



**Generation Interconnection
Feasibility Study Report
for
Queue Project AE1-163
POWERTON-GOODINGS GROVE 345 KV
49 MW Capacity / 350 MW Energy**

June, 2019

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 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 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.

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

General

The Interconnection Customer (IC) has proposed a Wind generating facility located in Woodford County, Illinois. The installed facilities will have a total capability of 300 MW with 85 MW of this output being recognized by PJM as Capacity. The proposed in-service date for this project is 12/31/2021. This study does not imply a TO commitment to this in-service date.

Queue Number	AE1-163
Project Name	POWERTON-GOODINGS GROVE 345 KV
State	Illinois
County	Woodford
Transmission Owner	ComEd
MFO	350
MWE	350
MWC	49
Fuel	Wind
Basecase Study Year	2022

Primary Point of Interconnection

Queue Position AE-163, a 350 MW wind farm, proposes to interconnect with the ComEd transmission system by tying into the Powerton-Nevada 345kV Line 0303, approximately 40 miles from Powerton Station 3.

Cost Summary

The AE1-163 project will be responsible for the following costs:

Description	Total Cost
Attachment Facilities	\$ 1,000,000
Direct Connection Network Upgrade	\$23,500,000
Non Direct Connection Network Upgrades	\$ 2,000,000
Total Costs	\$26,500,000

In addition, the AE1-163 project may be responsible for a contribution to the following costs (see later sections of this report.

Description	Total Cost
System Upgrades	\$121,243,120

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

Interconnected Transmission Owner Scope of Work

Attachment Facilities

The AE1-163 generator lead would interconnect to a new 345kV Interconnection Substation (see details in Direct Connection section below). The required Attachment Facilities are one 345kV line MOD, a dead-end structure and revenue metering as shown in the one-line diagram.

Scope of Work	Cost Estimate
Installation of one 345kV line MOD, one dead-end structure and one set of revenue metering (see notes below on cost estimate)	\$1,000,000

Direct Connection Cost Estimate

In order to accommodate interconnection of AE1-163, a new 345kV Interconnection Substation would need to be built close to the Powerton-Nevada 345kV Line 0303, approximately 40 miles from Powerton Station 3.

The scope of work includes the installation of three 345kV circuit breakers in a “breaker-and-a-half” bus configuration, cutting in the Interconnection Substation to Powerton-Nevada 345kV Line 0303, and raising 345kV line 0301 to cross under, as shown in the one-line diagram below.

The Interconnection Customer (“IC”) is responsible for constructing all of the facilities on the IC side of the Point of Interconnection (“POI”). It is assumed for the purposes of this report that the IC will obtain the site for the Interconnection Substation and right-of-way between the Interconnection Substation and the 345kV transmission line.

In the event that the IC exercises the option to build the Interconnecting Substation, the IC will be required to construct all interconnection facilities that will be turned over to ComEd in accordance with ComEd published standards and the PJM Tariff.

ComEd would design, engineer and construct the tie in of the Interconnection Substation to the Powerton-Nevada 345kV Line 0303 and raise 345kV line 0301.

The preliminary cost estimate for Direct Connection Network Upgrade is given in the following tables.

For Option to Build Direct Connection cost estimates:

Scope of Work	Cost Estimate
Installation of a new 345kV substation as described above	N/A
Transmission line tie in work (foundations, structures, conductors)	\$ 3,000,000
Raising 345kV line 0301	\$ 500,000
ComEd oversight and testing	\$ 1,500,000
Total Cost Estimate (see notes below on cost estimate)	\$ 5,000,000

For ComEd building the interconnecting substation cost estimates:

Scope of Work	Cost Estimate
Installation of a new 345kV substation as described above	\$ 20,000,000
Transmission line tie in work (foundations, structures, conductors)	\$ 3,000,000

Raising 345kV line 0301	\$ 500,000
Total Cost Estimate (see notes below on cost estimate)	\$ 23,500,000

Non-Direct Connection Cost Estimate

The total preliminary cost estimate for the Non-Direct Connection work is given in the table below. These costs do not include CIAC Tax Gross-up.

The integration of the new 345kV Interconnection Substation would require relay/communications/SCADA upgrades at the Powerton Station 3 and Nevada TSS 98. The ComEd cost is given below:

Scope of Work	Cost Estimate
Relay/communications/SCADA upgrades at Powerton Station 3	\$ 1,000,000
Relay/communications/SCADA upgrades at Nevada TSS 98	\$ 1,000,000
Total Cost Estimate (see notes below on cost estimate)	\$ 2,000,000

Schedule

Normally it takes about 24-months to engineer, design, procure material and construct 345kV facilities after ISA/ICSA are signed.

Transmission Owner Analysis

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.

Interconnection Customer Requirements

Exelon Utilities Transmission Bus Configuration Design Philosophy, ComEd Interconnection Guidelines, and Exelon Utilities Transmission Facility Interconnection Requirements shall apply. They are available on the PJM website. To the extent that these Applicable Technical Requirements and Standards conflict with the terms and conditions of the Tariff, the Tariff shall control.

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.

Primary Point of Interconnection Network Impacts

The Queue Project AE1-163 was evaluated as a 350 MW (Capacity 49 MW) injection at the AD2-038 Tap which is tapping the Powerton; R to Goodings; 2R 345 kV line in the ComEd area. Project AE1-163 was evaluated for compliance with applicable reliability planning criteria (PJM, NERC, NERC Regional Reliability Councils, and Transmission Owners). Project AE1-163 was studied with a commercial probability of 53%. Potential network impacts were as follows:

Summer Peak Load Flow

Generation Deliverability

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

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
155783	270855	POWERTON ; R	CE	349662	7TAZEWELL	AMIL	1	COMED_P1-2_345-L1202__B-S-A	single	1479.0	78.41	79.93	DC	22.55

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
155394	270644	WILTON ;	CE	243206	05DUMONT	AEP	1	AEP_P4_#8805_05OLIVE 345_D	breaker	4105.0	96.19	96.9	DC	96.75
761048	270644	WILTON ;	CE	243206	05DUMONT	AEP	1	AEP_P4_#8805_05OLIVE 345_D	breaker	4105.0	96.19	96.9	DC	96.75
155262	270716	DRESDEN ; B	CE	270928	WOLFS ; B	CE	1	COMED_P4_012-45-BT5-6	breaker	1479.0	96.03	96.84	DC	26.72
155310	270717	DRESDEN ; R	CE	270697	COLLINS ; R	CE	1	COMED_P4_111-45-L1223T	breaker	1528.0	99.43	100.03	DC	20.27
156473	918050	AA1-018 TAP	CE	270769	GOODINGS ; 2R	CE	1	COMED_P7_345-L1202__B-S_+ 345-L1227__R-S-A	tower	1494.0	83.77	93.65	DC	147.47
156337	930750	AB1-122 TAP	CE	270716	DRESDEN ; B	CE	1	COMED_P7_345-L19601_B-S_+ 345-L9801__R-S_FSA	tower	1768.0	98.06	103.21	DC	91.08
156338	930750	AB1-122 TAP	CE	270716	DRESDEN ; B	CE	1	COMED_P7_345-L0301__B-S_+ 345-L9801__R-S_FSA	tower	1768.0	93.59	98.75	DC	91.11
156529	936290	AD2-038 TAP	CE	918050	AA1-018 TAP	CE	1	COMED_P7_345-L1202__B-S_+ 345-L1227__R-S-A	tower	1494.0	77.42	87.3	DC	147.5

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	CK T ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADIN G %	POST PROJECT LOADIN G %	AC/D C	MW IMPACT
76074 5	24391 8	05ELDERBRY S	AEP	93867 0	AE1-089 TAP	AEP	1	AEP_P4_#2978_05DUMONT 765_B	breaker	1409.0	116.22	117.03	DC	25.31
76074 6	24391 8	05ELDERBRY S	AEP	93867 0	AE1-089 TAP	AEP	1	COMED_P4_112-65-BT4-5__	breaker	1409.0	107.51	108.15	DC	27.22
76074 7	24391 8	05ELDERBRY S	AEP	93867 0	AE1-089 TAP	AEP	1	COMED_P4_112-65-BT3-4__	breaker	1409.0	107.51	108.15	DC	27.22
76074 8	24391 8	05ELDERBRY S	AEP	93867 0	AE1-089 TAP	AEP	1	COMED_P4_023-65-BT2-3__	breaker	1409.0	107.51	108.15	DC	27.22
15528 3	25510 4	17GREEN_ACR E	NIPS	27077 1	GREENACRE; T	CE	1	AEP_P4_#2978_05DUMONT 765_B	breaker	1091.0	102.13	102.9	DC	27.67
15511 2	25511 2	17STJOHN	NIPS	27088 6	ST JOHN ; T	CE	1	AEP_P4_#2978_05DUMONT 765_B	breaker	1091.0	107.46	108.51	DC	30.51
15511 3	25511 2	17STJOHN	NIPS	27088 6	ST JOHN ; T	CE	1	COMED_P4_023-65-BT2-3__	breaker	1091.0	109.88	110.86	DC	30.71
15511 4	25511 2	17STJOHN	NIPS	27088 6	ST JOHN ; T	CE	1	COMED_P4_112-65-BT4-5__	breaker	1091.0	107.69	108.72	DC	30.72
15511 5	25511 2	17STJOHN	NIPS	27088 6	ST JOHN ; T	CE	1	COMED_P4_112-65-BT3-4__	breaker	1091.0	107.69	108.72	DC	30.72
76042 0	25511 3	17STILLWELL	NIPS	24321 9	05DUMONT	AEP	1	AEP_P4_#2978_05DUMONT 765_B	breaker	1409.0	172.48	173.35	DC	48.34
15647 9	27064 4	WILTON ;	CE	24320 6	05DUMONT	AEP	1	COMED_P7_345-L94507_B-S_+ 345-L97008_R-S	tower	4105.0	102.94	103.54	DC	105.14
15648 0	27064 4	WILTON ;	CE	24320 6	05DUMONT	AEP	1	COMED_P7_345-L6607_B-S_+ 345-L97008_R-S	tower	4105.0	102.08	102.74	DC	105.28
76227 3	27064 4	WILTON ;	CE	24320 6	05DUMONT	AEP	1	COMED_P7_345-L94507_B-S_+ 345-L97008_R-S	tower	4105.0	102.94	103.54	DC	105.14
76227 4	27064 4	WILTON ;	CE	24320 6	05DUMONT	AEP	1	COMED_P7_345-L6607_B-S_+ 345-L97008_R-S	tower	4105.0	102.08	102.74	DC	105.28
15528 8	27067 7	BURNHAM ;OR	CE	25510 9	17MUNSTER	NIPS	1	AEP_P4_#2978_05DUMONT 765_B	breaker	1441.0	111.88	112.67	DC	41.79
15527 1	27072 8	E FRANKFO; B	CE	27475 0	CRETE EC ;BP	CE	1	AEP_P4_#2978_05DUMONT 765_B	breaker	1399.0	109.46	110.61	DC	43.17
15527 2	27072 8	E FRANKFO; B	CE	27475 0	CRETE EC ;BP	CE	1	COMED_P4_023-65-BT2-3__	breaker	1399.0	109.13	110.26	DC	43.35
15527 3	27072 8	E FRANKFO; B	CE	27475 0	CRETE EC ;BP	CE	1	COMED_P4_112-65-BT4-5__	breaker	1399.0	109.06	110.19	DC	43.37
15527 4	27072 8	E FRANKFO; B	CE	27475 0	CRETE EC ;BP	CE	1	COMED_P4_112-65-BT3-4__	breaker	1399.0	109.05	110.18	DC	43.37
15467 0	27077 0	GOODINGS ;4B	CE	27076 6	GOODINGS ;3B	CE	1	COMED_P2-2_116_GG-345R_2_NO_FSA	bus	1802.0	115.77	117.12	DC	53.49
15467 1	27077 0	GOODINGS ;4B	CE	27076 6	GOODINGS ;3B	CE	1	COMED_P2-2_116_GG-345R_2_FSA	bus	1802.0	114.56	115.91	DC	53.5
15518 3	27077 0	GOODINGS ;4B	CE	27076 6	GOODINGS ;3B	CE	1	COMED_P4_116-45-L11614__	breaker	1802.0	119.51	120.86	DC	53.43
15518 4	27077 0	GOODINGS ;4B	CE	27076 6	GOODINGS ;3B	CE	1	COMED_P4_116-45-L9801_FSA	breaker	1802.0	115.77	117.12	DC	53.49
15518 5	27077 0	GOODINGS ;4B	CE	27076 6	GOODINGS ;3B	CE	1	COMED_P4_116-45-TR82__	breaker	1802.0	115.74	117.09	DC	53.49
15518 6	27077 0	GOODINGS ;4B	CE	27076 6	GOODINGS ;3B	CE	1	COMED_P4_112-45-BT4-5__	breaker	1802.0	107.91	108.9	DC	39.33

ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CK T ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADIN G %	POST PROJECT LOADIN G %	AC/D C	MW IMPACT
155154	270771	GREENACRE; T	CE	243229	05OLIVE	AEP	1	AEP_P4_#2978_05DUMONT 765_B	breaker	971.0	114.74	115.6	DC	27.67
760684	270771	GREENACRE; T	CE	243229	05OLIVE	AEP	1	AEP_P4_#2978_05DUMONT 765_B	breaker	971.0	114.74	115.6	DC	27.67
155117	270886	ST JOHN ; T	CE	255104	17GREEN_ACR E	NIPS	1	AEP_P4_#2978_05DUMONT 765_B	breaker	1091.0	107.46	108.51	DC	30.51
155118	270886	ST JOHN ; T	CE	255104	17GREEN_ACR E	NIPS	1	COMED_P4_023-65-BT2-3	breaker	1091.0	109.88	110.86	DC	30.71
155119	270886	ST JOHN ; T	CE	255104	17GREEN_ACR E	NIPS	1	COMED_P4_112-65-BT4-5	breaker	1091.0	107.69	108.72	DC	30.72
155120	270886	ST JOHN ; T	CE	255104	17GREEN_ACR E	NIPS	1	COMED_P4_112-65-BT3-4	breaker	1091.0	107.69	108.72	DC	30.72
154978	270926	WILTON ; B	CE	275232	WILTON ;3M	CE	1	COMED_P4_112-65-BT5-6	breaker	1379.0	165.2	165.81	DC	51.73
154980	270927	WILTON ; R	CE	275233	WILTON ;4M	CE	1	COMED_P4_112-65-BT2-3	breaker	1379.0	162.64	163.55	DC	52.85
155010	274750	CRETE EC;BP	CE	255112	17STJOHN	NIPS	1	AEP_P4_#2978_05DUMONT 765_B	breaker	1399.0	122.6	123.84	DC	42.61
155011	274750	CRETE EC;BP	CE	255112	17STJOHN	NIPS	1	COMED_P4_023-65-BT2-3	breaker	1399.0	122.01	123.25	DC	42.8
155012	274750	CRETE EC;BP	CE	255112	17STJOHN	NIPS	1	COMED_P4_112-65-BT4-5	breaker	1399.0	121.95	123.19	DC	42.81
155013	274750	CRETE EC;BP	CE	255112	17STJOHN	NIPS	1	COMED_P4_112-65-BT3-4	breaker	1399.0	121.94	123.18	DC	42.81
155067	274804	UNIV PK N;RP	CE	243229	05OLIVE	AEP	1	AEP_P4_#2978_05DUMONT 765_B	breaker	971.0	133.23	134.44	DC	35.37
155068	274804	UNIV PK N;RP	CE	243229	05OLIVE	AEP	1	COMED_P4_023-65-BT2-3	breaker	971.0	131.03	132.35	DC	35.62
155069	274804	UNIV PK N;RP	CE	243229	05OLIVE	AEP	1	COMED_P4_112-65-BT4-5	breaker	971.0	131.98	133.2	DC	35.62
155070	274804	UNIV PK N;RP	CE	243229	05OLIVE	AEP	1	COMED_P4_112-65-BT3-4	breaker	971.0	131.98	133.2	DC	35.62
155071	274804	UNIV PK N;RP	CE	243229	05OLIVE	AEP	1	COMED_P4_023-65-BT4-5	breaker	971.0	131.97	133.19	DC	35.62
760553	274804	UNIV PK N;RP	CE	243229	05OLIVE	AEP	1	AEP_P4_#2978_05DUMONT 765_B	breaker	971.0	133.23	134.44	DC	35.37
760554	274804	UNIV PK N;RP	CE	243229	05OLIVE	AEP	1	COMED_P4_023-65-BT2-3	breaker	971.0	131.03	132.35	DC	35.62
760555	274804	UNIV PK N;RP	CE	243229	05OLIVE	AEP	1	COMED_P4_112-65-BT4-5	breaker	971.0	131.98	133.2	DC	35.62
760556	274804	UNIV PK N;RP	CE	243229	05OLIVE	AEP	1	COMED_P4_112-65-BT3-4	breaker	971.0	131.98	133.2	DC	35.62
760557	274804	UNIV PK N;RP	CE	243229	05OLIVE	AEP	1	COMED_P4_023-65-BT4-5	breaker	971.0	131.97	133.19	DC	35.62
154977	275232	WILTON ;3M	CE	270644	WILTON ;	CE	1	COMED_P4_112-65-BT5-6	breaker	1379.0	165.2	165.81	DC	51.73
154982	275233	WILTON ;4M	CE	270644	WILTON ;	CE	1	COMED_P4_112-65-BT2-3	breaker	1379.0	162.64	163.55	DC	52.85
760520	346809	7CASEY	AMIL	247712	05SULLIVAN	AEP	1	AEP_P4_#3128_05EUGEN E 345_A2	breaker	1466.0	142.85	143.6	DC	24.09
156189	930740	AB1-122 TAP	CE	270717	DRESDEN ; R	CE	1	COMED_P7_345-L19601_B-S_+_345-L9801_R-S_FSA	tower	1195.0	125.61	132.15	DC	78.08
156190	930740	AB1-122 TAP	CE	270717	DRESDEN ; R	CE	1	COMED_P7_345-L0301_B-S_+_345-L9801_R-S_FSA	tower	1195.0	120.95	127.49	DC	78.11
760670	938670	AE1-089 TAP	AEP	243219	05DUMONT	AEP	1	AEP_P4_#2978_05DUMONT 765_B	breaker	1409.0	124.58	125.4	DC	25.31

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
761709	243918	05ELDERBRYSS	AEP	938670	AE1-089 TAP	AEP	1	AEP_P1-2_#695A	operation	1409.0	107.5	108.15	DC	27.22
156014	255104	17GREEN_ACRE	NIPS	270771	GREENACRE; T	CE	1	AEP_P1-2_#695A	operation	1091.0	100.84	101.61	DC	27.96
155820	255112	17STJOHN	NIPS	270886	ST JOHN ; T	CE	1	AEP_P1-2_#695A	operation	1091.0	107.68	108.71	DC	30.71
761244	255113	17STILLWELL	NIPS	243219	05DUMONT	AEP	1	AEP_P1-2_#695A	operation	1409.0	168.93	169.83	DC	49.54
761250	255113	17STILLWELL	NIPS	243219	05DUMONT	AEP	1	Base Case	operation	1409.0	110.4	110.94	DC	28.85
156070	270644	WILTON ;	CE	243206	05DUMONT	AEP	1	Base Case	operation	3555.0	105.04	105.6	DC	88.61
156071	270644	WILTON ;	CE	243206	05DUMONT	AEP	1	AEP_P1-2_#697A	operation	4105.0	96.16	96.86	DC	96.8
761773	270644	WILTON ;	CE	243206	05DUMONT	AEP	1	Base Case	operation	3555.0	105.04	105.6	DC	88.61
761774	270644	WILTON ;	CE	243206	05DUMONT	AEP	1	AEP_P1-2_#697A	operation	4105.0	96.16	96.86	DC	96.8
156013	270677	BURNHAM ;OR	CE	255109	17MUNSTER	NIPS	1	AEP_P1-2_#695A	operation	1441.0	111.05	111.84	DC	42.04
156023	270717	DRESDEN ; R	CE	270697	COLLINS ; R	CE	1	COMED_P1-2_345-L1223_TR-S	operation	1528.0	99.29	99.89	DC	20.24
155981	270728	E FRANKFO; B	CE	274750	CRETE EC;BP	CE	1	AEP_P1-2_#695A	operation	1399.0	109.01	110.14	DC	43.36
156060	270770	GOODINGS ;4B	CE	270766	GOODINGS ;3B	CE	1	COMED_P1-2_345-L11622_R-S	operation	1802.0	102.98	103.63	DC	25.9
156065	270770	GOODINGS ;4B	CE	270766	GOODINGS ;3B	CE	1	Base Case	operation	1560.0	95.86	96.66	DC	27.44
155869	270771	GREENACRE; T	CE	243229	05OLIVE	AEP	1	AEP_P1-2_#695A	operation	971.0	113.28	114.15	DC	27.96
761489	270771	GREENACRE; T	CE	243229	05OLIVE	AEP	1	AEP_P1-2_#695A	operation	971.0	113.28	114.15	DC	27.96
155782	270855	POWERTON ; R	CE	349662	7TAZEWELL	AMIL	1	COMED_P1-2_345-L1202_B-S-A	operation	1479.0	106.34	117.2	DC	161.05
155816	270886	ST JOHN ; T	CE	255104	17GREEN_ACRE	NIPS	1	AEP_P1-2_#695A	operation	1091.0	107.68	108.71	DC	30.71
156095	270926	WILTON ; B	CE	275232	WILTON ;3M	CE	1	COMED_P1-2_765-L11216_-S	operation	1379.0	103.71	104.09	DC	32.44
156069	270927	WILTON ; R	CE	275233	WILTON ;4M	CE	1	COMED_P1-2_765-L11216_-S	operation	1379.0	104.89	105.47	DC	34.11
155738	274750	CRETE EC;BP	CE	255112	17STJOHN	NIPS	1	AEP_P1-2_#695A	operation	1399.0	121.9	123.15	DC	42.8
155739	274750	CRETE EC;BP	CE	255112	17STJOHN	NIPS	1	Base Case	operation	1091.0	78.9	80.07	DC	28.12

