	Y1-080 E	0.53	80|50	0.53
232428	Y3-058 C	0.14	80|50	0.14
232429	Y3-058 E	0.91	80|50	0.91
232433	Z2-076 E	0.15	Adder	0.18
232435	Z2-077 E	0.15	Adder	0.18
232851	DUP-SFR1	0.78	Adder	0.92
232905	BAYVIEW1	0.22	80|50	0.22
232907	VN8	3.6	80|50	3.6
232912	OH NUG1	0.64	80|50	0.64
232919	VN10	0.39	80|50	0.39
232921	TASLEY2G	0.42	80|50	0.42
232926	CRISFLD1	0.19	80|50	0.19
233923	AA1-102 C	1.08	80|50	1.08
293670	O-025 C	0.13	80|50	0.13
917081	CHERRYDALE C	0.14	80|50	0.14
917082	CHERRYDALE E	1.36	80|50	1.36
918835	AA1-102 E	10.7	80|50	10.7
924831	AB2-136 C	7.81	80|50	7.81
924832	AB2-136 E	8.29	80|50	8.29
925151	AB2-172 C	7.37	80|50	7.37
925152	AB2-172 E	12.02	80|50	12.02
925261	AB2-180 C	2.08	80|50	2.08
925262	AB2-180 E	0.89	80|50	0.89
927031	AC1-190 C	13.12	80|50	13.12
927032	AC1-190 E	5.62	80|50	5.62
927191	**AC1-213 C (Withdrawn : 05/24/2021)**	**0.41**	**80|50**	**0.41**
927192	**AC1-213 E (Withdrawn : 05/24/2021)**	**0.27**	**80|50**	**0.27**
930201	AB1-056 C	3.99	Adder	4.69

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
930202	AB1-056 E	11.35	Adder	13.35
932161	AC2-023 C	4.26	80|50	4.26
932162	AC2-023 E	3.11	80|50	3.11
938651	AE1-087 C	6.2	80|50	6.2
938652	AE1-087 E	1.55	80|50	1.55
938895	AE1-117 C	3.2	Adder	3.76
938896	AE1-117 E	8.53	Adder	10.04
939151	AE1-145	1.85	Adder	2.18
942441	AE2-257 C	2.18	Adder	2.56
942442	AE2-257 E	5.74	Adder	6.75
943361	AF1-007 C	0.12	Adder	0.14
943362	AF1-007 E	0.33	Adder	0.39
945661	AF1-231 C	0.71	Adder	0.84
945662	AF1-231 E	1.06	Adder	1.25
945791	**AF1-244 (Withdrawn : 06/07/2021)**	**0.92**	**80|50**	**0.92**
945931	AF1-258	0.48	80|50	0.48
957611	AF2-055 C	3.83	80|50	3.83
957612	AF2-055 E	1.64	80|50	1.64
957661	AF2-060	0.83	Adder	0.98
957671	AF2-061 O1	3.71	Adder	4.36
959021	AF2-193 C	7.36	Adder	8.66
959022	AF2-193 E	19.86	Adder	23.36
959031	AF2-194 C	7.36	Adder	8.66
959032	AF2-194 E	19.86	Adder	23.36
959051	AF2-196 C	0.59	Adder	0.69
959052	AF2-196 E	1.39	Adder	1.64
959161	AF2-207 C O1	2.46	80|50	2.46
959162	AF2-207 E O1	3.69	80|50	3.69
959581	AF2-249 C	0.07	80|50	0.07
959582	AF2-249 E	0.3	80|50	0.3
959591	AF2-250 C	0.14	80|50	0.14
959592	AF2-250 E	0.11	80|50	0.11
960341	AF2-325 C	1.43	80|50	1.43
960342	AF2-325 E	1.98	80|50	1.98
960671	AF2-358 C O1	14.56	80|50	14.56
960672	AF2-358 E O1	9.71	80|50	9.71
960871	AF2-378 C	0.36	80|50	0.36
960872	AF2-378 E	0.5	80|50	0.5
960881	AF2-379 C	0.2	80|50	0.2
960882	AF2-379 E	0.28	80|50	0.28
960941	AF2-385 C	5.83	80|50	5.83
960942	AF2-385 E	3.32	80|50	3.32
961181	**AF2-409 O1 (Withdrawn : 07/06/2021)**	**14.33**	**80|50**	**14.33**
962161	AG1-061 C O1	10.24	80|50	10.24
962162	AG1-061 E O1	6.82	80|50	6.82
962262	AG1-072 BAT	2.76	Adder	3.25
963001	**AG1-149 (Withdrawn : 06/07/2021)**	**0.35**	**80|50**	**0.35**
963011	AG1-150	3.71	Adder	4.36
964551	AG1-318 C	0.02	Adder	0.02
964552	AG1-318 E	0.05	Adder	0.06

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
964962	AG1-360 E	1.0	80|50	1.0
965321	AG1-397 C	0.49	80|50	0.49
965322	AG1-397 E	0.68	80|50	0.68
965611	AG1-429 C O1	3.85	80|50	3.85
965612	AG1-429 E O1	2.57	80|50	2.57
965821	AG1-450	6.07	80|50	6.07
965921	AG1-461 C O1	1.76	Adder	2.07
965922	AG1-461 E O1	0.95	Adder	1.12
966601	AG1-529 C	2.21	Adder	2.6
966602	AG1-529 E	1.18	Adder	1.39
LTFEXP_AC1-056	LTFEXP_AC1-056->LTFIMP_AC1-056	0.0685	Confirmed LTF	0.0685
LTFEXP_AC1-131	LTFEXP_AC1-131->LTFIMP_AC1-131	0.0522	Confirmed LTF	0.0522
LTFEXP_BlueG	LTFEXP_BlueG->LTFIMP_BlueG	0.1188	Confirmed LTF	0.1188
LTFEXP_CALDERWOOD	LTFEXP_CALDERWOOD->LTFIMP_CALDERWOOD	0.0342	Confirmed LTF	0.0342
LTFEXP_CATAWBA	LTFEXP_CATAWBA->LTFIMP_CATAWBA	0.0242	Confirmed LTF	0.0242
LTFEXP_CHEOAH	LTFEXP_CHEOAH->LTFIMP_CHEOAH	0.0345	Confirmed LTF	0.0345
LTFEXP_COTTONWOOD	LTFEXP_COTTONWOOD->LTFIMP_COTTONWOOD	0.1443	Confirmed LTF	0.1443
LTFEXP_G-007	LTFEXP_G-007->LTFIMP_G-007	0.0261	LTF/CMTX NF	0.0261
LTFEXP_GIBSON	LTFEXP_GIBSON->LTFIMP_GIBSON	0.0374	Confirmed LTF	0.0374
LTFEXP_HAMLET	LTFEXP_HAMLET->LTFIMP_HAMLET	0.0401	Confirmed LTF	0.0401
LTFEXP_NY	LTFEXP_NY->LTFIMP_NY	0.0245	Confirmed LTF	0.0245
LTFEXP_O-066	LTFEXP_O-066->LTFIMP_O-066	0.2213	LTF/CMTX NF	0.2213
LTFEXP_PRAIRIE	LTFEXP_PRAIRIE->LTFIMP_PRAIRIE	0.177	Confirmed LTF	0.177
LTFEXP_TRIMBLE	LTFEXP_TRIMBLE->LTFIMP_TRIMBLE	0.0381	Confirmed LTF	0.0381

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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
174309034	232233	PRESTON	DP&L	232821	TANYARD	DP&L	1	DPL_P4-2_DP11	breaker	173.0	145.85	149.18	AC	6.07

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
232404	W1-003 C	0.24	80|50	0.24
232405	W1-003 E	1.36	80|50	1.36
232406	W1-004 C	0.24	80|50	0.24
232407	W1-004 E	1.36	80|50	1.36
232408	W1-005 C	0.24	80|50	0.24
232409	W1-005 E	1.36	80|50	1.36
232410	W1-006 C	0.24	80|50	0.24
232411	W1-006 E	1.36	80|50	1.36
232412	X1-032 E	0.46	80|50	0.46
232417	X3-008 C	0.48	80|50	0.48
232418	X3-008 E	4.81	80|50	4.81
232426	Y1-080 FULL	0.05	80|50	0.05
232427	Y1-080 E	0.53	80|50	0.53
232428	Y3-058 C	0.14	80|50	0.14
232429	Y3-058 E	0.91	80|50	0.91
232433	Z2-076 E	0.15	Adder	0.18
232435	Z2-077 E	0.15	Adder	0.18
232851	DUP-SFR1	0.78	Adder	0.92
232905	BAYVIEW1	0.22	80|50	0.22
232907	VN8	3.6	80|50	3.6
232914	OH NUG3	0.64	80|50	0.64
232919	VN10	0.39	80|50	0.39
232921	TASLEY2G	0.42	80|50	0.42
232926	CRISFLD1	0.19	80|50	0.19
233923	AA1-102 C	1.08	80|50	1.08
293670	O-025 C	0.13	80|50	0.13
917081	CHERRYDALE C	0.14	80|50	0.14
917082	CHERRYDALE E	1.36	80|50	1.36
918835	AA1-102 E	10.7	80|50	10.7
924831	AB2-136 C	7.81	80|50	7.81
924832	AB2-136 E	8.29	80|50	8.29
925151	AB2-172 C	7.37	80|50	7.37
925152	AB2-172 E	12.02	80|50	12.02
925261	AB2-180 C	2.08	80|50	2.08
925262	AB2-180 E	0.89	80|50	0.89
927031	AC1-190 C	13.12	80|50	13.12
927032	AC1-190 E	5.62	80|50	5.62
927191	**AC1-213 C (Withdrawn : 05/24/2021)**	**0.41**	**80|50**	**0.41**
927192	**AC1-213 E (Withdrawn : 05/24/2021)**	**0.27**	**80|50**	**0.27**
930201	AB1-056 C	3.99	Adder	4.69

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
930202	AB1-056 E	11.35	Adder	13.35
932161	AC2-023 C	4.26	80|50	4.26
932162	AC2-023 E	3.11	80|50	3.11
938651	AE1-087 C	6.2	80|50	6.2
938652	AE1-087 E	1.55	80|50	1.55
938895	AE1-117 C	3.2	Adder	3.76
938896	AE1-117 E	8.53	Adder	10.04
939151	AE1-145	1.85	Adder	2.18
942441	AE2-257 C	2.18	Adder	2.56
942442	AE2-257 E	5.74	Adder	6.75
943361	AF1-007 C	0.12	Adder	0.14
943362	AF1-007 E	0.33	Adder	0.39
945661	AF1-231 C	0.71	Adder	0.84
945662	AF1-231 E	1.06	Adder	1.25
945791	**AF1-244 (Withdrawn : 06/07/2021)**	**0.92**	**80|50**	**0.92**
945931	AF1-258	0.48	80|50	0.48
957611	AF2-055 C	3.83	80|50	3.83
957612	AF2-055 E	1.64	80|50	1.64
957661	AF2-060	0.83	Adder	0.98
957671	AF2-061 O1	3.71	Adder	4.36
959021	AF2-193 C	7.36	Adder	8.66
959022	AF2-193 E	19.86	Adder	23.36
959031	AF2-194 C	7.36	Adder	8.66
959032	AF2-194 E	19.86	Adder	23.36
959051	AF2-196 C	0.59	Adder	0.69
959052	AF2-196 E	1.39	Adder	1.64
959161	AF2-207 C O1	2.46	80|50	2.46
959162	AF2-207 E O1	3.69	80|50	3.69
959581	AF2-249 C	0.07	80|50	0.07
959582	AF2-249 E	0.3	80|50	0.3
959591	AF2-250 C	0.14	80|50	0.14
959592	AF2-250 E	0.11	80|50	0.11
960341	AF2-325 C	1.43	80|50	1.43
960342	AF2-325 E	1.98	80|50	1.98
960671	AF2-358 C O1	14.56	80|50	14.56
960672	AF2-358 E O1	9.71	80|50	9.71
960871	AF2-378 C	0.36	80|50	0.36
960872	AF2-378 E	0.5	80|50	0.5
960881	AF2-379 C	0.2	80|50	0.2
960882	AF2-379 E	0.28	80|50	0.28
960941	AF2-385 C	5.83	80|50	5.83
960942	AF2-385 E	3.32	80|50	3.32
961181	**AF2-409 O1 (Withdrawn : 07/06/2021)**	**14.33**	**80|50**	**14.33**
962161	AG1-061 C O1	10.24	80|50	10.24
962162	AG1-061 E O1	6.82	80|50	6.82
962262	AG1-072 BAT	2.76	Adder	3.25
963001	**AG1-149 (Withdrawn : 06/07/2021)**	**0.35**	**80|50**	**0.35**
963011	AG1-150	3.71	Adder	4.36
964551	AG1-318 C	0.02	Adder	0.02
964552	AG1-318 E	0.05	Adder	0.06

