



**Generation Interconnection
Feasibility Study Report
for
Queue Project AG1-220
WEST DEKALB 138 KV
90 MW Capacity / 150 MW Energy**

January 2021

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1 Introduction

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

2 Preface

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

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

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

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.

3 General

The Interconnection Customer (IC), has proposed a Solar generating facility located in DeKalb County, Illinois. The installed facilities will have a total capability of 150 MW with 90 MW of this output being recognized by PJM as Capacity. The proposed in-service date for this project is December 31, 2023. This study does not imply a TO commitment to this in-service date.

Queue Number	AG1-220
Project Name	WEST DEKALB 138 KV
State	Illinois
County	DeKalb
Transmission Owner	ComEd
MFO	150
MWE	150
MWC	90
Fuel	Solar
Basecase Study Year	2024

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

4 Point of Interconnection

4.1 Primary

AG1-220 has proposed a primary Point of Interconnection on the ComEd transmission system at the TDC 375 West Dekalb 138 kV substation.

4.2 Secondary

AG1-220 has proposed a secondary Point of Interconnection on the ComEd transmission system tapping the Cherry Valley – Gliden 138kV line.

5 Cost Summary

The AG1-220 project will be responsible for the following costs:

Description	Total Cost
Total Physical Interconnection Costs	\$ 33,500,000
Total System Network Upgrade Costs	\$ 171,700,000
Total Costs	\$ 205,200,000

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

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

6 Transmission Owner Scope of Work

6.1 Attachment Facilities

The generator lead for AG1-220 will interconnect to the expanded bus at TDC 375 W. DeKalb (see details in Direct Connection section below). The required Attachment Facilities are one 138kV line MOD, one dead-end structure and a set of revenue-metering as shown in the one-line diagram.

Scope of Work	Cost Estimate
Installation of one 138 kV line MOD, one dead-end structure and one set of revenue metering (see notes below on cost estimate)	\$ 1,000,000

6.2 Direct Connection Network Upgrades

In order to accommodate interconnection of AG1-220, TDC 375 W. DeKalb would need to be expanded to create bus positions to interconnect the generator lead, and would be upgraded to a TSS with eight 138kV circuit breakers in breaker-and-a-half configuration, as shown in the one-line diagram

The Interconnection Customer is responsible for constructing all the facilities on the Interconnection Customer side of the Point of Interconnection (POI).

ComEd would design, engineer and construct expansion of TDC 375 W. DeKalb, as shown in the one-line diagram. The ComEd cost is given below:

Scope of Work	Cost Estimate
new BUS rebuild at TDC 375 W. DeKalb, with eight circuit breakers and five switches,	\$30,000,000
Total Cost Estimate (see notes below on cost estimate)	\$30,000,000

Normally it takes about 24-months to engineer, design, procure material and construct 138 V facilities after ISA/ICSA are signed.

6.3 Non-Direct Connection Network Upgrades

In order to allow interconnection of this solar facility on this line, a remote system circuit breaker is required at TSS 113 Waterman, as shown in the one-line diagram.

The ComEd cost is given below:

Scope of Work	Cost Estimate
TSS 113 Waterman remote system circuit breaker	\$ 2,500,000
Total Cost Estimate (see notes below on cost estimate)	\$2,500,000

Notes on Cost Estimate:

- 1) These estimates are Order-of-Magnitude estimates of the costs that ComEd would bill to the customer for this interconnection. These estimates are based on a one-line electrical diagram of the project and the information provided by the Interconnection Customer.
- 2) There were no site visits performed for these estimates. There may be costs related to specific site related issues that are not identified in these estimates. The site reviews will be performed during the Facilities Study or during detailed engineering.
- 3) These estimates are not a guarantee of the maximum amount payable by the Interconnection Customer and the actual costs of ComEd's work may differ significantly from these estimates. Interconnection Customer will be responsible for paying actual costs of ComEd's work in accordance with Sections 212.1 and 217 of the PJM Open Access Transmission Tariff.
- 4) The Interconnection Customer is responsible for all engineering, procurement, testing and construction of all equipment on the Interconnection Customer's side of the POI.
- 5) These cost estimates do not include cost of acquiring right-of-way for the transmission line and purchasing any additional land, if needed, for the line terminations. The need and cost for acquiring property and associated legal costs will be investigation during Facilities Study for this project.

7 Schedule

See Section 6 and 11.

8 Transmission Owner Analysis

See Section 6 and 11.

9 Interconnection Customer Requirements

The Interconnection Customer is responsible for all design and construction related activities on the Interconnection Customer's side of the Point of Interconnection.

10 Revenue Metering and SCADA Requirements

10.1 PJM Requirements

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

10.2 Meteorological Data Reporting Requirements

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

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

10.3 Interconnected Transmission Owner Requirements

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

ComEd interconnection requirements can be found at <https://www.pjm.com/planning/design-engineering/to-tech-standards/private-comed.aspx>

11 Summer Peak - Load Flow Analysis - Primary POI

The Queue Project AG1-220 was evaluated as a 150.0 MW (Capacity 90.0 MW) injection at the West Dekalb 138 kV substation in the ComEd area. Project AG1-220 was evaluated for compliance with applicable reliability planning criteria (PJM, NERC, NERC Regional Reliability Councils, and Transmission Owners). Project AG1-220 was studied with a commercial probability of 53%. Potential network impacts were as follows:

11.1 Generation Deliverability

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

ID	FROM BUS#	FROM BUS	kV	FROM BUS AREA	TO BUS#	TO BUS	kV	TO BUS AREA	CK T ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADIN G %	POST PROJECT LOADIN G %	AC/D C	MW IMPACT
16840794 4	27073 0	ELECT JCT; B	345. 0	CE	27081 2	LOMBARD ; B	345. 0	CE	1	COMED_P2-1_111-L11120__	single	1479. 0	99.47	100.09	DC	9.22

11.2 Multiple Facility Contingency

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

None

11.3 Contribution to Previously Identified Overloads

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

ID	FROM BUS#	FROM BUS	kV	FROM BUS AREA	TO BUS#	TO BUS	kV	TO BUS AREA	CK T ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADIN G %	POST PROJECT LOADIN G %	AC/D C	MW IMPACT
1620993 37	27073 0	ELECT JCT; B	345. 0	CE	27081 2	LOMBARD ; B	345. 0	CE	1	COMED_P2-2_111_EJ-345R_3	bus	1479. 0	113.94	114.98	DC	15.42
1620993 38	27073 0	ELECT JCT; B	345. 0	CE	27081 2	LOMBARD ; B	345. 0	CE	1	COMED_P2-2_111_EJ-345B_2	bus	1479. 0	106.57	107.2	DC	22.06
1620993 63	27073 0	ELECT JCT; B	345. 0	CE	27084 6	PLANO ; B	345. 0	CE	1	COMED_P2-2_111_EJ-345R_3	bus	1341. 0	100.13	100.54	DC	15.43
1623338 61	27142 8	ESS H452 ;RT	138. 0	CE	27273 0	WATERMAN ;3B	138. 0	CE	1	COMED_P2-2_107_DX-138R_23	bus	538.0	129.7	154.04	DC	130.9 6
1629911 39	27142 8	ESS H452 ;RT	138. 0	CE	27273 0	WATERMAN ;3B	138. 0	CE	1	COMED_P7-1_138-L10714_R-R+_138-L10721_R-R-A	tower	538.0	129.69	154.04	DC	130.9 6
1624485 70	27156 0	GLIDDEN ;BT	138. 0	CE	27252 2	SUGAR GRV; B	138. 0	CE	1	COMED_P4_167-38-L14609__	breaker	538.0	115.92	126.45	DC	56.63
1623338 93	27202 7	MONTGOMER ;RT	138. 0	CE	27220 3	OSWEGO ; R	138. 0	CE	1	COMED_P2-2_167_PL-138B_2	bus	275.0	132.79	144.18	DC	31.33
1624485 11	27202 7	MONTGOMER ;RT	138. 0	CE	27220 3	OSWEGO ; R	138. 0	CE	1	COMED_P4_167-38-TR81__	breaker	264.0	138.25	150.12	DC	31.34
1624485 12	27202 7	MONTGOMER ;RT	138. 0	CE	27220 3	OSWEGO ; R	138. 0	CE	1	COMED_P4_167-38-L14302__	breaker	275.0	124.79	136.78	DC	32.98
1629912 02	27244 4	SANDWICH ; B	138. 0	CE	94312 0	AE2-341 TAP	138. 0	CE	1	COMED_P7-1_138-L11106_B-R+_345-L15502_B-R-A	tower	498.0	113.9	125.98	DC	60.17
1623339 43	27244 5	SANDWICH ; R	138. 0	CE	27244 4	SANDWICH ; B	138. 0	CE	1	COMED_P2-2_111_EJ-138B_2	bus	498.0	107.49	119.24	DC	58.5

ID	FROM BUS#	FROM BUS	kV	FROM BUS AREA	TO BUS#	TO BUS	kV	TO BUS AREA	CK T ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADIN G %	POST PROJECT LOADIN G %	AC/D C	MW IMPACT
162448545	272445	SANDWICH ; R	138.0	CE	272444	SANDWICH ; B	138.0	CE	1	COMED_P4_11-38-TR82_	breaker	449.0	119.22	132.25	DC	58.5
162448546	272445	SANDWICH ; R	138.0	CE	272444	SANDWICH ; B	138.0	CE	1	COMED_P4_11-38-L11106_	breaker	498.0	107.49	119.24	DC	58.5
162991187	272445	SANDWICH ; R	138.0	CE	272444	SANDWICH ; B	138.0	CE	1	COMED_P7-1_138-L11106_B-R+_345-L15502_B-R-A	tower	498.0	116.61	128.69	DC	60.16
162448561	272522	SUGAR GRV ; B	138.0	CE	272114	N AURORA ; B	138.0	CE	1	COMED_P4_167-38-L14609_	breaker	498.0	114.63	126.0	DC	56.63
162333841	272728	WATERMAN ; B	138.0	CE	272445	SANDWICH ; R	138.0	CE	1	COMED_P2-2_111_EJ-138B_2	bus	331.0	167.55	185.22	DC	58.51
162448434	272728	WATERMAN ; B	138.0	CE	272445	SANDWICH ; R	138.0	CE	1	COMED_P4_11-38-TR82_	breaker	309.0	179.48	198.41	DC	58.51
162448435	272728	WATERMAN ; B	138.0	CE	272445	SANDWICH ; R	138.0	CE	1	COMED_P4_11-38-L11106_	breaker	331.0	167.55	185.22	DC	58.51
162991113	272728	WATERMAN ; B	138.0	CE	272445	SANDWICH ; R	138.0	CE	1	COMED_P7-1_138-L11106_B-R+_345-L15502_B-R-A	tower	331.0	181.22	199.4	DC	60.17
162333883	272803	W PLANO ; R	138.0	CE	272251	PLANO ; R	138.0	CE	1	COMED_P2-2_111_EJ-138B_2	bus	498.0	141.03	152.78	DC	58.51
162448469	272803	W PLANO ; R	138.0	CE	272251	PLANO ; R	138.0	CE	1	COMED_P4_11-38-TR82_	breaker	449.0	156.42	169.45	DC	58.51
162448470	272803	W PLANO ; R	138.0	CE	272251	PLANO ; R	138.0	CE	1	COMED_P4_11-38-L11106_	breaker	498.0	141.06	153.04	DC	59.65
162991144	272803	W PLANO ; R	138.0	CE	272251	PLANO ; R	138.0	CE	1	COMED_P7-1_138-L11106_B-R+_345-L15502_B-R-A	tower	498.0	150.13	162.21	DC	60.17
162333868	943120	AE2-341 TAP	138.0	CE	272803	W PLANO ; R	138.0	CE	1	COMED_P2-2_111_EJ-138B_2	bus	498.0	148.06	159.8	DC	58.51
162448454	943120	AE2-341 TAP	138.0	CE	272803	W PLANO ; R	138.0	CE	1	COMED_P4_11-38-TR82_	breaker	449.0	164.21	177.24	DC	58.51
162448455	943120	AE2-341 TAP	138.0	CE	272803	W PLANO ; R	138.0	CE	1	COMED_P4_11-38-L11106_	breaker	498.0	148.09	160.07	DC	59.65
162991129	943120	AE2-341 TAP	138.0	CE	272803	W PLANO ; R	138.0	CE	1	COMED_P7-1_138-L11106_B-R+_345-L15502_B-R-A	tower	498.0	157.16	169.24	DC	60.17

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 LOADIN G %	POST PROJECT LOADIN G %	AC/D C	MW IMPACT
168407803	255113	17STILLWELL	345.0	NIPS	243219	05DUMONT	345.0	AEP	1	COMED_P1-2_765-L11215__S	operation	1409.0	162.99	163.08	DC	21.63
168407804	255113	17STILLWELL	345.0	NIPS	243219	05DUMONT	345.0	AEP	1	AEP_P1-2_#695_1681	operation	1409.0	162.99	163.08	DC	21.63
168408098	270644	WILTON ;	765.0	CE	243206	05DUMONT	765.0	AEP	1	Base Case	operation	3555.0	107.25	107.26	DC	42.96
168408100	270644	WILTON ;	765.0	CE	243206	05DUMONT	765.0	AEP	1	AEP_P1-2_#701	operation	4105.0	101.39	101.41	DC	45.96
168408149	270677	BURNHAM ;OR	345.0	CE	255109	17MUNSTER	345.0	NIPS	1	AEP_P1-2_#695_1681	operation	1441.0	100.19	100.21	DC	17.89
168408150	270677	BURNHAM ;OR	345.0	CE	255109	17MUNSTER	345.0	NIPS	1	COMED_P1-2_765-L11215__S	operation	1441.0	100.19	100.21	DC	17.89
168408114	270697	COLLINS ;R	345.0	CE	275168	COLLINS ;2M	345.0	CE	1	COMED_P1-2_765-L2315__S	operation	1379.0	104.43	104.45	DC	14.85
168408052	270728	E FRANKFO;B	345.0	CE	274750	CRETE EC ;BP	345.0	CE	1	AEP_P1-2_#695_1681	operation	1399.0	115.79	115.81	DC	19.25
168408053	270728	E FRANKFO;B	345.0	CE	274750	CRETE EC ;BP	345.0	CE	1	COMED_P1-2_765-L11215__S	operation	1399.0	115.79	115.81	DC	19.25
168407941	270730	ELECT JCT;B	345.0	CE	270812	LOMBARD ;B	345.0	CE	1	Base Case	operation	1201.0	117.44	117.97	DC	14.09
168407942	270730	ELECT JCT;B	345.0	CE	270812	LOMBARD ;B	345.0	CE	1	COMED_P2-1_111-L11120__	operation	1479.0	112.76	113.8	DC	15.36
168408015	270846	PLANO ;B	345.0	CE	275207	PLANO ;3M	345.0	CE	1	COMED_P1-3_TR94_PLANO_R-S	operation	1379.0	113.52	113.71	DC	18.4
168408001	270847	PLANO ;R	345.0	CE	275208	PLANO ;4M	345.0	CE	1	COMED_P1-3_TR93_PLANO_B-S	operation	1379.0	116.29	116.48	DC	18.83
168408135	270927	WILTON ;R	345.0	CE	275233	WILTON ;4M	345.0	CE	1	COMED_P1-2_765-L11216__S	operation	1379.0	101.16	101.18	DC	14.78
162608052	271428	ESS H452 ;RT	138.0	CE	272730	WATERMAN ;3B	138.0	CE	1	Base Case	operation	376.0	149.37	177.99	DC	107.62
162608053	271428	ESS H452 ;RT	138.0	CE	272730	WATERMAN ;3B	138.0	CE	1	COMED_P1-2_138-L8315__R-R	operation	483.0	147.12	170.2	DC	111.45
162608142	271560	GLIDDEN ;BT	138.0	CE	272522	SUGAR GRV; B	138.0	CE	1	COMED_P1-2_138-L14609_R-R-A	operation	483.0	129.03	140.76	DC	56.64
162608147	271560	GLIDDEN ;BT	138.0	CE	272522	SUGAR GRV; B	138.0	CE	1	Base Case	operation	376.0	102.94	113.4	DC	39.33
162608201	271560	GLIDDEN ;BT	138.0	CE	272728	WATERMAN ;B	138.0	CE	1	COMED_P2-1_113-L11323__	operation	321.0	107.82	117.98	DC	32.61
162608241	271581	ESS B200 ;R	138.0	CE	271193	CHERRY VA; R	138.0	CE	1	COMED_P1-2_138-L14609_R-R-A	operation	449.0	92.91	102.89	DC	44.83
162608232	271586	ESS W541 ;B	138.0	CE	271390	ELECT JCT; B	138.0	CE	1	COMED_P1-2_138-L14609_R-R-A	operation	449.0	92.19	103.54	DC	50.97

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 LOADIN G %	POST PROJECT LOADIN G %	AC DC	MW IMPACT
162608227	272114	N AURORA ; B	138.0	CE	271586	ESS W541 ; B	138.0	CE	1	COMED_P1-2_138-L14609_R-R-A	operation	449.0	93.84	105.19	DC	50.97
162608181	272444	SANDWICH ; B	138.0	CE	943120	AE2-341 TAP	138.0	CE	1	COMED_P1-2_138-L11106_B-R-A	operation	449.0	110.34	123.41	DC	58.67
162608183	272444	SANDWICH ; B	138.0	CE	943120	AE2-341 TAP	138.0	CE	1	Base Case	operation	351.0	98.43	110.27	DC	41.53
162608168	272445	SANDWICH ; R	138.0	CE	272444	SANDWICH ; B	138.0	CE	1	COMED_P1-2_138-L11106_B-R-A	operation	449.0	118.13	131.2	DC	58.66
162608170	272445	SANDWICH ; R	138.0	CE	272444	SANDWICH ; B	138.0	CE	1	Base Case	operation	351.0	102.29	114.12	DC	41.52
162608098	272522	SUGAR GRV; B	138.0	CE	272114	N AURORA ; B	138.0	CE	1	COMED_P1-2_138-L14609_R-R-A	operation	374.0	152.54	167.69	DC	56.64
162608103	272522	SUGAR GRV; B	138.0	CE	272114	N AURORA ; B	138.0	CE	1	Base Case	operation	330.0	101.32	113.24	DC	39.33
162608027	272728	WATERMAN ; B	138.0	CE	272445	SANDWICH ; R	138.0	CE	1	COMED_P1-2_138-L11106_B-R-A	operation	309.0	177.87	196.86	DC	58.67
162608029	272728	WATERMAN ; B	138.0	CE	272445	SANDWICH ; R	138.0	CE	1	Base Case	operation	238.0	159.4	176.84	DC	41.53
162608043	272728	WATERMAN ; B	138.0	CE	271560	GLIDDEN ; BT	138.0	CE	1	COMED_P1-2_138-L14609_R-R-A	operation	321.0	164.18	184.47	DC	65.12
162608048	272728	WATERMAN ; B	138.0	CE	271560	GLIDDEN ; BT	138.0	CE	1	Base Case	operation	292.0	86.36	101.52	DC	44.24
162608032	272730	WATERMAN ; 3B	138.0	CE	272728	WATERMAN ; B	138.0	CE	1	COMED_P1-2_138-L10714_R-R-A	operation	507.0	155.89	177.16	DC	107.87
162608037	272730	WATERMAN ; 3B	138.0	CE	272728	WATERMAN ; B	138.0	CE	1	Base Case	operation	487.0	132.29	149.9	DC	85.77
162608196	272730	WATERMAN ; 3B	138.0	CE	960750	AF2-366 TAP	138.0	CE	1	COMED_P2-1_113-L11323_	operation	480.0	99.11	118.67	DC	93.87
162608038	272756	W DEKALB ; 3T	138.0	CE	271428	ESS H452 ; RT	138.0	CE	1	COMED_P1-2_138-L8315_R-R	operation	452.0	157.21	181.87	DC	111.45
162608039	272756	W DEKALB ; 3T	138.0	CE	271428	ESS H452 ; RT	138.0	CE	1	Base Case	operation	376.0	149.4	178.02	DC	107.62
162608093	272803	W PLANO ; R	138.0	CE	272251	PLANO; R	138.0	CE	1	COMED_P1-2_138-L11106_B-R-A	operation	449.0	155.59	168.65	DC	58.67
162608094	272803	W PLANO ; R	138.0	CE	272251	PLANO; R	138.0	CE	1	Base Case	operation	351.0	153.08	164.91	DC	41.53
162608023	272948	CHI W CTR	138.0	CE	271560	GLIDDEN ; BT	138.0	CE	1	COMED_P2-1_113-L11323_	operation	386.0	180.73	198.04	DC	66.82
168407767	274750	CRETE EC ; BP	345.0	CE	255112	17STJOHN	345.0	NIPS	1	Base Case	operation	1091.0	175.01	175.03	DC	11.94
168407893	274804	UNIV PK N; RP	345.0	CE	960680	AF2-359 TAP	345.0	CE	1	COMED_P1-2_765-L11215_-S	operation	971.0	137.9	138.04	DC	15.06
168407894	274804	UNIV PK N; RP	345.0	CE	960680	AF2-359 TAP	345.0	CE	1	AEP_P1-2_#695_1681	operation	971.0	137.9	138.04	DC	15.06
168408117	275168	COLLINS ; 2M	345.0	CE	270607	COLLINS ;	765.0	CE	1	COMED_P1-2_765-L2315_-S	operation	1379.0	104.43	104.45	DC	14.85
168408019	275207	PLANO ; 3M	345.0	CE	270630	PLANO ;	765.0	CE	1	COMED_P1-3_TR94_PLANO_R-S	operation	1379.0	113.52	113.71	DC	18.4
168407997	275208	PLANO ; 4M	345.0	CE	270630	PLANO ;	765.0	CE	1	COMED_P1-3_TR93_PLANO_B-S	operation	1379.0	116.29	116.48	DC	18.83

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 LOADIN G %	POST PROJECT LOADIN G %	AC DC	MW IMPACT
168408133	275233	WILTON ;4M	345.0	CE	270644	WILTON ;	765.0	CE	1	COMED_P1-2_765-L11216__S	operation	1379.0	101.16	101.18	DC	14.78
162608111	934700	AD1-098 TAP	138.0	CE	966520	AG1-521 TAP	138.0	CE	1	Base Case	operation	351.0	93.04	103.59	DC	37.05
162608070	943120	AE2-341 TAP	138.0	CE	272803	W PLANO ; R	138.0	CE	1	COMED_P1-2_138-L11106_B-R-A	operation	449.0	163.38	176.45	DC	58.67
162608071	943120	AE2-341 TAP	138.0	CE	272803	W PLANO ; R	138.0	CE	1	Base Case	operation	351.0	163.05	174.89	DC	41.53
169928231	960680	AF2-359 TAP	345.0	CE	243229	05OLIVE	345.0	AEP	1	AEP_P1-2_#695_1681	operation	971.0	149.88	150.33	DC	15.06
169928232	960680	AF2-359 TAP	345.0	CE	243229	05OLIVE	345.0	AEP	1	COMED_P1-2_765-L11215__S	operation	971.0	149.88	150.33	DC	15.06
162608153	960750	AF2-366 TAP	138.0	CE	272948	CHI W CTR	138.0	CE	1	COMED_P2-1_113-L11323__	operation	480.0	115.72	135.28	DC	93.87
162608069	966520	AG1-521 TAP	138.0	CE	271333	DIXON ; R	138.0	CE	1	Base Case	operation	351.0	92.89	103.45	DC	37.05

11.5 System Reinforcements - Summer Peak Load Flow - Primary POI

ID	Idx	Facility	Upgrade Description	Cost
162448570	4	GLIDDEN ;BT 138.0 kV - SUGAR GRV; B 138.0 kV Ckt 1	<u>ComEd</u> CE_NUN_L14609_1 (1451) : The post contingency flow exceeds the rating of the line ALDR rating. The resolution will be a new 138kV line from TSS 167 Plano to AE2-341 Interconnection Substation. Convert TSS 167 Plano 138kV bus to a breaker and 1/2 bus configuration, install ~3.5 miles of new 138kV conductor and towers from AE2-341 to TSS 167 Plano, expand AE2-341 Interconnection substation for new line. A preliminary estimate for this project is \$34M, which assumes land availability for the station expansions and new 138kV easement requirements. If the assumptions are not valid then additional costs will be incurred. The Facility Study Phase will provide more details. A minimum construction timeline of 48 months pending prior assumptions being valid. This upgrade does not change the ratings of the overloaded line rather it addresses the post contingency flow. Project Type : CON Cost : \$34,000,000 Time Estimate : 30.0 Months	\$75,000,000
162448561	8	SUGAR GRV; B 138.0 kV - N AURORA ; B 138.0 kV Ckt 1	CE_NUN_L14609_NEW LINE (1455) : The post contingency flow exceeds the rating of the line ALDR rating. The resolution will be a new 138kV line from TSS 146 Sandwich to AE2-341 Interconnection Substation. Convert TSS 146 Sandwich to a breaker and 1/2 configuration, install ~6.3 miles of new 138kV conductor and towers from TSS 146 Sandwich to AE2-341 station, expand AE2-341 Interconnection substation for new line. A preliminary estimate for this project is \$41M, which assumes land availability for the station expansions and new 138kV easement requirements. If the assumptions are not valid then additional costs will be incurred. The Facility Study Phase will provide more details. A minimum construction timeline of 48 months pending prior assumptions being valid. This upgrade does not change the ratings of the overloaded line rather it addresses the post contingency flow. Project Type : CON Cost : \$41,000,000 Time Estimate : 48.0 Months	
162333868,162 991129,162448 455,162448454	11	AE2-341 TAP 138.0 kV - W PLANO ; R 138.0 kV Ckt 1	<u>ComEd</u> CE_NUN_L14609_1 (1451) : The post contingency flow exceeds the rating of the line ALDR rating. The resolution will be a new 138kV line from TSS 167 Plano to AE2-341 Interconnection Substation. Convert TSS 167 Plano 138kV bus to a breaker and 1/2 bus configuration, install ~3.5 miles of new 138kV conductor and towers from AE2-341 to TSS 167 Plano, expand AE2-341 Interconnection substation for new line. A preliminary estimate for this project is \$34M, which assumes land availability for the station expansions and new 138kV easement requirements. If the assumptions are not valid then additional costs will be incurred. The Facility Study Phase will provide more details. A minimum construction timeline of 48 months pending prior assumptions being valid. This upgrade does not change the ratings of the overloaded line rather it addresses the post contingency flow. Project Type : CON Cost : \$34,000,000 Time Estimate : 30.0 Months	\$34,000,000
162333883,162 991144,162448 470,162448469	10	W PLANO ; R 138.0 kV - PLANO; R 138.0 kV Ckt 1		

ID	Idx	Facility	Upgrade Description	Cost
162991202	6	SANDWICH ; B 138.0 kV - AE2-341 TAP 138.0 kV Ckt 1	<u>ComEd</u> CE_NUN_L14609_NEW LINE (1455) : The post contingency flow exceeds the rating of the line ALDR rating. The resolution will be a new 138kV line from TSS 146 Sandwich to AE2-341 Interconnection Substation. Convert TSS 146 Sandwich to a breaker and 1/2 configuration, install ~6.3 miles of new 138kV conductor and towers from TSS 146 Sandwich to AE2-341 station, expand AE2-341 Interconnection substation for new line. A preliminary estimate for this project is \$41M, which assumes land availability for the station expansions and new 138kV easement requirements. If the assumptions are not valid then additional costs will be incurred. The Facility Study Phase will provide more details. A minimum construction timeline of 48 months pending prior assumptions being valid. This upgrade does not change the ratings of the overloaded line rather it addresses the post contingency flow. Project Type : CON Cost : \$41,000,000 Time Estimate : 48.0 Months	\$41,000,000
162333861,162991139	3	ESS H452 ;RT 138.0 kV - WATERMAN ;3B 138.0 kV Ckt 1	<u>ComEd</u> CE_NUN_L11323_1 (1453) : The post contingency flow for this event exceeds the rating therefore an upgrade is required. The upgrade will be to re-conductor the line. Potential tower replacement may be required due to the increase in conductor to address this post flow overload. A preliminary estimate for this upgrade is \$4.6M (Note- this estimate does not include tower replacement which is very possible. This detail will be determined during the Facility Study Phase). A preliminary construction timeline of 30-36 months is subject to potential tower replacements unknown at this time. Upon completion of this upgrade the new ratings will be 533/690/735/834/959 MVA (SN/SSTE/SLTE/SLD/ALDR). Project Type : FAC Cost : \$5,400,000 Time Estimate : 30-36 Months	\$5,400,000
162099363	2	ELECT JCT; B 345.0 kV - PLANO ; B 345.0 kV Ckt 1	<u>ComEd</u> CE_NUN_L16704 (1426) : ComEd 345kV L16704 SSTE rating is 1603 MVA. The upgrade will be to replace 1-345kV circuit breaker. A preliminary estimate is \$3M. A preliminary construction timeline is 24 months. Upon completion of the upgrade the ratings will be 1334/1726/1837/2084 MVA (SNSLTE/SSTE/SLD) MVA. Project Type : FAC Cost : \$3,000,000 Time Estimate : 24.0 Months	\$3,000,000
162448545,162448546,162333943,162991187	7	SANDWICH ; R 138.0 kV - SANDWICH ; B 138.0 kV Ckt 1	<u>ComEd</u> CE_NUN_L11301_Z1 (1444) : The upgrade will be to re-conductor the line segment. A preliminary estimate for the upgrade is \$600K. A preliminary estimate is 30 months. Upon completion of the upgrade the ratings will be 487/534/612/722 MVA (SN/SLTE/SSTE/SLD). Project Type : FAC Cost : \$600,000 Time Estimate : 30.0 Months	\$600,000

ID	Idx	Facility	Upgrade Description	Cost
162991113,162 448435,162448 434,162333841	9	WATERMAN ; B 138.0 kV - SANDWICH ; R 138.0 kV Ckt 1	<u>ComEd</u> CE_NUN_L11301 (1387) : The upgrade will be to construct a new 138kV line that parallels the overloaded 138kV line. A preliminary estimate for the upgrade is \$50M. A preliminary estimate is 48 months subject to land availability for the new line and station expansion at the two substations. Note that the upgrade includes conductor work. The preliminary estimate does not include possible tower replacement/upgrades. These unknown costs will add to the estimate. This upgrade addresses the contingencies and does not change the line ratings. Project Type : CON Cost : \$50,000,000 Time Estimate : 48.0 Months S1552 (1456) : PJM model appears to not have the PJM Supplemental Upgrade-S1552-Expand Glidden substation from a straight bus to a ring bus. Based on this upgrade the contingency would be invalid. Project Type : CON Cost : \$0 Time Estimate : Months	\$50,000,000
168407944,162 099337,162099 338	1	ELECT JCT; B 345.0 kV - LOMBARD ; B 345.0 kV Ckt 1	<u>ComEd</u> CE_NUN_L11124 (1312) : ComEd 345kV L11124 SSTE rating is 1568 MVA. The upgrade will be to reconductor the line. A preliminary estimate is \$14.6M with an estimated construction timeline of 30 months. Upon completion of the upgrade the ratings will be 1334/1726/1837/2084 MVA (SN/SLTE/SSTE/SLD). Project Type : FAC Cost : \$14,600,000 Time Estimate : 30.0 Months CE_NUN_L11124_1 (1372) : ComEd 345kV L11124 SSTE rating is 1568 MVA. The upgrade will be to reconductor the line and station conductor. A preliminary estimate is \$15.3M with an estimated construction timeline of 30 months. Upon completion of the upgrade the ratings will be 1364/1726/1846/2221 MVA (SN/SLTE/SSTE/SLD). Project Type : FAC Cost : \$14,600,000 Time Estimate : 30.0 Months CE_NUN_L11124_2 (1414) : In addition to CE_NUN_11124_1, the upgrade will be to replace 2-345kV Circuit Breakers and station conductor. A preliminary estimate is \$7M with an estimated construction timeline of 30 months. Upon completion of the upgrade the ratings will be 1461/1656/1909/1912 MVA (SN/SLTE/SSTE/SLD). Project Type : FAC Cost : \$7,000,000 Time Estimate : 30.0 Months	\$36,200,000

ID	Idx	Facility	Upgrade Description	Cost
162448512,162448511,162333893	5	MONTGOMER;R T 138.0 kV - OSWEGO ; R 138.0 kV Ckt 1	<u>ComEd</u> CE_NUN_L14304 (1439) : Re-conductor the line. A preliminary estimate is \$1.5M with a construction timeline of 30 months. Upon completion the limit rating swill be 351/449/459/498 MVA (SN/SLTE/SSTE/SLD). Project Type : FAC Cost : \$1,500,000 Time Estimate : 30.0 Months	\$1,500,000
			TOTAL COST	\$171,700,000

11.6 Flow Gate Details - Primary POI

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

11.6.1 Index 1

ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC DC	MW IMPACT
162099337	270730	ELECT JCT; B	CE	270812	LOMBARD ; B	CE	1	COMED_P2-2_111_EJ-345R__3	bus	1479.0	113.94	114.98	DC	15.42

