Generation Interconnection

Feasibility Study Report

for

Queue Project AE2-152

WILTON CENTER-LORETTO

90 MW Capacity / 150 MW Energy

July, 2019

Revised February 2020

Table of Contents

1 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.

PJM utilizes manufacturer models to ensure the performance of turbines and inverters is properly captured during the simulations performed for stability verification and, where applicable, for compliance with low voltage ride through requirements. Turbine manufacturers provide such models to their customers. The list of manufacturer models PJM has already validated is contained in Attachment B of Manual 14G. Manufacturer models may be updated from time to time, for various reasons such as to reflect changes to the control systems or to more accurately represent the capabilities turbines or inverters and controls which are currently available in the field. Additionally, as new turbine models are developed, turbine manufacturers provide such new models which must be used in the conduct of these studies. PJM needs adequate time to evaluate the new models in order to reduce delays to the System Impact Study process timeline for the Interconnection Customer as well as other Interconnection Customers in the study group. Therefore, PJM will require that any Interconnection Customer with a new manufacturer model must supply that model to PJM, along with a $10,000 fully refundable deposit, no later than three (3) months prior to the starting date of the System Impact Study (See Section 4.3 for starting dates) for the Interconnection Request which shall specify the use of the new model. The Interconnection Customer will be required to submit a completed dynamic model study request form (Attachment B-1 of Manual 14G) in order to document the request for the study.

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.

2 General

The Interconnection Customer (IC), has proposed a Solar generating facility located in Kankakee 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 September 30, 2020. This study does not imply a TO commitment to this in-service date.

Queue Number	**AE2-152**
Project Name	WILTON CENTER-LORETTO
State	None
County	Kankakee
Transmission Owner	ComEd
MFO	150
MWE	150
MWC	90
Fuel	Solar
Basecase Study Year	2022

2.1 Primary Point of Interconnection

Queue Position AE2-152, a 150 MW solar facility, proposes to interconnect with the ComEd transmission system by utilizing the same attachment facilities as AD1-100 and AE1-166.

2.2 Cost Summary

The AE2-152 project will be responsible for the following costs:

Description	Total Cost
Attachment Facilities	$200,000
Direct Connection Network Upgrade	$none
Non Direct Connection Network Upgrades	$none
Total Costs	$200,000

In addition, the AE2-152 project may be responsible for a contribution to the following costs

Description	Total Cost
System Upgrades	$124,000,120

Cost allocations for these upgrades will be provided in the System Impact Study Report.

3 Transmission Owner Scope of Work

4 Attachment Facilities

Addition of a 150 MW solar facility behind the meter will require review and possible upgrade of SCADA, Communication, relays and metering. The estimated cost is $200,000. ComEd would take approximately 18-months to review and possibly upgrade SCADA, Communication, relays and metering after the ISA / ICSA are signed.

5 Direct Connection Cost Estimate

None.

6 Non-Direct Connection Cost Estimate

None.

7 Schedule

ComEd would take approximately 18-months to review and possibly upgrade SCADA, Communication, relays and metering after the ISA / ICSA are signed.

8 Transmission Owner Analysis

One line redacted

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.

9 Interconnection Customer Requirements

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

To the extent that these Applicable Technical Requirements and Standards may conflict with the terms and conditions of the Tariff, the Tariff shall control.

ComEd distribution line drops to move customer cranes and heavy equipment is not part of PJM process. The customer should directly contact ComEd New Business Group to arrange for line drops, if needed.

10 Revenue Metering and SCADA 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.

11 Network Impacts for Primary Point of Interconnection

The Queue Project AE2-152 was evaluated as a 150.0 MW (Capacity 100.0 MW) injection utilizing the same attachment facilities as AD1-100 and AE1-166 in the ComEd area. Project AE2-152 was evaluated for compliance with applicable reliability planning criteria (PJM, NERC, NERC Regional Reliability Councils, and Transmission Owners). Project AE2-152 was studied with a commercial probability of 0.53. Potential network impacts were as follows:

Summer Peak Load Flow

12 Generation Deliverability

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

None

13 Multiple Facility Contingency

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

ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC|DC	MW IMPACT
2228409	270670	BRAIDWOOD; B	CE	270671	BRAIDWOOD; R	CE	1	COMED_P4_020-45-BT9-10_	breaker	1341.0	98.4	100.18	DC	23.9

11 Contribution to Previously Identified Overloads

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

ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC|DC	MW IMPACT
2228329	255104	17GREEN_ACRE	NIPS	270771	GREENACRE; T	CE	1	AEP_P4_#2978_05DUMONT 765_B	breaker	1091.0	111.85	111.95	DC	13.13
2228197	255112	17STJOHN	NIPS	270886	ST JOHN ; T	CE	1	AEP_P4_#2978_05DUMONT 765_B	breaker	1091.0	133.28	133.39	DC	14.48
2228198	255112	17STJOHN	NIPS	270886	ST JOHN ; T	CE	1	COMED_P4_023-65-BT2-3__	breaker	1091.0	133.11	133.21	DC	14.59
2228199	255112	17STJOHN	NIPS	270886	ST JOHN ; T	CE	1	COMED_P4_112-65-BT4-5__	breaker	1091.0	132.75	132.86	DC	14.59
2228200	255112	17STJOHN	NIPS	270886	ST JOHN ; T	CE	1	COMED_P4_112-65-BT3-4__	breaker	1091.0	132.75	132.85	DC	14.59
1539765	255113	17STILLWELL	NIPS	243219	05DUMONT	AEP	1	AEP_P4_#2978_05DUMONT 765_B	breaker	1409.0	173.01	173.14	DC	22.65
1540530	255113	17STILLWELL	NIPS	243219	05DUMONT	AEP	1	AEP_P1-2_#695A	single	1409.0	108.59	109.09	DC	15.56
1541382	270644	WILTON ;	CE	243206	05DUMONT	AEP	1	COMED_P7_345-L94507_B-S_+_345-L97008_R-S	tower	4105.0	106.99	107.08	DC	50.41
1541383	270644	WILTON ;	CE	243206	05DUMONT	AEP	1	COMED_P7_345-L6607__B-S_+_345-L97008_R-S	tower	4105.0	104.9	104.98	DC	50.47
2228402	270677	BURNHAM ;0R	CE	255109	17MUNSTER	NIPS	1	AEP_P4_#2978_05DUMONT 765_B	breaker	1441.0	100.67	100.78	DC	19.64
2228300	270728	E FRANKFO; B	CE	274750	CRETE EC ;BP	CE	1	AEP_P4_#2978_05DUMONT 765_B	breaker	1399.0	114.56	114.69	DC	20.46
2228301	270728	E FRANKFO; B	CE	274750	CRETE EC ;BP	CE	1	COMED_P4_023-65-BT2-3__	breaker	1399.0	114.11	114.25	DC	20.56
2228302	270728	E FRANKFO; B	CE	274750	CRETE EC ;BP	CE	1	COMED_P4_112-65-BT4-5__	breaker	1399.0	114.04	114.17	DC	20.56
2228303	270728	E FRANKFO; B	CE	274750	CRETE EC ;BP	CE	1	COMED_P4_112-65-BT3-4__	breaker	1399.0	114.03	114.16	DC	20.56
1540036	270771	GREENACRE; T	CE	243229	05OLIVE	AEP	1	AEP_P4_#2978_05DUMONT 765_B	breaker	971.0	125.66	125.77	DC	13.13
2228202	270886	ST JOHN ; T	CE	255104	17GREEN_ACRE	NIPS	1	AEP_P4_#2978_05DUMONT 765_B	breaker	1091.0	133.28	133.39	DC	14.48
2228203	270886	ST JOHN ; T	CE	255104	17GREEN_ACRE	NIPS	1	COMED_P4_023-65-BT2-3__	breaker	1091.0	133.11	133.21	DC	14.59

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
2228204	270886	ST JOHN ; T	CE	255104	17GREEN_ACRE	NIPS	1	COMED_P4_112-65-BT4-5__	breaker	1091.0	132.75	132.86	DC	14.59
2228205	270886	ST JOHN ; T	CE	255104	17GREEN_ACRE	NIPS	1	COMED_P4_112-65-BT3-4__	breaker	1091.0	132.75	132.85	DC	14.59
2228135	270926	WILTON ; B	CE	275232	WILTON ;3M	CE	1	COMED_P4_112-65-BT5-6__	breaker	1379.0	162.73	162.88	DC	27.88
2228137	270927	WILTON ; R	CE	275233	WILTON ;4M	CE	1	COMED_P4_112-65-BT2-3__	breaker	1379.0	162.44	162.6	DC	28.44
2228153	274750	CRETE EC ;BP	CE	255112	17STJOHN	NIPS	1	AEP_P4_#2978_05DUMONT 765_B	breaker	1399.0	159.74	159.86	DC	20.22
2228154	274750	CRETE EC ;BP	CE	255112	17STJOHN	NIPS	1	COMED_P4_023-65-BT2-3__	breaker	1399.0	159.3	159.41	DC	20.32
2228155	274750	CRETE EC ;BP	CE	255112	17STJOHN	NIPS	1	COMED_P4_112-65-BT4-5__	breaker	1399.0	159.25	159.36	DC	20.32
2228156	274750	CRETE EC ;BP	CE	255112	17STJOHN	NIPS	1	COMED_P4_112-65-BT3-4__	breaker	1399.0	159.24	159.36	DC	20.32
1539902	274804	UNIV PK N;RP	CE	243229	05OLIVE	AEP	1	AEP_P4_#2978_05DUMONT 765_B	breaker	971.0	138.38	138.54	DC	15.89
1539903	274804	UNIV PK N;RP	CE	243229	05OLIVE	AEP	1	COMED_P4_023-65-BT2-3__	breaker	971.0	137.25	137.41	DC	16.03
1539904	274804	UNIV PK N;RP	CE	243229	05OLIVE	AEP	1	COMED_P4_112-65-BT4-5__	breaker	971.0	137.25	137.41	DC	16.03
1539905	274804	UNIV PK N;RP	CE	243229	05OLIVE	AEP	1	COMED_P4_112-65-BT3-4__	breaker	971.0	137.25	137.41	DC	16.03
1539906	274804	UNIV PK N;RP	CE	243229	05OLIVE	AEP	1	COMED_P4_023-65-BT4-5__	breaker	971.0	137.24	137.4	DC	16.03
2228133	275232	WILTON ;3M	CE	270644	WILTON ;	CE	1	COMED_P4_112-65-BT5-6__	breaker	1379.0	162.73	162.88	DC	27.88
2228139	275233	WILTON ;4M	CE	270644	WILTON ;	CE	1	COMED_P4_112-65-BT2-3__	breaker	1379.0	162.44	162.6	DC	28.44
2228809	934720	AD1-100 TAP	CE	937030	AD2-137 TAP	CE	1	COMED_P7_345-L2001__B-S_+_345-L2003__R-S-B	tower	1846.0	145.12	147.48	DC	43.46
2228810	934720	AD1-100 TAP	CE	937030	AD2-137 TAP	CE	1	COMED_P7_345-L2001__B-S_+_345-L2003__R-S-A	tower	1846.0	143.73	146.1	DC	43.52
2228804	937030	AD2-137 TAP	CE	270926	WILTON ; B	CE	1	COMED_P7_345-L2001__B-S_+_345-L2003__R-S-B	tower	1846.0	153.07	155.43	DC	43.46
2228805	937030	AD2-137 TAP	CE	270926	WILTON ; B	CE	1	COMED_P7_345-L2001__B-S_+_345-L2003__R-S-A	tower	1846.0	151.27	153.64	DC	43.52

12 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	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
2228689	255104	17GREEN_ACRE	NIPS	270771	GREENACRE; T	CE	1	AEP_P1-2_#695A	operation	1091.0	110.81	110.91	DC	13.3
2228585	255112	17STJOHN	NIPS	270886	ST JOHN ; T	CE	1	AEP_P1-2_#695A	operation	1091.0	132.74	132.84	DC	14.59
1540524	255113	17STILLWELL	NIPS	243219	05DUMONT	AEP	1	AEP_P1-2_#695A	operation	1409.0	170.07	170.2	DC	23.34
1541058	270644	WILTON ;	CE	243206	05DUMONT	AEP	1	Base Case	operation	3555.0	105.46	105.53	DC	42.99
2228775	270677	BURNHAM ;0R	CE	255109	17MUNSTER	NIPS	1	AEP_P1-2_#695A	operation	1441.0	99.93	100.05	DC	19.79
2228670	270728	E FRANKFO; B	CE	274750	CRETE EC ;BP	CE	1	AEP_P1-2_#695A	operation	1399.0	113.99	114.12	DC	20.57
1540778	270771	GREENACRE; T	CE	243229	05OLIVE	AEP	1	AEP_P1-2_#695A	operation	971.0	124.48	124.6	DC	13.3
2228582	270886	ST JOHN ; T	CE	255104	17GREEN_ACRE	NIPS	1	AEP_P1-2_#695A	operation	1091.0	132.74	132.84	DC	14.59
2228767	270926	WILTON ; B	CE	275232	WILTON ;3M	CE	1	COMED_P1-2_765-L11216__-S	operation	1379.0	102.17	102.26	DC	17.52
2228741	270927	WILTON ; R	CE	275233	WILTON ;4M	CE	1	COMED_P1-2_765-L11216__-S	operation	1379.0	104.74	104.85	DC	18.33
2228540	274750	CRETE EC ;BP	CE	255112	17STJOHN	NIPS	1	AEP_P1-2_#695A	operation	1399.0	159.21	159.32	DC	20.33
2228541	274750	CRETE EC ;BP	CE	255112	17STJOHN	NIPS	1	Base Case	operation	1091.0	130.75	131.3	DC	13.21
1540684	274804	UNIV PK N;RP	CE	243229	05OLIVE	AEP	1	AEP_P1-2_#695A	operation	971.0	137.23	137.39	DC	16.03
2228520	934720	AD1-100 TAP	CE	937030	AD2-137 TAP	CE	1	COMED_P1-2_345-L8014___-S-B	operation	1528.0	163.18	165.46	DC	34.76
2228525	934720	AD1-100 TAP	CE	937030	AD2-137 TAP	CE	1	Base Case	operation	1364.0	146.98	149.5	DC	34.3
2228747	934730	AD1-100 TAP	CE	270670	BRAIDWOOD; B	CE	1	COMED_P1-2_345-L11212_B-S-A	operation	1528.0	99.17	104.71	DC	84.58
2228514	937030	AD2-137 TAP	CE	270926	WILTON ; B	CE	1	COMED_P1-2_345-L8014___-S-B	operation	1528.0	169.61	171.89	DC	34.76
2228519	937030	AD2-137 TAP	CE	270926	WILTON ; B	CE	1	Base Case	operation	1364.0	156.88	159.4	DC	34.3
2228769	940630	AE2-050 TAP	CE	270728	E FRANKFO; B	CE	1	COMED_P1-2_345-L11212_B-S-A	operation	1528.0	98.62	100.22	DC	24.37

13 System Reinforcements

ID	Index	Facility	Upgrade Description	Cost
2228302,2228303,2228300,2228301	7	E FRANKFO; B 345.0 kV - CRETE EC ;BP 345.0 kV Ckt 1	**COMED** **ce-014 (301) : L6607 SSTE rating is 1483 MVA. The post contingency flow for this event exceeds the rating therefore an upgrade is required. The upgrade will be to reconductor the line. A preliminary estimate is $10.3 M with an estimated construction timeline of 30 months. Upon completion of the upgrades the rating swill be 1334/1726/1837/2084 MVA (SN/SLTE/SSTE/SLD).** **Project Type : FAC** **Cost : $10,300,000** **Time Estimate : 30.0 Months**	$10,300,000
2228133	14	WILTON ;3M 345.0 kV - WILTON ; 765.0 kV Ckt 1	**COMED** **n5145 (292) : PJM Network Upgrade (n5145): Reconfigure Wilton 765kV bus thereby allowing for 765kV L11216 (currently on Bus 6) to be relocated to Bus 8. Along with this line relocation, installation of 2-765kV BT CBs (6-8 & 8-2).** **Project Type : CON** **Cost : $11,000,000** **Time Estimate : 36-40 Months**	$11,000,000
2228135	10	WILTON ; B 345.0 kV - WILTON ;3M 345.0 kV Ckt 1		
2228137	11	WILTON ; R 345.0 kV - WILTON ;4M 345.0 kV Ckt 1		
2228139	15	WILTON ;4M 345.0 kV - WILTON ; 765.0 kV Ckt 1		
2228402	6	BURNHAM ;0R 345.0 kV - 17MUNSTER 345.0 kV Ckt 1	**COMED** **ce-015 (302) : L17703 SSTE rating is 1251 MVA. The post contingency flow for this event exceeds the rating thererfore an upgrade is required. The upgrade will be to mitigate the sag on the line. A preliminary estimate for the upgrade is $2.7 M with a estimated construction timeline of 30 months. The new line rating upon completion of the upgrade will be 1201/1479/1568/1768 MVA (SN/SLTE/SSTE/SLD).** **Project Type : FAC** **Cost : $2,700,000** **Time Estimate : 30.0 Months** **NIPS** **NonPJMArea (759) : The external (i.e. Non-PJM) Transmission Owner, NIPS, will not evaluate this violation until the impact study phase.** **Project Type : FAC** **Cost : $0** **Time Estimate : N/A Months**	$2,700,000

ID	Index	Facility	Upgrade Description	Cost
1539902,1539903,1539904,1539905,1539906	13	UNIV PK N;RP 345.0 kV - 05OLIVE 345.0 kV Ckt 1	**AEP** **AEP_AE1_REF_r0001 (120) : A Sag Study will be required on the 40.64 miles of ACSR/PE 1414 62/19 conductor to mitigate the overload. The new ratings after sag study will be: S/N: 971 MVA, S/E: 1419 MVA, Depending on the sag study results, the cost for this upgrade is expected to be between $162,560 (no remediation required, just sag study) and $81.28 million (complete line Reconductor/rebuild). Time Estimate: a) Sag Study: 6-12 months b) Rebuild: The standard time required for construction differs from state to state. An approximate construction time would be 24 to 36 months after signing an interconnection agreement.** **Project Type : FAC** **Cost : $162,560** **Time Estimate : 6-12 Months** **AEP_AE1_REF_r0002 (121) : Replace 5 Jumpers (Sub cond 2156 ACSR 84/19 STD at Olive station, estimated cost : $175,000** **Project Type : FAC** **Cost : $175,000** **Time Estimate : 6-12 Months** **COMED** **ce-001 (278) : AEP owns limit on L97008. CE has a sag limit on 2 types of conductors as well. CE would need to address sag limit of 2 types of conductors to reach required rating. A preliminary estimate for sag mitigation is $21.4M with an estimated construction timeline of 30 months. Upon completion of the sag mitigation the new ratings will become 1091/1399/1483/1674 MVA SN/SLTE/SSTE/SLD.** **Project Type : FAC** **Cost : $21,400,000** **Time Estimate : 30.0 Months**	$21,737,560
2228805,2228804	17	AD2-137 TAP 345.0 kV - WILTON ; B 345.0 kV Ckt 1	**COMED** **ce-019 (308) : L11212 SLD & ALDR ratings are 2221 MVA & 2554MVA respectively. The post contingency flow for this event exceeds the rating therefore an upgrade is required. The upgrade will be to re-conductor the line, upgrade station conductor at both terminals, upgrade 2-345kV circuit breakers at Wilton Center. A preliminary estimate for the upgrades is $ 43.2 M with a estimated construction timeline of 36 months. Upon completion of the upgrades the rating swill be 1912/1912/1912/2390/2749 MVA (SN/SLTE/SSTE/SLD/ALDR).** **Project Type : FAC** **Cost : $43,200,000** **Time Estimate : 36.0 Months**	$43,200,000
2228809,2228810	16	AD1-100 TAP 345.0 kV - AD2-137 TAP 345.0 kV Ckt 1		

ID	Index	Facility	Upgrade Description	Cost
2228156,2228155,2228154,2228153	12	CRETE EC ;BP 345.0 kV - 17STJOHN 345.0 kV Ckt 1	**COMED** **ce-009 (293) : L94507 SSTE rating is 1483 MVA. The post contingency flow for this event exceeds the rating therefore an upgrade is required. The upgrade will be to reconductor the line, upgrade station conductor and upgrade a relay package. A preliminary cost estimate is $14.9 M with an estimated construction timeline of 30 months. Upon complation of this upgrade the new ratings will be 1754/2246/2297/2488 MVA (SN/SLTE/SSTE/SLD).** **Project Type : FAC** **Cost : $14,900,000** **Time Estimate : 30.0 Months** **NIPS** **NonPJMArea (759) : The external (i.e. Non-PJM) Transmission Owner, NIPS, will not evaluate this violation until the impact study phase.** **Project Type : FAC** **Cost : $0** **Time Estimate : N/A Months**	$14,900,000
2228329	2	17GREEN_ACRE 345.0 kV - GREENACRE; T 345.0 kV Ckt 1	**COMED** **ce-011 (297) : L6617 SSTE is 1134 MVA. The post contingency flow for this event exceeds the rating therefore an upgrade is required. The upgrade is sag mitgation of the line. A preliminary estimate is $3.1 M with a estimated construction timeline of 30 months. Upon completion of this upgrade the new ratings will be 1091/1399/1483/1674 MVA (SN/SLTE/SSTE/SLD).** **Project Type : FAC** **Cost : $3,100,000** **Time Estimate : 30.0 Months** **NIPS** **NonPJMArea (759) : The external (i.e. Non-PJM) Transmission Owner, NIPS, will not evaluate this violation until the impact study phase.** **Project Type : FAC** **Cost : $0** **Time Estimate : N/A Months**	$3,100,000
2228200,2228199,2228198,2228197	3	17STJOHN 345.0 kV - ST JOHN ; T 345.0 kV Ckt 1		
2228203,2228202,2228205,2228204	9	ST JOHN ; T 345.0 kV - 17GREEN_ACRE 345.0 kV Ckt 1		
1541383,1541382	5	WILTON ; 765.0 kV - 05DUMONT 765.0 kV Ckt 1	**AEP** **AEPI0001a (80) : Replace Dumont Circuit Breaker B1 [Breaker (3000A) Non oil - Dumont]** **Project Type : FAC** **Cost : $3,000,000** **Time Estimate : 12-18 Months** **COMED** **No upgrade is required. Line L11215. Line sag SLD= 4802 MVA, ALDR = 5522 MVA.**	$3,000,000

ID	Index	Facility	Upgrade Description	Cost
1540530,1539765	4	17STILLWELL 345.0 kV - 05DUMONT 345.0 kV Ckt 1	**AEP** **n4790 (150) : PJM Network Upgrade n4790. Replace Dumont substation 2500A wavetrap. The network project had a projected in-service date of 06/01/2019 and an estimated cost of $200,000.** **Cost : $0** **n5769.1 (151) : PJM Network Upgrade n5769.1. Perform engineering study for CT limits, and relay compliance trip limits at Dumont substation. The network project has a projected in-service date of 06/01/2021 and an estimated cost of $25,000.** **Cost : $0** **n5769.2 (152) : PJM Network Upgrade n5769.2. Replace two Dumont 3000A Non-Oil breakers. The network project has a projected in-service date of 06/01/2021 and an estimated cost of $2,000,000.** **Cost : $0** **n5769.3 (153) : PJM Network Upgrade n5769.3. Replace 11 jumpers/risers at Dumont substation. The network project has a projected in-service date of 06/01/2021 and an estimated cost of $275,000.** **Cost : $0** **AEP_AD2_REF_r0001 (154) : Replace 4 Dumont switches (3000 A). Estimated cost is $2,400,000.** **Cost : $0** **AEP_AD2_REF_r0002 (155) : An engineering study will need to be conducted to determine if the Dumont Relay Compliance Trip limit settings can be adjusted. Estimated Cost to perform setting changes: $25,000. New relay packages will be required if the settings cannot be adjusted, Estimated Cost for relay package: $600,000.** **Cost : $0** **For all AEP reinforcements on the Stillwell-Dumont 345 kV line:** **Cost allocation will be performed in the Impact Study phase. Queue Project AE2-049 presently does not receive cost allocation for this upgrade.** **Note 1: As changes to the interconnection process occur, such as prior queued projects withdrawing from the queue, reducing in size, etc, Queue Project AE2-049 could receive cost allocation.** **Note 2: Although Queue Project AE2-049 may not have cost responsibility for this upgrade, Queue Project AE2-049 may need this upgrade in-service to be deliverable to the PJM system. If Queue Project AE2-049 comes into service prior to completion of the upgrade, Queue Project AE2-049 will need an interim study.** **NIPS** **NonPJMArea (759) : The external (i.e. Non-PJM) Transmission Owner, NIPS, will not evaluate this violation until the impact study phase.** **Cost : $0**	$0

ID	Index	Facility	Upgrade Description	Cost
2228409	1	BRAIDWOOD; B 345.0 kV - BRAIDWOOD; R 345.0 kV Ckt 1	**COMED** No upgrade is required. Sta 20 BT 7-11 SSTE rating is 1837 MVA.	$0
1540036	8	GREENACRE; T 345.0 kV - 05OLIVE 345.0 kV Ckt 1	**AEP** **AEP_AE1_REF_r0005 (123)** : Replace ACSR/PE 1414 62/19 - Conductor Section 1. A Sag Study will be required on the 40.64 miles of conductor to mitigate the overload. The new ratings after sag study will be: S/N: 971 MVA, S/E: 1419 MVA, Depending on the sag study results, the cost for this upgrade is expected to be between $162,560 (no remediation required, just sag study) and $81.28 million (complete line Reconductor/rebuild). Time Estimate: a) Sag Study: 6-12 months b) Rebuild: The standard time required for construction differs from state to state. An approximate construction time would be 24 to 36 months after signing an interconnection agreement. **Project Type** : FAC **Cost** : $162,560 **Time Estimate** : 6-12 Months **COMED** **ce-002 (279)** : AEP owns limit on L6615. CE and NIPSCO have a sag limit as well that would need to be addressed. CE SSTE rating is 1134 MVA.A preliminary estimate for sag mitigation is $13.9M with an estimated construction timeline of 30 months. Upon completion of the sag mitigation the new ratings will become 1091/1399/1483/1674 MVA SN/SLTE/SSTE/SLD. **Project Type** : FAC **Cost** : $13,900,000 **Time Estimate** : 30.0 Months	$14,062,560
			TOTAL COST	**$124,000,120**

14 Flow Gate Details

The following appendices contain additional information about each flowgate presented in the body of the report. For each appendix, a description of the flowgate and its contingency was included for convenience. However, the intent of the appendix section is to provide more information on which projects/generators have contributions to the flowgate in question. Although this information is not used "as is" for cost allocation purposes, it can be used to gage other generators impact.It should be noted the generator contributions presented in the appendices sections are full contributions, whereas in the body of the report, those contributions take into consideration the commercial probability of each project.

14.1 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
2228409	270670	BRAIDWOOD; B	CE	270671	BRAIDWOOD; R	CE	1	COMED_P4_020-45-BT9-10_	breaker	1341.0	98.4	100.18	DC	23.9

Bus #	Bus	MW Impact
274654	BRAIDWOOD;1U	44.11
274660	LASCO STA;1U	21.73
274661	LASCO STA;2U	21.69
274847	GR RIDGE ;BU	0.44
274871	GR RIDGE ;2U	0.55
274890	CAYUG;1U E	8.36
274891	CAYUG;2U E	8.36
293061	N-015 E	14.32
294392	P-010 E	18.18
934721	AD1-100 C	20.13
934722	AD1-100 E	93.93
939351	AE1-166 C O1	12.43
939352	AE1-166 E O1	11.47
939401	AE1-172 C O1	4.31
939402	AE1-172 E O1	20.2
940101	AE1-252 C O1	7.35
940102	AE1-252 E O1	4.9
940631	AE2-050 C O1	25.16
940632	AE2-050 E O1	16.77
941551	AE2-152 C	15.93
941552	AE2-152 E	7.97
942881	AE2-307 C	46.12
942882	AE2-307 E	16.77
942913	AE2-310 BAT	5.09
CBM-N	CBM-N	0.09
CBM-S1	CBM-S1	1.46
CBM-S2	CBM-S2	0.47
CBM-W1	CBM-W1	1.19
CBM-W2	CBM-W2	16.86
CIN	CIN	1.17
CPLE	CPLE	0.17
G-007A	G-007A	0.29
IPL	IPL	0.65
LGEE	LGEE	0.2
MEC	MEC	3.78
NYISO	NYISO	0.38
VFT	VFT	0.79
WEC	WEC	0.13

14.2 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
2228329	255104	17GREEN_ACRE	NIPS	270771	GREENACRE; T	CE	1	AEP_P4_#2978_05DUMONT 765_B	breaker	1091.0	111.85	111.95	DC	13.13

Bus #	Bus	MW Impact
270859	PWR VTR EC;R	8.05
274722	S-055 E	7.51
274751	CRETE EC ;1U	1.53
274752	CRETE EC ;2U	1.53
274753	CRETE EC ;3U	1.53
274754	CRETE EC ;4U	1.53
274788	SE CHICAG;5U	3.6
274789	SE CHICAG;6U	3.6
274790	SE CHICAG;7U	3.6
274791	SE CHICAG;8U	3.6
274792	SE CHICAG;9U	3.65
274793	SE CHICAG;0U	3.65
274794	SE CHICAG;1U	3.65
274795	SE CHICAG;2U	3.65
274859	EASYR;U1 E	7.29
274860	EASYR;U2 E	7.29
274888	PILOT HIL;1E	12.38
274890	CAYUG;1U E	8.9
274891	CAYUG;2U E	8.9
275149	KEMPTON ;1E	12.38
290021	O50 E	12.96
290051	GSG-6; E	6.93
290108	LEEDK;1U E	16.12
293061	N-015 E	10.22
293516	O-009 E1	2.6
293517	O-009 E2	1.32
293518	O-009 E3	1.45
293644	O22 E1	7.23
293645	O22 E2	14.04
293715	O-029 E	6.46
293716	O-029 E	3.54
293717	O-029 E	3.26
294392	P-010 E	12.98
294763	P-046 E	6.22
295109	WESTBROOK E	3.71
295111	SUBLETTE E	1.72
910542	X3-005 E	0.52
914641	Y2-103	30.04
915011	Y3-013 1	2.5
915021	Y3-013 2	2.5
915031	Y3-013 3	2.5
916221	Z1-073 E	3.58

Bus #	Bus	MW Impact
916502	Z1-106 E1	0.84
916504	Z1-106 E2	0.84
916512	Z1-107 E	1.71
916522	Z1-108 E	1.66
918052	AA1-018 E	10.6
919221	AA1-146	11.65
919581	AA2-030	11.65
920272	AA2-123 E	1.63
924471	AB2-096	28.16
925161	AB2-173	2.08
925302	AB2-191 E	0.92
926311	AC1-109 1	1.27
926321	AC1-109 2	1.27
926331	AC1-110 1	1.26
926341	AC1-110 2	1.26
926351	AC1-111 1	0.51
926361	AC1-111 2	0.51
926371	AC1-111 3	0.51
926381	AC1-111 4	0.51
926391	AC1-111 5	0.51
926401	AC1-111 6	0.51
926431	AC1-114	1.58
926821	AC1-168 C O1	0.76
926822	AC1-168 E O1	5.07
927091	AC1-204 1	48.7
927101	AC1-204 2	48.66
927451	AC1-142A 1	2.83
927461	AC1-142A 2	2.83
927511	AC1-113 1	0.79
927521	AC1-113 2	0.79
927531	AC1-185 1	0.46
927541	AC1-185 2	0.46
927551	AC1-185 3	0.46
927561	AC1-185 4	0.46
927571	AC1-185 5	0.46
927581	AC1-185 6	0.46
927591	AC1-185 7	0.46
927601	AC1-185 8	0.46
930481	AB1-089	43.69
930501	AB1-091 O1	49.08
930741	AB1-122 1O1	47.51
930751	AB1-122 2O1	49.68
932881	AC2-115 1	1.58
932891	AC2-115 2	1.58
932921	AC2-116	0.55
933341	AC2-147 C	0.58
933342	AC2-147 E	0.94
933411	AC2-154 C	1.68
933412	AC2-154 E	2.74
933431	AC2-156 C O1	0.63
933432	AC2-156 E O1	1.04
933911	AD1-013 C	1.22

Bus #	Bus	MW Impact
933912	AD1-013 E	1.95
933931	AD1-016 C	0.62
933932	AD1-016 E	1.01
934101	AD1-039 1	4.66
934111	AD1-039 2	4.87
934401	AD1-064 C O1	2.13
934402	AD1-064 E O1	9.97
934431	AD1-067 C	0.09
934432	AD1-067 E	0.37
934651	AD1-096 C	0.59
934652	AD1-096 E	0.97
934701	AD1-098 C O1	4.56
934702	AD1-098 E O1	3.33
934721	AD1-100 C	12.92
934722	AD1-100 E	60.3
934871	AD1-116 C	0.62
934872	AD1-116 E	1.01
934971	AD1-129 C	0.6
934972	AD1-129 E	0.4
935001	AD1-133 C O1	13.71
935002	AD1-133 E O1	9.14
936291	AD2-038 C O1	1.54
936292	AD2-038 E O1	10.3
936371	AD2-047 C O1	1.5
936372	AD2-047 E O1	16.18
936461	AD2-060	1.77
936511	AD2-066 C O1	5.55
936512	AD2-066 E O1	3.7
936781	AD2-101 C	3.17
936782	AD2-101 E	14.82
936791	AD2-102 C	7.99
936792	AD2-102 E	7.67
937001	AD2-134 C	1.81
937002	AD2-134 E	7.49
937031	AD2-137 C O1	2.3
937032	AD2-137 E O1	10.79
937051	AD2-140 C O1	2.32
937052	AD2-140 E O1	10.85
937061	AD2-141 C O1	2.3
937062	AD2-141 E O1	10.86
937071	AD2-142 C O1	4.64
937072	AD2-142 E O1	21.7
937121	AD2-148 C O1	2.36
937122	AD2-148 E O1	11.03
937131	AD2-149 C O1	2.36
937132	AD2-149 E O1	11.03
937141	AD2-150 C O1	2.36
937142	AD2-150 E O1	11.03
937181	AD2-155 C O1	2.36
937182	AD2-155 E O1	11.03
937311	AD2-172 C	1.63
937312	AD2-172 E	2.26

Bus #	Bus	MW Impact
937321	AD2-175 C	10.97
937322	AD2-175 E	7.32
937331	AD2-176 C O1	4.88
937332	AD2-176 E O1	3.25
937401	AD2-194 1	5.24
937411	AD2-194 2	5.23
938012	AE1-002 E O1	4.63
938511	AE1-070 1	6.15
938521	AE1-070 2	5.63
938851	AE1-113 C O1	5.87
938852	AE1-113 E O1	18.44
938861	AE1-114 C O1	2.38
938862	AE1-114 E O1	9.11
939051	AE1-134 1	0.9
939061	AE1-134 2	0.9
939321	AE1-163 C O1	3.87
939322	AE1-163 E O1	23.76
939351	AE1-166 C O1	6.83
939352	AE1-166 E O1	6.3
939401	AE1-172 C O1	4.09
939402	AE1-172 E O1	19.14
939641	AE1-194 C	10.88
939642	AE1-194 E	72.79
939651	AE1-195 C	10.88
939652	AE1-195 E	72.79
939691	AE1-199	1.59
939701	AE1-201 C	1.33
939702	AE1-201 E	0.29
939732	AE1-204 E	0.2
939861	AE1-222 1	52.47
939871	AE1-222 2	54.86
939921	AE1-228 C O1	6.67
939922	AE1-228 E O1	4.44
940101	AE1-252 C O1	6.97
940102	AE1-252 E O1	4.65
940501	AE2-035 C	1.63
940502	AE2-035 E	2.26
940621	AE2-049 C O1	6.08
940622	AE2-049 E O1	4.05
940631	AE2-050 C O1	8.29
940632	AE2-050 E O1	5.53
940752	AE2-062 E	0.09
940762	AE2-063 E	0.09
940881	AE2-077 C	2.09
940882	AE2-077 E	3.42
941131	AE2-107 C	4.85
941132	AE2-107 E	3.23
941551	AE2-152 C	8.75
941552	AE2-152 E	4.38
941561	AE2-153 C O1	3.14
941562	AE2-153 E O1	14.71
942421	AE2-255 C O1	2.03

Bus #	Bus	MW Impact
942422	AE2-255 E O1	6.08
942651	AE2-281 C	0.55
942652	AE2-281 E	3.39
942881	AE2-307 C	15.2
942882	AE2-307 E	5.53
942911	AE2-310 C	5.9
942912	AE2-310 E	1.59
942991	AE2-321 C O1	5.44
942992	AE2-321 E O1	2.68
943121	AE2-341 C	8.47
943122	AE2-341 E	4.16
951721	J643	15.48
952581	J740 C	3.4
952582	J740 E	18.4
953871	J847	8.37
BLUEG	BLUEG	2.92
CANNELTON	CANNELTON	0.01
CARR	CARR	0.5
CATAWBA	CATAWBA	0.17
CBM-S1	CBM-S1	1.3
CBM-W1	CBM-W1	20.03
CBM-W2	CBM-W2	38.32
CHEOAH	CHEOAH	0.0
CIN	CIN	0.09
G-007	G-007	1.39
HAMLET	HAMLET	0.33
MEC	MEC	24.99
O-066	O-066	8.94
RENSSELAER	RENSSELAER	0.4
SANTEETLA	SANTEETLA	0.0
TRIMBLE	TRIMBLE	0.35
WEC	WEC	5.32
Z1-043	Z1-043	18.79

14.3 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
2228198	255112	17STJOHN	NIPS	270886	ST JOHN ; T	CE	1	COMED_P4_023-65-BT2-3__	breaker	1091.0	133.11	133.21	DC	14.59

Bus #	Bus	MW Impact
270859	PWR VTR EC;R	9.02
274654	BRAIDWOOD;1U	15.11
274655	BRAIDWOOD;2U	14.47
274661	LASCO STA;2U	13.96
274687	WILL CNTY;4U	6.37
274704	KENDALL ;1C	2.23
274705	KENDALL ;1S	1.49
274706	KENDALL ;2C	2.23
274707	KENDALL ;2S	1.49
274722	S-055 E	8.43
274751	CRETE EC ;1U	2.67
274752	CRETE EC ;2U	2.67
274753	CRETE EC ;3U	2.67
274754	CRETE EC ;4U	2.67
274859	EASYR;U1 E	8.15
274860	EASYR;U2 E	8.15
274861	TOP CROP ;1U	0.26
274862	TOP CROP ;2U	0.5
274888	PILOT HIL;1E	12.78
275149	KEMPTON ;1E	12.78
290021	O50 E	14.62
290051	GSG-6; E	7.76
290108	LEEDK;1U E	18.05
293061	N-015 E	11.59
293644	O22 E1	8.49
293645	O22 E2	16.47
294392	P-010 E	14.72
294763	P-046 E	6.96
295109	WESTBROOK E	4.15
295111	SUBLETTE E	1.92
914641	Y2-103	33.72
915011	Y3-013 1	2.81
915021	Y3-013 2	2.81
915031	Y3-013 3	2.81
916221	Z1-073 E	4.0
916502	Z1-106 E1	0.94
916504	Z1-106 E2	0.94
916512	Z1-107 E	1.85
916522	Z1-108 E	1.86
918052	AA1-018 E	11.61
920272	AA2-123 E	1.82

Bus #	Bus	MW Impact
924471	AB2-096	31.56
925302	AB2-191 E	1.03
926311	AC1-109 1	1.42
926321	AC1-109 2	1.42
926331	AC1-110 1	1.42
926341	AC1-110 2	1.42
926351	AC1-111 1	0.57
926361	AC1-111 2	0.57
926371	AC1-111 3	0.57
926381	AC1-111 4	0.57
926391	AC1-111 5	0.57
926401	AC1-111 6	0.57
926431	AC1-114	1.77
927091	AC1-204 1	55.08
927101	AC1-204 2	55.0
927451	AC1-142A 1	3.19
927461	AC1-142A 2	3.2
927511	AC1-113 1	0.89
927521	AC1-113 2	0.89
927531	AC1-185 1	0.51
927541	AC1-185 2	0.51
927551	AC1-185 3	0.51
927561	AC1-185 4	0.51
927571	AC1-185 5	0.51
927581	AC1-185 6	0.51
927591	AC1-185 7	0.51
927601	AC1-185 8	0.51
930481	AB1-089	48.93
930501	AB1-091 O1	50.49
930741	AB1-122 1O1	52.86
930751	AB1-122 2O1	56.2
932881	AC2-115 1	1.77
932891	AC2-115 2	1.77
932921	AC2-116	0.62
933341	AC2-147 C	0.65
933342	AC2-147 E	1.05
933411	AC2-154 C	1.73
933412	AC2-154 E	2.83
933431	AC2-156 C O1	0.71
933432	AC2-156 E O1	1.16
933911	AD1-013 C	1.37
933912	AD1-013 E	2.18
933931	AD1-016 C	0.69
933932	AD1-016 E	1.13
934101	AD1-039 1	5.18
934111	AD1-039 2	5.51
934401	AD1-064 C O1	2.39
934402	AD1-064 E O1	11.18
934431	AD1-067 C	0.1
934432	AD1-067 E	0.41
934651	AD1-096 C	0.66
934652	AD1-096 E	1.08