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
964962	AG1-360 E	1.0	80|50	1.0
965321	AG1-397 C	0.49	80|50	0.49
965322	AG1-397 E	0.68	80|50	0.68
965611	AG1-429 C O1	3.85	80|50	3.85
965612	AG1-429 E O1	2.57	80|50	2.57
965821	AG1-450	6.07	80|50	6.07
965921	AG1-461 C O1	1.76	Adder	2.07
965922	AG1-461 E O1	0.95	Adder	1.12
966601	AG1-529 C	2.21	Adder	2.6
966602	AG1-529 E	1.18	Adder	1.39
LTFEXP_AC1-056	LTFEXP_AC1-056->LTFIMP_AC1-056	0.0685	Confirmed LTF	0.0685
LTFEXP_AC1-131	LTFEXP_AC1-131->LTFIMP_AC1-131	0.0522	Confirmed LTF	0.0522
LTFEXP_BlueG	LTFEXP_BlueG->LTFIMP_BlueG	0.1188	Confirmed LTF	0.1188
LTFEXP_CALDERWOOD	LTFEXP_CALDERWOOD->LTFIMP_CALDERWOOD	0.0342	Confirmed LTF	0.0342
LTFEXP_CATAWBA	LTFEXP_CATAWBA->LTFIMP_CATAWBA	0.0242	Confirmed LTF	0.0242
LTFEXP_CHEOAH	LTFEXP_CHEOAH->LTFIMP_CHEOAH	0.0345	Confirmed LTF	0.0345
LTFEXP_COTTONWOOD	LTFEXP_COTTONWOOD->LTFIMP_COTTONWOOD	0.1443	Confirmed LTF	0.1443
LTFEXP_G-007	LTFEXP_G-007->LTFIMP_G-007	0.0261	LTF/CMTX NF	0.0261
LTFEXP_GIBSON	LTFEXP_GIBSON->LTFIMP_GIBSON	0.0374	Confirmed LTF	0.0374
LTFEXP_HAMLET	LTFEXP_HAMLET->LTFIMP_HAMLET	0.0401	Confirmed LTF	0.0401
LTFEXP_NY	LTFEXP_NY->LTFIMP_NY	0.0245	Confirmed LTF	0.0245
LTFEXP_O-066	LTFEXP_O-066->LTFIMP_O-066	0.2213	LTF/CMTX NF	0.2213
LTFEXP_PRAIRIE	LTFEXP_PRAIRIE->LTFIMP_PRAIRIE	0.177	Confirmed LTF	0.177
LTFEXP_TRIMBLE	LTFEXP_TRIMBLE->LTFIMP_TRIMBLE	0.0381	Confirmed LTF	0.0381

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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
179461140	232234	TODD	DP&L	232233	PRESTON	DP&L	1	DPL_P4-2_DP11	breaker	93.0	275.04	281.24	AC	6.07

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
232404	W1-003 C	0.24	80|50	0.24
232405	W1-003 E	1.36	80|50	1.36
232406	W1-004 C	0.24	80|50	0.24
232407	W1-004 E	1.36	80|50	1.36
232408	W1-005 C	0.24	80|50	0.24
232409	W1-005 E	1.36	80|50	1.36
232410	W1-006 C	0.24	80|50	0.24
232411	W1-006 E	1.36	80|50	1.36
232412	X1-032 E	0.46	80|50	0.46
232417	X3-008 C	0.48	80|50	0.48
232418	X3-008 E	4.81	80|50	4.81
232426	Y1-080 FULL	0.05	80|50	0.05
232427	Y1-080 E	0.53	80|50	0.53
232428	Y3-058 C	0.14	80|50	0.14
232429	Y3-058 E	0.91	80|50	0.91
232433	Z2-076 E	0.15	Adder	0.18
232435	Z2-077 E	0.15	Adder	0.18
232851	DUP-SFR1	0.78	Adder	0.92
232905	BAYVIEW1	0.22	80|50	0.22
232907	VN8	3.6	80|50	3.6
232912	OH NUG1	0.64	80|50	0.64
232919	VN10	0.39	80|50	0.39
232921	TASLEY2G	0.42	80|50	0.42
232926	CRISFLD1	0.19	80|50	0.19
233923	AA1-102 C	1.08	80|50	1.08
293670	O-025 C	0.13	80|50	0.13
917081	CHERRYDALE C	0.14	80|50	0.14
917082	CHERRYDALE E	1.36	80|50	1.36
918835	AA1-102 E	10.7	80|50	10.7
924831	AB2-136 C	7.81	80|50	7.81
924832	AB2-136 E	8.29	80|50	8.29
925151	AB2-172 C	7.37	80|50	7.37
925152	AB2-172 E	12.02	80|50	12.02
925261	AB2-180 C	2.08	80|50	2.08
925262	AB2-180 E	0.89	80|50	0.89
927031	AC1-190 C	13.12	80|50	13.12
927032	AC1-190 E	5.62	80|50	5.62
927191	**AC1-213 C (Withdrawn : 05/24/2021)**	**0.41**	**80|50**	**0.41**
927192	**AC1-213 E (Withdrawn : 05/24/2021)**	**0.27**	**80|50**	**0.27**
930201	AB1-056 C	3.99	Adder	4.69

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
930202	AB1-056 E	11.35	Adder	13.35
932161	AC2-023 C	4.26	80|50	4.26
932162	AC2-023 E	3.11	80|50	3.11
938651	AE1-087 C	6.2	80|50	6.2
938652	AE1-087 E	1.55	80|50	1.55
938895	AE1-117 C	3.2	Adder	3.76
938896	AE1-117 E	8.53	Adder	10.04
939151	AE1-145	1.85	Adder	2.18
942441	AE2-257 C	2.18	Adder	2.56
942442	AE2-257 E	5.74	Adder	6.75
943361	AF1-007 C	0.12	Adder	0.14
943362	AF1-007 E	0.33	Adder	0.39
945661	AF1-231 C	0.71	Adder	0.84
945662	AF1-231 E	1.06	Adder	1.25
945791	**AF1-244 (Withdrawn : 06/07/2021)**	**0.92**	**80|50**	**0.92**
945931	AF1-258	0.48	80|50	0.48
957611	AF2-055 C	3.83	80|50	3.83
957612	AF2-055 E	1.64	80|50	1.64
957661	AF2-060	0.83	Adder	0.98
957671	AF2-061 O1	3.71	Adder	4.36
959021	AF2-193 C	7.36	Adder	8.66
959022	AF2-193 E	19.86	Adder	23.36
959031	AF2-194 C	7.36	Adder	8.66
959032	AF2-194 E	19.86	Adder	23.36
959051	AF2-196 C	0.59	Adder	0.69
959052	AF2-196 E	1.39	Adder	1.64
959161	AF2-207 C O1	2.46	80|50	2.46
959162	AF2-207 E O1	3.69	80|50	3.69
959581	AF2-249 C	0.07	80|50	0.07
959582	AF2-249 E	0.3	80|50	0.3
959591	AF2-250 C	0.14	80|50	0.14
959592	AF2-250 E	0.11	80|50	0.11
960341	AF2-325 C	1.43	80|50	1.43
960342	AF2-325 E	1.98	80|50	1.98
960671	AF2-358 C O1	14.56	80|50	14.56
960672	AF2-358 E O1	9.71	80|50	9.71
960871	AF2-378 C	0.36	80|50	0.36
960872	AF2-378 E	0.5	80|50	0.5
960881	AF2-379 C	0.2	80|50	0.2
960882	AF2-379 E	0.28	80|50	0.28
960941	AF2-385 C	5.83	80|50	5.83
960942	AF2-385 E	3.32	80|50	3.32
961181	**AF2-409 O1 (Withdrawn : 07/06/2021)**	**14.33**	**80|50**	**14.33**
962161	AG1-061 C O1	10.24	80|50	10.24
962162	AG1-061 E O1	6.82	80|50	6.82
962262	AG1-072 BAT	2.76	Adder	3.25
963001	**AG1-149 (Withdrawn : 06/07/2021)**	**0.35**	**80|50**	**0.35**
963011	AG1-150	3.71	Adder	4.36
964551	AG1-318 C	0.02	Adder	0.02
964552	AG1-318 E	0.05	Adder	0.06

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
964962	AG1-360 E	1.0	80|50	1.0
965321	AG1-397 C	0.49	80|50	0.49
965322	AG1-397 E	0.68	80|50	0.68
965611	AG1-429 C O1	3.85	80|50	3.85
965612	AG1-429 E O1	2.57	80|50	2.57
965821	AG1-450	6.07	80|50	6.07
965921	AG1-461 C O1	1.76	Adder	2.07
965922	AG1-461 E O1	0.95	Adder	1.12
966601	AG1-529 C	2.21	Adder	2.6
966602	AG1-529 E	1.18	Adder	1.39
LTFEXP_AC1-056	LTFEXP_AC1-056->LTFIMP_AC1-056	0.0685	Confirmed LTF	0.0685
LTFEXP_AC1-131	LTFEXP_AC1-131->LTFIMP_AC1-131	0.0522	Confirmed LTF	0.0522
LTFEXP_BlueG	LTFEXP_BlueG->LTFIMP_BlueG	0.1188	Confirmed LTF	0.1188
LTFEXP_CALDERWOOD	LTFEXP_CALDERWOOD->LTFIMP_CALDERWOOD	0.0342	Confirmed LTF	0.0342
LTFEXP_CATAWBA	LTFEXP_CATAWBA->LTFIMP_CATAWBA	0.0242	Confirmed LTF	0.0242
LTFEXP_CHEOAH	LTFEXP_CHEOAH->LTFIMP_CHEOAH	0.0345	Confirmed LTF	0.0345
LTFEXP_COTTONWOOD	LTFEXP_COTTONWOOD->LTFIMP_COTTONWOOD	0.1443	Confirmed LTF	0.1443
LTFEXP_G-007	LTFEXP_G-007->LTFIMP_G-007	0.0261	LTF/CMTX NF	0.0261
LTFEXP_GIBSON	LTFEXP_GIBSON->LTFIMP_GIBSON	0.0374	Confirmed LTF	0.0374
LTFEXP_HAMLET	LTFEXP_HAMLET->LTFIMP_HAMLET	0.0401	Confirmed LTF	0.0401
LTFEXP_NY	LTFEXP_NY->LTFIMP_NY	0.0245	Confirmed LTF	0.0245
LTFEXP_O-066	LTFEXP_O-066->LTFIMP_O-066	0.2213	LTF/CMTX NF	0.2213
LTFEXP_PRAIRIE	LTFEXP_PRAIRIE->LTFIMP_PRAIRIE	0.177	Confirmed LTF	0.177
LTFEXP_TRIMBLE	LTFEXP_TRIMBLE->LTFIMP_TRIMBLE	0.0381	Confirmed LTF	0.0381