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
272364	ESS H440N ;R	1.7991	Adder	2.12
274738	AURORA EC;3P	4.0530	50/50	4.0530
274740	AURORA EC;4P	4.0530	50/50	4.0530
274859	EASYR;U1 E	5.9233	Adder	6.97
274860	EASYR;U2 E	5.9233	Adder	6.97
274872	LEE DEKAL;1U	0.6412	50/50	0.6412
276167	Z1-106 E2	1.1169	50/50	1.1169
276168	Z1-106 E1	1.1234	50/50	1.1234
276591	L-013 2	3.2390	50/50	3.2390
290051	GSG-6; E	7.0990	Adder	8.35
290108	LEEDK;1U E	20.3200	50/50	20.3200
293516	O-009 E1	4.5550	Adder	5.36
293517	O-009 E2	2.3136	Adder	2.72
293518	O-009 E3	2.5479	Adder	3.0
293715	O-029 E	4.8698	Adder	5.73
293716	O-029 E	2.6701	Adder	3.14
293717	O-029 E	2.4541	Adder	2.89
294763	P-046 E	3.8882	Adder	4.57
295109	WESTBROOK E	3.8007	Adder	4.47
295111	SUBLETTE E	1.4504	Adder	1.71
916221	Z1-073 E	3.6873	Adder	4.34
919581	AA2-030 C	10.7721	Adder	12.67
926331	AC1-110 1	2.5352	50/50	2.5352
926341	AC1-110 2	2.5352	50/50	2.5352
930482	AB1-089 CT	17.1057	Adder	20.12
930483	AB1-089 ST	13.5997	Adder	16.0
933431	AC2-156 C O1	0.8044	50/50	0.8044
933432	AC2-156 E O1	1.3124	50/50	1.3124
933911	AD1-013 C	1.2638	Adder	1.49
933912	AD1-013 E	2.0189	Adder	2.38
934432	AD1-067 E	0.3748	Adder	0.44
934701	AD1-098 C O1	4.6290	Adder	5.45
934702	AD1-098 E O1	3.3797	Adder	3.98
937001	AD2-134 C	1.8558	Adder	2.18
937002	AD2-134 E	7.6663	Adder	9.02
937311	AD2-172 C	1.0207	Adder	1.2
937312	AD2-172 E	1.4095	Adder	1.66
937531	AD2-214 C	2.2448	Adder	2.64
937532	AD2-214 E	1.4966	Adder	1.76
938861	AE1-114 C O1	1.8661	Adder	2.2
938862	AE1-114 E O1	6.3666	Adder	7.49

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
939051	AE1-134 1	0.8371	Adder	0.98
939061	AE1-134 2	0.8371	Adder	0.98
940501	AE2-035 C	1.0207	Adder	1.2
940502	AE2-035 E	1.4095	Adder	1.66
941131	AE2-107 C	5.4864	50/50	5.4864
941132	AE2-107 E	3.6576	50/50	3.6576
943121	AE2-341 C	10.6646	50/50	10.6646
943122	AE2-341 E	5.2369	50/50	5.2369
943411	AF1-012 C	10.8801	50/50	10.8801
943412	AF1-012 E	7.2534	50/50	7.2534
943591	AF1-030 C O1	7.0921	50/50	7.0921
943592	AF1-030 E O1	3.5089	50/50	3.5089
943921	AF1-060	0.5026	Adder	0.59
944041	AF1-072	0.9098	Adder	1.07
945351	AF1-200 FTIR	175.0914	Merchant Transmission	175.0914
946151	AF1-280 C O1	8.7442	Adder	10.29
946152	AF1-280 E O1	4.0211	Adder	4.73
946161	AF1-281 C O1	0.1915	Adder	0.23
946162	AF1-281 E O1	1.0851	Adder	1.28
946321	AF1-296 C O1	1.8445	Adder	2.17
946322	AF1-296 E O1	8.6355	Adder	10.16
946501	AF1-314 C	1.8135	Adder	2.13
946502	AF1-314 E	8.4904	Adder	9.99
946671	AF1-331	1.6414	Adder	1.93
955971	J1084	7.9065	PJM External (MISO)	7.9065
957333	AF2-027 BAT	3.0640	Merchant Transmission	3.0640
957471	AF2-041 C	26.6022	50/50	26.6022
957472	AF2-041 E	13.3011	50/50	13.3011
958911	AF2-182 C	11.4888	Adder	13.52
958912	AF2-182 E	7.6592	Adder	9.01
958921	AF2-183 C	2.0424	Adder	2.4
958922	AF2-183 E	3.0637	Adder	3.6
959081	AF2-199 C	8.8674	50/50	8.8674
959082	AF2-199 E	4.4337	50/50	4.4337
959091	AF2-200 C O1	17.7348	50/50	17.7348
959092	AF2-200 E O1	8.8674	50/50	8.8674
959101	AF2-201 C O1	2.4982	Adder	2.94
959102	AF2-201 E O1	7.1738	Adder	8.44
960381	AF2-329	5.5337	50/50	5.5337
960551	AF2-346 C	4.6629	50/50	4.6629
960552	AF2-346 E	3.1086	50/50	3.1086
960721	AF2-363 C O1	3.4519	Adder	4.06
960722	AF2-363 E O1	2.3013	Adder	2.71
960731	AF2-364 C O1	3.5125	Adder	4.13
960732	AF2-364 E O1	2.3417	Adder	2.75
960751	AF2-366 C	5.8608	50/50	5.8608
960752	AF2-366 E	3.9072	50/50	3.9072
961011	AF2-392 C O1	2.2688	Adder	2.67
961012	AF2-392 E O1	10.6223	Adder	12.5
961021	AF2-393 O1	3.8673	Adder	4.55
961031	AF2-394 O1	2.5782	Adder	3.03
962012	AG1-044 E	0.0184	Adder	0.04

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
962691	AG1-118 C O1	18.5184	50/50	18.5184
962692	AG1-118 E O1	12.3456	50/50	12.3456
962701	AG1-119 C	6.0201	Adder	13.36
962702	AG1-119 E	4.0134	Adder	8.91
962711	AG1-120 C O1	2.6835	Adder	5.96
962712	AG1-120 E O1	1.7890	Adder	3.97
962781	AG1-127 C	6.4693	50/50	6.4693
962782	AG1-127 E	4.3129	50/50	4.3129
962791	AG1-128 C O1	2.2248	Adder	4.94
962792	AG1-128 E O1	10.4112	Adder	23.11
963681	AG1-220 C O1	9.2511	50/50	9.2511
963682	AG1-220 E O1	6.1674	50/50	6.1674
964461	AG1-309 FTIR	122.4256	Merchant Transmission	122.4256
965061	AG1-371	4.4337	50/50	4.4337
965071	AG1-372	2.9558	50/50	2.9558
965081	AG1-373	1.4779	50/50	1.4779
965551	AG1-423 C O1	4.9557	Adder	11.0
965552	AG1-423 E O1	3.3038	Adder	7.33
965661	AG1-434 C O1	4.6137	50/50	4.6137
965662	AG1-434 E O1	21.6003	50/50	21.6003
965931	AG1-462 C O1	4.6448	Adder	10.31
965932	AG1-462 E O1	3.0966	Adder	6.87
966441	AG1-513 C	0.1760	Adder	0.39
966442	AG1-513 E	0.2640	Adder	0.59
966521	AG1-521 C O1	2.8392	Adder	6.3
966522	AG1-521 E O1	0.7098	Adder	1.58
966821	AG1-553 C O1	6.8124	Adder	15.12
966822	AG1-553 E O1	1.7031	Adder	3.78
CBM-W2	CBM-W2	4.1216	Confirmed LTF	4.1216
NY	NY	0.1029	Confirmed LTF	0.1029
TVA	TVA	0.4312	Confirmed LTF	0.4312
O-066	O-066	1.2114	Confirmed LTF	1.2114
SIGE	SIGE	0.0161	Confirmed LTF	0.0161
CBM-S2	CBM-S2	0.2192	Confirmed LTF	0.2192
CBM-S1	CBM-S1	0.0882	Confirmed LTF	0.0882
G-007	G-007	0.1880	Confirmed LTF	0.1880
HAMLET	HAMLET	0.0035	Confirmed LTF	0.0035
MEC	MEC	3.7929	Confirmed LTF	3.7929
GIBSON	GIBSON	0.0311	Confirmed LTF	0.0311
BLUEG	BLUEG	0.2066	Confirmed LTF	0.2066
TRIMBLE	TRIMBLE	0.0712	Confirmed LTF	0.0712
LAGN	LAGN	1.0027	Confirmed LTF	1.0027
CBM-W1	CBM-W1	3.2526	Confirmed LTF	3.2526

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
162099363	270730	ELECT JCT; B	CE	270846	PLANO ; B	CE	1	COMED_P2-2_111_EJ-345R_3	bus	1341.0	100.13	100.54	DC	15.43

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
272364	ESS H440N ;R	2.0153	Adder	2.37
274658	DRESDEN ;2U	65.1442	Adder	76.64
274738	AURORA EC;3P	4.4199	50/50	4.4199
274740	AURORA EC;4P	4.4199	50/50	4.4199
274820	ELGIN EC ;2P	2.9992	50/50	2.9992
274859	EASYR;U1 E	10.7826	Adder	12.69
274860	EASYR;U2 E	10.7826	Adder	12.69
276167	Z1-106 E2	1.5751	50/50	1.5751
276168	Z1-106 E1	1.5795	50/50	1.5795
276170	Z1-108 E	2.3775	Adder	2.8
276591	L-013 2	4.5678	50/50	4.5678
290021	O50 E	8.8849	Adder	10.45
290051	GSG-6; E	8.0566	Adder	9.48
290108	LEEDK;1U E	17.6324	Adder	20.74
293516	O-009 E1	7.6345	Adder	8.98
293517	O-009 E2	3.8777	Adder	4.56
293518	O-009 E3	4.2704	Adder	5.02
293715	O-029 E	8.1621	Adder	9.6
293716	O-029 E	4.4752	Adder	5.26
293717	O-029 E	4.1132	Adder	4.84
294401	BSHIL;1U E	4.2745	Adder	5.03
294410	BSHIL;2U E	4.2745	Adder	5.03
294763	P-046 E	8.7230	Adder	10.26
295109	WESTBROOK E	4.3134	Adder	5.07
295111	SUBLETTE E	2.3574	Adder	2.77
915011	Y3-013 1	3.0391	Adder	3.58
915021	Y3-013 2	3.0391	Adder	3.58
915031	Y3-013 3	3.0391	Adder	3.58
916221	Z1-073 E	4.1846	Adder	4.92
919581	AA2-030 C	17.4152	Adder	20.49
920272	AA2-123 E	2.3290	Adder	2.74
924472	AB2-096 CT1	18.0819	Adder	21.27
924473	AB2-096 CT2	18.0819	Adder	21.27
924474	AB2-096 CT3	18.0819	Adder	21.27
925581	AC1-033 C	0.7001	Adder	0.82
925582	AC1-033 E	4.6866	Adder	5.51
926331	AC1-110 1	2.7647	50/50	2.7647
926341	AC1-110 2	2.7647	50/50	2.7647
927451	AC1-142A 1	1.7381	Adder	2.04
927461	AC1-142A 2	1.7400	Adder	2.05
930482	AB1-089 CT	36.1829	Adder	42.57

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
930483	AB1-089 ST	28.7668	Adder	33.84
930771	AB1-122 CT2	41.1772	Adder	48.44
933911	AD1-013 C	1.4087	Adder	1.66
933912	AD1-013 E	2.2503	Adder	2.65
933931	AD1-016 C	0.8846	Adder	1.04
933932	AD1-016 E	1.4433	Adder	1.7
934051	AD1-031 C O1	1.4215	Adder	1.67
934052	AD1-031 E O1	2.3193	Adder	2.73
934111	AD1-039 2	4.0354	Adder	4.75
934432	AD1-067 E	0.4254	Adder	0.5
934701	AD1-098 C O1	5.3522	Adder	6.3
934702	AD1-098 E O1	3.9077	Adder	4.6
934971	AD1-129 C	0.8539	Adder	1.0
934972	AD1-129 E	0.5693	Adder	0.67
936791	AD2-102 C	13.1682	Adder	15.49
936792	AD2-102 E	8.7788	Adder	10.33
937001	AD2-134 C	2.1061	Adder	2.48
937002	AD2-134 E	8.7004	Adder	10.24
937311	AD2-172 C	2.2898	Adder	2.69
937312	AD2-172 E	3.1621	Adder	3.72
937531	AD2-214 C	3.9774	Adder	4.68
937532	AD2-214 E	2.6516	Adder	3.12
938851	AE1-113 C O1	3.6650	Adder	4.31
938852	AE1-113 E O1	12.9941	Adder	15.29
938861	AE1-114 C O1	3.6371	Adder	4.28
938862	AE1-114 E O1	12.4088	Adder	14.6
939051	AE1-134 1	1.3533	Adder	1.59
939061	AE1-134 2	1.3533	Adder	1.59
940501	AE2-035 C	2.2898	Adder	2.69
940502	AE2-035 E	3.1621	Adder	3.72
940752	AE2-062 E	0.0313	Adder	0.07
941131	AE2-107 C	4.7607	Adder	5.6
941132	AE2-107 E	3.1738	Adder	3.73
942421	AE2-255 C O1	1.3883	Adder	1.63
942422	AE2-255 E O1	4.1648	Adder	4.9
942991	AE2-321 C	7.7834	Adder	9.16
942992	AE2-321 E	3.8336	Adder	4.51
943411	AF1-012 C	13.0439	Adder	15.35
943412	AF1-012 E	8.6959	Adder	10.23
943801	AF1-048 C	3.6384	Adder	4.28
943802	AF1-048 E	2.4256	Adder	2.85
943921	AF1-060	1.1275	Adder	1.33
944041	AF1-072	2.1858	Adder	2.57
945352	AF1-200 NFTW	581.7840	50/50	581.7840
946151	AF1-280 C O1	15.3283	Adder	18.03
946152	AF1-280 E O1	7.0488	Adder	8.29
946161	AF1-281 C O1	0.3357	Adder	0.39
946162	AF1-281 E O1	1.9021	Adder	2.24
946321	AF1-296 C O1	3.4748	Adder	4.09
946322	AF1-296 E O1	16.2682	Adder	19.14
946501	AF1-314 C	4.0684	Adder	4.79
946502	AF1-314 E	19.0476	Adder	22.41

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
946661	AF1-330 C	1.9098	Adder	2.25
946662	AF1-330 E	0.4192	Adder	0.49
946671	AF1-331	1.8295	Adder	2.15
952381	J703	8.7915	PJM External (MISO)	8.7915
952391	J704	3.7601	PJM External (MISO)	3.7601
952431	J760	2.5245	PJM External (MISO)	2.5245
953151	J831	2.9900	PJM External (MISO)	2.9900
953491	J947	15.3280	PJM External (MISO)	15.3280
953681	J818	11.4492	PJM External (MISO)	11.4492
953891	J849	8.5863	PJM External (MISO)	8.5863
953901	J850	20.0350	PJM External (MISO)	20.0350
953921	J855 C	1.0240	PJM External (MISO)	1.0240
953922	J855 E	5.5400	PJM External (MISO)	5.5400
954001	J864	3.3976	PJM External (MISO)	3.3976
954061	J870	13.4800	PJM External (MISO)	13.4800
954071	J871	6.7400	PJM External (MISO)	6.7400
954141	J878	15.6260	PJM External (MISO)	15.6260
954191	J886	10.5855	PJM External (MISO)	10.5855
954691	J732	13.2787	PJM External (MISO)	13.2787
954741	J928 C	0.8572	PJM External (MISO)	0.8572
954742	J928 E	4.6377	PJM External (MISO)	4.6377
955091	J986	9.6565	PJM External (MISO)	9.6565
955221	J1000	3.1680	PJM External (MISO)	3.1680
955241	J1002	6.8112	PJM External (MISO)	6.8112
955251	J1003	3.6680	PJM External (MISO)	3.6680
955582	J1042 E	14.2758	PJM External (MISO)	14.2758
955971	J1084	10.0725	PJM External (MISO)	10.0725
956141	J1101	1.4114	PJM External (MISO)	1.4114
956571	J1153	11.0760	PJM External (MISO)	11.0760
956581	J1154	5.7630	PJM External (MISO)	5.7630
956731	J1171	7.3110	PJM External (MISO)	7.3110
956852	J1183 E	0.0927	PJM External (MISO)	0.0927
956901	J1188	3.8925	PJM External (MISO)	3.8925
957331	AF2-027 C	2.0261	Adder	2.38
957332	AF2-027 E	3.0391	Adder	3.58
957401	AF2-034 C	0.7257	Adder	0.85
957402	AF2-034 E	0.6182	Adder	0.73
957471	AF2-041 C	31.7376	50/50	31.7376
957472	AF2-041 E	15.8688	50/50	15.8688
958911	AF2-182 C	20.1394	Adder	23.69
958912	AF2-182 E	13.4263	Adder	15.8
958921	AF2-183 C	3.5803	Adder	4.21
958922	AF2-183 E	5.3705	Adder	6.32
959081	AF2-199 C	10.5792	50/50	10.5792
959082	AF2-199 E	5.2896	50/50	5.2896
959091	AF2-200 C O1	21.1584	50/50	21.1584
959092	AF2-200 E O1	10.5792	50/50	10.5792
959101	AF2-201 C O1	5.6046	Adder	6.59
959102	AF2-201 E O1	16.0940	Adder	18.93
960551	AF2-346 C	5.5902	Adder	6.58
960552	AF2-346 E	3.7268	Adder	4.38
960581	AF2-349 C	20.6519	Adder	24.3

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
960582	AF2-349 E	13.7680	Adder	16.2
960721	AF2-363 C O1	4.7974	Adder	5.64
960722	AF2-363 E O1	3.1982	Adder	3.76
960731	AF2-364 C O1	6.3404	Adder	7.46
960732	AF2-364 E O1	4.2270	Adder	4.97
960751	AF2-366 C	5.0562	Adder	5.95
960752	AF2-366 E	3.3708	Adder	3.97
961011	AF2-392 C O1	3.7032	Adder	4.36
961012	AF2-392 E O1	17.3377	Adder	20.4
961021	AF2-393 O1	6.3123	Adder	7.43
961031	AF2-394 O1	4.2082	Adder	4.95
962012	AG1-044 E	0.0304	Adder	0.07
962691	AG1-118 C O1	10.9026	Adder	24.2
962692	AG1-118 E O1	7.2684	Adder	16.13
962701	AG1-119 C	11.8124	Adder	26.22
962702	AG1-119 E	7.8749	Adder	17.48
962711	AG1-120 C O1	3.6950	Adder	8.2
962712	AG1-120 E O1	2.4633	Adder	5.47
962781	AG1-127 C	2.9818	Adder	6.62
962782	AG1-127 E	1.9878	Adder	4.41
962791	AG1-128 C O1	2.5249	Adder	5.6
962792	AG1-128 E O1	11.8156	Adder	26.23
963681	AG1-220 C O1	4.1705	Adder	9.26
963682	AG1-220 E O1	2.7803	Adder	6.17
964461	AG1-309 FTIR	273.9313	Merchant Transmission	273.9313
965061	AG1-371	5.2896	50/50	5.2896
965071	AG1-372	3.5264	50/50	3.5264
965081	AG1-373	1.7632	50/50	1.7632
965141	AG1-379 C	4.0380	Adder	8.96
965142	AG1-379 E	1.8483	Adder	4.1
965551	AG1-423 C O1	19.1328	50/50	19.1328
965552	AG1-423 E O1	12.7552	50/50	12.7552
965661	AG1-434 C O1	5.8045	50/50	5.8045
965662	AG1-434 E O1	27.1755	50/50	27.1755
965931	AG1-462 C O1	8.7918	Adder	19.52
965932	AG1-462 E O1	5.8612	Adder	13.01
966441	AG1-513 C	0.2410	Adder	0.53
966442	AG1-513 E	0.3615	Adder	0.8
966521	AG1-521 C O1	4.2909	Adder	9.52
966522	AG1-521 E O1	1.0727	Adder	2.38
966821	AG1-553 C O1	12.8946	Adder	28.62
966822	AG1-553 E O1	3.2237	Adder	7.16
WEC	WEC	3.6430	Confirmed LTF	3.6430
CBM-W2	CBM-W2	14.3360	Confirmed LTF	14.3360
NY	NY	0.4363	Confirmed LTF	0.4363
TVA	TVA	1.3818	Confirmed LTF	1.3818
O-066	O-066	5.1821	Confirmed LTF	5.1821
SIGE	SIGE	0.0779	Confirmed LTF	0.0779
CBM-S1	CBM-S1	0.2785	Confirmed LTF	0.2785
G-007	G-007	0.8074	Confirmed LTF	0.8074
HAMLET	HAMLET	0.0889	Confirmed LTF	0.0889
MEC	MEC	11.8222	Confirmed LTF	11.8222

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
GIBSON	GIBSON	0.0480	Confirmed LTF	0.0480
BLUEG	BLUEG	0.7986	Confirmed LTF	0.7986
TRIMBLE	TRIMBLE	0.2760	Confirmed LTF	0.2760
LAGN	LAGN	3.3442	Confirmed LTF	3.3442
CATAWBA	CATAWBA	0.0269	Confirmed LTF	0.0269
CBM-W1	CBM-W1	72.3152	Confirmed LTF	72.3152

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
162991139	271428	ESS H452 ;RT	CE	272730	WATERMAN ;3B	CE	1	COMED_P7-1_138-L10714_R-R+_138-L10721_R-R-A	tower	538.0	129.69	154.04	DC	130.96

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
272364	ESS H440N ;R	12.2720	50/50	12.2720
274850	MENDOTA H;RU	1.3261	50/50	1.3261
274855	GSG-6 ;RU	2.1836	50/50	2.1836
274872	LEE DEKAL;1U	5.2455	50/50	5.2455
290051	GSG-6; E	55.3614	50/50	55.3614
290108	LEEDK;1U E	166.2400	50/50	166.2400
295108	WESTBROOK C	0.7079	50/50	0.7079
295109	WESTBROOK E	29.6399	50/50	29.6399
916221	Z1-073 E	28.7551	50/50	28.7551
933911	AD1-013 C	8.0553	50/50	8.0553
933912	AD1-013 E	12.8675	50/50	12.8675
934431	AD1-067 C	0.1097	50/50	0.1097
934432	AD1-067 E	2.9229	50/50	2.9229
934701	AD1-098 C O1	36.5284	50/50	36.5284
934702	AD1-098 E O1	26.6696	50/50	26.6696
937001	AD2-134 C	14.4723	50/50	14.4723
937002	AD2-134 E	59.7853	50/50	59.7853
941131	AE2-107 C	44.8848	50/50	44.8848
941132	AE2-107 E	29.9232	50/50	29.9232
946671	AF1-331	10.4614	50/50	10.4614
962791	AG1-128 C O1	32.7366	50/50	32.7366
962792	AG1-128 E O1	153.1920	50/50	153.1920
963681	AG1-220 C O1	78.5772	50/50	78.5772
963682	AG1-220 E O1	52.3848	50/50	52.3848
966521	AG1-521 C O1	50.5592	50/50	50.5592
966522	AG1-521 E O1	12.6398	50/50	12.6398
WEC	WEC	0.0306	Confirmed LTF	0.0306
CALDERWOOD	CALDERWOOD	0.0134	Confirmed LTF	0.0134
NY	NY	0.0227	Confirmed LTF	0.0227
PRAIRIE	PRAIRIE	0.0181	Confirmed LTF	0.0181
O-066	O-066	0.2692	Confirmed LTF	0.2692
SIGE	SIGE	0.0006	Confirmed LTF	0.0006
CHEOAH	CHEOAH	0.0140	Confirmed LTF	0.0140
COTTONWOOD	COTTONWOOD	0.0147	Confirmed LTF	0.0147
G-007	G-007	0.0420	Confirmed LTF	0.0420
HAMLET	HAMLET	0.0191	Confirmed LTF	0.0191
MEC	MEC	0.1224	Confirmed LTF	0.1224
GIBSON	GIBSON	0.0191	Confirmed LTF	0.0191
BLUEG	BLUEG	0.0660	Confirmed LTF	0.0660

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
TRIMBLE	TRIMBLE	0.0217	Confirmed LTF	0.0217
CATAWBA	CATAWBA	0.0112	Confirmed LTF	0.0112
CBM-W1	CBM-W1	0.6309	Confirmed LTF	0.6309

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
162448570	271560	GLIDDEN ;BT	CE	272522	SUGAR GRV; B	CE	1	COMED_P4_167-38-L14609_	breaker	538.0	115.92	126.45	DC	56.63

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
272364	ESS H440N ;R	6.8702	50/50	6.8702
274850	MENDOTA H;RU	0.6310	50/50	0.6310
274855	GSG-6 ;RU	1.0390	50/50	1.0390
274872	LEE DEKAL;1U	2.3058	50/50	2.3058
290051	GSG-6; E	26.3413	50/50	26.3413
290108	LEEDK;1U E	73.0740	50/50	73.0740
295108	WESTBROOK C	0.3368	50/50	0.3368
295109	WESTBROOK E	14.1028	50/50	14.1028
295111	SUBLETTE E	1.3899	Adder	1.64
916221	Z1-073 E	13.6819	50/50	13.6819
933431	AC2-156 C O1	3.0693	50/50	3.0693
933432	AC2-156 E O1	5.0079	50/50	5.0079
933911	AD1-013 C	4.8813	50/50	4.8813
933912	AD1-013 E	7.7975	50/50	7.7975
934431	AD1-067 C	0.0522	50/50	0.0522
934432	AD1-067 E	1.3907	50/50	1.3907
934701	AD1-098 C O1	16.6522	50/50	16.6522
934702	AD1-098 E O1	12.1578	50/50	12.1578
937001	AD2-134 C	6.8860	50/50	6.8860
937002	AD2-134 E	28.4462	50/50	28.4462
941131	AE2-107 C	19.7300	50/50	19.7300
941132	AE2-107 E	13.1533	50/50	13.1533
943121	AE2-341 C	40.6263	50/50	40.6263
943122	AE2-341 E	19.9497	50/50	19.9497
943591	AF1-030 C O1	27.0169	50/50	27.0169
943592	AF1-030 E O1	13.3671	50/50	13.3671
946671	AF1-331	6.3394	50/50	6.3394
960381	AF2-329	21.0804	50/50	21.0804
960721	AF2-363 C O1	12.0918	50/50	12.0918
960722	AF2-363 E O1	8.0612	50/50	8.0612
960751	AF2-366 C	22.0016	50/50	22.0016
960752	AF2-366 E	14.6677	50/50	14.6677
962711	AG1-120 C O1	17.8910	50/50	17.8910
962712	AG1-120 E O1	11.9274	50/50	11.9274
962781	AG1-127 C	24.2131	50/50	24.2131
962782	AG1-127 E	16.1421	50/50	16.1421
962791	AG1-128 C O1	15.5763	50/50	15.5763
962792	AG1-128 E O1	72.8897	50/50	72.8897
963681	AG1-220 C O1	33.9804	50/50	33.9804
963682	AG1-220 E O1	22.6536	50/50	22.6536
966521	AG1-521 C O1	9.2568	50/50	9.2568
966522	AG1-521 E O1	2.3142	50/50	2.3142

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
WEC	WEC	0.2429	Confirmed LTF	0.2429
CBM-W2	CBM-W2	2.0250	Confirmed LTF	2.0250
NY	NY	0.0448	Confirmed LTF	0.0448
TVA	TVA	0.2156	Confirmed LTF	0.2156
O-066	O-066	0.5317	Confirmed LTF	0.5317
SIGE	SIGE	0.0077	Confirmed LTF	0.0077
CBM-S2	CBM-S2	0.1670	Confirmed LTF	0.1670
CBM-S1	CBM-S1	0.0448	Confirmed LTF	0.0448
G-007	G-007	0.0819	Confirmed LTF	0.0819
MEC	MEC	1.9068	Confirmed LTF	1.9068
GIBSON	GIBSON	0.0109	Confirmed LTF	0.0109
BLUEG	BLUEG	0.0885	Confirmed LTF	0.0885
TRIMBLE	TRIMBLE	0.0306	Confirmed LTF	0.0306
LAGN	LAGN	0.5110	Confirmed LTF	0.5110
CBM-W1	CBM-W1	9.2953	Confirmed LTF	9.2953

11.6.5 Index 5

ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CK T ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADIN G %	POST PROJECT LOADIN G %	ACID C	MW IMPACT
162448511	272027	MONTGOMER;R T	CE	272203	OSWEG O ;R	CE	1	COMED_P4_167-38-TR81	breaker	264.0	138.25	150.12	DC	31.34

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
272364	ESS H440N ;R	3.7462	50/50	3.7462
274850	MENDOTA H;RU	0.3457	50/50	0.3457
274855	GSG-6 ;RU	0.5692	50/50	0.5692
274872	LEE DEKAL;1U	1.2742	50/50	1.2742
290051	GSG-6; E	14.4312	50/50	14.4312
290108	LEEDK;1U E	40.3820	50/50	40.3820
295108	WESTBROOK C	0.1845	50/50	0.1845
295109	WESTBROOK E	7.7263	50/50	7.7263
916221	Z1-073 E	7.4957	50/50	7.4957
933431	AC2-156 C O1	3.8328	50/50	3.8328
933432	AC2-156 E O1	6.2536	50/50	6.2536
933911	AD1-013 C	2.6560	50/50	2.6560
933912	AD1-013 E	4.2428	50/50	4.2428
934431	AD1-067 C	0.0286	50/50	0.0286
934432	AD1-067 E	0.7619	50/50	0.7619
934701	AD1-098 C O1	9.1266	50/50	9.1266
934702	AD1-098 E O1	6.6634	50/50	6.6634
937001	AD2-134 C	3.7725	50/50	3.7725
937002	AD2-134 E	15.5844	50/50	15.5844
941131	AE2-107 C	10.9031	50/50	10.9031
941132	AE2-107 E	7.2688	50/50	7.2688
943121	AE2-341 C	60.6145	50/50	60.6145
943122	AE2-341 E	29.7650	50/50	29.7650
943591	AF1-030 C O1	40.3093	50/50	40.3093
943592	AF1-030 E O1	19.9437	50/50	19.9437
946671	AF1-331	3.4494	50/50	3.4494
960381	AF2-329	31.4521	50/50	31.4521
960721	AF2-363 C O1	6.4488	50/50	6.4488
960722	AF2-363 E O1	4.2992	50/50	4.2992
960751	AF2-366 C	11.7200	50/50	11.7200
960752	AF2-366 E	7.8133	50/50	7.8133
962711	AG1-120 C O1	9.5397	50/50	9.5397
962712	AG1-120 E O1	6.3598	50/50	6.3598
962781	AG1-127 C	12.8176	50/50	12.8176
962782	AG1-127 E	8.5451	50/50	8.5451
962791	AG1-128 C O1	8.5335	50/50	8.5335
962792	AG1-128 E O1	39.9330	50/50	39.9330
963681	AG1-220 C O1	18.8064	50/50	18.8064
963682	AG1-220 E O1	12.5376	50/50	12.5376
966521	AG1-521 C O1	2.3163	Adder	5.14
966522	AG1-521 E O1	0.5791	Adder	1.29
WEC	WEC	0.1673	Confirmed LTF	0.1673

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
CBM-W2	CBM-W2	1.1827	Confirmed LTF	1.1827
NY	NY	0.0282	Confirmed LTF	0.0282
TVA	TVA	0.1246	Confirmed LTF	0.1246
O-066	O-066	0.3365	Confirmed LTF	0.3365
SIGE	SIGE	0.0044	Confirmed LTF	0.0044
CBM-S2	CBM-S2	0.0731	Confirmed LTF	0.0731
CBM-S1	CBM-S1	0.0258	Confirmed LTF	0.0258
G-007	G-007	0.0525	Confirmed LTF	0.0525
HAMLET	HAMLET	0.0006	Confirmed LTF	0.0006
MEC	MEC	1.1488	Confirmed LTF	1.1488
GIBSON	GIBSON	0.0087	Confirmed LTF	0.0087
BLUEG	BLUEG	0.0590	Confirmed LTF	0.0590
TRIMBLE	TRIMBLE	0.0200	Confirmed LTF	0.0200
LAGN	LAGN	0.3028	Confirmed LTF	0.3028
CBM-W1	CBM-W1	5.7482	Confirmed LTF	5.7482

11.6.6 Index 6

ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC DC	MW IMPACT
162991202	272444	SANDWICH ; B	CE	943120	AE2-341 TAP	CE	1	COMED_P7-1_138-L11106_B-R_+ 345-L15502_B-R-A	tower	498.0	113.9	125.98	DC	60.17

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
272364	ESS H440N ;R	7.0400	50/50	7.0400
274850	MENDOTA H;RU	0.6552	50/50	0.6552
274855	GSG-6 ;RU	1.0788	50/50	1.0788
274872	LEE DEKAL;1U	2.4413	50/50	2.4413
290051	GSG-6; E	27.3522	50/50	27.3522
290108	LEEDK;1U E	77.3680	50/50	77.3680
295108	WESTBROOK C	0.3498	50/50	0.3498
295109	WESTBROOK E	14.6441	50/50	14.6441
295111	SUBLETTE E	1.6297	Adder	1.92
916221	Z1-073 E	14.2069	50/50	14.2069
933431	AC2-156 C O1	5.4960	50/50	5.4960
933432	AC2-156 E O1	8.9672	50/50	8.9672
933911	AD1-013 C	4.9727	50/50	4.9727
933912	AD1-013 E	7.9433	50/50	7.9433
934431	AD1-067 C	0.0542	50/50	0.0542
934432	AD1-067 E	1.4441	50/50	1.4441
934701	AD1-098 C O1	17.3221	50/50	17.3221
934702	AD1-098 E O1	12.6469	50/50	12.6469
937001	AD2-134 C	7.1503	50/50	7.1503
937002	AD2-134 E	29.5379	50/50	29.5379
938861	AE1-114 C O1	1.8161	Adder	2.14
938862	AE1-114 E O1	6.1960	Adder	7.29
941131	AE2-107 C	20.8894	50/50	20.8894
941132	AE2-107 E	13.9262	50/50	13.9262
946671	AF1-331	6.4580	50/50	6.4580
960382	AF2-329 BAT	9.1240	50/50	9.1240
960721	AF2-363 C O1	11.6264	50/50	11.6264
960722	AF2-363 E O1	7.7509	50/50	7.7509
960751	AF2-366 C	22.3353	50/50	22.3353
960752	AF2-366 E	14.8902	50/50	14.8902
961011	AF2-392 C O1	1.9645	Adder	2.31
961012	AF2-392 E O1	9.1977	Adder	10.82
961021	AF2-393 O1	3.3487	Adder	3.94
961031	AF2-394 O1	2.2324	Adder	2.63
962711	AG1-120 C O1	17.1930	50/50	17.1930
962712	AG1-120 E O1	11.4620	50/50	11.4620
962781	AG1-127 C	24.3859	50/50	24.3859
962782	AG1-127 E	16.2573	50/50	16.2573
962791	AG1-128 C O1	16.1740	50/50	16.1740