Bus #	Bus	MW Impact
934701	AD1-098 C O1	5.1
934702	AD1-098 E O1	3.73
934721	AD1-100 C	14.24
934722	AD1-100 E	66.44
934871	AD1-116 C	0.68
934872	AD1-116 E	1.1
934971	AD1-129 C	0.67
934972	AD1-129 E	0.45
935001	AD1-133 C O1	10.36
935002	AD1-133 E O1	6.91
936291	AD2-038 C O1	1.71
936292	AD2-038 E O1	11.42
936371	AD2-047 C O1	1.55
936372	AD2-047 E O1	16.71
936461	AD2-060	1.83
936511	AD2-066 C O1	6.18
936512	AD2-066 E O1	4.12
936781	AD2-101 C	3.08
936782	AD2-101 E	14.43
936791	AD2-102 C	8.94
936792	AD2-102 E	8.59
937001	AD2-134 C	2.03
937002	AD2-134 E	8.38
937031	AD2-137 C O1	2.44
937032	AD2-137 E O1	11.4
937051	AD2-140 C O1	2.43
937052	AD2-140 E O1	11.4
937061	AD2-141 C O1	2.42
937062	AD2-141 E O1	11.41
937071	AD2-142 C O1	4.87
937072	AD2-142 E O1	22.79
937121	AD2-148 C O1	2.42
937122	AD2-148 E O1	11.35
937131	AD2-149 C O1	2.42
937132	AD2-149 E O1	11.35
937141	AD2-150 C O1	2.42
937142	AD2-150 E O1	11.35
937181	AD2-155 C O1	2.42
937182	AD2-155 E O1	11.35
937311	AD2-172 C	1.83
937312	AD2-172 E	2.52
937321	AD2-175 C	11.29
937322	AD2-175 E	7.53
937331	AD2-176 C O1	5.47
937332	AD2-176 E O1	3.65
937401	AD2-194 1	5.92
937411	AD2-194 2	5.91
938012	AE1-002 E O1	4.89
938511	AE1-070 1	6.96
938521	AE1-070 2	6.36
938851	AE1-113 C O1	6.61
938852	AE1-113 E O1	20.79

Bus #	Bus	MW Impact
938861	AE1-114 C O1	2.67
938862	AE1-114 E O1	10.19
939321	AE1-163 C O1	4.29
939322	AE1-163 E O1	26.35
939351	AE1-166 C O1	7.59
939352	AE1-166 E O1	7.0
939401	AE1-172 C O1	4.46
939402	AE1-172 E O1	20.9
939641	AE1-194 C	18.94
939642	AE1-194 E	126.77
939651	AE1-195 C	18.94
939652	AE1-195 E	126.77
939691	AE1-199	1.77
939701	AE1-201 C	1.49
939702	AE1-201 E	0.33
939732	AE1-204 E	0.22
939861	AE1-222 1	58.38
939871	AE1-222 2	62.06
939921	AE1-228 C O1	7.46
939922	AE1-228 E O1	4.97
940101	AE1-252 C O1	7.61
940102	AE1-252 E O1	5.07
940501	AE2-035 C	1.83
940502	AE2-035 E	2.52
940621	AE2-049 C O1	6.33
940622	AE2-049 E O1	4.22
940631	AE2-050 C O1	9.85
940632	AE2-050 E O1	6.57
940752	AE2-062 E	0.1
940762	AE2-063 E	0.1
940881	AE2-077 C	2.34
940882	AE2-077 E	3.82
941131	AE2-107 C	5.43
941132	AE2-107 E	3.62
941551	AE2-152 C	9.73
941552	AE2-152 E	4.86
941561	AE2-153 C O1	3.5
941562	AE2-153 E O1	16.37
942421	AE2-255 C O1	2.28
942422	AE2-255 E O1	6.85
942651	AE2-281 C	0.61
942652	AE2-281 E	3.76
942881	AE2-307 C	18.06
942882	AE2-307 E	6.57
942911	AE2-310 C	6.14
942912	AE2-310 E	1.66
942991	AE2-321 C O1	6.09
942992	AE2-321 E O1	3.0
943121	AE2-341 C	9.48
943122	AE2-341 E	4.66
BLUEG	BLUEG	5.16
CALDERWOOD	CALDERWOOD	0.1

Bus #	Bus	MW Impact
CANNELTON	CANNELTON	0.11
CARR	CARR	0.57
CATAWBA	CATAWBA	0.24
CBM-S1	CBM-S1	0.68
CBM-W1	CBM-W1	20.04
CBM-W2	CBM-W2	36.78
CHEOAH	CHEOAH	0.1
CHILHOWEE	CHILHOWEE	0.03
ELMERSMITH	ELMERSMITH	0.15
G-007	G-007	1.6
GIBSON	GIBSON	0.07
HAMLET	HAMLET	0.45
MEC	MEC	27.48
O-066	O-066	10.25
RENSSELAER	RENSSELAER	0.45
SANTEETLA	SANTEETLA	0.03
TRIMBLE	TRIMBLE	0.6
WEC	WEC	5.96
Z1-043	Z1-043	20.93

14.4 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
1539765	255113	17STILLWELL	NIPS	243219	05DUMONT	AEP	1	AEP_P4_#2978_05DUMONT 765_B	breaker	1409.0	173.01	173.14	DC	22.65

Bus #	Bus	MW Impact
270859	PWR VTR EC;R	13.9
274722	S-055 E	12.93
274724	RIVER EC ;11	3.77
274788	SE CHICAG;5U	7.41
274789	SE CHICAG;6U	7.41
274790	SE CHICAG;7U	7.41
274791	SE CHICAG;8U	7.41
274792	SE CHICAG;9U	7.31
274793	SE CHICAG;0U	7.31
274794	SE CHICAG;1U	7.31
274795	SE CHICAG;2U	7.31
274832	U4-027	12.43
274859	EASYR;U1 E	12.65
274860	EASYR;U2 E	12.65
274888	PILOT HIL;1E	22.27
274890	CAYUG;1U E	15.74
274891	CAYUG;2U E	15.74
275149	KEMPTON ;1E	22.27
290021	O50 E	22.28
290051	GSG-6; E	12.01
290108	LEEDK;1U E	27.88
293061	N-015 E	17.51
293516	O-009 E1	10.43
293517	O-009 E2	5.3
293518	O-009 E3	5.84
293644	O22 E1	11.93
293645	O22 E2	23.17
293715	O-029 E	11.25
293716	O-029 E	6.17
293717	O-029 E	5.67
293771	O-035 E	7.35
294392	P-010 E	22.24
294763	P-046 E	10.78
295109	WESTBROOK E	6.43
295111	SUBLETTE E	2.98
910542	X3-005 E	1.0
914641	Y2-103	51.72
915011	Y3-013 1	4.31
915021	Y3-013 2	4.31
915031	Y3-013 3	4.31
916211	Z1-072 E	5.56
916221	Z1-073 E	6.19

Bus #	Bus	MW Impact
916502	Z1-106 E1	1.45
916504	Z1-106 E2	1.45
916512	Z1-107 E	3.03
916522	Z1-108 E	2.86
918052	AA1-018 E	18.71
919221	AA1-146	20.25
919581	AA2-030	20.25
920272	AA2-123 E	2.81
924471	AB2-096	48.66
925161	AB2-173	3.61
925302	AB2-191 E	1.59
926311	AC1-109 1	2.19
926321	AC1-109 2	2.19
926331	AC1-110 1	2.18
926341	AC1-110 2	2.18
926351	AC1-111 1	0.87
926361	AC1-111 2	0.87
926371	AC1-111 3	0.87
926381	AC1-111 4	0.87
926391	AC1-111 5	0.87
926401	AC1-111 6	0.87
926431	AC1-114	2.74
926821	AC1-168 C O1	1.32
926822	AC1-168 E O1	8.84
927091	AC1-204 1	83.15
927101	AC1-204 2	83.12
927201	AC1-214 C O1	2.36
927202	AC1-214 E O1	7.5
927451	AC1-142A 1	4.83
927461	AC1-142A 2	4.83
927511	AC1-113 1	1.37
927521	AC1-113 2	1.37
927531	AC1-185 1	0.79
927541	AC1-185 2	0.79
927551	AC1-185 3	0.79
927561	AC1-185 4	0.79
927571	AC1-185 5	0.79
927581	AC1-185 6	0.79
927591	AC1-185 7	0.79
927601	AC1-185 8	0.79
930481	AB1-089	75.56
930501	AB1-091 O1	88.11
930741	AB1-122 1O1	82.31
930751	AB1-122 2O1	84.84
932881	AC2-115 1	2.74
932891	AC2-115 2	2.74
932921	AC2-116	0.96
932931	AC2-117	5.8
933341	AC2-147 C	1.0
933342	AC2-147 E	1.64
933411	AC2-154 C	3.02
933412	AC2-154 E	4.93

Bus #	Bus	MW Impact
933431	AC2-156 C O1	1.1
933432	AC2-156 E O1	1.79
933911	AD1-013 C	2.11
933912	AD1-013 E	3.38
933931	AD1-016 C	1.07
933932	AD1-016 E	1.74
934101	AD1-039 1	8.07
934111	AD1-039 2	8.31
934401	AD1-064 C O1	3.68
934402	AD1-064 E O1	17.23
934431	AD1-067 C	0.15
934432	AD1-067 E	0.63
934651	AD1-096 C	1.03
934652	AD1-096 E	1.67
934701	AD1-098 C O1	7.9
934702	AD1-098 E O1	5.77
934721	AD1-100 C	22.42
934722	AD1-100 E	104.62
934871	AD1-116 C	1.09
934872	AD1-116 E	1.78
934971	AD1-129 C	1.04
934972	AD1-129 E	0.69
935001	AD1-133 C O1	24.03
935002	AD1-133 E O1	16.02
936291	AD2-038 C O1	2.69
936292	AD2-038 E O1	18.0
936371	AD2-047 C O1	2.7
936372	AD2-047 E O1	29.11
936461	AD2-060	3.18
936511	AD2-066 C O1	9.66
936512	AD2-066 E O1	6.44
936781	AD2-101 C	5.89
936782	AD2-101 E	27.59
936791	AD2-102 C	13.83
936792	AD2-102 E	13.28
937001	AD2-134 C	3.14
937002	AD2-134 E	12.96
937031	AD2-137 C O1	4.07
937032	AD2-137 E O1	19.06
937051	AD2-140 C O1	4.11
937052	AD2-140 E O1	19.23
937061	AD2-141 C O1	4.08
937062	AD2-141 E O1	19.25
937071	AD2-142 C O1	8.21
937072	AD2-142 E O1	38.45
937121	AD2-148 C O1	4.23
937122	AD2-148 E O1	19.8
937131	AD2-149 C O1	4.23
937132	AD2-149 E O1	19.8
937141	AD2-150 C O1	4.23
937142	AD2-150 E O1	19.8
937181	AD2-155 C O1	4.23

Bus #	Bus	MW Impact
937182	AD2-155 E O1	19.8
937311	AD2-172 C	2.83
937312	AD2-172 E	3.91
937321	AD2-175 C	19.7
937322	AD2-175 E	13.13
937331	AD2-176 C O1	8.42
937332	AD2-176 E O1	5.62
937401	AD2-194 1	8.94
937411	AD2-194 2	8.94
937531	AD2-214 C	5.09
937532	AD2-214 E	2.39
938012	AE1-002 E O1	8.17
938511	AE1-070 1	10.51
938521	AE1-070 2	9.61
938851	AE1-113 C O1	10.08
938852	AE1-113 E O1	31.69
938861	AE1-114 C O1	4.14
938862	AE1-114 E O1	15.81
939051	AE1-134 1	1.57
939061	AE1-134 2	1.57
939321	AE1-163 C O1	6.76
939322	AE1-163 E O1	41.51
939351	AE1-166 C O1	11.78
939352	AE1-166 E O1	10.87
939401	AE1-172 C O1	7.2
939402	AE1-172 E O1	33.69
939641	AE1-194 C	10.23
939642	AE1-194 E	68.46
939651	AE1-195 C	10.23
939652	AE1-195 E	68.46
939681	AE1-198 C O1	23.4
939682	AE1-198 E O1	19.88
939691	AE1-199	2.74
939701	AE1-201 C	2.3
939702	AE1-201 E	0.51
939732	AE1-204 E	0.34
939861	AE1-222 1	90.89
939871	AE1-222 2	93.69
939921	AE1-228 C O1	11.54
939922	AE1-228 E O1	7.7
940101	AE1-252 C O1	12.26
940102	AE1-252 E O1	8.18
940501	AE2-035 C	2.83
940502	AE2-035 E	3.91
940621	AE2-049 C O1	10.89
940622	AE2-049 E O1	7.26
940631	AE2-050 C O1	13.62
940632	AE2-050 E O1	9.08
940752	AE2-062 E	0.15
940762	AE2-063 E	0.15
940881	AE2-077 C	3.62
940882	AE2-077 E	5.91

Bus #	Bus	MW Impact
941131	AE2-107 C	8.39
941132	AE2-107 E	5.59
941551	AE2-152 C	15.1
941552	AE2-152 E	7.55
941561	AE2-153 C O1	5.42
941562	AE2-153 E O1	25.36
942421	AE2-255 C O1	3.48
942422	AE2-255 E O1	10.44
942651	AE2-281 C	0.97
942652	AE2-281 E	5.93
942881	AE2-307 C	24.97
942882	AE2-307 E	9.08
942911	AE2-310 C	10.57
942912	AE2-310 E	2.86
942991	AE2-321 C O1	9.39
942992	AE2-321 E O1	4.62
943121	AE2-341 C	14.63
943122	AE2-341 E	7.18
951721	J643	25.68
952581	J740 C	4.29
952582	J740 E	23.24
953871	J847	13.08
954751	J351	434.36
BLUEG	BLUEG	1.17
CARR	CARR	0.91
CATAWBA	CATAWBA	0.23
CBM-S1	CBM-S1	3.86
CBM-W1	CBM-W1	35.93
CBM-W2	CBM-W2	81.92
CIN	CIN	3.25
G-007	G-007	2.53
HAMLET	HAMLET	0.49
IPL	IPL	1.09
MEC	MEC	44.6
O-066	O-066	16.24
RENSSELAER	RENSSELAER	0.72
TRIMBLE	TRIMBLE	0.18
WEC	WEC	9.18
Z1-043	Z1-043	32.87

14.5 Index 5

ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC|DC	MW IMPACT
1541382	270644	WILTON ;	CE	243206	05DUMONT	AEP	1	COMED_P7_345-L94507_B-S_+_345-L97008_R-S	tower	4105.0	106.99	107.08	DC	50.41

Bus #	Bus	MW Impact
270859	PWR VTR EC;R	32.1
274722	S-055 E	29.48
274772	LINCOLN ;3U	3.73
274773	LINCOLN ;4U	3.73
274774	LINCOLN ;5U	3.73
274775	LINCOLN ;6U	3.73
274776	LINCOLN ;7U	3.73
274777	LINCOLN ;8U	3.73
274832	U4-027	27.98
274859	EASYR;U1 E	29.06
274860	EASYR;U2 E	29.06
274888	PILOT HIL;1E	44.2
274890	CAYUG;1U E	35.98
274891	CAYUG;2U E	35.98
275149	KEMPTON ;1E	44.2
290021	O50 E	49.12
290051	GSG-6; E	28.02
290108	LEEDK;1U E	65.42
293061	N-015 E	41.13
293516	O-009 E1	23.73
293517	O-009 E2	12.05
293518	O-009 E3	13.28
293644	O22 E1	25.25
293645	O22 E2	49.01
293715	O-029 E	25.71
293716	O-029 E	14.1
293717	O-029 E	12.96
293771	O-035 E	16.45
294392	P-010 E	52.23
294763	P-046 E	24.82
295109	WESTBROOK E	15.0
295111	SUBLETTE E	6.85
296125	R-030 C3	6.6
296128	R-030 E3	26.39
296271	R-030 C2	6.52
296272	R-030 E2	26.07
296308	R-030 C1	6.52
296309	R-030 E1	26.07
910542	X3-005 E	1.57
914641	Y2-103	117.92

Bus #	Bus	MW Impact
915011	Y3-013 1	9.83
915021	Y3-013 2	9.83
915031	Y3-013 3	9.83
916211	Z1-072 E	12.45
916221	Z1-073 E	14.46
916502	Z1-106 E1	3.4
916504	Z1-106 E2	3.4
916512	Z1-107 E	6.51
916522	Z1-108 E	6.61
918052	AA1-018 E	40.31
919221	AA1-146	46.38
919581	AA2-030	46.38
920272	AA2-123 E	6.49
924471	AB2-096	112.35
925161	AB2-173	8.27
925302	AB2-191 E	3.71
926311	AC1-109 1	5.2
926321	AC1-109 2	5.2
926331	AC1-110 1	5.11
926341	AC1-110 2	5.11
926351	AC1-111 1	2.06
926361	AC1-111 2	2.06
926371	AC1-111 3	2.06
926381	AC1-111 4	2.06
926391	AC1-111 5	2.06
926401	AC1-111 6	2.06
926431	AC1-114	6.31
926821	AC1-168 C O1	2.97
926822	AC1-168 E O1	19.96
927091	AC1-204 1	183.86
927101	AC1-204 2	183.9
927201	AC1-214 C O1	5.28
927202	AC1-214 E O1	16.78
927451	AC1-142A 1	10.58
927461	AC1-142A 2	10.58
927511	AC1-113 1	3.15
927521	AC1-113 2	3.15
927531	AC1-185 1	1.82
927541	AC1-185 2	1.82
927551	AC1-185 3	1.82
927561	AC1-185 4	1.82
927571	AC1-185 5	1.82
927581	AC1-185 6	1.82
927591	AC1-185 7	1.82
927601	AC1-185 8	1.82
930481	AB1-089	174.75
930501	AB1-091 O1	173.56
930741	AB1-122 1O1	194.52
930751	AB1-122 2O1	188.25
932881	AC2-115 1	6.31
932891	AC2-115 2	6.31
932921	AC2-116	2.21

Bus #	Bus	MW Impact
932931	AC2-117	14.91
933341	AC2-147 C	2.31
933342	AC2-147 E	3.76
933411	AC2-154 C	6.0
933412	AC2-154 E	9.79
933431	AC2-156 C O1	2.63
933432	AC2-156 E O1	4.29
933911	AD1-013 C	4.93
933912	AD1-013 E	7.88
933931	AD1-016 C	2.47
933932	AD1-016 E	4.02
934101	AD1-039 1	19.06
934111	AD1-039 2	18.45
934401	AD1-064 C O1	8.54
934402	AD1-064 E O1	39.99
934431	AD1-067 C	0.35
934432	AD1-067 E	1.48
934651	AD1-096 C	2.36
934652	AD1-096 E	3.85
934701	AD1-098 C O1	18.42
934702	AD1-098 E O1	13.45
934721	AD1-100 C	50.93
934722	AD1-100 E	237.66
934871	AD1-116 C	2.35
934872	AD1-116 E	3.83
934971	AD1-129 C	2.4
934972	AD1-129 E	1.6
935001	AD1-133 C O1	55.82
935002	AD1-133 E O1	37.21
936291	AD2-038 C O1	5.84
936292	AD2-038 E O1	39.1
936371	AD2-047 C O1	5.37
936372	AD2-047 E O1	57.77
936461	AD2-060	6.31
936511	AD2-066 C O1	21.42
936512	AD2-066 E O1	14.28
936781	AD2-101 C	10.65
936782	AD2-101 E	49.86
936791	AD2-102 C	31.81
936792	AD2-102 E	30.56
937001	AD2-134 C	7.32
937002	AD2-134 E	30.26
937031	AD2-137 C O1	10.24
937032	AD2-137 E O1	47.92
937051	AD2-140 C O1	10.48
937052	AD2-140 E O1	49.08
937061	AD2-141 C O1	10.42
937062	AD2-141 E O1	49.14
937071	AD2-142 C O1	20.97
937072	AD2-142 E O1	98.16
937121	AD2-148 C O1	8.33
937122	AD2-148 E O1	39.01

Bus #	Bus	MW Impact
937131	AD2-149 C O1	8.33
937132	AD2-149 E O1	39.01
937141	AD2-150 C O1	8.33
937142	AD2-150 E O1	39.01
937181	AD2-155 C O1	8.33
937182	AD2-155 E O1	39.01
937311	AD2-172 C	6.51
937312	AD2-172 E	9.0
937321	AD2-175 C	38.82
937322	AD2-175 E	25.88
937331	AD2-176 C O1	19.48
937332	AD2-176 E O1	12.98
937401	AD2-194 1	19.77
937411	AD2-194 2	19.78
937531	AD2-214 C	11.57
937532	AD2-214 E	5.45
938012	AE1-002 E O1	20.55
938511	AE1-070 1	23.23
938521	AE1-070 2	21.26
938851	AE1-113 C O1	22.23
938852	AE1-113 E O1	69.88
938861	AE1-114 C O1	9.51
938862	AE1-114 E O1	36.36
939051	AE1-134 1	3.6
939061	AE1-134 2	3.6
939321	AE1-163 C O1	14.68
939322	AE1-163 E O1	90.19
939351	AE1-166 C O1	26.21
939352	AE1-166 E O1	24.2
939401	AE1-172 C O1	16.53
939402	AE1-172 E O1	77.39
939641	AE1-194 C	21.06
939642	AE1-194 E	140.92
939651	AE1-195 C	21.06
939652	AE1-195 E	140.92
939691	AE1-199	6.41
939701	AE1-201 C	5.32
939702	AE1-201 E	1.17
939732	AE1-204 E	0.77
939741	AE1-205 C O1	23.23
939742	AE1-205 E O1	32.07
939861	AE1-222 1	214.82
939871	AE1-222 2	207.89
939921	AE1-228 C O1	26.96
939922	AE1-228 E O1	17.97
940101	AE1-252 C O1	28.18
940102	AE1-252 E O1	18.78
940501	AE2-035 C	6.51
940502	AE2-035 E	9.0
940621	AE2-049 C O1	21.85
940622	AE2-049 E O1	14.57
940631	AE2-050 C O1	30.19

Bus #	Bus	MW Impact
940632	AE2-050 E O1	20.13
940752	AE2-062 E	0.33
940762	AE2-063 E	0.33
940881	AE2-077 C	8.36
940882	AE2-077 E	13.63
941131	AE2-107 C	19.71
941132	AE2-107 E	13.14
941551	AE2-152 C	33.61
941552	AE2-152 E	16.8
941561	AE2-153 C O1	11.6
941562	AE2-153 E O1	54.33
942421	AE2-255 C O1	7.68
942422	AE2-255 E O1	23.03
942651	AE2-281 C	2.1
942652	AE2-281 E	12.89
942881	AE2-307 C	55.35
942882	AE2-307 E	20.13
942911	AE2-310 C	21.22
942912	AE2-310 E	5.73
942991	AE2-321 C O1	21.71
942992	AE2-321 E O1	10.69
943121	AE2-341 C	35.31
943122	AE2-341 E	17.34
BLUEG	BLUEG	17.18
CALDERWOOD	CALDERWOOD	0.27
CANNELTON	CANNELTON	0.28
CARR	CARR	2.0
CATAWBA	CATAWBA	0.82
CBM-S1	CBM-S1	3.15
CBM-W1	CBM-W1	76.97
CBM-W2	CBM-W2	139.71
CHEOAH	CHEOAH	0.28
CHILHOWEE	CHILHOWEE	0.08
ELMERSMITH	ELMERSMITH	0.31
G-007	G-007	5.61
GIBSON	GIBSON	0.1
HAMLET	HAMLET	1.54
MEC	MEC	97.87
O-066	O-066	35.97
RENSSELAER	RENSSELAER	1.58
SANTEETLA	SANTEETLA	0.09
TRIMBLE	TRIMBLE	2.03
WEC	WEC	20.89
Z1-043	Z1-043	73.67

14.6 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
2228402	270677	BURNHAM ;0R	CE	255109	17MUNSTER	NIPS	1	AEP_P4_#2978_05DUMONT 765_B	breaker	1441.0	100.67	100.78	DC	19.64

Bus #	Bus	MW Impact
270859	PWR VTR EC;R	11.72
274722	S-055 E	10.94
274723	RIVER EC ;12	3.43
274792	SE CHICAG;9U	6.24
274793	SE CHICAG;0U	6.24
274794	SE CHICAG;1U	6.24
274795	SE CHICAG;2U	6.24
274826	FISK ;BP	1.82
274832	U4-027	10.29
274859	EASYR;U1 E	10.59
274860	EASYR;U2 E	10.59
274888	PILOT HIL;1E	20.45
274890	CAYUG;1U E	13.37
274891	CAYUG;2U E	13.37
275149	KEMPTON ;1E	20.45
290021	O50 E	18.53
290051	GSG-6; E	10.11
290108	LEEDK;1U E	23.53
293061	N-015 E	14.79
293516	O-009 E1	8.68
293517	O-009 E2	4.41
293518	O-009 E3	4.86
293644	O22 E1	9.25
293645	O22 E2	17.95
293715	O-029 E	9.38
293716	O-029 E	5.14
293717	O-029 E	4.73
293771	O-035 E	6.07
294392	P-010 E	18.79
294763	P-046 E	9.05
295109	WESTBROOK E	5.41
295111	SUBLETTE E	2.49
296125	R-030 C3	3.42
296128	R-030 E3	13.68
296271	R-030 C2	3.38
296272	R-030 E2	13.51
296308	R-030 C1	3.38
296309	R-030 E1	13.51
910541	X3-005 C	0.07
910542	X3-005 E	0.91
914641	Y2-103	43.74
915011	Y3-013 1	3.65

Bus #	Bus	MW Impact
915021	Y3-013 2	3.65
915031	Y3-013 3	3.65
916211	Z1-072 E	4.6
916221	Z1-073 E	5.22
916502	Z1-106 E1	1.23
916504	Z1-106 E2	1.23
916512	Z1-107 E	2.58
916522	Z1-108 E	2.42
917502	Z2-087 E	7.1
918052	AA1-018 E	16.78
919221	AA1-146	16.9
919581	AA2-030	16.9
920272	AA2-123 E	2.37
924471	AB2-096	41.03
925161	AB2-173	3.01
925302	AB2-191 E	1.34
926311	AC1-109 1	1.86
926321	AC1-109 2	1.86
926331	AC1-110 1	1.85
926341	AC1-110 2	1.85
926351	AC1-111 1	0.74
926361	AC1-111 2	0.74
926371	AC1-111 3	0.74
926381	AC1-111 4	0.74
926391	AC1-111 5	0.74
926401	AC1-111 6	0.74
926431	AC1-114	2.3
926821	AC1-168 C O1	1.09
926822	AC1-168 E O1	7.34
927091	AC1-204 1	69.96
927101	AC1-204 2	70.02
927201	AC1-214 C O1	1.95
927202	AC1-214 E O1	6.2
927451	AC1-142A 1	4.09
927461	AC1-142A 2	4.08
927511	AC1-113 1	1.15
927521	AC1-113 2	1.15
927531	AC1-185 1	0.66
927541	AC1-185 2	0.66
927551	AC1-185 3	0.66
927561	AC1-185 4	0.66
927571	AC1-185 5	0.66
927581	AC1-185 6	0.66
927591	AC1-185 7	0.66
927601	AC1-185 8	0.66
930481	AB1-089	63.61
930501	AB1-091 O1	82.15
930741	AB1-122 1O1	69.9
930751	AB1-122 2O1	70.86
932881	AC2-115 1	2.3
932891	AC2-115 2	2.3
932921	AC2-116	0.81

Bus #	Bus	MW Impact
932931	AC2-117	5.29
933341	AC2-147 C	0.84
933342	AC2-147 E	1.37
933411	AC2-154 C	2.77
933412	AC2-154 E	4.53
933431	AC2-156 C O1	0.93
933432	AC2-156 E O1	1.52
933911	AD1-013 C	1.78
933912	AD1-013 E	2.84
933931	AD1-016 C	0.9
933932	AD1-016 E	1.47
934101	AD1-039 1	6.85
934111	AD1-039 2	6.94
934401	AD1-064 C O1	3.1
934402	AD1-064 E O1	14.53
934431	AD1-067 C	0.13
934432	AD1-067 E	0.53
934651	AD1-096 C	0.86
934652	AD1-096 E	1.4
934701	AD1-098 C O1	6.65
934702	AD1-098 E O1	4.86
934721	AD1-100 C	19.51
934722	AD1-100 E	91.04
934871	AD1-116 C	0.98
934872	AD1-116 E	1.59
934971	AD1-129 C	0.88
934972	AD1-129 E	0.58
935001	AD1-133 C O1	20.26
935002	AD1-133 E O1	13.5
936291	AD2-038 C O1	2.32
936292	AD2-038 E O1	15.55
936371	AD2-047 C O1	2.48
936372	AD2-047 E O1	26.73
936461	AD2-060	2.92
936511	AD2-066 C O1	8.12
936512	AD2-066 E O1	5.42
936781	AD2-101 C	4.74
936782	AD2-101 E	22.18
936791	AD2-102 C	11.62
936792	AD2-102 E	11.17
937001	AD2-134 C	2.64
937002	AD2-134 E	10.91
937031	AD2-137 C O1	3.66
937032	AD2-137 E O1	17.14
937051	AD2-140 C O1	3.71
937052	AD2-140 E O1	17.39
937061	AD2-141 C O1	3.69
937062	AD2-141 E O1	17.41
937071	AD2-142 C O1	7.43
937072	AD2-142 E O1	34.78
937121	AD2-148 C O1	3.93
937122	AD2-148 E O1	18.4

Bus #	Bus	MW Impact
937131	AD2-149 C O1	3.93
937132	AD2-149 E O1	18.4
937141	AD2-150 C O1	3.93
937142	AD2-150 E O1	18.4
937181	AD2-155 C O1	3.93
937182	AD2-155 E O1	18.4
937311	AD2-172 C	2.38
937312	AD2-172 E	3.28
937321	AD2-175 C	18.31
937322	AD2-175 E	12.21
937331	AD2-176 C O1	7.11
937332	AD2-176 E O1	4.74
937401	AD2-194 1	7.52
937411	AD2-194 2	7.53
937531	AD2-214 C	4.23
937532	AD2-214 E	1.99
938012	AE1-002 E O1	7.35
938511	AE1-070 1	8.84
938521	AE1-070 2	8.09
938851	AE1-113 C O1	8.39
938852	AE1-113 E O1	26.36
938861	AE1-114 C O1	3.47
938862	AE1-114 E O1	13.25
939051	AE1-134 1	1.31
939061	AE1-134 2	1.31
939321	AE1-163 C O1	5.84
939322	AE1-163 E O1	35.87
939351	AE1-166 C O1	10.21
939352	AE1-166 E O1	9.43
939401	AE1-172 C O1	6.17
939402	AE1-172 E O1	28.89
939691	AE1-199	2.31
939701	AE1-201 C	1.94
939702	AE1-201 E	0.43
939732	AE1-204 E	0.28
939741	AE1-205 C O1	8.55
939742	AE1-205 E O1	11.81
939861	AE1-222 1	77.19
939871	AE1-222 2	78.26
939921	AE1-228 C O1	9.72
939922	AE1-228 E O1	6.48
940101	AE1-252 C O1	10.52
940102	AE1-252 E O1	7.01
940501	AE2-035 C	2.38
940502	AE2-035 E	3.28
940621	AE2-049 C O1	9.92
940622	AE2-049 E O1	6.61
940631	AE2-050 C O1	11.06
940632	AE2-050 E O1	7.37
940752	AE2-062 E	0.13
940762	AE2-063 E	0.13
940881	AE2-077 C	3.05

Bus #	Bus	MW Impact
940882	AE2-077 E	4.97
941131	AE2-107 C	7.08
941132	AE2-107 E	4.72
941551	AE2-152 C	13.1
941552	AE2-152 E	6.55
941561	AE2-153 C O1	4.72
941562	AE2-153 E O1	22.12
942111	AE2-223 C	1.98
942112	AE2-223 E	13.26
942421	AE2-255 C O1	2.9
942422	AE2-255 E O1	8.69
942651	AE2-281 C	0.83
942652	AE2-281 E	5.12
942881	AE2-307 C	20.28
942882	AE2-307 E	7.37
942911	AE2-310 C	9.63
942912	AE2-310 E	2.6
942991	AE2-321 C O1	7.92
942992	AE2-321 E O1	3.9
943121	AE2-341 C	12.44
943122	AE2-341 E	6.11
BLUEG	BLUEG	5.58
CALDERWOOD	CALDERWOOD	0.07
CANNELTON	CANNELTON	0.09
CARR	CARR	0.74
CATAWBA	CATAWBA	0.28
CBM-S1	CBM-S1	1.35
CBM-W1	CBM-W1	23.91
CBM-W2	CBM-W2	51.55
CHEOAH	CHEOAH	0.07
CHILHOWEE	CHILHOWEE	0.02
ELMERSMITH	ELMERSMITH	0.09
G-007	G-007	2.05
GIBSON	GIBSON	0.04
HAMLET	HAMLET	0.53
MEC	MEC	35.99
O-066	O-066	13.18
RENSSELAER	RENSSELAER	0.58
SANTEETLA	SANTEETLA	0.02
TRIMBLE	TRIMBLE	0.66
WEC	WEC	7.73
Z1-043	Z1-043	27.21

14.7 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
2228303	270728	E FRANKFO; B	CE	274750	CRETE EC ;BP	CE	1	COMED_P4_112-65-BT3-4__	breaker	1399.0	114.03	114.16	DC	20.56

Bus #	Bus	MW Impact
270859	PWR VTR EC;R	12.76
274654	BRAIDWOOD;1U	21.73
274655	BRAIDWOOD;2U	20.79
274660	LASCO STA;1U	19.85
274661	LASCO STA;2U	19.89
274675	JOLIET 29;7U	8.97
274676	JOLIET 29;8U	8.97
274687	WILL CNTY;4U	9.06
274704	KENDALL ;1C	3.19
274705	KENDALL ;1S	2.13
274706	KENDALL ;2C	3.19
274707	KENDALL ;2S	2.13
274722	S-055 E	11.95
274736	ELWOOD EC;9P	2.57
274859	EASYR;U1 E	11.54
274860	EASYR;U2 E	11.54
274861	TOP CROP ;1U	0.38
274862	TOP CROP ;2U	0.73
274888	PILOT HIL;1E	17.16
275149	KEMPTON ;1E	17.16
290021	O50 E	20.84
290051	GSG-6; E	10.97
290108	LEEDK;1U E	25.51
293061	N-015 E	16.48
293516	O-009 E1	6.05
293517	O-009 E2	3.07
293518	O-009 E3	3.39
293644	O22 E1	12.37
293645	O22 E2	24.01
293715	O-029 E	10.23
293716	O-029 E	5.61
293717	O-029 E	5.15
294392	P-010 E	20.93
294763	P-046 E	9.86
295109	WESTBROOK E	5.87
295111	SUBLETTE E	2.72
914641	Y2-103	47.78
915011	Y3-013 1	3.98
915021	Y3-013 2	3.98
915031	Y3-013 3	3.98
916221	Z1-073 E	5.66

Bus #	Bus	MW Impact
916502	Z1-106 E1	1.33
916504	Z1-106 E2	1.33
916512	Z1-107 E	2.56
916522	Z1-108 E	2.63
918052	AA1-018 E	16.24
919221	AA1-146	18.43
919581	AA2-030	18.43
920272	AA2-123 E	2.58
924471	AB2-096	44.68
925161	AB2-173	3.29
925302	AB2-191 E	1.45
926311	AC1-109 1	2.0
926321	AC1-109 2	2.0
926331	AC1-110 1	2.01
926341	AC1-110 2	2.01
926351	AC1-111 1	0.8
926361	AC1-111 2	0.8
926371	AC1-111 3	0.8
926381	AC1-111 4	0.8
926391	AC1-111 5	0.8
926401	AC1-111 6	0.8
926431	AC1-114	2.51
926821	AC1-168 C O1	1.2
926822	AC1-168 E O1	8.04
927091	AC1-204 1	78.55
927101	AC1-204 2	78.42
927451	AC1-142A 1	4.55
927461	AC1-142A 2	4.55
927511	AC1-113 1	1.25
927521	AC1-113 2	1.25
927531	AC1-185 1	0.72
927541	AC1-185 2	0.72
927551	AC1-185 3	0.72
927561	AC1-185 4	0.72
927571	AC1-185 5	0.72
927581	AC1-185 6	0.72
927591	AC1-185 7	0.72
927601	AC1-185 8	0.72
930481	AB1-089	69.28
930501	AB1-091 O1	67.62
930741	AB1-122 1O1	74.91
930751	AB1-122 2O1	80.1
932881	AC2-115 1	2.51
932891	AC2-115 2	2.51
932921	AC2-116	0.88
933341	AC2-147 C	0.92
933342	AC2-147 E	1.49
933411	AC2-154 C	2.33
933412	AC2-154 E	3.8
933431	AC2-156 C O1	1.0
933432	AC2-156 E O1	1.63
933911	AD1-013 C	1.93

Bus #	Bus	MW Impact
933912	AD1-013 E	3.09
933931	AD1-016 C	0.98
933932	AD1-016 E	1.6
934101	AD1-039 1	7.34
934111	AD1-039 2	7.85
934401	AD1-064 C O1	3.38
934402	AD1-064 E O1	15.82
934431	AD1-067 C	0.14
934432	AD1-067 E	0.58
934651	AD1-096 C	0.94
934652	AD1-096 E	1.53
934701	AD1-098 C O1	7.22
934702	AD1-098 E O1	5.27
934721	AD1-100 C	19.99
934722	AD1-100 E	93.28
934871	AD1-116 C	0.95
934872	AD1-116 E	1.54
934971	AD1-129 C	0.95
934972	AD1-129 E	0.64
935001	AD1-133 C O1	21.37
935002	AD1-133 E O1	14.25
936291	AD2-038 C O1	2.41
936292	AD2-038 E O1	16.13
936371	AD2-047 C O1	2.08
936372	AD2-047 E O1	22.44
936461	AD2-060	2.45
936511	AD2-066 C O1	8.73
936512	AD2-066 E O1	5.82
936791	AD2-102 C	12.66
936792	AD2-102 E	12.17
937001	AD2-134 C	2.87
937002	AD2-134 E	11.85
937031	AD2-137 C O1	3.34
937032	AD2-137 E O1	15.65
937051	AD2-140 C O1	3.33
937052	AD2-140 E O1	15.57
937061	AD2-141 C O1	3.31
937062	AD2-141 E O1	15.59
937071	AD2-142 C O1	6.65
937072	AD2-142 E O1	31.14
937121	AD2-148 C O1	3.25
937122	AD2-148 E O1	15.2
937131	AD2-149 C O1	3.25
937132	AD2-149 E O1	15.2
937141	AD2-150 C O1	3.25
937142	AD2-150 E O1	15.2
937181	AD2-155 C O1	3.25
937182	AD2-155 E O1	15.2
937311	AD2-172 C	2.59
937312	AD2-172 E	3.57
937321	AD2-175 C	15.13
937322	AD2-175 E	10.08

Bus #	Bus	MW Impact
937331	AD2-176 C O1	7.74
937332	AD2-176 E O1	5.16
937401	AD2-194 1	8.45
937411	AD2-194 2	8.43
938012	AE1-002 E O1	6.71
938511	AE1-070 1	9.93
938521	AE1-070 2	9.07
938851	AE1-113 C O1	9.43
938852	AE1-113 E O1	29.64
938861	AE1-114 C O1	3.78
938862	AE1-114 E O1	14.44
939051	AE1-134 1	1.43
939061	AE1-134 2	1.43
939321	AE1-163 C O1	6.06
939322	AE1-163 E O1	37.2
939351	AE1-166 C O1	10.69
939352	AE1-166 E O1	9.87
939401	AE1-172 C O1	6.26
939402	AE1-172 E O1	29.29
939691	AE1-199	2.51
939701	AE1-201 C	2.12
939702	AE1-201 E	0.46
939732	AE1-204 E	0.31
939861	AE1-222 1	82.73
939871	AE1-222 2	88.46
939921	AE1-228 C O1	10.55
939922	AE1-228 E O1	7.03
940101	AE1-252 C O1	10.67
940102	AE1-252 E O1	7.11
940501	AE2-035 C	2.59
940502	AE2-035 E	3.57
940621	AE2-049 C O1	8.55
940622	AE2-049 E O1	5.7
940631	AE2-050 C O1	14.4
940632	AE2-050 E O1	9.6
940752	AE2-062 E	0.14
940762	AE2-063 E	0.14
940881	AE2-077 C	3.32
940882	AE2-077 E	5.42
941131	AE2-107 C	7.68
941132	AE2-107 E	5.12
941551	AE2-152 C	13.71
941552	AE2-152 E	6.85
941561	AE2-153 C O1	4.92
941562	AE2-153 E O1	23.04
942421	AE2-255 C O1	3.26
942422	AE2-255 E O1	9.77
942651	AE2-281 C	0.87
942652	AE2-281 E	5.31
942881	AE2-307 C	26.41
942882	AE2-307 E	9.6
942911	AE2-310 C	8.3

Bus #	Bus	MW Impact
942912	AE2-310 E	2.24
942991	AE2-321 C O1	8.63
942992	AE2-321 E O1	4.25
943121	AE2-341 C	13.36
943122	AE2-341 E	6.56
BLUEG	BLUEG	6.81
CALDERWOOD	CALDERWOOD	0.08
CANNELTON	CANNELTON	0.14
CARR	CARR	0.75
CATAWBA	CATAWBA	0.29
CBM-S1	CBM-S1	1.26
CBM-W1	CBM-W1	26.85
CBM-W2	CBM-W2	53.48
CHEOAH	CHEOAH	0.09
CHILHOWEE	CHILHOWEE	0.03
ELMERSMITH	ELMERSMITH	0.17
G-007	G-007	2.1
GIBSON	GIBSON	0.08
HAMLET	HAMLET	0.56
MEC	MEC	39.06
O-066	O-066	13.46
RENSSELAER	RENSSELAER	0.59
SANTEETLA	SANTEETLA	0.03
TRIMBLE	TRIMBLE	0.8
WEC	WEC	8.44
Z1-043	Z1-043	29.69