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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
174309076	232241	VIENN_69	DP&L	232234	TODD	DP&L	1	DPL_P4-2_DP11	breaker	143.0	132.93	133.78	AC	1.46

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
232405	W1-003 E	0.95	Adder	1.12
232407	W1-004 E	0.95	Adder	1.12
232409	W1-005 E	0.95	Adder	1.12
232411	W1-006 E	0.95	Adder	1.12
232412	X1-032 E	0.32	Adder	0.38
232428	Y3-058 C	0.11	80|50	0.11
232429	Y3-058 E	0.75	80|50	0.75
232433	Z2-076 E	0.12	Adder	0.14
232435	Z2-077 E	0.12	Adder	0.14
232851	DUP-SFR1	0.64	Adder	0.75
232907	VN8	2.96	80|50	2.96
232919	VN10	0.32	80|50	0.32
293670	O-025 C	0.11	80|50	0.11
917082	CHERRYDALE E	0.95	Adder	1.12
918835	AA1-102 E	7.49	Adder	8.81
925151	AB2-172 C	-8.14	Adder	-9.58
925261	AB2-180 C	1.71	80|50	1.71
925262	AB2-180 E	0.73	80|50	0.73
927191	**AC1-213 C (Withdrawn : 05/24/2021)**	**0.34**	**80|50**	**0.34**
927192	**AC1-213 E (Withdrawn : 05/24/2021)**	**0.22**	**80|50**	**0.22**
930201	AB1-056 C	3.28	Adder	3.86
930202	AB1-056 E	9.34	Adder	10.99
932161	AC2-023 C	3.51	80|50	3.51
932162	AC2-023 E	2.56	80|50	2.56
938651	AE1-087 C	-6.85	Adder	-8.06
938653	AE1-087 BAT	10.07	80|50	10.07
938895	AE1-117 C	2.63	Adder	3.09
938896	AE1-117 E	7.03	Adder	8.27
939151	AE1-145	1.52	Adder	1.79
942441	AE2-257 C	1.79	Adder	2.11
942442	AE2-257 E	4.73	Adder	5.56
943361	AF1-007 C	0.1	Adder	0.12
943362	AF1-007 E	0.28	Adder	0.33
945661	AF1-231 C	0.58	Adder	0.68
945662	AF1-231 E	0.87	Adder	1.02
945791	**AF1-244 (Withdrawn : 06/07/2021)**	**0.64**	**Adder**	**0.75**
945931	AF1-258	0.39	80|50	0.39
957611	AF2-055 C	2.68	Adder	3.15
957612	AF2-055 E	1.15	Adder	1.35

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
957661	AF2-060	0.69	Adder	0.81
957671	AF2-061 O1	3.05	Adder	3.59
959021	AF2-193 C	6.06	Adder	7.13
959022	AF2-193 E	16.35	Adder	19.24
959031	AF2-194 C	6.06	Adder	7.13
959032	AF2-194 E	16.35	Adder	19.24
959051	AF2-196 C	0.49	Adder	0.58
959052	AF2-196 E	1.14	Adder	1.34
959161	AF2-207 C O1	2.02	80|50	2.02
959162	AF2-207 E O1	3.03	80|50	3.03
959581	AF2-249 C	0.06	80|50	0.06
959582	AF2-249 E	0.25	80|50	0.25
959591	AF2-250 C	0.11	80|50	0.11
959592	AF2-250 E	0.09	80|50	0.09
960671	AF2-358 C O1	2.97	Adder	3.49
960672	AF2-358 E O1	1.98	Adder	2.33
960881	AF2-379 C	0.16	80|50	0.16
960882	AF2-379 E	0.23	80|50	0.23
960941	AF2-385 C	4.8	80|50	4.8
960942	AF2-385 E	2.73	80|50	2.73
961181	**AF2-409 O1 (Withdrawn : 07/06/2021)**	**11.79**	**80|50**	**11.79**
962161	AG1-061 C O1	8.42	80|50	8.42
962162	AG1-061 E O1	5.62	80|50	5.62
963001	**AG1-149 (Withdrawn : 06/07/2021)**	**0.24**	**Adder**	**0.28**
963011	AG1-150	3.05	Adder	3.59
964551	AG1-318 C	0.02	Adder	0.02
964552	AG1-318 E	0.04	Adder	0.05
964962	AG1-360 E	0.7	Adder	0.82
965321	AG1-397 C	0.34	Adder	0.4
965322	AG1-397 E	0.48	Adder	0.56
965611	AG1-429 C O1	2.7	Adder	3.18
965612	AG1-429 E O1	1.8	Adder	2.12
965821	AG1-450	1.24	Adder	1.46
965921	AG1-461 C O1	1.45	Adder	1.71
965922	AG1-461 E O1	0.78	Adder	0.92
LTFEXP_AC1-056	LTFEXP_AC1-056->LTFIMP_AC1-056	0.053	Confirmed LTF	0.053
LTFEXP_AC1-131	LTFEXP_AC1-131->LTFIMP_AC1-131	0.0404	Confirmed LTF	0.0404
LTFEXP_BlueG	LTFEXP_BlueG->LTFIMP_BlueG	0.0918	Confirmed LTF	0.0918
LTFEXP_CALDERWOOD	LTFEXP_CALDERWOOD->LTFIMP_CALDERWOOD	0.0265	Confirmed LTF	0.0265
LTFEXP_CATAWBA	LTFEXP_CATAWBA->LTFIMP_CATAWBA	0.0187	Confirmed LTF	0.0187
LTFEXP_CHEOAH	LTFEXP_CHEOAH->LTFIMP_CHEOAH	0.0267	Confirmed LTF	0.0267
LTFEXP_COTTONWOOD	LTFEXP_COTTONWOOD->LTFIMP_COTTONWOOD	0.1116	Confirmed LTF	0.1116
LTFEXP_G-007	LTFEXP_G-007->LTFIMP_G-007	0.0179	LTF/CMTX NF	0.0179

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
LTFEXP_GIBSON	LTFEXP_GIBSON->LTFIMP_GIBSON	0.0289	Confirmed LTF	0.0289
LTFEXP_HAMLET	LTFEXP_HAMLET->LTFIMP_HAMLET	0.031	Confirmed LTF	0.031
LTFEXP_NY	LTFEXP_NY->LTFIMP_NY	0.0183	Confirmed LTF	0.0183
LTFEXP_O-066	LTFEXP_O-066->LTFIMP_O-066	0.1592	LTF/CMTX NF	0.1592
LTFEXP_PRAIRIE	LTFEXP_PRAIRIE->LTFIMP_PRAIRIE	0.1369	Confirmed LTF	0.1369
LTFEXP_TRIMBLE	LTFEXP_TRIMBLE->LTFIMP_TRIMBLE	0.0294	Confirmed LTF	0.0294

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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
182296390	232241	VIENN_69	DP&L	232838	MARDELA	DP&L	1	DPL_P4-2_DP55	breaker	64.0	151.84	158.79	AC	4.61

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
232417	X3-008 C	0.19	80|50	0.19
232418	X3-008 E	1.85	80|50	1.85
232426	Y1-080 FULL	0.04	80|50	0.04
232427	Y1-080 E	0.38	80|50	0.38
232919	VN10	0.35	80|50	0.35
924831	AB2-136 C	4.13	80|50	4.13
924832	AB2-136 E	4.38	80|50	4.38
925151	AB2-172 C	2.83	80|50	2.83
925152	AB2-172 E	4.62	80|50	4.62
925261	AB2-180 C	-4.1	Adder	-4.82
927031	AC1-190 C	5.32	80|50	5.32
927032	AC1-190 E	2.28	80|50	2.28
938651	AE1-087 C	2.38	80|50	2.38
938652	AE1-087 E	0.6	80|50	0.6
939152	AE1-145 BAT	1.94	Adder	2.28
945663	AF1-231 BAT	1.82	Adder	2.14
945792	**AF1-244 BAT (Withdrawn : 06/07/2021)**	**0.76**	**Adder**	**0.89**
945931	AF1-258	-0.94	Adder	-1.11
957613	AF2-055 BAT	2.88	Adder	3.39
957662	AF2-060 BAT	0.87	Adder	1.02
957672	AF2-061 BAT	3.88	Adder	4.56
959163	AF2-207 BAT	4.14	Adder	4.87
959583	AF2-249 BAT	0.39	80|50	0.39
960341	AF2-325 C	0.67	80|50	0.67
960342	AF2-325 E	0.93	80|50	0.93
960671	AF2-358 C O1	11.06	80|50	11.06
960672	AF2-358 E O1	7.37	80|50	7.37
960871	AF2-378 C	0.18	80|50	0.18
960872	AF2-378 E	0.25	80|50	0.25
960881	AF2-379 C	-0.2	Adder	-0.24
961181	**AF2-409 O1 (Withdrawn : 07/06/2021)**	**4.47**	**Adder**	**5.26**
962161	AG1-061 C O1	4.22	Adder	4.96
962162	AG1-061 E O1	2.81	Adder	3.31
963002	**AG1-149 BAT (Withdrawn : 06/07/2021)**	**0.29**	**Adder**	**0.34**
963012	AG1-150 BAT	3.88	Adder	4.56
965821	AG1-450	4.61	80|50	4.61
LTFEXP_AA2-074	LTFEXP_AA2-074->LTFIMP_AA2-074	0.0131	Confirmed LTF	0.0131
LTFEXP_CBM-N	LTFEXP_CBM-N->LTFIMP_CBM-N	0.0255	LTF/CBM	0.0255

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
LTFEXP_CBM-S1	LTFEXP_CBM-S1->LTFIMP_CBM-S1	0.0109	LTF/CBM	0.0109
LTFEXP_CBM-S2	LTFEXP_CBM-S2->LTFIMP_CBM-S2	0.3004	LTF/CBM	0.3004
LTFEXP_CBM-W1	LTFEXP_CBM-W1->LTFIMP_CBM-W1	0.4003	LTF/CBM	0.4003
LTFEXP_CBM-W2	LTFEXP_CBM-W2->LTFIMP_CBM-W2	0.2564	LTF/CBM	0.2564
LTFEXP_CPLE	LTFEXP_CPLE->LTFIMP_CPLE	0.0197	Confirmed LTF	0.0197
LTFEXP_G-007A	LTFEXP_G-007A->LTFIMP_G-007A	0.0442	LTF/CMTX	0.0442
LTFEXP_LAGN	LTFEXP_LAGN->LTFIMP_LAGN	0.0501	Confirmed LTF	0.0501
LTFEXP_LGEE	LTFEXP_LGEE->LTFIMP_LGEE	0.018	Confirmed LTF	0.018
LTFEXP_MEC	LTFEXP_MEC->LTFIMP_MEC	0.0454	Confirmed LTF	0.0454
LTFEXP_SIGE	LTFEXP_SIGE->LTFIMP_SIGE	0.003	Confirmed LTF	0.003
LTFEXP_TVA	LTFEXP_TVA->LTFIMP_TVA	0.0401	Confirmed LTF	0.0401
LTFEXP_VFT	LTFEXP_VFT->LTFIMP_VFT	0.1281	Confirmed LTF	0.1281
LTFEXP_WEC	LTFEXP_WEC->LTFIMP_WEC	0.009	Confirmed LTF	0.009