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
962792	AG1-128 E O1	75.6870	50/50	75.6870
963681	AG1-220 C O1	36.1008	50/50	36.1008
963682	AG1-220 E O1	24.0672	50/50	24.0672
966521	AG1-521 C O1	10.2336	50/50	10.2336
966522	AG1-521 E O1	2.5584	50/50	2.5584
WEC	WEC	0.3600	Confirmed LTF	0.3600
CBM-W2	CBM-W2	3.0643	Confirmed LTF	3.0643
NY	NY	0.0664	Confirmed LTF	0.0664
TVA	TVA	0.3262	Confirmed LTF	0.3262
O-066	O-066	0.7807	Confirmed LTF	0.7807
SIGE	SIGE	0.0118	Confirmed LTF	0.0118
CBM-S2	CBM-S2	0.2714	Confirmed LTF	0.2714
CBM-S1	CBM-S1	0.0680	Confirmed LTF	0.0680
G-007	G-007	0.1218	Confirmed LTF	0.1218
MEC	MEC	2.8300	Confirmed LTF	2.8300
GIBSON	GIBSON	0.0131	Confirmed LTF	0.0131
BLUEG	BLUEG	0.1285	Confirmed LTF	0.1285
TRIMBLE	TRIMBLE	0.0445	Confirmed LTF	0.0445
LAGN	LAGN	0.7665	Confirmed LTF	0.7665
CBM-W1	CBM-W1	13.3751	Confirmed LTF	13.3751

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
162448545	272445	SANDWICH ; R	CE	272444	SANDWICH ; B	CE	1	COMED_P4_111-38-TR82__	breaker	449.0	119.22	132.25	DC	58.5

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
272364	ESS H440N ;R	6.9337	50/50	6.9337
274850	MENDOTA H;RU	0.6414	50/50	0.6414
274855	GSG-6 ;RU	1.0562	50/50	1.0562
274872	LEE DEKAL;1U	2.3761	50/50	2.3761
290051	GSG-6; E	26.7776	50/50	26.7776
290108	LEEDK;1U E	75.3020	50/50	75.3020
295108	WESTBROOK C	0.3424	50/50	0.3424
295109	WESTBROOK E	14.3364	50/50	14.3364
295111	SUBLETTE E	1.4626	Adder	1.72
916221	Z1-073 E	13.9084	50/50	13.9084
933431	AC2-156 C O1	1.6480	50/50	1.6480
933432	AC2-156 E O1	2.6888	50/50	2.6888
933911	AD1-013 C	4.9108	50/50	4.9108
933912	AD1-013 E	7.8444	50/50	7.8444
934431	AD1-067 C	0.0531	50/50	0.0531
934432	AD1-067 E	1.4138	50/50	1.4138
934701	AD1-098 C O1	16.9366	50/50	16.9366
934702	AD1-098 E O1	12.3654	50/50	12.3654
937001	AD2-134 C	7.0001	50/50	7.0001
937002	AD2-134 E	28.9173	50/50	28.9173
938861	AE1-114 C O1	1.6328	Adder	1.92
938862	AE1-114 E O1	5.5709	Adder	6.55
941131	AE2-107 C	20.3315	50/50	20.3315
941132	AE2-107 E	13.5544	50/50	13.5544
946671	AF1-331	6.3776	50/50	6.3776
960382	AF2-329 BAT	9.3720	50/50	9.3720
960721	AF2-363 C O1	11.7866	50/50	11.7866
960722	AF2-363 E O1	7.8577	50/50	7.8577
960751	AF2-366 C	21.4260	50/50	21.4260
960752	AF2-366 E	14.2840	50/50	14.2840
961011	AF2-392 C O1	1.6800	Adder	1.98
961012	AF2-392 E O1	7.8655	Adder	9.25
961021	AF2-393 O1	2.8637	Adder	3.37
961031	AF2-394 O1	1.9091	Adder	2.25
962711	AG1-120 C O1	17.4342	50/50	17.4342
962712	AG1-120 E O1	11.6228	50/50	11.6228
962781	AG1-127 C	23.3505	50/50	23.3505
962782	AG1-127 E	15.5670	50/50	15.5670
962791	AG1-128 C O1	15.8342	50/50	15.8342
962792	AG1-128 E O1	74.0968	50/50	74.0968
963681	AG1-220 C O1	35.0982	50/50	35.0982
963682	AG1-220 E O1	23.3988	50/50	23.3988

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
966521	AG1-521 C O1	9.5752	50/50	9.5752
966522	AG1-521 E O1	2.3938	50/50	2.3938
WEC	WEC	0.3452	Confirmed LTF	0.3452
CBM-W2	CBM-W2	2.3386	Confirmed LTF	2.3386
NY	NY	0.0581	Confirmed LTF	0.0581
TVA	TVA	0.2450	Confirmed LTF	0.2450
O-066	O-066	0.6865	Confirmed LTF	0.6865
SIGE	SIGE	0.0093	Confirmed LTF	0.0093
CBM-S2	CBM-S2	0.1148	Confirmed LTF	0.1148
CBM-S1	CBM-S1	0.0502	Confirmed LTF	0.0502
G-007	G-007	0.1071	Confirmed LTF	0.1071
HAMLET	HAMLET	0.0029	Confirmed LTF	0.0029
MEC	MEC	2.2294	Confirmed LTF	2.2294
GIBSON	GIBSON	0.0158	Confirmed LTF	0.0158
BLUEG	BLUEG	0.1180	Confirmed LTF	0.1180
TRIMBLE	TRIMBLE	0.0406	Confirmed LTF	0.0406
LAGN	LAGN	0.5915	Confirmed LTF	0.5915
CBM-W1	CBM-W1	11.2721	Confirmed LTF	11.2721

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
162448561	272522	SUGAR GRV; B	CE	272114	N AURORA ; B	CE	1	COMED_P4_167-38-L14609_	breaker	498.0	114.63	126.0	DC	56.63

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
272364	ESS H440N ;R	6.8702	50/50	6.8702
274850	MENDOTA H;RU	0.6310	50/50	0.6310
274855	GSG-6 ;RU	1.0390	50/50	1.0390
274872	LEE DEKAL;1U	2.3058	50/50	2.3058
290051	GSG-6; E	26.3413	50/50	26.3413
290108	LEEDK;1U E	73.0740	50/50	73.0740
295108	WESTBROOK C	0.3368	50/50	0.3368
295109	WESTBROOK E	14.1028	50/50	14.1028
295111	SUBLETTE E	1.3899	Adder	1.64
916221	Z1-073 E	13.6819	50/50	13.6819
933431	AC2-156 C O1	3.0693	50/50	3.0693
933432	AC2-156 E O1	5.0079	50/50	5.0079
933911	AD1-013 C	4.8813	50/50	4.8813
933912	AD1-013 E	7.7975	50/50	7.7975
934431	AD1-067 C	0.0522	50/50	0.0522
934432	AD1-067 E	1.3907	50/50	1.3907
934701	AD1-098 C O1	16.6522	50/50	16.6522
934702	AD1-098 E O1	12.1578	50/50	12.1578
937001	AD2-134 C	6.8860	50/50	6.8860
937002	AD2-134 E	28.4462	50/50	28.4462
941131	AE2-107 C	19.7300	50/50	19.7300
941132	AE2-107 E	13.1533	50/50	13.1533
943121	AE2-341 C	40.6263	50/50	40.6263
943122	AE2-341 E	19.9497	50/50	19.9497
943591	AF1-030 C O1	27.0169	50/50	27.0169
943592	AF1-030 E O1	13.3671	50/50	13.3671
946671	AF1-331	6.3394	50/50	6.3394
960381	AF2-329	21.0804	50/50	21.0804
960721	AF2-363 C O1	12.0918	50/50	12.0918
960722	AF2-363 E O1	8.0612	50/50	8.0612
960751	AF2-366 C	22.0016	50/50	22.0016
960752	AF2-366 E	14.6677	50/50	14.6677
962711	AG1-120 C O1	17.8910	50/50	17.8910
962712	AG1-120 E O1	11.9274	50/50	11.9274
962781	AG1-127 C	24.2131	50/50	24.2131
962782	AG1-127 E	16.1421	50/50	16.1421
962791	AG1-128 C O1	15.5763	50/50	15.5763
962792	AG1-128 E O1	72.8897	50/50	72.8897
963681	AG1-220 C O1	33.9804	50/50	33.9804
963682	AG1-220 E O1	22.6536	50/50	22.6536
966521	AG1-521 C O1	9.2568	50/50	9.2568

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
966522	AG1-521 E O1	2.3142	50/50	2.3142
WEC	WEC	0.2429	Confirmed LTF	0.2429
CBM-W2	CBM-W2	2.0250	Confirmed LTF	2.0250
NY	NY	0.0448	Confirmed LTF	0.0448
TVA	TVA	0.2156	Confirmed LTF	0.2156
O-066	O-066	0.5317	Confirmed LTF	0.5317
SIGE	SIGE	0.0077	Confirmed LTF	0.0077
CBM-S2	CBM-S2	0.1670	Confirmed LTF	0.1670
CBM-S1	CBM-S1	0.0448	Confirmed LTF	0.0448
G-007	G-007	0.0819	Confirmed LTF	0.0819
MEC	MEC	1.9068	Confirmed LTF	1.9068
GIBSON	GIBSON	0.0109	Confirmed LTF	0.0109
BLUEG	BLUEG	0.0885	Confirmed LTF	0.0885
TRIMBLE	TRIMBLE	0.0306	Confirmed LTF	0.0306
LAGN	LAGN	0.5110	Confirmed LTF	0.5110
CBM-W1	CBM-W1	9.2953	Confirmed LTF	9.2953

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
162991113	272728	WATERMAN ; B	CE	272445	SANDWICH ; R	CE	1	COMED_P7-1_138-L11106_B-R+_345-L15502_B-R-A	tower	331.0	181.22	199.4	DC	60.17

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
272364	ESS H440N ;R	7.0400	50/50	7.0400
274850	MENDOTA H;RU	0.6552	50/50	0.6552
274855	GSG-6 ;RU	1.0788	50/50	1.0788
274872	LEE DEKAL;1U	2.4413	50/50	2.4413
290051	GSG-6; E	27.3522	50/50	27.3522
290108	LEEDK;1U E	77.3680	50/50	77.3680
295108	WESTBROOK C	0.3498	50/50	0.3498
295109	WESTBROOK E	14.6441	50/50	14.6441
295111	SUBLETTE E	1.6297	Adder	1.92
916221	Z1-073 E	14.2069	50/50	14.2069
933911	AD1-013 C	4.9727	50/50	4.9727
933912	AD1-013 E	7.9433	50/50	7.9433
934431	AD1-067 C	0.0542	50/50	0.0542
934432	AD1-067 E	1.4441	50/50	1.4441
934701	AD1-098 C O1	17.3221	50/50	17.3221
934702	AD1-098 E O1	12.6469	50/50	12.6469
937001	AD2-134 C	7.1503	50/50	7.1503
937002	AD2-134 E	29.5379	50/50	29.5379
938861	AE1-114 C O1	1.8161	Adder	2.14
938862	AE1-114 E O1	6.1960	Adder	7.29
941131	AE2-107 C	20.8894	50/50	20.8894
941132	AE2-107 E	13.9262	50/50	13.9262
946671	AF1-331	6.4580	50/50	6.4580
960382	AF2-329 BAT	9.1240	50/50	9.1240
960721	AF2-363 C O1	11.6264	50/50	11.6264
960722	AF2-363 E O1	7.7509	50/50	7.7509
960751	AF2-366 C	22.3353	50/50	22.3353
960752	AF2-366 E	14.8902	50/50	14.8902
961011	AF2-392 C O1	1.9645	Adder	2.31
961012	AF2-392 E O1	9.1977	Adder	10.82
961021	AF2-393 O1	3.3487	Adder	3.94
961031	AF2-394 O1	2.2324	Adder	2.63
962711	AG1-120 C O1	17.1930	50/50	17.1930
962712	AG1-120 E O1	11.4620	50/50	11.4620
962781	AG1-127 C	24.3859	50/50	24.3859
962782	AG1-127 E	16.2573	50/50	16.2573
962791	AG1-128 C O1	16.1740	50/50	16.1740
962792	AG1-128 E O1	75.6870	50/50	75.6870
963681	AG1-220 C O1	36.1008	50/50	36.1008

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
963682	AG1-220 E O1	24.0672	50/50	24.0672
966521	AG1-521 C O1	10.2336	50/50	10.2336
966522	AG1-521 E O1	2.5584	50/50	2.5584
WEC	WEC	0.3600	Confirmed LTF	0.3600
CBM-W2	CBM-W2	3.0643	Confirmed LTF	3.0643
NY	NY	0.0664	Confirmed LTF	0.0664
TVA	TVA	0.3262	Confirmed LTF	0.3262
O-066	O-066	0.7807	Confirmed LTF	0.7807
SIGE	SIGE	0.0118	Confirmed LTF	0.0118
CBM-S2	CBM-S2	0.2714	Confirmed LTF	0.2714
CBM-S1	CBM-S1	0.0680	Confirmed LTF	0.0680
G-007	G-007	0.1218	Confirmed LTF	0.1218
MEC	MEC	2.8300	Confirmed LTF	2.8300
GIBSON	GIBSON	0.0131	Confirmed LTF	0.0131
BLUEG	BLUEG	0.1285	Confirmed LTF	0.1285
TRIMBLE	TRIMBLE	0.0445	Confirmed LTF	0.0445
LAGN	LAGN	0.7665	Confirmed LTF	0.7665
CBM-W1	CBM-W1	13.3751	Confirmed LTF	13.3751

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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
162448469	272803	W PLANO ; R	CE	272251	PLANO; R	CE	1	COMED_P4_111-38-TR82____	breaker	449.0	156.42	169.45	DC	58.51

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
272364	ESS H440N ;R	6.9351	50/50	6.9351
274850	MENDOTA H;RU	0.6415	50/50	0.6415
274855	GSG-6 ;RU	1.0564	50/50	1.0564
274872	LEE DEKAL;1U	2.3765	50/50	2.3765
290051	GSG-6; E	26.7828	50/50	26.7828
290108	LEEDK;1U E	75.3160	50/50	75.3160
295108	WESTBROOK C	0.3425	50/50	0.3425
295109	WESTBROOK E	14.3392	50/50	14.3392
916221	Z1-073 E	13.9112	50/50	13.9112
933431	AC2-156 C O1	5.4439	50/50	5.4439
933432	AC2-156 E O1	8.8821	50/50	8.8821
933911	AD1-013 C	4.9117	50/50	4.9117
933912	AD1-013 E	7.8459	50/50	7.8459
934431	AD1-067 C	0.0531	50/50	0.0531
934432	AD1-067 E	1.4140	50/50	1.4140
934701	AD1-098 C O1	16.9400	50/50	16.9400
934702	AD1-098 E O1	12.3680	50/50	12.3680
937001	AD2-134 C	7.0014	50/50	7.0014
937002	AD2-134 E	28.9230	50/50	28.9230
941131	AE2-107 C	20.3353	50/50	20.3353
941132	AE2-107 E	13.5569	50/50	13.5569
943121	AE2-341 C	82.5353	50/50	82.5353
943122	AE2-341 E	40.5292	50/50	40.5292
943591	AF1-030 C O1	54.8868	50/50	54.8868
943592	AF1-030 E O1	27.1562	50/50	27.1562
946671	AF1-331	6.3788	50/50	6.3788
960381	AF2-329	42.8264	50/50	42.8264
960721	AF2-363 C O1	11.7890	50/50	11.7890
960722	AF2-363 E O1	7.8593	50/50	7.8593
960751	AF2-366 C	21.4299	50/50	21.4299
960752	AF2-366 E	14.2866	50/50	14.2866
962711	AG1-120 C O1	17.4370	50/50	17.4370
962712	AG1-120 E O1	11.6247	50/50	11.6247
962781	AG1-127 C	23.3555	50/50	23.3555
962782	AG1-127 E	15.5704	50/50	15.5704
962791	AG1-128 C O1	15.8373	50/50	15.8373
962792	AG1-128 E O1	74.1114	50/50	74.1114
963681	AG1-220 C O1	35.1054	50/50	35.1054
963682	AG1-220 E O1	23.4036	50/50	23.4036
966521	AG1-521 C O1	9.5776	50/50	9.5776
966522	AG1-521 E O1	2.3944	50/50	2.3944

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
WEC	WEC	0.3456	Confirmed LTF	0.3456
CBM-W2	CBM-W2	2.3386	Confirmed LTF	2.3386
NY	NY	0.0581	Confirmed LTF	0.0581
TVA	TVA	0.2450	Confirmed LTF	0.2450
O-066	O-066	0.6865	Confirmed LTF	0.6865
SIGE	SIGE	0.0093	Confirmed LTF	0.0093
CBM-S2	CBM-S2	0.1148	Confirmed LTF	0.1148
CBM-S1	CBM-S1	0.0502	Confirmed LTF	0.0502
G-007	G-007	0.1071	Confirmed LTF	0.1071
HAMLET	HAMLET	0.0029	Confirmed LTF	0.0029
MEC	MEC	2.2294	Confirmed LTF	2.2294
GIBSON	GIBSON	0.0158	Confirmed LTF	0.0158
BLUEG	BLUEG	0.1180	Confirmed LTF	0.1180
TRIMBLE	TRIMBLE	0.0406	Confirmed LTF	0.0406
LAGN	LAGN	0.5915	Confirmed LTF	0.5915
CBM-W1	CBM-W1	11.2721	Confirmed LTF	11.2721

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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
162448454	943120	AE2-341 TAP	CE	272803	W PLANO ; R	CE	1	COMED_P4_111-38-TR82__	breaker	449.0	164.21	177.24	DC	58.51

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
272364	ESS H440N ;R	6.9351	50/50	6.9351
274850	MENDOTA H;RU	0.6415	50/50	0.6415
274855	GSG-6 ;RU	1.0564	50/50	1.0564
274872	LEE DEKAL;1U	2.3765	50/50	2.3765
290051	GSG-6; E	26.7828	50/50	26.7828
290108	LEEDK;1U E	75.3160	50/50	75.3160
295108	WESTBROOK C	0.3425	50/50	0.3425
295109	WESTBROOK E	14.3392	50/50	14.3392
916221	Z1-073 E	13.9112	50/50	13.9112
933431	AC2-156 C O1	5.4439	50/50	5.4439
933432	AC2-156 E O1	8.8821	50/50	8.8821
933911	AD1-013 C	4.9117	50/50	4.9117
933912	AD1-013 E	7.8459	50/50	7.8459
934431	AD1-067 C	0.0531	50/50	0.0531
934432	AD1-067 E	1.4140	50/50	1.4140
934701	AD1-098 C O1	16.9400	50/50	16.9400
934702	AD1-098 E O1	12.3680	50/50	12.3680
937001	AD2-134 C	7.0014	50/50	7.0014
937002	AD2-134 E	28.9230	50/50	28.9230
941131	AE2-107 C	20.3353	50/50	20.3353
941132	AE2-107 E	13.5569	50/50	13.5569
943121	AE2-341 C	82.5353	50/50	82.5353
943122	AE2-341 E	40.5292	50/50	40.5292
943591	AF1-030 C O1	54.8868	50/50	54.8868
943592	AF1-030 E O1	27.1562	50/50	27.1562
946671	AF1-331	6.3788	50/50	6.3788
960381	AF2-329	42.8264	50/50	42.8264
960721	AF2-363 C O1	11.7890	50/50	11.7890
960722	AF2-363 E O1	7.8593	50/50	7.8593
960751	AF2-366 C	21.4299	50/50	21.4299
960752	AF2-366 E	14.2866	50/50	14.2866
962711	AG1-120 C O1	17.4370	50/50	17.4370
962712	AG1-120 E O1	11.6247	50/50	11.6247
962781	AG1-127 C	23.3555	50/50	23.3555
962782	AG1-127 E	15.5704	50/50	15.5704
962791	AG1-128 C O1	15.8373	50/50	15.8373
962792	AG1-128 E O1	74.1114	50/50	74.1114
963681	AG1-220 C O1	35.1054	50/50	35.1054
963682	AG1-220 E O1	23.4036	50/50	23.4036
966521	AG1-521 C O1	9.5776	50/50	9.5776
966522	AG1-521 E O1	2.3944	50/50	2.3944

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
WEC	WEC	0.3456	Confirmed LTF	0.3456
CBM-W2	CBM-W2	2.3386	Confirmed LTF	2.3386
NY	NY	0.0581	Confirmed LTF	0.0581
TVA	TVA	0.2450	Confirmed LTF	0.2450
O-066	O-066	0.6865	Confirmed LTF	0.6865
SIGE	SIGE	0.0093	Confirmed LTF	0.0093
CBM-S2	CBM-S2	0.1148	Confirmed LTF	0.1148
CBM-S1	CBM-S1	0.0502	Confirmed LTF	0.0502
G-007	G-007	0.1071	Confirmed LTF	0.1071
HAMLET	HAMLET	0.0029	Confirmed LTF	0.0029
MEC	MEC	2.2294	Confirmed LTF	2.2294
GIBSON	GIBSON	0.0158	Confirmed LTF	0.0158
BLUEG	BLUEG	0.1180	Confirmed LTF	0.1180
TRIMBLE	TRIMBLE	0.0406	Confirmed LTF	0.0406
LAGN	LAGN	0.5915	Confirmed LTF	0.5915
CBM-W1	CBM-W1	11.2721	Confirmed LTF	11.2721

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
AA2-030	Nelson	Active
AA2-123	Marengo 34kV	In Service
AB1-089	Byron-Wayne 345kV #1	Active
AB1-122	Kendall-Tazewell & Dresden-Mole Creek	Engineering and Procurement
AB2-096	Silver Lake-Cherry Valley	Active
AC1-033	Kewanee	Active
AC1-110	Aurora 138kV	Active
AC1-142A	Joliet	In Service
AC2-156	Sandwich 34.5kV	Active
AD1-013	Twombly Road 138kV	Active
AD1-016	Marengo	Active
AD1-031	Kewanee 138 kV	Active
AD1-039	Kendall-Tazewell & Dresden-Mole Creek	Active
AD1-067	Mendota Hills	In Service
AD1-098	Dixon-McGirr	Active
AD1-129	Belvidere 34 kV	Active
AD2-102	Wempletown 345 kV	Active
AD2-134	Shady Oaks	Active
AD2-172	Lena 138kV	Active
AD2-214	Rock Falls-Garden Plains	Active
AE1-113	Mole Creek 345 kV	Active
AE1-114	Maryland-Lancaster 138 kV	Active
AE1-134	Nelson 345 kV	Active
AE2-035	Lena 138 kV	Active
AE2-062	Romeoville 12 kV	Engineering and Procurement
AE2-107	Haumesser Road 138 kV	Active
AE2-255	Molecreek 345 kV	Active
AE2-321	Belvidere-Marengo 138 kV	Active
AE2-341	Sandwich-Plano	Active
AF1-012	Electric Junc-Nelson	Active
AF1-030	Plano-R 138 kV	Active
AF1-048	Belvidere-Marengo	Active
AF1-060	Lena 138 kV	Active
AF1-072	Rocky Road	Active
AF1-200	Plano 345 kV	Active
AF1-280	Nelson-Lee County	Active
AF1-281	Nelson-Lee County	Active
AF1-296	Garden Plain 138 kV	Active
AF1-314	Lena 138 kV	Active

Queue Number	Project Name	Status
AF1-330	Marengo	Active
AF1-331	Twombly Road	Active
AF2-027	Zion Energy Center 345 kV	Active
AF2-034	Kendall	Active
AF2-041	Nelson-Electric Junction 345 kV	Active
AF2-182	Nelson-Lee County 345 kV II	Active
AF2-183	Nelson-Lee County 345 kV	Active
AF2-199	Nelson-Electric Junction 345 kV	Active
AF2-200	Nelson-Electric Junction 345 kV	Active
AF2-201	Lena-Ecogrove 138 kV	Active
AF2-329	Sandwich-Plano 138 kV	Active
AF2-346	Electric Junction-Nelson 345 kV	Active
AF2-349	Garden Prairie-Silver Lake 345 kV	Active
AF2-363	Glidden 138 kV	Active
AF2-364	Wayne Red 138 kV	Active
AF2-366	Glidden-Waterman 138 kV	Active
AF2-392	Nelson-Dixon 138 kV	Active
AF2-393	Nelson-Dixon 138 kV	Active
AF2-394	Nelson-Dixon 138 kV	Active
AG1-044	Whiteside County	Active
AG1-118	Sugar Grove 138 kV	Active
AG1-119	Wayne-Byron 345 kV	Active
AG1-120	Glidden-Cherry Valley 138 kV	Active
AG1-127	Glidden-Waterman 138 kV	Active
AG1-128	Shady Oaks 138 kV	Active
AG1-220	West Dekalb 138 kV	Active
AG1-309	Byron 345 kV	Active
AG1-371	Nelson-Electric Junction 345 kV	Active
AG1-372	Nelson-Electric Junction 345 kV	Active
AG1-373	Nelson-Electric Junction 345 kV	Active
AG1-379	Minonk 345 kV	Active
AG1-423	Wayne 345 kV	Active
AG1-434	Electric Junction-Nelson 345 kV	Active
AG1-462	Quad Cities-Sterling Steel 345 kV	Active
AG1-513	Aurora 138 kV	Active
AG1-521	Dixon-McGirr Road 138 kV	Active
AG1-553	Cordova 345 kV	Active
Y3-013	Zion Energy Center	In Service
Z1-073	Mendota Hills	In Service
Z1-106	West Chicago 34kV	In Service
Z1-108	McHenry 34kV	In Service
J1000	MISO	MISO
J1002	MISO	MISO
J1003	MISO	MISO
J1042	MISO	MISO
J1084	MISO	MISO
J1101	MISO	MISO
J1153	MISO	MISO
J1154	MISO	MISO
J1171	MISO	MISO
J1183	MISO	MISO
J1188	MISO	MISO

Queue Number	Project Name	Status
J703	MISO	MISO
J704	MISO	MISO
J732	MISO	MISO
J760	MISO	MISO
J818	MISO	MISO
J831	MISO	MISO
J849	MISO	MISO
J850	MISO	MISO
J855	MISO	MISO
J864	MISO	MISO
J870	MISO	MISO
J871	MISO	MISO
J878	MISO	MISO
J886	MISO	MISO
J928	MISO	MISO
J947	MISO	MISO
J986	MISO	MISO

11.8 Contingency Descriptions - Primary POI

Contingency Name	Contingency Definition
COMED_P2-2_107_DX-138R_23	CONTINGENCY 'COMED_P2-2_107_DX-138R_23' / CONTINGENCY # 91 MOVE 100 PERCENT LOAD FROM BUS 271333 TO BUS 271332 / DIXON ; R 138 DIXON ; B 138 DISCONNECT BUS 271333 / DIXON ; R 138 END
COMED_P2-2_111_EJ-138B__2	CONTINGENCY 'COMED_P2-2_111_EJ-138B__2' / CONTINGENCY # 98 TRIP BRANCH FROM BUS 271390 TO BUS 271586 CKT 1 / ELECT JCT; B 138 ESS W541 ; B 138 TRIP BRANCH FROM BUS 271390 TO BUS 272724 CKT 1 / ELECT JCT; B 138 WARRENVIL;BT 138 TRIP BRANCH FROM BUS 271390 TO BUS 275239 CKT 1 / ELECT JCT; B 138 ELECT JCT;2M 138 MOVE 100 PERCENT LOAD FROM BUS 271586 TO BUS 271587 / ESS W541 ; B 138 ESS W541 ; R 138 MOVE 100 PERCENT LOAD FROM BUS 272522 TO BUS 272523 / SUGAR GRV; B 138 SUGAR GRV; R 138 CLOSE LINE FROM BUS 272114 TO BUS 272115 CKT 1 / N AURORA ; B 138 N AURORA ; R 138 DISCONNECT BUS 271560 / GLIDDEN ;BT 138 DISCONNECT BUS 272522 / SUGAR GRV; B 138 REMOVE SWSHUNT FROM BUS 271390 / ELECT JCT; B 138 END
COMED_P4_167-38-TR81__	CONTINGENCY 'COMED_P4_167-38-TR81__' / CONTINGENCY # 676 TRIP BRANCH FROM BUS 270846 TO BUS 270730 CKT 1 / PLANO ; B 345 ELECT JCT; B 345 TRIP BRANCH FROM BUS 272250 TO BUS 272278 CKT 2 / PLANO ; B 138 PLANO;1I 138 TRIP BRANCH FROM BUS 272250 TO BUS 272278 CKT 1 / PLANO ; B 138 PLANO;1I 138 TRIP BRANCH FROM BUS 270846 TO BUS 272278 TO BUS 275354 CKT 1 / PLANO ; B 345 PLANO;1I 138 PLANO;1C 34.5 DISCONNECT BUS 272250 / PLANO ; B 138 END

Contingency Name	Contingency Definition
COMED_P4_113-38-L11106_	CONTINGENCY 'COMED_P4_113-38-L11106_' / CONTINGENCY # 417 TRIP BRANCH FROM BUS 271390 TO BUS 271586 CKT 1 / ELECT JCT; B 138 ESS W541 ; B 138 TRIP BRANCH FROM BUS 272948 TO BUS 271558 CKT 1 / CHI W CTR 138 GLIDDEN ; B 138 TRIP BRANCH FROM BUS 271560 TO BUS 272948 CKT 1 / GLIDDEN ;BT 138 CHI W CTR 138 TRIP BRANCH FROM BUS 271560 TO BUS 272728 CKT 1 / GLIDDEN ;BT 138 WATERMAN ; B 138 TRIP BRANCH FROM BUS 271586 TO BUS 272114 CKT 1 / ESS W541 ; B 138 N AURORA ; B 138 TRIP BRANCH FROM BUS 272114 TO BUS 272522 CKT 1 / N AURORA ; B 138 SUGAR GRV; B 138 TRIP BRANCH FROM BUS 272522 TO BUS 271560 CKT 1 / SUGAR GRV; B 138 GLIDDEN ;BT 138 MOVE 100 PERCENT LOAD FROM BUS 271586 TO BUS 271587 / ESS W541 ; B 138 ESS W541 ; R 138 MOVE 100 PERCENT LOAD FROM BUS 272522 TO BUS 272523 / SUGAR GRV; B 138 SUGAR GRV; R 138 CLOSE LINE FROM BUS 272114 TO BUS 272115 CKT 1 / N AURORA ; B 138 N AURORA ; R 138 TRIP BRANCH FROM BUS 272728 TO BUS 271430 CKT 1 / WATERMAN ; B 138 ESS H452 ; B 138 CLOSE LINE FROM BUS 271430 TO BUS 271428 CKT 1 / ESS H452 ; B 138 ESS H452 ;RT 138 END
COMED_P1-2_765-L2315___-S	CONTINGENCY 'COMED_P1-2_765-L2315___-S' / CONTINGENCY # 452 TRIP BRANCH FROM BUS 270607 TO BUS 270630 CKT 1 / COLLINS ; 765 PLANO ; 765 END
COMED_P1-2_138-L14609_R-R-A	CONTINGENCY 'COMED_P1-2_138-L14609_R-R-A' / CONTINGENCY # 316 TRIP BRANCH FROM BUS 272251 TO BUS 272803 CKT 1 / PLANO; R 138 W PLANO ; R 138 TRIP BRANCH FROM BUS 272803 TO BUS 943120 CKT 1 / W PLANO ; R 138 AE2-341 TAP 138 MOVE 25 PERCENT LOAD FROM BUS 272803 TO BUS 271116 / W PLANO ; R 138 BRISTOL ; B 138 MOVE 25 PERCENT LOAD FROM BUS 272803 TO BUS 271117 / W PLANO ; R 138 BRISTOL ; R 138 MOVE 50 PERCENT LOAD FROM BUS 272803 TO BUS 272445 / W PLANO ; R 138 SANDWICH ; R 138 END