14.8 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
1540036	270771	GREENACRE ; T	CE	243229	05OLIVE	AEP	1	AEP_P4_#2978_05DUMONT 765_B	breaker	971.0	125.66	125.77	DC	13.13

Bus #	Bus	MW Impact
270859	PWR VTR EC;R	8.05
274722	S-055 E	7.51
274751	CRETE EC ;1U	1.53
274752	CRETE EC ;2U	1.53
274753	CRETE EC ;3U	1.53
274754	CRETE EC ;4U	1.53
274788	SE CHICAG;5U	3.6
274789	SE CHICAG;6U	3.6
274790	SE CHICAG;7U	3.6
274791	SE CHICAG;8U	3.6
274792	SE CHICAG;9U	3.65
274793	SE CHICAG;0U	3.65
274794	SE CHICAG;1U	3.65
274795	SE CHICAG;2U	3.65
274859	EASYR;U1 E	7.29
274860	EASYR;U2 E	7.29
274888	PILOT HIL;1E	12.38
274890	CAYUG;1U E	8.9
274891	CAYUG;2U E	8.9
275149	KEMPTON ;1E	12.38
290021	O50 E	12.96
290051	GSG-6; E	6.93
290108	LEEDK;1U E	16.12
293061	N-015 E	10.22
293516	O-009 E1	2.6
293517	O-009 E2	1.32
293518	O-009 E3	1.45
293644	O22 E1	7.23
293645	O22 E2	14.04
293715	O-029 E	6.46
293716	O-029 E	3.54
293717	O-029 E	3.26
294392	P-010 E	12.98
294763	P-046 E	6.22
295109	WESTBROOK E	3.71
295111	SUBLETTE E	1.72
910542	X3-005 E	0.52
914641	Y2-103	30.04
915011	Y3-013 1	2.5
915021	Y3-013 2	2.5
915031	Y3-013 3	2.5
916221	Z1-073 E	3.58

Bus #	Bus	MW Impact
916502	Z1-106 E1	0.84
916504	Z1-106 E2	0.84
916512	Z1-107 E	1.71
916522	Z1-108 E	1.66
918052	AA1-018 E	10.6
919221	AA1-146	11.65
919581	AA2-030	11.65
920272	AA2-123 E	1.63
924471	AB2-096	28.16
925161	AB2-173	2.08
925302	AB2-191 E	0.92
926311	AC1-109 1	1.27
926321	AC1-109 2	1.27
926331	AC1-110 1	1.26
926341	AC1-110 2	1.26
926351	AC1-111 1	0.51
926361	AC1-111 2	0.51
926371	AC1-111 3	0.51
926381	AC1-111 4	0.51
926391	AC1-111 5	0.51
926401	AC1-111 6	0.51
926431	AC1-114	1.58
926821	AC1-168 C O1	0.76
926822	AC1-168 E O1	5.07
927091	AC1-204 1	48.7
927101	AC1-204 2	48.66
927451	AC1-142A 1	2.83
927461	AC1-142A 2	2.83
927511	AC1-113 1	0.79
927521	AC1-113 2	0.79
927531	AC1-185 1	0.46
927541	AC1-185 2	0.46
927551	AC1-185 3	0.46
927561	AC1-185 4	0.46
927571	AC1-185 5	0.46
927581	AC1-185 6	0.46
927591	AC1-185 7	0.46
927601	AC1-185 8	0.46
930481	AB1-089	43.69
930501	AB1-091 O1	49.08
930741	AB1-122 1O1	47.51
930751	AB1-122 2O1	49.68
932881	AC2-115 1	1.58
932891	AC2-115 2	1.58
932921	AC2-116	0.55
933341	AC2-147 C	0.58
933342	AC2-147 E	0.94
933411	AC2-154 C	1.68
933412	AC2-154 E	2.74
933431	AC2-156 C O1	0.63
933432	AC2-156 E O1	1.04
933911	AD1-013 C	1.22

Bus #	Bus	MW Impact
933912	AD1-013 E	1.95
933931	AD1-016 C	0.62
933932	AD1-016 E	1.01
934101	AD1-039 1	4.66
934111	AD1-039 2	4.87
934401	AD1-064 C O1	2.13
934402	AD1-064 E O1	9.97
934431	AD1-067 C	0.09
934432	AD1-067 E	0.37
934651	AD1-096 C	0.59
934652	AD1-096 E	0.97
934701	AD1-098 C O1	4.56
934702	AD1-098 E O1	3.33
934721	AD1-100 C	12.92
934722	AD1-100 E	60.3
934871	AD1-116 C	0.62
934872	AD1-116 E	1.01
934971	AD1-129 C	0.6
934972	AD1-129 E	0.4
935001	AD1-133 C O1	13.71
935002	AD1-133 E O1	9.14
936291	AD2-038 C O1	1.54
936292	AD2-038 E O1	10.3
936371	AD2-047 C O1	1.5
936372	AD2-047 E O1	16.18
936461	AD2-060	1.77
936511	AD2-066 C O1	5.55
936512	AD2-066 E O1	3.7
936781	AD2-101 C	3.17
936782	AD2-101 E	14.82
936791	AD2-102 C	7.99
936792	AD2-102 E	7.67
937001	AD2-134 C	1.81
937002	AD2-134 E	7.49
937031	AD2-137 C O1	2.3
937032	AD2-137 E O1	10.79
937051	AD2-140 C O1	2.32
937052	AD2-140 E O1	10.85
937061	AD2-141 C O1	2.3
937062	AD2-141 E O1	10.86
937071	AD2-142 C O1	4.64
937072	AD2-142 E O1	21.7
937121	AD2-148 C O1	2.36
937122	AD2-148 E O1	11.03
937131	AD2-149 C O1	2.36
937132	AD2-149 E O1	11.03
937141	AD2-150 C O1	2.36
937142	AD2-150 E O1	11.03
937181	AD2-155 C O1	2.36
937182	AD2-155 E O1	11.03
937311	AD2-172 C	1.63
937312	AD2-172 E	2.26

Bus #	Bus	MW Impact
937321	AD2-175 C	10.97
937322	AD2-175 E	7.32
937331	AD2-176 C O1	4.88
937332	AD2-176 E O1	3.25
937401	AD2-194 1	5.24
937411	AD2-194 2	5.23
938012	AE1-002 E O1	4.63
938511	AE1-070 1	6.15
938521	AE1-070 2	5.63
938851	AE1-113 C O1	5.87
938852	AE1-113 E O1	18.44
938861	AE1-114 C O1	2.38
938862	AE1-114 E O1	9.11
939051	AE1-134 1	0.9
939061	AE1-134 2	0.9
939321	AE1-163 C O1	3.87
939322	AE1-163 E O1	23.76
939351	AE1-166 C O1	6.83
939352	AE1-166 E O1	6.3
939401	AE1-172 C O1	4.09
939402	AE1-172 E O1	19.14
939641	AE1-194 C	10.88
939642	AE1-194 E	72.79
939651	AE1-195 C	10.88
939652	AE1-195 E	72.79
939691	AE1-199	1.59
939701	AE1-201 C	1.33
939702	AE1-201 E	0.29
939732	AE1-204 E	0.2
939861	AE1-222 1	52.47
939871	AE1-222 2	54.86
939921	AE1-228 C O1	6.67
939922	AE1-228 E O1	4.44
940101	AE1-252 C O1	6.97
940102	AE1-252 E O1	4.65
940501	AE2-035 C	1.63
940502	AE2-035 E	2.26
940621	AE2-049 C O1	6.08
940622	AE2-049 E O1	4.05
940631	AE2-050 C O1	8.29
940632	AE2-050 E O1	5.53
940752	AE2-062 E	0.09
940762	AE2-063 E	0.09
940881	AE2-077 C	2.09
940882	AE2-077 E	3.42
941131	AE2-107 C	4.85
941132	AE2-107 E	3.23
941551	AE2-152 C	8.75
941552	AE2-152 E	4.38
941561	AE2-153 C O1	3.14
941562	AE2-153 E O1	14.71
942421	AE2-255 C O1	2.03

Bus #	Bus	MW Impact
942422	AE2-255 E O1	6.08
942651	AE2-281 C	0.55
942652	AE2-281 E	3.39
942881	AE2-307 C	15.2
942882	AE2-307 E	5.53
942911	AE2-310 C	5.9
942912	AE2-310 E	1.59
942991	AE2-321 C O1	5.44
942992	AE2-321 E O1	2.68
943121	AE2-341 C	8.47
943122	AE2-341 E	4.16
951721	J643	15.48
952581	J740 C	3.4
952582	J740 E	18.4
953871	J847	8.37
BLUEG	BLUEG	2.92
CANNELTON	CANNELTON	0.01
CARR	CARR	0.5
CATAWBA	CATAWBA	0.17
CBM-S1	CBM-S1	1.3
CBM-W1	CBM-W1	20.03
CBM-W2	CBM-W2	38.32
CHEOAH	CHEOAH	0.0
CIN	CIN	0.09
G-007	G-007	1.39
HAMLET	HAMLET	0.33
MEC	MEC	24.99
O-066	O-066	8.94
RENSSELAER	RENSSELAER	0.4
SANTEETLA	SANTEETLA	0.0
TRIMBLE	TRIMBLE	0.35
WEC	WEC	5.32
Z1-043	Z1-043	18.79

14.9 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
2228203	270886	ST JOHN ; T	CE	255104	17GREEN_ACRE	NIPS	1	COMED_P4_023-65-BT2-3__	breaker	1091.0	133.11	133.21	DC	14.59

Bus #	Bus	MW Impact
270859	PWR VTR EC;R	9.02
274654	BRAIDWOOD;1U	15.11
274655	BRAIDWOOD;2U	14.47
274661	LASCO STA;2U	13.96
274687	WILL CNTY;4U	6.37
274704	KENDALL ;1C	2.23
274705	KENDALL ;1S	1.49
274706	KENDALL ;2C	2.23
274707	KENDALL ;2S	1.49
274722	S-055 E	8.43
274751	CRETE EC ;1U	2.67
274752	CRETE EC ;2U	2.67
274753	CRETE EC ;3U	2.67
274754	CRETE EC ;4U	2.67
274859	EASYR;U1 E	8.15
274860	EASYR;U2 E	8.15
274861	TOP CROP ;1U	0.26
274862	TOP CROP ;2U	0.5
274888	PILOT HIL;1E	12.78
275149	KEMPTON ;1E	12.78
290021	O50 E	14.62
290051	GSG-6; E	7.76
290108	LEEDK;1U E	18.05
293061	N-015 E	11.59
293644	O22 E1	8.49
293645	O22 E2	16.47
294392	P-010 E	14.72
294763	P-046 E	6.96
295109	WESTBROOK E	4.15
295111	SUBLETTE E	1.92
914641	Y2-103	33.72
915011	Y3-013 1	2.81
915021	Y3-013 2	2.81
915031	Y3-013 3	2.81
916221	Z1-073 E	4.0
916502	Z1-106 E1	0.94
916504	Z1-106 E2	0.94
916512	Z1-107 E	1.85
916522	Z1-108 E	1.86
918052	AA1-018 E	11.61
920272	AA2-123 E	1.82

Bus #	Bus	MW Impact
924471	AB2-096	31.56
925302	AB2-191 E	1.03
926311	AC1-109 1	1.42
926321	AC1-109 2	1.42
926331	AC1-110 1	1.42
926341	AC1-110 2	1.42
926351	AC1-111 1	0.57
926361	AC1-111 2	0.57
926371	AC1-111 3	0.57
926381	AC1-111 4	0.57
926391	AC1-111 5	0.57
926401	AC1-111 6	0.57
926431	AC1-114	1.77
927091	AC1-204 1	55.08
927101	AC1-204 2	55.0
927451	AC1-142A 1	3.19
927461	AC1-142A 2	3.2
927511	AC1-113 1	0.89
927521	AC1-113 2	0.89
927531	AC1-185 1	0.51
927541	AC1-185 2	0.51
927551	AC1-185 3	0.51
927561	AC1-185 4	0.51
927571	AC1-185 5	0.51
927581	AC1-185 6	0.51
927591	AC1-185 7	0.51
927601	AC1-185 8	0.51
930481	AB1-089	48.93
930501	AB1-091 O1	50.49
930741	AB1-122 1O1	52.86
930751	AB1-122 2O1	56.2
932881	AC2-115 1	1.77
932891	AC2-115 2	1.77
932921	AC2-116	0.62
933341	AC2-147 C	0.65
933342	AC2-147 E	1.05
933411	AC2-154 C	1.73
933412	AC2-154 E	2.83
933431	AC2-156 C O1	0.71
933432	AC2-156 E O1	1.16
933911	AD1-013 C	1.37
933912	AD1-013 E	2.18
933931	AD1-016 C	0.69
933932	AD1-016 E	1.13
934101	AD1-039 1	5.18
934111	AD1-039 2	5.51
934401	AD1-064 C O1	2.39
934402	AD1-064 E O1	11.18
934431	AD1-067 C	0.1
934432	AD1-067 E	0.41
934651	AD1-096 C	0.66
934652	AD1-096 E	1.08

Bus #	Bus	MW Impact
934701	AD1-098 C O1	5.1
934702	AD1-098 E O1	3.73
934721	AD1-100 C	14.24
934722	AD1-100 E	66.44
934871	AD1-116 C	0.68
934872	AD1-116 E	1.1
934971	AD1-129 C	0.67
934972	AD1-129 E	0.45
935001	AD1-133 C O1	10.36
935002	AD1-133 E O1	6.91
936291	AD2-038 C O1	1.71
936292	AD2-038 E O1	11.42
936371	AD2-047 C O1	1.55
936372	AD2-047 E O1	16.71
936461	AD2-060	1.83
936511	AD2-066 C O1	6.18
936512	AD2-066 E O1	4.12
936781	AD2-101 C	3.08
936782	AD2-101 E	14.43
936791	AD2-102 C	8.94
936792	AD2-102 E	8.59
937001	AD2-134 C	2.03
937002	AD2-134 E	8.38
937031	AD2-137 C O1	2.44
937032	AD2-137 E O1	11.4
937051	AD2-140 C O1	2.43
937052	AD2-140 E O1	11.4
937061	AD2-141 C O1	2.42
937062	AD2-141 E O1	11.41
937071	AD2-142 C O1	4.87
937072	AD2-142 E O1	22.79
937121	AD2-148 C O1	2.42
937122	AD2-148 E O1	11.35
937131	AD2-149 C O1	2.42
937132	AD2-149 E O1	11.35
937141	AD2-150 C O1	2.42
937142	AD2-150 E O1	11.35
937181	AD2-155 C O1	2.42
937182	AD2-155 E O1	11.35
937311	AD2-172 C	1.83
937312	AD2-172 E	2.52
937321	AD2-175 C	11.29
937322	AD2-175 E	7.53
937331	AD2-176 C O1	5.47
937332	AD2-176 E O1	3.65
937401	AD2-194 1	5.92
937411	AD2-194 2	5.91
938012	AE1-002 E O1	4.89
938511	AE1-070 1	6.96
938521	AE1-070 2	6.36
938851	AE1-113 C O1	6.61
938852	AE1-113 E O1	20.79

Bus #	Bus	MW Impact
938861	AE1-114 C O1	2.67
938862	AE1-114 E O1	10.19
939321	AE1-163 C O1	4.29
939322	AE1-163 E O1	26.35
939351	AE1-166 C O1	7.59
939352	AE1-166 E O1	7.0
939401	AE1-172 C O1	4.46
939402	AE1-172 E O1	20.9
939641	AE1-194 C	18.94
939642	AE1-194 E	126.77
939651	AE1-195 C	18.94
939652	AE1-195 E	126.77
939691	AE1-199	1.77
939701	AE1-201 C	1.49
939702	AE1-201 E	0.33
939732	AE1-204 E	0.22
939861	AE1-222 1	58.38
939871	AE1-222 2	62.06
939921	AE1-228 C O1	7.46
939922	AE1-228 E O1	4.97
940101	AE1-252 C O1	7.61
940102	AE1-252 E O1	5.07
940501	AE2-035 C	1.83
940502	AE2-035 E	2.52
940621	AE2-049 C O1	6.33
940622	AE2-049 E O1	4.22
940631	AE2-050 C O1	9.85
940632	AE2-050 E O1	6.57
940752	AE2-062 E	0.1
940762	AE2-063 E	0.1
940881	AE2-077 C	2.34
940882	AE2-077 E	3.82
941131	AE2-107 C	5.43
941132	AE2-107 E	3.62
941551	AE2-152 C	9.73
941552	AE2-152 E	4.86
941561	AE2-153 C O1	3.5
941562	AE2-153 E O1	16.37
942421	AE2-255 C O1	2.28
942422	AE2-255 E O1	6.85
942651	AE2-281 C	0.61
942652	AE2-281 E	3.76
942881	AE2-307 C	18.06
942882	AE2-307 E	6.57
942911	AE2-310 C	6.14
942912	AE2-310 E	1.66
942991	AE2-321 C O1	6.09
942992	AE2-321 E O1	3.0
943121	AE2-341 C	9.48
943122	AE2-341 E	4.66
BLUEG	BLUEG	5.16
CALDERWOOD	CALDERWOOD	0.1

Bus #	Bus	MW Impact
CANNELTON	CANNELTON	0.11
CARR	CARR	0.57
CATAWBA	CATAWBA	0.24
CBM-S1	CBM-S1	0.68
CBM-W1	CBM-W1	20.04
CBM-W2	CBM-W2	36.78
CHEOAH	CHEOAH	0.1
CHILHOWEE	CHILHOWEE	0.03
ELMERSMITH	ELMERSMITH	0.15
G-007	G-007	1.6
GIBSON	GIBSON	0.07
HAMLET	HAMLET	0.45
MEC	MEC	27.48
O-066	O-066	10.25
RENSSELAER	RENSSELAER	0.45
SANTEETLA	SANTEETLA	0.03
TRIMBLE	TRIMBLE	0.6
WEC	WEC	5.96
Z1-043	Z1-043	20.93

14.10 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
2228135	270926	WILTON ; B	CE	275232	WILTON ;3M	CE	1	COMED_P4_112-65-BT5-6__	breaker	1379.0	162.73	162.88	DC	27.88

Bus #	Bus	MW Impact
270859	PWR VTR EC;R	14.78
274722	S-055 E	13.73
274772	LINCOLN ;3U	2.67
274773	LINCOLN ;4U	2.67
274774	LINCOLN ;5U	2.67
274775	LINCOLN ;6U	2.67
274776	LINCOLN ;7U	2.67
274777	LINCOLN ;8U	2.67
274788	SE CHICAG;5U	5.44
274789	SE CHICAG;6U	5.44
274790	SE CHICAG;7U	5.44
274791	SE CHICAG;8U	5.44
274792	SE CHICAG;9U	5.4
274793	SE CHICAG;0U	5.4
274794	SE CHICAG;1U	5.4
274795	SE CHICAG;2U	5.4
274859	EASYR;U1 E	13.43
274860	EASYR;U2 E	13.43
274888	PILOT HIL;1E	23.57
274890	CAYUG;1U E	20.22
274891	CAYUG;2U E	20.22
275149	KEMPTON ;1E	23.57
290021	O50 E	23.7
290051	GSG-6; E	12.77
290108	LEEDK;1U E	29.68
293061	N-015 E	19.41
293644	O22 E1	12.53
293645	O22 E2	24.32
294392	P-010 E	24.65
294763	P-046 E	11.45
295109	WESTBROOK E	6.84
295111	SUBLETTE E	3.17
296125	R-030 C3	4.97
296128	R-030 E3	19.89
296271	R-030 C2	4.91
296272	R-030 E2	19.65
296308	R-030 C1	4.91
296309	R-030 E1	19.65
910542	X3-005 E	0.89
914641	Y2-103	54.9
915011	Y3-013 1	4.58
915021	Y3-013 2	4.58

Bus #	Bus	MW Impact
915031	Y3-013 3	4.58
916221	Z1-073 E	6.59
916502	Z1-106 E1	1.54
916504	Z1-106 E2	1.54
916512	Z1-107 E	3.16
916522	Z1-108 E	3.04
917502	Z2-087 E	25.7
918052	AA1-018 E	20.09
919581	AA2-030	18.9
920272	AA2-123 E	2.98
924041	AB2-047 C O1	4.74
924042	AB2-047 E O1	31.72
924471	AB2-096	51.72
925161	AB2-173	3.83
925302	AB2-191 E	1.69
926311	AC1-109 1	2.34
926321	AC1-109 2	2.34
926331	AC1-110 1	2.32
926341	AC1-110 2	2.32
926351	AC1-111 1	0.93
926361	AC1-111 2	0.93
926371	AC1-111 3	0.93
926381	AC1-111 4	0.93
926391	AC1-111 5	0.93
926401	AC1-111 6	0.93
926431	AC1-114	2.91
926821	AC1-168 C O1	1.43
926822	AC1-168 E O1	9.57
927091	AC1-204 1	88.75
927101	AC1-204 2	88.75
927451	AC1-142A 1	5.11
927461	AC1-142A 2	5.11
927511	AC1-113 1	1.45
927521	AC1-113 2	1.45
927531	AC1-185 1	0.84
927541	AC1-185 2	0.84
927551	AC1-185 3	0.84
927561	AC1-185 4	0.84
927571	AC1-185 5	0.84
927581	AC1-185 6	0.84
927591	AC1-185 7	0.84
927601	AC1-185 8	0.84
930481	AB1-089	80.32
930501	AB1-091 O1	93.8
930741	AB1-122 1O1	89.17
930751	AB1-122 2O1	90.13
932881	AC2-115 1	2.91
932891	AC2-115 2	2.91
932921	AC2-116	1.02
932931	AC2-117	6.51
933341	AC2-147 C	1.07
933342	AC2-147 E	1.74

Bus #	Bus	MW Impact
933411	AC2-154 C	3.2
933412	AC2-154 E	5.22
933431	AC2-156 C O1	1.17
933432	AC2-156 E O1	1.91
933911	AD1-013 C	2.25
933912	AD1-013 E	3.59
933931	AD1-016 C	1.13
933932	AD1-016 E	1.85
934101	AD1-039 1	8.74
934111	AD1-039 2	8.83
934401	AD1-064 C O1	3.91
934402	AD1-064 E O1	18.33
934431	AD1-067 C	0.16
934432	AD1-067 E	0.67
934651	AD1-096 C	1.09
934652	AD1-096 E	1.78
934701	AD1-098 C O1	8.41
934702	AD1-098 E O1	6.14
934721	AD1-100 C	29.39
934722	AD1-100 E	137.14
934871	AD1-116 C	1.17
934872	AD1-116 E	1.91
934971	AD1-129 C	1.1
934972	AD1-129 E	0.74
935001	AD1-133 C O1	27.36
935002	AD1-133 E O1	18.24
936291	AD2-038 C O1	2.88
936292	AD2-038 E O1	19.25
936371	AD2-047 C O1	2.86
936372	AD2-047 E O1	30.81
936461	AD2-060	3.37
936511	AD2-066 C O1	10.34
936512	AD2-066 E O1	6.89
936781	AD2-101 C	5.82
936782	AD2-101 E	27.26
936791	AD2-102 C	14.68
936792	AD2-102 E	14.11
937001	AD2-134 C	3.34
937002	AD2-134 E	13.79
937031	AD2-137 C O1	7.17
937032	AD2-137 E O1	33.55
937051	AD2-140 C O1	7.53
937052	AD2-140 E O1	35.24
937061	AD2-141 C O1	7.48
937062	AD2-141 E O1	35.28
937071	AD2-142 C O1	15.05
937072	AD2-142 E O1	70.47
937121	AD2-148 C O1	4.5
937122	AD2-148 E O1	21.09
937131	AD2-149 C O1	4.5
937132	AD2-149 E O1	21.09
937141	AD2-150 C O1	4.5

Bus #	Bus	MW Impact
937142	AD2-150 E O1	21.09
937181	AD2-155 C O1	4.5
937182	AD2-155 E O1	21.09
937311	AD2-172 C	3.01
937312	AD2-172 E	4.15
937321	AD2-175 C	20.99
937322	AD2-175 E	13.99
937331	AD2-176 C O1	8.96
937332	AD2-176 E O1	5.97
937401	AD2-194 1	9.54
937411	AD2-194 2	9.54
938012	AE1-002 E O1	14.38
938511	AE1-070 1	11.21
938521	AE1-070 2	10.26
938851	AE1-113 C O1	10.72
938852	AE1-113 E O1	33.71
938861	AE1-114 C O1	4.39
938862	AE1-114 E O1	16.8
939051	AE1-134 1	1.67
939061	AE1-134 2	1.67
939321	AE1-163 C O1	7.23
939322	AE1-163 E O1	44.39
939351	AE1-166 C O1	14.5
939352	AE1-166 E O1	13.38
939401	AE1-172 C O1	9.5
939402	AE1-172 E O1	44.49
939691	AE1-199	2.92
939701	AE1-201 C	2.45
939702	AE1-201 E	0.54
939732	AE1-204 E	0.36
939741	AE1-205 C O1	12.45
939742	AE1-205 E O1	17.19
939861	AE1-222 1	98.48
939871	AE1-222 2	99.53
939921	AE1-228 C O1	12.28
939922	AE1-228 E O1	8.19
940101	AE1-252 C O1	16.2
940102	AE1-252 E O1	10.8
940501	AE2-035 C	3.01
940502	AE2-035 E	4.15
940621	AE2-049 C O1	11.53
940622	AE2-049 E O1	7.69
940631	AE2-050 C O1	15.38
940632	AE2-050 E O1	10.26
940752	AE2-062 E	0.16
940762	AE2-063 E	0.16
940881	AE2-077 C	3.85
940882	AE2-077 E	6.28
941131	AE2-107 C	8.93
941132	AE2-107 E	5.96
941551	AE2-152 C	18.59
941552	AE2-152 E	9.29

Bus #	Bus	MW Impact
941561	AE2-153 C O1	6.06
941562	AE2-153 E O1	28.37
941731	AE2-173	7.31
942111	AE2-223 C	2.88
942112	AE2-223 E	19.28
942421	AE2-255 C O1	3.7
942422	AE2-255 E O1	11.11
942651	AE2-281 C	1.03
942652	AE2-281 E	6.34
942881	AE2-307 C	28.2
942882	AE2-307 E	10.26
942911	AE2-310 C	11.2
942912	AE2-310 E	3.02
942991	AE2-321 C O1	9.98
942992	AE2-321 E O1	4.92
943121	AE2-341 C	15.61
943122	AE2-341 E	7.67
BLUEG	BLUEG	8.02
CALDERWOOD	CALDERWOOD	0.11
CANNELTON	CANNELTON	0.1
CARR	CARR	0.97
CATAWBA	CATAWBA	0.4
CBM-S1	CBM-S1	1.72
CBM-W1	CBM-W1	37.33
CBM-W2	CBM-W2	70.69
CHEOAH	CHEOAH	0.12
CHILHOWEE	CHILHOWEE	0.03
ELMERSMITH	ELMERSMITH	0.09
G-007	G-007	2.73
GIBSON	GIBSON	0.01
HAMLET	HAMLET	0.74
MEC	MEC	46.43
O-066	O-066	17.5
RENSSELAER	RENSSELAER	0.77
SANTEETLA	SANTEETLA	0.04
TRIMBLE	TRIMBLE	0.95
WEC	WEC	9.73
Z1-043	Z1-043	35.42

14.11 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
2228137	270927	WILTON ; R	CE	275233	WILTON ;4M	CE	1	COMED_P4_112-65-BT2-3__	breaker	1379.0	162.44	162.6	DC	28.44

Bus #	Bus	MW Impact
270859	PWR VTR EC;R	15.09
274722	S-055 E	14.02
274772	LINCOLN ;3U	2.74
274773	LINCOLN ;4U	2.74
274774	LINCOLN ;5U	2.74
274775	LINCOLN ;6U	2.74
274776	LINCOLN ;7U	2.74
274777	LINCOLN ;8U	2.74
274788	SE CHICAG;5U	5.56
274789	SE CHICAG;6U	5.56
274790	SE CHICAG;7U	5.56
274791	SE CHICAG;8U	5.56
274792	SE CHICAG;9U	5.52
274793	SE CHICAG;0U	5.52
274794	SE CHICAG;1U	5.52
274795	SE CHICAG;2U	5.52
274859	EASYR;U1 E	13.72
274860	EASYR;U2 E	13.72
274888	PILOT HIL;1E	24.06
274890	CAYUG;1U E	20.62
274891	CAYUG;2U E	20.62
275149	KEMPTON ;1E	24.06
290021	O50 E	24.2
290051	GSG-6; E	13.05
290108	LEEDK;1U E	30.31
293061	N-015 E	19.81
293516	O-009 E1	2.14
293517	O-009 E2	1.09
293518	O-009 E3	1.2
293644	O22 E1	12.79
293645	O22 E2	24.83
293715	O-029 E	12.21
293716	O-029 E	6.69
293717	O-029 E	6.15
294392	P-010 E	25.16
294763	P-046 E	11.69
295109	WESTBROOK E	6.98
295111	SUBLETTE E	3.24
296125	R-030 C3	5.07
296128	R-030 E3	20.29
296271	R-030 C2	5.01
296272	R-030 E2	20.05

Bus #	Bus	MW Impact
296308	R-030 C1	5.01
296309	R-030 E1	20.05
910542	X3-005 E	0.91
914641	Y2-103	56.07
915011	Y3-013 1	4.67
915021	Y3-013 2	4.67
915031	Y3-013 3	4.67
916221	Z1-073 E	6.73
916502	Z1-106 E1	1.58
916504	Z1-106 E2	1.58
916512	Z1-107 E	3.23
916522	Z1-108 E	3.1
917502	Z2-087 E	26.22
918052	AA1-018 E	20.53
919221	AA1-146	21.95
919581	AA2-030	21.95
920272	AA2-123 E	3.05
924041	AB2-047 C O1	4.84
924042	AB2-047 E O1	32.36
924471	AB2-096	52.83
925161	AB2-173	3.91
925302	AB2-191 E	1.73
926311	AC1-109 1	2.39
926321	AC1-109 2	2.39
926331	AC1-110 1	2.37
926341	AC1-110 2	2.37
926351	AC1-111 1	0.95
926361	AC1-111 2	0.95
926371	AC1-111 3	0.95
926381	AC1-111 4	0.95
926391	AC1-111 5	0.95
926401	AC1-111 6	0.95
926431	AC1-114	2.97
926821	AC1-168 C O1	1.46
926822	AC1-168 E O1	9.77
927091	AC1-204 1	90.65
927101	AC1-204 2	90.65
927451	AC1-142A 1	5.22
927461	AC1-142A 2	5.22
927511	AC1-113 1	1.48
927521	AC1-113 2	1.48
927531	AC1-185 1	0.86
927541	AC1-185 2	0.86
927551	AC1-185 3	0.86
927561	AC1-185 4	0.86
927571	AC1-185 5	0.86
927581	AC1-185 6	0.86
927591	AC1-185 7	0.86
927601	AC1-185 8	0.86
930481	AB1-089	82.03
930501	AB1-091 O1	95.74
930741	AB1-122 1O1	91.06

Bus #	Bus	MW Impact
930751	AB1-122 2O1	92.05
932881	AC2-115 1	2.97
932891	AC2-115 2	2.97
932921	AC2-116	1.04
932931	AC2-117	6.65
933341	AC2-147 C	1.09
933342	AC2-147 E	1.78
933411	AC2-154 C	3.27
933412	AC2-154 E	5.33
933431	AC2-156 C O1	1.19
933432	AC2-156 E O1	1.95
933911	AD1-013 C	2.3
933912	AD1-013 E	3.67
933931	AD1-016 C	1.16
933932	AD1-016 E	1.89
934101	AD1-039 1	8.92
934111	AD1-039 2	9.02
934401	AD1-064 C O1	4.0
934402	AD1-064 E O1	18.72
934431	AD1-067 C	0.16
934432	AD1-067 E	0.69
934651	AD1-096 C	1.11
934652	AD1-096 E	1.81
934701	AD1-098 C O1	8.59
934702	AD1-098 E O1	6.27
934721	AD1-100 C	29.97
934722	AD1-100 E	139.86
934871	AD1-116 C	1.2
934872	AD1-116 E	1.95
934971	AD1-129 C	1.13
934972	AD1-129 E	0.75
935001	AD1-133 C O1	27.93
935002	AD1-133 E O1	18.62
936291	AD2-038 C O1	2.94
936292	AD2-038 E O1	19.66
936371	AD2-047 C O1	2.92
936372	AD2-047 E O1	31.45
936461	AD2-060	3.44
936511	AD2-066 C O1	10.56
936512	AD2-066 E O1	7.04
936781	AD2-101 C	5.94
936782	AD2-101 E	27.82
936791	AD2-102 C	14.99
936792	AD2-102 E	14.41
937001	AD2-134 C	3.41
937002	AD2-134 E	14.09
937031	AD2-137 C O1	7.3
937032	AD2-137 E O1	34.17
937051	AD2-140 C O1	7.67
937052	AD2-140 E O1	35.89
937061	AD2-141 C O1	7.62
937062	AD2-141 E O1	35.93

Bus #	Bus	MW Impact
937071	AD2-142 C O1	15.33
937072	AD2-142 E O1	71.78
937121	AD2-148 C O1	4.6
937122	AD2-148 E O1	21.53
937131	AD2-149 C O1	4.6
937132	AD2-149 E O1	21.53
937141	AD2-150 C O1	4.6
937142	AD2-150 E O1	21.53
937181	AD2-155 C O1	4.6
937182	AD2-155 E O1	21.53
937311	AD2-172 C	3.07
937312	AD2-172 E	4.24
937321	AD2-175 C	21.42
937322	AD2-175 E	14.28
937331	AD2-176 C O1	9.15
937332	AD2-176 E O1	6.1
937401	AD2-194 1	9.75
937411	AD2-194 2	9.75
938012	AE1-002 E O1	14.65
938511	AE1-070 1	11.45
938521	AE1-070 2	10.48
938851	AE1-113 C O1	10.95
938852	AE1-113 E O1	34.43
938861	AE1-114 C O1	4.49
938862	AE1-114 E O1	17.15
939051	AE1-134 1	1.71
939061	AE1-134 2	1.71
939321	AE1-163 C O1	7.38
939322	AE1-163 E O1	45.35
939351	AE1-166 C O1	14.79
939352	AE1-166 E O1	13.65
939401	AE1-172 C O1	9.69
939402	AE1-172 E O1	45.37
939691	AE1-199	2.98
939701	AE1-201 C	2.5
939702	AE1-201 E	0.55
939732	AE1-204 E	0.36
939741	AE1-205 C O1	12.7
939742	AE1-205 E O1	17.54
939861	AE1-222 1	100.56
939871	AE1-222 2	101.65
939921	AE1-228 C O1	12.54
939922	AE1-228 E O1	8.36
940101	AE1-252 C O1	16.52
940102	AE1-252 E O1	11.01
940501	AE2-035 C	3.07
940502	AE2-035 E	4.24
940621	AE2-049 C O1	11.77
940622	AE2-049 E O1	7.85
940631	AE2-050 C O1	15.7
940632	AE2-050 E O1	10.47
940752	AE2-062 E	0.16

Bus #	Bus	MW Impact
940762	AE2-063 E	0.16
940881	AE2-077 C	3.93
940882	AE2-077 E	6.42
941131	AE2-107 C	9.12
941132	AE2-107 E	6.08
941551	AE2-152 C	18.96
941552	AE2-152 E	9.48
941561	AE2-153 C O1	6.18
941562	AE2-153 E O1	28.96
941731	AE2-173	7.45
942111	AE2-223 C	2.94
942112	AE2-223 E	19.67
942421	AE2-255 C O1	3.78
942422	AE2-255 E O1	11.34
942651	AE2-281 C	1.05
942652	AE2-281 E	6.48
942881	AE2-307 C	28.78
942882	AE2-307 E	10.47
942911	AE2-310 C	11.43
942912	AE2-310 E	3.09
942991	AE2-321 C O1	10.2
942992	AE2-321 E O1	5.02
943121	AE2-341 C	15.94
943122	AE2-341 E	7.83
BLUEG	BLUEG	8.2
CALDERWOOD	CALDERWOOD	0.12
CANNELTON	CANNELTON	0.1
CARR	CARR	0.99
CATAWBA	CATAWBA	0.4
CBM-S1	CBM-S1	1.75
CBM-W1	CBM-W1	38.13
CBM-W2	CBM-W2	72.15
CHEOAH	CHEOAH	0.12
CHILHOWEE	CHILHOWEE	0.04
ELMERSMITH	ELMERSMITH	0.09
G-007	G-007	2.79
GIBSON	GIBSON	0.01
HAMLET	HAMLET	0.76
MEC	MEC	47.41
O-066	O-066	17.87
RENSSELAER	RENSSELAER	0.78
SANTEETLA	SANTEETLA	0.04
TRIMBLE	TRIMBLE	0.98
WEC	WEC	9.93
Z1-043	Z1-043	36.17

14.12 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
2228156	274750	CRETE EC ;BP	CE	255112	17STJOHN	NIPS	1	COMED_P4_112-65-BT3-4__	breaker	1399.0	159.24	159.36	DC	20.32

Bus #	Bus	MW Impact
270859	PWR VTR EC;R	12.6
274654	BRAIDWOOD;1U	21.49
274655	BRAIDWOOD;2U	20.56
274661	LASCO STA;2U	19.66
274687	WILL CNTY;4U	8.96
274704	KENDALL ;1C	3.15
274705	KENDALL ;1S	2.1
274706	KENDALL ;2C	3.15
274707	KENDALL ;2S	2.1
274722	S-055 E	11.8
274751	CRETE EC ;1U	4.57
274752	CRETE EC ;2U	4.57
274753	CRETE EC ;3U	4.57
274754	CRETE EC ;4U	4.57
274859	EASYR;U1 E	11.39
274860	EASYR;U2 E	11.39
274861	TOP CROP ;1U	0.37
274862	TOP CROP ;2U	0.72
274888	PILOT HIL;1E	16.93
275149	KEMPTON ;1E	16.93
290021	O50 E	20.58
290051	GSG-6; E	10.83
290108	LEEDK;1U E	25.18
293061	N-015 E	16.29
293644	O22 E1	12.24
293645	O22 E2	23.75
294392	P-010 E	20.68
294763	P-046 E	9.73
295109	WESTBROOK E	5.8
295111	SUBLETTE E	2.68
914641	Y2-103	47.19
915011	Y3-013 1	3.93
915021	Y3-013 2	3.93
915031	Y3-013 3	3.93
916221	Z1-073 E	5.59
916502	Z1-106 E1	1.32
916504	Z1-106 E2	1.32
916512	Z1-107 E	2.53
916522	Z1-108 E	2.6
918052	AA1-018 E	16.03
920272	AA2-123 E	2.55
924471	AB2-096	44.1

Bus #	Bus	MW Impact
925302	AB2-191 E	1.43
926311	AC1-109 1	1.98
926321	AC1-109 2	1.98
926331	AC1-110 1	1.98
926341	AC1-110 2	1.98
926351	AC1-111 1	0.79
926361	AC1-111 2	0.79
926371	AC1-111 3	0.79
926381	AC1-111 4	0.79
926391	AC1-111 5	0.79
926401	AC1-111 6	0.79
926431	AC1-114	2.47
927091	AC1-204 1	77.64
927101	AC1-204 2	77.51
927451	AC1-142A 1	4.49
927461	AC1-142A 2	4.5
927511	AC1-113 1	1.24
927521	AC1-113 2	1.24
927531	AC1-185 1	0.71
927541	AC1-185 2	0.71
927551	AC1-185 3	0.71
927561	AC1-185 4	0.71
927571	AC1-185 5	0.71
927581	AC1-185 6	0.71
927591	AC1-185 7	0.71
927601	AC1-185 8	0.71
930481	AB1-089	68.38
930501	AB1-091 O1	66.72
930741	AB1-122 1O1	73.97
930751	AB1-122 2O1	79.16
932881	AC2-115 1	2.47
932891	AC2-115 2	2.47
932921	AC2-116	0.87
933341	AC2-147 C	0.9
933342	AC2-147 E	1.47
933411	AC2-154 C	2.3
933412	AC2-154 E	3.75
933431	AC2-156 C O1	0.99
933432	AC2-156 E O1	1.61
933911	AD1-013 C	1.91
933912	AD1-013 E	3.05
933931	AD1-016 C	0.97
933932	AD1-016 E	1.58
934101	AD1-039 1	7.25
934111	AD1-039 2	7.76
934401	AD1-064 C O1	3.34
934402	AD1-064 E O1	15.62
934431	AD1-067 C	0.14
934432	AD1-067 E	0.57
934651	AD1-096 C	0.93
934652	AD1-096 E	1.51
934701	AD1-098 C O1	7.13