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
155802	274804	UNIV PK N;RP	CE	243229	05OLIVE	AEP	1	AEP_P1-2_#695A	operation	971.0	131.97	133.19	DC	35.62
761414	274804	UNIV PK N;RP	CE	243229	05OLIVE	AEP	1	AEP_P1-2_#695A	operation	971.0	131.97	133.19	DC	35.62
761408	346809	7CASEY	AMIL	247712	05SULLIVAN	AEP	1	AEP_P1-2_#286	operation	1466.0	137.16	137.93	DC	24.69
761409	346809	7CASEY	AMIL	247712	05SULLIVAN	AEP	1	Base Case	operation	1334.0	121.43	122.12	DC	20.17
761883	348885	7BUNSONVILLE	AMIL	243221	05EUGENE	AEP	1	AEP_P1-2_#8907	operation	1793.0	100.65	101.08	DC	22.47
155664	930740	AB1-122 TAP	CE	270717	DRESDEN ; R	CE	1	COMED_P1-2_345-L1202_B-S-A	operation	1195.0	111.99	115.79	DC	45.41
155674	930740	AB1-122 TAP	CE	270717	DRESDEN ; R	CE	1	Base Case	operation	1195.0	86.29	89.33	DC	36.41
155748	930750	AB1-122 TAP	CE	270716	DRESDEN ; B	CE	1	Base Case	operation	1201.0	107.32	110.86	DC	42.46
155749	930750	AB1-122 TAP	CE	270716	DRESDEN ; B	CE	1	COMED_P1-2_345-L19601_B-S	operation	1479.0	101.02	104.5	DC	51.54
761572	938670	AE1-089 TAP	AEP	243219	05DUMONT	AEP	1	AEP_P1-2_#695A	operation	1409.0	115.32	116.2	DC	27.22

System Reinforcements

ID	Index	Facility	Upgrade Description	Cost
155783	1	POWERTON ; R 345.0 kV - 7TAZEWELL 345.0 kV Ckt 1	<u>CE</u> Description : No Violation. Facility loading does not exceed 100%. <u>AMIL</u> Description : The external (i.e. Non-PJM) Transmission Owner, AMIL, will not evaluate this violation until the impact study phase.	\$0
154982	22	WILTON ;4M 345.0 kV - WILTON ; 765.0 kV Ckt 1	<u>CE</u> Description : 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 CB's (6-8 & 8-2). The baseline project has an projected in-service date of 06/30/2019. Time Estimate : 36.0 Months Cost : \$ 11,000,000	\$11,000,000
154977	21	WILTON ;3M 345.0 kV - WILTON ; 765.0 kV Ckt 1		
154980	18	WILTON ; R 345.0 kV - WILTON ;4M 345.0 kV Ckt 1		
154978	17	WILTON ; B 345.0 kV - WILTON ;3M 345.0 kV Ckt 1		
155288	12	BURNHAM ;OR 345.0 kV - 17MUNSTER 345.0 kV Ckt 1	<u>CE</u> Description : Line conductor & station conductor upgrades. (Note that there may be additional 345kV line tower costs as a result of this upgrade. This estimate does not include potential tower work. The tower costs will be determined during the Facility Study). Time Estimate : 36.0 Months Cost : \$9,200,000 <u>NIPS</u> Description : The external (i.e. Non-PJM) Transmission Owner, NIPS, will not evaluate this violation until the impact study phase.	\$9,200,000
155120,155117,155118,155119	16	ST JOHN ; T 345.0 kV - 17GREEN_ACRE 345.0 kV Ckt 1	<u>CE</u> Description : The upgrade will be to mitigate the sag on the line. Note, the estimate provided does not include potential transmission tower pole upgrades. This cost will be determined during the Facilities Studies. Time Estimate : 24-30 Months Cost : \$2,600,000 <u>NIPS</u> Description : The external (i.e. Non-PJM) Transmission Owner, NIPS, will not evaluate this violation until the impact study phase.	\$2,600,000
155112,155113,155114,155115	10	17STJOHN 345.0 kV - ST JOHN ; T 345.0 kV Ckt 1		
156337,156338	6	AB1-122 TAP 345.0 kV - DRESDEN ; B 345.0 kV Ckt 1	<u>CE</u> Description : No Violation. The ALDR rating is 2033 MVA.	\$0

ID	Index	Facility	Upgrade Description	Cost
155272,155273,155274,155271	13	E FRANKFO; B 345.0 kV - CRETE EC ;BP 345.0 kV Ckt 1	<u>CE</u> Description : Line conductoring upgrade. Note that there may be additional 345kV line tower costs as a result of this upgrade. This estimate does not include potential tower work. The tower costs will be determined during the Facility Study. Time Estimate : 30.0 Months Cost : \$14,400,000	\$14,400,000
156480,762273,155394,762274,761048,156479	2	WILTON ; 765.0 kV - 05DUMONT 765.0 kV Ckt 1	<u>CE</u> Description : No Violation. The SLD rating is 4802 MVA. <u>AEP</u> Description : 1) Replace Dumont Circuit Breaker [Breaker (3000A) Non oil - Dumont] Time Estimate : 24-36 Months Cost : \$3,000,000	\$3,000,000
155262	3	DRESDEN ; B 345.0 kV - WOLFS ; B 345.0 kV Ckt 1	<u>CE</u> Description : No Violation. Facility loading does not exceed 100%.	\$0
760553,760554,760555,760556,760557,155067,155068,155069,155070,155071	20	UNIV PK N;RP 345.0 kV - 05OLIVE 345.0 kV Ckt 1	<u>CE</u> Description : Line sag mitigation. Note that there may be additional 345kV line tower costs as a result of this upgrade. This estimate does not include potential tower work. The tower costs will be determined during the Facility Study Time Estimate : 24-30 Months Cost : \$13,800,000 <u>AEP</u> Description : 1) 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. Time Estimate : 6-12 Months Cost : \$162,560	\$ 13,962,560
155283	9	17GREEN_ACRE 345.0 kV - GREENACRE; T 345.0 kV Ckt 1	<u>CE</u> Description : No Violation. The SSTE rating is 1134 MVA. <u>NIPS</u> Description : The external (i.e. Non-PJM) Transmission Owner, NIPS, will not evaluate this violation until the impact study phase.	\$0

ID	Index	Facility	Upgrade Description	Cost
155010,155011,155012,155013	19	CRETE EC ;BP 345.0 kV - 17STJOHN 345.0 kV Ckt 1	CE Description : The upgrade will be to re-conductor the line and upgrade station conductor. Time Estimate : 24-30 Months Cost : \$5,500,000 NIPS Description : The external (i.e. Non-PJM) Transmission Owner, NIPS, will not evaluate this violation until the impact study phase.	\$5,500,000
760520	23	7CASEY 345.0 kV - 05SULLIVAN 345.0 kV Ckt 1	AEP Description : 1) Rebuild / reconductor 0.6 miles of conductor (ACAR ~ 1024.5 ~ 30/7 ~ RAIL1 - Conductor section 5), estimated cost : \$1.2 million 2) Rebuild / reconductor 1.44 miles of conductor (ACSR/PE ~ 1414 ~ 62/19 ~ - Conductor section 2), estimated cost : \$2.88 million. 3) Replace two Sullivan 3000A Wavetraps , Estimated cost : \$225, 000. Time Estimate : 24-36 Months Cost : \$4,305,000 AMIL Description : The external (i.e. Non-PJM) Transmission Owner, AMIL, will not evaluate this violation until the impact study phase.	\$4,305,000
760670	25	AE1-089 TAP 345.0 kV - 05DUMONT 345.0 kV Ckt 1	AEP Description : 1) A Sag Study will be required on the 7.0 miles of conductor to mitigate the overload. The new ratings after sag study will be: S/N: 1409 MVA, S/E: 1888 MVA, Depending on the sag study results, the cost for this upgrade is expected to be between \$28,000(no remediation required, just sag study) and \$14.0 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. Time Estimate : 6-12 Months Cost : \$28,000	\$28,000
760745,760746,760747,760748	8	05ELDERBRYSS 345.0 kV - AE1-089 TAP 345.0 kV Ckt 1		
154670,155183,155184,155185,155186,154671	14	GOODINGS ;4B 345.0 kV - GOODINGS ;3B 345.0 kV Ckt 1	CE Description : Upgrade 1-345kV circuit breaker & associated equipment, station conductor upgrade required. Time Estimate : 24-30 Months Cost : \$3,600,000	\$3,600,000
156189,156190	24	AB1-122 TAP 345.0 kV - DRESDEN ; R 345.0 kV Ckt 1	CE Description : Mitigate sag limit (91.7 miles) Time Estimate : 36.0 Months Cost : \$31,500,000	\$31,500,000
155310	4	DRESDEN ; R 345.0 kV - COLLINS ; R 345.0 kV Ckt 1	CE Description : No Violation. The SSTE rating is 1837 MVA.	\$0

ID	Index	Facility	Upgrade Description	Cost
155154,760684	15	GREENACRE; T 345.0 kV - 05OLIVE 345.0 kV Ckt 1	CE Description : No Violation. ComEd 345kV L6615 SSTE rating is 1134 MVA. AEP Description : 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. Time Estimate : 6-12 Months Cost : \$162,560	\$162,560
156473	5	AA1-018 TAP 345.0 kV - GOODINGS ;2R 345.0 kV Ckt 1	CE Description : No Violation. The ALDR rating is 1718 MVA.	\$0
156529	7	AD2-038 TAP 345.0 kV - AA1-018 TAP 345.0 kV Ckt 1	CE Description : No Violation. No Violation. Facility loading does not exceed 100%.	\$0
760420	11	17STILLWELL 345.0 kV - 05DUMONT 345.0 kV Ckt 1	AEP Description : 1) Rebuild / reconductor 8.58 miles of conductor (ACSR ~ 954 ~ 45/7 ~ RAIL - Conductor section 1), Estimated Cost : \$17.16 million . 2) Replace Dumont Wavetrap , Estimated Cost : \$200k. 3) An Engineering study will need to be conducted to determine if the CT Thermal Limits can be adjusted to mitigate the overload. Estimated Cost: \$25,000. 4) Replace two Dumont Breakers , Estimated Cost: \$2.4 million 5) Replace 11 Dumont risers (11 Sub cond 2-1700 kcm AAC 61 Str.- Dumont) , Estimated Cost : \$ 175,000 6) Replace four 3000 A Dumont Switches , Estimated Cost : \$2,000,000 7) An Engineering study will need to be conducted to determine if the CT Thermal Limit settings can be adjusted to mitigate the overload. Estimated Cost: \$25,000. New relay package will be required if the settings cannot be adjusted, Estimated Cost: \$600,000. Time Estimate : 24-36 Months Cost : \$21,985,000 NIPS Description : The external (i.e. Non-PJM) Transmission Owner, NIPS, will not evaluate this violation until the impact study phase.	\$21,985,000
			TOTAL COST	\$121,243,120

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 gauge 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.

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
155783	270855	POWERTON ; R	CE	349662	7TAZEWELL	AMIL	1	COMED_P1-2_345-L1202__B-S-A	single	1479.0	78.41	79.93	DC	22.55

Bus #	Bus	MW Impact
274677	POWERTON ;5U	73.29
274678	POWERTON ;6U	73.44
274861	TOP CROP ;1U	0.9
274862	TOP CROP ;2U	1.75
274879	MINONK ;1U	3.81
918051	AA1-018 C	0.89
930751	AB1-122 2O1	357.35
934111	AD1-039 2	35.02
934871	AD1-116 C	2.26
936291	AD2-038 C O1	8.97
938851	AE1-113 C O1	45.0
939321	AE1-163 C O1	22.55
939871	AE1-222 2	394.63
AC1-056	AC1-056	6.51
AE1-080A	AE1-080A	18.52
BAYOU	BAYOU	3.24
BIG_CAJUN1	BIG_CAJUN1	4.77
BIG_CAJUN2	BIG_CAJUN2	9.61
BLUEG	BLUEG	5.05
CALDERWOOD	CALDERWOOD	0.97
CANNELTON	CANNELTON	0.47
CARR	CARR	0.23
CATAWBA	CATAWBA	0.47
CHEOAH	CHEOAH	0.88
CHILHOWEE	CHILHOWEE	0.32
CHOCTAW	CHOCTAW	2.89
COFFEEN	COFFEEN	2.36
COTTONWOOD	COTTONWOOD	13.17
DUCKCREEK	DUCKCREEK	24.17
EDWARDS	EDWARDS	12.15
ELMERSMITH	ELMERSMITH	0.86
FARMERCITY	FARMERCITY	1.94
GIBSON	GIBSON	0.32
HAMLET	HAMLET	1.47
MECS	MECS	0.98
NEWTON	NEWTON	4.2
PRAIRIE	PRAIRIE	11.16
RENSSELAER	RENSSELAER	0.18
SANTEETLA	SANTEETLA	0.26
SMITHLAND	SMITHLAND	0.6

Bus #	Bus	MW Impact
TATANKA	TATANKA	3.01
TILTON	TILTON	1.46
TRIMBLE	TRIMBLE	0.53
TVA	TVA	4.17
UNIONPOWER	UNIONPOWER	2.25

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
762273	270644	WILTON ;	CE	243206	05DUMONT	AEP	1	COMED_P7_345-L94507_B-S+_345-L97008_R-S	tower	4105.0	102.94	103.54	DC	105.14

Bus #	Bus	MW Impact
270859	PWR VTR EC;R	32.17
274722	S-055 E	29.55
274772	LINCOLN ;3U	4.7
274773	LINCOLN ;4U	4.7
274774	LINCOLN ;5U	4.7
274775	LINCOLN ;6U	4.7
274776	LINCOLN ;7U	4.7
274777	LINCOLN ;8U	4.7
274832	U4-027	28.06
274859	EASYR;U1 E	29.13
274860	EASYR;U2 E	29.13
274888	PILOT HIL;1E	44.3
274890	CAYUG;1U E	36.07
274891	CAYUG;2U E	36.07
275149	KEMPTON ;1E	44.3
290021	O50 E	49.24
290051	GSG-6; E	28.08
290108	LEEDK;1U E	65.57
293061	N-015 E	41.22
293516	O-009 E1	23.79
293517	O-009 E2	12.09
293518	O-009 E3	13.31
293644	O22 E1	25.31
293645	O22 E2	49.12
293715	O-029 E	25.78
293716	O-029 E	14.13
293717	O-029 E	12.99
293771	O-035 E	16.49
294392	P-010 E	52.34
294763	P-046 E	24.88
295109	WESTBROOK E	15.03
295111	SUBLETTE E	6.87
296125	R-030 C3	9.31
296128	R-030 E3	37.24
296271	R-030 C2	9.2
296272	R-030 E2	36.8
296308	R-030 C1	9.2
296309	R-030 E1	36.8
910542	X3-005 E	1.57
914641	Y2-103	118.19

Bus #	Bus	MW Impact
915011	Y3-013 1	9.85
915021	Y3-013 2	9.85
915031	Y3-013 3	9.85
916211	Z1-072 E	12.48
916221	Z1-073 E	14.49
916502	Z1-106 E1	3.41
916504	Z1-106 E2	3.41
916512	Z1-107 E	6.53
916522	Z1-108 E	6.62
917502	Z2-087 E	48.13
918052	AA1-018 E	40.41
919221	AA1-146	46.5
919581	AA2-030	46.5
919621	AA2-039 C	3.78
919622	AA2-039 E	25.31
920272	AA2-123 E	6.51
924471	AB2-096	112.6
925161	AB2-173	8.29
925302	AB2-191 E	3.72
925581	AC1-033 C	3.62
925582	AC1-033 E	24.22
926311	AC1-109 1	5.21
926321	AC1-109 2	5.21
926331	AC1-110 1	5.12
926341	AC1-110 2	5.12
926351	AC1-111 1	2.07
926361	AC1-111 2	2.07
926371	AC1-111 3	2.07
926381	AC1-111 4	2.07
926391	AC1-111 5	2.07
926401	AC1-111 6	2.07
926431	AC1-114	6.32
926821	AC1-168 C O1	2.98
926822	AC1-168 E O1	20.01
927091	AC1-204 1	184.27
927101	AC1-204 2	184.31
927201	AC1-214 C O1	5.29
927202	AC1-214 E O1	16.83
927451	AC1-142A 1	10.61
927461	AC1-142A 2	10.61
927511	AC1-113 1	3.16
927521	AC1-113 2	3.16
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	175.15
930501	AB1-091 O1	173.97

Bus #	Bus	MW Impact
930741	AB1-122 1O1	194.95
930751	AB1-122 2O1	188.67
932881	AC2-115 1	6.32
932891	AC2-115 2	6.32
932921	AC2-116	2.21
932931	AC2-117	14.95
933341	AC2-147 C	2.31
933342	AC2-147 E	3.77
933411	AC2-154 C	6.01
933412	AC2-154 E	9.81
933431	AC2-156 C O1	2.64
933432	AC2-156 E O1	4.3
933911	AD1-013 C	4.95
933912	AD1-013 E	7.9
933931	AD1-016 C	2.47
933932	AD1-016 E	4.03
934051	AD1-031 C O1	7.35
934052	AD1-031 E O1	11.99
934101	AD1-039 1	19.1
934111	AD1-039 2	18.49
934401	AD1-064 C O1	8.56
934402	AD1-064 E O1	40.08
934431	AD1-067 C	0.35
934432	AD1-067 E	1.48
934651	AD1-096 C	2.37
934652	AD1-096 E	3.86
934701	AD1-098 C O1	18.47
934702	AD1-098 E O1	13.48
934721	AD1-100 C	51.04
934722	AD1-100 E	238.17
934871	AD1-116 C	2.35
934872	AD1-116 E	3.84
934881	AD1-117 C	14.23
934882	AD1-117 E	9.49
934971	AD1-129 C	2.4
934972	AD1-129 E	1.6
935001	AD1-133 C O1	55.95
935002	AD1-133 E O1	37.3
936291	AD2-038 C O1	5.86
936292	AD2-038 E O1	39.2
936371	AD2-047 C O1	5.38
936372	AD2-047 E O1	57.91
936461	AD2-060	6.33
936511	AD2-066 C O1	21.47
936512	AD2-066 E O1	14.31
936781	AD2-101 C	10.68
936782	AD2-101 E	49.98
936791	AD2-102 C	31.89
936792	AD2-102 E	30.64
936961	AD2-130	1.4
937001	AD2-134 C	7.34
937002	AD2-134 E	30.33

Bus #	Bus	MW Impact
937031	AD2-137 C O1	10.26
937032	AD2-137 E O1	48.01
937051	AD2-140 C O1	10.5
937052	AD2-140 E O1	49.17
937061	AD2-141 C O1	10.44
937062	AD2-141 E O1	49.23
937071	AD2-142 C O1	21.0
937072	AD2-142 E O1	98.34
937121	AD2-148 C O1	8.35
937122	AD2-148 E O1	39.1
937131	AD2-149 C O1	8.35
937132	AD2-149 E O1	39.1
937141	AD2-150 C O1	8.35
937142	AD2-150 E O1	39.1
937181	AD2-155 C O1	8.35
937182	AD2-155 E O1	39.1
937311	AD2-172 C	6.53
937312	AD2-172 E	9.02
937321	AD2-175 C	38.91
937322	AD2-175 E	25.94
937331	AD2-176 C O1	19.52
937332	AD2-176 E O1	13.01
937401	AD2-194 1	19.82
937411	AD2-194 2	19.82
937531	AD2-214 C	11.6
937532	AD2-214 E	5.46
938012	AE1-002 E O1	20.59
938511	AE1-070 1	23.28
938521	AE1-070 2	21.31
938851	AE1-113 C O1	22.28
938852	AE1-113 E O1	70.05
938861	AE1-114 C O1	9.53
938862	AE1-114 E O1	36.45
939051	AE1-134 1	3.61
939061	AE1-134 2	3.61
939321	AE1-163 C O1	14.72
939322	AE1-163 E O1	90.42
939351	AE1-166 C O1	26.27
939352	AE1-166 E O1	24.25
939401	AE1-172 C O1	16.57
939402	AE1-172 E O1	77.57
939631	AE1-193 C O1	17.95
939632	AE1-193 E O1	120.14
939641	AE1-194 C	21.1
939642	AE1-194 E	141.24
939651	AE1-195 C	21.1
939652	AE1-195 E	141.24
939681	AE1-198 C O1	53.3
939682	AE1-198 E O1	45.3
939691	AE1-199	6.42
939701	AE1-201 C	5.34
939702	AE1-201 E	1.17

Bus #	Bus	MW Impact
939732	AE1-204 E	0.77
939741	AE1-205 C O1	23.29
939742	AE1-205 E O1	32.16
939861	AE1-222 1	215.29
939871	AE1-222 2	208.36
939921	AE1-228 C O1	27.02
939922	AE1-228 E O1	18.01
939961	AE1-233 C O1	6.29
939962	AE1-233 E O1	25.97
940101	AE1-252 C O1	28.24
940102	AE1-252 E O1	18.83
AB2-013	AB2-013	41.07
AE1-033	AE1-033	47.69
BLUEG	BLUEG	16.82
CALDERWOOD	CALDERWOOD	0.23
CANNELTON	CANNELTON	0.26
CARR	CARR	1.97
CATAWBA	CATAWBA	0.8
CBM-S1	CBM-S1	3.44
CBM-W1	CBM-W1	76.96
CBM-W2	CBM-W2	140.68
CHEOAH	CHEOAH	0.24
CHILHOWEE	CHILHOWEE	0.07
DEARBORN	DEARBORN	6.43
ELMERSMITH	ELMERSMITH	0.27
G-007	G-007	5.53
GIBSON	GIBSON	0.08
HAMLET	HAMLET	3.02
MEC	MEC	98.2
O-066	O-066	18.61
RENSSELAER	RENSSELAER	1.56
SANTEETLA	SANTEETLA	0.08
TRIMBLE	TRIMBLE	1.99
WEC	WEC	20.94
Z1-043	Z1-043	73.86

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
155262	270716	DRESDEN ; B	CE	270928	WOLFS ; B	CE	1	COMED_P4_012-45-BT5-6__	breaker	1479.0	96.03	96.84	DC	26.72

Bus #	Bus	MW Impact
274658	DRESDEN ;2U	78.0
274677	POWERTON ;5U	12.82
274678	POWERTON ;6U	12.7
274836	EQUISTAR ; R	4.45
274879	MINONK ;1U	1.89
290021	O50 E	49.28
904211	W3-135	0.36
916502	Z1-106 E1	0.62
916504	Z1-106 E2	0.61
930751	AB1-122 2O1	318.92
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	70.11
939321	AE1-163 C O1	3.74
939322	AE1-163 E O1	22.98
939871	AE1-222 2	352.2
953201	J715 C	1.34
953202	J715 E	7.25
AB2-013	AB2-013	10.17
BLUEG	BLUEG	0.42
CALDERWOOD	CALDERWOOD	0.01
CARR	CARR	0.07
CATAWBA	CATAWBA	0.03
CBM-S1	CBM-S1	0.09
CBM-W2	CBM-W2	7.73
CHEOAH	CHEOAH	0.01
CHILHOWEE	CHILHOWEE	0.0
CIN	CIN	0.16
DEARBORN	DEARBORN	0.27
FARMERCITY	FARMERCITY	0.1
G-007	G-007	0.2
HAMLET	HAMLET	0.12
IPL	IPL	0.03
O-066	O-066	0.67
RENSSELAER	RENSSELAER	0.06
SANTEETLA	SANTEETLA	0.0
TATANKA	TATANKA	0.72