Contingency Name	Contingency Definition
COMED_P1-2_138-L8315__R-R	CONTINGENCY 'COMED_P1-2_138-L8315__R-R' / CONTINGENCY # 552 TRIP BRANCH FROM BUS 271558 TO BUS 272757 CKT 1 / GLIDDEN ; B 138 W DEKALB ;7T 138 TRIP BRANCH FROM BUS 272757 TO BUS 272362 CKT 1 / W DEKALB ;7T 138 ESS H445 ;3B 138 TRIP BRANCH FROM BUS 272757 TO BUS 272761 CKT 1 / W DEKALB ;7T 138 W DEKALB ;7R 138 MOVE 100 PERCENT LOAD FROM BUS 272761 TO BUS 272759 / W DEKALB ;7R 138 W DEKALB ;4R 138 END
COMED_P4_111-38-TR82__	CONTINGENCY 'COMED_P4_111-38-TR82__' / CONTINGENCY # 395 TRIP BRANCH FROM BUS 271390 TO BUS 271586 CKT 1 / ELECT JCT; B 138 ESS W541 ; B 138 TRIP BRANCH FROM BUS 271390 TO BUS 272724 CKT 1 / ELECT JCT; B 138 WARRENVIL;BT 138 TRIP BRANCH FROM BUS 271390 TO BUS 275239 CKT 1 / ELECT JCT; B 138 ELECT JCT;2M 138 MOVE 100 PERCENT LOAD FROM BUS 271586 TO BUS 271587 / ESS W541 ; B 138 ESS W541 ; R 138 MOVE 100 PERCENT LOAD FROM BUS 272522 TO BUS 272523 / SUGAR GRV; B 138 SUGAR GRV; R 138 CLOSE LINE FROM BUS 272114 TO BUS 272115 CKT 1 / N AURORA ; B 138 N AURORA ; R 138 DISCONNECT BUS 271560 / GLIDDEN ;BT 138 DISCONNECT BUS 272522 / SUGAR GRV; B 138 REMOVE SWSHUNT FROM BUS 271390 / ELECT JCT; B 138 TRIP BRANCH FROM BUS 275239 TO BUS 270730 CKT 1 / ELECT JCT;2M 138 ELECT JCT; B 345 TRIP BRANCH FROM BUS 275239 TO BUS 275339 CKT 1 / ELECT JCT;2M 138 ELECT JCT;2C 34.5 END
COMED_P1-2_138-L11106_B-R-A	CONTINGENCY 'COMED_P1-2_138-L11106_B-R-A' / CONTINGENCY # 190 TRIP BRANCH FROM BUS 271390 TO BUS 271586 CKT 1 / ELECT JCT; B 138 ESS W541 ; B 138 TRIP BRANCH FROM BUS 271560 TO BUS 272522 CKT 1 / GLIDDEN ;BT 138 SUGAR GRV; B 138 TRIP BRANCH FROM BUS 271560 TO BUS 272728 CKT 1 / GLIDDEN ;BT 138 WATERMAN ; B 138 TRIP BRANCH FROM BUS 271586 TO BUS 272114 CKT 1 / ESS W541 ; B 138 N AURORA ; B 138 TRIP BRANCH FROM BUS 272114 TO BUS 272522 CKT 1 / N AURORA ; B 138 SUGAR GRV; B 138 TRIP BRANCH FROM BUS 272522 TO BUS 271560 CKT 1 / SUGAR GRV; B 138 GLIDDEN ;BT 138 MOVE 100 PERCENT LOAD FROM BUS 271586 TO BUS 271587 / ESS W541 ; B 138 ESS W541 ; R 138 MOVE 100 PERCENT LOAD FROM BUS 272522 TO BUS 272523 / SUGAR GRV; B 138 SUGAR GRV; R 138 CLOSE LINE FROM BUS 272114 TO BUS 272115 CKT 1 / N AURORA ; B 138 N AURORA ; R 138 END

Contingency Name	Contingency Definition
COMED_P2-1_111-L11120__	CONTINGENCY 'COMED_P2-1_111-L11120__' / CONTINGENCY # 134 TRIP BRANCH FROM BUS 270733 TO BUS 270747 CKT 1 / ELECT JCT;3R 345 ESS W407K;OT 345 END
AEP_P1-2_#701	CONTINGENCY 'AEP_P1-2_#701' OPEN BRANCH FROM BUS 243219 TO BUS 255113 CKT 1 / 243219 05DUMONT 345 255113 17STILLWELL 345 1 END
COMED_P7-1_138-L11106_B-R+_345-L15502_B-R-A	CONTINGENCY 'COMED_P7-1_138-L11106_B-R+_345-L15502_B-R-A' / CONTINGENCY # 58 TRIP BRANCH FROM BUS 271390 TO BUS 271586 CKT 1 / ELECT JCT; B 138 ESS W541 ; B 138 TRIP BRANCH FROM BUS 271560 TO BUS 272948 CKT 1 / GLIDDEN ;BT 138 CHI W CTR 138 TRIP BRANCH FROM BUS 272948 TO BUS 271558 CKT 1 / CHI W CTR 138 GLIDDEN ; B 138 TRIP BRANCH FROM BUS 271560 TO BUS 272728 CKT 1 / GLIDDEN ;BT 138 WATERMAN ; B 138 TRIP BRANCH FROM BUS 271586 TO BUS 272114 CKT 1 / ESS W541 ; B 138 N AURORA ; B 138 TRIP BRANCH FROM BUS 272114 TO BUS 272522 CKT 1 / N AURORA ; B 138 SUGAR GRV; B 138 TRIP BRANCH FROM BUS 272522 TO BUS 271560 CKT 1 / SUGAR GRV; B 138 GLIDDEN ;BT 138 MOVE 100 PERCENT LOAD FROM BUS 271586 TO BUS 271587 / ESS W541 ; B 138 ESS W541 ; R 138 MOVE 100 PERCENT LOAD FROM BUS 272522 TO BUS 272523 / SUGAR GRV; B 138 SUGAR GRV; R 138 CLOSE LINE FROM BUS 272114 TO BUS 272115 CKT 1 / N AURORA ; B 138 N AURORA ; R 138 TRIP BRANCH FROM BUS 957470 TO BUS 270730 CKT 1 / AF2-041 TAP 345 ELECT JCT; B 345 END

Contingency Name	Contingency Definition
COMED_P4_111-38-L11106_	CONTINGENCY 'COMED_P4_111-38-L11106_' / CONTINGENCY # 391 TRIP BRANCH FROM BUS 271390 TO BUS 271586 CKT 1 / ELECT JCT; B 138 ESS W541 ; B 138 TRIP BRANCH FROM BUS 271560 TO BUS 272948 CKT 1 / GLIDDEN ;BT 138 CHI W CTR 138 TRIP BRANCH FROM BUS 271560 TO BUS 272728 CKT 1 / GLIDDEN ;BT 138 WATERMAN ; B 138 TRIP BRANCH FROM BUS 271586 TO BUS 272114 CKT 1 / ESS W541 ; B 138 N AURORA ; B 138 TRIP BRANCH FROM BUS 272114 TO BUS 272522 CKT 1 / N AURORA ; B 138 SUGAR GRV; B 138 TRIP BRANCH FROM BUS 272522 TO BUS 271560 CKT 1 / SUGAR GRV; B 138 GLIDDEN ;BT 138 MOVE 100 PERCENT LOAD FROM BUS 271586 TO BUS 271587 / ESS W541 ; B 138 ESS W541 ; R 138 MOVE 100 PERCENT LOAD FROM BUS 272522 TO BUS 272523 / SUGAR GRV; B 138 SUGAR GRV; R 138 CLOSE LINE FROM BUS 272114 TO BUS 272115 CKT 1 / N AURORA ; B 138 N AURORA ; R 138 TRIP BRANCH FROM BUS 271390 TO BUS 272724 CKT 1 / ELECT JCT; B 138 WARRENVIL;BT 138 TRIP BRANCH FROM BUS 271390 TO BUS 275239 CKT 1 / ELECT JCT; B 138 ELECT JCT;2M 138 DISCONNECT BUS 271560 / GLIDDEN ;BT 138 DISCONNECT BUS 272522 / SUGAR GRV; B 138 REMOVE SWSHUNT FROM BUS 271390 / ELECT JCT; B 138 END
COMED_P1-3_TR93_PLANO_B-S	CONTINGENCY 'COMED_P1-3_TR93_PLANO_B-S' / CONTINGENCY # 646 TRIP BRANCH FROM BUS 275207 TO BUS 270630 CKT 1 / PLANO ;3M 345 PLANO ; 765 TRIP BRANCH FROM BUS 275207 TO BUS 270846 CKT 1 / PLANO ;3M 345 PLANO ; B 345 TRIP BRANCH FROM BUS 275207 TO BUS 275307 CKT 1 / PLANO ;3M 345 PLANO ;3C 33 END

Contingency Name	Contingency Definition
COMED_P4_167-38-L14302_	CONTINGENCY 'COMED_P4_167-38-L14302_' / CONTINGENCY # 673 TRIP BRANCH FROM BUS 271116 TO BUS 272250 CKT 1 / BRISTOL ; B 138 PLANO ; B 138 TRIP BRANCH FROM BUS 272024 TO BUS 271182 CKT 1 / MONTGOMER; B 138 ESS W507 ; B 138 TRIP BRANCH FROM BUS 272026 TO BUS 271116 CKT 1 / MONTGOMER;BT 138 BRISTOL ; B 138 TRIP BRANCH FROM BUS 272026 TO BUS 272024 CKT 1 / MONTGOMER;BT 138 MONTGOMER; B 138 TRIP BRANCH FROM BUS 272202 TO BUS 272026 CKT 1 / OSWEGO ; B 138 MONTGOMER;BT 138 TRIP BRANCH FROM BUS 272794 TO BUS 272202 CKT 1 / WOLFS ; B 138 OSWEGO ; B 138 MOVE 100 PERCENT LOAD FROM BUS 271116 TO BUS 271117 / BRISTOL ; B 138 BRISTOL ; R 138 MOVE 100 PERCENT LOAD FROM BUS 272202 TO BUS 272203 / OSWEGO ; B 138 OSWEGO ; R 138 CLOSE LINE FROM BUS 271182 TO BUS 271183 CKT 1 / ESS W507 ; B 138 ESS W507 ; R 138 CLOSE LINE FROM BUS 272024 TO BUS 272025 CKT 1 / MONTGOMER; B 138 MONTGOMER; R 138 DISCONNECT BUS 272250 / PLANO ; B 138 END
COMED_P2-2_111_EJ-345R__3	CONTINGENCY 'COMED_P2-2_111_EJ-345R__3' / CONTINGENCY # 103 DISCONNECT BUS 270733 / ELECT JCT;3R 345 DISCONNECT BUS 275183 / ELECT JCT;3M 138 END
AEP_P1-2_#695_1681	CONTINGENCY 'AEP_P1-2_#695_1681' OPEN BRANCH FROM BUS 243206 TO BUS 270644 CKT 1 / 243206 05DUMONT 765 270644 WILTON ; 765 1 END
COMED_P1-2_765-L11215__S	CONTINGENCY 'COMED_P1-2_765-L11215__S' / CONTINGENCY # 199 TRIP BRANCH FROM BUS 270644 TO BUS 243206 CKT 1 / WILTON ; 765 05DUMONT 765 REMOVE SHUNT 1 FROM BUS 270644 / WILTON ; 765 END
COMED_P2-2_167_PL-138B__2	CONTINGENCY 'COMED_P2-2_167_PL-138B__2' / CONTINGENCY # 169 DISCONNECT BUS 272250 / PLANO ; B 138 END
Base Case	

Contingency Name	Contingency Definition
COMED_P1-2_765-L11216__-S	CONTINGENCY 'COMED_P1-2_765-L11216__-S' / CONTINGENCY # 200 TRIP BRANCH FROM BUS 270644 TO BUS 270607 CKT 1 / WILTON ; 765 COLLINS ; 765 END
COMED_P4_167-38-L14609__	CONTINGENCY 'COMED_P4_167-38-L14609__' / CONTINGENCY # 675 TRIP BRANCH FROM BUS 272251 TO BUS 272803 CKT 1 / PLANO ; R 138 W PLANO ; R 138 TRIP BRANCH FROM BUS 272803 TO BUS 943120 CKT 1 / W PLANO ; R 138 AE2-341 TAP 138 MOVE 25 PERCENT LOAD FROM BUS 272803 TO BUS 271116 / W PLANO ; R 138 BRISTOL ; B 138 MOVE 25 PERCENT LOAD FROM BUS 272803 TO BUS 271117 / W PLANO ; R 138 BRISTOL ; R 138 MOVE 50 PERCENT LOAD FROM BUS 272803 TO BUS 272444 / W PLANO ; R 138 SANDWICH ; B 138 DISCONNECT BUS 272251 / PLANO ; R 138 END
COMED_P2-1_113-L11323__	CONTINGENCY 'COMED_P2-1_113-L11323__' / CONTINGENCY # 140 TRIP BRANCH FROM BUS 272730 TO BUS 272728 CKT 1 / WATERMAN ;3B 138 WATERMAN ; B 138 END
COMED_P1-3_TR94_PLANO_R-S	CONTINGENCY 'COMED_P1-3_TR94_PLANO_R-S' / CONTINGENCY # 648 TRIP BRANCH FROM BUS 275208 TO BUS 270630 CKT 1 / PLANO ;4M 345 PLANO ; 765 TRIP BRANCH FROM BUS 275208 TO BUS 270847 CKT 1 / PLANO ;4M 345 PLANO ; R 345 TRIP BRANCH FROM BUS 275208 TO BUS 275308 CKT 1 / PLANO ;4M 345 PLANO ;4C 33 END
COMED_P1-2_138-L10714_R-R-A	CONTINGENCY 'COMED_P1-2_138-L10714_R-R-A' / CONTINGENCY # 171 TRIP BRANCH FROM BUS 271333 TO BUS 966520 CKT 1 / DIXON ; R 138 AG1-521 TAP 138 END
COMED_P7-1_138-L10714_R-R+_138-L10721_R-R-A	CONTINGENCY 'COMED_P7-1_138-L10714_R-R+_138-L10721_R-R-A' / CONTINGENCY # 39 TRIP BRANCH FROM BUS 271333 TO BUS 966520 CKT 1 / DIXON ; R 138 AG1-521 TAP 138 TRIP BRANCH FROM BUS 272517 TO BUS 271333 CKT 1 / STILLMAN ;RT 138 DIXON ; R 138 END

Contingency Name	Contingency Definition
COMED_P2-2_111_EJ-345B__2	CONTINGENCY 'COMED_P2-2_111_EJ-345B__2' / CONTINGENCY # 102 TRIP BRANCH FROM BUS 270730 TO BUS 270846 CKT 1 / ELECT JCT; B 345 PLANO ; B 345 TRIP BRANCH FROM BUS 270730 TO BUS 270916 CKT 1 / ELECT JCT; B 345 WAYNE ; B 345 TRIP BRANCH FROM BUS 270730 TO BUS 270928 CKT 1 / ELECT JCT; B 345 WOLFS ; B 345 TRIP BRANCH FROM BUS 270928 TO BUS 272794 TO BUS 275334 CKT 1 / WOLFS ; B 345 WOLFS ; B 138 WOLFS ;1C 34.5 DISCONNECT BUS 275239 / ELECT JCT;2M 138 END

12 Short Circuit Analysis - Primary POI

No breakers were identified as over-dutied as part of this analysis.

13 Summer Peak - Load Flow Analysis - Secondary POI

The Queue Project AG1-220 was evaluated as a 150.0 MW (Capacity 90.0 MW) injection tapping the Glidden to Cherry Valley 138 kV line in the ComEd area. Project AG1-220 was evaluated for compliance with applicable reliability planning criteria (PJM, NERC, NERC Regional Reliability Councils, and Transmission Owners). Project AG1-220 was studied with a commercial probability of 53%. Potential network impacts were as follows:

13.1 Generation Deliverability

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

None

13.2 Multiple Facility Contingency

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

None

13.3 Contribution to Previously Identified Overloads

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

ID	FROM BUS#	FROM BUS	kV	FROM BUS AREA	TO BUS#	TO BUS	kV	TO BUS AREA	CK T ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADIN G %	POST PROJECT LOADIN G %	AC/D C	MW IMPACT
168407760	270694	CHERRY VA; B	345.0	CE	924470	GARDEN PR; R	345.0	CE	1	COMED_P1-2_345-L18905__B-R-B	single	1479.0	114.83	116.19	DC	20.14
168407763	270694	CHERRY VA; B	345.0	CE	924470	GARDEN PR; R	345.0	CE	1	Base Case	single	1201.0	101.88	103.24	DC	16.26
162099363	270730	ELECT JCT; B	345.0	CE	270846	PLANO ; B	345.0	CE	1	COMED_P2-2_111_EJ-345R_3	bus	1341.0	101.2	101.71	DC	18.76
174535519	270730	ELECT JCT; B	345.0	CE	270846	PLANO ; B	345.0	CE	1	COMED_P4_111-45-L16703_	breaker	1341.0	107.37	107.92	DC	20.78
174535520	270730	ELECT JCT; B	345.0	CE	270846	PLANO ; B	345.0	CE	1	COMED_P4_111-45-L11120_	breaker	1341.0	101.14	101.65	DC	18.76
174415165	270731	ELECT JCT;4R	345.0	CE	270733	ELECT JCT;3R	345.0	CE	1	COMED_P4_111-45-L16704T	breaker	1656.0	104.46	105.02	DC	20.3
174415116	270743	ESS W407K;9T	345.0	CE	274749	AURORA EC;RP	345.0	CE	1	COMED_P4_111-45-L16704T	breaker	1479.0	101.56	102.46	DC	29.34
174415108	270751	ESS W407M;9T	345.0	CE	270743	ESS W407K;9T	345.0	CE	1	COMED_P4_111-45-L16704T	breaker	1479.0	102.52	103.42	DC	29.34

ID	FROM BUS#	FROM BUS	kV	FROM BUS AREA	TO BUS#	TO BUS	kV	TO BUS AREA	CK T ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADIN G %	POST PROJECT LOADIN G %	AC/D C	MW IMPACT
174415106	270917	WAYNE ; R	345.0	CE	270751	ESS W407M;9T	345.0	CE	1	COMED_P4_11-45-L16704T	breaker	1479.0	102.53	103.42	DC	29.34
177669080	271560	GLIDDEN ;BT	138.0	CE	962690	AG1-118 TAP	138.0	CE	1	COMED_P4_167-38-L14609_	breaker	538.0	110.39	113.78	DC	18.25
162448649	271586	ESS W541 ; B	138.0	CE	271390	ELECT JCT; B	138.0	CE	1	COMED_P4_167-38-L14609_	breaker	498.0	101.59	104.87	DC	16.35
162333893	272027	MONTGOMER ;RT	138.0	CE	272203	OSWEGO ; R	138.0	CE	1	COMED_P2-2_167_PL-138B_2	bus	275.0	149.12	150.78	DC	10.14
162448511	272027	MONTGOMER ;RT	138.0	CE	272203	OSWEGO ; R	138.0	CE	1	COMED_P4_167-38-TR81_	breaker	264.0	155.25	156.98	DC	10.16
162448512	272027	MONTGOMER ;RT	138.0	CE	272203	OSWEGO ; R	138.0	CE	1	COMED_P4_167-38-L14302_	breaker	275.0	141.97	143.72	DC	10.68
162448640	272114	N AURORA ; B	138.0	CE	271586	ESS W541 ; B	138.0	CE	1	COMED_P4_167-38-L14609_	breaker	498.0	103.05	106.34	DC	16.35
162333996	272251	PLANO; R	138.0	CE	271117	BRISTOL ; R	138.0	CE	1	COMED_P2-2_167_PL-138B_2	bus	498.0	101.71	102.69	DC	10.75
162448561	272522	SUGAR GRV; B	138.0	CE	272114	N AURORA ; B	138.0	CE	1	COMED_P4_167-38-L14609_	breaker	498.0	137.33	140.99	DC	18.25
162333846	272730	WATERMAN ;3B	138.0	CE	272728	WATERMAN ; B	138.0	CE	1	COMED_P2-2_107_DX-138R_23	bus	539.0	164.83	170.74	DC	31.84
162333848	272730	WATERMAN ;3B	138.0	CE	272728	WATERMAN ; B	138.0	CE	1	COMED_P2-2_156_CV-138R_1	bus	539.0	154.44	173.62	DC	103.4
162099277	274749	AURORA EC;RP	345.0	CE	270731	ELECT JCT;4R	345.0	CE	1	COMED_P2-2_111_EJ-345B_2	bus	1479.0	105.44	106.3	DC	28.14
174415086	274749	AURORA EC;RP	345.0	CE	270731	ELECT JCT;4R	345.0	CE	1	COMED_P4_11-45-L16704T	breaker	1479.0	108.54	109.43	DC	29.08
174415087	274749	AURORA EC;RP	345.0	CE	270731	ELECT JCT;4R	345.0	CE	1	COMED_P4_11-45-L14321T	breaker	1479.0	105.44	106.3	DC	28.16
169631509	924470	GARDEN PR; R	345.0	CE	270883	SILVER LK; R	345.0	CE	1	COMED_P1-2_345-L18905_B-R-B	single	1479.0	133.16	134.53	DC	20.14
169631511	924470	GARDEN PR; R	345.0	CE	270883	SILVER LK; R	345.0	CE	1	Base Case	single	1201.0	123.33	124.69	DC	16.26
168407796	946150	AF1-280 TAP	345.0	CE	270828	NELSON ; B	345.0	CE	1	COMED_P1-2_345-L18905_B-R-B	single	1479.0	100.31	101.46	DC	16.95
174535498	946150	AF1-280 TAP	345.0	CE	270828	NELSON ; B	345.0	CE	1	COMED_P4_144-45-BT6-8_	breaker	1479.0	112.68	113.56	DC	28.84
177669028	962690	AG1-118 TAP	138.0	CE	272522	SUGAR GRV; B	138.0	CE	1	COMED_P4_167-38-L14609_	breaker	538.0	136.91	140.31	DC	18.25

13.4 Potential Congestion due to Local Energy Deliverability

PJM also studied the delivery of the energy portion of this interconnection request. Any problems identified below are likely to result in operational restrictions to the project under study. The developer can proceed

with network upgrades to eliminate the operational restriction at their discretion by submitting a Merchant Transmission Interconnection request.

Note: Only the most severely overloaded conditions are listed below. There is no guarantee of full delivery of energy for this project by fixing only the conditions listed in this section. With a Transmission Interconnection Request, a subsequent analysis will be performed which shall study all overload conditions associated with the overloaded element(s) identified.

ID	FROM BUS#	FROM BUS	kV	FRO M BUS AREA	TO BUS#	TO BUS	kV	TO BUS AREA	CK T ID	CONT NAME	Type	Ratin g MVA	PRE PROJEC T LOADIN G %	POST PROJEC T LOADIN G %	AC D C	MW IMPAC T
168407910	270678	BYRON ; B	345.0	CE	930480	AB1-089 POI	345.0	CE	1	COMED_P 1-2_345-L97104__ - R	operatio n	2058.0	103.05	103.68	DC	28.8
168407758	270694	CHERRY VA; B	345.0	CE	924470	GARDEN PR; R	345.0	CE	1	COMED_P 1-2_345-L18905__ B-R-B	operatio n	1479.0	134.14	136.41	DC	33.57
168407762	270694	CHERRY VA; B	345.0	CE	924470	GARDEN PR; R	345.0	CE	1	Base Case	operatio n	1201.0	119.66	121.92	DC	27.1
168408114	270697	COLLINS ; R	345.0	CE	275168	COLLINS ;2M	345.0	CE	1	COMED_P 1-2_765-L2315__ - S	operatio n	1379.0	104.42	104.44	DC	14.86
177343045	271558	GLIDDEN ; B	138.0	CE	960750	AF2-366 TAP	138.0	CE	1	COMED_P 2-1_094-L11323__	operatio n	480.0	97.62	103.02	DC	25.9
177342987	271560	GLIDDEN ;BT	138.0	CE	962690	AG1-118 TAP	138.0	CE	1	COMED_P 1-2_138-L14609_R-R-A	operatio n	483.0	122.88	126.66	DC	18.26
162608232	271586	ESS W541 ; B	138.0	CE	271390	ELECT JCT; B	138.0	CE	1	COMED_P 1-2_138-L14609_R-R-A	operatio n	449.0	112.59	116.23	DC	16.35
162608227	272114	N AURORA ; B	138.0	CE	271586	ESS W541 ; B	138.0	CE	1	COMED_P 1-2_138-L14609_R-R-A	operatio n	449.0	114.24	117.88	DC	16.35
162608183	272444	SANDWIC H; B	138.0	CE	943120	AE2-341 TAP	138.0	CE	1	Base Case	operatio n	351.0	115.09	116.85	DC	13.67
177342967	272444	SANDWIC H; B	138.0	CE	943120	AE2-341 TAP	138.0	CE	1	COMED_P 1-2_138-L11106_B-R-AA	operatio n	449.0	133.22	137.47	DC	19.08
162608170	272445	SANDWIC H; R	138.0	CE	272444	SANDWIC H; B	138.0	CE	1	Base Case	operatio n	351.0	118.92	120.68	DC	13.67
177342946	272445	SANDWIC H; R	138.0	CE	272444	SANDWIC H; B	138.0	CE	1	COMED_P 1-2_138-L11106_B-R-AA	operatio n	449.0	140.98	145.23	DC	19.07
162608098	272522	SUGAR GRV; B	138.0	CE	272114	N AURORA ; B	138.0	CE	1	COMED_P 1-2_138-L14609_R-R-A	operatio n	374.0	182.76	187.65	DC	18.26
162608103	272522	SUGAR GRV; B	138.0	CE	272114	N AURORA ; B	138.0	CE	1	Base Case	operatio n	330.0	125.54	127.23	DC	12.37
162608029	272728	WATERMA N; B	138.0	CE	272445	SANDWIC H; R	138.0	CE	1	Base Case	operatio n	238.0	183.9	186.49	DC	13.67
162608043	272728	WATERMA N; B	138.0	CE	271560	GLIDDEN ;BT	138.0	CE	1	COMED_P 1-2_138-L14609_R-R-A	operatio n	321.0	184.89	190.58	DC	18.26

ID	FROM BUS#	FROM BUS	kV	FROM BUS AREA	TO BUS#	TO BUS	kV	TO BUS AREA	CK T ID	CONT NAME	Type	Rating MVA	PRE PROJECTIONS LOADIN G %	POST PROJECTIONS LOADIN G %	AC DC	MW IMPACT
162608048	272728	WATERMAN ; B	138.0	CE	271560	GLIDDEN ; BT	138.0	CE	1	Base Case	operation	292.0	123.03	124.94	DC	12.37
177342827	272728	WATERMAN ; B	138.0	CE	272445	SANDWICH ; R	138.0	CE	1	COMED_P1-2_138-L11106_B-R-AA	operation	309.0	211.06	217.24	DC	19.08
162608037	272730	WATERMAN ; 3B	138.0	CE	272728	WATERMAN ; B	138.0	CE	1	Base Case	operation	487.0	154.43	159.78	DC	26.04
177342852	272730	WATERMAN ; 3B	138.0	CE	272728	WATERMAN ; B	138.0	CE	1	COMED_P1-2_138-L15627_R-R-AA	operation	507.0	162.69	182.99	DC	102.91
162608094	272803	W PLANO ; R	138.0	CE	272251	PLANO ; R	138.0	CE	1	Base Case	operation	351.0	169.88	171.63	DC	13.67
177342883	272803	W PLANO ; R	138.0	CE	272251	PLANO ; R	138.0	CE	1	COMED_P1-2_138-L11106_B-R-AA	operation	449.0	178.62	182.87	DC	19.08
168407767	274750	CRETE EC ; BP	345.0	CE	255112	17STJOHN	345.0	NIPS	1	Base Case	operation	1091.0	175.0	175.02	DC	11.86
168408117	275168	COLLINS ; 2M	345.0	CE	270607	COLLINS ;	765.0	CE	1	COMED_P1-2_765-L2315__S	operation	1379.0	104.42	104.44	DC	14.86
169631506	924470	GARDEN PR ; R	345.0	CE	270883	SILVER LK ; R	345.0	CE	1	COMED_P1-2_345-L18905__B-R-B	operation	1479.0	159.32	161.6	DC	33.57
169631508	924470	GARDEN PR ; R	345.0	CE	270883	SILVER LK ; R	345.0	CE	1	Base Case	operation	1201.0	148.17	150.43	DC	27.1
175671091	930480	AB1-089 POI	345.0	CE	965550	AG1-423 TAP	345.0	CE	1	COMED_P1-2_345-L97104__R	operation	2058.0	113.62	114.26	DC	28.8
175671092	930480	AB1-089 POI	345.0	CE	965550	AG1-423 TAP	345.0	CE	1	Base Case	operation	1679.0	106.36	106.91	DC	20.49
177342882	934700	AD1-098 TAP	138.0	CE	271333	DIXON ; R	138.0	CE	1	Base Case	operation	351.0	104.11	105.17	DC	8.29
162608071	943120	AE2-341 TAP	138.0	CE	272803	W PLANO ; R	138.0	CE	1	Base Case	operation	351.0	179.85	181.6	DC	13.67
177342870	943120	AE2-341 TAP	138.0	CE	272803	W PLANO ; R	138.0	CE	1	COMED_P1-2_138-L11106_B-R-AA	operation	449.0	186.44	190.68	DC	19.08
168407794	946150	AF1-280 TAP	345.0	CE	270828	NELSON ; B	345.0	CE	1	COMED_P1-2_345-L18905__B-R-B	operation	1479.0	113.01	113.88	DC	28.25
177343006	960750	AF2-366 TAP	138.0	CE	272730	WATERMAN ; 3B	138.0	CE	1	COMED_P2-1_094-L11323__	operation	480.0	116.01	121.4	DC	25.9
177342932	962690	AG1-118 TAP	138.0	CE	272522	SUGAR GRV ; B	138.0	CE	1	COMED_P1-2_138-L14609_R-R-A	operation	483.0	152.43	156.21	DC	18.26
177342936	962690	AG1-118 TAP	138.0	CE	272522	SUGAR GRV ; B	138.0	CE	1	Base Case	operation	376.0	124.22	125.71	DC	12.37
177342937	963680	AG1-220 TAP	138.0	CE	271193	CHERRY VA ; R	138.0	CE	1	COMED_P2-1_113-L11323__	operation	449.0	118.42	147.16	DC	129.05
177342942	963680	AG1-220 TAP	138.0	CE	271193	CHERRY VA ; R	138.0	CE	1	Base Case	operation	351.0	71.17	104.1	DC	115.6
175671079	965550	AG1-423 TAP	345.0	CE	270916	WAYNE ; B	345.0	CE	1	COMED_P1-2_345-L97104__R	operation	2058.0	113.48	114.11	DC	28.8

ID	FROM BUS#	FROM BUS	kV	FROM BUS AREA	TO BUS#	TO BUS	kV	TO BUS AREA	CK T ID	CONT NAME	Type	Rating MVA	PRE PROJECTIONS LOADIN G %	POST PROJECTIONS LOADIN G %	AC DC	MW IMPACT
175671080	965550	AG1-423 TAP	345.0	CE	270916	WAYNE ; B	345.0	CE	1	Base Case	operation	1679.0	105.07	105.63	DC	20.49

13.5 Flow Gate Details - Secondary POI

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

13.5.1 Index 1

ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC DC	MW IMPACT
168407760	270694	CHERRY VA; B	CE	924470	GARDEN PR; R	CE	1	COMED_P1-2_345-L18905__B-R-B	single	1479.0	114.83	116.19	DC	20.14

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
272364	ESS H440N ;R	2.2213	80/20	2.2213
274656	BYRON ;1U	47.3438	80/20	47.3438
274657	BYRON ;2U	46.2787	80/20	46.2787
274662	QUAD CITI;1U	14.4405	80/20	14.4405
274663	QUAD CITI;2U	14.4816	80/20	14.4816
274700	CORDOVA ;2C	2.5357	80/20	2.5357
274701	CORDOVA ;1S	2.8526	80/20	2.8526
274715	NELSON EC;1C	3.3940	80/20	3.3940
274716	NELSON EC;1S	2.4764	80/20	2.4764
274717	NELSON EC;2C	3.4202	80/20	3.4202
274718	NELSON EC;2S	2.4986	80/20	2.4986
274760	LEE CO EC;1U	2.3971	80/20	2.3971
274761	LEE CO EC;2U	2.3971	80/20	2.3971
274762	LEE CO EC;3U	2.3971	80/20	2.3971
274763	LEE CO EC;4U	2.3745	80/20	2.3745
274764	LEE CO EC;5U	2.4027	80/20	2.4027
274765	LEE CO EC;6U	2.4027	80/20	2.4027
274766	LEE CO EC;7U	2.3689	80/20	2.3689
274767	LEE CO EC;8U	2.3689	80/20	2.3689
274822	ROCKFORD ;11	4.7466	80/20	4.7466
274823	ROCKFORD ;21	4.8710	80/20	4.8710
274824	ROCKFORD ;12	4.7052	80/20	4.7052
274856	ECOGROVE ;U1	0.6574	80/20	0.6574
274857	BIG SKY ;U1	0.4292	80/20	0.4292
274858	BIG SKY ;U2	0.4292	80/20	0.4292
276156	O-029 C	0.1894	80/20	0.1894
276157	O-029 C	0.2047	80/20	0.2047
276158	O-029 C	0.3736	80/20	0.3736
276162	X1-087	0.3277	80/20	0.3277
276590	R-018	0.2567	80/20	0.2567
293513	O-009 C1	0.3497	80/20	0.3497
293514	O-009 C2	0.1774	80/20	0.1774
293515	O-009 C3	0.1962	80/20	0.1962
295110	SUBLETTE C	0.0683	80/20	0.0683
919221	AA1-146	3.1661	80/20	3.1661
919581	AA2-030 C	20.0677	80/20	20.0677
926431	AC1-114	0.7911	80/20	0.7911
927511	AC1-113 1	0.3955	80/20	0.3955
927521	AC1-113 2	0.3955	80/20	0.3955
930482	AB1-089 CT	78.6774	80/20	78.6774
930483	AB1-089 ST	62.5516	80/20	62.5516