Bus #	Bus	MW Impact
934702	AD1-098 E O1	5.2
934721	AD1-100 C	19.74
934722	AD1-100 E	92.14
934871	AD1-116 C	0.93
934872	AD1-116 E	1.52
934971	AD1-129 C	0.94
934972	AD1-129 E	0.63
935001	AD1-133 C O1	21.07
935002	AD1-133 E O1	14.05
936291	AD2-038 C O1	2.38
936292	AD2-038 E O1	15.91
936371	AD2-047 C O1	2.06
936372	AD2-047 E O1	22.14
936461	AD2-060	2.42
936511	AD2-066 C O1	8.62
936512	AD2-066 E O1	5.75
936791	AD2-102 C	12.5
936792	AD2-102 E	12.01
937001	AD2-134 C	2.83
937002	AD2-134 E	11.69
937031	AD2-137 C O1	3.3
937032	AD2-137 E O1	15.44
937051	AD2-140 C O1	3.28
937052	AD2-140 E O1	15.37
937061	AD2-141 C O1	3.26
937062	AD2-141 E O1	15.39
937071	AD2-142 C O1	6.57
937072	AD2-142 E O1	30.74
937121	AD2-148 C O1	3.2
937122	AD2-148 E O1	15.0
937131	AD2-149 C O1	3.2
937132	AD2-149 E O1	15.0
937141	AD2-150 C O1	3.2
937142	AD2-150 E O1	15.0
937181	AD2-155 C O1	3.2
937182	AD2-155 E O1	15.0
937311	AD2-172 C	2.55
937312	AD2-172 E	3.53
937321	AD2-175 C	14.92
937322	AD2-175 E	9.95
937331	AD2-176 C O1	7.64
937332	AD2-176 E O1	5.1
937401	AD2-194 1	8.35
937411	AD2-194 2	8.34
938012	AE1-002 E O1	6.62
938511	AE1-070 1	9.81
938521	AE1-070 2	8.96
938851	AE1-113 C O1	9.31
938852	AE1-113 E O1	29.27
938861	AE1-114 C O1	3.73
938862	AE1-114 E O1	14.25
939051	AE1-134 1	1.26

Bus #	Bus	MW Impact
939061	AE1-134 2	1.26
939321	AE1-163 C O1	5.98
939322	AE1-163 E O1	36.71
939351	AE1-166 C O1	10.56
939352	AE1-166 E O1	9.75
939401	AE1-172 C O1	6.17
939402	AE1-172 E O1	28.89
939641	AE1-194 C	32.42
939642	AE1-194 E	216.99
939651	AE1-195 C	32.42
939652	AE1-195 E	216.99
939691	AE1-199	2.48
939701	AE1-201 C	2.09
939702	AE1-201 E	0.46
939732	AE1-204 E	0.31
939861	AE1-222 1	81.69
939871	AE1-222 2	87.42
939921	AE1-228 C O1	10.41
939922	AE1-228 E O1	6.94
940101	AE1-252 C O1	10.52
940102	AE1-252 E O1	7.01
940501	AE2-035 C	2.55
940502	AE2-035 E	3.53
940621	AE2-049 C O1	8.43
940622	AE2-049 E O1	5.62
940631	AE2-050 C O1	14.26
940632	AE2-050 E O1	9.5
940752	AE2-062 E	0.14
940762	AE2-063 E	0.14
940881	AE2-077 C	3.28
940882	AE2-077 E	5.34
941131	AE2-107 C	7.58
941132	AE2-107 E	5.05
941551	AE2-152 C	13.54
941552	AE2-152 E	6.77
941561	AE2-153 C O1	4.86
941562	AE2-153 E O1	22.77
942421	AE2-255 C O1	3.22
942422	AE2-255 E O1	9.65
942651	AE2-281 C	0.85
942652	AE2-281 E	5.24
942881	AE2-307 C	26.14
942882	AE2-307 E	9.5
942911	AE2-310 C	8.19
942912	AE2-310 E	2.21
942991	AE2-321 C O1	8.52
942992	AE2-321 E O1	4.2
943121	AE2-341 C	13.2
943122	AE2-341 E	6.48
BLUEG	BLUEG	7.64
CALDERWOOD	CALDERWOOD	0.17
CANNELTON	CANNELTON	0.19

Bus #	Bus	MW Impact
CARR	CARR	0.81
CATAWBA	CATAWBA	0.35
CBM-S1	CBM-S1	0.72
CBM-W1	CBM-W1	25.89
CBM-W2	CBM-W2	49.57
CHEOAH	CHEOAH	0.17
CHILHOWEE	CHILHOWEE	0.05
ELMERSMITH	ELMERSMITH	0.26
G-007	G-007	2.27
GIBSON	GIBSON	0.12
HAMLET	HAMLET	0.65
MEC	MEC	38.3
O-066	O-066	14.58
RENSSELAER	RENSSELAER	0.64
SANTEETLA	SANTEETLA	0.05
TRIMBLE	TRIMBLE	0.89
WEC	WEC	8.33
Z1-043	Z1-043	29.26

14.13 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
1539902	274804	UNIV PK N;RP	CE	243229	05OLIVE	AEP	1	AEP_P4_#2978_05DUMONT 765_B	breaker	971.0	138.38	138.54	DC	15.89

Bus #	Bus	MW Impact
270859	PWR VTR EC;R	9.77
274722	S-055 E	9.13
274808	UNIV PK N;4U	1.28
274809	UNIV PK N;5U	1.28
274811	UNIV PK N;7U	1.28
274812	UNIV PK N;8U	1.28
274814	UNIV PK N;0U	1.28
274815	UNIV PK N;XU	1.28
274832	U4-027	8.59
274859	EASYR;U1 E	8.82
274860	EASYR;U2 E	8.82
274888	PILOT HIL;1E	14.83
274890	CAYUG;1U E	10.67
274891	CAYUG;2U E	10.67
275149	KEMPTON ;1E	14.83
290021	O50 E	15.58
290051	GSG-6; E	8.41
290108	LEEDK;1U E	19.56
293061	N-015 E	12.57
293516	O-009 E1	7.24
293517	O-009 E2	3.68
293518	O-009 E3	4.05
293644	O22 E1	7.86
293645	O22 E2	15.26
293715	O-029 E	7.82
293716	O-029 E	4.29
293717	O-029 E	3.94
293771	O-035 E	5.08
294392	P-010 E	15.97
294401	BSHIL;1U E	6.79
294410	BSHIL;2U E	6.79
294763	P-046 E	7.54
295109	WESTBROOK E	4.5
295111	SUBLETTE E	2.08
910542	X3-005 E	0.51
914641	Y2-103	36.51
915011	Y3-013 1	3.04
915021	Y3-013 2	3.04
915031	Y3-013 3	3.04
916211	Z1-072 E	3.84
916221	Z1-073 E	4.34

Bus #	Bus	MW Impact
916502	Z1-106 E1	1.02
916504	Z1-106 E2	1.02
916512	Z1-107 E	2.17
916522	Z1-108 E	2.01
918052	AA1-018 E	14.26
919221	AA1-146	14.08
919581	AA2-030	14.08
919621	AA2-039 C	1.65
919622	AA2-039 E	11.07
920272	AA2-123 E	1.98
924471	AB2-096	34.19
925161	AB2-173	2.51
925302	AB2-191 E	1.11
925581	AC1-033 C	1.11
925582	AC1-033 E	7.44
926311	AC1-109 1	1.55
926321	AC1-109 2	1.55
926331	AC1-110 1	1.53
926341	AC1-110 2	1.53
926351	AC1-111 1	0.62
926361	AC1-111 2	0.62
926371	AC1-111 3	0.62
926381	AC1-111 4	0.62
926391	AC1-111 5	0.62
926401	AC1-111 6	0.62
926431	AC1-114	1.92
926821	AC1-168 C O1	0.92
926822	AC1-168 E O1	6.16
927091	AC1-204 1	59.04
927101	AC1-204 2	59.09
927201	AC1-214 C O1	1.63
927202	AC1-214 E O1	5.18
927451	AC1-142A 1	3.45
927461	AC1-142A 2	3.44
927511	AC1-113 1	0.96
927521	AC1-113 2	0.96
927531	AC1-185 1	0.55
927541	AC1-185 2	0.55
927551	AC1-185 3	0.55
927561	AC1-185 4	0.55
927571	AC1-185 5	0.55
927581	AC1-185 6	0.55
927591	AC1-185 7	0.55
927601	AC1-185 8	0.55
930481	AB1-089	52.99
930501	AB1-091 O1	57.0
930741	AB1-122 1O1	58.08
930751	AB1-122 2O1	59.55
932881	AC2-115 1	1.92
932891	AC2-115 2	1.92
932921	AC2-116	0.67
932931	AC2-117	10.38

Bus #	Bus	MW Impact
933341	AC2-147 C	0.7
933342	AC2-147 E	1.14
933411	AC2-154 C	2.01
933412	AC2-154 E	3.28
933431	AC2-156 C O1	0.77
933432	AC2-156 E O1	1.26
933911	AD1-013 C	1.48
933912	AD1-013 E	2.37
933931	AD1-016 C	0.75
933932	AD1-016 E	1.22
934051	AD1-031 C O1	2.26
934052	AD1-031 E O1	3.68
934101	AD1-039 1	5.69
934111	AD1-039 2	5.84
934401	AD1-064 C O1	2.59
934402	AD1-064 E O1	12.1
934431	AD1-067 C	0.11
934432	AD1-067 E	0.44
934651	AD1-096 C	0.72
934652	AD1-096 E	1.17
934701	AD1-098 C O1	5.53
934702	AD1-098 E O1	4.04
934721	AD1-100 C	15.54
934722	AD1-100 E	72.54
934871	AD1-116 C	0.83
934872	AD1-116 E	1.36
934971	AD1-129 C	0.73
934972	AD1-129 E	0.49
935001	AD1-133 C O1	16.63
935002	AD1-133 E O1	11.09
936291	AD2-038 C O1	1.97
936292	AD2-038 E O1	13.16
936371	AD2-047 C O1	1.8
936372	AD2-047 E O1	19.38
936461	AD2-060	2.12
936511	AD2-066 C O1	6.81
936512	AD2-066 E O1	4.54
936781	AD2-101 C	3.5
936782	AD2-101 E	16.38
936791	AD2-102 C	9.68
936792	AD2-102 E	9.3
937001	AD2-134 C	2.2
937002	AD2-134 E	9.08
937031	AD2-137 C O1	2.69
937032	AD2-137 E O1	12.58
937051	AD2-140 C O1	2.69
937052	AD2-140 E O1	12.58
937061	AD2-141 C O1	2.67
937062	AD2-141 E O1	12.6
937071	AD2-142 C O1	5.38
937072	AD2-142 E O1	25.17
937121	AD2-148 C O1	2.74

Bus #	Bus	MW Impact
937122	AD2-148 E O1	12.81
937131	AD2-149 C O1	2.74
937132	AD2-149 E O1	12.81
937141	AD2-150 C O1	2.74
937142	AD2-150 E O1	12.81
937181	AD2-155 C O1	2.74
937182	AD2-155 E O1	12.81
937311	AD2-172 C	1.98
937312	AD2-172 E	2.73
937321	AD2-175 C	12.74
937322	AD2-175 E	8.5
937331	AD2-176 C O1	5.92
937332	AD2-176 E O1	3.95
937401	AD2-194 1	6.35
937411	AD2-194 2	6.35
937531	AD2-214 C	3.52
937532	AD2-214 E	1.66
938012	AE1-002 E O1	5.39
938511	AE1-070 1	7.46
938521	AE1-070 2	6.83
938851	AE1-113 C O1	7.05
938852	AE1-113 E O1	22.17
938861	AE1-114 C O1	2.89
938862	AE1-114 E O1	11.04
939051	AE1-134 1	1.09
939061	AE1-134 2	1.09
939321	AE1-163 C O1	4.94
939322	AE1-163 E O1	30.35
939351	AE1-166 C O1	8.26
939352	AE1-166 E O1	7.63
939401	AE1-172 C O1	4.9
939402	AE1-172 E O1	22.92
939631	AE1-193 C O1	5.51
939632	AE1-193 E O1	36.9
939681	AE1-198 C O1	16.37
939682	AE1-198 E O1	13.91
939691	AE1-199	1.92
939701	AE1-201 C	1.62
939702	AE1-201 E	0.36
939732	AE1-204 E	0.24
939861	AE1-222 1	64.14
939871	AE1-222 2	65.77
939921	AE1-228 C O1	8.09
939922	AE1-228 E O1	5.39
940101	AE1-252 C O1	8.34
940102	AE1-252 E O1	5.56
940501	AE2-035 C	1.98
940502	AE2-035 E	2.73
940621	AE2-049 C O1	7.3
940622	AE2-049 E O1	4.87
940631	AE2-050 C O1	9.78
940632	AE2-050 E O1	6.52

Bus #	Bus	MW Impact
940752	AE2-062 E	0.1
940762	AE2-063 E	0.1
940881	AE2-077 C	2.54
940882	AE2-077 E	4.14
941131	AE2-107 C	5.89
941132	AE2-107 E	3.93
941551	AE2-152 C	10.59
941552	AE2-152 E	5.3
941561	AE2-153 C O1	3.82
941562	AE2-153 E O1	17.9
942421	AE2-255 C O1	2.44
942422	AE2-255 E O1	7.3
942651	AE2-281 C	0.71
942652	AE2-281 E	4.34
942881	AE2-307 C	17.93
942882	AE2-307 E	6.52
942911	AE2-310 C	7.09
942912	AE2-310 E	1.92
942991	AE2-321 C O1	6.6
942992	AE2-321 E O1	3.25
943121	AE2-341 C	10.31
943122	AE2-341 E	5.06
990901	L-005 E	8.02
BLUEG	BLUEG	4.52
CALDERWOOD	CALDERWOOD	0.06
CANNELTON	CANNELTON	0.07
CARR	CARR	0.62
CATAWBA	CATAWBA	0.24
CBM-S1	CBM-S1	1.13
CBM-W1	CBM-W1	21.91
CBM-W2	CBM-W2	42.89
CHEOAH	CHEOAH	0.06
CHILHOWEE	CHILHOWEE	0.02
ELMERSMITH	ELMERSMITH	0.07
G-007	G-007	1.74
GIBSON	GIBSON	0.03
HAMLET	HAMLET	0.45
MEC	MEC	29.98
O-066	O-066	11.15
RENSSELAER	RENSSELAER	0.49
SANTEETLA	SANTEETLA	0.02
TRIMBLE	TRIMBLE	0.53
WEC	WEC	6.45
Z1-043	Z1-043	22.8

14.14 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
2228133	275232	WILTON ;3M	CE	270644	WILTON ;	CE	1	COMED_P4_112-65-BT5-6__	breaker	1379.0	162.73	162.88	DC	27.88

Bus #	Bus	MW Impact
270859	PWR VTR EC;R	14.78
274722	S-055 E	13.73
274772	LINCOLN ;3U	2.67
274773	LINCOLN ;4U	2.67
274774	LINCOLN ;5U	2.67
274775	LINCOLN ;6U	2.67
274776	LINCOLN ;7U	2.67
274777	LINCOLN ;8U	2.67
274788	SE CHICAG;5U	5.44
274789	SE CHICAG;6U	5.44
274790	SE CHICAG;7U	5.44
274791	SE CHICAG;8U	5.44
274792	SE CHICAG;9U	5.4
274793	SE CHICAG;0U	5.4
274794	SE CHICAG;1U	5.4
274795	SE CHICAG;2U	5.4
274859	EASYR;U1 E	13.43
274860	EASYR;U2 E	13.43
274888	PILOT HIL;1E	23.57
274890	CAYUG;1U E	20.22
274891	CAYUG;2U E	20.22
275149	KEMPTON ;1E	23.57
290021	O50 E	23.7
290051	GSG-6; E	12.77
290108	LEEDK;1U E	29.68
293061	N-015 E	19.41
293644	O22 E1	12.53
293645	O22 E2	24.32
294392	P-010 E	24.65
294763	P-046 E	11.45
295109	WESTBROOK E	6.84
295111	SUBLETTE E	3.17
296125	R-030 C3	4.97
296128	R-030 E3	19.89
296271	R-030 C2	4.91
296272	R-030 E2	19.65
296308	R-030 C1	4.91
296309	R-030 E1	19.65
910542	X3-005 E	0.89
914641	Y2-103	54.9
915011	Y3-013 1	4.58
915021	Y3-013 2	4.58

Bus #	Bus	MW Impact
915031	Y3-013 3	4.58
916221	Z1-073 E	6.59
916502	Z1-106 E1	1.54
916504	Z1-106 E2	1.54
916512	Z1-107 E	3.16
916522	Z1-108 E	3.04
917502	Z2-087 E	25.7
918052	AA1-018 E	20.09
919581	AA2-030	18.9
920272	AA2-123 E	2.98
924041	AB2-047 C O1	4.74
924042	AB2-047 E O1	31.72
924471	AB2-096	51.72
925161	AB2-173	3.83
925302	AB2-191 E	1.69
926311	AC1-109 1	2.34
926321	AC1-109 2	2.34
926331	AC1-110 1	2.32
926341	AC1-110 2	2.32
926351	AC1-111 1	0.93
926361	AC1-111 2	0.93
926371	AC1-111 3	0.93
926381	AC1-111 4	0.93
926391	AC1-111 5	0.93
926401	AC1-111 6	0.93
926431	AC1-114	2.91
926821	AC1-168 C O1	1.43
926822	AC1-168 E O1	9.57
927091	AC1-204 1	88.75
927101	AC1-204 2	88.75
927451	AC1-142A 1	5.11
927461	AC1-142A 2	5.11
927511	AC1-113 1	1.45
927521	AC1-113 2	1.45
927531	AC1-185 1	0.84
927541	AC1-185 2	0.84
927551	AC1-185 3	0.84
927561	AC1-185 4	0.84
927571	AC1-185 5	0.84
927581	AC1-185 6	0.84
927591	AC1-185 7	0.84
927601	AC1-185 8	0.84
930481	AB1-089	80.32
930501	AB1-091 O1	93.8
930741	AB1-122 1O1	89.17
930751	AB1-122 2O1	90.13
932881	AC2-115 1	2.91
932891	AC2-115 2	2.91
932921	AC2-116	1.02
932931	AC2-117	6.51
933341	AC2-147 C	1.07
933342	AC2-147 E	1.74

Bus #	Bus	MW Impact
933411	AC2-154 C	3.2
933412	AC2-154 E	5.22
933431	AC2-156 C O1	1.17
933432	AC2-156 E O1	1.91
933911	AD1-013 C	2.25
933912	AD1-013 E	3.59
933931	AD1-016 C	1.13
933932	AD1-016 E	1.85
934101	AD1-039 1	8.74
934111	AD1-039 2	8.83
934401	AD1-064 C O1	3.91
934402	AD1-064 E O1	18.33
934431	AD1-067 C	0.16
934432	AD1-067 E	0.67
934651	AD1-096 C	1.09
934652	AD1-096 E	1.78
934701	AD1-098 C O1	8.41
934702	AD1-098 E O1	6.14
934721	AD1-100 C	29.39
934722	AD1-100 E	137.14
934871	AD1-116 C	1.17
934872	AD1-116 E	1.91
934971	AD1-129 C	1.1
934972	AD1-129 E	0.74
935001	AD1-133 C O1	27.36
935002	AD1-133 E O1	18.24
936291	AD2-038 C O1	2.88
936292	AD2-038 E O1	19.25
936371	AD2-047 C O1	2.86
936372	AD2-047 E O1	30.81
936461	AD2-060	3.37
936511	AD2-066 C O1	10.34
936512	AD2-066 E O1	6.89
936781	AD2-101 C	5.82
936782	AD2-101 E	27.26
936791	AD2-102 C	14.68
936792	AD2-102 E	14.11
937001	AD2-134 C	3.34
937002	AD2-134 E	13.79
937031	AD2-137 C O1	7.17
937032	AD2-137 E O1	33.55
937051	AD2-140 C O1	7.53
937052	AD2-140 E O1	35.24
937061	AD2-141 C O1	7.48
937062	AD2-141 E O1	35.28
937071	AD2-142 C O1	15.05
937072	AD2-142 E O1	70.47
937121	AD2-148 C O1	4.5
937122	AD2-148 E O1	21.09
937131	AD2-149 C O1	4.5
937132	AD2-149 E O1	21.09
937141	AD2-150 C O1	4.5

Bus #	Bus	MW Impact
937142	AD2-150 E O1	21.09
937181	AD2-155 C O1	4.5
937182	AD2-155 E O1	21.09
937311	AD2-172 C	3.01
937312	AD2-172 E	4.15
937321	AD2-175 C	20.99
937322	AD2-175 E	13.99
937331	AD2-176 C O1	8.96
937332	AD2-176 E O1	5.97
937401	AD2-194 1	9.54
937411	AD2-194 2	9.54
938012	AE1-002 E O1	14.38
938511	AE1-070 1	11.21
938521	AE1-070 2	10.26
938851	AE1-113 C O1	10.72
938852	AE1-113 E O1	33.71
938861	AE1-114 C O1	4.39
938862	AE1-114 E O1	16.8
939051	AE1-134 1	1.67
939061	AE1-134 2	1.67
939321	AE1-163 C O1	7.23
939322	AE1-163 E O1	44.39
939351	AE1-166 C O1	14.5
939352	AE1-166 E O1	13.38
939401	AE1-172 C O1	9.5
939402	AE1-172 E O1	44.49
939691	AE1-199	2.92
939701	AE1-201 C	2.45
939702	AE1-201 E	0.54
939732	AE1-204 E	0.36
939741	AE1-205 C O1	12.45
939742	AE1-205 E O1	17.19
939861	AE1-222 1	98.48
939871	AE1-222 2	99.53
939921	AE1-228 C O1	12.28
939922	AE1-228 E O1	8.19
940101	AE1-252 C O1	16.2
940102	AE1-252 E O1	10.8
940501	AE2-035 C	3.01
940502	AE2-035 E	4.15
940621	AE2-049 C O1	11.53
940622	AE2-049 E O1	7.69
940631	AE2-050 C O1	15.38
940632	AE2-050 E O1	10.26
940752	AE2-062 E	0.16
940762	AE2-063 E	0.16
940881	AE2-077 C	3.85
940882	AE2-077 E	6.28
941131	AE2-107 C	8.93
941132	AE2-107 E	5.96
941551	AE2-152 C	18.59
941552	AE2-152 E	9.29

Bus #	Bus	MW Impact
941561	AE2-153 C O1	6.06
941562	AE2-153 E O1	28.37
941731	AE2-173	7.31
942111	AE2-223 C	2.88
942112	AE2-223 E	19.28
942421	AE2-255 C O1	3.7
942422	AE2-255 E O1	11.11
942651	AE2-281 C	1.03
942652	AE2-281 E	6.34
942881	AE2-307 C	28.2
942882	AE2-307 E	10.26
942911	AE2-310 C	11.2
942912	AE2-310 E	3.02
942991	AE2-321 C O1	9.98
942992	AE2-321 E O1	4.92
943121	AE2-341 C	15.61
943122	AE2-341 E	7.67
BLUEG	BLUEG	8.02
CALDERWOOD	CALDERWOOD	0.11
CANNELTON	CANNELTON	0.1
CARR	CARR	0.97
CATAWBA	CATAWBA	0.4
CBM-S1	CBM-S1	1.72
CBM-W1	CBM-W1	37.33
CBM-W2	CBM-W2	70.69
CHEOAH	CHEOAH	0.12
CHILHOWEE	CHILHOWEE	0.03
ELMERSMITH	ELMERSMITH	0.09
G-007	G-007	2.73
GIBSON	GIBSON	0.01
HAMLET	HAMLET	0.74
MEC	MEC	46.43
O-066	O-066	17.5
RENSSELAER	RENSSELAER	0.77
SANTEETLA	SANTEETLA	0.04
TRIMBLE	TRIMBLE	0.95
WEC	WEC	9.73
Z1-043	Z1-043	35.42

14.15 Index 15

ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC|DC	MW IMPACT
2228139	275233	WILTON ;4M	CE	270644	WILTON ;	CE	1	COMED_P4_112-65-BT2-3__	breaker	1379.0	162.44	162.6	DC	28.44

Bus #	Bus	MW Impact
270859	PWR VTR EC;R	15.09
274722	S-055 E	14.02
274772	LINCOLN ;3U	2.74
274773	LINCOLN ;4U	2.74
274774	LINCOLN ;5U	2.74
274775	LINCOLN ;6U	2.74
274776	LINCOLN ;7U	2.74
274777	LINCOLN ;8U	2.74
274788	SE CHICAG;5U	5.56
274789	SE CHICAG;6U	5.56
274790	SE CHICAG;7U	5.56
274791	SE CHICAG;8U	5.56
274792	SE CHICAG;9U	5.52
274793	SE CHICAG;0U	5.52
274794	SE CHICAG;1U	5.52
274795	SE CHICAG;2U	5.52
274859	EASYR;U1 E	13.72
274860	EASYR;U2 E	13.72
274888	PILOT HIL;1E	24.06
274890	CAYUG;1U E	20.62
274891	CAYUG;2U E	20.62
275149	KEMPTON ;1E	24.06
290021	O50 E	24.2
290051	GSG-6; E	13.05
290108	LEEDK;1U E	30.31
293061	N-015 E	19.81
293516	O-009 E1	2.14
293517	O-009 E2	1.09
293518	O-009 E3	1.2
293644	O22 E1	12.79
293645	O22 E2	24.83
293715	O-029 E	12.21
293716	O-029 E	6.69
293717	O-029 E	6.15
294392	P-010 E	25.16
294763	P-046 E	11.69
295109	WESTBROOK E	6.98
295111	SUBLETTE E	3.24
296125	R-030 C3	5.07
296128	R-030 E3	20.29
296271	R-030 C2	5.01
296272	R-030 E2	20.05

Bus #	Bus	MW Impact
296308	R-030 C1	5.01
296309	R-030 E1	20.05
910542	X3-005 E	0.91
914641	Y2-103	56.07
915011	Y3-013 1	4.67
915021	Y3-013 2	4.67
915031	Y3-013 3	4.67
916221	Z1-073 E	6.73
916502	Z1-106 E1	1.58
916504	Z1-106 E2	1.58
916512	Z1-107 E	3.23
916522	Z1-108 E	3.1
917502	Z2-087 E	26.22
918052	AA1-018 E	20.53
919221	AA1-146	21.95
919581	AA2-030	21.95
920272	AA2-123 E	3.05
924041	AB2-047 C O1	4.84
924042	AB2-047 E O1	32.36
924471	AB2-096	52.83
925161	AB2-173	3.91
925302	AB2-191 E	1.73
926311	AC1-109 1	2.39
926321	AC1-109 2	2.39
926331	AC1-110 1	2.37
926341	AC1-110 2	2.37
926351	AC1-111 1	0.95
926361	AC1-111 2	0.95
926371	AC1-111 3	0.95
926381	AC1-111 4	0.95
926391	AC1-111 5	0.95
926401	AC1-111 6	0.95
926431	AC1-114	2.97
926821	AC1-168 C O1	1.46
926822	AC1-168 E O1	9.77
927091	AC1-204 1	90.65
927101	AC1-204 2	90.65
927451	AC1-142A 1	5.22
927461	AC1-142A 2	5.22
927511	AC1-113 1	1.48
927521	AC1-113 2	1.48
927531	AC1-185 1	0.86
927541	AC1-185 2	0.86
927551	AC1-185 3	0.86
927561	AC1-185 4	0.86
927571	AC1-185 5	0.86
927581	AC1-185 6	0.86
927591	AC1-185 7	0.86
927601	AC1-185 8	0.86
930481	AB1-089	82.03
930501	AB1-091 O1	95.74
930741	AB1-122 1O1	91.06

Bus #	Bus	MW Impact
930751	AB1-122 2O1	92.05
932881	AC2-115 1	2.97
932891	AC2-115 2	2.97
932921	AC2-116	1.04
932931	AC2-117	6.65
933341	AC2-147 C	1.09
933342	AC2-147 E	1.78
933411	AC2-154 C	3.27
933412	AC2-154 E	5.33
933431	AC2-156 C O1	1.19
933432	AC2-156 E O1	1.95
933911	AD1-013 C	2.3
933912	AD1-013 E	3.67
933931	AD1-016 C	1.16
933932	AD1-016 E	1.89
934101	AD1-039 1	8.92
934111	AD1-039 2	9.02
934401	AD1-064 C O1	4.0
934402	AD1-064 E O1	18.72
934431	AD1-067 C	0.16
934432	AD1-067 E	0.69
934651	AD1-096 C	1.11
934652	AD1-096 E	1.81
934701	AD1-098 C O1	8.59
934702	AD1-098 E O1	6.27
934721	AD1-100 C	29.97
934722	AD1-100 E	139.86
934871	AD1-116 C	1.2
934872	AD1-116 E	1.95
934971	AD1-129 C	1.13
934972	AD1-129 E	0.75
935001	AD1-133 C O1	27.93
935002	AD1-133 E O1	18.62
936291	AD2-038 C O1	2.94
936292	AD2-038 E O1	19.66
936371	AD2-047 C O1	2.92
936372	AD2-047 E O1	31.45
936461	AD2-060	3.44
936511	AD2-066 C O1	10.56
936512	AD2-066 E O1	7.04
936781	AD2-101 C	5.94
936782	AD2-101 E	27.82
936791	AD2-102 C	14.99
936792	AD2-102 E	14.41
937001	AD2-134 C	3.41
937002	AD2-134 E	14.09
937031	AD2-137 C O1	7.3
937032	AD2-137 E O1	34.17
937051	AD2-140 C O1	7.67
937052	AD2-140 E O1	35.89
937061	AD2-141 C O1	7.62
937062	AD2-141 E O1	35.93

Bus #	Bus	MW Impact
937071	AD2-142 C O1	15.33
937072	AD2-142 E O1	71.78
937121	AD2-148 C O1	4.6
937122	AD2-148 E O1	21.53
937131	AD2-149 C O1	4.6
937132	AD2-149 E O1	21.53
937141	AD2-150 C O1	4.6
937142	AD2-150 E O1	21.53
937181	AD2-155 C O1	4.6
937182	AD2-155 E O1	21.53
937311	AD2-172 C	3.07
937312	AD2-172 E	4.24
937321	AD2-175 C	21.42
937322	AD2-175 E	14.28
937331	AD2-176 C O1	9.15
937332	AD2-176 E O1	6.1
937401	AD2-194 1	9.75
937411	AD2-194 2	9.75
938012	AE1-002 E O1	14.65
938511	AE1-070 1	11.45
938521	AE1-070 2	10.48
938851	AE1-113 C O1	10.95
938852	AE1-113 E O1	34.43
938861	AE1-114 C O1	4.49
938862	AE1-114 E O1	17.15
939051	AE1-134 1	1.71
939061	AE1-134 2	1.71
939321	AE1-163 C O1	7.38
939322	AE1-163 E O1	45.35
939351	AE1-166 C O1	14.79
939352	AE1-166 E O1	13.65
939401	AE1-172 C O1	9.69
939402	AE1-172 E O1	45.37
939691	AE1-199	2.98
939701	AE1-201 C	2.5
939702	AE1-201 E	0.55
939732	AE1-204 E	0.36
939741	AE1-205 C O1	12.7
939742	AE1-205 E O1	17.54
939861	AE1-222 1	100.56
939871	AE1-222 2	101.65
939921	AE1-228 C O1	12.54
939922	AE1-228 E O1	8.36
940101	AE1-252 C O1	16.52
940102	AE1-252 E O1	11.01
940501	AE2-035 C	3.07
940502	AE2-035 E	4.24
940621	AE2-049 C O1	11.77
940622	AE2-049 E O1	7.85
940631	AE2-050 C O1	15.7
940632	AE2-050 E O1	10.47
940752	AE2-062 E	0.16

Bus #	Bus	MW Impact
940762	AE2-063 E	0.16
940881	AE2-077 C	3.93
940882	AE2-077 E	6.42
941131	AE2-107 C	9.12
941132	AE2-107 E	6.08
941551	AE2-152 C	18.96
941552	AE2-152 E	9.48
941561	AE2-153 C O1	6.18
941562	AE2-153 E O1	28.96
941731	AE2-173	7.45
942111	AE2-223 C	2.94
942112	AE2-223 E	19.67
942421	AE2-255 C O1	3.78
942422	AE2-255 E O1	11.34
942651	AE2-281 C	1.05
942652	AE2-281 E	6.48
942881	AE2-307 C	28.78
942882	AE2-307 E	10.47
942911	AE2-310 C	11.43
942912	AE2-310 E	3.09
942991	AE2-321 C O1	10.2
942992	AE2-321 E O1	5.02
943121	AE2-341 C	15.94
943122	AE2-341 E	7.83
BLUEG	BLUEG	8.2
CALDERWOOD	CALDERWOOD	0.12
CANNELTON	CANNELTON	0.1
CARR	CARR	0.99
CATAWBA	CATAWBA	0.4
CBM-S1	CBM-S1	1.75
CBM-W1	CBM-W1	38.13
CBM-W2	CBM-W2	72.15
CHEOAH	CHEOAH	0.12
CHILHOWEE	CHILHOWEE	0.04
ELMERSMITH	ELMERSMITH	0.09
G-007	G-007	2.79
GIBSON	GIBSON	0.01
HAMLET	HAMLET	0.76
MEC	MEC	47.41
O-066	O-066	17.87
RENSSELAER	RENSSELAER	0.78
SANTEETLA	SANTEETLA	0.04
TRIMBLE	TRIMBLE	0.98
WEC	WEC	9.93
Z1-043	Z1-043	36.17

14.16 Index 16

ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC|DC	MW IMPACT
2228809	934720	AD1-100 TAP	CE	937030	AD2-137 TAP	CE	1	COMED_P7_345-L2001__B-S_+_345-L2003__R-S-B	tower	1846.0	145.12	147.48	DC	43.46

Bus #	Bus	MW Impact
274654	BRAIDWOOD;1U	33.97
274655	BRAIDWOOD;2U	32.44
274660	LASCO STA;1U	21.33
274661	LASCO STA;2U	21.37
274847	GR RIDGE ;BU	0.46
274853	TWINGROVE;U1	0.72
274854	TWINGROVE;U2	0.72
274863	CAYUGA RI;1U	0.94
274864	CAYUGA RI;2U	0.94
274871	GR RIDGE ;2U	0.59
274881	PLEAS RDG;2U	0.62
274887	PILOT HIL;1U	0.62
274888	PILOT HIL;1E	20.33
274890	CAYUG;1U E	31.01
274891	CAYUG;2U E	31.01
275149	KEMPTON ;1E	20.33
276150	W2-048 E	1.39
290261	S-027 E	23.71
290265	S-028 E	23.71
293061	N-015 E	15.16
294392	P-010 E	19.26
296125	R-030 C3	6.08
296128	R-030 E3	24.33
296271	R-030 C2	6.01
296272	R-030 E2	24.04
296308	R-030 C1	6.01
296309	R-030 E1	24.04
905081	W4-005 C	0.7
905082	W4-005 E	38.29
909052	X2-022 E	19.29
917501	Z2-087 C	0.57
917502	Z2-087 E	31.42
924041	AB2-047 C O1	5.77
924042	AB2-047 E O1	38.6
924261	AB2-070 C O1	2.84
924262	AB2-070 E O1	18.99
925771	AC1-053 C	2.79
925772	AC1-053 E	18.64
926821	AC1-168 C O1	0.69
926822	AC1-168 E O1	4.62

Bus #	Bus	MW Impact
930501	AB1-091 O1	92.41
933411	AC2-154 C	2.76
933412	AC2-154 E	4.5
934721	AD1-100 C	51.69
934722	AD1-100 E	241.21
935001	AD1-133 C O1	18.06
935002	AD1-133 E O1	12.04
935141	AD1-148	5.04
936371	AD2-047 C O1	2.47
936372	AD2-047 E O1	26.58
936461	AD2-060	2.9
936771	AD2-100 C O1	10.69
936772	AD2-100 E O1	7.13
936781	AD2-101 C	3.9
936782	AD2-101 E	18.24
936972	AD2-131 E O1	2.25
937121	AD2-148 C O1	4.45
937122	AD2-148 E O1	20.84
937131	AD2-149 C O1	4.45
937132	AD2-149 E O1	20.84
937141	AD2-150 C O1	4.45
937142	AD2-150 E O1	20.84
937161	AD2-153 C O1	3.91
937162	AD2-153 E O1	18.29
937171	AD2-154 C O1	3.91
937172	AD2-154 E O1	18.29
937181	AD2-155 C O1	4.45
937182	AD2-155 E O1	20.84
937211	AD2-159 C	4.14
937212	AD2-159 E	19.37
937321	AD2-175 C	20.73
937322	AD2-175 E	13.82
938012	AE1-002 E O1	28.93
939351	AE1-166 C O1	22.6
939352	AE1-166 E O1	20.86
939401	AE1-172 C O1	15.93
939402	AE1-172 E O1	74.58
939741	AE1-205 C O1	15.3
939742	AE1-205 E O1	21.13
940101	AE1-252 C O1	27.15
940102	AE1-252 E O1	18.1
940621	AE2-049 C O1	9.11
940622	AE2-049 E O1	6.07
940631	AE2-050 C O1	20.86
940632	AE2-050 E O1	13.9
941551	AE2-152 C	28.97
941552	AE2-152 E	14.48
941561	AE2-153 C O1	7.41
941562	AE2-153 E O1	34.7
941731	AE2-173	8.89
942111	AE2-223 C	3.52
942112	AE2-223 E	23.57

Bus #	Bus	MW Impact
942481	AE2-261 C	13.71
942482	AE2-261 E	9.14
942881	AE2-307 C	38.24
942882	AE2-307 E	13.9
942911	AE2-310 C	8.85
942912	AE2-310 E	2.39
951741	J474 C	1.79
951742	J474 E	9.69
953741	J826 C	1.05
953742	J826 E	5.67
954181	J884	9.28
BLUEG	BLUEG	0.29
CARR	CARR	0.29
CATAWBA	CATAWBA	0.01
CBM-S1	CBM-S1	2.5
CBM-W1	CBM-W1	3.98
CBM-W2	CBM-W2	47.18
CIN	CIN	2.43
G-007	G-007	0.8
HAMLET	HAMLET	0.07
IPL	IPL	1.03
MEC	MEC	12.37
O-066	O-066	5.13
RENSSELAER	RENSSELAER	0.23
TRIMBLE	TRIMBLE	0.07
WEC	WEC	0.85
Z1-043	Z1-043	15.21

14.17 Index 17

ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC|DC	MW IMPACT
2228804	937030	AD2-137 TAP	CE	270926	WILTON ; B	CE	1	COMED_P7_345-L2001__B-S_+_345-L2003__R-S-B	tower	1846.0	153.07	155.43	DC	43.46

Bus #	Bus	MW Impact
274654	BRAIDWOOD;1U	33.97
274655	BRAIDWOOD;2U	32.44
274660	LASCO STA;1U	21.33
274661	LASCO STA;2U	21.37
274847	GR RIDGE ;BU	0.46
274853	TWINGROVE;U1	0.72
274854	TWINGROVE;U2	0.72
274863	CAYUGA RI;1U	0.94
274864	CAYUGA RI;2U	0.94
274871	GR RIDGE ;2U	0.59
274881	PLEAS RDG;2U	0.62
274887	PILOT HIL;1U	0.62
274888	PILOT HIL;1E	20.33
274890	CAYUG;1U E	31.01
274891	CAYUG;2U E	31.01
275149	KEMPTON ;1E	20.33
276150	W2-048 E	1.39
290261	S-027 E	23.71
290265	S-028 E	23.71
293061	N-015 E	15.16
294392	P-010 E	19.26
296125	R-030 C3	6.08
296128	R-030 E3	24.33
296271	R-030 C2	6.01
296272	R-030 E2	24.04
296308	R-030 C1	6.01
296309	R-030 E1	24.04
905081	W4-005 C	0.7
905082	W4-005 E	38.29
909052	X2-022 E	19.29
917501	Z2-087 C	0.57
917502	Z2-087 E	31.42
924041	AB2-047 C O1	5.77
924042	AB2-047 E O1	38.6
924261	AB2-070 C O1	2.84
924262	AB2-070 E O1	18.99
925771	AC1-053 C	2.79
925772	AC1-053 E	18.64
926821	AC1-168 C O1	0.69
926822	AC1-168 E O1	4.62

Bus #	Bus	MW Impact
930501	AB1-091 O1	92.41
933411	AC2-154 C	2.76
933412	AC2-154 E	4.5
934721	AD1-100 C	51.69
934722	AD1-100 E	241.21
935001	AD1-133 C O1	18.06
935002	AD1-133 E O1	12.04
935141	AD1-148	5.04
936371	AD2-047 C O1	2.47
936372	AD2-047 E O1	26.58
936461	AD2-060	2.9
936771	AD2-100 C O1	10.69
936772	AD2-100 E O1	7.13
936781	AD2-101 C	3.9
936782	AD2-101 E	18.24
936972	AD2-131 E O1	2.25
937031	AD2-137 C O1	18.76
937032	AD2-137 E O1	87.84
937121	AD2-148 C O1	4.45
937122	AD2-148 E O1	20.84
937131	AD2-149 C O1	4.45
937132	AD2-149 E O1	20.84
937141	AD2-150 C O1	4.45
937142	AD2-150 E O1	20.84
937161	AD2-153 C O1	3.91
937162	AD2-153 E O1	18.29
937171	AD2-154 C O1	3.91
937172	AD2-154 E O1	18.29
937181	AD2-155 C O1	4.45
937182	AD2-155 E O1	20.84
937211	AD2-159 C	4.14
937212	AD2-159 E	19.37
937321	AD2-175 C	20.73
937322	AD2-175 E	13.82
938012	AE1-002 E O1	71.07
939351	AE1-166 C O1	22.6
939352	AE1-166 E O1	20.86
939401	AE1-172 C O1	15.93
939402	AE1-172 E O1	74.58
939741	AE1-205 C O1	15.3
939742	AE1-205 E O1	21.13
940101	AE1-252 C O1	27.15
940102	AE1-252 E O1	18.1
940621	AE2-049 C O1	9.11
940622	AE2-049 E O1	6.07
940631	AE2-050 C O1	20.86
940632	AE2-050 E O1	13.9
941551	AE2-152 C	28.97
941552	AE2-152 E	14.48
941561	AE2-153 C O1	7.41
941562	AE2-153 E O1	34.7
941731	AE2-173	8.89

Bus #	Bus	MW Impact
942111	AE2-223 C	3.52
942112	AE2-223 E	23.57
942481	AE2-261 C	13.71
942482	AE2-261 E	9.14
942881	AE2-307 C	38.24
942882	AE2-307 E	13.9
942911	AE2-310 C	8.85
942912	AE2-310 E	2.39
951741	J474 C	1.79
951742	J474 E	9.69
953741	J826 C	1.05
953742	J826 E	5.67
954181	J884	9.28
BLUEG	BLUEG	0.29
CARR	CARR	0.29
CATAWBA	CATAWBA	0.01
CBM-S1	CBM-S1	2.5
CBM-W1	CBM-W1	3.98
CBM-W2	CBM-W2	47.18
CIN	CIN	2.43
G-007	G-007	0.8
HAMLET	HAMLET	0.07
IPL	IPL	1.03
MEC	MEC	12.37
O-066	O-066	5.13
RENSSELAER	RENSSELAER	0.23
TRIMBLE	TRIMBLE	0.07
WEC	WEC	0.85
Z1-043	Z1-043	15.21

Affected Systems

15 Affected Systems

15.1 LG&E

LG&E Impacts to be determined during later study phases (as applicable).