Bus #	Bus	MW Impact
TRIMBLE	TRIMBLE	0.05
Z1-043	Z1-043	16.14

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
155310	270717	DRESDEN ; R	CE	270697	COLLINS ; R	CE	1	COMED_P4_111-45-L1223T_	breaker	1528.0	99.43	100.03	DC	20.27

Bus #	Bus	MW Impact
274659	DRESDEN ;3U	42.28
274729	ELWOOD EC;1P	2.69
274731	ELWOOD EC;2P	2.69
274733	ELWOOD EC;3P	2.69
274735	ELWOOD EC;4P	2.69
274736	ELWOOD EC;9P	2.66
274890	CAYUG;1U E	9.67
274891	CAYUG;2U E	9.67
276150	W2-048 E	0.97
290021	O50 E	11.1
290261	S-027 E	15.15
290265	S-028 E	15.15
296125	R-030 C3	3.8
296128	R-030 E3	15.19
296271	R-030 C2	3.75
296272	R-030 E2	15.01
296308	R-030 C1	3.75
296309	R-030 E1	15.01
905082	W4-005 E	25.39
909052	X2-022 E	13.53
917502	Z2-087 E	19.63
924041	AB2-047 C O1	3.61
924042	AB2-047 E O1	24.18
924261	AB2-070 C O1	1.95
924262	AB2-070 E O1	13.08
925771	AC1-053 C	1.93
925772	AC1-053 E	12.91
926841	AC1-171 C O1	0.6
926842	AC1-171 E O1	4.0
927091	AC1-204 1	64.57
927101	AC1-204 2	65.35
930741	AB1-122 1O1	173.78
930751	AB1-122 2O1	33.89
934101	AD1-039 1	17.03
934111	AD1-039 2	3.32
935001	AD1-133 C O1	39.0
935002	AD1-133 E O1	26.0
935141	AD1-148	3.54
936291	AD2-038 C O1	1.13
936292	AD2-038 E O1	7.56
936771	AD2-100 C O1	7.92

Bus #	Bus	MW Impact
936772	AD2-100 E O1	5.28
936972	AD2-131 E O1	1.67
937161	AD2-153 C O1	2.52
937162	AD2-153 E O1	11.79
937171	AD2-154 C O1	2.52
937172	AD2-154 E O1	11.79
937211	AD2-159 C	2.74
937212	AD2-159 E	12.84
937401	AD2-194 1	6.94
937411	AD2-194 2	7.03
938511	AE1-070 1	8.16
938521	AE1-070 2	7.55
938851	AE1-113 C O1	5.02
938852	AE1-113 E O1	15.79
939321	AE1-163 C O1	2.84
939322	AE1-163 E O1	17.43
939401	AE1-172 C O1	3.31
939402	AE1-172 E O1	15.48
939741	AE1-205 C O1	9.44
939742	AE1-205 E O1	13.03
939861	AE1-222 1	191.92
939871	AE1-222 2	37.43
940101	AE1-252 C O1	5.64
940102	AE1-252 E O1	3.76
951741	J474 C	1.23
951742	J474 E	6.63
952651	J756 C	1.67
952652	J756 E	9.05
954181	J884	6.11
AB2-013	AB2-013	11.51
CARR	CARR	0.16
CBM-S1	CBM-S1	2.68
CBM-S2	CBM-S2	0.28
CBM-W1	CBM-W1	3.41
CBM-W2	CBM-W2	44.28
CIN	CIN	2.13
CPL	CPL	0.02
DEARBORN	DEARBORN	0.86
G-007	G-007	0.45
IPL	IPL	0.97
LGEE	LGEE	0.09
MEC	MEC	12.36
O-066	O-066	1.51
RENSSELAER	RENSSELAER	0.13
Z1-043	Z1-043	11.82

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
156473	918050	AA1-018 TAP	CE	270769	GOODINGS ;2R	CE	1	COMED_P7_345-L1202__B-S+_345-L1227__R-S-A	tower	1494.0	83.77	93.65	DC	147.47

Bus #	Bus	MW Impact
274677	POWERTON ;5U	24.82
274678	POWERTON ;6U	24.88
274879	MINONK ;1U	1.29
290021	O50 E	33.68
293644	O22 E1	6.5
293645	O22 E2	12.61
294401	BSHIL;1U E	4.59
294410	BSHIL;2U E	4.59
918051	AA1-018 C	1.89
918052	AA1-018 E	82.43
919621	AA2-039 C	1.12
919622	AA2-039 E	7.49
925581	AC1-033 C	0.75
925582	AC1-033 E	5.03
926841	AC1-171 C O1	0.64
926842	AC1-171 E O1	4.29
930741	AB1-122 1O1	102.48
930751	AB1-122 2O1	121.04
934051	AD1-031 C O1	1.53
934052	AD1-031 E O1	2.49
934101	AD1-039 1	10.04
934111	AD1-039 2	11.86
934871	AD1-116 C	4.8
934872	AD1-116 E	7.83
936291	AD2-038 C O1	8.22
936292	AD2-038 E O1	54.98
938851	AE1-113 C O1	15.24
938852	AE1-113 E O1	47.91
939321	AE1-163 C O1	20.65
939322	AE1-163 E O1	126.82
939631	AE1-193 C O1	3.73
939632	AE1-193 E O1	24.94
939681	AE1-198 C O1	11.07
939682	AE1-198 E O1	9.4
939861	AE1-222 1	113.17
939871	AE1-222 2	133.67
951631	J456 C	1.31
951632	J456 E	7.1
954702	J844 E	20.17
990901	L-005 E	7.01

Bus #	Bus	MW Impact
AB2-013	AB2-013	21.27
CARR	CARR	0.05
CBM-S1	CBM-S1	2.46
CBM-S2	CBM-S2	0.52
CBM-W1	CBM-W1	4.37
CBM-W2	CBM-W2	37.42
CIN	CIN	0.84
CPLE	CPLE	0.14
DEARBORN	DEARBORN	0.49
G-007	G-007	0.12
IPL	IPL	0.4
LGEE	LGEE	0.09
MEC	MEC	14.95
O-066	O-066	0.42
RENSSELAER	RENSSELAER	0.04
Z1-043	Z1-043	13.46

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
156337	930750	AB1-122 TAP	CE	270716	DRESDEN ; B	CE	1	COMED_P7_345-L19601_B-S_+_345-L9801__R-S_FSA	tower	1768.0	98.06	103.21	DC	91.08

Bus #	Bus	MW Impact
274677	POWERTON ;5U	30.9
274678	POWERTON ;6U	30.69
274861	TOP CROP ;1U	0.82
274862	TOP CROP ;2U	1.59
274879	MINONK ;1U	3.37
290021	O50 E	87.99
293644	O22 E1	21.38
293645	O22 E2	41.5
918051	AA1-018 C	0.78
918052	AA1-018 E	33.95
930751	AB1-122 2O1	521.0
934111	AD1-039 2	51.06
934871	AD1-116 C	1.98
934872	AD1-116 E	3.23
936291	AD2-038 C O1	5.07
936292	AD2-038 E O1	33.96
938851	AE1-113 C O1	39.81
938852	AE1-113 E O1	125.16
939321	AE1-163 C O1	12.75
939322	AE1-163 E O1	78.33
939871	AE1-222 2	575.36
AB2-013	AB2-013	23.94
CARR	CARR	0.03
CBM-S1	CBM-S1	2.85
CBM-S2	CBM-S2	0.66
CBM-W1	CBM-W1	3.44
CBM-W2	CBM-W2	42.04
CIN	CIN	1.13
CPL	CPL	0.2
DEARBORN	DEARBORN	0.47
G-007	G-007	0.06
IPL	IPL	0.57
LGEE	LGEE	0.14
MEC	MEC	15.32
O-066	O-066	0.21
RENSSELAER	RENSSELAER	0.02
Z1-043	Z1-043	13.56

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
156529	936290	AD2-038 TAP	CE	918050	AA1-018 TAP	CE	1	COMED_P7_345-L1202__B-S+_345-L1227__R-S-A	tower	1494.0	77.42	87.3	DC	147.5

Bus #	Bus	MW Impact
274677	POWERTON ;5U	24.83
274678	POWERTON ;6U	24.89
274879	MINONK ;1U	1.29
290021	O50 E	33.7
293644	O22 E1	6.5
293645	O22 E2	12.63
293771	O-035 E	3.1
294401	BSHIL;1U E	4.6
294410	BSHIL;2U E	4.6
916211	Z1-072 E	2.34
919621	AA2-039 C	1.12
919622	AA2-039 E	7.5
925581	AC1-033 C	0.75
925582	AC1-033 E	5.04
926841	AC1-171 C O1	0.64
926842	AC1-171 E O1	4.29
927201	AC1-214 C O1	0.99
927202	AC1-214 E O1	3.16
930741	AB1-122 1O1	102.53
930751	AB1-122 2O1	121.11
934051	AD1-031 C O1	1.53
934052	AD1-031 E O1	2.49
934101	AD1-039 1	10.05
934111	AD1-039 2	11.87
936291	AD2-038 C O1	8.22
936292	AD2-038 E O1	55.0
938851	AE1-113 C O1	15.25
938852	AE1-113 E O1	47.93
939321	AE1-163 C O1	20.65
939322	AE1-163 E O1	126.85
939631	AE1-193 C O1	3.73
939632	AE1-193 E O1	24.99
939681	AE1-198 C O1	11.09
939682	AE1-198 E O1	9.42
939861	AE1-222 1	113.23
939871	AE1-222 2	133.74
951631	J456 C	1.31
951632	J456 E	7.1
953951	J859	8.13
954702	J844 E	20.17

Bus #	Bus	MW Impact
990901	L-005 E	7.02
AB2-013	AB2-013	21.29
CARR	CARR	0.04
CBM-S1	CBM-S1	2.49
CBM-S2	CBM-S2	0.53
CBM-W1	CBM-W1	4.43
CBM-W2	CBM-W2	37.66
CIN	CIN	0.86
CPL	CPL	0.15
DEARBORN	DEARBORN	0.48
G-007	G-007	0.11
IPL	IPL	0.42
LGEE	LGEE	0.09
MEC	MEC	15.0
O-066	O-066	0.38
RENSSELAER	RENSSELAER	0.04
Z1-043	Z1-043	13.48

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
760745	243918	05ELDERBRYSS	AEP	938670	AE1-089 TAP	AEP	1	AEP_P4_#2978_05DUMONT 765_B	breaker	1409.0	116.22	117.03	DC	25.31

Bus #	Bus	MW Impact
247900	05FR-11G E	6.85
247901	05FR-12G E	6.74
247902	05FR-21G E	7.2
247903	05FR-22G E	6.89
247904	05FR-3G E	13.96
247905	05FR-4G E	10.5
247906	05MDL-1G E	15.63
247907	05MDL-2G E	7.75
247912	05MDL-3G E	8.11
247913	05MDL-4G E	7.83
247943	T-127 E	7.83
270859	PWR VTR EC;R	7.11
274722	S-055 E	6.55
274809	UNIV PK N;5U	0.8
274811	UNIV PK N;7U	0.8
274812	UNIV PK N;8U	0.8
274814	UNIV PK N;0U	0.8
274815	UNIV PK N;XU	0.8
274859	EASYR;U1 E	5.56
274860	EASYR;U2 E	5.56
274888	PILOT HIL;1E	10.32
274890	CAYUG;1U E	8.28
274891	CAYUG;2U E	8.28
275149	KEMPTON ;1E	10.32
290021	O50 E	11.46
290051	GSG-6; E	6.16
290108	LEEDK;1U E	14.23
293061	N-015 E	8.96
293644	O22 E1	5.93
293645	O22 E2	11.51
294392	P-010 E	11.37
294763	P-046 E	5.56
295109	WESTBROOK E	3.3
909145	X2-052	36.23
914641	Y2-103	26.18
915011	Y3-013 1	2.18
915021	Y3-013 2	2.18
915031	Y3-013 3	2.18
916221	Z1-073 E	3.18
916502	Z1-106 E1	0.73

Bus #	Bus	MW Impact
916504	Z1-106 E2	0.73
916512	Z1-107 E	1.5
916522	Z1-108 E	1.45
917711	Z2-114 C	0.06
917712	Z2-114 E	0.4
918052	AA1-018 E	9.8
920272	AA2-123 E	1.43
924471	AB2-096	24.87
925302	AB2-191 E	0.82
926311	AC1-109 1	1.1
926321	AC1-109 2	1.1
926331	AC1-110 1	1.1
926341	AC1-110 2	1.1
926351	AC1-111 1	0.44
926361	AC1-111 2	0.44
926371	AC1-111 3	0.44
926381	AC1-111 4	0.44
926391	AC1-111 5	0.44
926401	AC1-111 6	0.44
926431	AC1-114	1.4
926821	AC1-168 C O1	0.7
926822	AC1-168 E O1	4.71
927091	AC1-204 1	41.9
927101	AC1-204 2	41.91
927451	AC1-142A 1	2.42
927461	AC1-142A 2	2.42
927511	AC1-113 1	0.7
927521	AC1-113 2	0.7
927531	AC1-185 1	0.41
927541	AC1-185 2	0.41
927551	AC1-185 3	0.41
927561	AC1-185 4	0.41
927571	AC1-185 5	0.41
927581	AC1-185 6	0.41
927591	AC1-185 7	0.41
927601	AC1-185 8	0.41
930042	AB1-006 E	17.03
930391	AB1-080	2.15
930481	AB1-089	38.75
930501	AB1-091 O1	40.14
930741	AB1-122 1O1	41.99
930751	AB1-122 2O1	42.66
932601	AC2-080 C O1	3.72
932602	AC2-080 E O1	24.91
932881	AC2-115 1	1.4
932891	AC2-115 2	1.4
932921	AC2-116	0.49
932931	AC2-117	5.17
933341	AC2-147 C	0.52
933342	AC2-147 E	0.85
933411	AC2-154 C	1.4
933412	AC2-154 E	2.28

Bus #	Bus	MW Impact
933431	AC2-156 C O1	0.55
933432	AC2-156 E O1	0.9
933911	AD1-013 C	1.08
933912	AD1-013 E	1.73
933931	AD1-016 C	0.54
933932	AD1-016 E	0.89
934101	AD1-039 1	4.12
934111	AD1-039 2	4.18
934401	AD1-064 C O1	1.88
934402	AD1-064 E O1	8.8
934431	AD1-067 C	0.08
934432	AD1-067 E	0.33
934651	AD1-096 C	0.53
934652	AD1-096 E	0.86
934701	AD1-098 C O1	4.06
934702	AD1-098 E O1	2.96
934721	AD1-100 C	11.12
934722	AD1-100 E	51.9
934871	AD1-116 C	0.57
934872	AD1-116 E	0.93
934881	AD1-117 C	3.21
934882	AD1-117 E	2.14
934971	AD1-129 C	0.53
934972	AD1-129 E	0.35
935001	AD1-133 C O1	12.63
935002	AD1-133 E O1	8.42
935271	AD1-137 C	5.69
935272	AD1-137 E	38.05
936291	AD2-038 C O1	1.41
936292	AD2-038 E O1	9.44
936371	AD2-047 C O1	1.25
936372	AD2-047 E O1	13.49
936461	AD2-060	1.47
936511	AD2-066 C O1	4.99
936512	AD2-066 E O1	3.33
936781	AD2-101 C	2.48
936782	AD2-101 E	11.59
936791	AD2-102 C	7.12
936792	AD2-102 E	6.84
936961	AD2-130	0.32
936981	AD2-132 C	5.04
936982	AD2-132 E	23.6
937001	AD2-134 C	1.61
937002	AD2-134 E	6.66
937031	AD2-137 C O1	1.92
937032	AD2-137 E O1	9.0
937041	AD2-138 C	5.04
937042	AD2-138 E	23.6
937051	AD2-140 C O1	1.92
937052	AD2-140 E O1	8.99
937061	AD2-141 C O1	1.91
937062	AD2-141 E O1	9.0

Bus #	Bus	MW Impact
937071	AD2-142 C O1	3.84
937072	AD2-142 E O1	17.98
937121	AD2-148 C O1	1.93
937122	AD2-148 E O1	9.02
937131	AD2-149 C O1	1.93
937132	AD2-149 E O1	9.02
937141	AD2-150 C O1	1.93
937142	AD2-150 E O1	9.02
937181	AD2-155 C O1	1.93
937182	AD2-155 E O1	9.02
937311	AD2-172 C	1.46
937312	AD2-172 E	2.02
937321	AD2-175 C	8.98
937322	AD2-175 E	5.98
937331	AD2-176 C O1	4.29
937332	AD2-176 E O1	2.86
937401	AD2-194 1	4.51
937411	AD2-194 2	4.51
938012	AE1-002 E O1	3.86
938511	AE1-070 1	5.29
938521	AE1-070 2	4.84
938851	AE1-113 C O1	5.18
938852	AE1-113 E O1	16.3
938861	AE1-114 C O1	2.14
938862	AE1-114 E O1	8.19
939321	AE1-163 C O1	3.54
939322	AE1-163 E O1	21.77
939351	AE1-166 C O1	5.85
939352	AE1-166 E O1	5.4
939401	AE1-172 C O1	3.71
939402	AE1-172 E O1	17.38
939641	AE1-194 C	5.61
939642	AE1-194 E	37.52
939651	AE1-195 C	5.61
939652	AE1-195 E	37.52
939691	AE1-199	1.41
939701	AE1-201 C	1.17
939702	AE1-201 E	0.26
939732	AE1-204 E	0.17
939861	AE1-222 1	46.37
939871	AE1-222 2	47.11
939921	AE1-228 C O1	5.92
939922	AE1-228 E O1	3.95
939961	AE1-233 C O1	1.36
939962	AE1-233 E O1	5.62
940101	AE1-252 C O1	6.33
940102	AE1-252 E O1	4.22
AB2-013	AB2-013	10.01
AE1-033	AE1-033	10.77
CARR	CARR	0.59
CATAWBA	CATAWBA	0.05
CBM-S1	CBM-S1	4.6

Bus #	Bus	MW Impact
CBM-W1	CBM-W1	19.73
CBM-W2	CBM-W2	68.15
CIN	CIN	7.05
DEARBORN	DEARBORN	1.82
G-007	G-007	1.64
HAMLET	HAMLET	0.34
IPL	IPL	3.28
LGEE	LGEE	0.73
MEC	MEC	25.32
O-066	O-066	5.54
RENSSELAER	RENSSELAER	0.47
WEC	WEC	4.7
Z1-043	Z1-043	17.65

Index 9

ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CK T ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADIN G %	POST PROJECT LOADIN G %	AC D C	MW IMPACT
155283	255104	17GREEN_ACR E	NIPS	270771	GREENACR E; T	CE	1	AEP_P4_#2978_05DUMONT 765_B	breaker	1091.0	102.13	102.9	DC	27.67

Bus #	Bus	MW Impact
270859	PWR VTR EC;R	8.06
274722	S-055 E	7.52
274751	CRETE EC ;1U	1.93
274752	CRETE EC ;2U	1.93
274753	CRETE EC ;3U	1.93
274754	CRETE EC ;4U	1.93
274832	U4-027	7.11
274859	EASYR;U1 E	7.3
274860	EASYR;U2 E	7.3
274888	PILOT HIL;1E	12.4
274890	CAYUG;1U E	8.92
274891	CAYUG;2U E	8.92
275149	KEMPTON ;1E	12.4
290021	O50 E	12.98
290051	GSG-6; E	6.94
290108	LEEDK;1U E	16.14
293061	N-015 E	10.24
293516	O-009 E1	5.99
293517	O-009 E2	3.04
293518	O-009 E3	3.35
293644	O22 E1	7.24
293645	O22 E2	14.06
293715	O-029 E	6.47
293716	O-029 E	3.55
293717	O-029 E	3.26
294392	P-010 E	13.0
294763	P-046 E	6.23
295109	WESTBROOK E	3.72
295111	SUBLETTE E	1.72
910542	X3-005 E	0.52
914641	Y2-103	30.09
915011	Y3-013 1	2.51
915021	Y3-013 2	2.51
915031	Y3-013 3	2.51
916221	Z1-073 E	3.58
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	10.62
919221	AA1-146	11.67

Bus #	Bus	MW Impact
919581	AA2-030	11.67
920272	AA2-123 E	1.63
924471	AB2-096	28.21
925161	AB2-173	2.08
925302	AB2-191 E	0.92
925881	AC1-067 O1	102.57
926311	AC1-109 1	1.27
926321	AC1-109 2	1.27
926331	AC1-110 1	1.27
926341	AC1-110 2	1.27
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	5.08
927091	AC1-204 1	48.76
927101	AC1-204 2	48.73
927201	AC1-214 C O1	0.74
927202	AC1-214 E O1	2.34
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	43.76
930501	AB1-091 O1	49.15
930741	AB1-122 1O1	47.58
930751	AB1-122 2O1	49.75
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	2.75
933431	AC2-156 C O1	0.64
933432	AC2-156 E O1	1.04
933911	AD1-013 C	1.22
933912	AD1-013 E	1.95
933931	AD1-016 C	0.62
933932	AD1-016 E	1.01

Bus #	Bus	MW Impact
934101	AD1-039 1	4.66
934111	AD1-039 2	4.88
934401	AD1-064 C O1	2.13
934402	AD1-064 E O1	9.99
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	4.57
934702	AD1-098 E O1	3.34
934721	AD1-100 C	12.94
934722	AD1-100 E	60.39
934871	AD1-116 C	0.62
934872	AD1-116 E	1.01
934881	AD1-117 C	3.57
934882	AD1-117 E	2.38
934971	AD1-129 C	0.6
934972	AD1-129 E	0.4
935001	AD1-133 C O1	13.73
935002	AD1-133 E O1	9.15
936291	AD2-038 C O1	1.54
936292	AD2-038 E O1	10.32
936371	AD2-047 C O1	1.51
936372	AD2-047 E O1	16.21
936461	AD2-060	1.77
936511	AD2-066 C O1	5.56
936512	AD2-066 E O1	3.71
936781	AD2-101 C	3.17
936782	AD2-101 E	14.84
936791	AD2-102 C	8.0
936792	AD2-102 E	7.69
936961	AD2-130	0.38
937001	AD2-134 C	1.82
937002	AD2-134 E	7.5
937031	AD2-137 C O1	2.31
937032	AD2-137 E O1	10.8
937051	AD2-140 C O1	2.32
937052	AD2-140 E O1	10.87
937061	AD2-141 C O1	2.31
937062	AD2-141 E O1	10.88
937071	AD2-142 C O1	4.64
937072	AD2-142 E O1	21.73
937121	AD2-148 C O1	2.36
937122	AD2-148 E O1	11.04
937131	AD2-149 C O1	2.36
937132	AD2-149 E O1	11.04
937141	AD2-150 C O1	2.36
937142	AD2-150 E O1	11.04
937181	AD2-155 C O1	2.36
937182	AD2-155 E O1	11.04
937311	AD2-172 C	1.64
937312	AD2-172 E	2.26