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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
174309289	232291	ROCKAWLKN	DP&L	232271	NSALSBRY	DP&L	1	DPL_P4-2_DP55	breaker	123.0	106.54	110.11	AC	4.61

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
232417	X3-008 C	0.19	80|50	0.19
232418	X3-008 E	1.85	80|50	1.85
232426	Y1-080 FULL	0.04	80|50	0.04
232427	Y1-080 E	0.38	80|50	0.38
232428	Y3-058 C	0.61	80|50	0.61
232429	Y3-058 E	4.0	80|50	4.0
232919	VN10	0.35	80|50	0.35
924831	AB2-136 C	4.13	80|50	4.13
924832	AB2-136 E	4.38	80|50	4.38
925151	AB2-172 C	2.83	80|50	2.83
925152	AB2-172 E	4.62	80|50	4.62
925261	AB2-180 C	9.18	80|50	9.18
925262	AB2-180 E	3.93	80|50	3.93
927031	AC1-190 C	5.32	80|50	5.32
927032	AC1-190 E	2.28	80|50	2.28
932161	AC2-023 C	14.98	80|50	14.98
932162	AC2-023 E	10.91	80|50	10.91
938651	AE1-087 C	2.38	80|50	2.38
938652	AE1-087 E	0.6	80|50	0.6
939152	AE1-145 BAT	1.94	Adder	2.28
945663	AF1-231 BAT	1.82	Adder	2.14
945792	**AF1-244 BAT (Withdrawn : 06/07/2021)**	**0.77**	**Adder**	**0.91**
945931	AF1-258	2.1	80|50	2.1
957613	AF2-055 BAT	2.89	Adder	3.4
957662	AF2-060 BAT	0.87	Adder	1.02
957672	AF2-061 BAT	3.88	Adder	4.56
959163	AF2-207 BAT	4.14	Adder	4.87
959583	AF2-249 BAT	0.39	80|50	0.39
960341	AF2-325 C	0.67	80|50	0.67
960342	AF2-325 E	0.93	80|50	0.93
960671	AF2-358 C O1	11.06	80|50	11.06
960672	AF2-358 E O1	7.37	80|50	7.37
960871	AF2-378 C	0.18	80|50	0.18
960872	AF2-378 E	0.25	80|50	0.25
960881	AF2-379 C	-0.2	Adder	-0.24
961181	**AF2-409 O1 (Withdrawn : 07/06/2021)**	**4.46**	**Adder**	**5.25**
962161	AG1-061 C O1	4.22	Adder	4.96
962162	AG1-061 E O1	2.81	Adder	3.31
963002	**AG1-149 BAT (Withdrawn : 06/07/2021)**	**0.29**	**Adder**	**0.34**

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
963012	AG1-150 BAT	3.88	Adder	4.56
965821	AG1-450	4.61	80|50	4.61
LTFEXP_AA2-074	LTFEXP_AA2-074->LTFIMP_AA2-074	0.0118	Confirmed LTF	0.0118
LTFEXP_CBM-N	LTFEXP_CBM-N->LTFIMP_CBM-N	0.022	LTF/CBM	0.022
LTFEXP_CBM-S1	LTFEXP_CBM-S1->LTFIMP_CBM-S1	0.0098	LTF/CBM	0.0098
LTFEXP_CBM-S2	LTFEXP_CBM-S2->LTFIMP_CBM-S2	0.2693	LTF/CBM	0.2693
LTFEXP_CBM-W1	LTFEXP_CBM-W1->LTFIMP_CBM-W1	0.3586	LTF/CBM	0.3586
LTFEXP_CBM-W2	LTFEXP_CBM-W2->LTFIMP_CBM-W2	0.2298	LTF/CBM	0.2298
LTFEXP_CPLE	LTFEXP_CPLE->LTFIMP_CPLE	0.0176	Confirmed LTF	0.0176
LTFEXP_G-007A	LTFEXP_G-007A->LTFIMP_G-007A	0.0371	LTF/CMTX	0.0371
LTFEXP_LAGN	LTFEXP_LAGN->LTFIMP_LAGN	0.0449	Confirmed LTF	0.0449
LTFEXP_LGEE	LTFEXP_LGEE->LTFIMP_LGEE	0.0161	Confirmed LTF	0.0161
LTFEXP_MEC	LTFEXP_MEC->LTFIMP_MEC	0.0407	Confirmed LTF	0.0407
LTFEXP_SIGE	LTFEXP_SIGE->LTFIMP_SIGE	0.0027	Confirmed LTF	0.0027
LTFEXP_TVA	LTFEXP_TVA->LTFIMP_TVA	0.0359	Confirmed LTF	0.0359
LTFEXP_VFT	LTFEXP_VFT->LTFIMP_VFT	0.1089	Confirmed LTF	0.1089
LTFEXP_WEC	LTFEXP_WEC->LTFIMP_WEC	0.0081	Confirmed LTF	0.0081

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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
174309051	232820	TALBOT	DP&L	232230	TRAP ALT	DP&L	1	DPL_P4-2_DP11	breaker	173.0	140.49	143.8	AC	6.07

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
232404	W1-003 C	0.24	80|50	0.24
232405	W1-003 E	1.36	80|50	1.36
232406	W1-004 C	0.24	80|50	0.24
232407	W1-004 E	1.36	80|50	1.36
232408	W1-005 C	0.24	80|50	0.24
232409	W1-005 E	1.36	80|50	1.36
232410	W1-006 C	0.24	80|50	0.24
232411	W1-006 E	1.36	80|50	1.36
232412	X1-032 E	0.46	80|50	0.46
232417	X3-008 C	0.48	80|50	0.48
232418	X3-008 E	4.81	80|50	4.81
232426	Y1-080 FULL	0.05	80|50	0.05
232427	Y1-080 E	0.53	80|50	0.53
232428	Y3-058 C	0.14	80|50	0.14
232429	Y3-058 E	0.91	80|50	0.91
232433	Z2-076 E	0.15	Adder	0.18
232435	Z2-077 E	0.15	Adder	0.18
232851	DUP-SFR1	0.78	Adder	0.92
232905	BAYVIEW1	0.22	80|50	0.22
232907	VN8	3.6	80|50	3.6
232915	OH NUG4	0.64	80|50	0.64
232919	VN10	0.39	80|50	0.39
232921	TASLEY2G	0.42	80|50	0.42
232926	CRISFLD1	0.19	80|50	0.19
233923	AA1-102 C	1.08	80|50	1.08
293670	O-025 C	0.13	80|50	0.13
917081	CHERRYDALE C	0.14	80|50	0.14
917082	CHERRYDALE E	1.36	80|50	1.36
918835	AA1-102 E	10.7	80|50	10.7
924831	AB2-136 C	7.81	80|50	7.81
924832	AB2-136 E	8.29	80|50	8.29
925151	AB2-172 C	7.37	80|50	7.37
925152	AB2-172 E	12.02	80|50	12.02
925261	AB2-180 C	2.08	80|50	2.08
925262	AB2-180 E	0.89	80|50	0.89
927031	AC1-190 C	13.12	80|50	13.12
927032	AC1-190 E	5.62	80|50	5.62
927191	**AC1-213 C (Withdrawn : 05/24/2021)**	**0.41**	**80|50**	**0.41**
927192	**AC1-213 E (Withdrawn : 05/24/2021)**	**0.27**	**80|50**	**0.27**
930201	AB1-056 C	3.99	Adder	4.69

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
930202	AB1-056 E	11.35	Adder	13.35
932161	AC2-023 C	4.26	80|50	4.26
932162	AC2-023 E	3.11	80|50	3.11
938651	AE1-087 C	6.2	80|50	6.2
938652	AE1-087 E	1.55	80|50	1.55
938895	AE1-117 C	3.2	Adder	3.76
938896	AE1-117 E	8.53	Adder	10.04
939151	AE1-145	1.85	Adder	2.18
942441	AE2-257 C	2.18	Adder	2.56
942442	AE2-257 E	5.74	Adder	6.75
943361	AF1-007 C	0.12	Adder	0.14
943362	AF1-007 E	0.33	Adder	0.39
945661	AF1-231 C	0.71	Adder	0.84
945662	AF1-231 E	1.06	Adder	1.25
945791	**AF1-244 (Withdrawn : 06/07/2021)**	**0.92**	**80|50**	**0.92**
945931	AF1-258	0.48	80|50	0.48
957611	AF2-055 C	3.83	80|50	3.83
957612	AF2-055 E	1.64	80|50	1.64
957661	AF2-060	0.83	Adder	0.98
957671	AF2-061 O1	3.71	Adder	4.36
959021	AF2-193 C	7.36	Adder	8.66
959022	AF2-193 E	19.86	Adder	23.36
959031	AF2-194 C	7.36	Adder	8.66
959032	AF2-194 E	19.86	Adder	23.36
959051	AF2-196 C	0.59	Adder	0.69
959052	AF2-196 E	1.39	Adder	1.64
959161	AF2-207 C O1	2.46	80|50	2.46
959162	AF2-207 E O1	3.69	80|50	3.69
959581	AF2-249 C	0.07	80|50	0.07
959582	AF2-249 E	0.3	80|50	0.3
959591	AF2-250 C	0.14	80|50	0.14
959592	AF2-250 E	0.11	80|50	0.11
960341	AF2-325 C	1.43	80|50	1.43
960342	AF2-325 E	1.98	80|50	1.98
960671	AF2-358 C O1	14.56	80|50	14.56
960672	AF2-358 E O1	9.71	80|50	9.71
960871	AF2-378 C	0.36	80|50	0.36
960872	AF2-378 E	0.5	80|50	0.5
960881	AF2-379 C	0.2	80|50	0.2
960882	AF2-379 E	0.28	80|50	0.28
960941	AF2-385 C	5.83	80|50	5.83
960942	AF2-385 E	3.32	80|50	3.32
961181	**AF2-409 O1 (Withdrawn : 07/06/2021)**	**14.33**	**80|50**	**14.33**
962161	AG1-061 C O1	10.24	80|50	10.24
962162	AG1-061 E O1	6.82	80|50	6.82
962262	AG1-072 BAT	2.76	Adder	3.25
963001	**AG1-149 (Withdrawn : 06/07/2021)**	**0.35**	**80|50**	**0.35**
963011	AG1-150	3.71	Adder	4.36
964551	AG1-318 C	0.02	Adder	0.02
964552	AG1-318 E	0.05	Adder	0.06