15.2 MISO

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

15.3 TVA

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

15.4 Duke Energy Progress

Duke Energy Progress Impacts to be determined during later study phases (as applicable).

15.5 NYISO

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

Contingency Name	Contingency Definition
COMED_P7_345-L2001__B-S_+_345-L2003__R-S-B	CONTINGENCY 'COMED_P7_345-L2001__B-S_+_345-L2003__R-S-B' TRIP BRANCH FROM BUS 940630 TO BUS 270728 CKT 1 / AE2-050 TAP 345 E FRA; B 345 TRIP BRANCH FROM BUS 270728 TO BUS 270766 CKT 1 / E FRA; B 345 GOODI;3B 345 TRIP BRANCH FROM BUS 270728 TO BUS 274750 CKT 1 / E FRA; B 345 CRETE;BP 345 TRIP BRANCH FROM BUS 270671 TO BUS 270729 CKT 1 / BRAID; R 345 E FRA; R 345 END
COMED_P4_020-45-BT9-10_	CONTINGENCY 'COMED_P4_020-45-BT9-10_' TRIP BRANCH FROM BUS 270803 TO BUS 270671 CKT 1 / LASCO; R 345 BRAID; R 345 REMOVE UNIT 2 FROM BUS 274655 / BRAID;2U 25 END
AEP_P1-2_#695A	CONTINGENCY 'AEP_P1-2_#695A' OPEN BRANCH FROM BUS 243206 TO BUS 270644 CKT 1 / 243206 05DUMONT 765 270644 WILTON ; 765 1 END
COMED_P7_345-L94507_B-S_+_345-L97008_R-S	CONTINGENCY 'COMED_P7_345-L94507_B-S_+_345-L97008_R-S' TRIP BRANCH FROM BUS 274750 TO BUS 255112 CKT 1 / CRETE;BP 345 17STJOHN 345 TRIP BRANCH FROM BUS 274804 TO BUS 243229 CKT 1 / UPNOR;RP 345 05OLIVE 345 END
COMED_P1-2_345-L8014___-S-B	CONTINGENCY 'COMED_P1-2_345-L8014___-S-B' TRIP BRANCH FROM BUS 935000 TO BUS 270717 CKT 1 / AD1-133 TAP 345 DRESDEN ; R 345 END
COMED_P7_345-L6607__B-S_+_345-L97008_R-S	CONTINGENCY 'COMED_P7_345-L6607__B-S_+_345-L97008_R-S' TRIP BRANCH FROM BUS 270728 TO BUS 274750 CKT 1 / E FRANKFO; B 345 CRETE EC ;BP 345 TRIP BRANCH FROM BUS 274804 TO BUS 243229 CKT 1 / UNIV PK N;RP 345 05OLIVE 345 END
COMED_P7_345-L2001__B-S_+_345-L2003__R-S-A	CONTINGENCY 'COMED_P7_345-L2001__B-S_+_345-L2003__R-S-A' TRIP BRANCH FROM BUS 270670 TO BUS 940630 CKT 1 / BRAID; B 345 AE2-050 TAP 345 TRIP BRANCH FROM BUS 270671 TO BUS 270729 CKT 1 / BRAID; R 345 E FRA; R 345 END
COMED_P1-2_345-L11212_B-S-A	CONTINGENCY 'COMED_P1-2_345-L11212_B-S-A' TRIP BRANCH FROM BUS 270926 TO BUS 937030 CKT 1 / WILTO; B 345 AD2-137 TAP 345 END
COMED_P4_112-65-BT2-3__	CONTINGENCY 'COMED_P4_112-65-BT2-3__' TRIP BRANCH FROM BUS 270644 TO BUS 270607 CKT 1 / WILTO; 765 COLLI; 765 TRIP BRANCH FROM BUS 275232 TO BUS 270644 CKT 1 / WILTO;3M 345 WILTO; 765 TRIP BRANCH FROM BUS 275232 TO BUS 270926 CKT 1 / WILTO;3M 345 WILTO; B 345 TRIP BRANCH FROM BUS 275232 TO BUS 275332 CKT 1 / WILTO;3M 345 WILTO;3C 33 END

Contingency Name	Contingency Definition
COMED_P4_112-65-BT3-4__	CONTINGENCY 'COMED_P4_112-65-BT3-4__' TRIP BRANCH FROM BUS 270644 TO BUS 243206 CKT 1 / WILTO; 765 05DUMONT 765 TRIP BRANCH FROM BUS 275232 TO BUS 270644 CKT 1 / WILTO;3M 345 WILTO; 765 TRIP BRANCH FROM BUS 275232 TO BUS 270926 CKT 1 / WILTO;3M 345 WILTO; B 345 TRIP BRANCH FROM BUS 275232 TO BUS 275332 CKT 1 / WILTO;3M 345 WILTO;3C 33 END
AEP_P4_#2978_05DUMONT 765_B	CONTINGENCY 'AEP_P4_#2978_05DUMONT 765_B' OPEN BRANCH FROM BUS 243206 TO BUS 243207 CKT 1 / 243206 05DUMONT 765 243207 05GRNTWN 765 1 OPEN BRANCH FROM BUS 243206 TO BUS 270644 CKT 1 / 243206 05DUMONT 765 270644 WILTON ; 765 1 END
COMED_P1-2_765-L11216__-S	CONTINGENCY 'COMED_P1-2_765-L11216__-S' TRIP BRANCH FROM BUS 270644 TO BUS 270607 CKT 1 / WILTO; 765 COLLI; 765 END
Base Case	
COMED_P4_023-65-BT2-3__	CONTINGENCY 'COMED_P4_023-65-BT2-3__' TRIP BRANCH FROM BUS 270644 TO BUS 243206 CKT 1 / WILTO; 765 05DUMONT 765 TRIP BRANCH FROM BUS 270607 TO BUS 270630 CKT 1 / COLLI; 765 PLANO; 765 END
COMED_P4_112-65-BT5-6__	CONTINGENCY 'COMED_P4_112-65-BT5-6__' TRIP BRANCH FROM BUS 270644 TO BUS 270607 CKT 1 / WILTO; 765 COLLI; 765 TRIP BRANCH FROM BUS 275233 TO BUS 270644 CKT 1 / WILTO;4M 345 WILTO; 765 TRIP BRANCH FROM BUS 275233 TO BUS 270927 CKT 1 / WILTO;4M 345 WILTO; R 345 TRIP BRANCH FROM BUS 275233 TO BUS 275333 CKT 1 / WILTO;4M 345 WILTO;4C 33 END
COMED_P4_112-65-BT4-5__	CONTINGENCY 'COMED_P4_112-65-BT4-5__' TRIP BRANCH FROM BUS 270644 TO BUS 243206 CKT 1 / WILTO; 765 05DUMONT 765 TRIP BRANCH FROM BUS 275233 TO BUS 270644 CKT 1 / WILTO;4M 345 WILTO; 765 TRIP BRANCH FROM BUS 275233 TO BUS 270927 CKT 1 / WILTO;4M 345 WILTO; R 345 TRIP BRANCH FROM BUS 275233 TO BUS 275333 CKT 1 / WILTO;4M 345 WILTO;4C 33 END
COMED_P4_023-65-BT4-5__	CONTINGENCY 'COMED_P4_023-65-BT4-5__' TRIP BRANCH FROM BUS 275168 TO BUS 270607 CKT 1 / COLLI;2M 345 COLLI; 765 TRIP BRANCH FROM BUS 275168 TO BUS 270697 CKT 1 / COLLI;2M 345 COLLI; R 345 TRIP BRANCH FROM BUS 275168 TO BUS 275268 CKT 1 / COLLI;2M 345 COLLI;2C 33 TRIP BRANCH FROM BUS 270644 TO BUS 243206 CKT 1 / WILTO; 765 05DUMONT 765 END

Short Circuit

16 Short Circuit

No issues identified.

17 Network Impacts

The Queue Project AE2-152 was evaluated as a 150.0 MW (Capacity 90.0 MW) injection tapping the Wilmington to Davis Creek 138kV line in the ComEd area. Project AE2-152 was evaluated for compliance with applicable reliability planning criteria (PJM, NERC, NERC Regional Reliability Councils, and Transmission Owners). Project AE2-152 was studied with a commercial probability of 0.53. Potential network impacts were as follows:

Summer Peak Load Flow

18 Generation Deliverability

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

None

19 Multiple Facility Contingency

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

ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC|DC	MW IMPACT
8770757	271567	GOOSE LK ; R	CE	271785	GOOSE LK ;RT	CE	1	COMED_P4_012-45-BT5-6__	breaker	449.0	97.1	100.71	DC	16.16

20 Contribution to Previously Identified Overloads

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

ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC|DC	MW IMPACT
2228329	255104	17GREEN_ACRE	NIPS	270771	GREENACRE; T	CE	1	AEP_P4_#2978_05DUMONT 765_B	breaker	1091.0	111.83	111.92	DC	13.07
2228197	255112	17STJOHN	NIPS	270886	ST JOHN ; T	CE	1	AEP_P4_#2978_05DUMONT 765_B	breaker	1091.0	133.17	133.25	DC	13.8
2228198	255112	17STJOHN	NIPS	270886	ST JOHN ; T	CE	1	COMED_P4_023-65-BT2-3__	breaker	1091.0	133.0	133.07	DC	13.92
2228199	255112	17STJOHN	NIPS	270886	ST JOHN ; T	CE	1	COMED_P4_112-65-BT4-5__	breaker	1091.0	132.64	132.72	DC	13.92
2228200	255112	17STJOHN	NIPS	270886	ST JOHN ; T	CE	1	COMED_P4_112-65-BT3-4__	breaker	1091.0	132.63	132.72	DC	13.92
1539765	255113	17STILLWELL	NIPS	243219	05DUMONT	AEP	1	AEP_P4_#2978_05DUMONT 765_B	breaker	1409.0	173.02	173.14	DC	23.15
1540530	255113	17STILLWELL	NIPS	243219	05DUMONT	AEP	1	AEP_P1-2_#695A	single	1409.0	108.58	109.04	DC	14.32
1541382	270644	WILTON ;	CE	243206	05DUMONT	AEP	1	COMED_P7_345-L94507_B-S_+_345-L97008_R-S	tower	4105.0	106.97	107.04	DC	47.9
1541383	270644	WILTON ;	CE	243206	05DUMONT	AEP	1	COMED_P7_345-L6607__B-S_+_345-L97008_R-S	tower	4105.0	104.88	104.95	DC	47.97
2228402	270677	BURNHAM ;0R	CE	255109	17MUNSTER	NIPS	1	AEP_P4_#2978_05DUMONT 765_B	breaker	1441.0	100.69	100.82	DC	20.61
2228265	270716	DRESDEN ; B	CE	270928	WOLFS ; B	CE	1	COMED_P4_012-45-BT5-6__	breaker	1479.0	118.79	120.51	DC	25.36
8770235	270716	DRESDEN ; B	CE	274702	KENDALL ;BU	CE	1	COMED_P2-2_111_EJ-345B__2	bus	1195.0	104.88	105.44	DC	14.35
8770663	270716	DRESDEN ; B	CE	274702	KENDALL ;BU	CE	1	COMED_P4_111-45-L11126_	breaker	1195.0	104.94	105.49	DC	14.37
8770664	270716	DRESDEN ; B	CE	274702	KENDALL ;BU	CE	1	COMED_P4_111-45-L14321T	breaker	1195.0	104.88	105.44	DC	14.35
8771388	270716	DRESDEN ; B	CE	274702	KENDALL ;BU	CE	1	COMED_P7_345-L11620_B-S_+_345-L11622_R-S	tower	1195.0	129.75	130.24	DC	12.68
8771389	270716	DRESDEN ; B	CE	274702	KENDALL ;BU	CE	1	COMED_P7_345-L1221__B-S_+_345-L1223_TR-S	tower	1195.0	110.38	110.94	DC	14.44

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
2228300	270728	E FRANKFO; B	CE	274750	CRETE EC ;BP	CE	1	AEP_P4_#2978_05DUMONT 765_B	breaker	1399.0	114.4	114.49	DC	19.0
2228301	270728	E FRANKFO; B	CE	274750	CRETE EC ;BP	CE	1	COMED_P4_023-65-BT2-3__	breaker	1399.0	113.95	114.04	DC	19.12
2228302	270728	E FRANKFO; B	CE	274750	CRETE EC ;BP	CE	1	COMED_P4_112-65-BT4-5__	breaker	1399.0	113.87	113.97	DC	19.11
2228303	270728	E FRANKFO; B	CE	274750	CRETE EC ;BP	CE	1	COMED_P4_112-65-BT3-4__	breaker	1399.0	113.86	113.96	DC	19.11
1540036	270771	GREENACRE; T	CE	243229	05OLIVE	AEP	1	AEP_P4_#2978_05DUMONT 765_B	breaker	971.0	125.63	125.73	DC	13.07
2228202	270886	ST JOHN ; T	CE	255104	17GREEN_ACRE	NIPS	1	AEP_P4_#2978_05DUMONT 765_B	breaker	1091.0	133.17	133.25	DC	13.8
2228203	270886	ST JOHN ; T	CE	255104	17GREEN_ACRE	NIPS	1	COMED_P4_023-65-BT2-3__	breaker	1091.0	133.0	133.07	DC	13.92
2228204	270886	ST JOHN ; T	CE	255104	17GREEN_ACRE	NIPS	1	COMED_P4_112-65-BT4-5__	breaker	1091.0	132.64	132.72	DC	13.92
2228205	270886	ST JOHN ; T	CE	255104	17GREEN_ACRE	NIPS	1	COMED_P4_112-65-BT3-4__	breaker	1091.0	132.63	132.72	DC	13.92
2228135	270926	WILTON ; B	CE	275232	WILTON ;3M	CE	1	COMED_P4_112-65-BT5-6__	breaker	1379.0	162.7	162.83	DC	24.54
2228137	270927	WILTON ; R	CE	275233	WILTON ;4M	CE	1	COMED_P4_112-65-BT2-3__	breaker	1379.0	162.41	162.55	DC	25.05
2228153	274750	CRETE EC ;BP	CE	255112	17STJOHN	NIPS	1	AEP_P4_#2978_05DUMONT 765_B	breaker	1399.0	159.58	159.66	DC	18.75
2228154	274750	CRETE EC ;BP	CE	255112	17STJOHN	NIPS	1	COMED_P4_023-65-BT2-3__	breaker	1399.0	159.13	159.21	DC	18.87
2228155	274750	CRETE EC ;BP	CE	255112	17STJOHN	NIPS	1	COMED_P4_112-65-BT4-5__	breaker	1399.0	159.08	159.16	DC	18.86
2228156	274750	CRETE EC ;BP	CE	255112	17STJOHN	NIPS	1	COMED_P4_112-65-BT3-4__	breaker	1399.0	159.08	159.15	DC	18.86
1539902	274804	UNIV PK N;RP	CE	243229	05OLIVE	AEP	1	AEP_P4_#2978_05DUMONT 765_B	breaker	971.0	138.38	138.54	DC	15.85
1539903	274804	UNIV PK N;RP	CE	243229	05OLIVE	AEP	1	COMED_P4_023-65-BT2-3__	breaker	971.0	137.27	137.43	DC	15.99
1539904	274804	UNIV PK N;RP	CE	243229	05OLIVE	AEP	1	COMED_P4_112-65-BT4-5__	breaker	971.0	137.25	137.41	DC	15.99
1539905	274804	UNIV PK N;RP	CE	243229	05OLIVE	AEP	1	COMED_P4_112-65-BT3-4__	breaker	971.0	137.25	137.41	DC	15.99
1539906	274804	UNIV PK N;RP	CE	243229	05OLIVE	AEP	1	COMED_P4_023-65-BT4-5__	breaker	971.0	137.25	137.41	DC	15.99
2228133	275232	WILTON ;3M	CE	270644	WILTON ;	CE	1	COMED_P4_112-65-BT5-6__	breaker	1379.0	162.7	162.83	DC	24.54
2228139	275233	WILTON ;4M	CE	270644	WILTON ;	CE	1	COMED_P4_112-65-BT2-3__	breaker	1379.0	162.41	162.55	DC	25.05

21 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	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
2228689	255104	17GREEN_ACRE	NIPS	270771	GREENACRE; T	CE	1	AEP_P1-2_#695A	operation	1091.0	110.78	110.88	DC	13.24
2228585	255112	17STJOHN	NIPS	270886	ST JOHN ; T	CE	1	AEP_P1-2_#695A	operation	1091.0	132.63	132.71	DC	13.92
1540524	255113	17STILLWELL	NIPS	243219	05DUMONT	AEP	1	AEP_P1-2_#695A	operation	1409.0	170.07	170.21	DC	23.86
1540529	255113	17STILLWELL	NIPS	243219	05DUMONT	AEP	1	Base Case	operation	1409.0	110.15	110.25	DC	14.36
1541058	270644	WILTON ;	CE	243206	05DUMONT	AEP	1	Base Case	operation	3555.0	105.45	105.52	DC	40.66
2228775	270677	BURNHAM ;0R	CE	255109	17MUNSTER	NIPS	1	AEP_P1-2_#695A	operation	1441.0	99.95	100.09	DC	20.76
8771254	270716	DRESDEN ; B	CE	274702	KENDALL ;BU	CE	1	COMED_P1-2_345-L1221__B-S	operation	1195.0	104.05	104.61	DC	14.36
2228670	270728	E FRANKFO; B	CE	274750	CRETE EC ;BP	CE	1	AEP_P1-2_#695A	operation	1399.0	113.82	113.92	DC	19.11
1540778	270771	GREENACRE; T	CE	243229	05OLIVE	AEP	1	AEP_P1-2_#695A	operation	971.0	124.45	124.56	DC	13.24
2228582	270886	ST JOHN ; T	CE	255104	17GREEN_ACRE	NIPS	1	AEP_P1-2_#695A	operation	1091.0	132.63	132.71	DC	13.92
2228767	270926	WILTON ; B	CE	275232	WILTON ;3M	CE	1	COMED_P1-2_765-L11216__-S	operation	1379.0	102.15	102.22	DC	15.4
2228741	270927	WILTON ; R	CE	275233	WILTON ;4M	CE	1	COMED_P1-2_765-L11216__-S	operation	1379.0	104.73	104.82	DC	16.16
2228540	274750	CRETE EC ;BP	CE	255112	17STJOHN	NIPS	1	AEP_P1-2_#695A	operation	1399.0	159.04	159.12	DC	18.86
2228541	274750	CRETE EC ;BP	CE	255112	17STJOHN	NIPS	1	Base Case	operation	1091.0	129.81	130.32	DC	12.13
1540684	274804	UNIV PK N;RP	CE	243229	05OLIVE	AEP	1	AEP_P1-2_#695A	operation	971.0	137.24	137.4	DC	15.99
14556327	941550	AE2-152 TAP	CE	272789	WILMINGTO;	CE	1	COMED_P1-2_138-L8607__R-S-A	operation	317.0	0.03	47.32	DC	150.0
14556328	941560	AE2-153 TAP	CE	271295	DAVIS CRK; R	CE	1	COMED_P1-2_138-L8607__R-S-C	operation	317.0	0.03	47.32	DC	150.0

22 Flow Gate Details

The following appendices contain additional information about each flowgate presented in the body of the report. For each appendix, a description of the flowgate and its contingency was included for convenience. However, the intent of the appendix section is to provide more information on which projects/generators have contributions to the flowgate in question. Although this information is not used "as is" for cost allocation purposes, it can be used to gage other generators impact. It should be noted the generator contributions presented in the appendices sections are full contributions, whereas in the body of the report, those contributions take into consideration the commercial probability of each project.

22.1 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
8770757	271567	GOOSE LK ; R	CE	271785	GOOSE LK ;RT	CE	1	COMED_P4_012-45-BT5-6__	breaker	449.0	97.1	100.71	DC	16.16

Bus #	Bus	MW Impact
274658	DRESDEN ;2U	12.59
274836	EQUISTAR ; R	2.4
290021	O50 E	10.07
904211	W3-135	0.17
916512	Z1-107 E	1.98
930751	AB1-122 2O1	64.77
934111	AD1-039 2	6.35
936511	AD2-066 C O1	10.48
936512	AD2-066 E O1	6.98
938851	AE1-113 C O1	4.56
938852	AE1-113 E O1	14.33
939871	AE1-222 2	71.53
941551	AE2-152 C O2	9.69
941552	AE2-152 E O2	6.46
941561	AE2-153 C O2	2.2
941562	AE2-153 E O2	10.29
BLUEG	BLUEG	0.38
CANNELTON	CANNELTON	0.0
CARR	CARR	0.04
CATAWBA	CATAWBA	0.01
CBM-S1	CBM-S1	0.24
CBM-W1	CBM-W1	2.03
CBM-W2	CBM-W2	5.71
G-007	G-007	0.12
GIBSON	GIBSON	0.0
HAMLET	HAMLET	0.02
MEC	MEC	3.88
O-066	O-066	0.75
RENSSELAER	RENSSELAER	0.03
TRIMBLE	TRIMBLE	0.05
WEC	WEC	0.35
Z1-043	Z1-043	9.7

22.2 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
2228329	255104	17GREEN_ACRE	NIPS	270771	GREENACRE; T	CE	1	AEP_P4_#2978_05DUMONT 765_B	breaker	1091.0	111.83	111.92	DC	13.07

Bus #	Bus	MW Impact
270859	PWR VTR EC;R	8.05
274722	S-055 E	7.51
274751	CRETE EC ;1U	1.53
274752	CRETE EC ;2U	1.53
274753	CRETE EC ;3U	1.53
274754	CRETE EC ;4U	1.53
274788	SE CHICAG;5U	3.6
274789	SE CHICAG;6U	3.6
274790	SE CHICAG;7U	3.6
274791	SE CHICAG;8U	3.6
274792	SE CHICAG;9U	3.65
274793	SE CHICAG;0U	3.65
274794	SE CHICAG;1U	3.65
274795	SE CHICAG;2U	3.65
274859	EASYR;U1 E	7.29
274860	EASYR;U2 E	7.29
274888	PILOT HIL;1E	12.38
274890	CAYUG;1U E	8.91
274891	CAYUG;2U E	8.91
275149	KEMPTON ;1E	12.38
290021	O50 E	12.96
290051	GSG-6; E	6.93
290108	LEEDK;1U E	16.12
293061	N-015 E	10.22
293516	O-009 E1	2.6
293517	O-009 E2	1.32
293518	O-009 E3	1.45
293644	O22 E1	7.23
293645	O22 E2	14.04
293715	O-029 E	6.46
293716	O-029 E	3.54
293717	O-029 E	3.26
294392	P-010 E	12.98
294763	P-046 E	6.22
295109	WESTBROOK E	3.71
295111	SUBLETTE E	1.72
910542	X3-005 E	0.52
914641	Y2-103	30.04
915011	Y3-013 1	2.5
915021	Y3-013 2	2.5
915031	Y3-013 3	2.5
916221	Z1-073 E	3.58

Bus #	Bus	MW Impact
916502	Z1-106 E1	0.84
916504	Z1-106 E2	0.84
916512	Z1-107 E	1.71
916522	Z1-108 E	1.66
918052	AA1-018 E	10.6
919221	AA1-146	11.65
919581	AA2-030	11.65
920272	AA2-123 E	1.63
924471	AB2-096	28.16
925161	AB2-173	2.08
925302	AB2-191 E	0.92
926311	AC1-109 1	1.27
926321	AC1-109 2	1.27
926331	AC1-110 1	1.26
926341	AC1-110 2	1.26
926351	AC1-111 1	0.51
926361	AC1-111 2	0.51
926371	AC1-111 3	0.51
926381	AC1-111 4	0.51
926391	AC1-111 5	0.51
926401	AC1-111 6	0.51
926431	AC1-114	1.58
926821	AC1-168 C O1	0.76
926822	AC1-168 E O1	5.07
927091	AC1-204 1	48.7
927101	AC1-204 2	48.66
927451	AC1-142A 1	2.83
927461	AC1-142A 2	2.83
927511	AC1-113 1	0.79
927521	AC1-113 2	0.79
927531	AC1-185 1	0.46
927541	AC1-185 2	0.46
927551	AC1-185 3	0.46
927561	AC1-185 4	0.46
927571	AC1-185 5	0.46
927581	AC1-185 6	0.46
927591	AC1-185 7	0.46
927601	AC1-185 8	0.46
930481	AB1-089	43.69
930501	AB1-091 O1	49.08
930741	AB1-122 1O1	47.51
930751	AB1-122 2O1	49.69
932881	AC2-115 1	1.58
932891	AC2-115 2	1.58
932921	AC2-116	0.55
933341	AC2-147 C	0.58
933342	AC2-147 E	0.94
933411	AC2-154 C	1.68
933412	AC2-154 E	2.74
933431	AC2-156 C O1	0.63
933432	AC2-156 E O1	1.04
933911	AD1-013 C	1.22

Bus #	Bus	MW Impact
933912	AD1-013 E	1.95
933931	AD1-016 C	0.62
933932	AD1-016 E	1.01
934101	AD1-039 1	4.66
934111	AD1-039 2	4.87
934401	AD1-064 C O1	2.13
934402	AD1-064 E O1	9.97
934431	AD1-067 C	0.09
934432	AD1-067 E	0.37
934651	AD1-096 C	0.59
934652	AD1-096 E	0.97
934701	AD1-098 C O1	4.56
934702	AD1-098 E O1	3.33
934721	AD1-100 C	12.92
934722	AD1-100 E	60.3
934871	AD1-116 C	0.62
934872	AD1-116 E	1.01
934971	AD1-129 C	0.6
934972	AD1-129 E	0.4
935001	AD1-133 C O1	13.71
935002	AD1-133 E O1	9.14
936291	AD2-038 C O1	1.54
936292	AD2-038 E O1	10.3
936371	AD2-047 C O1	1.5
936372	AD2-047 E O1	16.18
936461	AD2-060	1.77
936511	AD2-066 C O1	5.55
936512	AD2-066 E O1	3.7
936781	AD2-101 C	3.17
936782	AD2-101 E	14.82
936791	AD2-102 C	7.99
936792	AD2-102 E	7.67
937001	AD2-134 C	1.81
937002	AD2-134 E	7.49
937031	AD2-137 C O1	2.3
937032	AD2-137 E O1	10.79
937051	AD2-140 C O1	2.32
937052	AD2-140 E O1	10.85
937061	AD2-141 C O1	2.3
937062	AD2-141 E O1	10.86
937071	AD2-142 C O1	4.64
937072	AD2-142 E O1	21.7
937121	AD2-148 C O1	2.36
937122	AD2-148 E O1	11.03
937131	AD2-149 C O1	2.36
937132	AD2-149 E O1	11.03
937141	AD2-150 C O1	2.36
937142	AD2-150 E O1	11.03
937181	AD2-155 C O1	2.36
937182	AD2-155 E O1	11.03
937311	AD2-172 C	1.63
937312	AD2-172 E	2.26

Bus #	Bus	MW Impact
937321	AD2-175 C	10.97
937322	AD2-175 E	7.32
937331	AD2-176 C O1	4.88
937332	AD2-176 E O1	3.25
937401	AD2-194 1	5.24
937411	AD2-194 2	5.23
938012	AE1-002 E O1	4.63
938511	AE1-070 1	6.15
938521	AE1-070 2	5.63
938851	AE1-113 C O1	5.87
938852	AE1-113 E O1	18.44
938861	AE1-114 C O1	2.38
938862	AE1-114 E O1	9.12
939051	AE1-134 1	0.9
939061	AE1-134 2	0.9
939321	AE1-163 C O1	3.87
939322	AE1-163 E O1	23.76
939351	AE1-166 C O1	6.83
939352	AE1-166 E O1	6.3
939401	AE1-172 C O1	4.09
939402	AE1-172 E O1	19.14
939641	AE1-194 C	10.88
939642	AE1-194 E	72.79
939651	AE1-195 C	10.88
939652	AE1-195 E	72.79
939691	AE1-199	1.59
939701	AE1-201 C	1.33
939702	AE1-201 E	0.29
939732	AE1-204 E	0.2
939861	AE1-222 1	52.47
939871	AE1-222 2	54.87
939921	AE1-228 C O1	6.67
939922	AE1-228 E O1	4.44
940101	AE1-252 C O1	6.97
940102	AE1-252 E O1	4.65
940501	AE2-035 C	1.63
940502	AE2-035 E	2.26
940621	AE2-049 C O2	6.1
940622	AE2-049 E O2	4.07
940631	AE2-050 C O2	8.04
940632	AE2-050 E O2	5.36
940752	AE2-062 E	0.09
940762	AE2-063 E	0.09
940881	AE2-077 C	2.09
940882	AE2-077 E	3.42
941131	AE2-107 C	4.85
941132	AE2-107 E	3.23
941551	AE2-152 C O2	7.84
941552	AE2-152 E O2	5.23
941561	AE2-153 C O2	3.09
941562	AE2-153 E O2	14.45
942421	AE2-255 C O2	1.97

Bus #	Bus	MW Impact
942422	AE2-255 E O2	5.9
942651	AE2-281 C	0.55
942652	AE2-281 E	3.39
942881	AE2-307 C	14.74
942882	AE2-307 E	5.36
942911	AE2-310 C	5.93
942912	AE2-310 E	1.6
942991	AE2-321 C O2	5.45
942992	AE2-321 E O2	2.68
943121	AE2-341 C	8.47
943122	AE2-341 E	4.16
951721	J643	15.48
952581	J740 C	3.4
952582	J740 E	18.4
953871	J847	8.37
BLUEG	BLUEG	2.92
CANNELTON	CANNELTON	0.01
CARR	CARR	0.5
CATAWBA	CATAWBA	0.17
CBM-S1	CBM-S1	1.31
CBM-W1	CBM-W1	20.03
CBM-W2	CBM-W2	38.34
CHEOAH	CHEOAH	0.0
CIN	CIN	0.09
G-007	G-007	1.39
HAMLET	HAMLET	0.33
MEC	MEC	24.99
O-066	O-066	8.94
RENSSELAER	RENSSELAER	0.4
SANTEETLA	SANTEETLA	0.0
TRIMBLE	TRIMBLE	0.35
WEC	WEC	5.32
Z1-043	Z1-043	18.79

22.3 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
2228198	255112	17STJOHN	NIPS	270886	ST JOHN ; T	CE	1	COMED_P4_023-65-BT2-3__	breaker	1091.0	133.0	133.07	DC	13.92

Bus #	Bus	MW Impact
270859	PWR VTR EC;R	9.02
274654	BRAIDWOOD;1U	15.11
274655	BRAIDWOOD;2U	14.47
274661	LASCO STA;2U	13.96
274687	WILL CNTY;4U	6.37
274704	KENDALL ;1C	2.23
274705	KENDALL ;1S	1.49
274706	KENDALL ;2C	2.23
274707	KENDALL ;2S	1.49
274722	S-055 E	8.43
274751	CRETE EC ;1U	2.67
274752	CRETE EC ;2U	2.67
274753	CRETE EC ;3U	2.67
274754	CRETE EC ;4U	2.67
274859	EASYR;U1 E	8.15
274860	EASYR;U2 E	8.15
274861	TOP CROP ;1U	0.26
274862	TOP CROP ;2U	0.5
274888	PILOT HIL;1E	12.78
275149	KEMPTON ;1E	12.78
290021	O50 E	14.62
290051	GSG-6; E	7.76
290108	LEEDK;1U E	18.05
293061	N-015 E	11.59
293644	O22 E1	8.49
293645	O22 E2	16.47
294392	P-010 E	14.72
294763	P-046 E	6.96
295109	WESTBROOK E	4.15
295111	SUBLETTE E	1.92
914641	Y2-103	33.72
915011	Y3-013 1	2.81
915021	Y3-013 2	2.81
915031	Y3-013 3	2.81
916221	Z1-073 E	4.0
916502	Z1-106 E1	0.94
916504	Z1-106 E2	0.94
916512	Z1-107 E	1.85
916522	Z1-108 E	1.86
918052	AA1-018 E	11.61
920272	AA2-123 E	1.82

Bus #	Bus	MW Impact
924471	AB2-096	31.56
925302	AB2-191 E	1.03
926311	AC1-109 1	1.42
926321	AC1-109 2	1.42
926331	AC1-110 1	1.42
926341	AC1-110 2	1.42
926351	AC1-111 1	0.57
926361	AC1-111 2	0.57
926371	AC1-111 3	0.57
926381	AC1-111 4	0.57
926391	AC1-111 5	0.57
926401	AC1-111 6	0.57
926431	AC1-114	1.77
927091	AC1-204 1	55.08
927101	AC1-204 2	55.0
927451	AC1-142A 1	3.19
927461	AC1-142A 2	3.2
927511	AC1-113 1	0.89
927521	AC1-113 2	0.89
927531	AC1-185 1	0.51
927541	AC1-185 2	0.51
927551	AC1-185 3	0.51
927561	AC1-185 4	0.51
927571	AC1-185 5	0.51
927581	AC1-185 6	0.51
927591	AC1-185 7	0.51
927601	AC1-185 8	0.51
930481	AB1-089	48.93
930501	AB1-091 O1	50.49
930741	AB1-122 1O1	52.86
930751	AB1-122 2O1	56.21
932881	AC2-115 1	1.77
932891	AC2-115 2	1.77
932921	AC2-116	0.62
933341	AC2-147 C	0.65
933342	AC2-147 E	1.05
933411	AC2-154 C	1.73
933412	AC2-154 E	2.83
933431	AC2-156 C O1	0.71
933432	AC2-156 E O1	1.16
933911	AD1-013 C	1.37
933912	AD1-013 E	2.18
933931	AD1-016 C	0.69
933932	AD1-016 E	1.13
934101	AD1-039 1	5.18
934111	AD1-039 2	5.51
934401	AD1-064 C O1	2.39
934402	AD1-064 E O1	11.18
934431	AD1-067 C	0.1
934432	AD1-067 E	0.41
934651	AD1-096 C	0.66
934652	AD1-096 E	1.08

Bus #	Bus	MW Impact
934701	AD1-098 C O1	5.1
934702	AD1-098 E O1	3.73
934721	AD1-100 C	14.24
934722	AD1-100 E	66.45
934871	AD1-116 C	0.68
934872	AD1-116 E	1.1
934971	AD1-129 C	0.67
934972	AD1-129 E	0.45
935001	AD1-133 C O1	10.36
935002	AD1-133 E O1	6.91
936291	AD2-038 C O1	1.71
936292	AD2-038 E O1	11.42
936371	AD2-047 C O1	1.55
936372	AD2-047 E O1	16.71
936461	AD2-060	1.83
936511	AD2-066 C O1	6.18
936512	AD2-066 E O1	4.12
936781	AD2-101 C	3.08
936782	AD2-101 E	14.43
936791	AD2-102 C	8.94
936792	AD2-102 E	8.59
937001	AD2-134 C	2.03
937002	AD2-134 E	8.38
937031	AD2-137 C O1	2.44
937032	AD2-137 E O1	11.4
937051	AD2-140 C O1	2.43
937052	AD2-140 E O1	11.4
937061	AD2-141 C O1	2.42
937062	AD2-141 E O1	11.41
937071	AD2-142 C O1	4.87
937072	AD2-142 E O1	22.79
937121	AD2-148 C O1	2.42
937122	AD2-148 E O1	11.35
937131	AD2-149 C O1	2.42
937132	AD2-149 E O1	11.35
937141	AD2-150 C O1	2.42
937142	AD2-150 E O1	11.35
937181	AD2-155 C O1	2.42
937182	AD2-155 E O1	11.35
937311	AD2-172 C	1.83
937312	AD2-172 E	2.52
937321	AD2-175 C	11.29
937322	AD2-175 E	7.53
937331	AD2-176 C O1	5.47
937332	AD2-176 E O1	3.65
937401	AD2-194 1	5.92
937411	AD2-194 2	5.91
938012	AE1-002 E O1	4.89
938511	AE1-070 1	6.96
938521	AE1-070 2	6.36
938851	AE1-113 C O1	6.61
938852	AE1-113 E O1	20.79

Bus #	Bus	MW Impact
938861	AE1-114 C O1	2.67
938862	AE1-114 E O1	10.19
939321	AE1-163 C O1	4.29
939322	AE1-163 E O1	26.35
939351	AE1-166 C O1	7.59
939352	AE1-166 E O1	7.0
939401	AE1-172 C O1	4.46
939402	AE1-172 E O1	20.9
939641	AE1-194 C	18.94
939642	AE1-194 E	126.77
939651	AE1-195 C	18.94
939652	AE1-195 E	126.77
939691	AE1-199	1.77
939701	AE1-201 C	1.49
939702	AE1-201 E	0.33
939732	AE1-204 E	0.22
939861	AE1-222 1	58.38
939871	AE1-222 2	62.07
939921	AE1-228 C O1	7.46
939922	AE1-228 E O1	4.97
940101	AE1-252 C O1	7.61
940102	AE1-252 E O1	5.07
940501	AE2-035 C	1.83
940502	AE2-035 E	2.52
940621	AE2-049 C O2	6.3
940622	AE2-049 E O2	4.2
940631	AE2-050 C O2	9.26
940632	AE2-050 E O2	6.17
940752	AE2-062 E	0.1
940762	AE2-063 E	0.1
940881	AE2-077 C	2.34
940882	AE2-077 E	3.82
941131	AE2-107 C	5.42
941132	AE2-107 E	3.62
941551	AE2-152 C O2	8.35
941552	AE2-152 E O2	5.57
941561	AE2-153 C O2	3.24
941562	AE2-153 E O2	15.19
942421	AE2-255 C O2	2.18
942422	AE2-255 E O2	6.55
942651	AE2-281 C	0.61
942652	AE2-281 E	3.76
942881	AE2-307 C	16.97
942882	AE2-307 E	6.17
942911	AE2-310 C	6.12
942912	AE2-310 E	1.65
942991	AE2-321 C O2	6.11
942992	AE2-321 E O2	3.01
943121	AE2-341 C	9.48
943122	AE2-341 E	4.66
BLUEG	BLUEG	5.15
CALDERWOOD	CALDERWOOD	0.1

Bus #	Bus	MW Impact
CANNELTON	CANNELTON	0.11
CARR	CARR	0.57
CATAWBA	CATAWBA	0.24
CBM-S1	CBM-S1	0.69
CBM-W1	CBM-W1	20.05
CBM-W2	CBM-W2	36.81
CHEOAH	CHEOAH	0.1
CHILHOWEE	CHILHOWEE	0.03
ELMERSMITH	ELMERSMITH	0.15
G-007	G-007	1.6
GIBSON	GIBSON	0.07
HAMLET	HAMLET	0.45
MEC	MEC	27.48
O-066	O-066	10.25
RENSSELAER	RENSSELAER	0.45
SANTEETLA	SANTEETLA	0.03
TRIMBLE	TRIMBLE	0.6
WEC	WEC	5.96
Z1-043	Z1-043	20.93

22.4 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
1539765	255113	17STILLWELL	NIPS	243219	05DUMONT	AEP	1	AEP_P4_#2978_05DUMONT 765_B	breaker	1409.0	173.02	173.14	DC	23.15

Bus #	Bus	MW Impact
270859	PWR VTR EC;R	13.9
274722	S-055 E	12.93
274724	RIVER EC ;11	3.77
274788	SE CHICAG;5U	7.41
274789	SE CHICAG;6U	7.41
274790	SE CHICAG;7U	7.41
274791	SE CHICAG;8U	7.41
274792	SE CHICAG;9U	7.31
274793	SE CHICAG;0U	7.31
274794	SE CHICAG;1U	7.31
274795	SE CHICAG;2U	7.31
274832	U4-027	12.43
274859	EASYR;U1 E	12.65
274860	EASYR;U2 E	12.65
274888	PILOT HIL;1E	22.27
274890	CAYUG;1U E	15.74
274891	CAYUG;2U E	15.74
275149	KEMPTON ;1E	22.27
290021	O50 E	22.28
290051	GSG-6; E	12.01
290108	LEEDK;1U E	27.88
293061	N-015 E	17.51
293516	O-009 E1	10.43
293517	O-009 E2	5.3
293518	O-009 E3	5.84
293644	O22 E1	11.94
293645	O22 E2	23.17
293715	O-029 E	11.25
293716	O-029 E	6.17
293717	O-029 E	5.67
293771	O-035 E	7.35
294392	P-010 E	22.24
294763	P-046 E	10.78
295109	WESTBROOK E	6.43
295111	SUBLETTE E	2.98
910542	X3-005 E	1.0
914641	Y2-103	51.72
915011	Y3-013 1	4.31
915021	Y3-013 2	4.31
915031	Y3-013 3	4.31
916211	Z1-072 E	5.56
916221	Z1-073 E	6.2