Bus #	Bus	MW Impact
937321	AD2-175 C	10.99
937322	AD2-175 E	7.33
937331	AD2-176 C O1	4.89
937332	AD2-176 E O1	3.26
937401	AD2-194 1	5.24
937411	AD2-194 2	5.24
937531	AD2-214 C	2.92
937532	AD2-214 E	1.37
938012	AE1-002 E O1	4.63
938511	AE1-070 1	6.16
938521	AE1-070 2	5.63
938851	AE1-113 C O1	5.88
938852	AE1-113 E O1	18.47
938861	AE1-114 C O1	2.39
938862	AE1-114 E O1	9.13
939051	AE1-134 1	0.91
939061	AE1-134 2	0.91
939321	AE1-163 C O1	3.87
939322	AE1-163 E O1	23.79
939351	AE1-166 C O1	6.84
939352	AE1-166 E O1	6.31
939401	AE1-172 C O1	4.1
939402	AE1-172 E O1	19.18
939641	AE1-194 C	10.88
939642	AE1-194 E	72.84
939651	AE1-195 C	10.88
939652	AE1-195 E	72.84
939691	AE1-199	1.59
939701	AE1-201 C	1.34
939702	AE1-201 E	0.29
939732	AE1-204 E	0.2
939861	AE1-222 1	52.55
939871	AE1-222 2	54.95
939921	AE1-228 C O1	6.68
939922	AE1-228 E O1	4.45
939961	AE1-233 C O1	1.55
939962	AE1-233 E O1	6.39
940101	AE1-252 C O1	6.98
940102	AE1-252 E O1	4.65
951721	J643	15.51
952581	J740 C	3.4
952582	J740 E	18.42
953871	J847	8.38
AB2-013	AB2-013	10.64
AE1-033	AE1-033	12.03
BLUEG	BLUEG	2.86
CANNELTON	CANNELTON	0.0
CARR	CARR	0.5
CATAWBA	CATAWBA	0.16
CBM-S1	CBM-S1	1.36
CBM-W1	CBM-W1	19.98
CBM-W2	CBM-W2	38.44

Bus #	Bus	MW Impact
CIN	CIN	0.12
DEARBORN	DEARBORN	2.29
G-007	G-007	1.38
HAMLET	HAMLET	0.65
MEC	MEC	25.05
O-066	O-066	4.65
RENSSELAER	RENSSELAER	0.39
SANTEETLA	SANTEETLA	0.0
TRIMBLE	TRIMBLE	0.34
WEC	WEC	5.32
Z1-043	Z1-043	18.82

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
155113	255112	17STJOHN	NIPS	270886	ST JOHN ; T	CE	1	COMED_P4_023-65-BT2-3__	breaker	1091.0	109.88	110.86	DC	30.71

Bus #	Bus	MW Impact
270859	PWR VTR EC;R	9.04
274654	BRAIDWOOD;1U	19.05
274655	BRAIDWOOD;2U	18.24
274661	LASCO STA;2U	17.6
274687	WILL CNTY;4U	8.03
274704	KENDALL ;1C	2.81
274705	KENDALL ;1S	1.88
274706	KENDALL ;2C	2.81
274707	KENDALL ;2S	1.88
274722	S-055 E	8.45
274751	CRETE EC ;1U	3.36
274752	CRETE EC ;2U	3.36
274753	CRETE EC ;3U	3.36
274754	CRETE EC ;4U	3.36
274859	EASYR;U1 E	8.17
274860	EASYR;U2 E	8.17
274861	TOP CROP ;1U	0.33
274862	TOP CROP ;2U	0.63
274888	PILOT HIL;1E	12.81
274890	CAYUG;1U E	9.74
274891	CAYUG;2U E	9.74
275149	KEMPTON ;1E	12.81
290021	O50 E	14.65
290051	GSG-6; E	7.78
290108	LEEDK;1U E	18.09
293061	N-015 E	11.61
293516	O-009 E1	6.69
293517	O-009 E2	3.4
293518	O-009 E3	3.74
293644	O22 E1	8.5
293645	O22 E2	16.51
293715	O-029 E	7.24
293716	O-029 E	3.97
293717	O-029 E	3.65
294392	P-010 E	14.75
294763	P-046 E	6.98
295109	WESTBROOK E	4.16
295111	SUBLETTE E	1.92
914641	Y2-103	33.8
915011	Y3-013 1	2.82

Bus #	Bus	MW Impact
915021	Y3-013 2	2.82
915031	Y3-013 3	2.82
916221	Z1-073 E	4.01
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	11.64
919221	AA1-146	13.04
919581	AA2-030	13.04
920272	AA2-123 E	1.83
924471	AB2-096	31.63
925161	AB2-173	2.33
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
926821	AC1-168 C O1	0.85
926822	AC1-168 E O1	5.68
927091	AC1-204 1	55.19
927101	AC1-204 2	55.12
927451	AC1-142A 1	3.2
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	49.05
930501	AB1-091 O1	50.61
930741	AB1-122 1O1	52.99
930751	AB1-122 2O1	56.33
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	1.06
933411	AC2-154 C	1.74
933412	AC2-154 E	2.84

Bus #	Bus	MW Impact
933431	AC2-156 C O1	0.71
933432	AC2-156 E O1	1.16
933911	AD1-013 C	1.37
933912	AD1-013 E	2.19
933931	AD1-016 C	0.69
933932	AD1-016 E	1.13
934101	AD1-039 1	5.19
934111	AD1-039 2	5.52
934401	AD1-064 C O1	2.39
934402	AD1-064 E O1	11.2
934431	AD1-067 C	0.1
934432	AD1-067 E	0.41
934651	AD1-096 C	0.66
934652	AD1-096 E	1.08
934701	AD1-098 C O1	5.12
934702	AD1-098 E O1	3.74
934721	AD1-100 C	14.27
934722	AD1-100 E	66.6
934871	AD1-116 C	0.68
934872	AD1-116 E	1.11
934881	AD1-117 C	3.99
934882	AD1-117 E	2.66
934971	AD1-129 C	0.67
934972	AD1-129 E	0.45
935001	AD1-133 C O1	15.16
935002	AD1-133 E O1	10.11
936291	AD2-038 C O1	1.71
936292	AD2-038 E O1	11.45
936371	AD2-047 C O1	1.56
936372	AD2-047 E O1	16.75
936461	AD2-060	1.83
936511	AD2-066 C O1	6.19
936512	AD2-066 E O1	4.13
936781	AD2-101 C	3.09
936782	AD2-101 E	14.46
936791	AD2-102 C	8.96
936792	AD2-102 E	8.61
936961	AD2-130	0.42
937001	AD2-134 C	2.03
937002	AD2-134 E	8.4
937031	AD2-137 C O1	2.44
937032	AD2-137 E O1	11.43
937051	AD2-140 C O1	2.44
937052	AD2-140 E O1	11.42
937061	AD2-141 C O1	2.43
937062	AD2-141 E O1	11.44
937071	AD2-142 C O1	4.88
937072	AD2-142 E O1	22.85
937121	AD2-148 C O1	2.43
937122	AD2-148 E O1	11.37
937131	AD2-149 C O1	2.43
937132	AD2-149 E O1	11.37

Bus #	Bus	MW Impact
937141	AD2-150 C O1	2.43
937142	AD2-150 E O1	11.37
937181	AD2-155 C O1	2.43
937182	AD2-155 E O1	11.37
937311	AD2-172 C	1.83
937312	AD2-172 E	2.53
937321	AD2-175 C	11.32
937322	AD2-175 E	7.55
937331	AD2-176 C O1	5.48
937332	AD2-176 E O1	3.65
937401	AD2-194 1	5.94
937411	AD2-194 2	5.93
937531	AD2-214 C	0.8
937532	AD2-214 E	0.38
938012	AE1-002 E O1	4.9
938511	AE1-070 1	6.97
938521	AE1-070 2	6.37
938851	AE1-113 C O1	6.63
938852	AE1-113 E O1	20.84
938861	AE1-114 C O1	2.67
938862	AE1-114 E O1	10.22
939051	AE1-134 1	1.01
939061	AE1-134 2	1.01
939321	AE1-163 C O1	4.3
939322	AE1-163 E O1	26.41
939351	AE1-166 C O1	7.6
939352	AE1-166 E O1	7.02
939401	AE1-172 C O1	4.47
939402	AE1-172 E O1	20.95
939641	AE1-194 C	18.96
939642	AE1-194 E	126.86
939651	AE1-195 C	18.96
939652	AE1-195 E	126.86
939691	AE1-199	1.78
939701	AE1-201 C	1.5
939702	AE1-201 E	0.33
939732	AE1-204 E	0.22
939861	AE1-222 1	58.52
939871	AE1-222 2	62.2
939921	AE1-228 C O1	7.48
939922	AE1-228 E O1	4.99
939961	AE1-233 C O1	1.73
939962	AE1-233 E O1	7.16
940101	AE1-252 C O1	7.63
940102	AE1-252 E O1	5.08
AB2-013	AB2-013	11.87
AE1-033	AE1-033	13.47
BLUEG	BLUEG	5.05
CALDERWOOD	CALDERWOOD	0.09
CANNELTON	CANNELTON	0.11
CARR	CARR	0.56
CATAWBA	CATAWBA	0.23

Bus #	Bus	MW Impact
CBM-S1	CBM-S1	0.77
CBM-W1	CBM-W1	20.04
CBM-W2	CBM-W2	37.14
CHEOAH	CHEOAH	0.09
CHILHOWEE	CHILHOWEE	0.03
DEARBORN	DEARBORN	2.24
ELMERSMITH	ELMERSMITH	0.14
G-007	G-007	1.57
GIBSON	GIBSON	0.06
HAMLET	HAMLET	0.87
MEC	MEC	27.58
O-066	O-066	5.3
RENSSELAER	RENSSELAER	0.45
SANTEETLA	SANTEETLA	0.03
TRIMBLE	TRIMBLE	0.59
WEC	WEC	5.97
Z1-043	Z1-043	20.98

Index 11

ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CK T ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADIN G %	POST PROJECT LOADIN G %	AC D C	MW IMPACT
760420	255113	17STILLWEL	NIPS	243219	05DUMONT	AEP	1	AEP_P4_#2978_05DUMONT 765_B	breaker	1409.0	172.48	173.35	DC	48.34

Bus #	Bus	MW Impact
270859	PWR VTR EC;R	13.92
274722	S-055 E	12.95
274724	RIVER EC ;11	4.75
274788	SE CHICAG;5U	1.14
274789	SE CHICAG;6U	1.14
274790	SE CHICAG;7U	1.14
274791	SE CHICAG;8U	1.14
274795	SE CHICAG;2U	1.12
274832	U4-027	12.45
274859	EASYR;U1 E	12.67
274860	EASYR;U2 E	12.67
274888	PILOT HIL;1E	22.3
274890	CAYUG;1U E	15.76
274891	CAYUG;2U E	15.76
275149	KEMPTON ;1E	22.3
290021	O50 E	22.31
290051	GSG-6; E	12.02
290108	LEEDK;1U E	27.92
293061	N-015 E	17.54
293516	O-009 E1	10.45
293517	O-009 E2	5.31
293518	O-009 E3	5.85
293644	O22 E1	11.95
293645	O22 E2	23.2
293715	O-029 E	11.27
293716	O-029 E	6.18
293717	O-029 E	5.68
293771	O-035 E	7.36
294392	P-010 E	22.27
294763	P-046 E	10.8
295109	WESTBROOK E	6.44
295111	SUBLETTE E	2.99
910542	X3-005 E	1.0
914641	Y2-103	51.8
915011	Y3-013 1	4.32
915021	Y3-013 2	4.32
915031	Y3-013 3	4.32
916211	Z1-072 E	5.57
916221	Z1-073 E	6.2
916502	Z1-106 E1	1.45
916504	Z1-106 E2	1.45

Bus #	Bus	MW Impact
916512	Z1-107 E	3.03
916522	Z1-108 E	2.86
918052	AA1-018 E	18.74
919221	AA1-146	20.28
919581	AA2-030	20.28
920272	AA2-123 E	2.81
924471	AB2-096	48.73
925161	AB2-173	3.62
925302	AB2-191 E	1.59
925581	AC1-033 C	1.61
925582	AC1-033 E	10.81
925881	AC1-067 O1	198.49
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	0.88
926361	AC1-111 2	0.88
926371	AC1-111 3	0.88
926381	AC1-111 4	0.88
926391	AC1-111 5	0.88
926401	AC1-111 6	0.88
926431	AC1-114	2.74
926821	AC1-168 C O1	1.32
926822	AC1-168 E O1	8.85
927091	AC1-204 1	83.26
927101	AC1-204 2	83.23
927201	AC1-214 C O1	2.36
927202	AC1-214 E O1	7.51
927451	AC1-142A 1	4.83
927461	AC1-142A 2	4.84
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	75.67
930501	AB1-091 O1	88.22
930741	AB1-122 1O1	82.42
930751	AB1-122 2O1	84.95
932881	AC2-115 1	2.74
932891	AC2-115 2	2.74
932921	AC2-116	0.96
932931	AC2-117	5.81
933341	AC2-147 C	1.0
933342	AC2-147 E	1.64
933411	AC2-154 C	3.03

Bus #	Bus	MW Impact
933412	AC2-154 E	4.94
933431	AC2-156 C O1	1.1
933432	AC2-156 E O1	1.79
933911	AD1-013 C	2.12
933912	AD1-013 E	3.38
933931	AD1-016 C	1.07
933932	AD1-016 E	1.74
934101	AD1-039 1	8.08
934111	AD1-039 2	8.33
934401	AD1-064 C O1	3.69
934402	AD1-064 E O1	17.25
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	7.91
934702	AD1-098 E O1	5.78
934721	AD1-100 C	22.45
934722	AD1-100 E	104.76
934871	AD1-116 C	1.09
934872	AD1-116 E	1.78
934881	AD1-117 C	6.19
934882	AD1-117 E	4.13
934971	AD1-129 C	1.04
934972	AD1-129 E	0.69
935001	AD1-133 C O1	24.06
935002	AD1-133 E O1	16.04
936291	AD2-038 C O1	2.69
936292	AD2-038 E O1	18.02
936371	AD2-047 C O1	2.71
936372	AD2-047 E O1	29.15
936461	AD2-060	3.19
936511	AD2-066 C O1	9.67
936512	AD2-066 E O1	6.45
936781	AD2-101 C	5.9
936782	AD2-101 E	27.62
936791	AD2-102 C	13.85
936792	AD2-102 E	13.3
936961	AD2-130	0.66
937001	AD2-134 C	3.14
937002	AD2-134 E	12.98
937031	AD2-137 C O1	4.08
937032	AD2-137 E O1	19.09
937051	AD2-140 C O1	4.11
937052	AD2-140 E O1	19.25
937061	AD2-141 C O1	4.09
937062	AD2-141 E O1	19.27
937071	AD2-142 C O1	8.22
937072	AD2-142 E O1	38.5
937121	AD2-148 C O1	4.23
937122	AD2-148 E O1	19.82
937131	AD2-149 C O1	4.23

Bus #	Bus	MW Impact
937132	AD2-149 E O1	19.82
937141	AD2-150 C O1	4.23
937142	AD2-150 E O1	19.82
937181	AD2-155 C O1	4.23
937182	AD2-155 E O1	19.82
937311	AD2-172 C	2.83
937312	AD2-172 E	3.91
937321	AD2-175 C	19.73
937322	AD2-175 E	13.15
937331	AD2-176 C O1	8.43
937332	AD2-176 E O1	5.62
937401	AD2-194 1	8.95
937411	AD2-194 2	8.95
937531	AD2-214 C	5.1
937532	AD2-214 E	2.4
938012	AE1-002 E O1	8.18
938511	AE1-070 1	10.52
938521	AE1-070 2	9.62
938851	AE1-113 C O1	10.1
938852	AE1-113 E O1	31.74
938861	AE1-114 C O1	4.14
938862	AE1-114 E O1	15.83
939051	AE1-134 1	1.58
939061	AE1-134 2	1.58
939321	AE1-163 C O1	6.77
939322	AE1-163 E O1	41.57
939351	AE1-166 C O1	11.8
939352	AE1-166 E O1	10.89
939401	AE1-172 C O1	7.21
939402	AE1-172 E O1	33.74
939631	AE1-193 C O1	4.73
939632	AE1-193 E O1	31.63
939641	AE1-194 C	10.24
939642	AE1-194 E	68.55
939651	AE1-195 C	10.24
939652	AE1-195 E	68.55
939681	AE1-198 C O1	23.78
939682	AE1-198 E O1	20.2
939691	AE1-199	2.75
939701	AE1-201 C	2.31
939702	AE1-201 E	0.51
939732	AE1-204 E	0.34
939861	AE1-222 1	91.02
939871	AE1-222 2	93.81
939921	AE1-228 C O1	11.56
939922	AE1-228 E O1	7.71
939961	AE1-233 C O1	2.67
939962	AE1-233 E O1	11.05
940101	AE1-252 C O1	12.28
940102	AE1-252 E O1	8.19
951721	J643	25.73
952581	J740 C	4.3

Bus #	Bus	MW Impact
952582	J740 E	23.28
953871	J847	13.1
954751	J351	434.54
AB2-013	AB2-013	18.6
AE1-033	AE1-033	20.85
BLUEG	BLUEG	1.07
CARR	CARR	0.9
CATAWBA	CATAWBA	0.22
CBM-S1	CBM-S1	3.95
CBM-W1	CBM-W1	35.83
CBM-W2	CBM-W2	81.92
CIN	CIN	3.3
DEARBORN	DEARBORN	4.0
G-007	G-007	2.51
HAMLET	HAMLET	0.96
IPL	IPL	1.12
MEC	MEC	44.69
O-066	O-066	8.44
RENSSELAER	RENSSELAER	0.71
TRIMBLE	TRIMBLE	0.16
WEC	WEC	9.2
Z1-043	Z1-043	32.93

Index 12

ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CK T ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADIN G %	POST PROJECT LOADIN G %	AC D C	MW IMPACT
155288	270677	BURNHAM ;OR	CE	255109	17MUNSTER	NIPS	1	AEP_P4_#2978_05DUMONT 765_B	breaker	1441.0	111.88	112.67	DC	41.79

Bus #	Bus	MW Impact
270859	PWR VTR EC;R	11.75
274722	S-055 E	10.96
274723	RIVER EC ;12	4.32
274792	SE CHICAG;9U	0.96
274793	SE CHICAG;0U	0.96
274794	SE CHICAG;1U	0.96
274795	SE CHICAG;2U	0.96
274832	U4-027	10.31
274859	EASYR;U1 E	10.61
274860	EASYR;U2 E	10.61
274888	PILOT HIL;1E	20.48
274890	CAYUG;1U E	13.4
274891	CAYUG;2U E	13.4
275149	KEMPTON ;1E	20.48
290021	O50 E	18.57
290051	GSG-6; E	10.13
290108	LEEDK;1U E	23.57
293061	N-015 E	14.82
293516	O-009 E1	8.7
293517	O-009 E2	4.42
293518	O-009 E3	4.87
293644	O22 E1	9.26
293645	O22 E2	17.98
293715	O-029 E	9.4
293716	O-029 E	5.15
293717	O-029 E	4.74
293771	O-035 E	6.09
294392	P-010 E	18.82
294763	P-046 E	9.07
295109	WESTBROOK E	5.42
295111	SUBLETTE E	2.5
296125	R-030 C3	3.43
296128	R-030 E3	13.71
296271	R-030 C2	3.39
296272	R-030 E2	13.54
296308	R-030 C1	3.39
296309	R-030 E1	13.54
910541	X3-005 C	0.08
910542	X3-005 E	0.91
914641	Y2-103	43.82
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	4.61
916221	Z1-073 E	5.23
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	8.96
918052	AA1-018 E	16.81
919221	AA1-146	16.93
919581	AA2-030	16.93
920272	AA2-123 E	2.37
924471	AB2-096	41.11
925161	AB2-173	3.02
925302	AB2-191 E	1.34
925881	AC1-067 O1	301.08
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	0.75
926361	AC1-111 2	0.75
926371	AC1-111 3	0.75
926381	AC1-111 4	0.75
926391	AC1-111 5	0.75
926401	AC1-111 6	0.75
926431	AC1-114	2.31
926821	AC1-168 C O1	1.1
926822	AC1-168 E O1	7.36
927091	AC1-204 1	70.09
927101	AC1-204 2	70.14
927201	AC1-214 C O1	1.95
927202	AC1-214 E O1	6.21
927451	AC1-142A 1	4.09
927461	AC1-142A 2	4.09
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	63.73
930501	AB1-091 O1	82.27
930741	AB1-122 1O1	70.02
930751	AB1-122 2O1	70.99
932881	AC2-115 1	2.31
932891	AC2-115 2	2.31

Bus #	Bus	MW Impact
932921	AC2-116	0.81
932931	AC2-117	5.3
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	2.85
933931	AD1-016 C	0.9
933932	AD1-016 E	1.47
934101	AD1-039 1	6.86
934111	AD1-039 2	6.96
934401	AD1-064 C O1	3.11
934402	AD1-064 E O1	14.56
934431	AD1-067 C	0.13
934432	AD1-067 E	0.53
934651	AD1-096 C	0.86
934652	AD1-096 E	1.41
934701	AD1-098 C O1	6.66
934702	AD1-098 E O1	4.86
934721	AD1-100 C	19.54
934722	AD1-100 E	91.19
934871	AD1-116 C	0.98
934872	AD1-116 E	1.6
934881	AD1-117 C	5.18
934882	AD1-117 E	3.46
934971	AD1-129 C	0.88
934972	AD1-129 E	0.58
935001	AD1-133 C O1	20.3
935002	AD1-133 E O1	13.53
936291	AD2-038 C O1	2.33
936292	AD2-038 E O1	15.58
936371	AD2-047 C O1	2.49
936372	AD2-047 E O1	26.77
936461	AD2-060	2.93
936511	AD2-066 C O1	8.14
936512	AD2-066 E O1	5.43
936781	AD2-101 C	4.75
936782	AD2-101 E	22.22
936791	AD2-102 C	11.64
936792	AD2-102 E	11.19
936961	AD2-130	0.56
937001	AD2-134 C	2.65
937002	AD2-134 E	10.94
937031	AD2-137 C O1	3.67
937032	AD2-137 E O1	17.17
937051	AD2-140 C O1	3.72
937052	AD2-140 E O1	17.42
937061	AD2-141 C O1	3.7
937062	AD2-141 E O1	17.44