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
964962	AG1-360 E	1.0	80|50	1.0
965321	AG1-397 C	0.49	80|50	0.49
965322	AG1-397 E	0.68	80|50	0.68
965611	AG1-429 C O1	3.85	80|50	3.85
965612	AG1-429 E O1	2.57	80|50	2.57
965821	AG1-450	6.07	80|50	6.07
965921	AG1-461 C O1	1.76	Adder	2.07
965922	AG1-461 E O1	0.95	Adder	1.12
966601	AG1-529 C	2.21	Adder	2.6
966602	AG1-529 E	1.18	Adder	1.39
LTFEXP_AC1-056	LTFEXP_AC1-056->LTFIMP_AC1-056	0.0685	Confirmed LTF	0.0685
LTFEXP_AC1-131	LTFEXP_AC1-131->LTFIMP_AC1-131	0.0522	Confirmed LTF	0.0522
LTFEXP_BlueG	LTFEXP_BlueG->LTFIMP_BlueG	0.1188	Confirmed LTF	0.1188
LTFEXP_CALDERWOOD	LTFEXP_CALDERWOOD->LTFIMP_CALDERWOOD	0.0342	Confirmed LTF	0.0342
LTFEXP_CATAWBA	LTFEXP_CATAWBA->LTFIMP_CATAWBA	0.0242	Confirmed LTF	0.0242
LTFEXP_CHEOAH	LTFEXP_CHEOAH->LTFIMP_CHEOAH	0.0345	Confirmed LTF	0.0345
LTFEXP_COTTONWOOD	LTFEXP_COTTONWOOD->LTFIMP_COTTONWOOD	0.1443	Confirmed LTF	0.1443
LTFEXP_G-007	LTFEXP_G-007->LTFIMP_G-007	0.0261	LTF/CMTX NF	0.0261
LTFEXP_GIBSON	LTFEXP_GIBSON->LTFIMP_GIBSON	0.0374	Confirmed LTF	0.0374
LTFEXP_HAMLET	LTFEXP_HAMLET->LTFIMP_HAMLET	0.0401	Confirmed LTF	0.0401
LTFEXP_NY	LTFEXP_NY->LTFIMP_NY	0.0245	Confirmed LTF	0.0245
LTFEXP_O-066	LTFEXP_O-066->LTFIMP_O-066	0.2213	LTF/CMTX NF	0.2213
LTFEXP_PRAIRIE	LTFEXP_PRAIRIE->LTFIMP_PRAIRIE	0.177	Confirmed LTF	0.177
LTFEXP_TRIMBLE	LTFEXP_TRIMBLE->LTFIMP_TRIMBLE	0.0381	Confirmed LTF	0.0381

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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
174309044	232821	TANYARD	DP&L	232820	TALBOT	DP&L	1	DPL_P4-2_DP11	breaker	173.0	142.84	146.16	AC	6.07

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
232404	W1-003 C	0.24	80|50	0.24
232405	W1-003 E	1.36	80|50	1.36
232406	W1-004 C	0.24	80|50	0.24
232407	W1-004 E	1.36	80|50	1.36
232408	W1-005 C	0.24	80|50	0.24
232409	W1-005 E	1.36	80|50	1.36
232410	W1-006 C	0.24	80|50	0.24
232411	W1-006 E	1.36	80|50	1.36
232412	X1-032 E	0.46	80|50	0.46
232417	X3-008 C	0.48	80|50	0.48
232418	X3-008 E	4.81	80|50	4.81
232426	Y1-080 FULL	0.05	80|50	0.05
232427	Y1-080 E	0.53	80|50	0.53
232428	Y3-058 C	0.14	80|50	0.14
232429	Y3-058 E	0.91	80|50	0.91
232433	Z2-076 E	0.15	Adder	0.18
232435	Z2-077 E	0.15	Adder	0.18
232851	DUP-SFR1	0.78	Adder	0.92
232905	BAYVIEW1	0.22	80|50	0.22
232907	VN8	3.6	80|50	3.6
232916	OH NUG5	0.64	80|50	0.64
232919	VN10	0.39	80|50	0.39
232921	TASLEY2G	0.42	80|50	0.42
232926	CRISFLD1	0.19	80|50	0.19
233923	AA1-102 C	1.08	80|50	1.08
293670	O-025 C	0.13	80|50	0.13
917081	CHERRYDALE C	0.14	80|50	0.14
917082	CHERRYDALE E	1.36	80|50	1.36
918835	AA1-102 E	10.7	80|50	10.7
924831	AB2-136 C	7.81	80|50	7.81
924832	AB2-136 E	8.29	80|50	8.29
925151	AB2-172 C	7.37	80|50	7.37
925152	AB2-172 E	12.02	80|50	12.02
925261	AB2-180 C	2.08	80|50	2.08
925262	AB2-180 E	0.89	80|50	0.89
927031	AC1-190 C	13.12	80|50	13.12
927032	AC1-190 E	5.62	80|50	5.62
927191	AC1-213 C (Withdrawn : 05/24/2021)	0.41	80|50	0.41
927192	AC1-213 E (Withdrawn : 05/24/2021)	0.27	80|50	0.27
930201	AB1-056 C	3.99	Adder	4.69

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
930202	AB1-056 E	11.35	Adder	13.35
932161	AC2-023 C	4.26	80|50	4.26
932162	AC2-023 E	3.11	80|50	3.11
938651	AE1-087 C	6.2	80|50	6.2
938652	AE1-087 E	1.55	80|50	1.55
938895	AE1-117 C	3.2	Adder	3.76
938896	AE1-117 E	8.53	Adder	10.04
939151	AE1-145	1.85	Adder	2.18
942441	AE2-257 C	2.18	Adder	2.56
942442	AE2-257 E	5.74	Adder	6.75
943361	AF1-007 C	0.12	Adder	0.14
943362	AF1-007 E	0.33	Adder	0.39
945661	AF1-231 C	0.71	Adder	0.84
945662	AF1-231 E	1.06	Adder	1.25
945791	**AF1-244 (Withdrawn : 06/07/2021)**	**0.92**	**80|50**	**0.92**
945931	AF1-258	0.48	80|50	0.48
957611	AF2-055 C	3.83	80|50	3.83
957612	AF2-055 E	1.64	80|50	1.64
957661	AF2-060	0.83	Adder	0.98
957671	AF2-061 O1	3.71	Adder	4.36
959021	AF2-193 C	7.36	Adder	8.66
959022	AF2-193 E	19.86	Adder	23.36
959031	AF2-194 C	7.36	Adder	8.66
959032	AF2-194 E	19.86	Adder	23.36
959051	AF2-196 C	0.59	Adder	0.69
959052	AF2-196 E	1.39	Adder	1.64
959161	AF2-207 C O1	2.46	80|50	2.46
959162	AF2-207 E O1	3.69	80|50	3.69
959581	AF2-249 C	0.07	80|50	0.07
959582	AF2-249 E	0.3	80|50	0.3
959591	AF2-250 C	0.14	80|50	0.14
959592	AF2-250 E	0.11	80|50	0.11
960341	AF2-325 C	1.43	80|50	1.43
960342	AF2-325 E	1.98	80|50	1.98
960671	AF2-358 C O1	14.56	80|50	14.56
960672	AF2-358 E O1	9.71	80|50	9.71
960871	AF2-378 C	0.36	80|50	0.36
960872	AF2-378 E	0.5	80|50	0.5
960881	AF2-379 C	0.2	80|50	0.2
960882	AF2-379 E	0.28	80|50	0.28
960941	AF2-385 C	5.83	80|50	5.83
960942	AF2-385 E	3.32	80|50	3.32
961181	**AF2-409 O1 (Withdrawn : 07/06/2021)**	**14.33**	**80|50**	**14.33**
962161	AG1-061 C O1	10.24	80|50	10.24
962162	AG1-061 E O1	6.82	80|50	6.82
962262	AG1-072 BAT	2.76	Adder	3.25
963001	**AG1-149 (Withdrawn : 06/07/2021)**	**0.35**	**80|50**	**0.35**
963011	AG1-150	3.71	Adder	4.36
964551	AG1-318 C	0.02	Adder	0.02
964552	AG1-318 E	0.05	Adder	0.06

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
964962	AG1-360 E	1.0	80|50	1.0
965321	AG1-397 C	0.49	80|50	0.49
965322	AG1-397 E	0.68	80|50	0.68
965611	AG1-429 C O1	3.85	80|50	3.85
965612	AG1-429 E O1	2.57	80|50	2.57
965821	AG1-450	6.07	80|50	6.07
965921	AG1-461 C O1	1.76	Adder	2.07
965922	AG1-461 E O1	0.95	Adder	1.12
966601	AG1-529 C	2.21	Adder	2.6
966602	AG1-529 E	1.18	Adder	1.39
LTFEXP_AC1-056	LTFEXP_AC1-056->LTFIMP_AC1-056	0.0685	Confirmed LTF	0.0685
LTFEXP_AC1-131	LTFEXP_AC1-131->LTFIMP_AC1-131	0.0522	Confirmed LTF	0.0522
LTFEXP_BlueG	LTFEXP_BlueG->LTFIMP_BlueG	0.1188	Confirmed LTF	0.1188
LTFEXP_CALDERWOOD	LTFEXP_CALDERWOOD->LTFIMP_CALDERWOOD	0.0342	Confirmed LTF	0.0342
LTFEXP_CATAWBA	LTFEXP_CATAWBA->LTFIMP_CATAWBA	0.0242	Confirmed LTF	0.0242
LTFEXP_CHEOAH	LTFEXP_CHEOAH->LTFIMP_CHEOAH	0.0345	Confirmed LTF	0.0345
LTFEXP_COTTONWOOD	LTFEXP_COTTONWOOD->LTFIMP_COTTONWOOD	0.1443	Confirmed LTF	0.1443
LTFEXP_G-007	LTFEXP_G-007->LTFIMP_G-007	0.0261	LTF/CMTX NF	0.0261
LTFEXP_GIBSON	LTFEXP_GIBSON->LTFIMP_GIBSON	0.0374	Confirmed LTF	0.0374
LTFEXP_HAMLET	LTFEXP_HAMLET->LTFIMP_HAMLET	0.0401	Confirmed LTF	0.0401
LTFEXP_NY	LTFEXP_NY->LTFIMP_NY	0.0245	Confirmed LTF	0.0245
LTFEXP_O-066	LTFEXP_O-066->LTFIMP_O-066	0.2213	LTF/CMTX NF	0.2213
LTFEXP_PRAIRIE	LTFEXP_PRAIRIE->LTFIMP_PRAIRIE	0.177	Confirmed LTF	0.177
LTFEXP_TRIMBLE	LTFEXP_TRIMBLE->LTFIMP_TRIMBLE	0.0381	Confirmed LTF	0.0381

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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
182350756	232838	MARDELA	DP&L	232270	HEBRON	DP&L	1	DPL_P4-2_DP55	breaker	64.0	142.57	149.52	AC	4.61

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
232417	X3-008 C	0.19	80|50	0.19
232418	X3-008 E	1.85	80|50	1.85
232426	Y1-080 FULL	0.04	80|50	0.04
232427	Y1-080 E	0.38	80|50	0.38
232919	VN10	0.35	80|50	0.35
924831	AB2-136 C	4.13	80|50	4.13
924832	AB2-136 E	4.38	80|50	4.38
925151	AB2-172 C	2.83	80|50	2.83
925152	AB2-172 E	4.62	80|50	4.62
925261	AB2-180 C	-4.1	Adder	-4.82
927031	AC1-190 C	5.32	80|50	5.32
927032	AC1-190 E	2.28	80|50	2.28
938651	AE1-087 C	2.38	80|50	2.38
938652	AE1-087 E	0.6	80|50	0.6
939152	AE1-145 BAT	1.94	Adder	2.28
945663	AF1-231 BAT	1.82	Adder	2.14
945792	**AF1-244 BAT (Withdrawn : 06/07/2021)**	**0.76**	**Adder**	**0.89**
945931	AF1-258	-0.94	Adder	-1.11
957613	AF2-055 BAT	2.88	Adder	3.39
957662	AF2-060 BAT	0.87	Adder	1.02
957672	AF2-061 BAT	3.88	Adder	4.56
959163	AF2-207 BAT	4.14	Adder	4.87
959583	AF2-249 BAT	0.39	80|50	0.39
960341	AF2-325 C	0.67	80|50	0.67
960342	AF2-325 E	0.93	80|50	0.93
960671	AF2-358 C O1	11.06	80|50	11.06
960672	AF2-358 E O1	7.37	80|50	7.37
960871	AF2-378 C	0.18	80|50	0.18
960872	AF2-378 E	0.25	80|50	0.25
960881	AF2-379 C	-0.2	Adder	-0.24
961181	**AF2-409 O1 (Withdrawn : 07/06/2021)**	**4.47**	**Adder**	**5.26**
962161	AG1-061 C O1	4.22	Adder	4.96
962162	AG1-061 E O1	2.81	Adder	3.31
963002	**AG1-149 BAT (Withdrawn : 06/07/2021)**	**0.29**	**Adder**	**0.34**
963012	AG1-150 BAT	3.88	Adder	4.56
965821	AG1-450	4.61	80|50	4.61
LTFEXP_AA2-074	LTFEXP_AA2-074->LTFIMP_AA2-074	0.0131	Confirmed LTF	0.0131
LTFEXP_CBM-N	LTFEXP_CBM-N->LTFIMP_CBM-N	0.0255	LTF/CBM	0.0255