Bus #	Bus	MW Impact
916502	Z1-106 E1	1.45
916504	Z1-106 E2	1.45
916512	Z1-107 E	3.03
916522	Z1-108 E	2.86
918052	AA1-018 E	18.71
919221	AA1-146	20.25
919581	AA2-030	20.25
920272	AA2-123 E	2.81
924471	AB2-096	48.66
925161	AB2-173	3.61
925302	AB2-191 E	1.59
925581	AC1-033 C	1.61
925582	AC1-033 E	10.79
926311	AC1-109 1	2.19
926321	AC1-109 2	2.19
926331	AC1-110 1	2.18
926341	AC1-110 2	2.18
926351	AC1-111 1	0.87
926361	AC1-111 2	0.87
926371	AC1-111 3	0.87
926381	AC1-111 4	0.87
926391	AC1-111 5	0.87
926401	AC1-111 6	0.87
926431	AC1-114	2.74
926821	AC1-168 C O1	1.32
926822	AC1-168 E O1	8.84
927091	AC1-204 1	83.15
927101	AC1-204 2	83.12
927201	AC1-214 C O1	2.36
927202	AC1-214 E O1	7.5
927451	AC1-142A 1	4.83
927461	AC1-142A 2	4.83
927511	AC1-113 1	1.37
927521	AC1-113 2	1.37
927531	AC1-185 1	0.79
927541	AC1-185 2	0.79
927551	AC1-185 3	0.79
927561	AC1-185 4	0.79
927571	AC1-185 5	0.79
927581	AC1-185 6	0.79
927591	AC1-185 7	0.79
927601	AC1-185 8	0.79
930481	AB1-089	75.56
930501	AB1-091 O1	88.12
930741	AB1-122 1O1	82.31
930751	AB1-122 2O1	84.84
932881	AC2-115 1	2.74
932891	AC2-115 2	2.74
932921	AC2-116	0.96
932931	AC2-117	5.8
933341	AC2-147 C	1.0
933342	AC2-147 E	1.64

Bus #	Bus	MW Impact
933411	AC2-154 C	3.02
933412	AC2-154 E	4.93
933431	AC2-156 C O1	1.1
933432	AC2-156 E O1	1.79
933911	AD1-013 C	2.11
933912	AD1-013 E	3.38
933931	AD1-016 C	1.07
933932	AD1-016 E	1.74
934101	AD1-039 1	8.07
934111	AD1-039 2	8.31
934401	AD1-064 C O1	3.68
934402	AD1-064 E O1	17.23
934431	AD1-067 C	0.15
934432	AD1-067 E	0.63
934651	AD1-096 C	1.03
934652	AD1-096 E	1.67
934701	AD1-098 C O1	7.9
934702	AD1-098 E O1	5.77
934721	AD1-100 C	22.42
934722	AD1-100 E	104.63
934871	AD1-116 C	1.09
934872	AD1-116 E	1.78
934971	AD1-129 C	1.04
934972	AD1-129 E	0.69
935001	AD1-133 C O1	24.03
935002	AD1-133 E O1	16.02
936291	AD2-038 C O1	2.69
936292	AD2-038 E O1	18.0
936371	AD2-047 C O1	2.7
936372	AD2-047 E O1	29.11
936461	AD2-060	3.18
936511	AD2-066 C O1	9.66
936512	AD2-066 E O1	6.44
936781	AD2-101 C	5.89
936782	AD2-101 E	27.59
936791	AD2-102 C	13.83
936792	AD2-102 E	13.28
937001	AD2-134 C	3.14
937002	AD2-134 E	12.97
937031	AD2-137 C O1	4.07
937032	AD2-137 E O1	19.06
937051	AD2-140 C O1	4.11
937052	AD2-140 E O1	19.23
937061	AD2-141 C O1	4.08
937062	AD2-141 E O1	19.25
937071	AD2-142 C O1	8.21
937072	AD2-142 E O1	38.45
937121	AD2-148 C O1	4.23
937122	AD2-148 E O1	19.8
937131	AD2-149 C O1	4.23
937132	AD2-149 E O1	19.8
937141	AD2-150 C O1	4.23

Bus #	Bus	MW Impact
937142	AD2-150 E O1	19.8
937181	AD2-155 C O1	4.23
937182	AD2-155 E O1	19.8
937311	AD2-172 C	2.83
937312	AD2-172 E	3.91
937321	AD2-175 C	19.7
937322	AD2-175 E	13.14
937331	AD2-176 C O1	8.42
937332	AD2-176 E O1	5.62
937401	AD2-194 1	8.94
937411	AD2-194 2	8.94
937531	AD2-214 C	5.09
937532	AD2-214 E	2.39
938012	AE1-002 E O1	8.17
938511	AE1-070 1	10.51
938521	AE1-070 2	9.61
938851	AE1-113 C O1	10.08
938852	AE1-113 E O1	31.69
938861	AE1-114 C O1	4.14
938862	AE1-114 E O1	15.81
939051	AE1-134 1	1.57
939061	AE1-134 2	1.57
939321	AE1-163 C O1	6.76
939322	AE1-163 E O1	41.51
939351	AE1-166 C O1	11.78
939352	AE1-166 E O1	10.87
939401	AE1-172 C O1	7.2
939402	AE1-172 E O1	33.69
939641	AE1-194 C	10.23
939642	AE1-194 E	68.46
939651	AE1-195 C	10.23
939652	AE1-195 E	68.46
939681	AE1-198 C O1	10.75
939682	AE1-198 E O1	9.13
939691	AE1-199	2.74
939701	AE1-201 C	2.3
939702	AE1-201 E	0.51
939732	AE1-204 E	0.34
939861	AE1-222 1	90.89
939871	AE1-222 2	93.69
939921	AE1-228 C O1	11.54
939922	AE1-228 E O1	7.7
940101	AE1-252 C O1	12.26
940102	AE1-252 E O1	8.18
940501	AE2-035 C	2.83
940502	AE2-035 E	3.91
940621	AE2-049 C O2	10.98
940622	AE2-049 E O2	7.32
940631	AE2-050 C O2	13.58
940632	AE2-050 E O2	9.05
940752	AE2-062 E	0.15
940762	AE2-063 E	0.15

Bus #	Bus	MW Impact
940881	AE2-077 C	3.62
940882	AE2-077 E	5.91
941131	AE2-107 C	8.38
941132	AE2-107 E	5.59
941551	AE2-152 C O2	13.89
941552	AE2-152 E O2	9.26
941561	AE2-153 C O2	5.5
941562	AE2-153 E O2	25.77
942421	AE2-255 C O2	3.44
942422	AE2-255 E O2	10.3
942651	AE2-281 C	0.97
942652	AE2-281 E	5.93
942881	AE2-307 C	24.9
942882	AE2-307 E	9.05
942911	AE2-310 C	10.66
942912	AE2-310 E	2.88
942991	AE2-321 C O2	9.41
942992	AE2-321 E O2	4.63
943121	AE2-341 C	14.63
943122	AE2-341 E	7.18
951721	J643	25.68
952581	J740 C	4.29
952582	J740 E	23.24
953871	J847	13.08
954751	J351	434.36
BLUEG	BLUEG	1.16
CARR	CARR	0.91
CATAWBA	CATAWBA	0.23
CBM-S1	CBM-S1	3.87
CBM-W1	CBM-W1	35.94
CBM-W2	CBM-W2	81.94
CIN	CIN	3.25
G-007	G-007	2.53
HAMLET	HAMLET	0.49
IPL	IPL	1.09
MEC	MEC	44.6
O-066	O-066	16.25
RENSSELAER	RENSSELAER	0.72
TRIMBLE	TRIMBLE	0.17
WEC	WEC	9.18
Z1-043	Z1-043	32.88

22.5 Index 5

ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC|DC	MW IMPACT
1541382	270644	WILTON ;	CE	243206	05DUMONT	AEP	1	COMED_P7_345-L94507_B-S_+_345-L97008_R-S	tower	4105.0	106.97	107.04	DC	47.9

Bus #	Bus	MW Impact
270859	PWR VTR EC;R	32.1
274722	S-055 E	29.48
274772	LINCOLN ;3U	3.73
274773	LINCOLN ;4U	3.73
274774	LINCOLN ;5U	3.73
274775	LINCOLN ;6U	3.73
274776	LINCOLN ;7U	3.73
274777	LINCOLN ;8U	3.73
274832	U4-027	27.98
274859	EASYR;U1 E	29.06
274860	EASYR;U2 E	29.06
274888	PILOT HIL;1E	44.2
274890	CAYUG;1U E	35.98
274891	CAYUG;2U E	35.98
275149	KEMPTON ;1E	44.2
290021	O50 E	49.13
290051	GSG-6; E	28.02
290108	LEEDK;1U E	65.42
293061	N-015 E	41.13
293516	O-009 E1	23.73
293517	O-009 E2	12.06
293518	O-009 E3	13.28
293644	O22 E1	25.25
293645	O22 E2	49.01
293715	O-029 E	25.72
293716	O-029 E	14.1
293717	O-029 E	12.96
293771	O-035 E	16.45
294392	P-010 E	52.23
294763	P-046 E	24.82
295109	WESTBROOK E	15.0
295111	SUBLETTE E	6.85
296125	R-030 C3	6.1
296128	R-030 E3	24.42
296271	R-030 C2	6.03
296272	R-030 E2	24.12
296308	R-030 C1	6.03
296309	R-030 E1	24.12
910542	X3-005 E	1.57
914641	Y2-103	117.93

Bus #	Bus	MW Impact
915011	Y3-013 1	9.83
915021	Y3-013 2	9.83
915031	Y3-013 3	9.83
916211	Z1-072 E	12.45
916221	Z1-073 E	14.46
916502	Z1-106 E1	3.4
916504	Z1-106 E2	3.4
916512	Z1-107 E	6.51
916522	Z1-108 E	6.61
918052	AA1-018 E	40.31
919221	AA1-146	46.38
919581	AA2-030	46.38
920272	AA2-123 E	6.49
924471	AB2-096	112.35
925161	AB2-173	8.27
925302	AB2-191 E	3.71
926311	AC1-109 1	5.2
926321	AC1-109 2	5.2
926331	AC1-110 1	5.11
926341	AC1-110 2	5.11
926351	AC1-111 1	2.06
926361	AC1-111 2	2.06
926371	AC1-111 3	2.06
926381	AC1-111 4	2.06
926391	AC1-111 5	2.06
926401	AC1-111 6	2.06
926431	AC1-114	6.31
926821	AC1-168 C O1	2.97
926822	AC1-168 E O1	19.96
927091	AC1-204 1	183.87
927101	AC1-204 2	183.91
927201	AC1-214 C O1	5.28
927202	AC1-214 E O1	16.78
927451	AC1-142A 1	10.58
927461	AC1-142A 2	10.58
927511	AC1-113 1	3.15
927521	AC1-113 2	3.15
927531	AC1-185 1	1.82
927541	AC1-185 2	1.82
927551	AC1-185 3	1.82
927561	AC1-185 4	1.82
927571	AC1-185 5	1.82
927581	AC1-185 6	1.82
927591	AC1-185 7	1.82
927601	AC1-185 8	1.82
930481	AB1-089	174.75
930501	AB1-091 O1	173.57
930741	AB1-122 1O1	194.53
930751	AB1-122 2O1	188.25
932881	AC2-115 1	6.31
932891	AC2-115 2	6.31
932921	AC2-116	2.21

Bus #	Bus	MW Impact
932931	AC2-117	14.91
933341	AC2-147 C	2.31
933342	AC2-147 E	3.76
933411	AC2-154 C	6.0
933412	AC2-154 E	9.79
933431	AC2-156 C O1	2.63
933432	AC2-156 E O1	4.29
933911	AD1-013 C	4.93
933912	AD1-013 E	7.88
933931	AD1-016 C	2.47
933932	AD1-016 E	4.02
934101	AD1-039 1	19.06
934111	AD1-039 2	18.45
934401	AD1-064 C O1	8.54
934402	AD1-064 E O1	39.99
934431	AD1-067 C	0.35
934432	AD1-067 E	1.48
934651	AD1-096 C	2.36
934652	AD1-096 E	3.85
934701	AD1-098 C O1	18.43
934702	AD1-098 E O1	13.45
934721	AD1-100 C	50.93
934722	AD1-100 E	237.66
934871	AD1-116 C	2.35
934872	AD1-116 E	3.83
934971	AD1-129 C	2.4
934972	AD1-129 E	1.6
935001	AD1-133 C O1	55.82
935002	AD1-133 E O1	37.22
936291	AD2-038 C O1	5.84
936292	AD2-038 E O1	39.11
936371	AD2-047 C O1	5.37
936372	AD2-047 E O1	57.77
936461	AD2-060	6.31
936511	AD2-066 C O1	21.42
936512	AD2-066 E O1	14.28
936781	AD2-101 C	10.65
936782	AD2-101 E	49.86
936791	AD2-102 C	31.81
936792	AD2-102 E	30.57
937001	AD2-134 C	7.32
937002	AD2-134 E	30.26
937031	AD2-137 C O1	10.24
937032	AD2-137 E O1	47.92
937051	AD2-140 C O1	10.48
937052	AD2-140 E O1	49.08
937061	AD2-141 C O1	10.42
937062	AD2-141 E O1	49.14
937071	AD2-142 C O1	20.97
937072	AD2-142 E O1	98.16
937121	AD2-148 C O1	8.33
937122	AD2-148 E O1	39.01

Bus #	Bus	MW Impact
937131	AD2-149 C O1	8.33
937132	AD2-149 E O1	39.01
937141	AD2-150 C O1	8.33
937142	AD2-150 E O1	39.01
937181	AD2-155 C O1	8.33
937182	AD2-155 E O1	39.01
937311	AD2-172 C	6.51
937312	AD2-172 E	9.0
937321	AD2-175 C	38.82
937322	AD2-175 E	25.88
937331	AD2-176 C O1	19.48
937332	AD2-176 E O1	12.98
937401	AD2-194 1	19.77
937411	AD2-194 2	19.78
937531	AD2-214 C	11.57
937532	AD2-214 E	5.45
938012	AE1-002 E O1	20.55
938511	AE1-070 1	23.23
938521	AE1-070 2	21.26
938851	AE1-113 C O1	22.23
938852	AE1-113 E O1	69.88
938861	AE1-114 C O1	9.51
938862	AE1-114 E O1	36.36
939051	AE1-134 1	3.6
939061	AE1-134 2	3.6
939321	AE1-163 C O1	14.68
939322	AE1-163 E O1	90.2
939351	AE1-166 C O1	26.21
939352	AE1-166 E O1	24.2
939401	AE1-172 C O1	16.53
939402	AE1-172 E O1	77.39
939641	AE1-194 C	21.06
939642	AE1-194 E	140.92
939651	AE1-195 C	21.06
939652	AE1-195 E	140.92
939691	AE1-199	6.41
939701	AE1-201 C	5.32
939702	AE1-201 E	1.17
939732	AE1-204 E	0.77
939741	AE1-205 C O1	23.23
939742	AE1-205 E O1	32.08
939861	AE1-222 1	214.83
939871	AE1-222 2	207.89
939921	AE1-228 C O1	26.96
939922	AE1-228 E O1	17.97
940101	AE1-252 C O1	28.18
940102	AE1-252 E O1	18.78
940501	AE2-035 C	6.51
940502	AE2-035 E	9.0
940621	AE2-049 C O2	21.78
940622	AE2-049 E O2	14.52
940631	AE2-050 C O2	30.27

Bus #	Bus	MW Impact
940632	AE2-050 E O2	20.18
940752	AE2-062 E	0.33
940762	AE2-063 E	0.33
940881	AE2-077 C	8.36
940882	AE2-077 E	13.63
941131	AE2-107 C	19.67
941132	AE2-107 E	13.12
941551	AE2-152 C O2	28.74
941552	AE2-152 E O2	19.16
941561	AE2-153 C O2	11.19
941562	AE2-153 E O2	52.37
941731	AE2-173	13.85
942421	AE2-255 C O2	7.47
942422	AE2-255 E O2	22.41
942651	AE2-281 C	2.1
942652	AE2-281 E	12.89
942881	AE2-307 C	55.5
942882	AE2-307 E	20.18
942911	AE2-310 C	21.15
942912	AE2-310 E	5.71
942991	AE2-321 C O2	21.75
942992	AE2-321 E O2	10.71
943121	AE2-341 C	35.31
943122	AE2-341 E	17.34
BLUEG	BLUEG	17.17
CALDERWOOD	CALDERWOOD	0.27
CANNELTON	CANNELTON	0.28
CARR	CARR	2.0
CATAWBA	CATAWBA	0.82
CBM-S1	CBM-S1	3.15
CBM-W1	CBM-W1	76.97
CBM-W2	CBM-W2	139.76
CHEOAH	CHEOAH	0.28
CHILHOWEE	CHILHOWEE	0.08
ELMERSMITH	ELMERSMITH	0.31
G-007	G-007	5.61
GIBSON	GIBSON	0.1
HAMLET	HAMLET	1.54
MEC	MEC	97.87
O-066	O-066	35.97
RENSSELAER	RENSSELAER	1.58
SANTEETLA	SANTEETLA	0.09
TRIMBLE	TRIMBLE	2.03
WEC	WEC	20.89
Z1-043	Z1-043	73.68

22.6 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
2228402	270677	BURNHAM ;0R	CE	255109	17MUNSTER	NIPS	1	AEP_P4_#2978_05DUMONT 765_B	breaker	1441.0	100.69	100.82	DC	20.61

Bus #	Bus	MW Impact
270859	PWR VTR EC;R	11.72
274722	S-055 E	10.94
274723	RIVER EC ;12	3.43
274792	SE CHICAG;9U	6.24
274793	SE CHICAG;0U	6.24
274794	SE CHICAG;1U	6.24
274795	SE CHICAG;2U	6.24
274826	FISK ;BP	1.82
274832	U4-027	10.29
274859	EASYR;U1 E	10.59
274860	EASYR;U2 E	10.59
274888	PILOT HIL;1E	20.45
274890	CAYUG;1U E	13.37
274891	CAYUG;2U E	13.37
275149	KEMPTON ;1E	20.45
290021	O50 E	18.53
290051	GSG-6; E	10.11
290108	LEEDK;1U E	23.53
293061	N-015 E	14.79
293516	O-009 E1	8.68
293517	O-009 E2	4.41
293518	O-009 E3	4.86
293644	O22 E1	9.25
293645	O22 E2	17.95
293715	O-029 E	9.38
293716	O-029 E	5.14
293717	O-029 E	4.73
293771	O-035 E	6.07
294392	P-010 E	18.79
294763	P-046 E	9.05
295109	WESTBROOK E	5.41
295111	SUBLETTE E	2.49
296125	R-030 C3	3.42
296128	R-030 E3	13.68
296271	R-030 C2	3.38
296272	R-030 E2	13.51
296308	R-030 C1	3.38
296309	R-030 E1	13.51
910541	X3-005 C	0.07
910542	X3-005 E	0.91
914641	Y2-103	43.75
915011	Y3-013 1	3.65

Bus #	Bus	MW Impact
915021	Y3-013 2	3.65
915031	Y3-013 3	3.65
916211	Z1-072 E	4.6
916221	Z1-073 E	5.22
916502	Z1-106 E1	1.23
916504	Z1-106 E2	1.23
916512	Z1-107 E	2.58
916522	Z1-108 E	2.42
917502	Z2-087 E	4.4
918052	AA1-018 E	16.78
919221	AA1-146	16.9
919581	AA2-030	16.9
920272	AA2-123 E	2.37
924471	AB2-096	41.03
925161	AB2-173	3.01
925302	AB2-191 E	1.34
926311	AC1-109 1	1.86
926321	AC1-109 2	1.86
926331	AC1-110 1	1.85
926341	AC1-110 2	1.85
926351	AC1-111 1	0.74
926361	AC1-111 2	0.74
926371	AC1-111 3	0.74
926381	AC1-111 4	0.74
926391	AC1-111 5	0.74
926401	AC1-111 6	0.74
926431	AC1-114	2.3
926821	AC1-168 C O1	1.09
926822	AC1-168 E O1	7.34
927091	AC1-204 1	69.97
927101	AC1-204 2	70.02
927201	AC1-214 C O1	1.95
927202	AC1-214 E O1	6.2
927451	AC1-142A 1	4.09
927461	AC1-142A 2	4.08
927511	AC1-113 1	1.15
927521	AC1-113 2	1.15
927531	AC1-185 1	0.66
927541	AC1-185 2	0.66
927551	AC1-185 3	0.66
927561	AC1-185 4	0.66
927571	AC1-185 5	0.66
927581	AC1-185 6	0.66
927591	AC1-185 7	0.66
927601	AC1-185 8	0.66
930481	AB1-089	63.61
930501	AB1-091 O1	82.15
930741	AB1-122 1O1	69.9
930751	AB1-122 2O1	70.86
932881	AC2-115 1	2.3
932891	AC2-115 2	2.3
932921	AC2-116	0.81

Bus #	Bus	MW Impact
932931	AC2-117	5.29
933341	AC2-147 C	0.84
933342	AC2-147 E	1.37
933411	AC2-154 C	2.78
933412	AC2-154 E	4.53
933431	AC2-156 C O1	0.93
933432	AC2-156 E O1	1.52
933911	AD1-013 C	1.78
933912	AD1-013 E	2.84
933931	AD1-016 C	0.9
933932	AD1-016 E	1.47
934101	AD1-039 1	6.85
934111	AD1-039 2	6.94
934401	AD1-064 C O1	3.1
934402	AD1-064 E O1	14.53
934431	AD1-067 C	0.13
934432	AD1-067 E	0.53
934651	AD1-096 C	0.86
934652	AD1-096 E	1.4
934701	AD1-098 C O1	6.65
934702	AD1-098 E O1	4.86
934721	AD1-100 C	19.51
934722	AD1-100 E	91.04
934871	AD1-116 C	0.98
934872	AD1-116 E	1.59
934971	AD1-129 C	0.88
934972	AD1-129 E	0.58
935001	AD1-133 C O1	20.26
935002	AD1-133 E O1	13.5
936291	AD2-038 C O1	2.32
936292	AD2-038 E O1	15.55
936371	AD2-047 C O1	2.48
936372	AD2-047 E O1	26.73
936461	AD2-060	2.92
936511	AD2-066 C O1	8.12
936512	AD2-066 E O1	5.42
936781	AD2-101 C	4.74
936782	AD2-101 E	22.18
936791	AD2-102 C	11.62
936792	AD2-102 E	11.17
937001	AD2-134 C	2.64
937002	AD2-134 E	10.92
937031	AD2-137 C O1	3.66
937032	AD2-137 E O1	17.14
937051	AD2-140 C O1	3.71
937052	AD2-140 E O1	17.39
937061	AD2-141 C O1	3.69
937062	AD2-141 E O1	17.41
937071	AD2-142 C O1	7.43
937072	AD2-142 E O1	34.78
937121	AD2-148 C O1	3.93
937122	AD2-148 E O1	18.4

Bus #	Bus	MW Impact
937131	AD2-149 C O1	3.93
937132	AD2-149 E O1	18.4
937141	AD2-150 C O1	3.93
937142	AD2-150 E O1	18.4
937181	AD2-155 C O1	3.93
937182	AD2-155 E O1	18.4
937311	AD2-172 C	2.38
937312	AD2-172 E	3.28
937321	AD2-175 C	18.31
937322	AD2-175 E	12.21
937331	AD2-176 C O1	7.11
937332	AD2-176 E O1	4.74
937401	AD2-194 1	7.52
937411	AD2-194 2	7.53
937531	AD2-214 C	4.23
937532	AD2-214 E	1.99
938012	AE1-002 E O1	7.35
938511	AE1-070 1	8.84
938521	AE1-070 2	8.09
938851	AE1-113 C O1	8.39
938852	AE1-113 E O1	26.36
938861	AE1-114 C O1	3.47
938862	AE1-114 E O1	13.25
939051	AE1-134 1	1.31
939061	AE1-134 2	1.31
939321	AE1-163 C O1	5.84
939322	AE1-163 E O1	35.88
939351	AE1-166 C O1	10.22
939352	AE1-166 E O1	9.43
939401	AE1-172 C O1	6.17
939402	AE1-172 E O1	28.89
939691	AE1-199	2.31
939701	AE1-201 C	1.94
939702	AE1-201 E	0.43
939732	AE1-204 E	0.28
939741	AE1-205 C O1	8.55
939742	AE1-205 E O1	11.81
939861	AE1-222 1	77.2
939871	AE1-222 2	78.26
939921	AE1-228 C O1	9.72
939922	AE1-228 E O1	6.48
940101	AE1-252 C O1	10.52
940102	AE1-252 E O1	7.01
940501	AE2-035 C	2.38
940502	AE2-035 E	3.28
940621	AE2-049 C O2	10.08
940622	AE2-049 E O2	6.72
940631	AE2-050 C O2	11.43
940632	AE2-050 E O2	7.62
940752	AE2-062 E	0.13
940762	AE2-063 E	0.13
940881	AE2-077 C	3.05

Bus #	Bus	MW Impact
940882	AE2-077 E	4.97
941131	AE2-107 C	7.07
941132	AE2-107 E	4.72
941551	AE2-152 C O2	12.37
941552	AE2-152 E O2	8.24
941561	AE2-153 C O2	4.97
941562	AE2-153 E O2	23.26
941731	AE2-173	5.1
942111	AE2-223 C	1.98
942112	AE2-223 E	13.26
942421	AE2-255 C O2	2.96
942422	AE2-255 E O2	8.87
942651	AE2-281 C	0.83
942652	AE2-281 E	5.13
942881	AE2-307 C	20.96
942882	AE2-307 E	7.62
942911	AE2-310 C	9.79
942912	AE2-310 E	2.64
942991	AE2-321 C O2	7.94
942992	AE2-321 E O2	3.91
943121	AE2-341 C	12.44
943122	AE2-341 E	6.11
BLUEG	BLUEG	5.58
CALDERWOOD	CALDERWOOD	0.07
CANNELTON	CANNELTON	0.09
CARR	CARR	0.74
CATAWBA	CATAWBA	0.28
CBM-S1	CBM-S1	1.36
CBM-W1	CBM-W1	23.91
CBM-W2	CBM-W2	51.57
CHEOAH	CHEOAH	0.07
CHILHOWEE	CHILHOWEE	0.02
ELMERSMITH	ELMERSMITH	0.09
G-007	G-007	2.05
GIBSON	GIBSON	0.04
HAMLET	HAMLET	0.53
MEC	MEC	35.99
O-066	O-066	13.18
RENSSELAER	RENSSELAER	0.58
SANTEETLA	SANTEETLA	0.02
TRIMBLE	TRIMBLE	0.66
WEC	WEC	7.73
Z1-043	Z1-043	27.22

22.7 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
2228265	270716	DRESDEN ; B	CE	270928	WOLFS ; B	CE	1	COMED_P4_012-45-BT5-6__	breaker	1479.0	118.79	120.51	DC	25.36

Bus #	Bus	MW Impact
274658	DRESDEN ;2U	61.98
274677	POWERTON ;5U	10.18
274678	POWERTON ;6U	10.09
274836	EQUISTAR ; R	3.53
274879	MINONK ;1U	1.5
290021	O50 E	49.28
904211	W3-135	0.29
916502	Z1-106 E1	0.62
916504	Z1-106 E2	0.61
930751	AB1-122 2O1	318.89
934111	AD1-039 2	31.25
936291	AD2-038 C O1	1.49
936292	AD2-038 E O1	9.96
936511	AD2-066 C O1	15.81
936512	AD2-066 E O1	10.54
938851	AE1-113 C O1	22.3
938852	AE1-113 E O1	70.1
939321	AE1-163 C O1	3.74
939322	AE1-163 E O1	22.96
939871	AE1-222 2	352.17
941551	AE2-152 C O2	15.21
941552	AE2-152 E O2	10.14
941561	AE2-153 C O2	3.73
941562	AE2-153 E O2	17.48
942421	AE2-255 C O2	1.98
942422	AE2-255 E O2	5.94
942651	AE2-281 C	0.53
942652	AE2-281 E	3.28
953201	J715 C	1.34
953202	J715 E	7.25
BLUEG	BLUEG	0.44
CALDERWOOD	CALDERWOOD	0.02
CARR	CARR	0.07
CATAWBA	CATAWBA	0.03
CBM-S1	CBM-S1	0.07
CBM-W2	CBM-W2	7.83
CHEOAH	CHEOAH	0.02
CHILHOWEE	CHILHOWEE	0.01
CIN	CIN	0.15
FARMERCITY	FARMERCITY	0.1
G-007	G-007	0.2
HAMLET	HAMLET	0.06

Bus #	Bus	MW Impact
IPL	IPL	0.03
O-066	O-066	1.31
RENSSELAER	RENSSELAER	0.06
SANTEETLA	SANTEETLA	0.01
TATANKA	TATANKA	0.73
TRIMBLE	TRIMBLE	0.05
Z1-043	Z1-043	16.13

22.8 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
8771388	270716	DRESDEN ; B	CE	274702	KENDALL ;BU	CE	1	COMED_P7_345-L11620_B-S_+_345-L11622_R-S	tower	1195.0	129.75	130.24	DC	12.68

Bus #	Bus	MW Impact
274658	DRESDEN ;2U	32.94
274728	ELWOOD EC;5P	3.46
274730	ELWOOD EC;6P	3.46
274732	ELWOOD EC;7P	3.46
274734	ELWOOD EC;8P	3.46
274736	ELWOOD EC;9P	3.46
290021	O50 E	26.69
927091	AC1-204 1	105.64
927101	AC1-204 2	104.93
930741	AB1-122 1O1	46.94
930751	AB1-122 2O1	169.57
934101	AD1-039 1	4.6
934111	AD1-039 2	16.62
936511	AD2-066 C O1	9.19
936512	AD2-066 E O1	6.13
937401	AD2-194 1	11.36
937411	AD2-194 2	11.28
938511	AE1-070 1	13.35
938521	AE1-070 2	12.13
938851	AE1-113 C O1	12.08
938852	AE1-113 E O1	37.97
939861	AE1-222 1	51.84
939871	AE1-222 2	187.26
941551	AE2-152 C O2	7.61
941552	AE2-152 E O2	5.07
BLUEG	BLUEG	0.23
CARR	CARR	0.09
CBM-S1	CBM-S1	1.11
CBM-S2	CBM-S2	0.09
CBM-W1	CBM-W1	0.51
CBM-W2	CBM-W2	20.07
CIN	CIN	0.46
G-007	G-007	0.24
IPL	IPL	0.17
MEC	MEC	7.95
O-066	O-066	1.55
RENSSELAER	RENSSELAER	0.07
TRIMBLE	TRIMBLE	0.04
Z1-043	Z1-043	13.38

22.9 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
2228301	270728	E FRANKFO; B	CE	274750	CRETE EC ;BP	CE	1	COMED_P4_023-65-BT2-3__	breaker	1399.0	113.95	114.04	DC	19.12

Bus #	Bus	MW Impact
270859	PWR VTR EC;R	12.81
274654	BRAIDWOOD;1U	21.76
274655	BRAIDWOOD;2U	20.82
274660	LASCO STA;1U	19.97
274661	LASCO STA;2U	20.0
274675	JOLIET 29;7U	8.97
274676	JOLIET 29;8U	8.97
274687	WILL CNTY;4U	9.07
274704	KENDALL ;1C	3.19
274705	KENDALL ;1S	2.13
274706	KENDALL ;2C	3.19
274707	KENDALL ;2S	2.13
274722	S-055 E	11.98
274736	ELWOOD EC;9P	2.57
274859	EASYR;U1 E	11.58
274860	EASYR;U2 E	11.58
274861	TOP CROP ;1U	0.38
274862	TOP CROP ;2U	0.73
274888	PILOT HIL;1E	17.17
275149	KEMPTON ;1E	17.17
290021	O50 E	20.84
290051	GSG-6; E	11.02
290108	LEEDK;1U E	25.63
293061	N-015 E	16.56
293516	O-009 E1	6.07
293517	O-009 E2	3.08
293518	O-009 E3	3.4
293644	O22 E1	12.37
293645	O22 E2	24.01
293715	O-029 E	10.26
293716	O-029 E	5.63
293717	O-029 E	5.17
294392	P-010 E	21.03
294763	P-046 E	9.9
295109	WESTBROOK E	5.9
295111	SUBLETTE E	2.73
914641	Y2-103	47.91
915011	Y3-013 1	3.99
915021	Y3-013 2	3.99
915031	Y3-013 3	3.99
916221	Z1-073 E	5.69

Bus #	Bus	MW Impact
916502	Z1-106 E1	1.34
916504	Z1-106 E2	1.34
916512	Z1-107 E	2.56
916522	Z1-108 E	2.64
918052	AA1-018 E	16.23
919221	AA1-146	18.5
919581	AA2-030	18.5
920272	AA2-123 E	2.59
924471	AB2-096	44.83
925161	AB2-173	3.3
925302	AB2-191 E	1.46
926311	AC1-109 1	2.01
926321	AC1-109 2	2.01
926331	AC1-110 1	2.02
926341	AC1-110 2	2.02
926351	AC1-111 1	0.8
926361	AC1-111 2	0.8
926371	AC1-111 3	0.8
926381	AC1-111 4	0.8
926391	AC1-111 5	0.8
926401	AC1-111 6	0.8
926431	AC1-114	2.52
926821	AC1-168 C O1	1.2
926822	AC1-168 E O1	8.06
927091	AC1-204 1	78.49
927101	AC1-204 2	78.35
927451	AC1-142A 1	4.55
927461	AC1-142A 2	4.55
927511	AC1-113 1	1.26
927521	AC1-113 2	1.26
927531	AC1-185 1	0.72
927541	AC1-185 2	0.72
927551	AC1-185 3	0.72
927561	AC1-185 4	0.72
927571	AC1-185 5	0.72
927581	AC1-185 6	0.72
927591	AC1-185 7	0.72
927601	AC1-185 8	0.72
930481	AB1-089	69.53
930501	AB1-091 O1	67.64
930741	AB1-122 1O1	74.7
930751	AB1-122 2O1	80.16
932881	AC2-115 1	2.52
932891	AC2-115 2	2.52
932921	AC2-116	0.88
933341	AC2-147 C	0.92
933342	AC2-147 E	1.5
933411	AC2-154 C	2.33
933412	AC2-154 E	3.8
933431	AC2-156 C O1	1.01
933432	AC2-156 E O1	1.65
933911	AD1-013 C	1.94

Bus #	Bus	MW Impact
933912	AD1-013 E	3.1
933931	AD1-016 C	0.98
933932	AD1-016 E	1.61
934101	AD1-039 1	7.32
934111	AD1-039 2	7.86
934401	AD1-064 C O1	3.39
934402	AD1-064 E O1	15.88
934431	AD1-067 C	0.14
934432	AD1-067 E	0.58
934651	AD1-096 C	0.94
934652	AD1-096 E	1.53
934701	AD1-098 C O1	7.25
934702	AD1-098 E O1	5.29
934721	AD1-100 C	19.98
934722	AD1-100 E	93.23
934871	AD1-116 C	0.95
934872	AD1-116 E	1.54
934971	AD1-129 C	0.96
934972	AD1-129 E	0.64
935001	AD1-133 C O1	21.31
935002	AD1-133 E O1	14.21
936291	AD2-038 C O1	2.41
936292	AD2-038 E O1	16.12
936371	AD2-047 C O1	2.08
936372	AD2-047 E O1	22.44
936461	AD2-060	2.45
936511	AD2-066 C O1	8.74
936512	AD2-066 E O1	5.83
936791	AD2-102 C	12.71
936792	AD2-102 E	12.21
937001	AD2-134 C	2.88
937002	AD2-134 E	11.9
937031	AD2-137 C O1	3.33
937032	AD2-137 E O1	15.57
937051	AD2-140 C O1	3.31
937052	AD2-140 E O1	15.49
937061	AD2-141 C O1	3.29
937062	AD2-141 E O1	15.5
937071	AD2-142 C O1	6.62
937072	AD2-142 E O1	30.97
937121	AD2-148 C O1	3.25
937122	AD2-148 E O1	15.21
937131	AD2-149 C O1	3.25
937132	AD2-149 E O1	15.21
937141	AD2-150 C O1	3.25
937142	AD2-150 E O1	15.21
937181	AD2-155 C O1	3.25
937182	AD2-155 E O1	15.21
937311	AD2-172 C	2.6
937312	AD2-172 E	3.59
937321	AD2-175 C	15.13
937322	AD2-175 E	10.09

Bus #	Bus	MW Impact
937331	AD2-176 C O1	7.77
937332	AD2-176 E O1	5.18
937401	AD2-194 1	8.44
937411	AD2-194 2	8.43
938012	AE1-002 E O1	6.68
938511	AE1-070 1	9.92
938521	AE1-070 2	9.06
938851	AE1-113 C O1	9.43
938852	AE1-113 E O1	29.65
938861	AE1-114 C O1	3.79
938862	AE1-114 E O1	14.49
939051	AE1-134 1	1.44
939061	AE1-134 2	1.44
939321	AE1-163 C O1	6.05
939322	AE1-163 E O1	37.19
939351	AE1-166 C O1	10.69
939352	AE1-166 E O1	9.87
939401	AE1-172 C O1	6.25
939402	AE1-172 E O1	29.25
939691	AE1-199	2.52
939701	AE1-201 C	2.12
939702	AE1-201 E	0.47
939732	AE1-204 E	0.31
939861	AE1-222 1	82.49
939871	AE1-222 2	88.52
939921	AE1-228 C O1	10.6
939922	AE1-228 E O1	7.07
940101	AE1-252 C O1	10.65
940102	AE1-252 E O1	7.1
940501	AE2-035 C	2.6
940502	AE2-035 E	3.59
940621	AE2-049 C O2	8.46
940622	AE2-049 E O2	5.64
940631	AE2-050 C O2	13.32
940632	AE2-050 E O2	8.88
940752	AE2-062 E	0.14
940762	AE2-063 E	0.14
940881	AE2-077 C	3.33
940882	AE2-077 E	5.43
941131	AE2-107 C	7.7
941132	AE2-107 E	5.14
941551	AE2-152 C O2	11.47
941552	AE2-152 E O2	7.65
941561	AE2-153 C O2	4.41
941562	AE2-153 E O2	20.66
942421	AE2-255 C O2	3.09
942422	AE2-255 E O2	9.26
942651	AE2-281 C	0.86
942652	AE2-281 E	5.31
942881	AE2-307 C	24.43
942882	AE2-307 E	8.88
942911	AE2-310 C	8.22

Bus #	Bus	MW Impact
942912	AE2-310 E	2.22
942991	AE2-321 C O2	8.68
942992	AE2-321 E O2	4.27
943121	AE2-341 C	13.46
943122	AE2-341 E	6.61
BLUEG	BLUEG	6.82
CALDERWOOD	CALDERWOOD	0.08
CANNELTON	CANNELTON	0.14
CARR	CARR	0.75
CATAWBA	CATAWBA	0.3
CBM-S1	CBM-S1	1.26
CBM-W1	CBM-W1	26.94
CBM-W2	CBM-W2	53.5
CHEOAH	CHEOAH	0.09
CHILHOWEE	CHILHOWEE	0.03
ELMERSMITH	ELMERSMITH	0.17
G-007	G-007	2.1
GIBSON	GIBSON	0.08
HAMLET	HAMLET	0.56
MEC	MEC	39.15
O-066	O-066	13.48
RENSSELAER	RENSSELAER	0.59
SANTEETLA	SANTEETLA	0.03
TRIMBLE	TRIMBLE	0.8
WEC	WEC	8.47
Z1-043	Z1-043	29.75

22.10 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
1540036	270771	GREENACRE ; T	CE	243229	05OLIVE	AEP	1	AEP_P4_#2978_05DUMONT 765_B	breaker	971.0	125.63	125.73	DC	13.07

Bus #	Bus	MW Impact
270859	PWR VTR EC;R	8.05
274722	S-055 E	7.51
274751	CRETE EC ;1U	1.53
274752	CRETE EC ;2U	1.53
274753	CRETE EC ;3U	1.53
274754	CRETE EC ;4U	1.53
274788	SE CHICAG;5U	3.6
274789	SE CHICAG;6U	3.6
274790	SE CHICAG;7U	3.6
274791	SE CHICAG;8U	3.6
274792	SE CHICAG;9U	3.65
274793	SE CHICAG;0U	3.65
274794	SE CHICAG;1U	3.65
274795	SE CHICAG;2U	3.65
274859	EASYR;U1 E	7.29
274860	EASYR;U2 E	7.29
274888	PILOT HIL;1E	12.38
274890	CAYUG;1U E	8.91
274891	CAYUG;2U E	8.91
275149	KEMPTON ;1E	12.38
290021	O50 E	12.96
290051	GSG-6; E	6.93
290108	LEEDK;1U E	16.12
293061	N-015 E	10.22
293516	O-009 E1	2.6
293517	O-009 E2	1.32
293518	O-009 E3	1.45
293644	O22 E1	7.23
293645	O22 E2	14.04
293715	O-029 E	6.46
293716	O-029 E	3.54
293717	O-029 E	3.26
294392	P-010 E	12.98
294763	P-046 E	6.22
295109	WESTBROOK E	3.71
295111	SUBLETTE E	1.72
910542	X3-005 E	0.52
914641	Y2-103	30.04
915011	Y3-013 1	2.5
915021	Y3-013 2	2.5
915031	Y3-013 3	2.5
916221	Z1-073 E	3.58