Bus #	Bus	MW Impact
937071	AD2-142 C O1	7.44
937072	AD2-142 E O1	34.83
937121	AD2-148 C O1	3.94
937122	AD2-148 E O1	18.43
937131	AD2-149 C O1	3.94
937132	AD2-149 E O1	18.43
937141	AD2-150 C O1	3.94
937142	AD2-150 E O1	18.43
937181	AD2-155 C O1	3.94
937182	AD2-155 E O1	18.43
937311	AD2-172 C	2.38
937312	AD2-172 E	3.29
937321	AD2-175 C	18.34
937322	AD2-175 E	12.23
937331	AD2-176 C O1	7.12
937332	AD2-176 E O1	4.75
937401	AD2-194 1	7.54
937411	AD2-194 2	7.54
937531	AD2-214 C	4.24
937532	AD2-214 E	1.99
938012	AE1-002 E O1	7.36
938511	AE1-070 1	8.86
938521	AE1-070 2	8.11
938851	AE1-113 C O1	8.4
938852	AE1-113 E O1	26.41
938861	AE1-114 C O1	3.47
938862	AE1-114 E O1	13.28
939051	AE1-134 1	1.32
939061	AE1-134 2	1.32
939321	AE1-163 C O1	5.85
939322	AE1-163 E O1	35.94
939351	AE1-166 C O1	10.23
939352	AE1-166 E O1	9.45
939401	AE1-172 C O1	6.18
939402	AE1-172 E O1	28.94
939691	AE1-199	2.32
939701	AE1-201 C	1.95
939702	AE1-201 E	0.43
939732	AE1-204 E	0.28
939741	AE1-205 C O1	8.57
939742	AE1-205 E O1	11.84
939861	AE1-222 1	77.33
939871	AE1-222 2	78.4
939921	AE1-228 C O1	9.74
939922	AE1-228 E O1	6.49
939961	AE1-233 C O1	2.26
939962	AE1-233 E O1	9.34
940101	AE1-252 C O1	10.54
940102	AE1-252 E O1	7.02
AB2-013	AB2-013	15.32
AE1-033	AE1-033	17.49
BLUEG	BLUEG	5.47

Bus #	Bus	MW Impact
CALDERWOOD	CALDERWOOD	0.06
CANNELTON	CANNELTON	0.08
CARR	CARR	0.73
CATAWBA	CATAWBA	0.27
CBM-S1	CBM-S1	1.44
CBM-W1	CBM-W1	23.88
CBM-W2	CBM-W2	51.81
CHEOAH	CHEOAH	0.06
CHILHOWEE	CHILHOWEE	0.02
DEARBORN	DEARBORN	2.93
ELMERSMITH	ELMERSMITH	0.08
G-007	G-007	2.03
GIBSON	GIBSON	0.04
HAMLET	HAMLET	1.05
MEC	MEC	36.09
O-066	O-066	6.84
RENSSELAER	RENSSELAER	0.58
SANTEETLA	SANTEETLA	0.02
TRIMBLE	TRIMBLE	0.65
WEC	WEC	7.74
Z1-043	Z1-043	27.27

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
155274	270728	E FRANKFO; B	CE	274750	CRETE EC ;BP	CE	1	COMED_P4_112- 65-BT3-4__	breaker	1399.0	109.05	110.18	DC	43.37

Bus #	Bus	MW Impact
270859	PWR VTR EC;R	12.8
274654	BRAIDWOOD;1U	27.4
274655	BRAIDWOOD;2U	26.22
274660	LASCO STA;1U	25.04
274661	LASCO STA;2U	25.08
274675	JOLIET 29;7U	11.31
274676	JOLIET 29;8U	11.32
274687	WILL CNTY;4U	11.43
274704	KENDALL ;1C	4.02
274705	KENDALL ;1S	2.68
274706	KENDALL ;2C	4.02
274707	KENDALL ;2S	2.68
274722	S-055 E	11.98
274736	ELWOOD EC;9P	3.25
274832	U4-027	11.25
274859	EASYR;U1 E	11.58
274860	EASYR;U2 E	11.58
274861	TOP CROP ;1U	0.48
274862	TOP CROP ;2U	0.92
274888	PILOT HIL;1E	17.21
274890	CAYUG;1U E	13.68
274891	CAYUG;2U E	13.68
275149	KEMPTON ;1E	17.21
290021	O50 E	20.89
290051	GSG-6; E	11.0
290108	LEEDK;1U E	25.57
293061	N-015 E	16.52
293516	O-009 E1	9.49
293517	O-009 E2	4.82
293518	O-009 E3	5.31
293644	O22 E1	12.4
293645	O22 E2	24.06
293715	O-029 E	10.26
293716	O-029 E	5.62
293717	O-029 E	5.17
293771	O-035 E	6.63
294392	P-010 E	20.98
294763	P-046 E	9.89
295109	WESTBROOK E	5.89
295111	SUBLETTE E	2.72

Bus #	Bus	MW Impact
914641	Y2-103	47.9
915011	Y3-013 1	3.99
915021	Y3-013 2	3.99
915031	Y3-013 3	3.99
916211	Z1-072 E	5.02
916221	Z1-073 E	5.68
916502	Z1-106 E1	1.34
916504	Z1-106 E2	1.34
916512	Z1-107 E	2.57
916522	Z1-108 E	2.64
918052	AA1-018 E	16.28
919221	AA1-146	18.49
919581	AA2-030	18.49
920272	AA2-123 E	2.59
924471	AB2-096	44.79
925161	AB2-173	3.3
925302	AB2-191 E	1.46
925581	AC1-033 C	1.45
925582	AC1-033 E	9.74
926311	AC1-109 1	2.01
926321	AC1-109 2	2.01
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	8.06
927091	AC1-204 1	78.74
927101	AC1-204 2	78.6
927201	AC1-214 C O1	2.13
927202	AC1-214 E O1	6.77
927451	AC1-142A 1	4.56
927461	AC1-142A 2	4.56
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	69.46
930501	AB1-091 O1	67.8
930741	AB1-122 1O1	75.1
930751	AB1-122 2O1	80.29

Bus #	Bus	MW Impact
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	1.5
933411	AC2-154 C	2.34
933412	AC2-154 E	3.81
933431	AC2-156 C O1	1.0
933432	AC2-156 E O1	1.64
933911	AD1-013 C	1.94
933912	AD1-013 E	3.09
933931	AD1-016 C	0.98
933932	AD1-016 E	1.6
934101	AD1-039 1	7.36
934111	AD1-039 2	7.87
934401	AD1-064 C O1	3.39
934402	AD1-064 E O1	15.86
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	7.24
934702	AD1-098 E O1	5.29
934721	AD1-100 C	20.04
934722	AD1-100 E	93.51
934871	AD1-116 C	0.95
934872	AD1-116 E	1.55
934881	AD1-117 C	5.65
934882	AD1-117 E	3.77
934971	AD1-129 C	0.96
934972	AD1-129 E	0.64
935001	AD1-133 C O1	21.43
935002	AD1-133 E O1	14.28
936291	AD2-038 C O1	2.42
936292	AD2-038 E O1	16.17
936371	AD2-047 C O1	2.09
936372	AD2-047 E O1	22.5
936461	AD2-060	2.46
936511	AD2-066 C O1	8.76
936512	AD2-066 E O1	5.84
936781	AD2-101 C	3.99
936782	AD2-101 E	18.7
936791	AD2-102 C	12.7
936792	AD2-102 E	12.2
936961	AD2-130	0.6
937001	AD2-134 C	2.88
937002	AD2-134 E	11.88
937031	AD2-137 C O1	3.35
937032	AD2-137 E O1	15.69
937051	AD2-140 C O1	3.33
937052	AD2-140 E O1	15.61
937061	AD2-141 C O1	3.32

Bus #	Bus	MW Impact
937062	AD2-141 E O1	15.63
937071	AD2-142 C O1	6.67
937072	AD2-142 E O1	31.23
937121	AD2-148 C O1	3.26
937122	AD2-148 E O1	15.24
937131	AD2-149 C O1	3.26
937132	AD2-149 E O1	15.24
937141	AD2-150 C O1	3.26
937142	AD2-150 E O1	15.24
937181	AD2-155 C O1	3.26
937182	AD2-155 E O1	15.24
937311	AD2-172 C	2.6
937312	AD2-172 E	3.58
937321	AD2-175 C	15.17
937322	AD2-175 E	10.11
937331	AD2-176 C O1	7.76
937332	AD2-176 E O1	5.17
937401	AD2-194 1	8.47
937411	AD2-194 2	8.45
937531	AD2-214 C	4.62
937532	AD2-214 E	2.18
938012	AE1-002 E O1	6.73
938511	AE1-070 1	9.95
938521	AE1-070 2	9.09
938851	AE1-113 C O1	9.45
938852	AE1-113 E O1	29.72
938861	AE1-114 C O1	3.79
938862	AE1-114 E O1	14.48
939051	AE1-134 1	1.44
939061	AE1-134 2	1.44
939321	AE1-163 C O1	6.07
939322	AE1-163 E O1	37.3
939351	AE1-166 C O1	10.72
939352	AE1-166 E O1	9.89
939401	AE1-172 C O1	6.27
939402	AE1-172 E O1	29.37
939631	AE1-193 C O1	1.03
939632	AE1-193 E O1	6.92
939681	AE1-198 C O1	21.43
939682	AE1-198 E O1	18.21
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	82.94
939871	AE1-222 2	88.67
939921	AE1-228 C O1	10.58
939922	AE1-228 E O1	7.05
939961	AE1-233 C O1	2.45
939962	AE1-233 E O1	10.13
940101	AE1-252 C O1	10.69
940102	AE1-252 E O1	7.13

Bus #	Bus	MW Impact
AB2-013	AB2-013	16.9
AE1-033	AE1-033	19.08
BLUEG	BLUEG	6.65
CALDERWOOD	CALDERWOOD	0.07
CANNELTON	CANNELTON	0.13
CARR	CARR	0.74
CATAWBA	CATAWBA	0.28
CBM-S1	CBM-S1	1.38
CBM-W1	CBM-W1	26.87
CBM-W2	CBM-W2	54.0
CHEOAH	CHEOAH	0.07
CHILHOWEE	CHILHOWEE	0.02
DEARBORN	DEARBORN	2.91
ELMERSMITH	ELMERSMITH	0.15
G-007	G-007	2.06
GIBSON	GIBSON	0.08
HAMLET	HAMLET	1.08
MEC	MEC	39.21
O-066	O-066	6.95
RENSSELAER	RENSSELAER	0.58
SANTEETLA	SANTEETLA	0.02
TRIMBLE	TRIMBLE	0.78
WEC	WEC	8.47
Z1-043	Z1-043	29.78

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
155183	270770	GOODINGS ;4B	CE	270766	GOODINGS ;3B	CE	1	COMED_P4_116-45-L11614_	breaker	1802.0	119.51	120.86	DC	53.43

Bus #	Bus	MW Impact
270859	PWR VTR EC;R	7.96
274722	S-055 E	7.38
274728	ELWOOD EC;5P	4.75
274730	ELWOOD EC;6P	4.75
274732	ELWOOD EC;7P	4.75
274734	ELWOOD EC;8P	4.75
274735	ELWOOD EC;4P	4.72
274736	ELWOOD EC;9P	4.75
274832	U4-027	8.21
274859	EASYR;U1 E	7.73
274860	EASYR;U2 E	7.73
274861	TOP CROP ;1U	0.95
274862	TOP CROP ;2U	1.84
290021	O50 E	25.65
290051	GSG-6; E	6.67
293516	O-009 E1	6.67
293517	O-009 E2	3.39
293518	O-009 E3	3.73
293644	O22 E1	24.77
293645	O22 E2	48.08
293715	O-029 E	7.07
293716	O-029 E	3.88
293717	O-029 E	3.56
293771	O-035 E	4.74
294401	BSHIL;1U E	6.6
294410	BSHIL;2U E	6.6
294763	P-046 E	6.37
295109	WESTBROOK E	3.57
295111	SUBLETTE E	1.82
914641	Y2-103	29.53
915011	Y3-013 1	2.46
915021	Y3-013 2	2.46
915031	Y3-013 3	2.46
916211	Z1-072 E	3.58
916221	Z1-073 E	3.44
916502	Z1-106 E1	0.78
916504	Z1-106 E2	0.78
916522	Z1-108 E	1.6
918052	AA1-018 E	19.58
919221	AA1-146	12.7
919581	AA2-030	12.7

Bus #	Bus	MW Impact
919621	AA2-039 C	1.61
919622	AA2-039 E	10.77
920272	AA2-123 E	1.59
924471	AB2-096	27.85
925161	AB2-173	2.27
925302	AB2-191 E	0.88
925581	AC1-033 C	1.08
925582	AC1-033 E	7.24
926331	AC1-110 1	1.2
926341	AC1-110 2	1.2
926431	AC1-114	1.59
926841	AC1-171 C O1	0.79
926842	AC1-171 E O1	5.24
927091	AC1-204 1	115.11
927101	AC1-204 2	114.46
927201	AC1-214 C O1	1.52
927202	AC1-214 E O1	4.83
927451	AC1-142A 1	3.64
927461	AC1-142A 2	3.67
927511	AC1-113 1	0.79
927521	AC1-113 2	0.79
927531	AC1-185 1	0.48
927541	AC1-185 2	0.48
927551	AC1-185 3	0.48
927561	AC1-185 4	0.48
927571	AC1-185 5	0.48
927581	AC1-185 6	0.48
927591	AC1-185 7	0.48
927601	AC1-185 8	0.48
930481	AB1-089	43.91
930741	AB1-122 1O1	65.29
930751	AB1-122 2O1	95.35
932881	AC2-115 1	1.59
932891	AC2-115 2	1.59
932921	AC2-116	0.56
933341	AC2-147 C	0.61
933342	AC2-147 E	0.99
933911	AD1-013 C	1.17
933912	AD1-013 E	1.87
933931	AD1-016 C	0.61
933932	AD1-016 E	0.99
934051	AD1-031 C O1	2.2
934052	AD1-031 E O1	3.58
934101	AD1-039 1	6.4
934111	AD1-039 2	9.34
934401	AD1-064 C O1	2.11
934402	AD1-064 E O1	9.87
934431	AD1-067 C	0.08
934432	AD1-067 E	0.35
934651	AD1-096 C	0.6
934652	AD1-096 E	0.99
934701	AD1-098 C O1	4.41

Bus #	Bus	MW Impact
934702	AD1-098 E O1	3.22
934871	AD1-116 C	1.14
934872	AD1-116 E	1.86
934881	AD1-117 C	3.74
934882	AD1-117 E	2.49
934971	AD1-129 C	0.6
934972	AD1-129 E	0.4
935001	AD1-133 C O1	14.7
935002	AD1-133 E O1	9.8
936291	AD2-038 C O1	2.98
936292	AD2-038 E O1	19.92
936511	AD2-066 C O1	6.45
936512	AD2-066 E O1	4.3
936791	AD2-102 C	8.1
936792	AD2-102 E	7.78
937001	AD2-134 C	1.74
937002	AD2-134 E	7.2
937311	AD2-172 C	1.67
937312	AD2-172 E	2.31
937331	AD2-176 C O1	4.78
937332	AD2-176 E O1	3.18
937401	AD2-194 1	12.38
937411	AD2-194 2	12.31
937531	AD2-214 C	3.27
937532	AD2-214 E	1.54
938511	AE1-070 1	14.54
938521	AE1-070 2	13.23
938851	AE1-113 C O1	11.61
938852	AE1-113 E O1	36.49
938861	AE1-114 C O1	2.48
938862	AE1-114 E O1	9.49
939051	AE1-134 1	0.99
939061	AE1-134 2	0.99
939321	AE1-163 C O1	7.48
939322	AE1-163 E O1	45.95
939631	AE1-193 C O1	5.36
939632	AE1-193 E O1	35.9
939681	AE1-198 C O1	15.93
939682	AE1-198 E O1	13.53
939691	AE1-199	1.52
939701	AE1-201 C	1.31
939702	AE1-201 E	0.29
939732	AE1-204 E	0.19
939861	AE1-222 1	72.1
939871	AE1-222 2	105.3
939921	AE1-228 C O1	6.37
939922	AE1-228 E O1	4.25
990901	L-005 E	9.75
AB2-013	AB2-013	17.74
AE1-033	AE1-033	12.31
BLUEG	BLUEG	2.87
CANNELTON	CANNELTON	0.0

Bus #	Bus	MW Impact
CARR	CARR	0.36
CATAWBA	CATAWBA	0.06
CBM-S1	CBM-S1	2.13
CBM-W1	CBM-W1	18.07
CBM-W2	CBM-W2	45.91
DEARBORN	DEARBORN	1.82
G-007	G-007	0.99
GIBSON	GIBSON	0.01
HAMLET	HAMLET	0.28
MEC	MEC	29.52
O-066	O-066	3.34
RENSSELAER	RENSSELAER	0.28
TRIMBLE	TRIMBLE	0.35
WEC	WEC	5.37
Z1-043	Z1-043	19.7

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
760684	270771	GREENACRE; T	CE	243229	05OLIVE	AEP	1	AEP_P4_#2978_05DUMONT 765_B	breaker	971.0	114.74	115.6	DC	27.67

Bus #	Bus	MW Impact
270859	PWR VTR EC;R	8.06
274722	S-055 E	7.52
274751	CRETE EC ;1U	1.93
274752	CRETE EC ;2U	1.93
274753	CRETE EC ;3U	1.93
274754	CRETE EC ;4U	1.93
274832	U4-027	7.11
274859	EASYR;U1 E	7.3
274860	EASYR;U2 E	7.3
274888	PILOT HIL;1E	12.4
274890	CAYUG;1U E	8.92
274891	CAYUG;2U E	8.92
275149	KEMPTON ;1E	12.4
290021	O50 E	12.98
290051	GSG-6; E	6.94
290108	LEEDK;1U E	16.14
293061	N-015 E	10.24
293516	O-009 E1	5.99
293517	O-009 E2	3.04
293518	O-009 E3	3.35
293644	O22 E1	7.24
293645	O22 E2	14.06
293715	O-029 E	6.47
293716	O-029 E	3.55
293717	O-029 E	3.26
294392	P-010 E	13.0
294763	P-046 E	6.23
295109	WESTBROOK E	3.72
295111	SUBLETTE E	1.72
910542	X3-005 E	0.52
914641	Y2-103	30.09
915011	Y3-013 1	2.51
915021	Y3-013 2	2.51
915031	Y3-013 3	2.51
916221	Z1-073 E	3.58
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	10.62
919221	AA1-146	11.67

Bus #	Bus	MW Impact
919581	AA2-030	11.67
920272	AA2-123 E	1.63
924471	AB2-096	28.21
925161	AB2-173	2.08
925302	AB2-191 E	0.92
925881	AC1-067 O1	102.57
926311	AC1-109 1	1.27
926321	AC1-109 2	1.27
926331	AC1-110 1	1.27
926341	AC1-110 2	1.27
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	5.08
927091	AC1-204 1	48.76
927101	AC1-204 2	48.73
927201	AC1-214 C O1	0.74
927202	AC1-214 E O1	2.34
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	43.76
930501	AB1-091 O1	49.15
930741	AB1-122 1O1	47.58
930751	AB1-122 2O1	49.75
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	2.75
933431	AC2-156 C O1	0.64
933432	AC2-156 E O1	1.04
933911	AD1-013 C	1.22
933912	AD1-013 E	1.95
933931	AD1-016 C	0.62
933932	AD1-016 E	1.01

Bus #	Bus	MW Impact
934101	AD1-039 1	4.66
934111	AD1-039 2	4.88
934401	AD1-064 C O1	2.13
934402	AD1-064 E O1	9.99
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	4.57
934702	AD1-098 E O1	3.34
934721	AD1-100 C	12.94
934722	AD1-100 E	60.39
934871	AD1-116 C	0.62
934872	AD1-116 E	1.01
934881	AD1-117 C	3.57
934882	AD1-117 E	2.38
934971	AD1-129 C	0.6
934972	AD1-129 E	0.4
935001	AD1-133 C O1	13.73
935002	AD1-133 E O1	9.15
936291	AD2-038 C O1	1.54
936292	AD2-038 E O1	10.32
936371	AD2-047 C O1	1.51
936372	AD2-047 E O1	16.21
936461	AD2-060	1.77
936511	AD2-066 C O1	5.56
936512	AD2-066 E O1	3.71
936781	AD2-101 C	3.17
936782	AD2-101 E	14.84
936791	AD2-102 C	8.0
936792	AD2-102 E	7.69
936961	AD2-130	0.38
937001	AD2-134 C	1.82
937002	AD2-134 E	7.5
937031	AD2-137 C O1	2.31
937032	AD2-137 E O1	10.8
937051	AD2-140 C O1	2.32
937052	AD2-140 E O1	10.87
937061	AD2-141 C O1	2.31
937062	AD2-141 E O1	10.88
937071	AD2-142 C O1	4.64
937072	AD2-142 E O1	21.73
937121	AD2-148 C O1	2.36
937122	AD2-148 E O1	11.04
937131	AD2-149 C O1	2.36
937132	AD2-149 E O1	11.04
937141	AD2-150 C O1	2.36
937142	AD2-150 E O1	11.04
937181	AD2-155 C O1	2.36
937182	AD2-155 E O1	11.04
937311	AD2-172 C	1.64
937312	AD2-172 E	2.26

Bus #	Bus	MW Impact
937321	AD2-175 C	10.99
937322	AD2-175 E	7.33
937331	AD2-176 C O1	4.89
937332	AD2-176 E O1	3.26
937401	AD2-194 1	5.24
937411	AD2-194 2	5.24
937531	AD2-214 C	2.92
937532	AD2-214 E	1.37
938012	AE1-002 E O1	4.63
938511	AE1-070 1	6.16
938521	AE1-070 2	5.63
938851	AE1-113 C O1	5.88
938852	AE1-113 E O1	18.47
938861	AE1-114 C O1	2.39
938862	AE1-114 E O1	9.13
939051	AE1-134 1	0.91
939061	AE1-134 2	0.91
939321	AE1-163 C O1	3.87
939322	AE1-163 E O1	23.79
939351	AE1-166 C O1	6.84
939352	AE1-166 E O1	6.31
939401	AE1-172 C O1	4.1
939402	AE1-172 E O1	19.18
939641	AE1-194 C	10.88
939642	AE1-194 E	72.84
939651	AE1-195 C	10.88
939652	AE1-195 E	72.84
939691	AE1-199	1.59
939701	AE1-201 C	1.34
939702	AE1-201 E	0.29
939732	AE1-204 E	0.2
939861	AE1-222 1	52.55
939871	AE1-222 2	54.95
939921	AE1-228 C O1	6.68
939922	AE1-228 E O1	4.45
939961	AE1-233 C O1	1.55
939962	AE1-233 E O1	6.39
940101	AE1-252 C O1	6.98
940102	AE1-252 E O1	4.65
951721	J643	15.51
952581	J740 C	3.4
952582	J740 E	18.42
953871	J847	8.38
AB2-013	AB2-013	10.64
AE1-033	AE1-033	12.03
BLUEG	BLUEG	2.86
CANNELTON	CANNELTON	0.0
CARR	CARR	0.5
CATAWBA	CATAWBA	0.16
CBM-S1	CBM-S1	1.36
CBM-W1	CBM-W1	19.98
CBM-W2	CBM-W2	38.44