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
932881	AC2-115 1	0.7911	80/20	0.7911
932891	AC2-115 2	0.7911	80/20	0.7911
932921	AC2-116	0.2769	80/20	0.2769
933911	AD1-013 C	1.5628	80/20	1.5628
933931	AD1-016 C	0.4486	Adder	0.53
934701	AD1-098 C O1	5.8996	80/20	5.8996
934971	AD1-129 C	1.3406	80/20	1.3406
936791	AD2-102 C	28.5168	80/20	28.5168
937001	AD2-134 C	1.9490	Adder	2.29
937311	AD2-172 C	4.5106	80/20	4.5106
937531	AD2-214 C	4.5778	80/20	4.5778
938861	AE1-114 C O1	6.1724	80/20	6.1724
939051	AE1-134 1	1.5594	80/20	1.5594
939061	AE1-134 2	1.5594	80/20	1.5594
940501	AE2-035 C	4.5106	80/20	4.5106
941131	AE2-107 C	3.8157	Adder	4.49
943411	AF1-012 C	10.9956	80/20	10.9956
943921	AF1-060	2.2209	80/20	2.2209
946151	AF1-280 C O1	22.3598	80/20	22.3598
946161	AF1-281 C O1	0.4896	80/20	0.4896
946321	AF1-296 C O1	3.9032	80/20	3.9032
946501	AF1-314 C	8.0142	80/20	8.0142
946671	AF1-331	2.0296	80/20	2.0296
952431	J760	5.1372	PJM External (MISO)	5.1372
953681	J818	13.1969	PJM External (MISO)	13.1969
953901	J850	21.8500	PJM External (MISO)	21.8500
953921	J855 C	1.2825	PJM External (MISO)	1.2825
954001	J864	4.2443	PJM External (MISO)	4.2443
954061	J870	16.9540	PJM External (MISO)	16.9540
954071	J871	8.4770	PJM External (MISO)	8.4770
955221	J1000	3.7970	PJM External (MISO)	3.7970
955971	J1084	11.1195	PJM External (MISO)	11.1195
956581	J1154	6.6472	PJM External (MISO)	6.6472
956901	J1188	5.5255	PJM External (MISO)	5.5255
958911	AF2-182 C	29.3778	80/20	29.3778
958921	AF2-183 C	5.2227	80/20	5.2227
959101	AF2-201 C O1	11.0402	80/20	11.0402
960551	AF2-346 C	4.7124	80/20	4.7124
960721	AF2-363 C O1	8.1094	80/20	8.1094
960751	AF2-366 C	4.3574	Adder	5.13
961011	AF2-392 C O1	4.6003	80/20	4.6003
961021	AF2-393 O1	7.8414	80/20	7.8414
961031	AF2-394 O1	5.2276	80/20	5.2276
962781	AG1-127 C O2	2.5576	Adder	5.68
962791	AG1-128 C O2	2.3366	Adder	5.19
963681	AG1-220 C O2	20.1402	80/20	20.1402
964461	AG1-309 FTIR	522.7711	80/20	522.7711
965551	AG1-423 C O2	30.8064	80/20	30.8064
965661	AG1-434 C O2	1.5878	Adder	3.52
965931	AG1-462 C O2	18.5670	80/20	18.5670
966521	AG1-521 C O2	11.4992	80/20	11.4992
966821	AG1-553 C O2	26.6614	80/20	26.6614

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
WEC	WEC	0.4945	Confirmed LTF	0.4945
CBM-W2	CBM-W2	9.3990	Confirmed LTF	9.3990
NY	NY	0.2627	Confirmed LTF	0.2627
TVA	TVA	0.9856	Confirmed LTF	0.9856
SIGE	SIGE	0.0359	Confirmed LTF	0.0359
CBM-S2	CBM-S2	0.1357	Confirmed LTF	0.1357
CBM-S1	CBM-S1	0.1980	Confirmed LTF	0.1980
HAMLET	HAMLET	0.0300	Confirmed LTF	0.0300
MEC	MEC	9.7310	Confirmed LTF	9.7310
GIBSON	GIBSON	0.1054	Confirmed LTF	0.1054
BLUEG	BLUEG	0.5850	Confirmed LTF	0.5850
TRIMBLE	TRIMBLE	0.1987	Confirmed LTF	0.1987
LAGN	LAGN	2.4745	Confirmed LTF	2.4745
CATAWBA	CATAWBA	0.0003	Confirmed LTF	0.0003
CBM-W1	CBM-W1	47.3876	Confirmed LTF	47.3876

13.5.2 Index 2

ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC DC	MW IMPACT
174535519	270730	ELECT JCT; B	CE	270846	PLANO ; B	CE	1	COMED_P4_111-45-L16703_	breaker	1341.0	107.37	107.92	DC	20.78

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
272364	ESS H440N ;R	2.1954	Adder	2.58
274658	DRESDEN ;2U	65.3207	Adder	76.85
274737	AURORA EC;1P	4.3885	50/50	4.3885
274738	AURORA EC;3P	4.6734	50/50	4.6734
274739	AURORA EC;2P	4.3885	50/50	4.3885
274740	AURORA EC;4P	4.6734	50/50	4.6734
274820	ELGIN EC ;2P	3.3870	50/50	3.3870
274859	EASYR;U1 E	11.7382	Adder	13.81
274860	EASYR;U2 E	11.7382	Adder	13.81
276167	Z1-106 E2	1.4469	Adder	1.7
276168	Z1-106 E1	1.4513	Adder	1.71
276170	Z1-108 E	2.6875	Adder	3.16
276591	L-013 2	4.1959	Adder	4.94
290051	GSG-6; E	8.7602	Adder	10.31
290108	LEEDK;1U E	19.1522	Adder	22.53
293516	O-009 E1	8.1324	Adder	9.57
293517	O-009 E2	4.1306	Adder	4.86
293518	O-009 E3	4.5489	Adder	5.35
293715	O-029 E	8.6944	Adder	10.23
293716	O-029 E	4.7670	Adder	5.61
293717	O-029 E	4.3814	Adder	5.15
294763	P-046 E	9.6132	Adder	11.31
295109	WESTBROOK E	4.6901	Adder	5.52
295111	SUBLETTE E	2.5430	Adder	2.99
915011	Y3-013 1	3.3775	Adder	3.97
915021	Y3-013 2	3.3775	Adder	3.97
915031	Y3-013 3	3.3775	Adder	3.97
916221	Z1-073 E	4.5501	Adder	5.35
919581	AA2-030 C	18.6963	Adder	22.0
920272	AA2-123 E	2.6168	Adder	3.08
924472	AB2-096 CT1	20.2615	Adder	23.84
924473	AB2-096 CT2	20.2615	Adder	23.84
924474	AB2-096 CT3	20.2615	Adder	23.84
926311	AC1-109 1	0.4331	50/50	0.4331
926321	AC1-109 2	0.4331	50/50	0.4331
926331	AC1-110 1	2.9232	50/50	2.9232
926341	AC1-110 2	2.9232	50/50	2.9232
930482	AB1-089 CT	40.5167	Adder	47.67
930483	AB1-089 ST	32.2123	Adder	37.9
930771	AB1-122 CT2	41.2212	Adder	48.5
933911	AD1-013 C	1.5357	Adder	1.81
933912	AD1-013 E	2.4532	Adder	2.89

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
933931	AD1-016 C	0.9937	Adder	1.17
933932	AD1-016 E	1.6213	Adder	1.91
934111	AD1-039 2	4.0397	Adder	4.75
934432	AD1-067 E	0.4625	Adder	0.54
934701	AD1-098 C O1	5.8170	Adder	6.84
934702	AD1-098 E O1	4.2470	Adder	5.0
934971	AD1-129 C	0.9542	Adder	1.12
934972	AD1-129 E	0.6361	Adder	0.75
936791	AD2-102 C	14.6074	Adder	17.19
936792	AD2-102 E	9.7383	Adder	11.46
937001	AD2-134 C	2.2901	Adder	2.69
937002	AD2-134 E	9.4602	Adder	11.13
937311	AD2-172 C	2.5235	Adder	2.97
937312	AD2-172 E	3.4848	Adder	4.1
937531	AD2-214 C	4.2521	Adder	5.0
937532	AD2-214 E	2.8347	Adder	3.33
938861	AE1-114 C O1	3.9732	Adder	4.67
938862	AE1-114 E O1	13.5555	Adder	15.95
939051	AE1-134 1	1.4528	Adder	1.71
939061	AE1-134 2	1.4528	Adder	1.71
940501	AE2-035 C	2.5235	Adder	2.97
940502	AE2-035 E	3.4848	Adder	4.1
940752	AE2-062 E	0.0326	Adder	0.07
941131	AE2-107 C	5.1711	Adder	6.08
941132	AE2-107 E	3.4474	Adder	4.06
942991	AE2-321 C	8.7424	Adder	10.29
942992	AE2-321 E	4.3060	Adder	5.07
943411	AF1-012 C	13.9168	Adder	16.37
943412	AF1-012 E	9.2778	Adder	10.92
943801	AF1-048 C	4.0867	Adder	4.81
943802	AF1-048 E	2.7245	Adder	3.21
943921	AF1-060	1.2425	Adder	1.46
944041	AF1-072	2.4766	Adder	2.91
945352	AF1-200 NFTW	574.2450	50/50	574.2450
946151	AF1-280 C O1	16.6174	Adder	19.55
946152	AF1-280 E O1	7.6416	Adder	8.99
946161	AF1-281 C O1	0.3639	Adder	0.43
946162	AF1-281 E O1	2.0620	Adder	2.43
946321	AF1-296 C O1	3.7061	Adder	4.36
946322	AF1-296 E O1	17.3512	Adder	20.41
946501	AF1-314 C	4.4836	Adder	5.27
946502	AF1-314 E	20.9913	Adder	24.7
946661	AF1-330 C	2.1458	Adder	2.52
946662	AF1-330 E	0.4710	Adder	0.55
946671	AF1-331	1.9944	Adder	2.35
952381	J703	9.8086	PJM External (MISO)	9.8086
952391	J704	4.1949	PJM External (MISO)	4.1949
952431	J760	2.8383	PJM External (MISO)	2.8383
953151	J831	3.3608	PJM External (MISO)	3.3608
953331	J801	4.2809	PJM External (MISO)	4.2809
953491	J947	17.2860	PJM External (MISO)	17.2860
953681	J818	12.8214	PJM External (MISO)	12.8214

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
953891	J849	9.5813	PJM External (MISO)	9.5813
953901	J850	22.5225	PJM External (MISO)	22.5225
953921	J855 C	1.1213	PJM External (MISO)	1.1213
953922	J855 E	6.0667	PJM External (MISO)	6.0667
954001	J864	3.7475	PJM External (MISO)	3.7475
954061	J870	14.8260	PJM External (MISO)	14.8260
954071	J871	7.4130	PJM External (MISO)	7.4130
954141	J878	17.6340	PJM External (MISO)	17.6340
954191	J886	11.8380	PJM External (MISO)	11.8380
954511	J926 C	0.9137	PJM External (MISO)	0.9137
954512	J926 E	4.9433	PJM External (MISO)	4.9433
954691	J732	34.0381	PJM External (MISO)	34.0381
954741	J928 C	0.9564	PJM External (MISO)	0.9564
954742	J928 E	5.1744	PJM External (MISO)	5.1744
954861	J959 C	0.3764	PJM External (MISO)	0.3764
954862	J959 E	2.0367	PJM External (MISO)	2.0367
955091	J986	10.7078	PJM External (MISO)	10.7078
955221	J1000	3.4515	PJM External (MISO)	3.4515
955241	J1002	7.5814	PJM External (MISO)	7.5814
955251	J1003	4.0990	PJM External (MISO)	4.0990
955582	J1042 E	16.0776	PJM External (MISO)	16.0776
955971	J1084	10.6920	PJM External (MISO)	10.6920
956051	J1092	5.6370	PJM External (MISO)	5.6370
956141	J1101	1.5784	PJM External (MISO)	1.5784
956411	J1131	5.7540	PJM External (MISO)	5.7540
956571	J1153	12.4365	PJM External (MISO)	12.4365
956581	J1154	6.4537	PJM External (MISO)	6.4537
956731	J1171	8.1870	PJM External (MISO)	8.1870
956852	J1183 E	0.1035	PJM External (MISO)	0.1035
956901	J1188	4.3570	PJM External (MISO)	4.3570
957331	AF2-027 C	2.2516	Adder	2.65
957332	AF2-027 E	3.3775	Adder	3.97
957401	AF2-034 C	0.7380	Adder	0.87
957402	AF2-034 E	0.6286	Adder	0.74
957471	AF2-041 C	33.5646	50/50	33.5646
957472	AF2-041 E	16.7823	50/50	16.7823
958911	AF2-182 C	21.8331	Adder	25.69
958912	AF2-182 E	14.5554	Adder	17.12
958921	AF2-183 C	3.8814	Adder	4.57
958922	AF2-183 E	5.8222	Adder	6.85
959081	AF2-199 C	11.1882	50/50	11.1882
959082	AF2-199 E	5.5941	50/50	5.5941
959091	AF2-200 C O1	22.3764	50/50	22.3764
959092	AF2-200 E O1	11.1882	50/50	11.1882
959101	AF2-201 C O1	6.1765	Adder	7.27
959102	AF2-201 E O1	17.7363	Adder	20.87
960551	AF2-346 C	5.9643	Adder	7.02
960552	AF2-346 E	3.9762	Adder	4.68
960581	AF2-349 C	23.1413	Adder	27.23
960582	AF2-349 E	15.4275	Adder	18.15
960721	AF2-363 C O1	5.3038	Adder	6.24
960722	AF2-363 E O1	3.5359	Adder	4.16

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
960731	AF2-364 C O1	7.1454	Adder	8.41
960732	AF2-364 E O1	4.7636	Adder	5.6
960751	AF2-366 C	5.4788	Adder	6.45
960752	AF2-366 E	3.6525	Adder	4.3
961011	AF2-392 C O1	3.9844	Adder	4.69
961012	AF2-392 E O1	18.6545	Adder	21.95
961021	AF2-393 O1	6.7917	Adder	7.99
961031	AF2-394 O1	4.5278	Adder	5.33
962012	AG1-044 E	0.0326	Adder	0.07
962691	AG1-118 C O2	9.5970	Adder	21.3
962692	AG1-118 E O2	6.3980	Adder	14.2
962701	AG1-119 C O2	33.2694	50/50	33.2694
962702	AG1-119 E O2	22.1796	50/50	22.1796
962711	AG1-120 C O2	13.1525	50/50	13.1525
962712	AG1-120 E O2	8.7683	50/50	8.7683
962781	AG1-127 C O2	3.2158	Adder	7.14
962782	AG1-127 E O2	2.1439	Adder	4.76
962791	AG1-128 C O2	2.7455	Adder	6.09
962792	AG1-128 E O2	12.8475	Adder	28.52
963681	AG1-220 C O2	5.6167	Adder	12.47
963682	AG1-220 E O2	3.7445	Adder	8.31
964461	AG1-309 FTIR	304.3546	Merchant Transmission	304.3546
965061	AG1-371	5.5941	50/50	5.5941
965071	AG1-372	3.7294	50/50	3.7294
965081	AG1-373	1.8647	50/50	1.8647
965551	AG1-423 C O2	8.9167	Adder	19.79
965552	AG1-423 E O2	5.9444	Adder	13.2
965661	AG1-434 C O2	1.8656	Adder	4.14
965662	AG1-434 E O2	8.7346	Adder	19.39
965931	AG1-462 C O2	9.5338	Adder	21.16
965932	AG1-462 E O2	6.3558	Adder	14.11
966441	AG1-513 C	0.2430	Adder	0.54
966442	AG1-513 E	0.3645	Adder	0.81
966521	AG1-521 C O2	4.7638	Adder	10.57
966522	AG1-521 E O2	1.1909	Adder	2.64
966651	AG1-535 O2	15.7616	50/50	15.7616
966821	AG1-553 C O2	13.7533	Adder	30.53
966822	AG1-553 E O2	3.4383	Adder	7.63
WEC	WEC	4.0279	Confirmed LTF	4.0279
CBM-W2	CBM-W2	14.0582	Confirmed LTF	14.0582
NY	NY	0.4723	Confirmed LTF	0.4723
TVA	TVA	1.3426	Confirmed LTF	1.3426
O-066	O-066	5.6195	Confirmed LTF	5.6195
SIGE	SIGE	0.0754	Confirmed LTF	0.0754
CBM-S1	CBM-S1	0.2645	Confirmed LTF	0.2645
G-007	G-007	0.8757	Confirmed LTF	0.8757
HAMLET	HAMLET	0.1190	Confirmed LTF	0.1190
MEC	MEC	12.5038	Confirmed LTF	12.5038
GIBSON	GIBSON	0.1016	Confirmed LTF	0.1016
BLUEG	BLUEG	0.9374	Confirmed LTF	0.9374
TRIMBLE	TRIMBLE	0.3205	Confirmed LTF	0.3205
LAGN	LAGN	3.3845	Confirmed LTF	3.3845

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
CATAWBA	CATAWBA	0.0448	Confirmed LTF	0.0448
CBM-W1	CBM-W1	78.4840	Confirmed LTF	78.4840

13.5.3 Index 3

ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC DC	MW IMPACT
174415165	270731	ELECT JCT;4R	CE	270733	ELECT JCT;3R	CE	1	COMED_P4_111-45-L16704T	breaker	1656.0	104.46	105.02	DC	20.3

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
272364	ESS H440N ;R	1.8199	Adder	2.14
274659	DRESDEN ;3U	70.5533	Adder	83.0
274695	ROCKY RD ;2P	3.3920	50/50	3.3920
274737	AURORA EC;1P	12.6528	50/50	12.6528
274739	AURORA EC;2P	12.6528	50/50	12.6528
274818	ELGIN EC ;1P	4.2523	50/50	4.2523
274819	ELGIN EC ;3P	4.2387	50/50	4.2387
274820	ELGIN EC ;2P	4.2523	50/50	4.2523
274821	ELGIN EC ;4P	4.2705	50/50	4.2705
274859	EASYR;U1 E	9.8255	Adder	11.56
274860	EASYR;U2 E	9.8255	Adder	11.56
276167	Z1-106 E2	1.3081	Adder	1.54
276168	Z1-106 E1	1.3076	Adder	1.54
276170	Z1-108 E	2.9769	Adder	3.5
276591	L-013 2	3.7934	Adder	4.46
290051	GSG-6; E	7.2040	Adder	8.48
290108	LEEDK;1U E	15.8202	Adder	18.61
293516	O-009 E1	6.1994	Adder	7.29
293517	O-009 E2	3.1488	Adder	3.7
293518	O-009 E3	3.4677	Adder	4.08
293715	O-029 E	6.6278	Adder	7.8
293716	O-029 E	3.6339	Adder	4.28
293717	O-029 E	3.3400	Adder	3.93
294763	P-046 E	8.9835	Adder	10.57
295109	WESTBROOK E	3.8569	Adder	4.54
295111	SUBLETTE E	1.9754	Adder	2.32
915011	Y3-013 1	1.8447	Adder	2.17
915021	Y3-013 2	1.8447	Adder	2.17
915031	Y3-013 3	1.8447	Adder	2.17
916221	Z1-073 E	3.7418	Adder	4.4
919581	AA2-030 C	13.1448	Adder	15.46
920272	AA2-123 E	2.8320	Adder	3.33
924472	AB2-096 CT1	21.3264	Adder	25.09
924473	AB2-096 CT2	21.3264	Adder	25.09
924474	AB2-096 CT3	21.3264	Adder	25.09
926311	AC1-109 1	1.2488	50/50	1.2488
926321	AC1-109 2	1.2488	50/50	1.2488
926331	AC1-110 1	1.1123	Adder	1.31
926341	AC1-110 2	1.1123	Adder	1.31
930482	AB1-089 CT	45.8739	Adder	53.97
930483	AB1-089 ST	36.4715	Adder	42.91
930761	AB1-122 CT1	38.4060	Adder	45.18

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
933431	AC2-156 C O1	0.4666	Adder	0.55
933432	AC2-156 E O1	0.7613	Adder	0.9
933911	AD1-013 C	1.2777	Adder	1.5
933912	AD1-013 E	2.0410	Adder	2.4
933931	AD1-016 C	1.0735	Adder	1.26
933932	AD1-016 E	1.7515	Adder	2.06
934101	AD1-039 1	3.7638	Adder	4.43
934432	AD1-067 E	0.3803	Adder	0.45
934701	AD1-098 C O1	4.7676	Adder	5.61
934702	AD1-098 E O1	3.4808	Adder	4.1
934971	AD1-129 C	0.9945	Adder	1.17
934972	AD1-129 E	0.6630	Adder	0.78
936791	AD2-102 C	14.2474	Adder	16.76
936792	AD2-102 E	9.4982	Adder	11.17
937001	AD2-134 C	1.8832	Adder	2.22
937002	AD2-134 E	7.7797	Adder	9.15
937311	AD2-172 C	2.3582	Adder	2.77
937312	AD2-172 E	3.2565	Adder	3.83
937531	AD2-214 C	3.1777	Adder	3.74
937532	AD2-214 E	2.1185	Adder	2.49
938861	AE1-114 C O1	3.4512	Adder	4.06
938862	AE1-114 E O1	11.7748	Adder	13.85
939051	AE1-134 1	1.0214	Adder	1.2
939061	AE1-134 2	1.0214	Adder	1.2
940501	AE2-035 C	2.3582	Adder	2.77
940502	AE2-035 E	3.2565	Adder	3.83
941131	AE2-107 C	4.2715	Adder	5.03
941132	AE2-107 E	2.8476	Adder	3.35
942991	AE2-321 C	9.4372	Adder	11.1
942992	AE2-321 E	4.6482	Adder	5.47
943411	AF1-012 C	7.9192	Adder	9.32
943412	AF1-012 E	5.2794	Adder	6.21
943801	AF1-048 C	4.4115	Adder	5.19
943802	AF1-048 E	2.9410	Adder	3.46
943921	AF1-060	1.1611	Adder	1.37
944041	AF1-072	3.0937	Adder	3.64
945352	AF1-200 NFTW	374.4930	Merchant Transmission	374.4930
946151	AF1-280 C O1	13.2357	Adder	15.57
946152	AF1-280 E O1	6.0865	Adder	7.16
946161	AF1-281 C O1	0.2898	Adder	0.34
946162	AF1-281 E O1	1.6424	Adder	1.93
946321	AF1-296 C O1	2.8069	Adder	3.3
946322	AF1-296 E O1	13.1411	Adder	15.46
946501	AF1-314 C	4.1899	Adder	4.93
946502	AF1-314 E	19.6163	Adder	23.08
946661	AF1-330 C	2.3223	Adder	2.73
946662	AF1-330 E	0.5098	Adder	0.6
946671	AF1-331	1.6594	Adder	1.95
952431	J760	2.8251	PJM External (MISO)	2.8251
953681	J818	10.5164	PJM External (MISO)	10.5164
953901	J850	18.2150	PJM External (MISO)	18.2150
956581	J1154	5.2950	PJM External (MISO)	5.2950

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
956901	J1188	3.8050	PJM External (MISO)	3.8050
957331	AF2-027 C	1.2298	Adder	1.45
957332	AF2-027 E	1.8447	Adder	2.17
957471	AF2-041 C	10.6901	Adder	12.58
957472	AF2-041 E	5.3451	Adder	6.29
958911	AF2-182 C	17.3900	Adder	20.46
958912	AF2-182 E	11.5933	Adder	13.64
958921	AF2-183 C	3.0916	Adder	3.64
958922	AF2-183 E	4.6373	Adder	5.46
959081	AF2-199 C	3.5634	Adder	4.19
959082	AF2-199 E	1.7817	Adder	2.1
959091	AF2-200 C O1	7.1267	Adder	8.38
959092	AF2-200 E O1	3.5634	Adder	4.19
959101	AF2-201 C O1	5.7719	Adder	6.79
959102	AF2-201 E O1	16.5745	Adder	19.5
960551	AF2-346 C	3.3939	Adder	3.99
960552	AF2-346 E	2.2626	Adder	2.66
960581	AF2-349 C	24.3576	Adder	28.66
960582	AF2-349 E	16.2384	Adder	19.1
960721	AF2-363 C O1	4.9032	Adder	5.77
960722	AF2-363 E O1	3.2688	Adder	3.85
960731	AF2-364 C O1	11.0540	50/50	11.0540
960732	AF2-364 E O1	7.3693	50/50	7.3693
960751	AF2-366 C	4.6318	Adder	5.45
960752	AF2-366 E	3.0879	Adder	3.63
961011	AF2-392 C O1	2.9845	Adder	3.51
961012	AF2-392 E O1	13.9730	Adder	16.44
961021	AF2-393 O1	5.0873	Adder	5.99
961031	AF2-394 O1	3.3915	Adder	3.99
962012	AG1-044 E	0.0240	Adder	0.05
962691	AG1-118 C O2	7.2089	Adder	16.0
962692	AG1-118 E O2	4.8059	Adder	10.67
962701	AG1-119 C O2	52.1478	50/50	52.1478
962702	AG1-119 E O2	34.7652	50/50	34.7652
962711	AG1-120 C O2	20.6158	50/50	20.6158
962712	AG1-120 E O2	13.7438	50/50	13.7438
962781	AG1-127 C O2	2.7187	Adder	6.03
962782	AG1-127 E O2	1.8125	Adder	4.02
962791	AG1-128 C O2	2.2577	Adder	5.01
962792	AG1-128 E O2	10.5652	Adder	23.45
963681	AG1-220 C O2	5.4882	Adder	12.18
963682	AG1-220 E O2	3.6588	Adder	8.12
964461	AG1-309 FTIR	312.8406	Merchant Transmission	312.8406
965061	AG1-371	0.9443	Adder	2.1
965071	AG1-372	0.6295	Adder	1.4
965081	AG1-373	0.3148	Adder	0.7
965551	AG1-423 C O2	11.4137	Adder	25.34
965552	AG1-423 E O2	7.6091	Adder	16.89
965661	AG1-434 C O2	1.5342	Adder	3.41
965662	AG1-434 E O2	7.1830	Adder	15.94
965931	AG1-462 C O2	7.1311	Adder	15.83
965932	AG1-462 E O2	4.7540	Adder	10.55

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
966441	AG1-513 C	0.1473	Adder	0.33
966442	AG1-513 E	0.2209	Adder	0.49
966521	AG1-521 C O2	3.7806	Adder	8.39
966522	AG1-521 E O2	0.9451	Adder	2.1
966651	AG1-535 O2	5.8293	Adder	12.94
966821	AG1-553 C O2	10.3507	Adder	22.98
966822	AG1-553 E O2	2.5877	Adder	5.74
WEC	WEC	2.5559	Confirmed LTF	2.5559
CBM-W2	CBM-W2	14.3987	Confirmed LTF	14.3987
NY	NY	0.3943	Confirmed LTF	0.3943
TVA	TVA	1.3818	Confirmed LTF	1.3818
O-066	O-066	4.6639	Confirmed LTF	4.6639
SIGE	SIGE	0.0827	Confirmed LTF	0.0827
CBM-S1	CBM-S1	0.2858	Confirmed LTF	0.2858
G-007	G-007	0.7266	Confirmed LTF	0.7266
HAMLET	HAMLET	0.0578	Confirmed LTF	0.0578
MEC	MEC	10.1791	Confirmed LTF	10.1791
BLUEG	BLUEG	0.6059	Confirmed LTF	0.6059
TRIMBLE	TRIMBLE	0.2143	Confirmed LTF	0.2143
LAGN	LAGN	3.1517	Confirmed LTF	3.1517
CATAWBA	CATAWBA	0.0091	Confirmed LTF	0.0091
CBM-W1	CBM-W1	57.0894	Confirmed LTF	57.0894

13.5.4 Index 4

ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC DC	MW IMPACT
174415116	270743	ESS W407K;9T	CE	274749	AURORA EC;RP	CE	1	COMED_P4_111-45-L16704T	breaker	1479.0	101.56	102.46	DC	29.34

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
272364	ESS H440N ;R	2.2059	Adder	2.6
274693	ROCKY RD ;1P	4.9878	50/50	4.9878
274695	ROCKY RD ;2P	5.0374	50/50	5.0374
274697	ROCKY RD ;3P	1.3684	50/50	1.3684
274818	ELGIN EC ;1P	6.1779	50/50	6.1779
274819	ELGIN EC ;3P	5.9544	50/50	5.9544
274820	ELGIN EC ;2P	6.1779	50/50	6.1779
274821	ELGIN EC ;4P	5.9991	50/50	5.9991
274859	EASYR;U1 E	14.2425	Adder	16.76
274860	EASYR;U2 E	14.2425	Adder	16.76
276167	Z1-106 E2	1.4705	Adder	1.73
276168	Z1-106 E1	1.4783	Adder	1.74
276170	Z1-108 E	4.6675	Adder	5.49
276591	L-013 2	4.2644	Adder	5.02
290051	GSG-6; E	8.7423	Adder	10.29
290108	LEEDK;1U E	18.1458	Adder	21.35
293516	O-009 E1	7.9413	Adder	9.34
293517	O-009 E2	4.0336	Adder	4.75
293518	O-009 E3	4.4421	Adder	5.23
293715	O-029 E	8.4902	Adder	9.99
293716	O-029 E	4.6550	Adder	5.48
293717	O-029 E	4.2785	Adder	5.03
294763	P-046 E	13.2872	Adder	15.63
295109	WESTBROOK E	4.6805	Adder	5.51
295111	SUBLETTE E	2.7014	Adder	3.18
915011	Y3-013 1	3.9030	Adder	4.59
915021	Y3-013 2	3.9030	Adder	4.59
915031	Y3-013 3	3.9030	Adder	4.59
916221	Z1-073 E	4.5408	Adder	5.34
919581	AA2-030 C	18.4375	Adder	21.69
920272	AA2-123 E	4.3515	Adder	5.12
924472	AB2-096 CT1	32.8885	Adder	38.69
924473	AB2-096 CT2	32.8885	Adder	38.69
924474	AB2-096 CT3	32.8885	Adder	38.69
926331	AC1-110 1	1.2550	Adder	1.48
926341	AC1-110 2	1.2550	Adder	1.48
930482	AB1-089 CT	68.4671	Adder	80.55
930483	AB1-089 ST	54.4340	Adder	64.04
933911	AD1-013 C	1.5484	Adder	1.82
933912	AD1-013 E	2.4734	Adder	2.91
933931	AD1-016 C	1.6497	Adder	1.94
933932	AD1-016 E	2.6916	Adder	3.17

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
934432	AD1-067 E	0.4616	Adder	0.54
934701	AD1-098 C O1	5.8278	Adder	6.86
934702	AD1-098 E O1	4.2549	Adder	5.01
934971	AD1-129 C	1.5109	Adder	1.78
934972	AD1-129 E	1.0073	Adder	1.19
936791	AD2-102 C	21.6250	Adder	25.44
936792	AD2-102 E	14.4167	Adder	16.96
937001	AD2-134 C	2.2854	Adder	2.69
937002	AD2-134 E	9.4409	Adder	11.11
937311	AD2-172 C	3.4879	Adder	4.1
937312	AD2-172 E	4.8166	Adder	5.67
937531	AD2-214 C	4.2341	Adder	4.98
937532	AD2-214 E	2.8227	Adder	3.32
938861	AE1-114 C O1	4.9737	Adder	5.85
938862	AE1-114 E O1	16.9691	Adder	19.96
939051	AE1-134 1	1.4327	Adder	1.69
939061	AE1-134 2	1.4327	Adder	1.69
940501	AE2-035 C	3.4879	Adder	4.1
940502	AE2-035 E	4.8166	Adder	5.67
941131	AE2-107 C	4.8994	Adder	5.76
941132	AE2-107 E	3.2662	Adder	3.84
942991	AE2-321 C	14.4790	Adder	17.03
942992	AE2-321 E	7.1314	Adder	8.39
943411	AF1-012 C	11.3794	Adder	13.39
943412	AF1-012 E	7.5862	Adder	8.92
943801	AF1-048 C	6.7684	Adder	7.96
943802	AF1-048 E	4.5123	Adder	5.31
943921	AF1-060	1.7174	Adder	2.02
944041	AF1-072	5.4053	50/50	5.4053
945352	AF1-200 NFTW	174.1740	Merchant Transmission	174.1740
946151	AF1-280 C O1	19.0198	Adder	22.38
946152	AF1-280 E O1	8.7463	Adder	10.29
946161	AF1-281 C O1	0.4165	Adder	0.49
946162	AF1-281 E O1	2.3601	Adder	2.78
946321	AF1-296 C O1	3.6776	Adder	4.33
946322	AF1-296 E O1	17.2175	Adder	20.26
946501	AF1-314 C	6.1972	Adder	7.29
946502	AF1-314 E	29.0139	Adder	34.13
946661	AF1-330 C	3.5682	Adder	4.2
946662	AF1-330 E	0.7833	Adder	0.92
946671	AF1-331	2.0109	Adder	2.37
952381	J703	12.2771	PJM External (MISO)	12.2771
952391	J704	5.2484	PJM External (MISO)	5.2484
952431	J760	4.4730	PJM External (MISO)	4.4730
953151	J831	4.1888	PJM External (MISO)	4.1888
953491	J947	21.0560	PJM External (MISO)	21.0560
953681	J818	18.0409	PJM External (MISO)	18.0409
953891	J849	11.9925	PJM External (MISO)	11.9925
953901	J850	32.1175	PJM External (MISO)	32.1175
953921	J855 C	1.3974	PJM External (MISO)	1.3974
953922	J855 E	7.5606	PJM External (MISO)	7.5606
954001	J864	4.8880	PJM External (MISO)	4.8880