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
LTFEXP_CBM-S1	LTFEXP_CBM-S1->LTFIMP_CBM-S1	0.0109	LTF/CBM	0.0109
LTFEXP_CBM-S2	LTFEXP_CBM-S2->LTFIMP_CBM-S2	0.3004	LTF/CBM	0.3004
LTFEXP_CBM-W1	LTFEXP_CBM-W1->LTFIMP_CBM-W1	0.4003	LTF/CBM	0.4003
LTFEXP_CBM-W2	LTFEXP_CBM-W2->LTFIMP_CBM-W2	0.2564	LTF/CBM	0.2564
LTFEXP_CPLE	LTFEXP_CPLE->LTFIMP_CPLE	0.0197	Confirmed LTF	0.0197
LTFEXP_G-007A	LTFEXP_G-007A->LTFIMP_G-007A	0.0442	LTF/CMTX	0.0442
LTFEXP_LAGN	LTFEXP_LAGN->LTFIMP_LAGN	0.0501	Confirmed LTF	0.0501
LTFEXP_LGEE	LTFEXP_LGEE->LTFIMP_LGEE	0.018	Confirmed LTF	0.018
LTFEXP_MEC	LTFEXP_MEC->LTFIMP_MEC	0.0454	Confirmed LTF	0.0454
LTFEXP_SIGE	LTFEXP_SIGE->LTFIMP_SIGE	0.003	Confirmed LTF	0.003
LTFEXP_TVA	LTFEXP_TVA->LTFIMP_TVA	0.0401	Confirmed LTF	0.0401
LTFEXP_VFT	LTFEXP_VFT->LTFIMP_VFT	0.1281	Confirmed LTF	0.1281
LTFEXP_WEC	LTFEXP_WEC->LTFIMP_WEC	0.009	Confirmed LTF	0.009

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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
182619934	923960	AB2-037 TAP	DP&L	231003	KEEN_230	DP&L	2	DPL_P4-2_DP10	breaker	727.0	118.02	119.13	AC	8.31

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
232404	W1-003 C	0.67	80|50	0.67
232405	W1-003 E	3.79	80|50	3.79
232406	W1-004 C	0.67	80|50	0.67
232407	W1-004 E	3.79	80|50	3.79
232408	W1-005 C	0.67	80|50	0.67
232409	W1-005 E	3.79	80|50	3.79
232410	W1-006 C	0.67	80|50	0.67
232411	W1-006 E	3.79	80|50	3.79
232412	X1-032 E	1.24	80|50	1.24
232417	X3-008 C	0.42	80|50	0.42
232418	X3-008 E	4.21	80|50	4.21
232423	X3-066 E	0.72	Adder	0.85
232424	Y1-079 C	0.21	80|50	0.21
232425	Y1-079 E	2.06	80|50	2.06
232426	Y1-080 FULL	0.07	80|50	0.07
232427	Y1-080 E	0.7	80|50	0.7
232428	Y3-058 C	0.29	80|50	0.29
232429	Y3-058 E	1.91	80|50	1.91
232433	Z2-076 E	0.48	Adder	0.56
232435	Z2-077 E	0.48	Adder	0.56
232851	DUP-SFR1	2.32	Adder	2.73
232902	EASTMUNI	4.08	80|50	4.08
232907	VN8	8.7	80|50	8.7
232912	OH NUG1	1.78	80|50	1.78
232915	OH NUG4	1.78	80|50	1.78
232919	VN10	0.61	80|50	0.61
232922	**MR3 (Deactivation : 01/06/2021)**	**13.6**	**Adder**	**16.0**
232926	CRISFLD1	0.51	80|50	0.51
233916	AB1-141 E	1.46	Adder	1.72
233919	AB1-142 E	1.46	Adder	1.72
233923	AA1-102 C	2.91	80|50	2.91
233931	AB2-179 C	4.4	Adder	5.18
293670	O-025 C	0.3	80|50	0.3
917082	CHERRYDALE E	3.21	Adder	3.78
918835	AA1-102 E	28.94	80|50	28.94
919831	AA2-069	60.13	Adder	70.74
923921	AB2-032 C	3.15	Adder	3.71
923922	AB2-032 E	1.48	Adder	1.74
923951	AB2-036 C	11.98	80|50	11.98
923952	AB2-036 E	19.6	80|50	19.6
923961	AB2-037 C	37.9	80|50	37.9

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
923962	AB2-037 E	61.92	80|50	61.92
924801	AB2-133 C O1	5.19	Adder	6.11
924802	AB2-133 E O1	6.59	Adder	7.75
924821	AB2-135 C	6.06	Adder	7.13
924822	AB2-135 E	6.91	Adder	8.13
924831	AB2-136 C	8.33	80|50	8.33
924832	AB2-136 E	8.83	80|50	8.83
924971	AB2-153 C	1.76	Adder	2.07
924972	AB2-153 E	2.88	Adder	3.39
925151	AB2-172 C	6.45	80|50	6.45
925152	AB2-172 E	10.52	80|50	10.52
925254	AB2-179 E	1.44	Adder	1.69
925261	AB2-180 C	4.38	80|50	4.38
925262	AB2-180 E	1.88	80|50	1.88
926131	AC1-091 C	0.8	Adder	0.94
926132	AC1-091 E	1.31	Adder	1.54
926141	AC1-092 C	0.8	Adder	0.94
926142	AC1-092 E	1.31	Adder	1.54
926151	AC1-093 C	0.76	Adder	0.89
926152	AC1-093 E	1.25	Adder	1.47
926161	AC1-094 C	0.64	Adder	0.75
926162	AC1-094 E	1.06	Adder	1.25
927031	AC1-190 C	11.85	80|50	11.85
927032	AC1-190 E	5.08	80|50	5.08
927191	**AC1-213 C (Withdrawn : 05/24/2021)**	**0.98**	**80|50**	**0.98**
927192	**AC1-213 E (Withdrawn : 05/24/2021)**	**0.65**	**80|50**	**0.65**
930201	AB1-056 C	14.96	Adder	17.6
930202	AB1-056 E	42.61	Adder	50.13
931261	AB1-176 C	0.37	Adder	0.44
931262	AB1-176 E	0.61	Adder	0.72
932161	AC2-023 C	8.38	80|50	8.38
932162	AC2-023 E	6.1	80|50	6.1
933631	AC2-185 C	1.62	Adder	1.91
933632	AC2-185 E	2.65	Adder	3.12
933641	AC2-186 C	3.78	Adder	4.45
933642	AC2-186 E	6.17	Adder	7.26
936611	AD2-076 C O1	4.55	Adder	5.35
936612	AD2-076 E O1	7.43	Adder	8.74
938651	AE1-087 C	5.43	80|50	5.43
938652	AE1-087 E	1.36	80|50	1.36
938895	AE1-117 C	11.29	Adder	13.28
938896	AE1-117 E	30.12	Adder	35.44
939151	AE1-145	5.18	Adder	6.09
941021	AE2-093 C	6.33	80|50	6.33
941022	AE2-093 E	10.32	80|50	10.32
941181	AE2-112 C	1.58	Adder	1.86
941182	AE2-112 E	2.58	Adder	3.04
942441	AE2-257 C	7.75	Adder	9.12
942442	AE2-257 E	20.42	Adder	24.02
943361	AF1-007 C	0.44	Adder	0.52
943362	AF1-007 E	1.25	Adder	1.47

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
943441	AF1-015 C	2.38	80|50	2.38
943442	AF1-015 E	3.29	80|50	3.29
943651	AF1-036 C	2.05	Adder	2.41
943652	AF1-036 E	2.84	Adder	3.34
945661	AF1-231 C	1.97	Adder	2.32
945662	AF1-231 E	2.96	Adder	3.48
945791	**AF1-244 (Withdrawn : 06/07/2021)**	**2.49**	**80|50**	**2.49**
945931	AF1-258	1.0	80|50	1.0
945941	AF1-259	0.2	Adder	0.24
957611	AF2-055 C	9.07	Adder	10.67
957612	AF2-055 E	3.89	Adder	4.58
957661	AF2-060	2.33	Adder	2.74
957671	AF2-061 O1	10.35	Adder	12.18
959021	AF2-193 C	27.65	Adder	32.53
959022	AF2-193 E	74.59	Adder	87.75
959031	AF2-194 C	27.65	Adder	32.53
959032	AF2-194 E	74.59	Adder	87.75
959051	AF2-196 C	2.11	Adder	2.48
959052	AF2-196 E	4.93	Adder	5.8
959161	AF2-207 C O1	5.22	Adder	6.14
959162	AF2-207 E O1	7.82	Adder	9.2
959581	AF2-249 C	0.18	80|50	0.18
959582	AF2-249 E	0.73	80|50	0.73
959591	AF2-250 C	0.34	80|50	0.34
959592	AF2-250 E	0.26	80|50	0.26
960221	AF2-313 C	3.11	Adder	3.66
960222	AF2-313 E	1.76	Adder	2.07
960341	AF2-325 C	1.42	80|50	1.42
960342	AF2-325 E	1.95	80|50	1.95
960671	AF2-358 C O1	19.94	80|50	19.94
960672	AF2-358 E O1	13.29	80|50	13.29
960871	AF2-378 C	0.37	80|50	0.37
960872	AF2-378 E	0.52	80|50	0.52
960881	AF2-379 C	0.51	80|50	0.51
960882	AF2-379 E	0.71	80|50	0.71
960941	AF2-385 C	12.37	Adder	14.55
960942	AF2-385 E	7.04	Adder	8.28
961181	**AF2-409 O1 (Withdrawn : 07/06/2021)**	**34.67**	**80|50**	**34.67**
962161	AG1-061 C O1	20.15	80|50	20.15
962162	AG1-061 E O1	13.43	80|50	13.43
962261	AG1-072	18.35	80|50	18.35
962302	**AG1-079 E (Withdrawn : 08/03/2021)**	**0.28**	**Adder**	**0.33**
962381	AG1-087 C O1	24.55	Adder	28.88
962382	AG1-087 E O1	66.22	Adder	77.91
963001	**AG1-149 (Withdrawn : 06/07/2021)**	**0.93**	**80|50**	**0.93**
963011	AG1-150	10.35	Adder	12.18
964551	AG1-318 C	0.07	Adder	0.08
964552	AG1-318 E	0.17	Adder	0.2
964962	AG1-360 E	2.71	80|50	2.71