Bus #	Bus	MW Impact
CIN	CIN	0.12
DEARBORN	DEARBORN	2.29
G-007	G-007	1.38
HAMLET	HAMLET	0.65
MEC	MEC	25.05
O-066	O-066	4.65
RENSSELAER	RENSSELAER	0.39
SANTEETLA	SANTEETLA	0.0
TRIMBLE	TRIMBLE	0.34
WEC	WEC	5.32
Z1-043	Z1-043	18.82

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
155118	270886	ST JOHN ; T	CE	255104	17GREEN_ACRE	NIPS	1	COMED_P4_023-65-BT2-3__	breaker	1091.0	109.88	110.86	DC	30.71

Bus #	Bus	MW Impact
270859	PWR VTR EC;R	9.04
274654	BRAIDWOOD;1U	19.05
274655	BRAIDWOOD;2U	18.24
274661	LASCO STA;2U	17.6
274687	WILL CNTY;4U	8.03
274704	KENDALL ;1C	2.81
274705	KENDALL ;1S	1.88
274706	KENDALL ;2C	2.81
274707	KENDALL ;2S	1.88
274722	S-055 E	8.45
274751	CRETE EC ;1U	3.36
274752	CRETE EC ;2U	3.36
274753	CRETE EC ;3U	3.36
274754	CRETE EC ;4U	3.36
274859	EASYR;U1 E	8.17
274860	EASYR;U2 E	8.17
274861	TOP CROP ;1U	0.33
274862	TOP CROP ;2U	0.63
274888	PILOT HIL;1E	12.81
274890	CAYUG;1U E	9.74
274891	CAYUG;2U E	9.74
275149	KEMPTON ;1E	12.81
290021	O50 E	14.65
290051	GSG-6; E	7.78
290108	LEEDK;1U E	18.09
293061	N-015 E	11.61
293516	O-009 E1	6.69
293517	O-009 E2	3.4
293518	O-009 E3	3.74
293644	O22 E1	8.5
293645	O22 E2	16.51
293715	O-029 E	7.24
293716	O-029 E	3.97
293717	O-029 E	3.65
294392	P-010 E	14.75
294763	P-046 E	6.98
295109	WESTBROOK E	4.16
295111	SUBLETTE E	1.92
914641	Y2-103	33.8
915011	Y3-013 1	2.82

Bus #	Bus	MW Impact
915021	Y3-013 2	2.82
915031	Y3-013 3	2.82
916221	Z1-073 E	4.01
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	11.64
919221	AA1-146	13.04
919581	AA2-030	13.04
920272	AA2-123 E	1.83
924471	AB2-096	31.63
925161	AB2-173	2.33
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
926821	AC1-168 C O1	0.85
926822	AC1-168 E O1	5.68
927091	AC1-204 1	55.19
927101	AC1-204 2	55.12
927451	AC1-142A 1	3.2
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	49.05
930501	AB1-091 O1	50.61
930741	AB1-122 1O1	52.99
930751	AB1-122 2O1	56.33
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	1.06
933411	AC2-154 C	1.74
933412	AC2-154 E	2.84

Bus #	Bus	MW Impact
933431	AC2-156 C O1	0.71
933432	AC2-156 E O1	1.16
933911	AD1-013 C	1.37
933912	AD1-013 E	2.19
933931	AD1-016 C	0.69
933932	AD1-016 E	1.13
934101	AD1-039 1	5.19
934111	AD1-039 2	5.52
934401	AD1-064 C O1	2.39
934402	AD1-064 E O1	11.2
934431	AD1-067 C	0.1
934432	AD1-067 E	0.41
934651	AD1-096 C	0.66
934652	AD1-096 E	1.08
934701	AD1-098 C O1	5.12
934702	AD1-098 E O1	3.74
934721	AD1-100 C	14.27
934722	AD1-100 E	66.6
934871	AD1-116 C	0.68
934872	AD1-116 E	1.11
934881	AD1-117 C	3.99
934882	AD1-117 E	2.66
934971	AD1-129 C	0.67
934972	AD1-129 E	0.45
935001	AD1-133 C O1	15.16
935002	AD1-133 E O1	10.11
936291	AD2-038 C O1	1.71
936292	AD2-038 E O1	11.45
936371	AD2-047 C O1	1.56
936372	AD2-047 E O1	16.75
936461	AD2-060	1.83
936511	AD2-066 C O1	6.19
936512	AD2-066 E O1	4.13
936781	AD2-101 C	3.09
936782	AD2-101 E	14.46
936791	AD2-102 C	8.96
936792	AD2-102 E	8.61
936961	AD2-130	0.42
937001	AD2-134 C	2.03
937002	AD2-134 E	8.4
937031	AD2-137 C O1	2.44
937032	AD2-137 E O1	11.43
937051	AD2-140 C O1	2.44
937052	AD2-140 E O1	11.42
937061	AD2-141 C O1	2.43
937062	AD2-141 E O1	11.44
937071	AD2-142 C O1	4.88
937072	AD2-142 E O1	22.85
937121	AD2-148 C O1	2.43
937122	AD2-148 E O1	11.37
937131	AD2-149 C O1	2.43
937132	AD2-149 E O1	11.37

Bus #	Bus	MW Impact
937141	AD2-150 C O1	2.43
937142	AD2-150 E O1	11.37
937181	AD2-155 C O1	2.43
937182	AD2-155 E O1	11.37
937311	AD2-172 C	1.83
937312	AD2-172 E	2.53
937321	AD2-175 C	11.32
937322	AD2-175 E	7.55
937331	AD2-176 C O1	5.48
937332	AD2-176 E O1	3.65
937401	AD2-194 1	5.94
937411	AD2-194 2	5.93
937531	AD2-214 C	0.8
937532	AD2-214 E	0.38
938012	AE1-002 E O1	4.9
938511	AE1-070 1	6.97
938521	AE1-070 2	6.37
938851	AE1-113 C O1	6.63
938852	AE1-113 E O1	20.84
938861	AE1-114 C O1	2.67
938862	AE1-114 E O1	10.22
939051	AE1-134 1	1.01
939061	AE1-134 2	1.01
939321	AE1-163 C O1	4.3
939322	AE1-163 E O1	26.41
939351	AE1-166 C O1	7.6
939352	AE1-166 E O1	7.02
939401	AE1-172 C O1	4.47
939402	AE1-172 E O1	20.95
939641	AE1-194 C	18.96
939642	AE1-194 E	126.86
939651	AE1-195 C	18.96
939652	AE1-195 E	126.86
939691	AE1-199	1.78
939701	AE1-201 C	1.5
939702	AE1-201 E	0.33
939732	AE1-204 E	0.22
939861	AE1-222 1	58.52
939871	AE1-222 2	62.2
939921	AE1-228 C O1	7.48
939922	AE1-228 E O1	4.99
939961	AE1-233 C O1	1.73
939962	AE1-233 E O1	7.16
940101	AE1-252 C O1	7.63
940102	AE1-252 E O1	5.08
AB2-013	AB2-013	11.87
AE1-033	AE1-033	13.47
BLUEG	BLUEG	5.05
CALDERWOOD	CALDERWOOD	0.09
CANNELTON	CANNELTON	0.11
CARR	CARR	0.56
CATAWBA	CATAWBA	0.23

Bus #	Bus	MW Impact
CBM-S1	CBM-S1	0.77
CBM-W1	CBM-W1	20.04
CBM-W2	CBM-W2	37.14
CHEOAH	CHEOAH	0.09
CHILHOWEE	CHILHOWEE	0.03
DEARBORN	DEARBORN	2.24
ELMERSMITH	ELMERSMITH	0.14
G-007	G-007	1.57
GIBSON	GIBSON	0.06
HAMLET	HAMLET	0.87
MEC	MEC	27.58
O-066	O-066	5.3
RENSSELAER	RENSSELAER	0.45
SANTEETLA	SANTEETLA	0.03
TRIMBLE	TRIMBLE	0.59
WEC	WEC	5.97
Z1-043	Z1-043	20.98

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
154978	270926	WILTON ; B	CE	275232	WILTON ;3M	CE	1	COMED_P4_112-65-BT5-6__	breaker	1379.0	165.2	165.81	DC	51.73

Bus #	Bus	MW Impact
270859	PWR VTR EC;R	14.81
274722	S-055 E	13.75
274772	LINCOLN ;3U	3.36
274773	LINCOLN ;4U	3.36
274774	LINCOLN ;5U	3.36
274775	LINCOLN ;6U	3.36
274776	LINCOLN ;7U	3.36
274777	LINCOLN ;8U	3.36
274859	EASYR;U1 E	13.46
274860	EASYR;U2 E	13.46
274888	PILOT HIL;1E	23.62
274890	CAYUG;1U E	20.25
274891	CAYUG;2U E	20.25
275149	KEMPTON ;1E	23.62
290021	O50 E	23.75
290051	GSG-6; E	12.8
290108	LEEDK;1U E	29.74
293061	N-015 E	19.44
293516	O-009 E1	1.0
293517	O-009 E2	0.51
293518	O-009 E3	0.56
293644	O22 E1	12.55
293645	O22 E2	24.37
293715	O-029 E	11.98
293716	O-029 E	6.57
293717	O-029 E	6.04
294392	P-010 E	24.69
294763	P-046 E	11.48
295109	WESTBROOK E	6.85
295111	SUBLETTE E	3.18
296125	R-030 C3	4.98
296128	R-030 E3	19.93
296271	R-030 C2	4.92
296272	R-030 E2	19.7
296308	R-030 C1	4.92
296309	R-030 E1	19.7
910542	X3-005 E	0.9
914641	Y2-103	55.02
915011	Y3-013 1	4.58
915021	Y3-013 2	4.58
915031	Y3-013 3	4.58

Bus #	Bus	MW Impact
916221	Z1-073 E	6.61
916502	Z1-106 E1	1.55
916504	Z1-106 E2	1.55
916512	Z1-107 E	3.17
916522	Z1-108 E	3.04
917502	Z2-087 E	25.76
918052	AA1-018 E	20.13
919221	AA1-146	21.54
919581	AA2-030	21.54
920272	AA2-123 E	2.99
924041	AB2-047 C O1	4.75
924042	AB2-047 E O1	31.79
924471	AB2-096	51.84
925161	AB2-173	3.84
925302	AB2-191 E	1.7
925881	AC1-067 O1	168.51
926311	AC1-109 1	2.34
926321	AC1-109 2	2.34
926331	AC1-110 1	2.33
926341	AC1-110 2	2.33
926351	AC1-111 1	0.94
926361	AC1-111 2	0.94
926371	AC1-111 3	0.94
926381	AC1-111 4	0.94
926391	AC1-111 5	0.94
926401	AC1-111 6	0.94
926431	AC1-114	2.91
926821	AC1-168 C O1	1.43
926822	AC1-168 E O1	9.59
927091	AC1-204 1	88.93
927101	AC1-204 2	88.93
927451	AC1-142A 1	5.12
927461	AC1-142A 2	5.12
927511	AC1-113 1	1.46
927521	AC1-113 2	1.46
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	80.5
930501	AB1-091 O1	93.97
930741	AB1-122 1O1	89.35
930751	AB1-122 2O1	90.31
932881	AC2-115 1	2.91
932891	AC2-115 2	2.91
932921	AC2-116	1.02
932931	AC2-117	6.52
933341	AC2-147 C	1.07

Bus #	Bus	MW Impact
933342	AC2-147 E	1.74
933411	AC2-154 C	3.21
933412	AC2-154 E	5.23
933431	AC2-156 C O1	1.17
933432	AC2-156 E O1	1.91
933911	AD1-013 C	2.25
933912	AD1-013 E	3.6
933931	AD1-016 C	1.14
933932	AD1-016 E	1.85
934101	AD1-039 1	8.76
934111	AD1-039 2	8.85
934401	AD1-064 C O1	3.92
934402	AD1-064 E O1	18.37
934431	AD1-067 C	0.16
934432	AD1-067 E	0.68
934651	AD1-096 C	1.09
934652	AD1-096 E	1.78
934701	AD1-098 C O1	8.43
934702	AD1-098 E O1	6.15
934721	AD1-100 C	29.44
934722	AD1-100 E	137.37
934871	AD1-116 C	1.17
934872	AD1-116 E	1.91
934881	AD1-117 C	6.58
934882	AD1-117 E	4.39
934971	AD1-129 C	1.11
934972	AD1-129 E	0.74
935001	AD1-133 C O1	27.42
935002	AD1-133 E O1	18.28
936291	AD2-038 C O1	2.88
936292	AD2-038 E O1	19.29
936371	AD2-047 C O1	2.87
936372	AD2-047 E O1	30.87
936461	AD2-060	3.37
936511	AD2-066 C O1	10.36
936512	AD2-066 E O1	6.91
936781	AD2-101 C	5.83
936782	AD2-101 E	27.31
936791	AD2-102 C	14.71
936792	AD2-102 E	14.14
936961	AD2-130	0.69
937001	AD2-134 C	3.35
937002	AD2-134 E	13.82
937031	AD2-137 C O1	7.17
937032	AD2-137 E O1	33.59
937051	AD2-140 C O1	7.53
937052	AD2-140 E O1	35.28
937061	AD2-141 C O1	7.49
937062	AD2-141 E O1	35.32
937071	AD2-142 C O1	15.07
937072	AD2-142 E O1	70.55
937121	AD2-148 C O1	4.51

Bus #	Bus	MW Impact
937122	AD2-148 E O1	21.13
937131	AD2-149 C O1	4.51
937132	AD2-149 E O1	21.13
937141	AD2-150 C O1	4.51
937142	AD2-150 E O1	21.13
937181	AD2-155 C O1	4.51
937182	AD2-155 E O1	21.13
937311	AD2-172 C	3.01
937312	AD2-172 E	4.16
937321	AD2-175 C	21.03
937322	AD2-175 E	14.02
937331	AD2-176 C O1	8.97
937332	AD2-176 E O1	5.98
937401	AD2-194 1	9.56
937411	AD2-194 2	9.56
938012	AE1-002 E O1	14.4
938511	AE1-070 1	11.24
938521	AE1-070 2	10.28
938851	AE1-113 C O1	10.75
938852	AE1-113 E O1	33.78
938861	AE1-114 C O1	4.4
938862	AE1-114 E O1	16.84
939051	AE1-134 1	1.67
939061	AE1-134 2	1.67
939321	AE1-163 C O1	7.24
939322	AE1-163 E O1	44.49
939351	AE1-166 C O1	14.52
939352	AE1-166 E O1	13.41
939401	AE1-172 C O1	9.52
939402	AE1-172 E O1	44.57
939691	AE1-199	2.93
939701	AE1-201 C	2.45
939702	AE1-201 E	0.54
939732	AE1-204 E	0.36
939741	AE1-205 C O1	12.48
939742	AE1-205 E O1	17.23
939861	AE1-222 1	98.68
939871	AE1-222 2	99.73
939921	AE1-228 C O1	12.31
939922	AE1-228 E O1	8.21
939961	AE1-233 C O1	2.85
939962	AE1-233 E O1	11.77
940101	AE1-252 C O1	16.23
940102	AE1-252 E O1	10.82
AB2-013	AB2-013	19.85
AE1-033	AE1-033	22.1
BLUEG	BLUEG	7.86
CALDERWOOD	CALDERWOOD	0.1
CANNELTON	CANNELTON	0.09
CARR	CARR	0.96
CATAWBA	CATAWBA	0.38
CBM-S1	CBM-S1	1.85

Bus #	Bus	MW Impact
CBM-W1	CBM-W1	37.32
CBM-W2	CBM-W2	71.02
CHEOAH	CHEOAH	0.1
CHILHOWEE	CHILHOWEE	0.03
DEARBORN	DEARBORN	2.9
ELMERSMITH	ELMERSMITH	0.07
G-007	G-007	2.69
GIBSON	GIBSON	0.0
HAMLET	HAMLET	1.46
MEC	MEC	46.58
O-066	O-066	9.06
RENSSELAER	RENSSELAER	0.76
SANTEETLA	SANTEETLA	0.03
TRIMBLE	TRIMBLE	0.94
WEC	WEC	9.75
Z1-043	Z1-043	35.51

Index 18

ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC DC	MW IMPACT
154980	270927	WILTON	CE	275233	WILTON	CE	1	COMED_P4_112-65-BT2-3__	breaker	1379.0	162.64	163.55	DC	52.85

Bus #	Bus	MW Impact
270859	PWR VTR EC;R	15.13
274722	S-055 E	14.05
274772	LINCOLN ;3U	3.45
274773	LINCOLN ;4U	3.45
274774	LINCOLN ;5U	3.45
274775	LINCOLN ;6U	3.45
274776	LINCOLN ;7U	3.45
274777	LINCOLN ;8U	3.45
274832	U4-027	6.82
274859	EASYR;U1 E	13.75
274860	EASYR;U2 E	13.75
274888	PILOT HIL;1E	24.11
274890	CAYUG;1U E	20.66
274891	CAYUG;2U E	20.66
275149	KEMPTON ;1E	24.11
290021	O50 E	24.25
290051	GSG-6; E	13.07
290108	LEEDK;1U E	30.37
293061	N-015 E	19.85
293516	O-009 E1	11.37
293517	O-009 E2	5.78
293518	O-009 E3	6.36
293644	O22 E1	12.82
293645	O22 E2	24.89
293715	O-029 E	12.24
293716	O-029 E	6.71
293717	O-029 E	6.17
293771	O-035 E	8.08
294392	P-010 E	25.21
294763	P-046 E	11.72
295109	WESTBROOK E	7.0
295111	SUBLETTE E	3.24
296125	R-030 C3	5.08
296128	R-030 E3	20.34
296271	R-030 C2	5.02
296272	R-030 E2	20.09
296308	R-030 C1	5.02
296309	R-030 E1	20.09
910542	X3-005 E	0.91
914641	Y2-103	56.19
915011	Y3-013 1	4.68

Bus #	Bus	MW Impact
915021	Y3-013 2	4.68
915031	Y3-013 3	4.68
916211	Z1-072 E	6.11
916221	Z1-073 E	6.75
916502	Z1-106 E1	1.58
916504	Z1-106 E2	1.58
916512	Z1-107 E	3.23
916522	Z1-108 E	3.11
917502	Z2-087 E	26.28
918052	AA1-018 E	20.57
919221	AA1-146	22.0
919581	AA2-030	22.0
920272	AA2-123 E	3.06
924041	AB2-047 C O1	4.85
924042	AB2-047 E O1	32.43
924471	AB2-096	52.94
925161	AB2-173	3.92
925302	AB2-191 E	1.73
925881	AC1-067 O1	172.23
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	0.96
926361	AC1-111 2	0.96
926371	AC1-111 3	0.96
926381	AC1-111 4	0.96
926391	AC1-111 5	0.96
926401	AC1-111 6	0.96
926431	AC1-114	2.97
926821	AC1-168 C O1	1.46
926822	AC1-168 E O1	9.79
927091	AC1-204 1	90.83
927101	AC1-204 2	90.83
927201	AC1-214 C O1	2.59
927202	AC1-214 E O1	8.24
927451	AC1-142A 1	5.23
927461	AC1-142A 2	5.23
927511	AC1-113 1	1.49
927521	AC1-113 2	1.49
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	82.21
930501	AB1-091 O1	95.92
930741	AB1-122 1O1	91.25
930751	AB1-122 2O1	92.24

Bus #	Bus	MW Impact
932881	AC2-115 1	2.97
932891	AC2-115 2	2.97
932921	AC2-116	1.04
932931	AC2-117	6.67
933341	AC2-147 C	1.09
933342	AC2-147 E	1.78
933411	AC2-154 C	3.27
933412	AC2-154 E	5.34
933431	AC2-156 C O1	1.2
933432	AC2-156 E O1	1.95
933911	AD1-013 C	2.3
933912	AD1-013 E	3.68
933931	AD1-016 C	1.16
933932	AD1-016 E	1.89
934101	AD1-039 1	8.94
934111	AD1-039 2	9.04
934401	AD1-064 C O1	4.01
934402	AD1-064 E O1	18.76
934431	AD1-067 C	0.16
934432	AD1-067 E	0.69
934651	AD1-096 C	1.11
934652	AD1-096 E	1.82
934701	AD1-098 C O1	8.6
934702	AD1-098 E O1	6.28
934721	AD1-100 C	30.02
934722	AD1-100 E	140.09
934871	AD1-116 C	1.2
934872	AD1-116 E	1.95
934881	AD1-117 C	6.72
934882	AD1-117 E	4.48
934971	AD1-129 C	1.13
934972	AD1-129 E	0.75
935001	AD1-133 C O1	27.99
935002	AD1-133 E O1	18.66
936291	AD2-038 C O1	2.94
936292	AD2-038 E O1	19.7
936371	AD2-047 C O1	2.93
936372	AD2-047 E O1	31.51
936461	AD2-060	3.44
936511	AD2-066 C O1	10.58
936512	AD2-066 E O1	7.05
936781	AD2-101 C	5.95
936782	AD2-101 E	27.88
936791	AD2-102 C	15.03
936792	AD2-102 E	14.44
936961	AD2-130	0.7
937001	AD2-134 C	3.42
937002	AD2-134 E	14.12
937031	AD2-137 C O1	7.31
937032	AD2-137 E O1	34.21
937051	AD2-140 C O1	7.67
937052	AD2-140 E O1	35.93