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
954061	J870	19.0080	PJM External (MISO)	19.0080
954071	J871	9.5040	PJM External (MISO)	9.5040
954141	J878	22.0320	PJM External (MISO)	22.0320
954191	J886	14.8170	PJM External (MISO)	14.8170
954741	J928 C	1.1973	PJM External (MISO)	1.1973
954742	J928 E	6.4775	PJM External (MISO)	6.4775
955091	J986	13.4095	PJM External (MISO)	13.4095
955221	J1000	4.1340	PJM External (MISO)	4.1340
955241	J1002	9.8525	PJM External (MISO)	9.8525
955251	J1003	5.4920	PJM External (MISO)	5.4920
955582	J1042 E	21.6846	PJM External (MISO)	21.6846
956141	J1101	1.9756	PJM External (MISO)	1.9756
956571	J1153	15.5265	PJM External (MISO)	15.5265
956581	J1154	9.0818	PJM External (MISO)	9.0818
956731	J1171	10.5520	PJM External (MISO)	10.5520
956852	J1183 E	0.1295	PJM External (MISO)	0.1295
956901	J1188	6.2940	PJM External (MISO)	6.2940
957331	AF2-027 C	2.6020	Adder	3.06
957332	AF2-027 E	3.9030	Adder	4.59
957471	AF2-041 C	16.3618	Adder	19.25
957472	AF2-041 E	8.1809	Adder	9.62
958911	AF2-182 C	24.9895	Adder	29.4
958912	AF2-182 E	16.6597	Adder	19.6
958921	AF2-183 C	4.4426	Adder	5.23
958922	AF2-183 E	6.6639	Adder	7.84
959081	AF2-199 C	5.4539	Adder	6.42
959082	AF2-199 E	2.7270	Adder	3.21
959091	AF2-200 C O1	10.9079	Adder	12.83
959092	AF2-200 E O1	5.4539	Adder	6.42
959101	AF2-201 C O1	8.5370	Adder	10.04
959102	AF2-201 E O1	24.5149	Adder	28.84
960551	AF2-346 C	4.8769	Adder	5.74
960552	AF2-346 E	3.2513	Adder	3.83
960581	AF2-349 C	37.5630	Adder	44.19
960582	AF2-349 E	25.0420	Adder	29.46
960721	AF2-363 C O1	6.6061	Adder	7.77
960722	AF2-363 E O1	4.4041	Adder	5.18
960731	AF2-364 C O1	12.9241	Adder	15.2
960732	AF2-364 E O1	8.6161	Adder	10.14
960751	AF2-366 C	5.3786	Adder	6.33
960752	AF2-366 E	3.5857	Adder	4.22
961011	AF2-392 C O1	4.1026	Adder	4.83
961012	AF2-392 E O1	19.2078	Adder	22.6
961021	AF2-393 O1	6.9931	Adder	8.23
961031	AF2-394 O1	4.6621	Adder	5.48
962012	AG1-044 E	0.0325	Adder	0.07
962691	AG1-118 C O2	7.8357	Adder	17.39
962692	AG1-118 E O2	5.2238	Adder	11.6
962701	AG1-119 C O2	77.4324	50/50	77.4324
962702	AG1-119 E O2	51.6216	50/50	51.6216
962711	AG1-120 C O2	30.6116	50/50	30.6116
962712	AG1-120 E O2	20.4077	50/50	20.4077

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
962781	AG1-127 C O2	3.1570	Adder	7.01
962782	AG1-127 E O2	2.1047	Adder	4.67
962791	AG1-128 C O2	2.7399	Adder	6.08
962792	AG1-128 E O2	12.8213	Adder	28.46
963681	AG1-220 C O2	7.9310	Adder	17.6
963682	AG1-220 E O2	5.2873	Adder	11.74
964461	AG1-309 FTIR	467.8058	Merchant Transmission	467.8058
965061	AG1-371	1.4453	Adder	3.21
965071	AG1-372	0.9635	Adder	2.14
965081	AG1-373	0.4818	Adder	1.07
965551	AG1-423 C O2	37.7352	50/50	37.7352
965552	AG1-423 E O2	25.1568	50/50	25.1568
965661	AG1-434 C O2	1.8618	Adder	4.13
965662	AG1-434 E O2	8.7168	Adder	19.35
965931	AG1-462 C O2	9.3059	Adder	20.66
965932	AG1-462 E O2	6.2039	Adder	13.77
966521	AG1-521 C O2	5.2157	Adder	11.58
966522	AG1-521 E O2	1.3039	Adder	2.89
966651	AG1-535 O2	7.6677	Adder	17.02
966821	AG1-553 C O2	13.3882	Adder	29.72
966822	AG1-553 E O2	3.3470	Adder	7.43
WEC	WEC	4.7795	Confirmed LTF	4.7795
CBM-W2	CBM-W2	10.3757	Confirmed LTF	10.3757
NY	NY	0.4264	Confirmed LTF	0.4264
TVA	TVA	1.0234	Confirmed LTF	1.0234
O-066	O-066	5.0812	Confirmed LTF	5.0812
SIGE	SIGE	0.0426	Confirmed LTF	0.0426
CBM-S1	CBM-S1	0.1877	Confirmed LTF	0.1877
G-007	G-007	0.7928	Confirmed LTF	0.7928
HAMLET	HAMLET	0.1351	Confirmed LTF	0.1351
MEC	MEC	12.5865	Confirmed LTF	12.5865
GIBSON	GIBSON	0.2441	Confirmed LTF	0.2441
BLUEG	BLUEG	1.0659	Confirmed LTF	1.0659
TRIMBLE	TRIMBLE	0.3562	Confirmed LTF	0.3562
LAGN	LAGN	2.9470	Confirmed LTF	2.9470
CATAWBA	CATAWBA	0.0591	Confirmed LTF	0.0591
CBM-W1	CBM-W1	89.6018	Confirmed LTF	89.6018

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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
174415108	270751	ESS W407M;9T	CE	270743	ESS W407K;9T	CE	1	COMED_P4_111-45-L16704T	breaker	1479.0	102.52	103.42	DC	29.34

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
272364	ESS H440N ;R	2.2059	Adder	2.6
274693	ROCKY RD ;1P	4.9878	50/50	4.9878
274695	ROCKY RD ;2P	5.0374	50/50	5.0374
274697	ROCKY RD ;3P	1.3684	50/50	1.3684
274818	ELGIN EC ;1P	6.1779	50/50	6.1779
274819	ELGIN EC ;3P	5.9544	50/50	5.9544
274820	ELGIN EC ;2P	6.1779	50/50	6.1779
274821	ELGIN EC ;4P	5.9991	50/50	5.9991
274859	EASYR;U1 E	14.2425	Adder	16.76
274860	EASYR;U2 E	14.2425	Adder	16.76
276167	Z1-106 E2	1.4705	Adder	1.73
276168	Z1-106 E1	1.4783	Adder	1.74
276170	Z1-108 E	4.6675	Adder	5.49
276591	L-013 2	4.2644	Adder	5.02
290051	GSG-6; E	8.7423	Adder	10.29
290108	LEEDK;1U E	18.1458	Adder	21.35
293516	O-009 E1	7.9413	Adder	9.34
293517	O-009 E2	4.0336	Adder	4.75
293518	O-009 E3	4.4421	Adder	5.23
293715	O-029 E	8.4902	Adder	9.99
293716	O-029 E	4.6550	Adder	5.48
293717	O-029 E	4.2785	Adder	5.03
294763	P-046 E	13.2872	Adder	15.63
295109	WESTBROOK E	4.6805	Adder	5.51
295111	SUBLETTE E	2.7014	Adder	3.18
915011	Y3-013 1	3.9030	Adder	4.59
915021	Y3-013 2	3.9030	Adder	4.59
915031	Y3-013 3	3.9030	Adder	4.59
916221	Z1-073 E	4.5408	Adder	5.34
919581	AA2-030 C	18.4375	Adder	21.69
920272	AA2-123 E	4.3515	Adder	5.12
924472	AB2-096 CT1	32.8885	Adder	38.69
924473	AB2-096 CT2	32.8885	Adder	38.69
924474	AB2-096 CT3	32.8885	Adder	38.69
926331	AC1-110 1	1.2550	Adder	1.48
926341	AC1-110 2	1.2550	Adder	1.48
930482	AB1-089 CT	68.4671	Adder	80.55
930483	AB1-089 ST	54.4340	Adder	64.04
933911	AD1-013 C	1.5484	Adder	1.82
933912	AD1-013 E	2.4734	Adder	2.91
933931	AD1-016 C	1.6497	Adder	1.94
933932	AD1-016 E	2.6916	Adder	3.17

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
934432	AD1-067 E	0.4616	Adder	0.54
934701	AD1-098 C O1	5.8278	Adder	6.86
934702	AD1-098 E O1	4.2549	Adder	5.01
934971	AD1-129 C	1.5109	Adder	1.78
934972	AD1-129 E	1.0073	Adder	1.19
936791	AD2-102 C	21.6250	Adder	25.44
936792	AD2-102 E	14.4167	Adder	16.96
937001	AD2-134 C	2.2854	Adder	2.69
937002	AD2-134 E	9.4409	Adder	11.11
937311	AD2-172 C	3.4879	Adder	4.1
937312	AD2-172 E	4.8166	Adder	5.67
937531	AD2-214 C	4.2341	Adder	4.98
937532	AD2-214 E	2.8227	Adder	3.32
938861	AE1-114 C O1	4.9737	Adder	5.85
938862	AE1-114 E O1	16.9691	Adder	19.96
939051	AE1-134 1	1.4327	Adder	1.69
939061	AE1-134 2	1.4327	Adder	1.69
940501	AE2-035 C	3.4879	Adder	4.1
940502	AE2-035 E	4.8166	Adder	5.67
941131	AE2-107 C	4.8994	Adder	5.76
941132	AE2-107 E	3.2662	Adder	3.84
942991	AE2-321 C	14.4790	Adder	17.03
942992	AE2-321 E	7.1314	Adder	8.39
943411	AF1-012 C	11.3794	Adder	13.39
943412	AF1-012 E	7.5862	Adder	8.92
943801	AF1-048 C	6.7684	Adder	7.96
943802	AF1-048 E	4.5123	Adder	5.31
943921	AF1-060	1.7174	Adder	2.02
944041	AF1-072	5.4053	50/50	5.4053
945352	AF1-200 NFTW	174.1740	Merchant Transmission	174.1740
946151	AF1-280 C O1	19.0198	Adder	22.38
946152	AF1-280 E O1	8.7463	Adder	10.29
946161	AF1-281 C O1	0.4165	Adder	0.49
946162	AF1-281 E O1	2.3601	Adder	2.78
946321	AF1-296 C O1	3.6776	Adder	4.33
946322	AF1-296 E O1	17.2175	Adder	20.26
946501	AF1-314 C	6.1972	Adder	7.29
946502	AF1-314 E	29.0139	Adder	34.13
946661	AF1-330 C	3.5682	Adder	4.2
946662	AF1-330 E	0.7833	Adder	0.92
946671	AF1-331	2.0109	Adder	2.37
952381	J703	12.2771	PJM External (MISO)	12.2771
952391	J704	5.2484	PJM External (MISO)	5.2484
952431	J760	4.4730	PJM External (MISO)	4.4730
953151	J831	4.1888	PJM External (MISO)	4.1888
953491	J947	21.0560	PJM External (MISO)	21.0560
953681	J818	18.0409	PJM External (MISO)	18.0409
953891	J849	11.9925	PJM External (MISO)	11.9925
953901	J850	32.1175	PJM External (MISO)	32.1175
953921	J855 C	1.3974	PJM External (MISO)	1.3974
953922	J855 E	7.5606	PJM External (MISO)	7.5606
954001	J864	4.8880	PJM External (MISO)	4.8880

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
954061	J870	19.0080	PJM External (MISO)	19.0080
954071	J871	9.5040	PJM External (MISO)	9.5040
954141	J878	22.0320	PJM External (MISO)	22.0320
954191	J886	14.8170	PJM External (MISO)	14.8170
954741	J928 C	1.1973	PJM External (MISO)	1.1973
954742	J928 E	6.4775	PJM External (MISO)	6.4775
955091	J986	13.4095	PJM External (MISO)	13.4095
955221	J1000	4.1340	PJM External (MISO)	4.1340
955241	J1002	9.8525	PJM External (MISO)	9.8525
955251	J1003	5.4920	PJM External (MISO)	5.4920
955582	J1042 E	21.6846	PJM External (MISO)	21.6846
956141	J1101	1.9756	PJM External (MISO)	1.9756
956571	J1153	15.5265	PJM External (MISO)	15.5265
956581	J1154	9.0818	PJM External (MISO)	9.0818
956731	J1171	10.5520	PJM External (MISO)	10.5520
956852	J1183 E	0.1295	PJM External (MISO)	0.1295
956901	J1188	6.2940	PJM External (MISO)	6.2940
957331	AF2-027 C	2.6020	Adder	3.06
957332	AF2-027 E	3.9030	Adder	4.59
957471	AF2-041 C	16.3618	Adder	19.25
957472	AF2-041 E	8.1809	Adder	9.62
958911	AF2-182 C	24.9895	Adder	29.4
958912	AF2-182 E	16.6597	Adder	19.6
958921	AF2-183 C	4.4426	Adder	5.23
958922	AF2-183 E	6.6639	Adder	7.84
959081	AF2-199 C	5.4539	Adder	6.42
959082	AF2-199 E	2.7270	Adder	3.21
959091	AF2-200 C O1	10.9079	Adder	12.83
959092	AF2-200 E O1	5.4539	Adder	6.42
959101	AF2-201 C O1	8.5370	Adder	10.04
959102	AF2-201 E O1	24.5149	Adder	28.84
960551	AF2-346 C	4.8769	Adder	5.74
960552	AF2-346 E	3.2513	Adder	3.83
960581	AF2-349 C	37.5630	Adder	44.19
960582	AF2-349 E	25.0420	Adder	29.46
960721	AF2-363 C O1	6.6061	Adder	7.77
960722	AF2-363 E O1	4.4041	Adder	5.18
960731	AF2-364 C O1	12.9241	Adder	15.2
960732	AF2-364 E O1	8.6161	Adder	10.14
960751	AF2-366 C	5.3786	Adder	6.33
960752	AF2-366 E	3.5857	Adder	4.22
961011	AF2-392 C O1	4.1026	Adder	4.83
961012	AF2-392 E O1	19.2078	Adder	22.6
961021	AF2-393 O1	6.9931	Adder	8.23
961031	AF2-394 O1	4.6621	Adder	5.48
962012	AG1-044 E	0.0325	Adder	0.07
962691	AG1-118 C O2	7.8357	Adder	17.39
962692	AG1-118 E O2	5.2238	Adder	11.6
962701	AG1-119 C O2	77.4324	50/50	77.4324
962702	AG1-119 E O2	51.6216	50/50	51.6216
962711	AG1-120 C O2	30.6116	50/50	30.6116
962712	AG1-120 E O2	20.4077	50/50	20.4077

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
962781	AG1-127 C O2	3.1570	Adder	7.01
962782	AG1-127 E O2	2.1047	Adder	4.67
962791	AG1-128 C O2	2.7399	Adder	6.08
962792	AG1-128 E O2	12.8213	Adder	28.46
963681	AG1-220 C O2	7.9310	Adder	17.6
963682	AG1-220 E O2	5.2873	Adder	11.74
964461	AG1-309 FTIR	467.8058	Merchant Transmission	467.8058
965061	AG1-371	1.4453	Adder	3.21
965071	AG1-372	0.9635	Adder	2.14
965081	AG1-373	0.4818	Adder	1.07
965551	AG1-423 C O2	37.7352	50/50	37.7352
965552	AG1-423 E O2	25.1568	50/50	25.1568
965661	AG1-434 C O2	1.8618	Adder	4.13
965662	AG1-434 E O2	8.7168	Adder	19.35
965931	AG1-462 C O2	9.3059	Adder	20.66
965932	AG1-462 E O2	6.2039	Adder	13.77
966521	AG1-521 C O2	5.2157	Adder	11.58
966522	AG1-521 E O2	1.3039	Adder	2.89
966651	AG1-535 O2	7.6677	Adder	17.02
966821	AG1-553 C O2	13.3882	Adder	29.72
966822	AG1-553 E O2	3.3470	Adder	7.43
WEC	WEC	4.7795	Confirmed LTF	4.7795
CBM-W2	CBM-W2	10.3757	Confirmed LTF	10.3757
NY	NY	0.4264	Confirmed LTF	0.4264
TVA	TVA	1.0234	Confirmed LTF	1.0234
O-066	O-066	5.0812	Confirmed LTF	5.0812
SIGE	SIGE	0.0426	Confirmed LTF	0.0426
CBM-S1	CBM-S1	0.1877	Confirmed LTF	0.1877
G-007	G-007	0.7928	Confirmed LTF	0.7928
HAMLET	HAMLET	0.1351	Confirmed LTF	0.1351
MEC	MEC	12.5865	Confirmed LTF	12.5865
GIBSON	GIBSON	0.2441	Confirmed LTF	0.2441
BLUEG	BLUEG	1.0659	Confirmed LTF	1.0659
TRIMBLE	TRIMBLE	0.3562	Confirmed LTF	0.3562
LAGN	LAGN	2.9470	Confirmed LTF	2.9470
CATAWBA	CATAWBA	0.0591	Confirmed LTF	0.0591
CBM-W1	CBM-W1	89.6018	Confirmed LTF	89.6018

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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
174415106	270917	WAYNE ; R	CE	270751	ESS W407M;9T	CE	1	COMED_P4_111-45-L16704T	breaker	1479.0	102.53	103.42	DC	29.34

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
272364	ESS H440N ;R	2.2059	Adder	2.6
274693	ROCKY RD ;1P	4.9878	50/50	4.9878
274695	ROCKY RD ;2P	5.0374	50/50	5.0374
274697	ROCKY RD ;3P	1.3684	50/50	1.3684
274818	ELGIN EC ;1P	6.1779	50/50	6.1779
274819	ELGIN EC ;3P	5.9544	50/50	5.9544
274820	ELGIN EC ;2P	6.1779	50/50	6.1779
274821	ELGIN EC ;4P	5.9991	50/50	5.9991
274859	EASYR;U1 E	14.2425	Adder	16.76
274860	EASYR;U2 E	14.2425	Adder	16.76
276167	Z1-106 E2	1.4705	Adder	1.73
276168	Z1-106 E1	1.4783	Adder	1.74
276170	Z1-108 E	4.6675	Adder	5.49
276591	L-013 2	4.2644	Adder	5.02
290051	GSG-6; E	8.7423	Adder	10.29
290108	LEEDK;1U E	18.1458	Adder	21.35
293516	O-009 E1	7.9413	Adder	9.34
293517	O-009 E2	4.0336	Adder	4.75
293518	O-009 E3	4.4421	Adder	5.23
293715	O-029 E	8.4902	Adder	9.99
293716	O-029 E	4.6550	Adder	5.48
293717	O-029 E	4.2785	Adder	5.03
294763	P-046 E	13.2872	Adder	15.63
295109	WESTBROOK E	4.6805	Adder	5.51
295111	SUBLETTE E	2.7014	Adder	3.18
915011	Y3-013 1	3.9030	Adder	4.59
915021	Y3-013 2	3.9030	Adder	4.59
915031	Y3-013 3	3.9030	Adder	4.59
916221	Z1-073 E	4.5408	Adder	5.34
919581	AA2-030 C	18.4375	Adder	21.69
920272	AA2-123 E	4.3515	Adder	5.12
924472	AB2-096 CT1	32.8885	Adder	38.69
924473	AB2-096 CT2	32.8885	Adder	38.69
924474	AB2-096 CT3	32.8885	Adder	38.69
926331	AC1-110 1	1.2550	Adder	1.48
926341	AC1-110 2	1.2550	Adder	1.48
930482	AB1-089 CT	68.4671	Adder	80.55
930483	AB1-089 ST	54.4340	Adder	64.04
933911	AD1-013 C	1.5484	Adder	1.82
933912	AD1-013 E	2.4734	Adder	2.91
933931	AD1-016 C	1.6497	Adder	1.94
933932	AD1-016 E	2.6916	Adder	3.17

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
934432	AD1-067 E	0.4616	Adder	0.54
934701	AD1-098 C O1	5.8278	Adder	6.86
934702	AD1-098 E O1	4.2549	Adder	5.01
934971	AD1-129 C	1.5109	Adder	1.78
934972	AD1-129 E	1.0073	Adder	1.19
936791	AD2-102 C	21.6250	Adder	25.44
936792	AD2-102 E	14.4167	Adder	16.96
937001	AD2-134 C	2.2854	Adder	2.69
937002	AD2-134 E	9.4409	Adder	11.11
937311	AD2-172 C	3.4879	Adder	4.1
937312	AD2-172 E	4.8166	Adder	5.67
937531	AD2-214 C	4.2341	Adder	4.98
937532	AD2-214 E	2.8227	Adder	3.32
938861	AE1-114 C O1	4.9737	Adder	5.85
938862	AE1-114 E O1	16.9691	Adder	19.96
939051	AE1-134 1	1.4327	Adder	1.69
939061	AE1-134 2	1.4327	Adder	1.69
940501	AE2-035 C	3.4879	Adder	4.1
940502	AE2-035 E	4.8166	Adder	5.67
941131	AE2-107 C	4.8994	Adder	5.76
941132	AE2-107 E	3.2662	Adder	3.84
942991	AE2-321 C	14.4790	Adder	17.03
942992	AE2-321 E	7.1314	Adder	8.39
943411	AF1-012 C	11.3794	Adder	13.39
943412	AF1-012 E	7.5862	Adder	8.92
943801	AF1-048 C	6.7684	Adder	7.96
943802	AF1-048 E	4.5123	Adder	5.31
943921	AF1-060	1.7174	Adder	2.02
944041	AF1-072	5.4053	50/50	5.4053
945352	AF1-200 NFTW	174.1740	Merchant Transmission	174.1740
946151	AF1-280 C O1	19.0198	Adder	22.38
946152	AF1-280 E O1	8.7463	Adder	10.29
946161	AF1-281 C O1	0.4165	Adder	0.49
946162	AF1-281 E O1	2.3601	Adder	2.78
946321	AF1-296 C O1	3.6776	Adder	4.33
946322	AF1-296 E O1	17.2175	Adder	20.26
946501	AF1-314 C	6.1972	Adder	7.29
946502	AF1-314 E	29.0139	Adder	34.13
946661	AF1-330 C	3.5682	Adder	4.2
946662	AF1-330 E	0.7833	Adder	0.92
946671	AF1-331	2.0109	Adder	2.37
952381	J703	12.2771	PJM External (MISO)	12.2771
952391	J704	5.2484	PJM External (MISO)	5.2484
952431	J760	4.4730	PJM External (MISO)	4.4730
953151	J831	4.1888	PJM External (MISO)	4.1888
953491	J947	21.0560	PJM External (MISO)	21.0560
953681	J818	18.0409	PJM External (MISO)	18.0409
953891	J849	11.9925	PJM External (MISO)	11.9925
953901	J850	32.1175	PJM External (MISO)	32.1175
953921	J855 C	1.3974	PJM External (MISO)	1.3974
953922	J855 E	7.5606	PJM External (MISO)	7.5606
954001	J864	4.8880	PJM External (MISO)	4.8880

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
954061	J870	19.0080	PJM External (MISO)	19.0080
954071	J871	9.5040	PJM External (MISO)	9.5040
954141	J878	22.0320	PJM External (MISO)	22.0320
954191	J886	14.8170	PJM External (MISO)	14.8170
954741	J928 C	1.1973	PJM External (MISO)	1.1973
954742	J928 E	6.4775	PJM External (MISO)	6.4775
955091	J986	13.4095	PJM External (MISO)	13.4095
955221	J1000	4.1340	PJM External (MISO)	4.1340
955241	J1002	9.8525	PJM External (MISO)	9.8525
955251	J1003	5.4920	PJM External (MISO)	5.4920
955582	J1042 E	21.6846	PJM External (MISO)	21.6846
956141	J1101	1.9756	PJM External (MISO)	1.9756
956571	J1153	15.5265	PJM External (MISO)	15.5265
956581	J1154	9.0818	PJM External (MISO)	9.0818
956731	J1171	10.5520	PJM External (MISO)	10.5520
956852	J1183 E	0.1295	PJM External (MISO)	0.1295
956901	J1188	6.2940	PJM External (MISO)	6.2940
957331	AF2-027 C	2.6020	Adder	3.06
957332	AF2-027 E	3.9030	Adder	4.59
957471	AF2-041 C	16.3618	Adder	19.25
957472	AF2-041 E	8.1809	Adder	9.62
958911	AF2-182 C	24.9895	Adder	29.4
958912	AF2-182 E	16.6597	Adder	19.6
958921	AF2-183 C	4.4426	Adder	5.23
958922	AF2-183 E	6.6639	Adder	7.84
959081	AF2-199 C	5.4539	Adder	6.42
959082	AF2-199 E	2.7270	Adder	3.21
959091	AF2-200 C O1	10.9079	Adder	12.83
959092	AF2-200 E O1	5.4539	Adder	6.42
959101	AF2-201 C O1	8.5370	Adder	10.04
959102	AF2-201 E O1	24.5149	Adder	28.84
960551	AF2-346 C	4.8769	Adder	5.74
960552	AF2-346 E	3.2513	Adder	3.83
960581	AF2-349 C	37.5630	Adder	44.19
960582	AF2-349 E	25.0420	Adder	29.46
960721	AF2-363 C O1	6.6061	Adder	7.77
960722	AF2-363 E O1	4.4041	Adder	5.18
960731	AF2-364 C O1	12.9241	Adder	15.2
960732	AF2-364 E O1	8.6161	Adder	10.14
960751	AF2-366 C	5.3786	Adder	6.33
960752	AF2-366 E	3.5857	Adder	4.22
961011	AF2-392 C O1	4.1026	Adder	4.83
961012	AF2-392 E O1	19.2078	Adder	22.6
961021	AF2-393 O1	6.9931	Adder	8.23
961031	AF2-394 O1	4.6621	Adder	5.48
962012	AG1-044 E	0.0325	Adder	0.07
962691	AG1-118 C O2	7.8357	Adder	17.39
962692	AG1-118 E O2	5.2238	Adder	11.6
962701	AG1-119 C O2	77.4324	50/50	77.4324
962702	AG1-119 E O2	51.6216	50/50	51.6216
962711	AG1-120 C O2	30.6116	50/50	30.6116
962712	AG1-120 E O2	20.4077	50/50	20.4077

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
962781	AG1-127 C O2	3.1570	Adder	7.01
962782	AG1-127 E O2	2.1047	Adder	4.67
962791	AG1-128 C O2	2.7399	Adder	6.08
962792	AG1-128 E O2	12.8213	Adder	28.46
963681	AG1-220 C O2	7.9310	Adder	17.6
963682	AG1-220 E O2	5.2873	Adder	11.74
964461	AG1-309 FTIR	467.8058	Merchant Transmission	467.8058
965061	AG1-371	1.4453	Adder	3.21
965071	AG1-372	0.9635	Adder	2.14
965081	AG1-373	0.4818	Adder	1.07
965551	AG1-423 C O2	37.7352	50/50	37.7352
965552	AG1-423 E O2	25.1568	50/50	25.1568
965661	AG1-434 C O2	1.8618	Adder	4.13
965662	AG1-434 E O2	8.7168	Adder	19.35
965931	AG1-462 C O2	9.3059	Adder	20.66
965932	AG1-462 E O2	6.2039	Adder	13.77
966521	AG1-521 C O2	5.2157	Adder	11.58
966522	AG1-521 E O2	1.3039	Adder	2.89
966651	AG1-535 O2	7.6677	Adder	17.02
966821	AG1-553 C O2	13.3882	Adder	29.72
966822	AG1-553 E O2	3.3470	Adder	7.43
WEC	WEC	4.7795	Confirmed LTF	4.7795
CBM-W2	CBM-W2	10.3757	Confirmed LTF	10.3757
NY	NY	0.4264	Confirmed LTF	0.4264
TVA	TVA	1.0234	Confirmed LTF	1.0234
O-066	O-066	5.0812	Confirmed LTF	5.0812
SIGE	SIGE	0.0426	Confirmed LTF	0.0426
CBM-S1	CBM-S1	0.1877	Confirmed LTF	0.1877
G-007	G-007	0.7928	Confirmed LTF	0.7928
HAMLET	HAMLET	0.1351	Confirmed LTF	0.1351
MEC	MEC	12.5865	Confirmed LTF	12.5865
GIBSON	GIBSON	0.2441	Confirmed LTF	0.2441
BLUEG	BLUEG	1.0659	Confirmed LTF	1.0659
TRIMBLE	TRIMBLE	0.3562	Confirmed LTF	0.3562
LAGN	LAGN	2.9470	Confirmed LTF	2.9470
CATAWBA	CATAWBA	0.0591	Confirmed LTF	0.0591
CBM-W1	CBM-W1	89.6018	Confirmed LTF	89.6018

13.5.7 Index 7

ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC DC	MW IMPACT
177669080	271560	GLIDDEN ;BT	CE	962690	AG1-118 TAP	CE	1	COMED_P4_167-38-L14609_	breaker	538.0	110.39	113.78	DC	18.25

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
272364	ESS H440N ;R	6.7652	50/50	6.7652
274850	MENDOTA H;RU	0.6282	50/50	0.6282
274855	GSG-6 ;RU	1.0345	50/50	1.0345
274872	LEE DEKAL;1U	2.3560	50/50	2.3560
290051	GSG-6; E	26.2274	50/50	26.2274
290108	LEEDK;1U E	74.6660	50/50	74.6660
295108	WESTBROOK C	0.3354	50/50	0.3354
295109	WESTBROOK E	14.0419	50/50	14.0419
295111	SUBLETTE E	1.3682	Adder	1.61
916221	Z1-073 E	13.6227	50/50	13.6227
933431	AC2-156 C O1	3.1776	50/50	3.1776
933432	AC2-156 E O1	5.1846	50/50	5.1846
933911	AD1-013 C	4.7829	50/50	4.7829
933912	AD1-013 E	7.6403	50/50	7.6403
934431	AD1-067 C	0.0520	50/50	0.0520
934432	AD1-067 E	1.3847	50/50	1.3847
934701	AD1-098 C O1	16.5782	50/50	16.5782
934702	AD1-098 E O1	12.1038	50/50	12.1038
937001	AD2-134 C	6.8563	50/50	6.8563
937002	AD2-134 E	28.3232	50/50	28.3232
941131	AE2-107 C	20.1598	50/50	20.1598
941132	AE2-107 E	13.4399	50/50	13.4399
943121	AE2-341 C	42.0599	50/50	42.0599
943122	AE2-341 E	20.6536	50/50	20.6536
943591	AF1-030 C O1	27.9702	50/50	27.9702
943592	AF1-030 E O1	13.8388	50/50	13.8388
946671	AF1-331	6.2116	50/50	6.2116
960381	AF2-329	21.8243	50/50	21.8243
960721	AF2-363 C O1	11.1619	50/50	11.1619
960722	AF2-363 E O1	7.4413	50/50	7.4413
960751	AF2-366 C	21.5324	50/50	21.5324
960752	AF2-366 E	14.3550	50/50	14.3550
962781	AG1-127 C O2	23.8468	50/50	23.8468
962782	AG1-127 E O2	15.8978	50/50	15.8978
962791	AG1-128 C O2	15.5089	50/50	15.5089
962792	AG1-128 E O2	72.5746	50/50	72.5746
963681	AG1-220 C O2	10.9503	50/50	10.9503
963682	AG1-220 E O2	7.3002	50/50	7.3002
965661	AG1-434 C O2	10.5389	50/50	10.5389
965662	AG1-434 E O2	49.3411	50/50	49.3411
966521	AG1-521 C O2	2.4932	Adder	5.53

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
966522	AG1-521 E O2	0.6233	Adder	1.38
WEC	WEC	0.2287	Confirmed LTF	0.2287
CBM-W2	CBM-W2	1.9533	Confirmed LTF	1.9533
NY	NY	0.0431	Confirmed LTF	0.0431
TVA	TVA	0.2086	Confirmed LTF	0.2086
O-066	O-066	0.5048	Confirmed LTF	0.5048
SIGE	SIGE	0.0073	Confirmed LTF	0.0073
CBM-S2	CBM-S2	0.1670	Confirmed LTF	0.1670
CBM-S1	CBM-S1	0.0437	Confirmed LTF	0.0437
G-007	G-007	0.0788	Confirmed LTF	0.0788
MEC	MEC	1.8385	Confirmed LTF	1.8385
GIBSON	GIBSON	0.0098	Confirmed LTF	0.0098
BLUEG	BLUEG	0.0851	Confirmed LTF	0.0851
TRIMBLE	TRIMBLE	0.0295	Confirmed LTF	0.0295
LAGN	LAGN	0.4935	Confirmed LTF	0.4935
CBM-W1	CBM-W1	8.8887	Confirmed LTF	8.8887

13.5.8 Index 8

ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC DC	MW IMPACT
162448649	271586	ESS W541 ; B	CE	271390	ELECT JCT; B	CE	1	COMED_P4_167-38-L14609_	breaker	498.0	101.59	104.87	DC	16.35

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
272364	ESS H440N ;R	6.0819	50/50	6.0819
274850	MENDOTA H;RU	0.5647	50/50	0.5647
274855	GSG-6 ;RU	0.9298	50/50	0.9298
274872	LEE DEKAL;1U	2.1198	50/50	2.1198
290051	GSG-6; E	23.5740	50/50	23.5740
290108	LEEDK;1U E	67.1800	50/50	67.1800
295108	WESTBROOK C	0.3014	50/50	0.3014
295109	WESTBROOK E	12.6213	50/50	12.6213
295111	SUBLETTE E	1.2078	Adder	1.42
916221	Z1-073 E	12.2445	50/50	12.2445
933431	AC2-156 C O1	2.8603	50/50	2.8603
933432	AC2-156 E O1	4.6667	50/50	4.6667
933911	AD1-013 C	4.3001	50/50	4.3001
933912	AD1-013 E	6.8691	50/50	6.8691
934431	AD1-067 C	0.0467	50/50	0.0467
934432	AD1-067 E	1.2446	50/50	1.2446
934701	AD1-098 C O1	14.8974	50/50	14.8974
934702	AD1-098 E O1	10.8766	50/50	10.8766
937001	AD2-134 C	6.1626	50/50	6.1626
937002	AD2-134 E	25.4578	50/50	25.4578
941131	AE2-107 C	18.1386	50/50	18.1386
941132	AE2-107 E	12.0924	50/50	12.0924
943121	AE2-341 C	37.8598	50/50	37.8598
943122	AE2-341 E	18.5912	50/50	18.5912
943591	AF1-030 C O1	25.1771	50/50	25.1771
943592	AF1-030 E O1	12.4569	50/50	12.4569
946671	AF1-331	5.5846	50/50	5.5846
960381	AF2-329	19.6449	50/50	19.6449
960721	AF2-363 C O1	10.0298	50/50	10.0298
960722	AF2-363 E O1	6.6865	50/50	6.6865
960751	AF2-366 C	19.3767	50/50	19.3767
960752	AF2-366 E	12.9178	50/50	12.9178
962691	AG1-118 C O2	77.1516	50/50	77.1516
962692	AG1-118 E O2	51.4344	50/50	51.4344
962781	AG1-127 C O2	21.4593	50/50	21.4593
962782	AG1-127 E O2	14.3062	50/50	14.3062
962791	AG1-128 C O2	13.9399	50/50	13.9399
962792	AG1-128 E O2	65.2323	50/50	65.2323
963681	AG1-220 C O2	9.8091	50/50	9.8091
963682	AG1-220 E O2	6.5394	50/50	6.5394
965661	AG1-434 C O2	9.4727	50/50	9.4727