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
965321	AG1-397 C	1.07	Adder	1.26
965322	AG1-397 E	1.47	Adder	1.73
965611	AG1-429 C O1	9.14	Adder	10.75
965612	AG1-429 E O1	6.09	Adder	7.16
965821	AG1-450	8.31	80|50	8.31
965921	AG1-461 C O1	4.75	Adder	5.59
965922	AG1-461 E O1	2.56	Adder	3.01
965951	AG1-464 C O1	3.98	Adder	4.68
965952	AG1-464 E O1	5.97	Adder	7.02
966281	AG1-497 C O1	11.2	Adder	13.18
966282	AG1-497 E O1	4.8	Adder	5.65
966601	AG1-529 C	10.23	Adder	12.04
966602	AG1-529 E	5.46	Adder	6.42
LTFEXP_AC1-056	LTFEXP_AC1-056->LTFIMP_AC1-056	0.2809	Confirmed LTF	0.2809
LTFEXP_AC1-131	LTFEXP_AC1-131->LTFIMP_AC1-131	0.2139	Confirmed LTF	0.2139
LTFEXP_BlueG	LTFEXP_BlueG->LTFIMP_BlueG	0.4871	Confirmed LTF	0.4871
LTFEXP_CALDERWOOD	LTFEXP_CALDERWOOD->LTFIMP_CALDERWOOD	0.1403	Confirmed LTF	0.1403
LTFEXP_CATAWBA	LTFEXP_CATAWBA->LTFIMP_CATAWBA	0.0993	Confirmed LTF	0.0993
LTFEXP_CHEOAH	LTFEXP_CHEOAH->LTFIMP_CHEOAH	0.1413	Confirmed LTF	0.1413
LTFEXP_COTTONWOOD	LTFEXP_COTTONWOOD->LTFIMP_COTTONWOOD	0.5917	Confirmed LTF	0.5917
LTFEXP_G-007	LTFEXP_G-007->LTFIMP_G-007	0.064	LTF/CMTX NF	0.064
LTFEXP_GIBSON	LTFEXP_GIBSON->LTFIMP_GIBSON	0.1532	Confirmed LTF	0.1532
LTFEXP_HAMLET	LTFEXP_HAMLET->LTFIMP_HAMLET	0.1643	Confirmed LTF	0.1643
LTFEXP_NY	LTFEXP_NY->LTFIMP_NY	0.0859	Confirmed LTF	0.0859
LTFEXP_O-066	LTFEXP_O-066->LTFIMP_O-066	0.6541	LTF/CMTX NF	0.6541
LTFEXP_PRAIRIE	LTFEXP_PRAIRIE->LTFIMP_PRAIRIE	0.7257	Confirmed LTF	0.7257
LTFEXP_TRIMBLE	LTFEXP_TRIMBLE->LTFIMP_TRIMBLE	0.1561	Confirmed LTF	0.1561

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	Engineering and Procurement
AA2-074	CPLE-PJM	Confirmed
AB1-056	Indian River 230kV I	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	Engineering and Procurement
AB2-032	Church-Wye Mills 138 kV	Engineering and Procurement
AB2-036	Church - Oil City 138kV	Engineering and Procurement
AB2-037	Keeney-Steele 230kV	Active
AB2-133	Chestertown-Church 69kV	Engineering and Procurement
AB2-135	Church-Kent 69kV	Engineering and Procurement
AB2-136	Cambridge-West Cambridge 69kV	Engineering and Procurement
AB2-153	Church-Wye Mills 138 kV	Engineering and Procurement
AB2-172	Todd 69kV	Engineering and Procurement
AB2-179	Townsend 138kV	Engineering and Procurement
AB2-180	Rockawalkin 69kV	Engineering and Procurement
AC1-056	PJM-AMIL	Confirmed
AC1-091	Cedar Creek 138kV I	Engineering and Procurement
AC1-092	Cedar Creek 138kV II	Engineering and Procurement
AC1-093	Cedar Creek 138kV III	Engineering and Procurement
AC1-094	Cedar Creek 138kV IV	Engineering and Procurement
AC1-131	PJM-CPLE	Confirmed
AC1-190	East New Market 69kV	Active
AC1-213	North Salisbury 25kV	Withdrawn
AC2-023	Hebron 69kV	Active
AC2-185	Cedar Creek 138kV II	Engineering and Procurement
AC2-186	Harrington 25kV	Engineering and Procurement
AD2-076	Carville 138 kV	Engineering and Procurement
AE1-087	Todd 69 kV	Engineering and Procurement
AE1-117	Bethany 138 kV	Active
AE1-145	Wallops Island 69 kV	Active
AE2-093	Easton-Steele 138 kV	Active
AE2-112	Carville 138 kV II	Active
AE2-257	Cedar Neck 69 kV	Active
AF1-007	Indian River 230 kV I	Active
AF1-015	Easton-Steele 138 kV II	Active
AF1-036	Carville 138 kV III	Active
AF1-231	New Church 138 kV	Active

Queue Number	Project Name	Status
AF1-244	Kingston 12 kV	Withdrawn
AF1-258	Rockawalkin 69 kV	Partially in Service - Under Construction
AF1-259	Price 25 kV	In Service
AF2-055	Plaintation Creek 69 kV	Active
AF2-060	Wattsville 12 kV	Active
AF2-061	Wattsville 69kV	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
AF2-249	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	Engineering and Procurement
AF2-379	Princess Anne 25 kV	Engineering and Procurement
AF2-385	Nelson 69 kV	Active
AF2-409	Vienna 138 kV	Withdrawn
AG1-061	Laurel-Sharptown 69 kV	Active
AG1-072	Hillsboro-Steele 138 kV II	Active
AG1-079	New Meredith 69 kV	Withdrawn
AG1-087	Milford-Cartanza 230 kV	Active
AG1-149	Kingston 12 kV II	Withdrawn
AG1-150	Wattsville 69 kV II	Active
AG1-318	Ocean Bay 12 kV	Engineering and Procurement
AG1-360	Costen 25 kV	Active
AG1-397	Walston 12 kV	Active
AG1-429	Tasley - Oak Hall 69 kV	Active
AG1-450	Airey-Vienna 69 kV II	Active
AG1-461	Mumford 69 kV	Active
AG1-464	Harrington 69 kV	Active
AG1-497	Cartanza 230 kV	Active
AG1-529	Farmview 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
X3-008	Todd 69kV	Partially in Service - 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
Z2-076	Worcester South 25kV	In Service
Z2-077	Worcester North 25kV	In Service

11.8 Contingency Descriptions

Contingency Name	Contingency Definition
DPL_P4-2_DP6	CONTINGENCY 'DPL_P4-2_DP6' /*MILFORD BUS BREAKER TO STEELE DISCONNECT BRANCH FROM BUS 232000 TO BUS 232004 CKT 1 /*MILFORD STEELE 230 230 /* DISCONNECT BRANCH FROM BUS 232003 TO BUS 232004 CKT 1 /*CARTANZA MILFORD 230 230 DISCONNECT BRANCH FROM BUS 962380 TO BUS 232004 CKT 1 /*AG1-087 TAP MILFORD 230 230 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
DPL_P4-2_DP10	CONTINGENCY 'DPL_P4-2_DP10' /*STEELE BUS BREAKER TO VIENNA DISCONNECT BRANCH FROM BUS 231003 TO BUS 232000 CKT 1 /*KEENEY STEELE 230 230 DISCONNECT BRANCH FROM BUS 232000 TO BUS 232103 CKT 2 /*STEELE STEELE 230 138 AT21 END
DPL_P4-2_DP3	CONTINGENCY 'DPL_P4-2_DP3' /*MILFORD BUS BREAKER TO STEELE DISCONNECT BRANCH FROM BUS 232004 TO BUS 232000 CKT 1 /*MILFORD STEELE 230 230 DISCONNECT BRANCH FROM BUS 232006 TO BUS 232004 CKT 1 /*MILFORD INDIAN RIVER 230 230 END
DPL_P1_2_CKT 23034	CONTINGENCY 'DPL_P1_2_CKT 23034' OPEN LINE FROM BUS 232006 TO BUS 232004 CIRCUIT 1 /INDIAN RIVER - MILFORD 230 END
CKT 23032B	CONTINGENCY 'CKT 23032B' OPEN LINE FROM BUS 232013 TO BUS 232003 CIRCUIT 1 /SILVER RUN - CARTANZA 230 END

Contingency Name	Contingency Definition
DPL_P4-2_DP12	CONTINGENCY 'DPL_P4-2_DP12' /*STEELE BUS BREAKER TO VIENNA DISCONNECT BRANCH FROM BUS 232000 TO BUS 232103 CKT 2 /*STEELE STEELE 230 138 AT21 DISCONNECT BRANCH FROM BUS 232000 TO BUS 232005 CKT 1 /*STEELE VIENNA 230 230 END
DPL_P1_2_AB2-037 KEENEY	CONTINGENCY 'DPL_P1_2_AB2-037 KEENEY' OPEN LINE FROM BUS 923960 TO BUS 231003 CIRCUIT 2 END
DPL_P1_2_CKT 23001	CONTINGENCY 'DPL_P1_2_CKT 23001' OPEN LINE FROM BUS 231003 TO BUS 232000 CIRCUIT 1 /#1 KEENEY EHV - STEELE 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_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_P4-2_DP8	CONTINGENCY 'DPL_P4-2_DP8' /*STEELE BUS BREAKER TO KEENEY DISCONNECT BRANCH FROM BUS 231003 TO BUS 232000 CKT 1 /*KEENEY STEELE 230 230 DISCONNECT BRANCH FROM BUS 232000 TO BUS 232103 CKT 1 /*STEELE STEELE 230 138 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_P7_1_DBL_1NCB_FSA	CONTINGENCY 'DPL_P7_1_DBL_1NCB_FSA' /* #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_P1_2_CKT 13780	CONTINGENCY 'DPL_P1_2_CKT 13780' OPEN LINE FROM BUS 232127 TO BUS 232117 CIRCUIT 1 /LORETTO - VIENNA 138 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
Base Case	
DPL_P1_2_CKT 13707	CONTINGENCY 'DPL_P1_2_CKT 13707' OPEN LINE FROM BUS 232119 TO BUS 232117 CIRCUIT 1 /NELSON - VIENNA 138 END
DPL_P1_2_CKT 23076	CONTINGENCY 'DPL_P1_2_CKT 23076' OPEN LINE FROM BUS 232004 TO BUS 232000 CIRCUIT 1 /MILFORD - STEELE 230 END
DPL_P4-2_DPIR235	CONTINGENCY 'DPL_P4-2_DPIR235' /*INDIAN RIVER BUS BREAKER 235 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_23085 &13710	CONTINGENCY 'DPL_P1_2_23085 &13710' DISCONNECT BUS 232005 /STEELE - VIENNA 230 & VIENNA AT20 DISCONNECT BUS 232116 /VIENNA XFMR - VIENNA 138 END

12 Light Load Analysis

The Queue Project AG1-450 was evaluated as a 25 MW (Capacity 25 MW) injection as an uprate to AF2-358 which taps the line between Airey - Vienna in the DPL area. Project AG1-450 was evaluated for compliance with applicable reliability planning criteria (PJM, NERC, NERC Regional Reliability Councils, and Transmission Owners). Project AG1-450 was studied with a commercial probability of 100.0 %. Potential network impacts were as follows:

12.1 Light Load Deliverability

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

None

12.2 Multiple Facility Contingency

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

ID	FROM BUS#	FROM BUS	kV	FROM BUS AREA	TO BUS#	TO BUS	kV	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC|DC	MW IMPACT
174309057	232001	COOLSPRS	230.0	DP&L	232927	BENNETT_230	230.0	DP&L	2	DPL_P4-2_DPIR235	breaker	678.0	99.92	100.89	AC	6.4
179461140	232234	TODD	69.0	DP&L	232233	PRESTON	69.0	DP&L	1	DPL_P4-2_DP11	breaker	93.0	96.06	102.54	AC	6.07