Bus #	Bus	MW Impact
937061	AD2-141 C O1	7.63
937062	AD2-141 E O1	35.97
937071	AD2-142 C O1	15.35
937072	AD2-142 E O1	71.86
937121	AD2-148 C O1	4.61
937122	AD2-148 E O1	21.57
937131	AD2-149 C O1	4.61
937132	AD2-149 E O1	21.57
937141	AD2-150 C O1	4.61
937142	AD2-150 E O1	21.57
937181	AD2-155 C O1	4.61
937182	AD2-155 E O1	21.57
937311	AD2-172 C	3.08
937312	AD2-172 E	4.25
937321	AD2-175 C	21.46
937322	AD2-175 E	14.31
937331	AD2-176 C O1	9.17
937332	AD2-176 E O1	6.11
937401	AD2-194 1	9.77
937411	AD2-194 2	9.77
938012	AE1-002 E O1	14.67
938511	AE1-070 1	11.48
938521	AE1-070 2	10.5
938851	AE1-113 C O1	10.98
938852	AE1-113 E O1	34.5
938861	AE1-114 C O1	4.5
938862	AE1-114 E O1	17.19
939051	AE1-134 1	1.71
939061	AE1-134 2	1.71
939321	AE1-163 C O1	7.4
939322	AE1-163 E O1	45.45
939351	AE1-166 C O1	14.82
939352	AE1-166 E O1	13.68
939401	AE1-172 C O1	9.71
939402	AE1-172 E O1	45.45
939691	AE1-199	2.99
939701	AE1-201 C	2.51
939702	AE1-201 E	0.55
939732	AE1-204 E	0.37
939741	AE1-205 C O1	12.73
939742	AE1-205 E O1	17.58
939861	AE1-222 1	100.77
939871	AE1-222 2	101.86
939921	AE1-228 C O1	12.57
939922	AE1-228 E O1	8.38
939961	AE1-233 C O1	2.91
939962	AE1-233 E O1	12.02
940101	AE1-252 C O1	16.55
940102	AE1-252 E O1	11.03
AB2-013	AB2-013	20.27
AE1-033	AE1-033	22.58
BLUEG	BLUEG	8.03

Bus #	Bus	MW Impact
CALDERWOOD	CALDERWOOD	0.1
CANNELTON	CANNELTON	0.09
CARR	CARR	0.98
CATAWBA	CATAWBA	0.39
CBM-S1	CBM-S1	1.88
CBM-W1	CBM-W1	38.11
CBM-W2	CBM-W2	72.48
CHEOAH	CHEOAH	0.1
CHILHOWEE	CHILHOWEE	0.03
DEARBORN	DEARBORN	2.96
ELMERSMITH	ELMERSMITH	0.07
G-007	G-007	2.75
GIBSON	GIBSON	0.0
HAMLET	HAMLET	1.49
MEC	MEC	47.56
O-066	O-066	9.26
RENSSELAER	RENSSELAER	0.77
SANTEETLA	SANTEETLA	0.03
TRIMBLE	TRIMBLE	0.96
WEC	WEC	9.96
Z1-043	Z1-043	36.25

Index 19

ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC DC	MW IMPACT
155013	274750	CRETE EC ;BP	CE	255112	17STJOHN	NIPS	1	COMED_P4_112-65-BT3-4__	breaker	1399.0	121.94	123.18	DC	42.81

Bus #	Bus	MW Impact
270859	PWR VTR EC;R	12.64
274654	BRAIDWOOD;1U	27.1
274655	BRAIDWOOD;2U	25.93
274661	LASCO STA;2U	24.8
274687	WILL CNTY;4U	11.3
274704	KENDALL ;1C	3.98
274705	KENDALL ;1S	2.65
274706	KENDALL ;2C	3.98
274707	KENDALL ;2S	2.65
274722	S-055 E	11.83
274751	CRETE EC ;1U	5.76
274752	CRETE EC ;2U	5.76
274753	CRETE EC ;3U	5.76
274754	CRETE EC ;4U	5.76
274859	EASYR;U1 E	11.42
274860	EASYR;U2 E	11.42
274861	TOP CROP ;1U	0.47
274862	TOP CROP ;2U	0.91
274888	PILOT HIL;1E	16.99
274890	CAYUG;1U E	13.49
274891	CAYUG;2U E	13.49
275149	KEMPTON ;1E	16.99
290021	O50 E	20.63
290051	GSG-6; E	10.86
290108	LEEDK;1U E	25.25
293061	N-015 E	16.33
293516	O-009 E1	9.36
293517	O-009 E2	4.75
293518	O-009 E3	5.24
293644	O22 E1	12.27
293645	O22 E2	23.81
293715	O-029 E	10.12
293716	O-029 E	5.55
293717	O-029 E	5.1
294392	P-010 E	20.74
294763	P-046 E	9.76
295109	WESTBROOK E	5.81
295111	SUBLETTE E	2.69
914641	Y2-103	47.33
915011	Y3-013 1	3.94
915021	Y3-013 2	3.94

Bus #	Bus	MW Impact
915031	Y3-013 3	3.94
916221	Z1-073 E	5.6
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	16.07
919221	AA1-146	18.24
919581	AA2-030	18.24
920272	AA2-123 E	2.55
924471	AB2-096	44.23
925161	AB2-173	3.25
925302	AB2-191 E	1.44
926311	AC1-109 1	1.99
926321	AC1-109 2	1.99
926331	AC1-110 1	1.99
926341	AC1-110 2	1.99
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	2.48
926821	AC1-168 C O1	1.18
926822	AC1-168 E O1	7.95
927091	AC1-204 1	77.85
927101	AC1-204 2	77.71
927451	AC1-142A 1	4.51
927461	AC1-142A 2	4.51
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	68.58
930501	AB1-091 O1	66.92
930741	AB1-122 1O1	74.18
930751	AB1-122 2O1	79.37
932881	AC2-115 1	2.48
932891	AC2-115 2	2.48
932921	AC2-116	0.87
933341	AC2-147 C	0.91
933342	AC2-147 E	1.48
933411	AC2-154 C	2.31
933412	AC2-154 E	3.76
933431	AC2-156 C O1	0.99

Bus #	Bus	MW Impact
933432	AC2-156 E O1	1.62
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	7.27
934111	AD1-039 2	7.78
934401	AD1-064 C O1	3.35
934402	AD1-064 E O1	15.66
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	7.15
934702	AD1-098 E O1	5.22
934721	AD1-100 C	19.8
934722	AD1-100 E	92.39
934871	AD1-116 C	0.94
934872	AD1-116 E	1.53
934881	AD1-117 C	5.58
934882	AD1-117 E	3.72
934971	AD1-129 C	0.94
934972	AD1-129 E	0.63
935001	AD1-133 C O1	21.14
935002	AD1-133 E O1	14.09
936291	AD2-038 C O1	2.39
936292	AD2-038 E O1	15.96
936371	AD2-047 C O1	2.06
936372	AD2-047 E O1	22.2
936461	AD2-060	2.43
936511	AD2-066 C O1	8.65
936512	AD2-066 E O1	5.76
936781	AD2-101 C	3.94
936782	AD2-101 E	18.44
936791	AD2-102 C	12.53
936792	AD2-102 E	12.04
936961	AD2-130	0.59
937001	AD2-134 C	2.84
937002	AD2-134 E	11.73
937031	AD2-137 C O1	3.31
937032	AD2-137 E O1	15.49
937051	AD2-140 C O1	3.29
937052	AD2-140 E O1	15.42
937061	AD2-141 C O1	3.27
937062	AD2-141 E O1	15.43
937071	AD2-142 C O1	6.59
937072	AD2-142 E O1	30.83
937121	AD2-148 C O1	3.21
937122	AD2-148 E O1	15.04
937131	AD2-149 C O1	3.21
937132	AD2-149 E O1	15.04
937141	AD2-150 C O1	3.21

Bus #	Bus	MW Impact
937142	AD2-150 E O1	15.04
937181	AD2-155 C O1	3.21
937182	AD2-155 E O1	15.04
937311	AD2-172 C	2.56
937312	AD2-172 E	3.54
937321	AD2-175 C	14.97
937322	AD2-175 E	9.98
937331	AD2-176 C O1	7.66
937332	AD2-176 E O1	5.11
937401	AD2-194 1	8.37
937411	AD2-194 2	8.36
937531	AD2-214 C	1.12
937532	AD2-214 E	0.53
938012	AE1-002 E O1	6.64
938511	AE1-070 1	9.84
938521	AE1-070 2	8.98
938851	AE1-113 C O1	9.34
938852	AE1-113 E O1	29.35
938861	AE1-114 C O1	3.74
938862	AE1-114 E O1	14.29
939051	AE1-134 1	1.42
939061	AE1-134 2	1.42
939321	AE1-163 C O1	5.99
939322	AE1-163 E O1	36.82
939351	AE1-166 C O1	10.59
939352	AE1-166 E O1	9.78
939401	AE1-172 C O1	6.19
939402	AE1-172 E O1	28.98
939641	AE1-194 C	32.45
939642	AE1-194 E	217.15
939651	AE1-195 C	32.45
939652	AE1-195 E	217.15
939691	AE1-199	2.48
939701	AE1-201 C	2.1
939702	AE1-201 E	0.46
939732	AE1-204 E	0.31
939861	AE1-222 1	81.92
939871	AE1-222 2	87.66
939921	AE1-228 C O1	10.44
939922	AE1-228 E O1	6.96
939961	AE1-233 C O1	2.42
939962	AE1-233 E O1	10.0
940101	AE1-252 C O1	10.55
940102	AE1-252 E O1	7.03
AB2-013	AB2-013	16.66
AE1-033	AE1-033	18.83
BLUEG	BLUEG	7.46
CALDERWOOD	CALDERWOOD	0.15
CANNELTON	CANNELTON	0.18
CARR	CARR	0.8
CATAWBA	CATAWBA	0.34
CBM-S1	CBM-S1	0.87

Bus #	Bus	MW Impact
CBM-W1	CBM-W1	25.94
CBM-W2	CBM-W2	50.2
CHEOAH	CHEOAH	0.15
CHILHOWEE	CHILHOWEE	0.05
DEARBORN	DEARBORN	3.06
ELMERSMITH	ELMERSMITH	0.24
G-007	G-007	2.23
GIBSON	GIBSON	0.11
HAMLET	HAMLET	1.27
MEC	MEC	38.47
O-066	O-066	7.52
RENSSELAER	RENSSELAER	0.63
SANTEETLA	SANTEETLA	0.05
TRIMBLE	TRIMBLE	0.87
WEC	WEC	8.36
Z1-043	Z1-043	29.36

Index 20

ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC DC	MW IMPACT
760553	274804	UNIV PK N;RP	CE	243229	05OLIVE	AEP	1	AEP_P4_#2978_05DUMONT 765_B	breaker	971.0	133.23	134.44	DC	35.37

Bus #	Bus	MW Impact
270859	PWR VTR EC;R	9.79
274722	S-055 E	9.15
274808	UNIV PK N;4U	1.62
274809	UNIV PK N;5U	1.62
274811	UNIV PK N;7U	1.62
274812	UNIV PK N;8U	1.62
274814	UNIV PK N;0U	1.62
274815	UNIV PK N;XU	1.62
274832	U4-027	8.61
274859	EASYR;U1 E	8.84
274860	EASYR;U2 E	8.84
274888	PILOT HIL;1E	14.86
274890	CAYUG;1U E	10.7
274891	CAYUG;2U E	10.7
275149	KEMPTON ;1E	14.86
290021	O50 E	15.62
290051	GSG-6; E	8.43
290108	LEEDK;1U E	19.61
293061	N-015 E	12.6
293516	O-009 E1	7.26
293517	O-009 E2	3.69
293518	O-009 E3	4.06
293644	O22 E1	7.88
293645	O22 E2	15.3
293715	O-029 E	7.84
293716	O-029 E	4.3
293717	O-029 E	3.95
293771	O-035 E	5.09
294392	P-010 E	16.0
294401	BSHIL;1U E	6.8
294410	BSHIL;2U E	6.8
294763	P-046 E	7.56
295109	WESTBROOK E	4.51
295111	SUBLETTE E	2.08
910542	X3-005 E	0.51
914641	Y2-103	36.59
915011	Y3-013 1	3.05
915021	Y3-013 2	3.05
915031	Y3-013 3	3.05
916211	Z1-072 E	3.85

Bus #	Bus	MW Impact
916221	Z1-073 E	4.35
916502	Z1-106 E1	1.02
916504	Z1-106 E2	1.02
916512	Z1-107 E	2.17
916522	Z1-108 E	2.02
918052	AA1-018 E	14.29
919221	AA1-146	14.12
919581	AA2-030	14.12
919621	AA2-039 C	1.66
919622	AA2-039 E	11.1
920272	AA2-123 E	1.98
924471	AB2-096	34.27
925161	AB2-173	2.52
925302	AB2-191 E	1.12
925581	AC1-033 C	1.11
925582	AC1-033 E	7.46
925881	AC1-067 O1	97.44
926311	AC1-109 1	1.55
926321	AC1-109 2	1.55
926331	AC1-110 1	1.54
926341	AC1-110 2	1.54
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	6.18
927091	AC1-204 1	59.17
927101	AC1-204 2	59.21
927201	AC1-214 C O1	1.63
927202	AC1-214 E O1	5.19
927451	AC1-142A 1	3.45
927461	AC1-142A 2	3.45
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	53.11
930501	AB1-091 O1	57.12
930741	AB1-122 1O1	58.21
930751	AB1-122 2O1	59.68
932881	AC2-115 1	1.92
932891	AC2-115 2	1.92

Bus #	Bus	MW Impact
932921	AC2-116	0.67
932931	AC2-117	10.39
933341	AC2-147 C	0.7
933342	AC2-147 E	1.15
933411	AC2-154 C	2.02
933412	AC2-154 E	3.29
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	1.23
934051	AD1-031 C O1	2.26
934052	AD1-031 E O1	3.69
934101	AD1-039 1	5.7
934111	AD1-039 2	5.85
934401	AD1-064 C O1	2.59
934402	AD1-064 E O1	12.13
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	5.55
934702	AD1-098 E O1	4.05
934721	AD1-100 C	15.58
934722	AD1-100 E	72.69
934871	AD1-116 C	0.83
934872	AD1-116 E	1.36
934881	AD1-117 C	4.32
934882	AD1-117 E	2.88
934971	AD1-129 C	0.73
934972	AD1-129 E	0.49
935001	AD1-133 C O1	16.67
935002	AD1-133 E O1	11.11
936291	AD2-038 C O1	1.97
936292	AD2-038 E O1	13.19
936371	AD2-047 C O1	1.8
936372	AD2-047 E O1	19.42
936461	AD2-060	2.12
936511	AD2-066 C O1	6.83
936512	AD2-066 E O1	4.55
936781	AD2-101 C	3.51
936782	AD2-101 E	16.41
936791	AD2-102 C	9.71
936792	AD2-102 E	9.33
936961	AD2-130	0.46
937001	AD2-134 C	2.2
937002	AD2-134 E	9.1
937031	AD2-137 C O1	2.69
937032	AD2-137 E O1	12.6
937051	AD2-140 C O1	2.69
937052	AD2-140 E O1	12.61

Bus #	Bus	MW Impact
937061	AD2-141 C O1	2.68
937062	AD2-141 E O1	12.63
937071	AD2-142 C O1	5.39
937072	AD2-142 E O1	25.22
937121	AD2-148 C O1	2.74
937122	AD2-148 E O1	12.83
937131	AD2-149 C O1	2.74
937132	AD2-149 E O1	12.83
937141	AD2-150 C O1	2.74
937142	AD2-150 E O1	12.83
937181	AD2-155 C O1	2.74
937182	AD2-155 E O1	12.83
937311	AD2-172 C	1.98
937312	AD2-172 E	2.74
937321	AD2-175 C	12.77
937322	AD2-175 E	8.51
937331	AD2-176 C O1	5.94
937332	AD2-176 E O1	3.96
937401	AD2-194 1	6.36
937411	AD2-194 2	6.37
937531	AD2-214 C	3.53
937532	AD2-214 E	1.66
938012	AE1-002 E O1	5.4
938511	AE1-070 1	7.48
938521	AE1-070 2	6.84
938851	AE1-113 C O1	7.07
938852	AE1-113 E O1	22.22
938861	AE1-114 C O1	2.9
938862	AE1-114 E O1	11.07
939051	AE1-134 1	1.1
939061	AE1-134 2	1.1
939321	AE1-163 C O1	4.95
939322	AE1-163 E O1	30.42
939351	AE1-166 C O1	8.28
939352	AE1-166 E O1	7.64
939401	AE1-172 C O1	4.91
939402	AE1-172 E O1	22.97
939631	AE1-193 C O1	5.53
939632	AE1-193 E O1	37.0
939681	AE1-198 C O1	16.41
939682	AE1-198 E O1	13.95
939691	AE1-199	1.93
939701	AE1-201 C	1.62
939702	AE1-201 E	0.36
939732	AE1-204 E	0.24
939861	AE1-222 1	64.28
939871	AE1-222 2	65.91
939921	AE1-228 C O1	8.11
939922	AE1-228 E O1	5.4
939961	AE1-233 C O1	1.88
939962	AE1-233 E O1	7.77
940101	AE1-252 C O1	8.36

Bus #	Bus	MW Impact
940102	AE1-252 E O1	5.58
990901	L-005 E	5.05
AB2-013	AB2-013	12.84
AE1-033	AE1-033	14.59
BLUEG	BLUEG	4.41
CALDERWOOD	CALDERWOOD	0.05
CANNELTON	CANNELTON	0.06
CARR	CARR	0.61
CATAWBA	CATAWBA	0.23
CBM-S1	CBM-S1	1.22
CBM-W1	CBM-W1	21.89
CBM-W2	CBM-W2	43.2
CHEOAH	CHEOAH	0.05
CHILHOWEE	CHILHOWEE	0.01
DEARBORN	DEARBORN	2.62
ELMERSMITH	ELMERSMITH	0.06
G-007	G-007	1.71
GIBSON	GIBSON	0.02
HAMLET	HAMLET	0.88
MEC	MEC	30.08
O-066	O-066	5.77
RENSSELAER	RENSSELAER	0.49
SANTEETLA	SANTEETLA	0.02
TRIMBLE	TRIMBLE	0.52
WEC	WEC	6.46
Z1-043	Z1-043	22.86

Index 21

ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC DC	MW IMPACT
154977	275232	WILTON ;3M	CE	270644	WILTON ;	CE	1	COMED_P4_112-65-BT5-6__	breaker	1379.0	165.2	165.81	DC	51.73

Bus #	Bus	MW Impact
270859	PWR VTR EC;R	14.81
274722	S-055 E	13.75
274772	LINCOLN ;3U	3.36
274773	LINCOLN ;4U	3.36
274774	LINCOLN ;5U	3.36
274775	LINCOLN ;6U	3.36
274776	LINCOLN ;7U	3.36
274777	LINCOLN ;8U	3.36
274859	EASYR;U1 E	13.46
274860	EASYR;U2 E	13.46
274888	PILOT HIL;1E	23.62
274890	CAYUG;1U E	20.25
274891	CAYUG;2U E	20.25
275149	KEMPTON ;1E	23.62
290021	O50 E	23.75
290051	GSG-6; E	12.8
290108	LEEDK;1U E	29.74
293061	N-015 E	19.44
293516	O-009 E1	1.0
293517	O-009 E2	0.51
293518	O-009 E3	0.56
293644	O22 E1	12.55
293645	O22 E2	24.37
293715	O-029 E	11.98
293716	O-029 E	6.57
293717	O-029 E	6.04
294392	P-010 E	24.69
294763	P-046 E	11.48
295109	WESTBROOK E	6.85
295111	SUBLETTE E	3.18
296125	R-030 C3	4.98
296128	R-030 E3	19.93
296271	R-030 C2	4.92
296272	R-030 E2	19.7
296308	R-030 C1	4.92
296309	R-030 E1	19.7
910542	X3-005 E	0.9
914641	Y2-103	55.02
915011	Y3-013 1	4.58
915021	Y3-013 2	4.58
915031	Y3-013 3	4.58

Bus #	Bus	MW Impact
916221	Z1-073 E	6.61
916502	Z1-106 E1	1.55
916504	Z1-106 E2	1.55
916512	Z1-107 E	3.17
916522	Z1-108 E	3.04
917502	Z2-087 E	25.76
918052	AA1-018 E	20.13
919221	AA1-146	21.54
919581	AA2-030	21.54
920272	AA2-123 E	2.99
924041	AB2-047 C O1	4.75
924042	AB2-047 E O1	31.79
924471	AB2-096	51.84
925161	AB2-173	3.84
925302	AB2-191 E	1.7
925881	AC1-067 O1	168.51
926311	AC1-109 1	2.34
926321	AC1-109 2	2.34
926331	AC1-110 1	2.33
926341	AC1-110 2	2.33
926351	AC1-111 1	0.94
926361	AC1-111 2	0.94
926371	AC1-111 3	0.94
926381	AC1-111 4	0.94
926391	AC1-111 5	0.94
926401	AC1-111 6	0.94
926431	AC1-114	2.91
926821	AC1-168 C O1	1.43
926822	AC1-168 E O1	9.59
927091	AC1-204 1	88.93
927101	AC1-204 2	88.93
927451	AC1-142A 1	5.12
927461	AC1-142A 2	5.12
927511	AC1-113 1	1.46
927521	AC1-113 2	1.46
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	80.5
930501	AB1-091 O1	93.97
930741	AB1-122 1O1	89.35
930751	AB1-122 2O1	90.31
932881	AC2-115 1	2.91
932891	AC2-115 2	2.91
932921	AC2-116	1.02
932931	AC2-117	6.52
933341	AC2-147 C	1.07

Bus #	Bus	MW Impact
933342	AC2-147 E	1.74
933411	AC2-154 C	3.21
933412	AC2-154 E	5.23
933431	AC2-156 C O1	1.17
933432	AC2-156 E O1	1.91
933911	AD1-013 C	2.25
933912	AD1-013 E	3.6
933931	AD1-016 C	1.14
933932	AD1-016 E	1.85
934101	AD1-039 1	8.76
934111	AD1-039 2	8.85
934401	AD1-064 C O1	3.92
934402	AD1-064 E O1	18.37
934431	AD1-067 C	0.16
934432	AD1-067 E	0.68
934651	AD1-096 C	1.09
934652	AD1-096 E	1.78
934701	AD1-098 C O1	8.43
934702	AD1-098 E O1	6.15
934721	AD1-100 C	29.44
934722	AD1-100 E	137.37
934871	AD1-116 C	1.17
934872	AD1-116 E	1.91
934881	AD1-117 C	6.58
934882	AD1-117 E	4.39
934971	AD1-129 C	1.11
934972	AD1-129 E	0.74
935001	AD1-133 C O1	27.42
935002	AD1-133 E O1	18.28
936291	AD2-038 C O1	2.88
936292	AD2-038 E O1	19.29
936371	AD2-047 C O1	2.87
936372	AD2-047 E O1	30.87
936461	AD2-060	3.37
936511	AD2-066 C O1	10.36
936512	AD2-066 E O1	6.91
936781	AD2-101 C	5.83
936782	AD2-101 E	27.31
936791	AD2-102 C	14.71
936792	AD2-102 E	14.14
936961	AD2-130	0.69
937001	AD2-134 C	3.35
937002	AD2-134 E	13.82
937031	AD2-137 C O1	7.17
937032	AD2-137 E O1	33.59
937051	AD2-140 C O1	7.53
937052	AD2-140 E O1	35.28
937061	AD2-141 C O1	7.49
937062	AD2-141 E O1	35.32
937071	AD2-142 C O1	15.07
937072	AD2-142 E O1	70.55
937121	AD2-148 C O1	4.51