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
965662	AG1-434 E O2	44.3493	50/50	44.3493
966521	AG1-521 C O2	2.2017	Adder	4.89
966522	AG1-521 E O2	0.5504	Adder	1.22
WEC	WEC	0.1953	Confirmed LTF	0.1953
CBM-W2	CBM-W2	1.7024	Confirmed LTF	1.7024
NY	NY	0.0371	Confirmed LTF	0.0371
TVA	TVA	0.1806	Confirmed LTF	0.1806
O-066	O-066	0.4375	Confirmed LTF	0.4375
SIGE	SIGE	0.0066	Confirmed LTF	0.0066
CBM-S2	CBM-S2	0.1462	Confirmed LTF	0.1462
CBM-S1	CBM-S1	0.0376	Confirmed LTF	0.0376
G-007	G-007	0.0683	Confirmed LTF	0.0683
MEC	MEC	1.5668	Confirmed LTF	1.5668
GIBSON	GIBSON	0.0076	Confirmed LTF	0.0076
BLUEG	BLUEG	0.0712	Confirmed LTF	0.0712
TRIMBLE	TRIMBLE	0.0245	Confirmed LTF	0.0245
LAGN	LAGN	0.4253	Confirmed LTF	0.4253
CBM-W1	CBM-W1	7.5988	Confirmed LTF	7.5988

13.5.9 Index 9

ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CK T ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADIN G %	POST PROJECT LOADIN G %	ACID C	MW IMPACT
162448511	272027	MONTGOMER;R T	CE	272203	OSWEG O ;R	CE	1	COMED_P4_167-38-TR81	breaker	264.0	155.25	156.98	DC	10.16

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
272364	ESS H440N ;R	3.7037	50/50	3.7037
274850	MENDOTA H;RU	0.3440	50/50	0.3440
274855	GSG-6 ;RU	0.5665	50/50	0.5665
274872	LEE DEKAL;1U	1.2875	50/50	1.2875
290051	GSG-6; E	14.3620	50/50	14.3620
290108	LEEDK;1U E	40.8040	50/50	40.8040
295108	WESTBROOK C	0.1837	50/50	0.1837
295109	WESTBROOK E	7.6893	50/50	7.6893
916221	Z1-073 E	7.4597	50/50	7.4597
933431	AC2-156 C O1	3.8524	50/50	3.8524
933432	AC2-156 E O1	6.2854	50/50	6.2854
933911	AD1-013 C	2.6182	50/50	2.6182
933912	AD1-013 E	4.1822	50/50	4.1822
934431	AD1-067 C	0.0285	50/50	0.0285
934432	AD1-067 E	0.7583	50/50	0.7583
934701	AD1-098 C O1	9.0821	50/50	9.0821
934702	AD1-098 E O1	6.6309	50/50	6.6309
937001	AD2-134 C	3.7545	50/50	3.7545
937002	AD2-134 E	15.5097	50/50	15.5097
941131	AE2-107 C	11.0171	50/50	11.0171
941132	AE2-107 E	7.3447	50/50	7.3447
943121	AE2-341 C	60.8197	50/50	60.8197
943122	AE2-341 E	29.8658	50/50	29.8658
943591	AF1-030 C O1	40.4457	50/50	40.4457
943592	AF1-030 E O1	20.0113	50/50	20.0113
946671	AF1-331	3.4002	50/50	3.4002
960381	AF2-329	31.5586	50/50	31.5586
960721	AF2-363 C O1	6.1343	50/50	6.1343
960722	AF2-363 E O1	4.0895	50/50	4.0895
960751	AF2-366 C	11.7661	50/50	11.7661
960752	AF2-366 E	7.8441	50/50	7.8441
962691	AG1-118 C O2	36.7470	50/50	36.7470
962692	AG1-118 E O2	24.4980	50/50	24.4980
962781	AG1-127 C O2	13.0307	50/50	13.0307
962782	AG1-127 E O2	8.6871	50/50	8.6871
962791	AG1-128 C O2	8.4926	50/50	8.4926
962792	AG1-128 E O2	39.7415	50/50	39.7415
963681	AG1-220 C O2	2.7453	Adder	6.09
963682	AG1-220 E O2	1.8302	Adder	4.06
965661	AG1-434 C O2	5.7710	50/50	5.7710
965662	AG1-434 E O2	27.0190	50/50	27.0190
WEC	WEC	0.1625	Confirmed LTF	0.1625

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
CBM-W2	CBM-W2	1.1558	Confirmed LTF	1.1558
NY	NY	0.0277	Confirmed LTF	0.0277
TVA	TVA	0.1218	Confirmed LTF	0.1218
O-066	O-066	0.3298	Confirmed LTF	0.3298
SIGE	SIGE	0.0044	Confirmed LTF	0.0044
CBM-S2	CBM-S2	0.0731	Confirmed LTF	0.0731
CBM-S1	CBM-S1	0.0251	Confirmed LTF	0.0251
G-007	G-007	0.0515	Confirmed LTF	0.0515
HAMLET	HAMLET	0.0006	Confirmed LTF	0.0006
MEC	MEC	1.1250	Confirmed LTF	1.1250
GIBSON	GIBSON	0.0087	Confirmed LTF	0.0087
BLUEG	BLUEG	0.0573	Confirmed LTF	0.0573
TRIMBLE	TRIMBLE	0.0200	Confirmed LTF	0.0200
LAGN	LAGN	0.2957	Confirmed LTF	0.2957
CBM-W1	CBM-W1	5.5940	Confirmed LTF	5.5940

13.5.10 Index 10

ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC DC	MW IMPACT
162448640	272114	N AURORA ; B	CE	271586	ESS W541 ; B	CE	1	COMED_P4_167-38-L14609_	breaker	498.0	103.05	106.34	DC	16.35

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
272364	ESS H440N ;R	6.0819	50/50	6.0819
274850	MENDOTA H;RU	0.5647	50/50	0.5647
274855	GSG-6 ;RU	0.9298	50/50	0.9298
274872	LEE DEKAL;1U	2.1198	50/50	2.1198
290051	GSG-6; E	23.5740	50/50	23.5740
290108	LEEDK;1U E	67.1800	50/50	67.1800
295108	WESTBROOK C	0.3014	50/50	0.3014
295109	WESTBROOK E	12.6213	50/50	12.6213
295111	SUBLETTE E	1.2078	Adder	1.42
916221	Z1-073 E	12.2445	50/50	12.2445
933431	AC2-156 C O1	2.8603	50/50	2.8603
933432	AC2-156 E O1	4.6667	50/50	4.6667
933911	AD1-013 C	4.3001	50/50	4.3001
933912	AD1-013 E	6.8691	50/50	6.8691
934431	AD1-067 C	0.0467	50/50	0.0467
934432	AD1-067 E	1.2446	50/50	1.2446
934701	AD1-098 C O1	14.8974	50/50	14.8974
934702	AD1-098 E O1	10.8766	50/50	10.8766
937001	AD2-134 C	6.1626	50/50	6.1626
937002	AD2-134 E	25.4578	50/50	25.4578
941131	AE2-107 C	18.1386	50/50	18.1386
941132	AE2-107 E	12.0924	50/50	12.0924
943121	AE2-341 C	37.8598	50/50	37.8598
943122	AE2-341 E	18.5912	50/50	18.5912
943591	AF1-030 C O1	25.1771	50/50	25.1771
943592	AF1-030 E O1	12.4569	50/50	12.4569
946671	AF1-331	5.5846	50/50	5.5846
960381	AF2-329	19.6449	50/50	19.6449
960721	AF2-363 C O1	10.0298	50/50	10.0298
960722	AF2-363 E O1	6.6865	50/50	6.6865
960751	AF2-366 C	19.3767	50/50	19.3767
960752	AF2-366 E	12.9178	50/50	12.9178
962691	AG1-118 C O2	77.1516	50/50	77.1516
962692	AG1-118 E O2	51.4344	50/50	51.4344
962781	AG1-127 C O2	21.4593	50/50	21.4593
962782	AG1-127 E O2	14.3062	50/50	14.3062
962791	AG1-128 C O2	13.9399	50/50	13.9399
962792	AG1-128 E O2	65.2323	50/50	65.2323
963681	AG1-220 C O2	9.8091	50/50	9.8091
963682	AG1-220 E O2	6.5394	50/50	6.5394
965661	AG1-434 C O2	9.4727	50/50	9.4727

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
965662	AG1-434 E O2	44.3493	50/50	44.3493
966521	AG1-521 C O2	2.2017	Adder	4.89
966522	AG1-521 E O2	0.5504	Adder	1.22
WEC	WEC	0.1953	Confirmed LTF	0.1953
CBM-W2	CBM-W2	1.7024	Confirmed LTF	1.7024
NY	NY	0.0371	Confirmed LTF	0.0371
TVA	TVA	0.1806	Confirmed LTF	0.1806
O-066	O-066	0.4375	Confirmed LTF	0.4375
SIGE	SIGE	0.0066	Confirmed LTF	0.0066
CBM-S2	CBM-S2	0.1462	Confirmed LTF	0.1462
CBM-S1	CBM-S1	0.0376	Confirmed LTF	0.0376
G-007	G-007	0.0683	Confirmed LTF	0.0683
MEC	MEC	1.5668	Confirmed LTF	1.5668
GIBSON	GIBSON	0.0076	Confirmed LTF	0.0076
BLUEG	BLUEG	0.0712	Confirmed LTF	0.0712
TRIMBLE	TRIMBLE	0.0245	Confirmed LTF	0.0245
LAGN	LAGN	0.4253	Confirmed LTF	0.4253
CBM-W1	CBM-W1	7.5988	Confirmed LTF	7.5988

13.5.11 Index 11

ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC DC	MW IMPACT
162333996	272251	PLANO; R	CE	271117	BRISTOL ; R	CE	1	COMED_P2-2_167_PL-138B_2	bus	498.0	101.71	102.69	DC	10.75

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
272364	ESS H440N ;R	3.9239	50/50	3.9239
274850	MENDOTA H;RU	0.3645	50/50	0.3645
274855	GSG-6 ;RU	0.6002	50/50	0.6002
274872	LEE DEKAL;1U	1.3642	50/50	1.3642
290051	GSG-6; E	15.2161	50/50	15.2161
290108	LEEDK;1U E	43.2340	50/50	43.2340
295108	WESTBROOK C	0.1946	50/50	0.1946
295109	WESTBROOK E	8.1465	50/50	8.1465
916221	Z1-073 E	7.9034	50/50	7.9034
933431	AC2-156 C O1	4.0832	50/50	4.0832
933432	AC2-156 E O1	6.6620	50/50	6.6620
933911	AD1-013 C	2.7738	50/50	2.7738
933912	AD1-013 E	4.4310	50/50	4.4310
934431	AD1-067 C	0.0301	50/50	0.0301
934432	AD1-067 E	0.8034	50/50	0.8034
934701	AD1-098 C O1	9.6220	50/50	9.6220
934702	AD1-098 E O1	7.0250	50/50	7.0250
937001	AD2-134 C	3.9777	50/50	3.9777
937002	AD2-134 E	16.4320	50/50	16.4320
941131	AE2-107 C	11.6732	50/50	11.6732
941132	AE2-107 E	7.7821	50/50	7.7821
943121	AE2-341 C	64.4665	50/50	64.4665
943122	AE2-341 E	31.6565	50/50	31.6565
943591	AF1-030 C O1	42.8709	50/50	42.8709
943592	AF1-030 E O1	21.2111	50/50	21.2111
946671	AF1-331	3.6024	50/50	3.6024
960381	AF2-329	33.4508	50/50	33.4508
960721	AF2-363 C O1	6.4977	50/50	6.4977
960722	AF2-363 E O1	4.3318	50/50	4.3318
960751	AF2-366 C	12.4670	50/50	12.4670
960752	AF2-366 E	8.3113	50/50	8.3113
962691	AG1-118 C O2	38.9340	50/50	38.9340
962692	AG1-118 E O2	25.9560	50/50	25.9560
962781	AG1-127 C O2	13.8070	50/50	13.8070
962782	AG1-127 E O2	9.2047	50/50	9.2047
962791	AG1-128 C O2	8.9977	50/50	8.9977
962792	AG1-128 E O2	42.1049	50/50	42.1049
963681	AG1-220 C O2	2.9063	Adder	6.45
963682	AG1-220 E O2	1.9375	Adder	4.3
965661	AG1-434 C O2	6.1142	50/50	6.1142
965662	AG1-434 E O2	28.6258	50/50	28.6258

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
WEC	WEC	0.1701	Confirmed LTF	0.1701
CBM-W2	CBM-W2	1.2186	Confirmed LTF	1.2186
NY	NY	0.0288	Confirmed LTF	0.0288
TVA	TVA	0.1288	Confirmed LTF	0.1288
O-066	O-066	0.3432	Confirmed LTF	0.3432
SIGE	SIGE	0.0045	Confirmed LTF	0.0045
CBM-S2	CBM-S2	0.0731	Confirmed LTF	0.0731
CBM-S1	CBM-S1	0.0266	Confirmed LTF	0.0266
G-007	G-007	0.0535	Confirmed LTF	0.0535
MEC	MEC	1.1838	Confirmed LTF	1.1838
GIBSON	GIBSON	0.0087	Confirmed LTF	0.0087
BLUEG	BLUEG	0.0608	Confirmed LTF	0.0608
TRIMBLE	TRIMBLE	0.0206	Confirmed LTF	0.0206
LAGN	LAGN	0.3115	Confirmed LTF	0.3115
CBM-W1	CBM-W1	5.8884	Confirmed LTF	5.8884

13.5.12 Index 12

ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC DC	MW IMPACT
162448561	272522	SUGAR GRV; B	CE	272114	N AURORA ; B	CE	1	COMED_P4_167-38-L14609_	breaker	498.0	137.33	140.99	DC	18.25

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
272364	ESS H440N ;R	6.7652	50/50	6.7652
274850	MENDOTA H;RU	0.6282	50/50	0.6282
274855	GSG-6 ;RU	1.0345	50/50	1.0345
274872	LEE DEKAL;1U	2.3560	50/50	2.3560
290051	GSG-6; E	26.2274	50/50	26.2274
290108	LEEDK;1U E	74.6660	50/50	74.6660
295108	WESTBROOK C	0.3354	50/50	0.3354
295109	WESTBROOK E	14.0419	50/50	14.0419
295111	SUBLETTE E	1.3682	Adder	1.61
916221	Z1-073 E	13.6227	50/50	13.6227
933431	AC2-156 C O1	3.1776	50/50	3.1776
933432	AC2-156 E O1	5.1846	50/50	5.1846
933911	AD1-013 C	4.7829	50/50	4.7829
933912	AD1-013 E	7.6403	50/50	7.6403
934431	AD1-067 C	0.0520	50/50	0.0520
934432	AD1-067 E	1.3847	50/50	1.3847
934701	AD1-098 C O1	16.5782	50/50	16.5782
934702	AD1-098 E O1	12.1038	50/50	12.1038
937001	AD2-134 C	6.8563	50/50	6.8563
937002	AD2-134 E	28.3232	50/50	28.3232
941131	AE2-107 C	20.1598	50/50	20.1598
941132	AE2-107 E	13.4399	50/50	13.4399
943121	AE2-341 C	42.0599	50/50	42.0599
943122	AE2-341 E	20.6536	50/50	20.6536
943591	AF1-030 C O1	27.9702	50/50	27.9702
943592	AF1-030 E O1	13.8388	50/50	13.8388
946671	AF1-331	6.2116	50/50	6.2116
960381	AF2-329	21.8243	50/50	21.8243
960721	AF2-363 C O1	11.1619	50/50	11.1619
960722	AF2-363 E O1	7.4413	50/50	7.4413
960751	AF2-366 C	21.5324	50/50	21.5324
960752	AF2-366 E	14.3550	50/50	14.3550
962691	AG1-118 C O2	85.6836	50/50	85.6836
962692	AG1-118 E O2	57.1224	50/50	57.1224
962781	AG1-127 C O2	23.8468	50/50	23.8468
962782	AG1-127 E O2	15.8978	50/50	15.8978
962791	AG1-128 C O2	15.5089	50/50	15.5089
962792	AG1-128 E O2	72.5746	50/50	72.5746
963681	AG1-220 C O2	10.9503	50/50	10.9503
963682	AG1-220 E O2	7.3002	50/50	7.3002
965661	AG1-434 C O2	10.5389	50/50	10.5389

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
965662	AG1-434 E O2	49.3411	50/50	49.3411
966521	AG1-521 C O2	2.4932	Adder	5.53
966522	AG1-521 E O2	0.6233	Adder	1.38
WEC	WEC	0.2287	Confirmed LTF	0.2287
CBM-W2	CBM-W2	1.9533	Confirmed LTF	1.9533
NY	NY	0.0431	Confirmed LTF	0.0431
TVA	TVA	0.2086	Confirmed LTF	0.2086
O-066	O-066	0.5048	Confirmed LTF	0.5048
SIGE	SIGE	0.0073	Confirmed LTF	0.0073
CBM-S2	CBM-S2	0.1670	Confirmed LTF	0.1670
CBM-S1	CBM-S1	0.0437	Confirmed LTF	0.0437
G-007	G-007	0.0788	Confirmed LTF	0.0788
MEC	MEC	1.8385	Confirmed LTF	1.8385
GIBSON	GIBSON	0.0098	Confirmed LTF	0.0098
BLUEG	BLUEG	0.0851	Confirmed LTF	0.0851
TRIMBLE	TRIMBLE	0.0295	Confirmed LTF	0.0295
LAGN	LAGN	0.4935	Confirmed LTF	0.4935
CBM-W1	CBM-W1	8.8887	Confirmed LTF	8.8887

13.5.13 Index 13

ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC DC	MW IMPACT
162333848	272730	WATERMAN ;3B	CE	272728	WATERMAN ; B	CE	1	COMED_P2-2_156_CV-138R_1	bus	539.0	154.44	173.62	DC	103.4

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
272364	ESS H440N ;R	12.7578	50/50	12.7578
274850	MENDOTA H;RU	1.1633	50/50	1.1633
274855	GSG-6 ;RU	1.9154	50/50	1.9154
274872	LEE DEKAL;1U	4.2054	50/50	4.2054
276162	X1-087	0.1859	50/50	0.1859
290051	GSG-6; E	48.5628	50/50	48.5628
290108	LEEDK;1U E	133.2760	50/50	133.2760
295108	WESTBROOK C	0.6210	50/50	0.6210
295109	WESTBROOK E	26.0000	50/50	26.0000
295110	SUBLETTE C	0.0620	50/50	0.0620
295111	SUBLETTE E	2.7982	50/50	2.7982
916221	Z1-073 E	25.2238	50/50	25.2238
933911	AD1-013 C	9.0932	50/50	9.0932
933912	AD1-013 E	14.5256	50/50	14.5256
934431	AD1-067 C	0.0962	50/50	0.0962
934432	AD1-067 E	2.5640	50/50	2.5640
934701	AD1-098 C O1	30.6704	50/50	30.6704
934702	AD1-098 E O1	22.3926	50/50	22.3926
937001	AD2-134 C	12.6951	50/50	12.6951
937002	AD2-134 E	52.4434	50/50	52.4434
941131	AE2-107 C	35.9845	50/50	35.9845
941132	AE2-107 E	23.9897	50/50	23.9897
946671	AF1-331	11.8094	50/50	11.8094
960721	AF2-363 C O1	33.6654	50/50	33.6654
960722	AF2-363 E O1	22.4436	50/50	22.4436
960751	AF2-366 C	40.5880	50/50	40.5880
960752	AF2-366 E	27.0586	50/50	27.0586
962781	AG1-127 C O2	44.9504	50/50	44.9504
962782	AG1-127 E O2	29.9670	50/50	29.9670
962791	AG1-128 C O2	28.7164	50/50	28.7164
962792	AG1-128 E O2	134.3793	50/50	134.3793
963681	AG1-220 C O2	62.0388	50/50	62.0388
963682	AG1-220 E O2	41.3592	50/50	41.3592
965661	AG1-434 C O2	19.5138	50/50	19.5138
965662	AG1-434 E O2	91.3602	50/50	91.3602
966521	AG1-521 C O2	9.8184	50/50	9.8184
966522	AG1-521 E O2	2.4546	50/50	2.4546
WEC	WEC	0.1452	Confirmed LTF	0.1452
CPL	CPL	0.0014	Confirmed LTF	0.0014
CBM-W2	CBM-W2	2.5536	Confirmed LTF	2.5536
NY	NY	0.0487	Confirmed LTF	0.0487

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
TVA	TVA	0.2744	Confirmed LTF	0.2744
O-066	O-066	0.5653	Confirmed LTF	0.5653
SIGE	SIGE	0.0098	Confirmed LTF	0.0098
CBM-S2	CBM-S2	0.3132	Confirmed LTF	0.3132
CBM-S1	CBM-S1	0.0581	Confirmed LTF	0.0581
G-007	G-007	0.0882	Confirmed LTF	0.0882
MEC	MEC	2.2310	Confirmed LTF	2.2310
GIBSON	GIBSON	0.0033	Confirmed LTF	0.0033
BLUEG	BLUEG	0.0833	Confirmed LTF	0.0833
TRIMBLE	TRIMBLE	0.0295	Confirmed LTF	0.0295
LAGN	LAGN	0.6195	Confirmed LTF	0.6195
CBM-W1	CBM-W1	8.6924	Confirmed LTF	8.6924

13.5.14 Index 14

ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC DC	MW IMPACT
174415086	274749	AURORA EC;RP	CE	270731	ELECT JCT;4R	CE	1	COMED_P4_111-45-L16704T	breaker	1479.0	108.54	109.43	DC	29.08

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
272364	ESS H440N ;R	2.1729	Adder	2.56
274693	ROCKY RD ;1P	4.9600	50/50	4.9600
274695	ROCKY RD ;2P	5.0093	50/50	5.0093
274697	ROCKY RD ;3P	1.3608	50/50	1.3608
274737	AURORA EC;1P	18.5238	50/50	18.5238
274739	AURORA EC;2P	18.5238	50/50	18.5238
274818	ELGIN EC ;1P	6.1443	50/50	6.1443
274820	ELGIN EC ;2P	6.1443	50/50	6.1443
274859	EASYR;U1 E	14.0988	Adder	16.59
274860	EASYR;U2 E	14.0988	Adder	16.59
276167	Z1-106 E2	1.4556	Adder	1.71
276168	Z1-106 E1	1.4634	Adder	1.72
276170	Z1-108 E	4.6378	Adder	5.46
276591	L-013 2	4.2213	Adder	4.97
290051	GSG-6; E	8.6113	Adder	10.13
290108	LEEDK;1U E	17.8466	Adder	21.0
293516	O-009 E1	7.8186	Adder	9.2
293517	O-009 E2	3.9712	Adder	4.67
293518	O-009 E3	4.3734	Adder	5.15
293715	O-029 E	8.3589	Adder	9.83
293716	O-029 E	4.5831	Adder	5.39
293717	O-029 E	4.2123	Adder	4.96
294763	P-046 E	13.1682	Adder	15.49
295109	WESTBROOK E	4.6104	Adder	5.42
295111	SUBLETTE E	2.6673	Adder	3.14
915011	Y3-013 1	3.8582	Adder	4.54
915021	Y3-013 2	3.8582	Adder	4.54
915031	Y3-013 3	3.8582	Adder	4.54
916221	Z1-073 E	4.4728	Adder	5.26
919581	AA2-030 C	18.2039	Adder	21.42
920272	AA2-123 E	4.3216	Adder	5.08
924472	AB2-096 CT1	32.6528	Adder	38.42
924473	AB2-096 CT2	32.6528	Adder	38.42
924474	AB2-096 CT3	32.6528	Adder	38.42
926311	AC1-109 1	1.8282	50/50	1.8282
926321	AC1-109 2	1.8282	50/50	1.8282
926331	AC1-110 1	1.2325	Adder	1.45
926341	AC1-110 2	1.2325	Adder	1.45
930482	AB1-089 CT	68.0087	Adder	80.01
930483	AB1-089 ST	54.0696	Adder	63.61
933911	AD1-013 C	1.5254	Adder	1.79
933912	AD1-013 E	2.4366	Adder	2.87

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
933931	AD1-016 C	1.6383	Adder	1.93
933932	AD1-016 E	2.6730	Adder	3.14
934432	AD1-067 E	0.4546	Adder	0.53
934701	AD1-098 C O1	5.7413	Adder	6.75
934702	AD1-098 E O1	4.1918	Adder	4.93
934971	AD1-129 C	1.4998	Adder	1.76
934972	AD1-129 E	0.9999	Adder	1.18
936791	AD2-102 C	21.4455	Adder	25.23
936792	AD2-102 E	14.2970	Adder	16.82
937001	AD2-134 C	2.2511	Adder	2.65
937002	AD2-134 E	9.2994	Adder	10.94
937311	AD2-172 C	3.4567	Adder	4.07
937312	AD2-172 E	4.7735	Adder	5.62
937531	AD2-214 C	4.1730	Adder	4.91
937532	AD2-214 E	2.7820	Adder	3.27
938861	AE1-114 C O1	4.9228	Adder	5.79
938862	AE1-114 E O1	16.7955	Adder	19.76
939051	AE1-134 1	1.4146	Adder	1.66
939061	AE1-134 2	1.4146	Adder	1.66
940501	AE2-035 C	3.4567	Adder	4.07
940502	AE2-035 E	4.7735	Adder	5.62
941131	AE2-107 C	4.8186	Adder	5.67
941132	AE2-107 E	3.2124	Adder	3.78
942991	AE2-321 C	14.3793	Adder	16.92
942992	AE2-321 E	7.0823	Adder	8.33
943411	AF1-012 C	11.2223	Adder	13.2
943412	AF1-012 E	7.4815	Adder	8.8
943801	AF1-048 C	6.7218	Adder	7.91
943802	AF1-048 E	4.4812	Adder	5.27
943921	AF1-060	1.7020	Adder	2.0
944041	AF1-072	5.3752	50/50	5.3752
946151	AF1-280 C O1	18.8160	Adder	22.14
946152	AF1-280 E O1	8.6526	Adder	10.18
946161	AF1-281 C O1	0.4120	Adder	0.48
946162	AF1-281 E O1	2.3348	Adder	2.75
946321	AF1-296 C O1	3.6217	Adder	4.26
946322	AF1-296 E O1	16.9560	Adder	19.95
946501	AF1-314 C	6.1416	Adder	7.23
946502	AF1-314 E	28.7541	Adder	33.83
946661	AF1-330 C	3.5437	Adder	4.17
946662	AF1-330 E	0.7779	Adder	0.92
946671	AF1-331	1.9810	Adder	2.33
952381	J703	12.2771	PJM External (MISO)	12.2771
952391	J704	5.2484	PJM External (MISO)	5.2484
952431	J760	4.4730	PJM External (MISO)	4.4730
953151	J831	4.1888	PJM External (MISO)	4.1888
953491	J947	21.0560	PJM External (MISO)	21.0560
953681	J818	18.0409	PJM External (MISO)	18.0409
953891	J849	11.9925	PJM External (MISO)	11.9925
953901	J850	32.1175	PJM External (MISO)	32.1175
954001	J864	4.8880	PJM External (MISO)	4.8880
954061	J870	19.0080	PJM External (MISO)	19.0080

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
954071	J871	9.5040	PJM External (MISO)	9.5040
954141	J878	22.0320	PJM External (MISO)	22.0320
954191	J886	14.8170	PJM External (MISO)	14.8170
954741	J928 C	1.1973	PJM External (MISO)	1.1973
954742	J928 E	6.4775	PJM External (MISO)	6.4775
955241	J1002	9.8525	PJM External (MISO)	9.8525
955251	J1003	5.4920	PJM External (MISO)	5.4920
955582	J1042 E	21.6846	PJM External (MISO)	21.6846
956141	J1101	1.9756	PJM External (MISO)	1.9756
956571	J1153	15.5265	PJM External (MISO)	15.5265
956581	J1154	9.0818	PJM External (MISO)	9.0818
956731	J1171	10.5520	PJM External (MISO)	10.5520
956852	J1183 E	0.1295	PJM External (MISO)	0.1295
956901	J1188	6.2940	PJM External (MISO)	6.2940
957331	AF2-027 C	2.5721	Adder	3.03
957332	AF2-027 E	3.8582	Adder	4.54
957471	AF2-041 C	16.0925	Adder	18.93
957472	AF2-041 E	8.0463	Adder	9.47
958911	AF2-182 C	24.7217	Adder	29.08
958912	AF2-182 E	16.4812	Adder	19.39
958921	AF2-183 C	4.3950	Adder	5.17
958922	AF2-183 E	6.5925	Adder	7.76
959081	AF2-199 C	5.3642	Adder	6.31
959082	AF2-199 E	2.6821	Adder	3.16
959091	AF2-200 C O1	10.7284	Adder	12.62
959092	AF2-200 E O1	5.3642	Adder	6.31
959101	AF2-201 C O1	8.4606	Adder	9.95
959102	AF2-201 E O1	24.2953	Adder	28.58
960551	AF2-346 C	4.8096	Adder	5.66
960552	AF2-346 E	3.2064	Adder	3.77
960581	AF2-349 C	37.2938	Adder	43.88
960582	AF2-349 E	24.8625	Adder	29.25
960721	AF2-363 C O1	6.5331	Adder	7.69
960722	AF2-363 E O1	4.3554	Adder	5.12
960731	AF2-364 C O1	12.8511	Adder	15.12
960732	AF2-364 E O1	8.5674	Adder	10.08
960751	AF2-366 C	5.2934	Adder	6.23
960752	AF2-366 E	3.5289	Adder	4.15
961011	AF2-392 C O1	4.0500	Adder	4.76
961012	AF2-392 E O1	18.9612	Adder	22.31
961021	AF2-393 O1	6.9034	Adder	8.12
961031	AF2-394 O1	4.6022	Adder	5.41
962012	AG1-044 E	0.0321	Adder	0.07
962691	AG1-118 C O2	7.6930	Adder	17.08
962692	AG1-118 E O2	5.1287	Adder	11.38
962701	AG1-119 C O2	77.1156	50/50	77.1156
962702	AG1-119 E O2	51.4104	50/50	51.4104
962711	AG1-120 C O2	30.4864	50/50	30.4864
962712	AG1-120 E O2	20.3242	50/50	20.3242
962781	AG1-127 C O2	3.1070	Adder	6.9
962782	AG1-127 E O2	2.0714	Adder	4.6
962791	AG1-128 C O2	2.6988	Adder	5.99

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
962792	AG1-128 E O2	12.6291	Adder	28.03
963681	AG1-220 C O2	7.8596	Adder	17.45
963682	AG1-220 E O2	5.2398	Adder	11.63
964461	AG1-309 FTIR	464.2242	Merchant Transmission	464.2242
965061	AG1-371	1.4215	Adder	3.16
965071	AG1-372	0.9477	Adder	2.1
965081	AG1-373	0.4738	Adder	1.05
965551	AG1-423 C O2	37.5240	50/50	37.5240
965552	AG1-423 E O2	25.0160	50/50	25.0160
965661	AG1-434 C O2	1.8339	Adder	4.07
965662	AG1-434 E O2	8.5861	Adder	19.06
965931	AG1-462 C O2	9.1632	Adder	20.34
965932	AG1-462 E O2	6.1088	Adder	13.56
966521	AG1-521 C O2	5.1523	Adder	11.44
966522	AG1-521 E O2	1.2881	Adder	2.86
966651	AG1-535 O2	7.6003	Adder	16.87
966821	AG1-553 C O2	13.1800	Adder	29.26
966822	AG1-553 E O2	3.2950	Adder	7.31
WEC	WEC	4.7241	Confirmed LTF	4.7241
CALDERWOOD	CALDERWOOD	0.0025	Confirmed LTF	0.0025
CBM-W2	CBM-W2	8.7987	Confirmed LTF	8.7987
NY	NY	0.5237	Confirmed LTF	0.5237
TVA	TVA	0.7770	Confirmed LTF	0.7770
O-066	O-066	6.2656	Confirmed LTF	6.2656
SIGE	SIGE	0.0426	Confirmed LTF	0.0426
CHEOAH	CHEOAH	0.0070	Confirmed LTF	0.0070
CBM-S1	CBM-S1	0.1208	Confirmed LTF	0.1208
G-007	G-007	0.9775	Confirmed LTF	0.9775
HAMLET	HAMLET	0.2368	Confirmed LTF	0.2368
MEC	MEC	12.3068	Confirmed LTF	12.3068
GIBSON	GIBSON	0.3402	Confirmed LTF	0.3402
BLUEG	BLUEG	1.3714	Confirmed LTF	1.3714
TRIMBLE	TRIMBLE	0.4541	Confirmed LTF	0.4541
LAGN	LAGN	2.6390	Confirmed LTF	2.6390
CATAWBA	CATAWBA	0.1207	Confirmed LTF	0.1207
CBM-W1	CBM-W1	87.1343	Confirmed LTF	87.1343