Bus #	Bus	MW Impact
916502	Z1-106 E1	0.84
916504	Z1-106 E2	0.84
916512	Z1-107 E	1.71
916522	Z1-108 E	1.66
918052	AA1-018 E	10.6
919221	AA1-146	11.65
919581	AA2-030	11.65
920272	AA2-123 E	1.63
924471	AB2-096	28.16
925161	AB2-173	2.08
925302	AB2-191 E	0.92
926311	AC1-109 1	1.27
926321	AC1-109 2	1.27
926331	AC1-110 1	1.26
926341	AC1-110 2	1.26
926351	AC1-111 1	0.51
926361	AC1-111 2	0.51
926371	AC1-111 3	0.51
926381	AC1-111 4	0.51
926391	AC1-111 5	0.51
926401	AC1-111 6	0.51
926431	AC1-114	1.58
926821	AC1-168 C O1	0.76
926822	AC1-168 E O1	5.07
927091	AC1-204 1	48.7
927101	AC1-204 2	48.66
927451	AC1-142A 1	2.83
927461	AC1-142A 2	2.83
927511	AC1-113 1	0.79
927521	AC1-113 2	0.79
927531	AC1-185 1	0.46
927541	AC1-185 2	0.46
927551	AC1-185 3	0.46
927561	AC1-185 4	0.46
927571	AC1-185 5	0.46
927581	AC1-185 6	0.46
927591	AC1-185 7	0.46
927601	AC1-185 8	0.46
930481	AB1-089	43.69
930501	AB1-091 O1	49.08
930741	AB1-122 1O1	47.51
930751	AB1-122 2O1	49.69
932881	AC2-115 1	1.58
932891	AC2-115 2	1.58
932921	AC2-116	0.55
933341	AC2-147 C	0.58
933342	AC2-147 E	0.94
933411	AC2-154 C	1.68
933412	AC2-154 E	2.74
933431	AC2-156 C O1	0.63
933432	AC2-156 E O1	1.04
933911	AD1-013 C	1.22

Bus #	Bus	MW Impact
933912	AD1-013 E	1.95
933931	AD1-016 C	0.62
933932	AD1-016 E	1.01
934101	AD1-039 1	4.66
934111	AD1-039 2	4.87
934401	AD1-064 C O1	2.13
934402	AD1-064 E O1	9.97
934431	AD1-067 C	0.09
934432	AD1-067 E	0.37
934651	AD1-096 C	0.59
934652	AD1-096 E	0.97
934701	AD1-098 C O1	4.56
934702	AD1-098 E O1	3.33
934721	AD1-100 C	12.92
934722	AD1-100 E	60.3
934871	AD1-116 C	0.62
934872	AD1-116 E	1.01
934971	AD1-129 C	0.6
934972	AD1-129 E	0.4
935001	AD1-133 C O1	13.71
935002	AD1-133 E O1	9.14
936291	AD2-038 C O1	1.54
936292	AD2-038 E O1	10.3
936371	AD2-047 C O1	1.5
936372	AD2-047 E O1	16.18
936461	AD2-060	1.77
936511	AD2-066 C O1	5.55
936512	AD2-066 E O1	3.7
936781	AD2-101 C	3.17
936782	AD2-101 E	14.82
936791	AD2-102 C	7.99
936792	AD2-102 E	7.67
937001	AD2-134 C	1.81
937002	AD2-134 E	7.49
937031	AD2-137 C O1	2.3
937032	AD2-137 E O1	10.79
937051	AD2-140 C O1	2.32
937052	AD2-140 E O1	10.85
937061	AD2-141 C O1	2.3
937062	AD2-141 E O1	10.86
937071	AD2-142 C O1	4.64
937072	AD2-142 E O1	21.7
937121	AD2-148 C O1	2.36
937122	AD2-148 E O1	11.03
937131	AD2-149 C O1	2.36
937132	AD2-149 E O1	11.03
937141	AD2-150 C O1	2.36
937142	AD2-150 E O1	11.03
937181	AD2-155 C O1	2.36
937182	AD2-155 E O1	11.03
937311	AD2-172 C	1.63
937312	AD2-172 E	2.26

Bus #	Bus	MW Impact
937321	AD2-175 C	10.97
937322	AD2-175 E	7.32
937331	AD2-176 C O1	4.88
937332	AD2-176 E O1	3.25
937401	AD2-194 1	5.24
937411	AD2-194 2	5.23
938012	AE1-002 E O1	4.63
938511	AE1-070 1	6.15
938521	AE1-070 2	5.63
938851	AE1-113 C O1	5.87
938852	AE1-113 E O1	18.44
938861	AE1-114 C O1	2.38
938862	AE1-114 E O1	9.12
939051	AE1-134 1	0.9
939061	AE1-134 2	0.9
939321	AE1-163 C O1	3.87
939322	AE1-163 E O1	23.76
939351	AE1-166 C O1	6.83
939352	AE1-166 E O1	6.3
939401	AE1-172 C O1	4.09
939402	AE1-172 E O1	19.14
939641	AE1-194 C	10.88
939642	AE1-194 E	72.79
939651	AE1-195 C	10.88
939652	AE1-195 E	72.79
939691	AE1-199	1.59
939701	AE1-201 C	1.33
939702	AE1-201 E	0.29
939732	AE1-204 E	0.2
939861	AE1-222 1	52.47
939871	AE1-222 2	54.87
939921	AE1-228 C O1	6.67
939922	AE1-228 E O1	4.44
940101	AE1-252 C O1	6.97
940102	AE1-252 E O1	4.65
940501	AE2-035 C	1.63
940502	AE2-035 E	2.26
940621	AE2-049 C O2	6.1
940622	AE2-049 E O2	4.07
940631	AE2-050 C O2	8.04
940632	AE2-050 E O2	5.36
940752	AE2-062 E	0.09
940762	AE2-063 E	0.09
940881	AE2-077 C	2.09
940882	AE2-077 E	3.42
941131	AE2-107 C	4.85
941132	AE2-107 E	3.23
941551	AE2-152 C O2	7.84
941552	AE2-152 E O2	5.23
941561	AE2-153 C O2	3.09
941562	AE2-153 E O2	14.45
942421	AE2-255 C O2	1.97

Bus #	Bus	MW Impact
942422	AE2-255 E O2	5.9
942651	AE2-281 C	0.55
942652	AE2-281 E	3.39
942881	AE2-307 C	14.74
942882	AE2-307 E	5.36
942911	AE2-310 C	5.93
942912	AE2-310 E	1.6
942991	AE2-321 C O2	5.45
942992	AE2-321 E O2	2.68
943121	AE2-341 C	8.47
943122	AE2-341 E	4.16
951721	J643	15.48
952581	J740 C	3.4
952582	J740 E	18.4
953871	J847	8.37
BLUEG	BLUEG	2.92
CANNELTON	CANNELTON	0.01
CARR	CARR	0.5
CATAWBA	CATAWBA	0.17
CBM-S1	CBM-S1	1.31
CBM-W1	CBM-W1	20.03
CBM-W2	CBM-W2	38.34
CHEOAH	CHEOAH	0.0
CIN	CIN	0.09
G-007	G-007	1.39
HAMLET	HAMLET	0.33
MEC	MEC	24.99
O-066	O-066	8.94
RENSSELAER	RENSSELAER	0.4
SANTEETLA	SANTEETLA	0.0
TRIMBLE	TRIMBLE	0.35
WEC	WEC	5.32
Z1-043	Z1-043	18.79

22.11 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
2228203	270886	ST JOHN ; T	CE	255104	17GREEN_ACRE	NIPS	1	COMED_P4_023-65-BT2-3__	breaker	1091.0	133.0	133.07	DC	13.92

Bus #	Bus	MW Impact
270859	PWR VTR EC;R	9.02
274654	BRAIDWOOD;1U	15.11
274655	BRAIDWOOD;2U	14.47
274661	LASCO STA;2U	13.96
274687	WILL CNTY;4U	6.37
274704	KENDALL ;1C	2.23
274705	KENDALL ;1S	1.49
274706	KENDALL ;2C	2.23
274707	KENDALL ;2S	1.49
274722	S-055 E	8.43
274751	CRETE EC ;1U	2.67
274752	CRETE EC ;2U	2.67
274753	CRETE EC ;3U	2.67
274754	CRETE EC ;4U	2.67
274859	EASYR;U1 E	8.15
274860	EASYR;U2 E	8.15
274861	TOP CROP ;1U	0.26
274862	TOP CROP ;2U	0.5
274888	PILOT HIL;1E	12.78
275149	KEMPTON ;1E	12.78
290021	O50 E	14.62
290051	GSG-6; E	7.76
290108	LEEDK;1U E	18.05
293061	N-015 E	11.59
293644	O22 E1	8.49
293645	O22 E2	16.47
294392	P-010 E	14.72
294763	P-046 E	6.96
295109	WESTBROOK E	4.15
295111	SUBLETTE E	1.92
914641	Y2-103	33.72
915011	Y3-013 1	2.81
915021	Y3-013 2	2.81
915031	Y3-013 3	2.81
916221	Z1-073 E	4.0
916502	Z1-106 E1	0.94
916504	Z1-106 E2	0.94
916512	Z1-107 E	1.85
916522	Z1-108 E	1.86
918052	AA1-018 E	11.61
920272	AA2-123 E	1.82

Bus #	Bus	MW Impact
924471	AB2-096	31.56
925302	AB2-191 E	1.03
926311	AC1-109 1	1.42
926321	AC1-109 2	1.42
926331	AC1-110 1	1.42
926341	AC1-110 2	1.42
926351	AC1-111 1	0.57
926361	AC1-111 2	0.57
926371	AC1-111 3	0.57
926381	AC1-111 4	0.57
926391	AC1-111 5	0.57
926401	AC1-111 6	0.57
926431	AC1-114	1.77
927091	AC1-204 1	55.08
927101	AC1-204 2	55.0
927451	AC1-142A 1	3.19
927461	AC1-142A 2	3.2
927511	AC1-113 1	0.89
927521	AC1-113 2	0.89
927531	AC1-185 1	0.51
927541	AC1-185 2	0.51
927551	AC1-185 3	0.51
927561	AC1-185 4	0.51
927571	AC1-185 5	0.51
927581	AC1-185 6	0.51
927591	AC1-185 7	0.51
927601	AC1-185 8	0.51
930481	AB1-089	48.93
930501	AB1-091 O1	50.49
930741	AB1-122 1O1	52.86
930751	AB1-122 2O1	56.21
932881	AC2-115 1	1.77
932891	AC2-115 2	1.77
932921	AC2-116	0.62
933341	AC2-147 C	0.65
933342	AC2-147 E	1.05
933411	AC2-154 C	1.73
933412	AC2-154 E	2.83
933431	AC2-156 C O1	0.71
933432	AC2-156 E O1	1.16
933911	AD1-013 C	1.37
933912	AD1-013 E	2.18
933931	AD1-016 C	0.69
933932	AD1-016 E	1.13
934101	AD1-039 1	5.18
934111	AD1-039 2	5.51
934401	AD1-064 C O1	2.39
934402	AD1-064 E O1	11.18
934431	AD1-067 C	0.1
934432	AD1-067 E	0.41
934651	AD1-096 C	0.66
934652	AD1-096 E	1.08

Bus #	Bus	MW Impact
934701	AD1-098 C O1	5.1
934702	AD1-098 E O1	3.73
934721	AD1-100 C	14.24
934722	AD1-100 E	66.45
934871	AD1-116 C	0.68
934872	AD1-116 E	1.1
934971	AD1-129 C	0.67
934972	AD1-129 E	0.45
935001	AD1-133 C O1	10.36
935002	AD1-133 E O1	6.91
936291	AD2-038 C O1	1.71
936292	AD2-038 E O1	11.42
936371	AD2-047 C O1	1.55
936372	AD2-047 E O1	16.71
936461	AD2-060	1.83
936511	AD2-066 C O1	6.18
936512	AD2-066 E O1	4.12
936781	AD2-101 C	3.08
936782	AD2-101 E	14.43
936791	AD2-102 C	8.94
936792	AD2-102 E	8.59
937001	AD2-134 C	2.03
937002	AD2-134 E	8.38
937031	AD2-137 C O1	2.44
937032	AD2-137 E O1	11.4
937051	AD2-140 C O1	2.43
937052	AD2-140 E O1	11.4
937061	AD2-141 C O1	2.42
937062	AD2-141 E O1	11.41
937071	AD2-142 C O1	4.87
937072	AD2-142 E O1	22.79
937121	AD2-148 C O1	2.42
937122	AD2-148 E O1	11.35
937131	AD2-149 C O1	2.42
937132	AD2-149 E O1	11.35
937141	AD2-150 C O1	2.42
937142	AD2-150 E O1	11.35
937181	AD2-155 C O1	2.42
937182	AD2-155 E O1	11.35
937311	AD2-172 C	1.83
937312	AD2-172 E	2.52
937321	AD2-175 C	11.29
937322	AD2-175 E	7.53
937331	AD2-176 C O1	5.47
937332	AD2-176 E O1	3.65
937401	AD2-194 1	5.92
937411	AD2-194 2	5.91
938012	AE1-002 E O1	4.89
938511	AE1-070 1	6.96
938521	AE1-070 2	6.36
938851	AE1-113 C O1	6.61
938852	AE1-113 E O1	20.79

Bus #	Bus	MW Impact
938861	AE1-114 C O1	2.67
938862	AE1-114 E O1	10.19
939321	AE1-163 C O1	4.29
939322	AE1-163 E O1	26.35
939351	AE1-166 C O1	7.59
939352	AE1-166 E O1	7.0
939401	AE1-172 C O1	4.46
939402	AE1-172 E O1	20.9
939641	AE1-194 C	18.94
939642	AE1-194 E	126.77
939651	AE1-195 C	18.94
939652	AE1-195 E	126.77
939691	AE1-199	1.77
939701	AE1-201 C	1.49
939702	AE1-201 E	0.33
939732	AE1-204 E	0.22
939861	AE1-222 1	58.38
939871	AE1-222 2	62.07
939921	AE1-228 C O1	7.46
939922	AE1-228 E O1	4.97
940101	AE1-252 C O1	7.61
940102	AE1-252 E O1	5.07
940501	AE2-035 C	1.83
940502	AE2-035 E	2.52
940621	AE2-049 C O2	6.3
940622	AE2-049 E O2	4.2
940631	AE2-050 C O2	9.26
940632	AE2-050 E O2	6.17
940752	AE2-062 E	0.1
940762	AE2-063 E	0.1
940881	AE2-077 C	2.34
940882	AE2-077 E	3.82
941131	AE2-107 C	5.42
941132	AE2-107 E	3.62
941551	AE2-152 C O2	8.35
941552	AE2-152 E O2	5.57
941561	AE2-153 C O2	3.24
941562	AE2-153 E O2	15.19
942421	AE2-255 C O2	2.18
942422	AE2-255 E O2	6.55
942651	AE2-281 C	0.61
942652	AE2-281 E	3.76
942881	AE2-307 C	16.97
942882	AE2-307 E	6.17
942911	AE2-310 C	6.12
942912	AE2-310 E	1.65
942991	AE2-321 C O2	6.11
942992	AE2-321 E O2	3.01
943121	AE2-341 C	9.48
943122	AE2-341 E	4.66
BLUEG	BLUEG	5.15
CALDERWOOD	CALDERWOOD	0.1

Bus #	Bus	MW Impact
CANNELTON	CANNELTON	0.11
CARR	CARR	0.57
CATAWBA	CATAWBA	0.24
CBM-S1	CBM-S1	0.69
CBM-W1	CBM-W1	20.05
CBM-W2	CBM-W2	36.81
CHEOAH	CHEOAH	0.1
CHILHOWEE	CHILHOWEE	0.03
ELMERSMITH	ELMERSMITH	0.15
G-007	G-007	1.6
GIBSON	GIBSON	0.07
HAMLET	HAMLET	0.45
MEC	MEC	27.48
O-066	O-066	10.25
RENSSELAER	RENSSELAER	0.45
SANTEETLA	SANTEETLA	0.03
TRIMBLE	TRIMBLE	0.6
WEC	WEC	5.96
Z1-043	Z1-043	20.93

22.12 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
2228135	270926	WILTON ; B	CE	275232	WILTON ;3M	CE	1	COMED_P4_112-65-BT5-6__	breaker	1379.0	162.7	162.83	DC	24.54

Bus #	Bus	MW Impact
270859	PWR VTR EC;R	14.78
274722	S-055 E	13.73
274772	LINCOLN ;3U	2.67
274773	LINCOLN ;4U	2.67
274774	LINCOLN ;5U	2.67
274775	LINCOLN ;6U	2.67
274776	LINCOLN ;7U	2.67
274777	LINCOLN ;8U	2.67
274788	SE CHICAG;5U	5.44
274789	SE CHICAG;6U	5.44
274790	SE CHICAG;7U	5.44
274791	SE CHICAG;8U	5.44
274792	SE CHICAG;9U	5.4
274793	SE CHICAG;0U	5.4
274794	SE CHICAG;1U	5.4
274795	SE CHICAG;2U	5.4
274859	EASYR;U1 E	13.43
274860	EASYR;U2 E	13.43
274888	PILOT HIL;1E	23.57
274890	CAYUG;1U E	20.22
274891	CAYUG;2U E	20.22
275149	KEMPTON ;1E	23.57
290021	O50 E	23.7
290051	GSG-6; E	12.77
290108	LEEDK;1U E	29.68
293061	N-015 E	19.41
293644	O22 E1	12.53
293645	O22 E2	24.32
294392	P-010 E	24.65
294763	P-046 E	11.45
295109	WESTBROOK E	6.84
295111	SUBLETTE E	3.17
296125	R-030 C3	4.97
296128	R-030 E3	19.89
296271	R-030 C2	4.91
296272	R-030 E2	19.65
296308	R-030 C1	4.91
296309	R-030 E1	19.65
910542	X3-005 E	0.89
914641	Y2-103	54.9
915011	Y3-013 1	4.58
915021	Y3-013 2	4.58

Bus #	Bus	MW Impact
915031	Y3-013 3	4.58
916221	Z1-073 E	6.59
916502	Z1-106 E1	1.54
916504	Z1-106 E2	1.54
916512	Z1-107 E	3.16
916522	Z1-108 E	3.04
917502	Z2-087 E	25.71
918052	AA1-018 E	20.09
919581	AA2-030	18.9
920272	AA2-123 E	2.99
924041	AB2-047 C O1	4.74
924042	AB2-047 E O1	31.72
924471	AB2-096	51.73
925161	AB2-173	3.83
925302	AB2-191 E	1.69
926311	AC1-109 1	2.34
926321	AC1-109 2	2.34
926331	AC1-110 1	2.32
926341	AC1-110 2	2.32
926351	AC1-111 1	0.93
926361	AC1-111 2	0.93
926371	AC1-111 3	0.93
926381	AC1-111 4	0.93
926391	AC1-111 5	0.93
926401	AC1-111 6	0.93
926431	AC1-114	2.91
926821	AC1-168 C O1	1.43
926822	AC1-168 E O1	9.57
927091	AC1-204 1	88.75
927101	AC1-204 2	88.75
927451	AC1-142A 1	5.11
927461	AC1-142A 2	5.11
927511	AC1-113 1	1.45
927521	AC1-113 2	1.45
927531	AC1-185 1	0.84
927541	AC1-185 2	0.84
927551	AC1-185 3	0.84
927561	AC1-185 4	0.84
927571	AC1-185 5	0.84
927581	AC1-185 6	0.84
927591	AC1-185 7	0.84
927601	AC1-185 8	0.84
930481	AB1-089	80.33
930501	AB1-091 O1	93.8
930741	AB1-122 1O1	89.17
930751	AB1-122 2O1	90.13
932881	AC2-115 1	2.91
932891	AC2-115 2	2.91
932921	AC2-116	1.02
932931	AC2-117	6.51
933341	AC2-147 C	1.07
933342	AC2-147 E	1.74

Bus #	Bus	MW Impact
933411	AC2-154 C	3.2
933412	AC2-154 E	5.22
933431	AC2-156 C O1	1.17
933432	AC2-156 E O1	1.91
933911	AD1-013 C	2.25
933912	AD1-013 E	3.59
933931	AD1-016 C	1.13
933932	AD1-016 E	1.85
934101	AD1-039 1	8.74
934111	AD1-039 2	8.83
934401	AD1-064 C O1	3.91
934402	AD1-064 E O1	18.33
934431	AD1-067 C	0.16
934432	AD1-067 E	0.67
934651	AD1-096 C	1.09
934652	AD1-096 E	1.78
934701	AD1-098 C O1	8.41
934702	AD1-098 E O1	6.14
934721	AD1-100 C	29.39
934722	AD1-100 E	137.14
934871	AD1-116 C	1.17
934872	AD1-116 E	1.91
934971	AD1-129 C	1.1
934972	AD1-129 E	0.74
935001	AD1-133 C O1	27.36
935002	AD1-133 E O1	18.24
936291	AD2-038 C O1	2.88
936292	AD2-038 E O1	19.25
936371	AD2-047 C O1	2.86
936372	AD2-047 E O1	30.81
936461	AD2-060	3.37
936511	AD2-066 C O1	10.34
936512	AD2-066 E O1	6.89
936781	AD2-101 C	5.82
936782	AD2-101 E	27.26
936791	AD2-102 C	14.68
936792	AD2-102 E	14.11
937001	AD2-134 C	3.34
937002	AD2-134 E	13.8
937031	AD2-137 C O1	7.17
937032	AD2-137 E O1	33.55
937051	AD2-140 C O1	7.53
937052	AD2-140 E O1	35.24
937061	AD2-141 C O1	7.48
937062	AD2-141 E O1	35.28
937071	AD2-142 C O1	15.05
937072	AD2-142 E O1	70.48
937121	AD2-148 C O1	4.51
937122	AD2-148 E O1	21.09
937131	AD2-149 C O1	4.51
937132	AD2-149 E O1	21.09
937141	AD2-150 C O1	4.51

Bus #	Bus	MW Impact
937142	AD2-150 E O1	21.09
937181	AD2-155 C O1	4.51
937182	AD2-155 E O1	21.09
937311	AD2-172 C	3.01
937312	AD2-172 E	4.15
937321	AD2-175 C	20.99
937322	AD2-175 E	13.99
937331	AD2-176 C O1	8.96
937332	AD2-176 E O1	5.97
937401	AD2-194 1	9.54
937411	AD2-194 2	9.54
938012	AE1-002 E O1	14.38
938511	AE1-070 1	11.21
938521	AE1-070 2	10.26
938851	AE1-113 C O1	10.72
938852	AE1-113 E O1	33.71
938861	AE1-114 C O1	4.39
938862	AE1-114 E O1	16.8
939051	AE1-134 1	1.67
939061	AE1-134 2	1.67
939321	AE1-163 C O1	7.23
939322	AE1-163 E O1	44.39
939351	AE1-166 C O1	14.5
939352	AE1-166 E O1	13.38
939401	AE1-172 C O1	9.5
939402	AE1-172 E O1	44.49
939691	AE1-199	2.92
939701	AE1-201 C	2.45
939702	AE1-201 E	0.54
939732	AE1-204 E	0.36
939741	AE1-205 C O1	12.45
939742	AE1-205 E O1	17.19
939861	AE1-222 1	98.48
939871	AE1-222 2	99.54
939921	AE1-228 C O1	12.28
939922	AE1-228 E O1	8.19
940101	AE1-252 C O1	16.2
940102	AE1-252 E O1	10.8
940501	AE2-035 C	3.01
940502	AE2-035 E	4.15
940621	AE2-049 C O2	11.62
940622	AE2-049 E O2	7.75
940631	AE2-050 C O2	15.56
940632	AE2-050 E O2	10.38
940752	AE2-062 E	0.16
940762	AE2-063 E	0.16
940881	AE2-077 C	3.85
940882	AE2-077 E	6.28
941131	AE2-107 C	8.92
941132	AE2-107 E	5.95
941551	AE2-152 C O2	14.72
941552	AE2-152 E O2	9.81

Bus #	Bus	MW Impact
941561	AE2-153 C O2	5.83
941562	AE2-153 E O2	27.3
941731	AE2-173	7.43
942111	AE2-223 C	2.88
942112	AE2-223 E	19.28
942421	AE2-255 C O2	3.67
942422	AE2-255 E O2	11.02
942651	AE2-281 C	1.03
942652	AE2-281 E	6.34
942881	AE2-307 C	28.54
942882	AE2-307 E	10.38
942911	AE2-310 C	11.28
942912	AE2-310 E	3.05
942991	AE2-321 C O2	10.0
942992	AE2-321 E O2	4.93
943121	AE2-341 C	15.61
943122	AE2-341 E	7.67
BLUEG	BLUEG	8.01
CALDERWOOD	CALDERWOOD	0.11
CANNELTON	CANNELTON	0.1
CARR	CARR	0.97
CATAWBA	CATAWBA	0.4
CBM-S1	CBM-S1	1.72
CBM-W1	CBM-W1	37.34
CBM-W2	CBM-W2	70.72
CHEOAH	CHEOAH	0.12
CHILHOWEE	CHILHOWEE	0.03
ELMERSMITH	ELMERSMITH	0.09
G-007	G-007	2.73
GIBSON	GIBSON	0.01
HAMLET	HAMLET	0.74
MEC	MEC	46.44
O-066	O-066	17.5
RENSSELAER	RENSSELAER	0.77
SANTEETLA	SANTEETLA	0.04
TRIMBLE	TRIMBLE	0.95
WEC	WEC	9.73
Z1-043	Z1-043	35.42

22.13 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
2228137	270927	WILTON ; R	CE	275233	WILTON ;4M	CE	1	COMED_P4_112-65-BT2-3__	breaker	1379.0	162.41	162.55	DC	25.05

Bus #	Bus	MW Impact
270859	PWR VTR EC;R	15.09
274722	S-055 E	14.02
274772	LINCOLN ;3U	2.74
274773	LINCOLN ;4U	2.74
274774	LINCOLN ;5U	2.74
274775	LINCOLN ;6U	2.74
274776	LINCOLN ;7U	2.74
274777	LINCOLN ;8U	2.74
274788	SE CHICAG;5U	5.56
274789	SE CHICAG;6U	5.56
274790	SE CHICAG;7U	5.56
274791	SE CHICAG;8U	5.56
274792	SE CHICAG;9U	5.52
274793	SE CHICAG;0U	5.52
274794	SE CHICAG;1U	5.52
274795	SE CHICAG;2U	5.52
274859	EASYR;U1 E	13.72
274860	EASYR;U2 E	13.72
274888	PILOT HIL;1E	24.06
274890	CAYUG;1U E	20.62
274891	CAYUG;2U E	20.62
275149	KEMPTON ;1E	24.06
290021	O50 E	24.2
290051	GSG-6; E	13.05
290108	LEEDK;1U E	30.31
293061	N-015 E	19.81
293516	O-009 E1	2.14
293517	O-009 E2	1.09
293518	O-009 E3	1.2
293644	O22 E1	12.79
293645	O22 E2	24.84
293715	O-029 E	12.21
293716	O-029 E	6.69
293717	O-029 E	6.15
294392	P-010 E	25.16
294763	P-046 E	11.7
295109	WESTBROOK E	6.98
295111	SUBLETTE E	3.24
296125	R-030 C3	5.07
296128	R-030 E3	20.29
296271	R-030 C2	5.01
296272	R-030 E2	20.05

Bus #	Bus	MW Impact
296308	R-030 C1	5.01
296309	R-030 E1	20.05
910542	X3-005 E	0.91
914641	Y2-103	56.07
915011	Y3-013 1	4.67
915021	Y3-013 2	4.67
915031	Y3-013 3	4.67
916221	Z1-073 E	6.73
916502	Z1-106 E1	1.58
916504	Z1-106 E2	1.58
916512	Z1-107 E	3.23
916522	Z1-108 E	3.1
917502	Z2-087 E	26.23
918052	AA1-018 E	20.53
919221	AA1-146	21.95
919581	AA2-030	21.95
920272	AA2-123 E	3.05
924041	AB2-047 C O1	4.84
924042	AB2-047 E O1	32.36
924471	AB2-096	52.83
925161	AB2-173	3.91
925302	AB2-191 E	1.73
926311	AC1-109 1	2.39
926321	AC1-109 2	2.39
926331	AC1-110 1	2.37
926341	AC1-110 2	2.37
926351	AC1-111 1	0.95
926361	AC1-111 2	0.95
926371	AC1-111 3	0.95
926381	AC1-111 4	0.95
926391	AC1-111 5	0.95
926401	AC1-111 6	0.95
926431	AC1-114	2.97
926821	AC1-168 C O1	1.46
926822	AC1-168 E O1	9.77
927091	AC1-204 1	90.65
927101	AC1-204 2	90.65
927451	AC1-142A 1	5.22
927461	AC1-142A 2	5.22
927511	AC1-113 1	1.48
927521	AC1-113 2	1.48
927531	AC1-185 1	0.86
927541	AC1-185 2	0.86
927551	AC1-185 3	0.86
927561	AC1-185 4	0.86
927571	AC1-185 5	0.86
927581	AC1-185 6	0.86
927591	AC1-185 7	0.86
927601	AC1-185 8	0.86
930481	AB1-089	82.03
930501	AB1-091 O1	95.74
930741	AB1-122 1O1	91.06

Bus #	Bus	MW Impact
930751	AB1-122 2O1	92.05
932881	AC2-115 1	2.97
932891	AC2-115 2	2.97
932921	AC2-116	1.04
932931	AC2-117	6.65
933341	AC2-147 C	1.09
933342	AC2-147 E	1.78
933411	AC2-154 C	3.27
933412	AC2-154 E	5.33
933431	AC2-156 C O1	1.19
933432	AC2-156 E O1	1.95
933911	AD1-013 C	2.3
933912	AD1-013 E	3.67
933931	AD1-016 C	1.16
933932	AD1-016 E	1.89
934101	AD1-039 1	8.92
934111	AD1-039 2	9.02
934401	AD1-064 C O1	4.0
934402	AD1-064 E O1	18.72
934431	AD1-067 C	0.16
934432	AD1-067 E	0.69
934651	AD1-096 C	1.11
934652	AD1-096 E	1.81
934701	AD1-098 C O1	8.59
934702	AD1-098 E O1	6.27
934721	AD1-100 C	29.97
934722	AD1-100 E	139.86
934871	AD1-116 C	1.2
934872	AD1-116 E	1.95
934971	AD1-129 C	1.13
934972	AD1-129 E	0.75
935001	AD1-133 C O1	27.93
935002	AD1-133 E O1	18.62
936291	AD2-038 C O1	2.94
936292	AD2-038 E O1	19.66
936371	AD2-047 C O1	2.92
936372	AD2-047 E O1	31.46
936461	AD2-060	3.44
936511	AD2-066 C O1	10.56
936512	AD2-066 E O1	7.04
936781	AD2-101 C	5.94
936782	AD2-101 E	27.83
936791	AD2-102 C	14.99
936792	AD2-102 E	14.41
937001	AD2-134 C	3.41
937002	AD2-134 E	14.09
937031	AD2-137 C O1	7.3
937032	AD2-137 E O1	34.17
937051	AD2-140 C O1	7.67
937052	AD2-140 E O1	35.89
937061	AD2-141 C O1	7.62
937062	AD2-141 E O1	35.93

Bus #	Bus	MW Impact
937071	AD2-142 C O1	15.33
937072	AD2-142 E O1	71.78
937121	AD2-148 C O1	4.6
937122	AD2-148 E O1	21.53
937131	AD2-149 C O1	4.6
937132	AD2-149 E O1	21.53
937141	AD2-150 C O1	4.6
937142	AD2-150 E O1	21.53
937181	AD2-155 C O1	4.6
937182	AD2-155 E O1	21.53
937311	AD2-172 C	3.07
937312	AD2-172 E	4.24
937321	AD2-175 C	21.43
937322	AD2-175 E	14.28
937331	AD2-176 C O1	9.15
937332	AD2-176 E O1	6.1
937401	AD2-194 1	9.75
937411	AD2-194 2	9.75
938012	AE1-002 E O1	14.65
938511	AE1-070 1	11.45
938521	AE1-070 2	10.48
938851	AE1-113 C O1	10.95
938852	AE1-113 E O1	34.43
938861	AE1-114 C O1	4.49
938862	AE1-114 E O1	17.15
939051	AE1-134 1	1.71
939061	AE1-134 2	1.71
939321	AE1-163 C O1	7.38
939322	AE1-163 E O1	45.35
939351	AE1-166 C O1	14.79
939352	AE1-166 E O1	13.65
939401	AE1-172 C O1	9.69
939402	AE1-172 E O1	45.37
939691	AE1-199	2.98
939701	AE1-201 C	2.5
939702	AE1-201 E	0.55
939732	AE1-204 E	0.36
939741	AE1-205 C O1	12.7
939742	AE1-205 E O1	17.54
939861	AE1-222 1	100.56
939871	AE1-222 2	101.66
939921	AE1-228 C O1	12.54
939922	AE1-228 E O1	8.36
940101	AE1-252 C O1	16.52
940102	AE1-252 E O1	11.01
940501	AE2-035 C	3.07
940502	AE2-035 E	4.24
940621	AE2-049 C O2	11.86
940622	AE2-049 E O2	7.91
940631	AE2-050 C O2	15.89
940632	AE2-050 E O2	10.59
940752	AE2-062 E	0.16

Bus #	Bus	MW Impact
940762	AE2-063 E	0.16
940881	AE2-077 C	3.93
940882	AE2-077 E	6.42
941131	AE2-107 C	9.11
941132	AE2-107 E	6.07
941551	AE2-152 C O2	15.03
941552	AE2-152 E O2	10.02
941561	AE2-153 C O2	5.95
941562	AE2-153 E O2	27.87
941731	AE2-173	7.58
942111	AE2-223 C	2.94
942112	AE2-223 E	19.67
942421	AE2-255 C O2	3.75
942422	AE2-255 E O2	11.25
942651	AE2-281 C	1.05
942652	AE2-281 E	6.48
942881	AE2-307 C	29.12
942882	AE2-307 E	10.59
942911	AE2-310 C	11.52
942912	AE2-310 E	3.11
942991	AE2-321 C O2	10.21
942992	AE2-321 E O2	5.03
943121	AE2-341 C	15.94
943122	AE2-341 E	7.83
BLUEG	BLUEG	8.19
CALDERWOOD	CALDERWOOD	0.12
CANNELTON	CANNELTON	0.1
CARR	CARR	0.99
CATAWBA	CATAWBA	0.4
CBM-S1	CBM-S1	1.75
CBM-W1	CBM-W1	38.13
CBM-W2	CBM-W2	72.18
CHEOAH	CHEOAH	0.12
CHILHOWEE	CHILHOWEE	0.04
ELMERSMITH	ELMERSMITH	0.09
G-007	G-007	2.79
GIBSON	GIBSON	0.01
HAMLET	HAMLET	0.76
MEC	MEC	47.42
O-066	O-066	17.87
RENSSELAER	RENSSELAER	0.78
SANTEETLA	SANTEETLA	0.04
TRIMBLE	TRIMBLE	0.97
WEC	WEC	9.94
Z1-043	Z1-043	36.17

22.14 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
2228156	274750	CRETE EC ;BP	CE	255112	17STJOHN	NIPS	1	COMED_P4_112-65-BT3-4__	breaker	1399.0	159.08	159.15	DC	18.86

Bus #	Bus	MW Impact
270859	PWR VTR EC;R	12.6
274654	BRAIDWOOD;1U	21.49
274655	BRAIDWOOD;2U	20.56
274661	LASCO STA;2U	19.66
274687	WILL CNTY;4U	8.96
274704	KENDALL ;1C	3.15
274705	KENDALL ;1S	2.1
274706	KENDALL ;2C	3.15
274707	KENDALL ;2S	2.1
274722	S-055 E	11.8
274751	CRETE EC ;1U	4.57
274752	CRETE EC ;2U	4.57
274753	CRETE EC ;3U	4.57
274754	CRETE EC ;4U	4.57
274859	EASYR;U1 E	11.39
274860	EASYR;U2 E	11.39
274861	TOP CROP ;1U	0.37
274862	TOP CROP ;2U	0.72
274888	PILOT HIL;1E	16.93
275149	KEMPTON ;1E	16.93
290021	O50 E	20.58
290051	GSG-6; E	10.83
290108	LEEDK;1U E	25.18
293061	N-015 E	16.29
293644	O22 E1	12.24
293645	O22 E2	23.75
294392	P-010 E	20.68
294763	P-046 E	9.73
295109	WESTBROOK E	5.8
295111	SUBLETTE E	2.68
914641	Y2-103	47.2
915011	Y3-013 1	3.93
915021	Y3-013 2	3.93
915031	Y3-013 3	3.93
916221	Z1-073 E	5.59
916502	Z1-106 E1	1.32
916504	Z1-106 E2	1.32
916512	Z1-107 E	2.53
916522	Z1-108 E	2.6
918052	AA1-018 E	16.03
920272	AA2-123 E	2.55
924471	AB2-096	44.11

Bus #	Bus	MW Impact
925302	AB2-191 E	1.43
926311	AC1-109 1	1.98
926321	AC1-109 2	1.98
926331	AC1-110 1	1.98
926341	AC1-110 2	1.98
926351	AC1-111 1	0.79
926361	AC1-111 2	0.79
926371	AC1-111 3	0.79
926381	AC1-111 4	0.79
926391	AC1-111 5	0.79
926401	AC1-111 6	0.79
926431	AC1-114	2.47
927091	AC1-204 1	77.64
927101	AC1-204 2	77.51
927451	AC1-142A 1	4.49
927461	AC1-142A 2	4.5
927511	AC1-113 1	1.24
927521	AC1-113 2	1.24
927531	AC1-185 1	0.71
927541	AC1-185 2	0.71
927551	AC1-185 3	0.71
927561	AC1-185 4	0.71
927571	AC1-185 5	0.71
927581	AC1-185 6	0.71
927591	AC1-185 7	0.71
927601	AC1-185 8	0.71
930481	AB1-089	68.38
930501	AB1-091 O1	66.72
930741	AB1-122 1O1	73.97
930751	AB1-122 2O1	79.17
932881	AC2-115 1	2.47
932891	AC2-115 2	2.47
932921	AC2-116	0.87
933341	AC2-147 C	0.9
933342	AC2-147 E	1.47
933411	AC2-154 C	2.3
933412	AC2-154 E	3.75
933431	AC2-156 C O1	0.99
933432	AC2-156 E O1	1.61
933911	AD1-013 C	1.91
933912	AD1-013 E	3.05
933931	AD1-016 C	0.97
933932	AD1-016 E	1.58
934101	AD1-039 1	7.25
934111	AD1-039 2	7.76
934401	AD1-064 C O1	3.34
934402	AD1-064 E O1	15.62
934431	AD1-067 C	0.14
934432	AD1-067 E	0.57
934651	AD1-096 C	0.93
934652	AD1-096 E	1.51
934701	AD1-098 C O1	7.13

Bus #	Bus	MW Impact
934702	AD1-098 E O1	5.2
934721	AD1-100 C	19.74
934722	AD1-100 E	92.14
934871	AD1-116 C	0.93
934872	AD1-116 E	1.52
934971	AD1-129 C	0.94
934972	AD1-129 E	0.63
935001	AD1-133 C O1	21.07
935002	AD1-133 E O1	14.05
936291	AD2-038 C O1	2.38
936292	AD2-038 E O1	15.91
936371	AD2-047 C O1	2.06
936372	AD2-047 E O1	22.14
936461	AD2-060	2.42
936511	AD2-066 C O1	8.62
936512	AD2-066 E O1	5.75
936791	AD2-102 C	12.5
936792	AD2-102 E	12.01
937001	AD2-134 C	2.83
937002	AD2-134 E	11.69
937031	AD2-137 C O1	3.3
937032	AD2-137 E O1	15.45
937051	AD2-140 C O1	3.28
937052	AD2-140 E O1	15.37
937061	AD2-141 C O1	3.26
937062	AD2-141 E O1	15.39
937071	AD2-142 C O1	6.57
937072	AD2-142 E O1	30.74
937121	AD2-148 C O1	3.2
937122	AD2-148 E O1	15.0
937131	AD2-149 C O1	3.2
937132	AD2-149 E O1	15.0
937141	AD2-150 C O1	3.2
937142	AD2-150 E O1	15.0
937181	AD2-155 C O1	3.2
937182	AD2-155 E O1	15.0
937311	AD2-172 C	2.55
937312	AD2-172 E	3.53
937321	AD2-175 C	14.93
937322	AD2-175 E	9.95
937331	AD2-176 C O1	7.64
937332	AD2-176 E O1	5.1
937401	AD2-194 1	8.35
937411	AD2-194 2	8.34
938012	AE1-002 E O1	6.62
938511	AE1-070 1	9.81
938521	AE1-070 2	8.96
938851	AE1-113 C O1	9.31
938852	AE1-113 E O1	29.27
938861	AE1-114 C O1	3.73
938862	AE1-114 E O1	14.25
939051	AE1-134 1	1.26