12.3 Contribution to Previously Identified Overloads

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

ID	FROM BUS#	FROM BUS	kV	FROM BUS AREA	TO BUS#	TO BUS	kV	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC|DC	MW IMPACT
174100049	232121	INDRV2&3	138.0	DP&L	232119	NELSON	138.0	DP&L	1	DPL_P4-2_DPIR235	breaker	193.0	142.69	144.66	DC	3.82
178679516	232121	INDRV2&3	138.0	DP&L	232119	NELSON	138.0	DP&L	1	DPL_P1_2_CKT 23002	single	193.0	126.55	128.71	DC	4.16
179460348	232121	INDRV2&3	138.0	DP&L	232119	NELSON	138.0	DP&L	1	DPL_P4-2_DPPINEY8870	breaker	193.0	116.6	118.76	DC	4.16

12.4 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 PROJECT LOADING %	POST PROJECT LOADING %	AC|DC	MW IMPACT
168001908	232121	INDRV2&3	138.0	DP&L	232119	NELSON	138.0	DP&L	1	DPL_P1_2_CKT 23002	operation	193.0	116.5	118.65	DC	4.16

12.5 System Reinforcements

<table>
<tr><th>ID</th><th>Idx</th><th>Facility</th><th>Upgrade Description</th><th>Cost</th><th>Cost Allocation</th><th>Upgrade Number</th></tr>
<tr><td>179461140</td><td>2</td><td>TODD 69.0 kV - PRESTON 69.0 kV Ckt 1</td><td>See Summer Peak reinforcements above</td><td>$0</td><td>$0</td><td></td></tr>
<tr><td>174309057</td><td>1</td><td>COOLSPRS 230.0 kV - BENNETT_230 230.0 kV Ckt 2</td><td>ProjectId : n7830 (dt23069r0001)
Description : Rebuild 23069 Cool Spring - Milford (232001 to 232004) with new poles, conductor, foundations, insulators and OPGW
Type : FAC
Total Cost : $52,000,000
Time Estimate : 48-60 Months
Ratings : 659.0/799.0/799.0
<table><tr><th>Queue</th><th>MW</th><th>Cost %</th><th>Cost $</th></tr><tr><td>AG1-450</td><td>5.4</td><td>100.00%</td><td>$52,000,000</td></tr></table></td><td>$52,000,000</td><td>$52,000,000</td><td>N7830</td></tr>
<tr><td>179460348, 178679516, 174100049</td><td>3</td><td>INDRV2&3 138.0 kV - NELSON 138.0 kV Ckt 1</td><td>See Summer Peak reinforcements above</td><td>$0</td><td>$0</td><td></td></tr>
<tr><td></td><td></td><td></td><td>TOTAL COST</td><td>$52,000,000</td><td>$52,000,000</td><td></td></tr>
</table>

Note: For customers with System Reinforcements listed: If your present cost allocation to a System Reinforcement indicates $0, then please be aware that as changes to the interconnection process occur, such as prior queued projects withdrawing from the queue, reducing in size, etc, the cost responsibilities can change and a cost allocation may be assigned to your project. In addition, although your present cost allocation to a System Reinforcement is presently $0, your project may need this system reinforcement completed to be deliverable to the PJM system. If your project comes into service prior to completion of the system reinforcement, an interim deliverability study for your project will be required.

12.6 Flow Gate Details

12.6.1 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
174309057	232001	COOLSPRS	DP&L	232927	BENNETT_230	DP&L	2	DPL_P4-2_DPIR235	breaker	678.0	99.92	100.89	AC	6.4

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
930201	AB1-056 C	17.3986	50/50	17.3986
930202	AB1-056 E	49.5481	50/50	49.5481
938651	AE1-087 C	3.3512	50/50	3.3512
938652	AE1-087 E	0.8378	50/50	0.8378
939151	AE1-145	5.8160	50/50	5.8160
942441	AE2-257 C	16.5414	50/50	16.5414
942442	AE2-257 E	43.6093	50/50	43.6093
943361	AF1-007 C	1.0266	50/50	1.0266
943362	AF1-007 E	2.9178	50/50	2.9178
945661	AF1-231 C	2.2021	50/50	2.2021
945662	AF1-231 E	3.3032	50/50	3.3032
945791	AF1-244	2.2842	50/50	2.2842
957611	AF2-055 C	0.0003	50/50	0.0003
957612	AF2-055 E	8.7036	50/50	8.7036
957661	AF2-060	2.6172	50/50	2.6172
957671	AF2-061 O1	11.6320	50/50	11.6320
959021	AF2-193 C	64.2990	50/50	64.2990
959022	AF2-193 E	173.4453	50/50	173.4453
959031	AF2-194 C	64.2990	50/50	64.2990
959032	AF2-194 E	173.4453	50/50	173.4453
959051	AF2-196 C	4.5113	50/50	4.5113
959052	AF2-196 E	10.5264	50/50	10.5264
959161	AF2-207 C O1	7.2929	50/50	7.2929
959162	AF2-207 E O1	10.9393	50/50	10.9393
959581	AF2-249 C	0.2128	50/50	0.2128
959582	AF2-249 E	0.8513	50/50	0.8513
960341	AF2-325 C	0.0002	50/50	0.0002
960342	AF2-325 E	2.6928	50/50	2.6928
960871	AF2-378 C	0.0002	50/50	0.0002
960872	AF2-378 E	0.9156	50/50	0.9156
960881	AF2-379 C	0.0003	50/50	0.0003
960882	AF2-379 E	0.9083	50/50	0.9083
961181	AF2-409 O1	24.5520	50/50	24.5520
963001	AG1-149	0.8566	50/50	0.8566
963011	AG1-150	11.6320	50/50	11.6320
964551	AG1-318 C	0.1832	50/50	0.1832
964552	AG1-318 E	0.4274	50/50	0.4274
965322	AG1-397 E	1.2229	50/50	1.2229
965821	AG1-450	6.3995	50/50	6.3995
965951	AG1-464 C	2.6372	50/50	2.6372
965952	AG1-464 E	3.9558	50/50	3.9558

12.6.2 Index 2

ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC|DC	MW IMPACT
179461140	232234	TODD	DP&L	232233	PRESTON	DP&L	1	DPL_P4-2_DP11	breaker	93.0	96.06	102.54	AC	6.07

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
938651	AE1-087 C	6.2050	50/50	6.2050
938652	AE1-087 E	1.5512	50/50	1.5512
939151	AE1-145	2.1824	50/50	2.1824
942441	AE2-257 C	1.7458	Adder	2.05
942442	AE2-257 E	4.6026	Adder	5.41
943361	AF1-007 C	0.0942	Adder	0.11
943362	AF1-007 E	0.2678	Adder	0.32
945661	AF1-231 C	0.8314	50/50	0.8314
945662	AF1-231 E	1.2472	50/50	1.2472
945791	AF1-244	0.9218	50/50	0.9218
957611	AF2-055 C	0.0001	50/50	0.0001
957612	AF2-055 E	3.2826	50/50	3.2826
957661	AF2-060	0.9821	50/50	0.9821
957671	AF2-061 O1	4.3648	50/50	4.3648
959021	AF2-193 C	5.9015	Adder	6.94
959022	AF2-193 E	15.9192	Adder	18.73
959031	AF2-194 C	5.9015	Adder	6.94
959032	AF2-194 E	15.9192	Adder	18.73
959051	AF2-196 C	0.4761	Adder	0.56
959052	AF2-196 E	1.1110	Adder	1.31
959161	AF2-207 C O1	2.4609	50/50	2.4609
959162	AF2-207 E O1	3.6914	50/50	3.6914
959581	AF2-249 C	0.0750	50/50	0.0750
959582	AF2-249 E	0.2999	50/50	0.2999
960341	AF2-325 C	0.0003	50/50	0.0003
960342	AF2-325 E	4.0943	50/50	4.0943
960871	AF2-378 C	0.0003	50/50	0.0003
960872	AF2-378 E	1.3086	50/50	1.3086
960881	AF2-379 C	0.0001	50/50	0.0001
960882	AF2-379 E	0.3657	50/50	0.3657
961181	AF2-409 O1	14.3440	50/50	14.3440
962381	AG1-087 C	4.0395	Adder	4.75
962382	AG1-087 E	10.8965	Adder	12.82
963001	AG1-149	0.3457	50/50	0.3457
963011	AG1-150	4.3648	50/50	4.3648
964551	AG1-318 C	0.0203	Adder	0.02
964552	AG1-318 E	0.0473	Adder	0.06
965322	AG1-397 E	0.3528	50/50	0.3528
965821	AG1-450	6.0690	50/50	6.0690

12.6.3 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
174100049	232121	INDRV2&3	DP&L	232119	NELSON	DP&L	1	DPL_P4-2_DPIR235	breaker	193.0	142.69	144.66	DC	3.82

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
930201	AB1-056 C	3.4655	50/50	3.4655
930202	AB1-056 E	9.8691	50/50	9.8691
938651	AE1-087 C	-1.7275	Adder	-2.03
938653	AE1-087 BAT	2.5404	50/50	2.5404
939152	AE1-145 BAT	3.6566	50/50	3.6566
942441	AE2-257 C	3.8087	50/50	3.8087
942442	AE2-257 E	10.0412	50/50	10.0412
943361	AF1-007 C	0.2045	50/50	0.2045
943362	AF1-007 E	0.5812	50/50	0.5812
945663	AF1-231 BAT	3.4848	50/50	3.4848
945792	AF1-244 BAT	1.4861	50/50	1.4861
957613	AF2-055 BAT	5.4960	50/50	5.4960
957662	AF2-060 BAT	1.6455	50/50	1.6455
957672	AF2-061 BAT	7.3132	50/50	7.3132
959021	AF2-193 C	12.8073	50/50	12.8073
959022	AF2-193 E	34.5473	50/50	34.5473
959031	AF2-194 C	12.8073	50/50	12.8073
959032	AF2-194 E	34.5473	50/50	34.5473
959051	AF2-196 C	1.0387	50/50	1.0387
959052	AF2-196 E	2.4237	50/50	2.4237
959163	AF2-207 BAT	10.0215	50/50	10.0215
959583	AF2-249 BAT	0.5465	50/50	0.5465
961182	AF2-409 BAT	20.7980	50/50	20.7980
962381	AG1-087 C	2.6137	Adder	3.07
962382	AG1-087 E	7.0504	Adder	8.29
963002	AG1-149 BAT	0.5573	50/50	0.5573
963012	AG1-150 BAT	7.3132	50/50	7.3132
964551	AG1-318 C	0.0435	50/50	0.0435
964552	AG1-318 E	0.1016	50/50	0.1016
965822	AG1-450 BAT	3.8183	50/50	3.8183

12.7 Contingency Descriptions

Contingency Name	Contingency Definition
DPL_P1_2_CKT 23002	CONTINGENCY 'DPL_P1_2_CKT 23002' DISCONNECT BUS 232007 /INDIAN RIVER - PINEY GROVE 230 & PNY GRV AT-20 XFMER 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
DPL_P4-2_DPPINEY8870	CONTINGENCY 'DPL_P4-2_DPPINEY8870' /*PINEY GROVE BUS BREAKER 8870 DISCONNECT BRANCH FROM BUS 232128 TO BUS 232133 CKT 1 /*PINEY GROVE WATTSVILLE 138 138 DISCONNECT BRANCH FROM BUS 232007 TO BUS 232006 CKT 1 /*PINEY GROVE INDIAN RIVER 230 230 DISCONNECT BRANCH FROM BUS 232007 TO BUS 232128 CKT 1 /*PINEY GROVE PINEY GROVE 230 138 END
DPL_P4-2_DPIR235	CONTINGENCY 'DPL_P4-2_DPIR235' /*INDIAN RIVER BUS BREAKER 235 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

13 Short Circuit Analysis

The following Breakers are overdutied:

None

13.1 System Reinforcements - Short Circuit

None

14 Stability and Reactive Power

To be determined in the Facilities Study Phase.

15 Affected Systems

None

16 Attachment 1: One Line Diagram