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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
169631509	924470	GARDEN PR; R	CE	270883	SILVER LK; R	CE	1	COMED_P1-2_345-L18905_B-R-B	single	1479.0	133.16	134.53	DC	20.14

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
272364	ESS H440N ;R	1.8881	Adder	2.22
274656	BYRON ;1U	47.3438	80/20	47.3438
274657	BYRON ;2U	46.2787	80/20	46.2787
274715	NELSON EC;1C	3.3940	80/20	3.3940
274717	NELSON EC;2C	3.4202	80/20	3.4202
274760	LEE CO EC;1U	2.3971	80/20	2.3971
274761	LEE CO EC;2U	2.3971	80/20	2.3971
274762	LEE CO EC;3U	2.3971	80/20	2.3971
274763	LEE CO EC;4U	2.3745	80/20	2.3745
274764	LEE CO EC;5U	2.4027	80/20	2.4027
274765	LEE CO EC;6U	2.4027	80/20	2.4027
274766	LEE CO EC;7U	2.3689	80/20	2.3689
274767	LEE CO EC;8U	2.3689	80/20	2.3689
274822	ROCKFORD ;11	4.7466	80/20	4.7466
274823	ROCKFORD ;21	4.8710	80/20	4.8710
274824	ROCKFORD ;12	4.7052	80/20	4.7052
274856	ECOGROVE ;U1	0.6574	80/20	0.6574
274857	BIG SKY ;U1	0.4292	80/20	0.4292
274858	BIG SKY ;U2	0.4292	80/20	0.4292
276162	X1-087	0.3277	80/20	0.3277
276590	R-018	0.2567	80/20	0.2567
295110	SUBLETTE C	0.0683	80/20	0.0683
919581	AA2-030 C	17.0576	Adder	20.07
924472	AB2-096 CT1	78.4060	80/20	78.4060
924473	AB2-096 CT2	78.4060	80/20	78.4060
924474	AB2-096 CT3	78.4060	80/20	78.4060
926431	AC1-114	0.7911	80/20	0.7911
927511	AC1-113 1	0.3955	80/20	0.3955
927521	AC1-113 2	0.3955	80/20	0.3955
930482	AB1-089 CT	78.6774	80/20	78.6774
930483	AB1-089 ST	62.5516	80/20	62.5516
932881	AC2-115 1	0.7911	80/20	0.7911
932891	AC2-115 2	0.7911	80/20	0.7911
932921	AC2-116	0.2769	80/20	0.2769
933911	AD1-013 C	1.3284	Adder	1.56
933931	AD1-016 C	0.4486	Adder	0.53
934701	AD1-098 C O1	5.0147	Adder	5.9
934971	AD1-129 C	1.3406	80/20	1.3406
936791	AD2-102 C	28.5168	80/20	28.5168
937001	AD2-134 C	1.9490	Adder	2.29
937311	AD2-172 C	4.5106	80/20	4.5106

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
937531	AD2-214 C	3.8911	Adder	4.58
938861	AE1-114 C O1	6.1724	80/20	6.1724
939051	AE1-134 1	1.3255	Adder	1.56
939061	AE1-134 2	1.3255	Adder	1.56
940501	AE2-035 C	4.5106	80/20	4.5106
941131	AE2-107 C	3.8157	Adder	4.49
943411	AF1-012 C	9.3463	Adder	11.0
943921	AF1-060	2.2209	80/20	2.2209
946151	AF1-280 C O1	22.3598	80/20	22.3598
946161	AF1-281 C O1	0.4896	80/20	0.4896
946321	AF1-296 C O1	3.3177	Adder	3.9
946501	AF1-314 C	8.0142	80/20	8.0142
946671	AF1-331	1.7252	Adder	2.03
952431	J760	5.1372	PJM External (MISO)	5.1372
953681	J818	13.1969	PJM External (MISO)	13.1969
953901	J850	21.8500	PJM External (MISO)	21.8500
953921	J855 C	1.2825	PJM External (MISO)	1.2825
954001	J864	4.2443	PJM External (MISO)	4.2443
954061	J870	16.9540	PJM External (MISO)	16.9540
954071	J871	8.4770	PJM External (MISO)	8.4770
955221	J1000	3.7970	PJM External (MISO)	3.7970
955971	J1084	11.1195	PJM External (MISO)	11.1195
956581	J1154	6.6472	PJM External (MISO)	6.6472
956901	J1188	5.5255	PJM External (MISO)	5.5255
958911	AF2-182 C	29.3778	80/20	29.3778
958921	AF2-183 C	5.2227	80/20	5.2227
959101	AF2-201 C O1	11.0402	80/20	11.0402
960551	AF2-346 C	4.0055	Adder	4.71
960581	AF2-349 C	89.5500	80/20	89.5500
960721	AF2-363 C O1	8.1094	80/20	8.1094
960751	AF2-366 C	4.3574	Adder	5.13
961011	AF2-392 C O1	4.6003	80/20	4.6003
961021	AF2-393 O1	7.8414	80/20	7.8414
961031	AF2-394 O1	5.2276	80/20	5.2276
962781	AG1-127 C O2	2.5576	Adder	5.68
962791	AG1-128 C O2	2.3366	Adder	5.19
963681	AG1-220 C O2	20.1402	80/20	20.1402
964461	AG1-309 FTIR	522.7711	80/20	522.7711
965551	AG1-423 C O2	30.8064	80/20	30.8064
965661	AG1-434 C O2	1.5878	Adder	3.52
965931	AG1-462 C O2	8.3644	Adder	18.57
966521	AG1-521 C O2	11.4992	80/20	11.4992
966821	AG1-553 C O2	12.0109	Adder	26.66
WEC	WEC	0.4945	Confirmed LTF	0.4945
CBM-W2	CBM-W2	9.3990	Confirmed LTF	9.3990
NY	NY	0.2627	Confirmed LTF	0.2627
TVA	TVA	0.9856	Confirmed LTF	0.9856
SIGE	SIGE	0.0359	Confirmed LTF	0.0359
CBM-S2	CBM-S2	0.1357	Confirmed LTF	0.1357
CBM-S1	CBM-S1	0.1980	Confirmed LTF	0.1980
HAMLET	HAMLET	0.0300	Confirmed LTF	0.0300
MEC	MEC	9.7310	Confirmed LTF	9.7310

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
GIBSON	GIBSON	0.1054	Confirmed LTF	0.1054
BLUEG	BLUEG	0.5850	Confirmed LTF	0.5850
TRIMBLE	TRIMBLE	0.1987	Confirmed LTF	0.1987
LAGN	LAGN	2.4745	Confirmed LTF	2.4745
CATAWBA	CATAWBA	0.0003	Confirmed LTF	0.0003
CBM-W1	CBM-W1	47.3876	Confirmed LTF	47.3876

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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
174535498	946150	AF1-280 TAP	CE	270828	NELSON ; B	CE	1	COMED_P4_144-45-BT6-8__	breaker	1479.0	112.68	113.56	DC	28.84

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
274760	LEE CO EC;1U	8.1382	50/50	8.1382
274761	LEE CO EC;2U	8.1382	50/50	8.1382
274762	LEE CO EC;3U	8.1382	50/50	8.1382
274763	LEE CO EC;4U	8.0615	50/50	8.0615
274764	LEE CO EC;5U	8.1573	50/50	8.1573
274765	LEE CO EC;6U	8.1573	50/50	8.1573
274767	LEE CO EC;8U	8.0423	50/50	8.0423
274859	EASYR;U1 E	49.5777	Adder	58.33
274860	EASYR;U2 E	49.5777	Adder	58.33
294763	P-046 E	9.4221	Adder	11.08
920272	AA2-123 E	2.7623	Adder	3.25
924472	AB2-096 CT1	29.7070	Adder	34.95
924473	AB2-096 CT2	29.7070	Adder	34.95
924474	AB2-096 CT3	29.7070	Adder	34.95
930482	AB1-089 CT	98.0374	Adder	115.34
930483	AB1-089 ST	77.9436	Adder	91.7
933931	AD1-016 C	1.0848	Adder	1.28
933932	AD1-016 E	1.7699	Adder	2.08
934971	AD1-129 C	1.3456	Adder	1.58
934972	AD1-129 E	0.8971	Adder	1.06
936791	AD2-102 C	27.3564	Adder	32.18
936792	AD2-102 E	18.2376	Adder	21.46
937311	AD2-172 C	2.4733	Adder	2.91
937312	AD2-172 E	3.4155	Adder	4.02
940501	AE2-035 C	2.4733	Adder	2.91
940502	AE2-035 E	3.4155	Adder	4.02
942991	AE2-321 C	9.2401	Adder	10.87
942992	AE2-321 E	4.5511	Adder	5.35
943801	AF1-048 C	4.3194	Adder	5.08
943802	AF1-048 E	2.8796	Adder	3.39
943921	AF1-060	1.2178	Adder	1.43
946151	AF1-280 C O1	89.6432	50/50	89.6432
946152	AF1-280 E O1	41.2228	50/50	41.2228
946161	AF1-281 C O1	1.9630	50/50	1.9630
946162	AF1-281 E O1	11.1236	50/50	11.1236
946501	AF1-314 C	4.3945	Adder	5.17
946502	AF1-314 E	20.5741	Adder	24.2
946661	AF1-330 C	2.2651	Adder	2.66
946662	AF1-330 E	0.4972	Adder	0.58
952431	J760	6.5112	PJM External (MISO)	6.5112
953681	J818	19.2791	PJM External (MISO)	19.2791

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
953901	J850	36.9025	PJM External (MISO)	36.9025
955582	J1042 E	21.4020	PJM External (MISO)	21.4020
956581	J1154	9.7072	PJM External (MISO)	9.7072
956901	J1188	7.1810	PJM External (MISO)	7.1810
958911	AF2-182 C	117.7794	50/50	117.7794
958912	AF2-182 E	78.5196	50/50	78.5196
958921	AF2-183 C	20.9386	50/50	20.9386
958922	AF2-183 E	31.4078	50/50	31.4078
959101	AF2-201 C O1	6.0537	Adder	7.12
959102	AF2-201 E O1	17.3837	Adder	20.45
960581	AF2-349 C	33.9293	Adder	39.92
960582	AF2-349 E	22.6195	Adder	26.61
960721	AF2-363 C O1	5.1482	Adder	6.06
960722	AF2-363 E O1	3.4321	Adder	4.04
961022	AF2-393 BAT	9.8262	Merchant Transmission	9.8262
961032	AF2-394 BAT	6.5508	Merchant Transmission	6.5508
962013	AG1-044 BAT	0.0548	Merchant Transmission	0.0548
963681	AG1-220 C O2	7.7952	Adder	17.3
963682	AG1-220 E O2	5.1968	Adder	11.54
964461	AG1-309 FTIR	765.3024	Merchant Transmission	765.3024
965062	AG1-371 BAT	5.5074	Merchant Transmission	5.5074
965072	AG1-372 BAT	3.6716	Merchant Transmission	3.6716
965082	AG1-373 BAT	1.8358	Merchant Transmission	1.8358
965551	AG1-423 C O2	20.3482	Adder	45.17
965552	AG1-423 E O2	13.5655	Adder	30.11
966823	AG1-553 BAT	13.6667	Merchant Transmission	13.6667
WEC	WEC	2.3244	Confirmed LTF	2.3244
CALDERWOOD	CALDERWOOD	0.5547	Confirmed LTF	0.5547
NY	NY	0.3550	Confirmed LTF	0.3550
PRAIRIE	PRAIRIE	5.3081	Confirmed LTF	5.3081
O-066	O-066	4.3812	Confirmed LTF	4.3812
CHEOAH	CHEOAH	0.5561	Confirmed LTF	0.5561
COTTONWOOD	COTTONWOOD	3.6246	Confirmed LTF	3.6246
G-007	G-007	0.6836	Confirmed LTF	0.6836
HAMLET	HAMLET	0.5255	Confirmed LTF	0.5255
GIBSON	GIBSON	0.4898	Confirmed LTF	0.4898
BLUEG	BLUEG	1.3298	Confirmed LTF	1.3298
TRIMBLE	TRIMBLE	0.4185	Confirmed LTF	0.4185
CATAWBA	CATAWBA	0.3297	Confirmed LTF	0.3297
CBM-W1	CBM-W1	12.3516	Confirmed LTF	12.3516

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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
177669028	962690	AG1-118 TAP	CE	272522	SUGAR GRV; B	CE	1	COMED_P4_167-38-L14609_	breaker	538.0	136.91	140.31	DC	18.25

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
272364	ESS H440N ;R	6.7652	50/50	6.7652
274850	MENDOTA H;RU	0.6282	50/50	0.6282
274855	GSG-6 ;RU	1.0345	50/50	1.0345
274872	LEE DEKAL;1U	2.3560	50/50	2.3560
290051	GSG-6; E	26.2274	50/50	26.2274
290108	LEEDK;1U E	74.6660	50/50	74.6660
295108	WESTBROOK C	0.3354	50/50	0.3354
295109	WESTBROOK E	14.0419	50/50	14.0419
295111	SUBLETTE E	1.3682	Adder	1.61
916221	Z1-073 E	13.6227	50/50	13.6227
933431	AC2-156 C O1	3.1776	50/50	3.1776
933432	AC2-156 E O1	5.1846	50/50	5.1846
933911	AD1-013 C	4.7829	50/50	4.7829
933912	AD1-013 E	7.6403	50/50	7.6403
934431	AD1-067 C	0.0520	50/50	0.0520
934432	AD1-067 E	1.3847	50/50	1.3847
934701	AD1-098 C O1	16.5782	50/50	16.5782
934702	AD1-098 E O1	12.1038	50/50	12.1038
937001	AD2-134 C	6.8563	50/50	6.8563
937002	AD2-134 E	28.3232	50/50	28.3232
941131	AE2-107 C	20.1598	50/50	20.1598
941132	AE2-107 E	13.4399	50/50	13.4399
943121	AE2-341 C	42.0599	50/50	42.0599
943122	AE2-341 E	20.6536	50/50	20.6536
943591	AF1-030 C O1	27.9702	50/50	27.9702
943592	AF1-030 E O1	13.8388	50/50	13.8388
946671	AF1-331	6.2116	50/50	6.2116
960381	AF2-329	21.8243	50/50	21.8243
960721	AF2-363 C O1	11.1619	50/50	11.1619
960722	AF2-363 E O1	7.4413	50/50	7.4413
960751	AF2-366 C	21.5324	50/50	21.5324
960752	AF2-366 E	14.3550	50/50	14.3550
962691	AG1-118 C O2	85.6836	50/50	85.6836
962692	AG1-118 E O2	57.1224	50/50	57.1224
962781	AG1-127 C O2	23.8468	50/50	23.8468
962782	AG1-127 E O2	15.8978	50/50	15.8978
962791	AG1-128 C O2	15.5089	50/50	15.5089
962792	AG1-128 E O2	72.5746	50/50	72.5746
963681	AG1-220 C O2	10.9503	50/50	10.9503
963682	AG1-220 E O2	7.3002	50/50	7.3002
965661	AG1-434 C O2	10.5389	50/50	10.5389

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
965662	AG1-434 E O2	49.3411	50/50	49.3411
966521	AG1-521 C O2	2.4932	Adder	5.53
966522	AG1-521 E O2	0.6233	Adder	1.38
WEC	WEC	0.2287	Confirmed LTF	0.2287
CBM-W2	CBM-W2	1.9533	Confirmed LTF	1.9533
NY	NY	0.0431	Confirmed LTF	0.0431
TVA	TVA	0.2086	Confirmed LTF	0.2086
O-066	O-066	0.5048	Confirmed LTF	0.5048
SIGE	SIGE	0.0073	Confirmed LTF	0.0073
CBM-S2	CBM-S2	0.1670	Confirmed LTF	0.1670
CBM-S1	CBM-S1	0.0437	Confirmed LTF	0.0437
G-007	G-007	0.0788	Confirmed LTF	0.0788
MEC	MEC	1.8385	Confirmed LTF	1.8385
GIBSON	GIBSON	0.0098	Confirmed LTF	0.0098
BLUEG	BLUEG	0.0851	Confirmed LTF	0.0851
TRIMBLE	TRIMBLE	0.0295	Confirmed LTF	0.0295
LAGN	LAGN	0.4935	Confirmed LTF	0.4935
CBM-W1	CBM-W1	8.8887	Confirmed LTF	8.8887

13.6 Contingency Descriptions - Secondary POI

Contingency Name	Contingency Definition
COMED_P2-2_107_DX-138R_23	CONTINGENCY 'COMED_P2-2_107_DX-138R_23' / CONTINGENCY # 91 MOVE 100 PERCENT LOAD FROM BUS 271333 TO BUS 271332 / DIXON ; R 138 DIXON ; B 138 DISCONNECT BUS 271333 / DIXON ; R 138 END
COMED_P4_167-38-TR81____	CONTINGENCY 'COMED_P4_167-38-TR81____' / CONTINGENCY # 676 TRIP BRANCH FROM BUS 270846 TO BUS 270730 CKT 1 / PLANO ; B 345 ELECT JCT; B 345 TRIP BRANCH FROM BUS 272250 TO BUS 272278 CKT 2 / PLANO ; B 138 PLANO;1I 138 TRIP BRANCH FROM BUS 272250 TO BUS 272278 CKT 1 / PLANO ; B 138 PLANO;1I 138 TRIP BRANCH FROM BUS 270846 TO BUS 272278 TO BUS 275354 CKT 1 / PLANO ; B 345 PLANO;1I 138 PLANO;1C 34.5 DISCONNECT BUS 272250 / PLANO ; B 138 END
COMED_P4_111-45-L16704T	CONTINGENCY 'COMED_P4_111-45-L16704T' / 1647 OPEN BRANCH FROM BUS 270730 TO BUS 270846 CKT 1 / 270730 ELECT JCT; B 345 270846 PLANO ; B 345 1 OPEN BRANCH FROM BUS 272250 TO BUS 272278 CKT 2 / 272250 PLANO ; B 138 272278 PLANO;1I 138 2 OPEN THREEWINDING AT BUS 270846 TO BUS 272278 TO BUS 275354 CKT 1/ OPEN THREEWINDING AT BUS 272278 TO BUS 270846 TO BUS 275354 CKT 1/ OPEN THREEWINDING AT BUS 275354 TO BUS 270846 TO BUS 272278 CKT 1/ OPEN BRANCH FROM BUS 270730 TO BUS 270916 CKT 1 / 270730 ELECT JCT; B 345 270916 WAYNE ; B 345 1 OPEN BRANCH FROM BUS 270730 TO BUS 270928 CKT 1 / 270730 ELECT JCT; B 345 270928 WOLFS ; B 345 1 OPEN THREEWINDING AT BUS 270928 TO BUS 272794 TO BUS 275334 CKT 1/ OPEN THREEWINDING AT BUS 272794 TO BUS 270928 TO BUS 275334 CKT 1/ OPEN THREEWINDING AT BUS 275334 TO BUS 270928 TO BUS 272794 CKT 1/ OPEN BRANCH FROM BUS 270730 TO BUS 275239 CKT 1 / 270730 ELECT JCT; B 345 275239 ELECT JCT;2M 138 1 OPEN BRANCH FROM BUS 275239 TO BUS 271390 CKT 1 / 275239 ELECT JCT;2M 138 271390 ELECT JCT; B 138 1 OPEN BRANCH FROM BUS 275339 TO BUS 275239 CKT 1 / 275339 ELECT JCT;2C 34.5 275239 ELECT JCT;2M 138 1 END
COMED_P1-2_765-L2315____-S	CONTINGENCY 'COMED_P1-2_765-L2315____-S' / 2979 OPEN BRANCH FROM BUS 270607 TO BUS 270630 CKT 1 / 270607 COLLINS ; 765 270630 PLANO ; 765 1 END

Contingency Name	Contingency Definition
COMED_P1-2_138-L14609_R-R-A	CONTINGENCY 'COMED_P1-2_138-L14609_R-R-A' / CONTINGENCY # 316 TRIP BRANCH FROM BUS 272251 TO BUS 272803 CKT 1 / PLANO; R 138 W PLANO ; R 138 TRIP BRANCH FROM BUS 272803 TO BUS 943120 CKT 1 / W PLANO ; R 138 AE2-341 TAP 138 MOVE 25 PERCENT LOAD FROM BUS 272803 TO BUS 271116 / W PLANO ; R 138 BRISTOL ; B 138 MOVE 25 PERCENT LOAD FROM BUS 272803 TO BUS 271117 / W PLANO ; R 138 BRISTOL ; R 138 MOVE 50 PERCENT LOAD FROM BUS 272803 TO BUS 272445 / W PLANO ; R 138 SANDWICH ; R 138 END
COMED_P4_144-45-BT6-8__	CONTINGENCY 'COMED_P4_144-45-BT6-8__' / 777 OPEN BRANCH FROM BUS 270916 TO BUS 965550 CKT 1 / 270916 WAYNE ; B 345 965550 AG1-423 TAP 345 1 OPEN BRANCH FROM BUS 270730 TO BUS 270916 CKT 1 / 270730 ELECT JCT; B 345 270916 WAYNE ; B 345 1 OPEN BRANCH FROM BUS 270916 TO BUS 270917 CKT 1 / 270916 WAYNE ; B 345 270917 WAYNE ; R 345 1 END
COMED_P4_111-45-L14321T	CONTINGENCY 'COMED_P4_111-45-L14321T' / 2454 OPEN BRANCH FROM BUS 270730 TO BUS 270928 CKT 1 / 270730 ELECT JCT; B 345 270928 WOLFS ; B 345 1 OPEN THREEWINDING AT BUS 270928 TO BUS 272794 TO BUS 275334 CKT 1/ OPEN THREEWINDING AT BUS 272794 TO BUS 270928 TO BUS 275334 CKT 1/ OPEN THREEWINDING AT BUS 275334 TO BUS 270928 TO BUS 272794 CKT 1/ OPEN BRANCH FROM BUS 270730 TO BUS 270846 CKT 1 / 270730 ELECT JCT; B 345 270846 PLANO ; B 345 1 OPEN BRANCH FROM BUS 270730 TO BUS 270916 CKT 1 / 270730 ELECT JCT; B 345 270916 WAYNE ; B 345 1 OPEN BRANCH FROM BUS 270730 TO BUS 275239 CKT 1 / 270730 ELECT JCT; B 345 275239 ELECT JCT;2M 138 1 OPEN BRANCH FROM BUS 275239 TO BUS 271390 CKT 1 / 275239 ELECT JCT;2M 138 271390 ELECT JCT; B 138 1 OPEN BRANCH FROM BUS 275339 TO BUS 275239 CKT 1 / 275339 ELECT JCT;2C 34.5 275239 ELECT JCT;2M 138 1 END
COMED_P1-2_138-L15627_R-R-AA	CONTINGENCY 'COMED_P1-2_138-L15627_R-R-AA' / CONTINGENCY # 363 TRIP BRANCH FROM BUS 271193 TO BUS 963680 CKT 1 / CHERRY VA; R 138 AG1-220 TAP 138 END

Contingency Name	Contingency Definition
COMED_P2-2_156-CV-138R__1	CONTINGENCY 'COMED_P2-2_156-CV-138R__1' / CONTINGENCY # 163 TRIP BRANCH FROM BUS 271193 TO BUS 271387 CKT 1 / CHERR COMED_P2-2_VA; R 138 E ROCKFOR;RT 138 TRIP BRANCH FROM BUS 271193 TO BUS 963680 CKT 1 / CHERR COMED_P2-2_VA; R 138 AG1-220 TAP 138 TRIP BRANCH FROM BUS 271193 TO BUS 272517 CKT 1 / CHERR COMED_P2-2_VA; R 138 STILLMAN ;RT 138 TRIP BRANCH FROM BUS 271193 TO BUS 275165 CKT 1 / CHERR COMED_P2-2_VA; R 138 CHERR COMED_P2-2_VA;1M 138 REMOVE SWSHUNT FROM BUS 271193 / CHERR COMED_P2-2_VA; R 138 END
COMED_P4_167-38-L14302_	CONTINGENCY 'COMED_P4_167-38-L14302_' / CONTINGENCY # 673 TRIP BRANCH FROM BUS 271116 TO BUS 272250 CKT 1 / BRISTOL ; B 138 PLANO ; B 138 TRIP BRANCH FROM BUS 272024 TO BUS 271182 CKT 1 / MONTGOMER; B 138 ESS W507 ; B 138 TRIP BRANCH FROM BUS 272026 TO BUS 271116 CKT 1 / MONTGOMER;BT 138 BRISTOL ; B 138 TRIP BRANCH FROM BUS 272026 TO BUS 272024 CKT 1 / MONTGOMER;BT 138 MONTGOMER; B 138 TRIP BRANCH FROM BUS 272202 TO BUS 272026 CKT 1 / OSWEGO ; B 138 MONTGOMER;BT 138 TRIP BRANCH FROM BUS 272794 TO BUS 272202 CKT 1 / WOLFS ; B 138 OSWEGO ; B 138 MOVE 100 PERCENT LOAD FROM BUS 271116 TO BUS 271117 / BRISTOL ; B 138 BRISTOL ; R 138 MOVE 100 PERCENT LOAD FROM BUS 272202 TO BUS 272203 / OSWEGO ; B 138 OSWEGO ; R 138 CLOSE LINE FROM BUS 271182 TO BUS 271183 CKT 1 / ESS W507 ; B 138 ESS W507 ; R 138 CLOSE LINE FROM BUS 272024 TO BUS 272025 CKT 1 / MONTGOMER; B 138 MONTGOMER; R 138 DISCONNECT BUS 272250 / PLANO ; B 138 END
COMED_P2-1_094-L11323__	CONTINGENCY 'COMED_P2-1_094-L11323__' / CONTINGENCY # 111 TRIP BRANCH FROM BUS 271680 TO BUS 272756 CKT 1 / HAUMESSER; B 138 W DEKALB ;3T 138 END

Contingency Name	Contingency Definition
COMED_P4_111-45-L16703_	CONTINGENCY 'COMED_P4_111-45-L16703_' / 3238 OPEN BRANCH FROM BUS 270846 TO BUS 270847 CKT 1 / 270846 PLANO ; B 345 270847 PLANO ; R 345 1 OPEN BRANCH FROM BUS 270733 TO BUS 270847 CKT 1 / 270733 ELECT JCT;3R 345 270847 PLANO ; R 345 1 OPEN BRANCH FROM BUS 270717 TO BUS 270731 CKT 1 / 270717 DRESDEN ; R 345 270731 ELECT JCT;4R 345 1 OPEN BRANCH FROM BUS 270731 TO BUS 270733 CKT 1 / 270731 ELECT JCT;4R 345 270733 ELECT JCT;3R 345 1 OPEN BRANCH FROM BUS 270731 TO BUS 274749 CKT 1 / 270731 ELECT JCT;4R 345 274749 AURORA EC;RP 345 1 OPEN BRANCH FROM BUS 270731 TO BUS 275184 CKT 1 / 270731 ELECT JCT;4R 345 275184 ELECT JCT;4M 138 1 OPEN BRANCH FROM BUS 275184 TO BUS 271393 CKT 1 / 275184 ELECT JCT;4M 138 271393 ELECT JCT;4R 138 1 OPEN BRANCH FROM BUS 275284 TO BUS 275184 CKT 1 / 275284 ELECT JCT;4C 34.5 275184 ELECT JCT;4M 138 1 END
COMED_P2-2_111_EJ-345R__3	CONTINGENCY 'COMED_P2-2_111_EJ-345R__3' / CONTINGENCY # 103 DISCONNECT BUS 270733 / ELECT JCT;3R 345 DISCONNECT BUS 275183 / ELECT JCT;3M 138 END
COMED_P1-2_138-L11106_B-R-AA	CONTINGENCY 'COMED_P1-2_138-L11106_B-R-AA' / CONTINGENCY # 190 TRIP BRANCH FROM BUS 271390 TO BUS 271586 CKT 1 / ELECT JCT; B 138 ESS W541 ; B 138 TRIP BRANCH FROM BUS 271586 TO BUS 272114 CKT 1 / ESS W541 ; B 138 N AURORA ; B 138 TRIP BRANCH FROM BUS 272114 TO BUS 272522 CKT 1 / N AURORA ; B 138 SUGAR GRV; B 138 TRIP BRANCH FROM BUS 962690 TO BUS 272522 CKT 1 / AG1-118 TAP 138 SUGAR GRV; B 138 MOVE 100 PERCENT LOAD FROM BUS 271586 TO BUS 271587 / ESS W541 ; B 138 ESS W541 ; R 138 MOVE 100 PERCENT LOAD FROM BUS 272522 TO BUS 272523 / SUGAR GRV; B 138 SUGAR GRV; R 138 CLOSE LINE FROM BUS 272114 TO BUS 272115 CKT 1 / N AURORA ; B 138 N AURORA ; R 138 END
COMED_P2-2_167_PL-138B__2	CONTINGENCY 'COMED_P2-2_167_PL-138B__2' / CONTINGENCY # 169 DISCONNECT BUS 272250 / PLANO ; B 138 END
Base Case	

Contingency Name	Contingency Definition
COMED_P4_167-38-L14609_	CONTINGENCY 'COMED_P4_167-38-L14609_' / CONTINGENCY # 675 TRIP BRANCH FROM BUS 272251 TO BUS 272803 CKT 1 / PLANO; R 138 W PLANO ; R 138 TRIP BRANCH FROM BUS 272803 TO BUS 943120 CKT 1 / W PLANO ; R 138 AE2-341 TAP 138 MOVE 25 PERCENT LOAD FROM BUS 272803 TO BUS 271116 / W PLANO ; R 138 BRISTOL ; B 138 MOVE 25 PERCENT LOAD FROM BUS 272803 TO BUS 271117 / W PLANO ; R 138 BRISTOL ; R 138 MOVE 50 PERCENT LOAD FROM BUS 272803 TO BUS 272444 / W PLANO ; R 138 SANDWICH ; B 138 DISCONNECT BUS 272251 / PLANO; R 138 END
COMED_P1-2_345-L18905__B-R-B	CONTINGENCY 'COMED_P1-2_345-L18905__B-R-B' / 1087 OPEN BRANCH FROM BUS 270916 TO BUS 965550 CKT 1 / 270916 WAYNE ; B 345 965550 AG1-423 TAP 345 1 END
COMED_P2-1_113-L11323__	CONTINGENCY 'COMED_P2-1_113-L11323__' / CONTINGENCY # 140 TRIP BRANCH FROM BUS 272730 TO BUS 272728 CKT 1 / WATERMAN ;3B 138 WATERMAN ; B 138 END
COMED_P4_111-45-L11120_	CONTINGENCY 'COMED_P4_111-45-L11120_' / 1799 OPEN BRANCH FROM BUS 270733 TO BUS 270747 CKT 1 / 270733 ELECT JCT;3R 345 270747 ESS W407K;OT 345 1 OPEN BRANCH FROM BUS 270747 TO BUS 270753 CKT 1 / 270747 ESS W407K;OT 345 270753 ESS W407M;OT 345 1 OPEN BRANCH FROM BUS 270749 TO BUS 270753 CKT 1 / 270749 ESS W407M; R 345 270753 ESS W407M;OT 345 1 OPEN BRANCH FROM BUS 270753 TO BUS 270813 CKT 1 / 270753 ESS W407M;OT 345 270813 LOMBARD ; R 345 1 OPEN BRANCH FROM BUS 270731 TO BUS 270733 CKT 1 / 270731 ELECT JCT;4R 345 270733 ELECT JCT;3R 345 1 OPEN BRANCH FROM BUS 270733 TO BUS 270847 CKT 1 / 270733 ELECT JCT;3R 345 270847 PLANO ; R 345 1 OPEN BRANCH FROM BUS 270733 TO BUS 275183 CKT 1 / 270733 ELECT JCT;3R 345 275183 ELECT JCT;3M 138 1 OPEN BRANCH FROM BUS 275183 TO BUS 271391 CKT 1 / 275183 ELECT JCT;3M 138 271391 ELECT JCT;3R 138 1 OPEN BRANCH FROM BUS 275283 TO BUS 275183 CKT 1 / 275283 ELECT JCT;3C 34.5 275183 ELECT JCT;3M 138 1 MOVE 100.00 PERCENT LOAD FROM BUS 270749 TO BUS 270751 / FROM 270749 ESS W407M; R 345 TO 270751 ESS W407M;9T 345 . LOAD=18.00 END
COMED_P1-2_345-L97104__-R	CONTINGENCY 'COMED_P1-2_345-L97104__-R' / 1538 OPEN BRANCH FROM BUS 270883 TO BUS 924470 CKT 1 / 270883 SILVER LK; R 345 924470 GARDEN PR; R 345 1 END

Contingency Name	Contingency Definition
COMED_P2-2_111_EJ-345B__2	CONTINGENCY 'COMED_P2-2_111_EJ-345B__2' / CONTINGENCY # 102 TRIP BRANCH FROM BUS 270730 TO BUS 270846 CKT 1 / ELECT JCT; B 345 PLANO ; B 345 TRIP BRANCH FROM BUS 270730 TO BUS 270916 CKT 1 / ELECT JCT; B 345 WAYNE ; B 345 TRIP BRANCH FROM BUS 270730 TO BUS 270928 CKT 1 / ELECT JCT; B 345 WOLFS ; B 345 TRIP BRANCH FROM BUS 270928 TO BUS 272794 TO BUS 275334 CKT 1 / WOLFS ; B 345 WOLFS ; B 138 WOLFS ;1C 34.5 DISCONNECT BUS 275239 / ELECT JCT;2M 138 END

14 Affected Systems

14.1 MISO

MISO Impacts to be determined during later study phases (as applicable).

Attachment 1: One Line Diagram