Bus #	Bus	MW Impact
939061	AE1-134 2	1.26
939321	AE1-163 C O1	5.98
939322	AE1-163 E O1	36.71
939351	AE1-166 C O1	10.57
939352	AE1-166 E O1	9.75
939401	AE1-172 C O1	6.17
939402	AE1-172 E O1	28.89
939641	AE1-194 C	32.42
939642	AE1-194 E	216.99
939651	AE1-195 C	32.42
939652	AE1-195 E	216.99
939691	AE1-199	2.48
939701	AE1-201 C	2.09
939702	AE1-201 E	0.46
939732	AE1-204 E	0.31
939861	AE1-222 1	81.69
939871	AE1-222 2	87.43
939921	AE1-228 C O1	10.41
939922	AE1-228 E O1	6.94
940101	AE1-252 C O1	10.52
940102	AE1-252 E O1	7.01
940501	AE2-035 C	2.55
940502	AE2-035 E	3.53
940621	AE2-049 C O2	8.35
940622	AE2-049 E O2	5.56
940631	AE2-050 C O2	13.16
940632	AE2-050 E O2	8.77
940752	AE2-062 E	0.14
940762	AE2-063 E	0.14
940881	AE2-077 C	3.28
940882	AE2-077 E	5.34
941131	AE2-107 C	7.57
941132	AE2-107 E	5.05
941551	AE2-152 C O2	11.32
941552	AE2-152 E O2	7.54
941561	AE2-153 C O2	4.35
941562	AE2-153 E O2	20.38
942421	AE2-255 C O2	3.05
942422	AE2-255 E O2	9.14
942651	AE2-281 C	0.85
942652	AE2-281 E	5.24
942881	AE2-307 C	24.12
942882	AE2-307 E	8.77
942911	AE2-310 C	8.1
942912	AE2-310 E	2.19
942991	AE2-321 C O2	8.54
942992	AE2-321 E O2	4.2
943121	AE2-341 C	13.2
943122	AE2-341 E	6.48
BLUEG	BLUEG	7.64
CALDERWOOD	CALDERWOOD	0.17
CANNELTON	CANNELTON	0.19

Bus #	Bus	MW Impact
CARR	CARR	0.81
CATAWBA	CATAWBA	0.35
CBM-S1	CBM-S1	0.73
CBM-W1	CBM-W1	25.9
CBM-W2	CBM-W2	49.59
CHEOAH	CHEOAH	0.17
CHILHOWEE	CHILHOWEE	0.05
ELMERSMITH	ELMERSMITH	0.26
G-007	G-007	2.27
GIBSON	GIBSON	0.12
HAMLET	HAMLET	0.65
MEC	MEC	38.3
O-066	O-066	14.57
RENSSELAER	RENSSELAER	0.64
SANTEETLA	SANTEETLA	0.05
TRIMBLE	TRIMBLE	0.89
WEC	WEC	8.33
Z1-043	Z1-043	29.27

22.15 Index 15

ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC|DC	MW IMPACT
1539902	274804	UNIV PK N;RP	CE	243229	05OLIVE	AEP	1	AEP_P4_#2978_05DUMONT 765_B	breaker	971.0	138.38	138.54	DC	15.85

Bus #	Bus	MW Impact
270859	PWR VTR EC;R	9.77
274722	S-055 E	9.13
274808	UNIV PK N;4U	1.28
274809	UNIV PK N;5U	1.28
274811	UNIV PK N;7U	1.28
274812	UNIV PK N;8U	1.28
274814	UNIV PK N;0U	1.28
274815	UNIV PK N;XU	1.28
274832	U4-027	8.59
274859	EASYR;U1 E	8.82
274860	EASYR;U2 E	8.82
274888	PILOT HIL;1E	14.83
274890	CAYUG;1U E	10.67
274891	CAYUG;2U E	10.67
275149	KEMPTON ;1E	14.83
290021	O50 E	15.58
290051	GSG-6; E	8.41
290108	LEEDK;1U E	19.56
293061	N-015 E	12.57
293516	O-009 E1	7.24
293517	O-009 E2	3.68
293518	O-009 E3	4.05
293644	O22 E1	7.86
293645	O22 E2	15.26
293715	O-029 E	7.82
293716	O-029 E	4.29
293717	O-029 E	3.94
293771	O-035 E	5.08
294392	P-010 E	15.97
294401	BSHIL;1U E	6.79
294410	BSHIL;2U E	6.79
294763	P-046 E	7.54
295109	WESTBROOK E	4.5
295111	SUBLETTE E	2.08
910542	X3-005 E	0.51
914641	Y2-103	36.51
915011	Y3-013 1	3.04
915021	Y3-013 2	3.04
915031	Y3-013 3	3.04
916211	Z1-072 E	3.84
916221	Z1-073 E	4.34

Bus #	Bus	MW Impact
916502	Z1-106 E1	1.02
916504	Z1-106 E2	1.02
916512	Z1-107 E	2.17
916522	Z1-108 E	2.01
918052	AA1-018 E	14.26
919221	AA1-146	14.08
919581	AA2-030	14.08
919621	AA2-039 C	1.65
919622	AA2-039 E	11.07
920272	AA2-123 E	1.98
924471	AB2-096	34.19
925161	AB2-173	2.51
925302	AB2-191 E	1.11
925581	AC1-033 C	1.11
925582	AC1-033 E	7.44
926311	AC1-109 1	1.55
926321	AC1-109 2	1.55
926331	AC1-110 1	1.53
926341	AC1-110 2	1.53
926351	AC1-111 1	0.62
926361	AC1-111 2	0.62
926371	AC1-111 3	0.62
926381	AC1-111 4	0.62
926391	AC1-111 5	0.62
926401	AC1-111 6	0.62
926431	AC1-114	1.92
926821	AC1-168 C O1	0.92
926822	AC1-168 E O1	6.16
927091	AC1-204 1	59.05
927101	AC1-204 2	59.09
927201	AC1-214 C O1	1.63
927202	AC1-214 E O1	5.18
927451	AC1-142A 1	3.45
927461	AC1-142A 2	3.44
927511	AC1-113 1	0.96
927521	AC1-113 2	0.96
927531	AC1-185 1	0.55
927541	AC1-185 2	0.55
927551	AC1-185 3	0.55
927561	AC1-185 4	0.55
927571	AC1-185 5	0.55
927581	AC1-185 6	0.55
927591	AC1-185 7	0.55
927601	AC1-185 8	0.55
930481	AB1-089	52.99
930501	AB1-091 O1	57.0
930741	AB1-122 1O1	58.08
930751	AB1-122 2O1	59.56
932881	AC2-115 1	1.92
932891	AC2-115 2	1.92
932921	AC2-116	0.67
932931	AC2-117	10.38

Bus #	Bus	MW Impact
933341	AC2-147 C	0.7
933342	AC2-147 E	1.14
933411	AC2-154 C	2.01
933412	AC2-154 E	3.28
933431	AC2-156 C O1	0.77
933432	AC2-156 E O1	1.26
933911	AD1-013 C	1.48
933912	AD1-013 E	2.37
933931	AD1-016 C	0.75
933932	AD1-016 E	1.22
934051	AD1-031 C O1	2.26
934052	AD1-031 E O1	3.68
934101	AD1-039 1	5.69
934111	AD1-039 2	5.84
934401	AD1-064 C O1	2.59
934402	AD1-064 E O1	12.1
934431	AD1-067 C	0.11
934432	AD1-067 E	0.44
934651	AD1-096 C	0.72
934652	AD1-096 E	1.17
934701	AD1-098 C O1	5.53
934702	AD1-098 E O1	4.04
934721	AD1-100 C	15.54
934722	AD1-100 E	72.54
934871	AD1-116 C	0.83
934872	AD1-116 E	1.36
934971	AD1-129 C	0.73
934972	AD1-129 E	0.49
935001	AD1-133 C O1	16.63
935002	AD1-133 E O1	11.09
936291	AD2-038 C O1	1.97
936292	AD2-038 E O1	13.16
936371	AD2-047 C O1	1.8
936372	AD2-047 E O1	19.38
936461	AD2-060	2.12
936511	AD2-066 C O1	6.81
936512	AD2-066 E O1	4.54
936781	AD2-101 C	3.5
936782	AD2-101 E	16.38
936791	AD2-102 C	9.68
936792	AD2-102 E	9.3
937001	AD2-134 C	2.2
937002	AD2-134 E	9.08
937031	AD2-137 C O1	2.69
937032	AD2-137 E O1	12.58
937051	AD2-140 C O1	2.69
937052	AD2-140 E O1	12.58
937061	AD2-141 C O1	2.67
937062	AD2-141 E O1	12.6
937071	AD2-142 C O1	5.38
937072	AD2-142 E O1	25.17
937121	AD2-148 C O1	2.74

Bus #	Bus	MW Impact
937122	AD2-148 E O1	12.81
937131	AD2-149 C O1	2.74
937132	AD2-149 E O1	12.81
937141	AD2-150 C O1	2.74
937142	AD2-150 E O1	12.81
937181	AD2-155 C O1	2.74
937182	AD2-155 E O1	12.81
937311	AD2-172 C	1.98
937312	AD2-172 E	2.73
937321	AD2-175 C	12.74
937322	AD2-175 E	8.5
937331	AD2-176 C O1	5.92
937332	AD2-176 E O1	3.95
937401	AD2-194 1	6.35
937411	AD2-194 2	6.35
937531	AD2-214 C	3.52
937532	AD2-214 E	1.66
938012	AE1-002 E O1	5.39
938511	AE1-070 1	7.46
938521	AE1-070 2	6.83
938851	AE1-113 C O1	7.05
938852	AE1-113 E O1	22.17
938861	AE1-114 C O1	2.89
938862	AE1-114 E O1	11.04
939051	AE1-134 1	1.09
939061	AE1-134 2	1.09
939321	AE1-163 C O1	4.94
939322	AE1-163 E O1	30.35
939351	AE1-166 C O1	8.26
939352	AE1-166 E O1	7.63
939401	AE1-172 C O1	4.9
939402	AE1-172 E O1	22.92
939631	AE1-193 C O1	5.51
939632	AE1-193 E O1	36.9
939681	AE1-198 C O1	16.37
939682	AE1-198 E O1	13.91
939691	AE1-199	1.92
939701	AE1-201 C	1.62
939702	AE1-201 E	0.36
939732	AE1-204 E	0.24
939861	AE1-222 1	64.14
939871	AE1-222 2	65.77
939921	AE1-228 C O1	8.09
939922	AE1-228 E O1	5.39
940101	AE1-252 C O1	8.34
940102	AE1-252 E O1	5.56
940501	AE2-035 C	1.98
940502	AE2-035 E	2.73
940621	AE2-049 C O2	7.31
940622	AE2-049 E O2	4.87
940631	AE2-050 C O2	9.99
940632	AE2-050 E O2	6.66

Bus #	Bus	MW Impact
940752	AE2-062 E	0.1
940762	AE2-063 E	0.1
940881	AE2-077 C	2.54
940882	AE2-077 E	4.14
941131	AE2-107 C	5.88
941132	AE2-107 E	3.92
941551	AE2-152 C O2	9.51
941552	AE2-152 E O2	6.34
941561	AE2-153 C O2	3.72
941562	AE2-153 E O2	17.43
942421	AE2-255 C O2	2.5
942422	AE2-255 E O2	7.5
942651	AE2-281 C	0.71
942652	AE2-281 E	4.34
942881	AE2-307 C	18.31
942882	AE2-307 E	6.66
942911	AE2-310 C	7.09
942912	AE2-310 E	1.92
942991	AE2-321 C O2	6.62
942992	AE2-321 E O2	3.26
943121	AE2-341 C	10.31
943122	AE2-341 E	5.06
990901	L-005 E	8.02
BLUEG	BLUEG	4.51
CALDERWOOD	CALDERWOOD	0.06
CANNELTON	CANNELTON	0.07
CARR	CARR	0.62
CATAWBA	CATAWBA	0.24
CBM-S1	CBM-S1	1.13
CBM-W1	CBM-W1	21.91
CBM-W2	CBM-W2	42.89
CHEOAH	CHEOAH	0.06
CHILHOWEE	CHILHOWEE	0.02
ELMERSMITH	ELMERSMITH	0.07
G-007	G-007	1.74
GIBSON	GIBSON	0.03
HAMLET	HAMLET	0.45
MEC	MEC	29.98
O-066	O-066	11.15
RENSSELAER	RENSSELAER	0.49
SANTEETLA	SANTEETLA	0.02
TRIMBLE	TRIMBLE	0.53
WEC	WEC	6.45
Z1-043	Z1-043	22.8

22.16 Index 16

ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC|DC	MW IMPACT
2228133	275232	WILTON ;3M	CE	270644	WILTON ;	CE	1	COMED_P4_112-65-BT5-6__	breaker	1379.0	162.7	162.83	DC	24.54

Bus #	Bus	MW Impact
270859	PWR VTR EC;R	14.78
274722	S-055 E	13.73
274772	LINCOLN ;3U	2.67
274773	LINCOLN ;4U	2.67
274774	LINCOLN ;5U	2.67
274775	LINCOLN ;6U	2.67
274776	LINCOLN ;7U	2.67
274777	LINCOLN ;8U	2.67
274788	SE CHICAG;5U	5.44
274789	SE CHICAG;6U	5.44
274790	SE CHICAG;7U	5.44
274791	SE CHICAG;8U	5.44
274792	SE CHICAG;9U	5.4
274793	SE CHICAG;0U	5.4
274794	SE CHICAG;1U	5.4
274795	SE CHICAG;2U	5.4
274859	EASYR;U1 E	13.43
274860	EASYR;U2 E	13.43
274888	PILOT HIL;1E	23.57
274890	CAYUG;1U E	20.22
274891	CAYUG;2U E	20.22
275149	KEMPTON ;1E	23.57
290021	O50 E	23.7
290051	GSG-6; E	12.77
290108	LEEDK;1U E	29.68
293061	N-015 E	19.41
293644	O22 E1	12.53
293645	O22 E2	24.32
294392	P-010 E	24.65
294763	P-046 E	11.45
295109	WESTBROOK E	6.84
295111	SUBLETTE E	3.17
296125	R-030 C3	4.97
296128	R-030 E3	19.89
296271	R-030 C2	4.91
296272	R-030 E2	19.65
296308	R-030 C1	4.91
296309	R-030 E1	19.65
910542	X3-005 E	0.89
914641	Y2-103	54.9
915011	Y3-013 1	4.58
915021	Y3-013 2	4.58

Bus #	Bus	MW Impact
915031	Y3-013 3	4.58
916221	Z1-073 E	6.59
916502	Z1-106 E1	1.54
916504	Z1-106 E2	1.54
916512	Z1-107 E	3.16
916522	Z1-108 E	3.04
917502	Z2-087 E	25.71
918052	AA1-018 E	20.09
919581	AA2-030	18.9
920272	AA2-123 E	2.99
924041	AB2-047 C O1	4.74
924042	AB2-047 E O1	31.72
924471	AB2-096	51.73
925161	AB2-173	3.83
925302	AB2-191 E	1.69
926311	AC1-109 1	2.34
926321	AC1-109 2	2.34
926331	AC1-110 1	2.32
926341	AC1-110 2	2.32
926351	AC1-111 1	0.93
926361	AC1-111 2	0.93
926371	AC1-111 3	0.93
926381	AC1-111 4	0.93
926391	AC1-111 5	0.93
926401	AC1-111 6	0.93
926431	AC1-114	2.91
926821	AC1-168 C O1	1.43
926822	AC1-168 E O1	9.57
927091	AC1-204 1	88.75
927101	AC1-204 2	88.75
927451	AC1-142A 1	5.11
927461	AC1-142A 2	5.11
927511	AC1-113 1	1.45
927521	AC1-113 2	1.45
927531	AC1-185 1	0.84
927541	AC1-185 2	0.84
927551	AC1-185 3	0.84
927561	AC1-185 4	0.84
927571	AC1-185 5	0.84
927581	AC1-185 6	0.84
927591	AC1-185 7	0.84
927601	AC1-185 8	0.84
930481	AB1-089	80.33
930501	AB1-091 O1	93.8
930741	AB1-122 1O1	89.17
930751	AB1-122 2O1	90.13
932881	AC2-115 1	2.91
932891	AC2-115 2	2.91
932921	AC2-116	1.02
932931	AC2-117	6.51
933341	AC2-147 C	1.07
933342	AC2-147 E	1.74

Bus #	Bus	MW Impact
933411	AC2-154 C	3.2
933412	AC2-154 E	5.22
933431	AC2-156 C O1	1.17
933432	AC2-156 E O1	1.91
933911	AD1-013 C	2.25
933912	AD1-013 E	3.59
933931	AD1-016 C	1.13
933932	AD1-016 E	1.85
934101	AD1-039 1	8.74
934111	AD1-039 2	8.83
934401	AD1-064 C O1	3.91
934402	AD1-064 E O1	18.33
934431	AD1-067 C	0.16
934432	AD1-067 E	0.67
934651	AD1-096 C	1.09
934652	AD1-096 E	1.78
934701	AD1-098 C O1	8.41
934702	AD1-098 E O1	6.14
934721	AD1-100 C	29.39
934722	AD1-100 E	137.14
934871	AD1-116 C	1.17
934872	AD1-116 E	1.91
934971	AD1-129 C	1.1
934972	AD1-129 E	0.74
935001	AD1-133 C O1	27.36
935002	AD1-133 E O1	18.24
936291	AD2-038 C O1	2.88
936292	AD2-038 E O1	19.25
936371	AD2-047 C O1	2.86
936372	AD2-047 E O1	30.81
936461	AD2-060	3.37
936511	AD2-066 C O1	10.34
936512	AD2-066 E O1	6.89
936781	AD2-101 C	5.82
936782	AD2-101 E	27.26
936791	AD2-102 C	14.68
936792	AD2-102 E	14.11
937001	AD2-134 C	3.34
937002	AD2-134 E	13.8
937031	AD2-137 C O1	7.17
937032	AD2-137 E O1	33.55
937051	AD2-140 C O1	7.53
937052	AD2-140 E O1	35.24
937061	AD2-141 C O1	7.48
937062	AD2-141 E O1	35.28
937071	AD2-142 C O1	15.05
937072	AD2-142 E O1	70.48
937121	AD2-148 C O1	4.51
937122	AD2-148 E O1	21.09
937131	AD2-149 C O1	4.51
937132	AD2-149 E O1	21.09
937141	AD2-150 C O1	4.51

Bus #	Bus	MW Impact
937142	AD2-150 E O1	21.09
937181	AD2-155 C O1	4.51
937182	AD2-155 E O1	21.09
937311	AD2-172 C	3.01
937312	AD2-172 E	4.15
937321	AD2-175 C	20.99
937322	AD2-175 E	13.99
937331	AD2-176 C O1	8.96
937332	AD2-176 E O1	5.97
937401	AD2-194 1	9.54
937411	AD2-194 2	9.54
938012	AE1-002 E O1	14.38
938511	AE1-070 1	11.21
938521	AE1-070 2	10.26
938851	AE1-113 C O1	10.72
938852	AE1-113 E O1	33.71
938861	AE1-114 C O1	4.39
938862	AE1-114 E O1	16.8
939051	AE1-134 1	1.67
939061	AE1-134 2	1.67
939321	AE1-163 C O1	7.23
939322	AE1-163 E O1	44.39
939351	AE1-166 C O1	14.5
939352	AE1-166 E O1	13.38
939401	AE1-172 C O1	9.5
939402	AE1-172 E O1	44.49
939691	AE1-199	2.92
939701	AE1-201 C	2.45
939702	AE1-201 E	0.54
939732	AE1-204 E	0.36
939741	AE1-205 C O1	12.45
939742	AE1-205 E O1	17.19
939861	AE1-222 1	98.48
939871	AE1-222 2	99.54
939921	AE1-228 C O1	12.28
939922	AE1-228 E O1	8.19
940101	AE1-252 C O1	16.2
940102	AE1-252 E O1	10.8
940501	AE2-035 C	3.01
940502	AE2-035 E	4.15
940621	AE2-049 C O2	11.62
940622	AE2-049 E O2	7.75
940631	AE2-050 C O2	15.56
940632	AE2-050 E O2	10.38
940752	AE2-062 E	0.16
940762	AE2-063 E	0.16
940881	AE2-077 C	3.85
940882	AE2-077 E	6.28
941131	AE2-107 C	8.92
941132	AE2-107 E	5.95
941551	AE2-152 C O2	14.72
941552	AE2-152 E O2	9.81

Bus #	Bus	MW Impact
941561	AE2-153 C O2	5.83
941562	AE2-153 E O2	27.3
941731	AE2-173	7.43
942111	AE2-223 C	2.88
942112	AE2-223 E	19.28
942421	AE2-255 C O2	3.67
942422	AE2-255 E O2	11.02
942651	AE2-281 C	1.03
942652	AE2-281 E	6.34
942881	AE2-307 C	28.54
942882	AE2-307 E	10.38
942911	AE2-310 C	11.28
942912	AE2-310 E	3.05
942991	AE2-321 C O2	10.0
942992	AE2-321 E O2	4.93
943121	AE2-341 C	15.61
943122	AE2-341 E	7.67
BLUEG	BLUEG	8.01
CALDERWOOD	CALDERWOOD	0.11
CANNELTON	CANNELTON	0.1
CARR	CARR	0.97
CATAWBA	CATAWBA	0.4
CBM-S1	CBM-S1	1.72
CBM-W1	CBM-W1	37.34
CBM-W2	CBM-W2	70.72
CHEOAH	CHEOAH	0.12
CHILHOWEE	CHILHOWEE	0.03
ELMERSMITH	ELMERSMITH	0.09
G-007	G-007	2.73
GIBSON	GIBSON	0.01
HAMLET	HAMLET	0.74
MEC	MEC	46.44
O-066	O-066	17.5
RENSSELAER	RENSSELAER	0.77
SANTEETLA	SANTEETLA	0.04
TRIMBLE	TRIMBLE	0.95
WEC	WEC	9.73
Z1-043	Z1-043	35.42

22.17 Index 17

ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC|DC	MW IMPACT
2228139	275233	WILTON ;4M	CE	270644	WILTON ;	CE	1	COMED_P4_112-65-BT2-3__	breaker	1379.0	162.41	162.55	DC	25.05

Bus #	Bus	MW Impact
270859	PWR VTR EC;R	15.09
274722	S-055 E	14.02
274772	LINCOLN ;3U	2.74
274773	LINCOLN ;4U	2.74
274774	LINCOLN ;5U	2.74
274775	LINCOLN ;6U	2.74
274776	LINCOLN ;7U	2.74
274777	LINCOLN ;8U	2.74
274788	SE CHICAG;5U	5.56
274789	SE CHICAG;6U	5.56
274790	SE CHICAG;7U	5.56
274791	SE CHICAG;8U	5.56
274792	SE CHICAG;9U	5.52
274793	SE CHICAG;0U	5.52
274794	SE CHICAG;1U	5.52
274795	SE CHICAG;2U	5.52
274859	EASYR;U1 E	13.72
274860	EASYR;U2 E	13.72
274888	PILOT HIL;1E	24.06
274890	CAYUG;1U E	20.62
274891	CAYUG;2U E	20.62
275149	KEMPTON ;1E	24.06
290021	O50 E	24.2
290051	GSG-6; E	13.05
290108	LEEDK;1U E	30.31
293061	N-015 E	19.81
293516	O-009 E1	2.14
293517	O-009 E2	1.09
293518	O-009 E3	1.2
293644	O22 E1	12.79
293645	O22 E2	24.84
293715	O-029 E	12.21
293716	O-029 E	6.69
293717	O-029 E	6.15
294392	P-010 E	25.16
294763	P-046 E	11.7
295109	WESTBROOK E	6.98
295111	SUBLETTE E	3.24
296125	R-030 C3	5.07
296128	R-030 E3	20.29
296271	R-030 C2	5.01
296272	R-030 E2	20.05

Bus #	Bus	MW Impact
296308	R-030 C1	5.01
296309	R-030 E1	20.05
910542	X3-005 E	0.91
914641	Y2-103	56.07
915011	Y3-013 1	4.67
915021	Y3-013 2	4.67
915031	Y3-013 3	4.67
916221	Z1-073 E	6.73
916502	Z1-106 E1	1.58
916504	Z1-106 E2	1.58
916512	Z1-107 E	3.23
916522	Z1-108 E	3.1
917502	Z2-087 E	26.23
918052	AA1-018 E	20.53
919221	AA1-146	21.95
919581	AA2-030	21.95
920272	AA2-123 E	3.05
924041	AB2-047 C O1	4.84
924042	AB2-047 E O1	32.36
924471	AB2-096	52.83
925161	AB2-173	3.91
925302	AB2-191 E	1.73
926311	AC1-109 1	2.39
926321	AC1-109 2	2.39
926331	AC1-110 1	2.37
926341	AC1-110 2	2.37
926351	AC1-111 1	0.95
926361	AC1-111 2	0.95
926371	AC1-111 3	0.95
926381	AC1-111 4	0.95
926391	AC1-111 5	0.95
926401	AC1-111 6	0.95
926431	AC1-114	2.97
926821	AC1-168 C O1	1.46
926822	AC1-168 E O1	9.77
927091	AC1-204 1	90.65
927101	AC1-204 2	90.65
927451	AC1-142A 1	5.22
927461	AC1-142A 2	5.22
927511	AC1-113 1	1.48
927521	AC1-113 2	1.48
927531	AC1-185 1	0.86
927541	AC1-185 2	0.86
927551	AC1-185 3	0.86
927561	AC1-185 4	0.86
927571	AC1-185 5	0.86
927581	AC1-185 6	0.86
927591	AC1-185 7	0.86
927601	AC1-185 8	0.86
930481	AB1-089	82.03
930501	AB1-091 O1	95.74
930741	AB1-122 1O1	91.06

Bus #	Bus	MW Impact
930751	AB1-122 2O1	92.05
932881	AC2-115 1	2.97
932891	AC2-115 2	2.97
932921	AC2-116	1.04
932931	AC2-117	6.65
933341	AC2-147 C	1.09
933342	AC2-147 E	1.78
933411	AC2-154 C	3.27
933412	AC2-154 E	5.33
933431	AC2-156 C O1	1.19
933432	AC2-156 E O1	1.95
933911	AD1-013 C	2.3
933912	AD1-013 E	3.67
933931	AD1-016 C	1.16
933932	AD1-016 E	1.89
934101	AD1-039 1	8.92
934111	AD1-039 2	9.02
934401	AD1-064 C O1	4.0
934402	AD1-064 E O1	18.72
934431	AD1-067 C	0.16
934432	AD1-067 E	0.69
934651	AD1-096 C	1.11
934652	AD1-096 E	1.81
934701	AD1-098 C O1	8.59
934702	AD1-098 E O1	6.27
934721	AD1-100 C	29.97
934722	AD1-100 E	139.86
934871	AD1-116 C	1.2
934872	AD1-116 E	1.95
934971	AD1-129 C	1.13
934972	AD1-129 E	0.75
935001	AD1-133 C O1	27.93
935002	AD1-133 E O1	18.62
936291	AD2-038 C O1	2.94
936292	AD2-038 E O1	19.66
936371	AD2-047 C O1	2.92
936372	AD2-047 E O1	31.46
936461	AD2-060	3.44
936511	AD2-066 C O1	10.56
936512	AD2-066 E O1	7.04
936781	AD2-101 C	5.94
936782	AD2-101 E	27.83
936791	AD2-102 C	14.99
936792	AD2-102 E	14.41
937001	AD2-134 C	3.41
937002	AD2-134 E	14.09
937031	AD2-137 C O1	7.3
937032	AD2-137 E O1	34.17
937051	AD2-140 C O1	7.67
937052	AD2-140 E O1	35.89
937061	AD2-141 C O1	7.62
937062	AD2-141 E O1	35.93

Bus #	Bus	MW Impact
937071	AD2-142 C O1	15.33
937072	AD2-142 E O1	71.78
937121	AD2-148 C O1	4.6
937122	AD2-148 E O1	21.53
937131	AD2-149 C O1	4.6
937132	AD2-149 E O1	21.53
937141	AD2-150 C O1	4.6
937142	AD2-150 E O1	21.53
937181	AD2-155 C O1	4.6
937182	AD2-155 E O1	21.53
937311	AD2-172 C	3.07
937312	AD2-172 E	4.24
937321	AD2-175 C	21.43
937322	AD2-175 E	14.28
937331	AD2-176 C O1	9.15
937332	AD2-176 E O1	6.1
937401	AD2-194 1	9.75
937411	AD2-194 2	9.75
938012	AE1-002 E O1	14.65
938511	AE1-070 1	11.45
938521	AE1-070 2	10.48
938851	AE1-113 C O1	10.95
938852	AE1-113 E O1	34.43
938861	AE1-114 C O1	4.49
938862	AE1-114 E O1	17.15
939051	AE1-134 1	1.71
939061	AE1-134 2	1.71
939321	AE1-163 C O1	7.38
939322	AE1-163 E O1	45.35
939351	AE1-166 C O1	14.79
939352	AE1-166 E O1	13.65
939401	AE1-172 C O1	9.69
939402	AE1-172 E O1	45.37
939691	AE1-199	2.98
939701	AE1-201 C	2.5
939702	AE1-201 E	0.55
939732	AE1-204 E	0.36
939741	AE1-205 C O1	12.7
939742	AE1-205 E O1	17.54
939861	AE1-222 1	100.56
939871	AE1-222 2	101.66
939921	AE1-228 C O1	12.54
939922	AE1-228 E O1	8.36
940101	AE1-252 C O1	16.52
940102	AE1-252 E O1	11.01
940501	AE2-035 C	3.07
940502	AE2-035 E	4.24
940621	AE2-049 C O2	11.86
940622	AE2-049 E O2	7.91
940631	AE2-050 C O2	15.89
940632	AE2-050 E O2	10.59
940752	AE2-062 E	0.16

Bus #	Bus	MW Impact
940762	AE2-063 E	0.16
940881	AE2-077 C	3.93
940882	AE2-077 E	6.42
941131	AE2-107 C	9.11
941132	AE2-107 E	6.07
941551	AE2-152 C O2	15.03
941552	AE2-152 E O2	10.02
941561	AE2-153 C O2	5.95
941562	AE2-153 E O2	27.87
941731	AE2-173	7.58
942111	AE2-223 C	2.94
942112	AE2-223 E	19.67
942421	AE2-255 C O2	3.75
942422	AE2-255 E O2	11.25
942651	AE2-281 C	1.05
942652	AE2-281 E	6.48
942881	AE2-307 C	29.12
942882	AE2-307 E	10.59
942911	AE2-310 C	11.52
942912	AE2-310 E	3.11
942991	AE2-321 C O2	10.21
942992	AE2-321 E O2	5.03
943121	AE2-341 C	15.94
943122	AE2-341 E	7.83
BLUEG	BLUEG	8.19
CALDERWOOD	CALDERWOOD	0.12
CANNELTON	CANNELTON	0.1
CARR	CARR	0.99
CATAWBA	CATAWBA	0.4
CBM-S1	CBM-S1	1.75
CBM-W1	CBM-W1	38.13
CBM-W2	CBM-W2	72.18
CHEOAH	CHEOAH	0.12
CHILHOWEE	CHILHOWEE	0.04
ELMERSMITH	ELMERSMITH	0.09
G-007	G-007	2.79
GIBSON	GIBSON	0.01
HAMLET	HAMLET	0.76
MEC	MEC	47.42
O-066	O-066	17.87
RENSSELAER	RENSSELAER	0.78
SANTEETLA	SANTEETLA	0.04
TRIMBLE	TRIMBLE	0.97
WEC	WEC	9.94
Z1-043	Z1-043	36.17

Affected Systems

23 Affected Systems

23.1 LG&E

LG&E Impacts to be determined during later study phases (as applicable).

23.2 MISO

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

23.3 TVA

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

23.4 Duke Energy Progress

Duke Energy Progress Impacts to be determined during later study phases (as applicable).

23.5 NYISO

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

Contingency Name	Contingency Definition
COMED_P4_111-45-L14321T	CONTINGENCY 'COMED_P4_111-45-L14321T' TRIP BRANCH FROM BUS 270928 TO BUS 270730 CKT 1 / WOLFS ; B 345 ELEC JUNC; 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 TRIP BRANCH FROM BUS 270730 TO BUS 270846 CKT 1 / ELEC JUNC; B 345 PLANO ; B 345 TRIP BRANCH FROM BUS 270730 TO BUS 270916 CKT 1 / ELEC JUNC; B 345 WAYNE ; B 345 DISCONNECT BUS 275239 / ELEC JUNC;2M 138 END
COMED_P4_111-45-L11126_	CONTINGENCY 'COMED_P4_111-45-L11126_' TRIP BRANCH FROM BUS 270730 TO BUS 270916 CKT 1 / ELEC JUNC; B 345 WAYNE ; B 345 TRIP BRANCH FROM BUS 270916 TO BUS 270917 CKT 1 / WAYNE ; B 345 WAYNE ; R 345 TRIP BRANCH FROM BUS 270730 TO BUS 270846 CKT 1 / ELEC JUNC; B 345 PLANO ; B 345 TRIP BRANCH FROM BUS 270730 TO BUS 270928 CKT 1 / ELEC JUNC; 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 / ELEC JUNC;2M 138 END
COMED_P7_345-L6607__B-S_+_345-L97008_R-S	CONTINGENCY 'COMED_P7_345-L6607__B-S_+_345-L97008_R-S' TRIP BRANCH FROM BUS 270728 TO BUS 274750 CKT 1 / E FRANKFO; B 345 CRETE EC ;BP 345 TRIP BRANCH FROM BUS 274804 TO BUS 243229 CKT 1 / UNIV PK N;RP 345 05OLIVE 345 END
COMED_P1-2_138-L8607__R-S-A	CONTINGENCY 'COMED_P1-2_138-L8607__R-S-A' TRIP BRANCH FROM BUS 271295 TO BUS 941560 CKT 1 / DAVIS; R 138 AE2-153 TAP 138 END
AEP_P1-2_#695A	CONTINGENCY 'AEP_P1-2_#695A' OPEN BRANCH FROM BUS 243206 TO BUS 270644 CKT 1 / 243206 05DUMONT 765 270644 WILTON ; 765 1 END
COMED_P7_345-L94507_B-S_+_345-L97008_R-S	CONTINGENCY 'COMED_P7_345-L94507_B-S_+_345-L97008_R-S' TRIP BRANCH FROM BUS 274750 TO BUS 255112 CKT 1 / CRETE;BP 345 17STJOHN 345 TRIP BRANCH FROM BUS 274804 TO BUS 243229 CKT 1 / UPNOR;RP 345 05OLIVE 345 END
COMED_P4_112-65-BT4-5__	CONTINGENCY 'COMED_P4_112-65-BT4-5__' TRIP BRANCH FROM BUS 270644 TO BUS 243206 CKT 1 / WILTO; 765 05DUMONT 765 TRIP BRANCH FROM BUS 275233 TO BUS 270644 CKT 1 / WILTO;4M 345 WILTO; 765 TRIP BRANCH FROM BUS 275233 TO BUS 270927 CKT 1 / WILTO;4M 345 WILTO; R 345 TRIP BRANCH FROM BUS 275233 TO BUS 275333 CKT 1 / WILTO;4M 345 WILTO;4C 33 END
COMED_P7_345-L11620_B-S_+_345-L11622_R-S	CONTINGENCY 'COMED_P7_345-L11620_B-S_+_345-L11622_R-S' TRIP BRANCH FROM BUS 270736 TO BUS 270770 CKT 1 / ELWOO; B 345 GOODI;3B 345 TRIP BRANCH FROM BUS 270737 TO BUS 270769 CKT 1 / ELWOO; R 345 GOODI;1R 345 END

Contingency Name	Contingency Definition
COMED_P1-2_138-L8607__R-S-C	CONTINGENCY 'COMED_P1-2_138-L8607__R-S-C' TRIP BRANCH FROM BUS 941550 TO BUS 272789 CKT 1 / AE2-152 TAP 138 WILMI; 138 END
COMED_P1-2_345-L1221__B-S	CONTINGENCY 'COMED_P1-2_345-L1221__B-S' TRIP BRANCH FROM BUS 270716 TO BUS 270928 CKT 1 / DRESD; B 345 WOLFS; B 345 END
COMED_P7_345-L1221__B-S_+_345-L1223_TR-S	CONTINGENCY 'COMED_P7_345-L1221__B-S_+_345-L1223_TR-S' TRIP BRANCH FROM BUS 270716 TO BUS 270928 CKT 1 / DRESD; B 345 WOLFS; B 345 TRIP BRANCH FROM BUS 270717 TO BUS 270731 CKT 1 / DRESD; R 345 ELECT;4R 345 TRIP BRANCH FROM BUS 275180 TO BUS 270717 CKT 1 / DRESD;3M 138 DRESD; R 345 TRIP BRANCH FROM BUS 275180 TO BUS 271336 CKT 1 / DRESD;3M 138 DRESD; B 138 TRIP BRANCH FROM BUS 275180 TO BUS 275280 CKT 1 / DRESD;3M 138 DRESD;3C 34.5 END
COMED_P4_112-65-BT2-3__	CONTINGENCY 'COMED_P4_112-65-BT2-3__' TRIP BRANCH FROM BUS 270644 TO BUS 270607 CKT 1 / WILTO; 765 COLLI; 765 TRIP BRANCH FROM BUS 275232 TO BUS 270644 CKT 1 / WILTO;3M 345 WILTO; 765 TRIP BRANCH FROM BUS 275232 TO BUS 270926 CKT 1 / WILTO;3M 345 WILTO; B 345 TRIP BRANCH FROM BUS 275232 TO BUS 275332 CKT 1 / WILTO;3M 345 WILTO;3C 33 END
COMED_P4_112-65-BT3-4__	CONTINGENCY 'COMED_P4_112-65-BT3-4__' TRIP BRANCH FROM BUS 270644 TO BUS 243206 CKT 1 / WILTO; 765 05DUMONT 765 TRIP BRANCH FROM BUS 275232 TO BUS 270644 CKT 1 / WILTO;3M 345 WILTO; 765 TRIP BRANCH FROM BUS 275232 TO BUS 270926 CKT 1 / WILTO;3M 345 WILTO; B 345 TRIP BRANCH FROM BUS 275232 TO BUS 275332 CKT 1 / WILTO;3M 345 WILTO;3C 33 END
COMED_P4_012-45-BT5-6__	CONTINGENCY 'COMED_P4_012-45-BT5-6__' TRIP BRANCH FROM BUS 270716 TO BUS 270736 CKT 1 / DRESD; B 345 ELWOO; B 345 TRIP BRANCH FROM BUS 270736 TO BUS 270737 CKT 1 / ELWOO; B 345 ELWOO; R 345 TRIP BRANCH FROM BUS 274702 TO BUS 270716 CKT 1 / KEND
COMED_P1-2_765-L11216__-S	CONTINGENCY 'COMED_P1-2_765-L11216__-S' TRIP BRANCH FROM BUS 270644 TO BUS 270607 CKT 1 / WILTO; 765 COLLI; 765 END
Base Case	
COMED_P4_023-65-BT2-3__	CONTINGENCY 'COMED_P4_023-65-BT2-3__' TRIP BRANCH FROM BUS 270644 TO BUS 243206 CKT 1 / WILTO; 765 05DUMONT 765 TRIP BRANCH FROM BUS 270607 TO BUS 270630 CKT 1 / COLLI; 765 PLANO; 765 END

Contingency Name	Contingency Definition
COMED_P2-2_111_EJ-345B__2	CONTINGENCY 'COMED_P2-2_111_EJ-345B__2' TRIP BRANCH FROM BUS 270730 TO BUS 270846 CKT 1 / ELECT; B 345 PLANO; B 345 TRIP BRANCH FROM BUS 270730 TO BUS 270916 CKT 1 / ELECT; B 345 WAYNE; B 345 TRIP BRANCH FROM BUS 270730 TO BUS 270928 CKT 1 / ELECT; 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;2M 138 END
COMED_P4_112-65-BT5-6__	CONTINGENCY 'COMED_P4_112-65-BT5-6__' TRIP BRANCH FROM BUS 270644 TO BUS 270607 CKT 1 / WILTO; 765 COLLI; 765 TRIP BRANCH FROM BUS 275233 TO BUS 270644 CKT 1 / WILTO;4M 345 WILTO; 765 TRIP BRANCH FROM BUS 275233 TO BUS 270927 CKT 1 / WILTO;4M 345 WILTO; R 345 TRIP BRANCH FROM BUS 275233 TO BUS 275333 CKT 1 / WILTO;4M 345 WILTO;4C 33 END
AEP_P4_#2978_05DUMONT 765_B	CONTINGENCY 'AEP_P4_#2978_05DUMONT 765_B' OPEN BRANCH FROM BUS 243206 TO BUS 243207 CKT 1 / 243206 05DUMONT 765 243207 05GRNTWN 765 1 OPEN BRANCH FROM BUS 243206 TO BUS 270644 CKT 1 / 243206 05DUMONT 765 270644 WILTON ; 765 1 END
COMED_P4_023-65-BT4-5__	CONTINGENCY 'COMED_P4_023-65-BT4-5__' TRIP BRANCH FROM BUS 275168 TO BUS 270607 CKT 1 / COLLI;2M 345 COLLI; 765 TRIP BRANCH FROM BUS 275168 TO BUS 270697 CKT 1 / COLLI;2M 345 COLLI; R 345 TRIP BRANCH FROM BUS 275168 TO BUS 275268 CKT 1 / COLLI;2M 345 COLLI;2C 33 TRIP BRANCH FROM BUS 270644 TO BUS 243206 CKT 1 / WILTO; 765 05DUMONT 765 END