Bus #	Bus	MW Impact
937122	AD2-148 E O1	21.13
937131	AD2-149 C O1	4.51
937132	AD2-149 E O1	21.13
937141	AD2-150 C O1	4.51
937142	AD2-150 E O1	21.13
937181	AD2-155 C O1	4.51
937182	AD2-155 E O1	21.13
937311	AD2-172 C	3.01
937312	AD2-172 E	4.16
937321	AD2-175 C	21.03
937322	AD2-175 E	14.02
937331	AD2-176 C O1	8.97
937332	AD2-176 E O1	5.98
937401	AD2-194 1	9.56
937411	AD2-194 2	9.56
938012	AE1-002 E O1	14.4
938511	AE1-070 1	11.24
938521	AE1-070 2	10.28
938851	AE1-113 C O1	10.75
938852	AE1-113 E O1	33.78
938861	AE1-114 C O1	4.4
938862	AE1-114 E O1	16.84
939051	AE1-134 1	1.67
939061	AE1-134 2	1.67
939321	AE1-163 C O1	7.24
939322	AE1-163 E O1	44.49
939351	AE1-166 C O1	14.52
939352	AE1-166 E O1	13.41
939401	AE1-172 C O1	9.52
939402	AE1-172 E O1	44.57
939691	AE1-199	2.93
939701	AE1-201 C	2.45
939702	AE1-201 E	0.54
939732	AE1-204 E	0.36
939741	AE1-205 C O1	12.48
939742	AE1-205 E O1	17.23
939861	AE1-222 1	98.68
939871	AE1-222 2	99.73
939921	AE1-228 C O1	12.31
939922	AE1-228 E O1	8.21
939961	AE1-233 C O1	2.85
939962	AE1-233 E O1	11.77
940101	AE1-252 C O1	16.23
940102	AE1-252 E O1	10.82
AB2-013	AB2-013	19.85
AE1-033	AE1-033	22.1
BLUEG	BLUEG	7.86
CALDERWOOD	CALDERWOOD	0.1
CANNELTON	CANNELTON	0.09
CARR	CARR	0.96
CATAWBA	CATAWBA	0.38
CBM-S1	CBM-S1	1.85

Bus #	Bus	MW Impact
CBM-W1	CBM-W1	37.32
CBM-W2	CBM-W2	71.02
CHEOAH	CHEOAH	0.1
CHILHOWEE	CHILHOWEE	0.03
DEARBORN	DEARBORN	2.9
ELMERSMITH	ELMERSMITH	0.07
G-007	G-007	2.69
GIBSON	GIBSON	0.0
HAMLET	HAMLET	1.46
MEC	MEC	46.58
O-066	O-066	9.06
RENSSELAER	RENSSELAER	0.76
SANTEETLA	SANTEETLA	0.03
TRIMBLE	TRIMBLE	0.94
WEC	WEC	9.75
Z1-043	Z1-043	35.51

Index 22

ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC DC	MW IMPACT
154982	275233	WILTON ;4M	CE	270644	WILTON ;	CE	1	COMED_P4_112-65-BT2-3__	breaker	1379.0	162.64	163.55	DC	52.85

Bus #	Bus	MW Impact
270859	PWR VTR EC;R	15.13
274722	S-055 E	14.05
274772	LINCOLN ;3U	3.45
274773	LINCOLN ;4U	3.45
274774	LINCOLN ;5U	3.45
274775	LINCOLN ;6U	3.45
274776	LINCOLN ;7U	3.45
274777	LINCOLN ;8U	3.45
274832	U4-027	6.82
274859	EASYR;U1 E	13.75
274860	EASYR;U2 E	13.75
274888	PILOT HIL;1E	24.11
274890	CAYUG;1U E	20.66
274891	CAYUG;2U E	20.66
275149	KEMPTON ;1E	24.11
290021	O50 E	24.25
290051	GSG-6; E	13.07
290108	LEEDK;1U E	30.37
293061	N-015 E	19.85
293516	O-009 E1	11.37
293517	O-009 E2	5.78
293518	O-009 E3	6.36
293644	O22 E1	12.82
293645	O22 E2	24.89
293715	O-029 E	12.24
293716	O-029 E	6.71
293717	O-029 E	6.17
293771	O-035 E	8.08
294392	P-010 E	25.21
294763	P-046 E	11.72
295109	WESTBROOK E	7.0
295111	SUBLETTE E	3.24
296125	R-030 C3	5.08
296128	R-030 E3	20.34
296271	R-030 C2	5.02
296272	R-030 E2	20.09
296308	R-030 C1	5.02
296309	R-030 E1	20.09
910542	X3-005 E	0.91
914641	Y2-103	56.19
915011	Y3-013 1	4.68

Bus #	Bus	MW Impact
915021	Y3-013 2	4.68
915031	Y3-013 3	4.68
916211	Z1-072 E	6.11
916221	Z1-073 E	6.75
916502	Z1-106 E1	1.58
916504	Z1-106 E2	1.58
916512	Z1-107 E	3.23
916522	Z1-108 E	3.11
917502	Z2-087 E	26.28
918052	AA1-018 E	20.57
919221	AA1-146	22.0
919581	AA2-030	22.0
920272	AA2-123 E	3.06
924041	AB2-047 C O1	4.85
924042	AB2-047 E O1	32.43
924471	AB2-096	52.94
925161	AB2-173	3.92
925302	AB2-191 E	1.73
925881	AC1-067 O1	172.23
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	0.96
926361	AC1-111 2	0.96
926371	AC1-111 3	0.96
926381	AC1-111 4	0.96
926391	AC1-111 5	0.96
926401	AC1-111 6	0.96
926431	AC1-114	2.97
926821	AC1-168 C O1	1.46
926822	AC1-168 E O1	9.79
927091	AC1-204 1	90.83
927101	AC1-204 2	90.83
927201	AC1-214 C O1	2.59
927202	AC1-214 E O1	8.24
927451	AC1-142A 1	5.23
927461	AC1-142A 2	5.23
927511	AC1-113 1	1.49
927521	AC1-113 2	1.49
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	82.21
930501	AB1-091 O1	95.92
930741	AB1-122 1O1	91.25
930751	AB1-122 2O1	92.24

Bus #	Bus	MW Impact
932881	AC2-115 1	2.97
932891	AC2-115 2	2.97
932921	AC2-116	1.04
932931	AC2-117	6.67
933341	AC2-147 C	1.09
933342	AC2-147 E	1.78
933411	AC2-154 C	3.27
933412	AC2-154 E	5.34
933431	AC2-156 C O1	1.2
933432	AC2-156 E O1	1.95
933911	AD1-013 C	2.3
933912	AD1-013 E	3.68
933931	AD1-016 C	1.16
933932	AD1-016 E	1.89
934101	AD1-039 1	8.94
934111	AD1-039 2	9.04
934401	AD1-064 C O1	4.01
934402	AD1-064 E O1	18.76
934431	AD1-067 C	0.16
934432	AD1-067 E	0.69
934651	AD1-096 C	1.11
934652	AD1-096 E	1.82
934701	AD1-098 C O1	8.6
934702	AD1-098 E O1	6.28
934721	AD1-100 C	30.02
934722	AD1-100 E	140.09
934871	AD1-116 C	1.2
934872	AD1-116 E	1.95
934881	AD1-117 C	6.72
934882	AD1-117 E	4.48
934971	AD1-129 C	1.13
934972	AD1-129 E	0.75
935001	AD1-133 C O1	27.99
935002	AD1-133 E O1	18.66
936291	AD2-038 C O1	2.94
936292	AD2-038 E O1	19.7
936371	AD2-047 C O1	2.93
936372	AD2-047 E O1	31.51
936461	AD2-060	3.44
936511	AD2-066 C O1	10.58
936512	AD2-066 E O1	7.05
936781	AD2-101 C	5.95
936782	AD2-101 E	27.88
936791	AD2-102 C	15.03
936792	AD2-102 E	14.44
936961	AD2-130	0.7
937001	AD2-134 C	3.42
937002	AD2-134 E	14.12
937031	AD2-137 C O1	7.31
937032	AD2-137 E O1	34.21
937051	AD2-140 C O1	7.67
937052	AD2-140 E O1	35.93

Bus #	Bus	MW Impact
937061	AD2-141 C O1	7.63
937062	AD2-141 E O1	35.97
937071	AD2-142 C O1	15.35
937072	AD2-142 E O1	71.86
937121	AD2-148 C O1	4.61
937122	AD2-148 E O1	21.57
937131	AD2-149 C O1	4.61
937132	AD2-149 E O1	21.57
937141	AD2-150 C O1	4.61
937142	AD2-150 E O1	21.57
937181	AD2-155 C O1	4.61
937182	AD2-155 E O1	21.57
937311	AD2-172 C	3.08
937312	AD2-172 E	4.25
937321	AD2-175 C	21.46
937322	AD2-175 E	14.31
937331	AD2-176 C O1	9.17
937332	AD2-176 E O1	6.11
937401	AD2-194 1	9.77
937411	AD2-194 2	9.77
938012	AE1-002 E O1	14.67
938511	AE1-070 1	11.48
938521	AE1-070 2	10.5
938851	AE1-113 C O1	10.98
938852	AE1-113 E O1	34.5
938861	AE1-114 C O1	4.5
938862	AE1-114 E O1	17.19
939051	AE1-134 1	1.71
939061	AE1-134 2	1.71
939321	AE1-163 C O1	7.4
939322	AE1-163 E O1	45.45
939351	AE1-166 C O1	14.82
939352	AE1-166 E O1	13.68
939401	AE1-172 C O1	9.71
939402	AE1-172 E O1	45.45
939691	AE1-199	2.99
939701	AE1-201 C	2.51
939702	AE1-201 E	0.55
939732	AE1-204 E	0.37
939741	AE1-205 C O1	12.73
939742	AE1-205 E O1	17.58
939861	AE1-222 1	100.77
939871	AE1-222 2	101.86
939921	AE1-228 C O1	12.57
939922	AE1-228 E O1	8.38
939961	AE1-233 C O1	2.91
939962	AE1-233 E O1	12.02
940101	AE1-252 C O1	16.55
940102	AE1-252 E O1	11.03
AB2-013	AB2-013	20.27
AE1-033	AE1-033	22.58
BLUEG	BLUEG	8.03

Bus #	Bus	MW Impact
CALDERWOOD	CALDERWOOD	0.1
CANNELTON	CANNELTON	0.09
CARR	CARR	0.98
CATAWBA	CATAWBA	0.39
CBM-S1	CBM-S1	1.88
CBM-W1	CBM-W1	38.11
CBM-W2	CBM-W2	72.48
CHEOAH	CHEOAH	0.1
CHILHOWEE	CHILHOWEE	0.03
DEARBORN	DEARBORN	2.96
ELMERSMITH	ELMERSMITH	0.07
G-007	G-007	2.75
GIBSON	GIBSON	0.0
HAMLET	HAMLET	1.49
MEC	MEC	47.56
O-066	O-066	9.26
RENSSELAER	RENSSELAER	0.77
SANTEETLA	SANTEETLA	0.03
TRIMBLE	TRIMBLE	0.96
WEC	WEC	9.96
Z1-043	Z1-043	36.25

Index 23

ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC DC	MW IMPACT
760520	346809	7CASEY	AMIL	247712	05SULLIVAN	AEP	1	AEP_P4_#3128_05EUGENE 345_A2	breaker	1466.0	142.85	143.6	DC	24.09

Bus #	Bus	MW Impact
270859	PWR VTR EC;R	6.24
274650	KINCAID ;1U	14.71
274651	KINCAID ;2U	14.73
274832	U4-027	8.54
274853	TWINGROVE;U1	0.74
274854	TWINGROVE;U2	0.74
274859	EASYR;U1 E	6.8
274860	EASYR;U2 E	6.8
274890	CAYUG;1U E	10.14
274891	CAYUG;2U E	10.14
276150	W2-048 E	2.05
290021	O50 E	10.78
290051	GSG-6; E	5.68
290108	LEEDK;1U E	12.4
290261	S-027 E	19.36
290265	S-028 E	19.36
293516	O-009 E1	6.47
293517	O-009 E2	3.29
293518	O-009 E3	3.62
293644	O22 E1	4.9
293645	O22 E2	9.51
293715	O-029 E	6.65
293716	O-029 E	3.65
293717	O-029 E	3.35
293771	O-035 E	5.18
294401	BSHIL;1U E	7.08
294410	BSHIL;2U E	7.08
294763	P-046 E	5.38
295109	WESTBROOK E	3.04
295111	SUBLETTE E	1.65
296125	R-030 C3	3.34
296128	R-030 E3	13.34
296271	R-030 C2	3.3
296272	R-030 E2	13.18
296308	R-030 C1	3.3
296309	R-030 E1	13.18
905081	W4-005 C	0.98
905082	W4-005 E	42.62
909052	X2-022 E	28.51
916211	Z1-072 E	3.92
916221	Z1-073 E	2.93

Bus #	Bus	MW Impact
917502	Z2-087 E	17.32
918052	AA1-018 E	7.91
919221	AA1-146	11.65
919581	AA2-030	11.65
919621	AA2-039 C	1.73
919622	AA2-039 E	11.55
920272	AA2-123 E	1.22
924041	AB2-047 C O1	3.3
924042	AB2-047 E O1	22.1
924261	AB2-070 C O1	3.84
924262	AB2-070 E O1	25.68
924471	AB2-096	21.83
925161	AB2-173	2.08
925302	AB2-191 E	0.75
925581	AC1-033 C	1.16
925582	AC1-033 E	7.76
925771	AC1-053 C	3.87
925772	AC1-053 E	25.93
926431	AC1-114	1.3
926821	AC1-168 C O1	0.83
926822	AC1-168 E O1	5.54
926841	AC1-171 C O1	1.14
926842	AC1-171 E O1	7.61
927201	AC1-214 C O1	1.66
927202	AC1-214 E O1	5.29
927511	AC1-113 1	0.65
927521	AC1-113 2	0.65
927531	AC1-185 1	0.43
927541	AC1-185 2	0.43
927551	AC1-185 3	0.43
927561	AC1-185 4	0.43
927571	AC1-185 5	0.43
927581	AC1-185 6	0.43
927591	AC1-185 7	0.43
927601	AC1-185 8	0.43
930481	AB1-089	35.32
930741	AB1-122 1O1	34.94
932881	AC2-115 1	1.3
932891	AC2-115 2	1.3
932921	AC2-116	0.45
933341	AC2-147 C	0.54
933342	AC2-147 E	0.88
933911	AD1-013 C	0.99
933912	AD1-013 E	1.59
933931	AD1-016 C	0.46
933932	AD1-016 E	0.76
934051	AD1-031 C O1	2.35
934052	AD1-031 E O1	3.84
934101	AD1-039 1	3.42
934401	AD1-064 C O1	1.64
934402	AD1-064 E O1	7.66
934431	AD1-067 C	0.07

Bus #	Bus	MW Impact
934432	AD1-067 E	0.3
934651	AD1-096 C	0.51
934652	AD1-096 E	0.83
934701	AD1-098 C O1	3.77
934702	AD1-098 E O1	2.75
934871	AD1-116 C	0.46
934872	AD1-116 E	0.75
934881	AD1-117 C	3.31
934882	AD1-117 E	2.21
934971	AD1-129 C	0.47
934972	AD1-129 E	0.31
935001	AD1-133 C O1	14.12
935002	AD1-133 E O1	9.41
935141	AD1-148	7.45
936291	AD2-038 C O1	1.34
936292	AD2-038 E O1	8.98
936511	AD2-066 C O1	4.76
936512	AD2-066 E O1	3.17
936771	AD2-100 C O1	21.12
936772	AD2-100 E O1	14.08
936791	AD2-102 C	6.72
936792	AD2-102 E	6.46
936972	AD2-131 E O1	8.38
937001	AD2-134 C	1.48
937002	AD2-134 E	6.13
937161	AD2-153 C O1	3.2
937162	AD2-153 E O1	15.0
937171	AD2-154 C O1	3.2
937172	AD2-154 E O1	15.0
937211	AD2-159 C	4.61
937212	AD2-159 E	21.56
937311	AD2-172 C	1.41
937312	AD2-172 E	1.95
937331	AD2-176 C O1	3.65
937332	AD2-176 E O1	2.44
937531	AD2-214 C	3.23
937532	AD2-214 E	1.52
938851	AE1-113 C O1	4.88
938852	AE1-113 E O1	15.33
938861	AE1-114 C O1	2.16
938862	AE1-114 E O1	8.27
939051	AE1-134 1	0.91
939061	AE1-134 2	0.91
939321	AE1-163 C O1	3.37
939322	AE1-163 E O1	20.72
939401	AE1-172 C O1	4.02
939402	AE1-172 E O1	18.81
939631	AE1-193 C O1	5.75
939632	AE1-193 E O1	38.49
939681	AE1-198 C O1	17.08
939682	AE1-198 E O1	14.51
939691	AE1-199	1.29

Bus #	Bus	MW Impact
939701	AE1-201 C	1.0
939702	AE1-201 E	0.22
939741	AE1-205 C O1	8.33
939742	AE1-205 E O1	11.5
939861	AE1-222 1	38.59
939921	AE1-228 C O1	5.41
939922	AE1-228 E O1	3.61
939961	AE1-233 C O1	1.15
939962	AE1-233 E O1	4.76
940101	AE1-252 C O1	6.85
940102	AE1-252 E O1	4.57
950291	J291	3.2
950701	J196 C	1.33
950702	J196 E	5.3
951001	J339	6.03
951741	J474 C	2.02
951742	J474 E	10.95
952251	J641	10.35
952271	J644	9.57
952321	J734	5.07
952651	J756 C	2.46
952652	J756 E	13.33
952871	J757 C	4.06
952872	J757 E	21.98
953241	J467 C	2.76
953242	J467 E	14.91
953371	J808	9.06
953401	J811	17.76
953431	J853	11.11
953641	J813	43.81
953651	J815	32.11
953671	J817	10.67
953741	J826 C	1.65
953742	J826 E	8.94
953801	J835 C	2.68
953802	J835 E	14.48
953851	J845 C	1.72
953852	J845 E	9.32
953881	J848 C	5.27
953882	J848 E	28.51
953951	J859	9.79
954081	J872 C	4.44
954082	J872 E	24.03
954181	J884	7.67
954411	J912	14.24
954681	J949	38.92
954721	J750 C	2.11
954722	J750 E	11.4
954761	J468 C	7.08
954762	J468 E	28.32
990901	L-005 E	11.18
AB2-013	AB2-013	13.3

Bus #	Bus	MW Impact
AE1-033	AE1-033	10.55
AE1-042	AE1-042	10.08
BLUEG	BLUEG	10.38
CARR	CARR	0.29
CBM-S1	CBM-S1	13.17
CBM-S2	CBM-S2	2.35
CBM-W1	CBM-W1	28.23
CBM-W2	CBM-W2	199.79
CIN	CIN	3.85
CPL	CPL	0.56
DEARBORN	DEARBORN	0.69
G-007	G-007	0.8
GIBSON	GIBSON	0.02
MEC	MEC	45.61
O-066	O-066	2.69
RENSSELAER	RENSSELAER	0.23
TRIMBLE	TRIMBLE	1.31
WEC	WEC	4.13
Z1-043	Z1-043	21.97

Index 24

ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC DC	MW IMPACT
156189	930740	AB1-122 TAP	CE	270717	DRESDEN ; R	CE	1	COMED_P7_345-L19601_B-S_+_345-L9801__R-S_FSA	tower	1195.0	125.61	132.15	DC	78.08

Bus #	Bus	MW Impact
274677	POWERTON ;5U	26.24
274678	POWERTON ;6U	26.31
274861	TOP CROP ;1U	0.7
274862	TOP CROP ;2U	1.35
274879	MINONK ;1U	0.74
290021	O50 E	19.44
293644	O22 E1	18.15
293645	O22 E2	35.22
294401	BSHIL;1U E	6.21
294410	BSHIL;2U E	6.21
918051	AA1-018 C	0.67
918052	AA1-018 E	29.1
919621	AA2-039 C	1.51
919622	AA2-039 E	10.13
925581	AC1-033 C	1.02
925582	AC1-033 E	6.81
926841	AC1-171 C O1	0.85
926842	AC1-171 E O1	5.66
930741	AB1-122 1O1	524.81
934051	AD1-031 C O1	2.06
934052	AD1-031 E O1	3.37
934101	AD1-039 1	51.43
934871	AD1-116 C	1.69
934872	AD1-116 E	2.77
936291	AD2-038 C O1	4.35
936292	AD2-038 E O1	29.11
938851	AE1-113 C O1	8.79
938852	AE1-113 E O1	27.65
939321	AE1-163 C O1	10.93
939322	AE1-163 E O1	67.15
939631	AE1-193 C O1	5.04
939632	AE1-193 E O1	33.74
939681	AE1-198 C O1	14.97
939682	AE1-198 E O1	12.72
939861	AE1-222 1	579.57
954702	J844 E	27.32
990901	L-005 E	9.43
AB2-013	AB2-013	28.99
CARR	CARR	0.04
CBM-S1	CBM-S1	3.25

Bus #	Bus	MW Impact
CBM-S2	CBM-S2	0.73
CBM-W1	CBM-W1	6.57
CBM-W2	CBM-W2	48.55
CIN	CIN	1.0
CPL	CPL	0.21
DEARBORN	DEARBORN	0.55
G-007	G-007	0.1
IPL	IPL	0.49
LGEE	LGEE	0.12
MEC	MEC	20.19
O-066	O-066	0.35
RENSSELAER	RENSSELAER	0.03
Z1-043	Z1-043	18.2

Index 25

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
760670	938670	AE1-089 TAP	AEP	243219	05DUMONT	AEP	1	AEP_P4_#2978_05DUMONT 765_B	breaker	1409.0	124.58	125.4	DC	25.31

Bus #	Bus	MW Impact
247900	05FR-11G E	6.85
247901	05FR-12G E	6.74
247902	05FR-21G E	7.2
247903	05FR-22G E	6.89
247904	05FR-3G E	13.96
247905	05FR-4G E	10.5
247906	05MDL-1G E	15.63
247907	05MDL-2G E	7.75
247912	05MDL-3G E	8.11
247913	05MDL-4G E	7.83
247943	T-127 E	7.83
270859	PWR VTR EC;R	7.11
274722	S-055 E	6.55
274809	UNIV PK N;5U	0.8
274811	UNIV PK N;7U	0.8
274812	UNIV PK N;8U	0.8
274814	UNIV PK N;0U	0.8
274815	UNIV PK N;XU	0.8
274888	PILOT HIL;1E	10.32
275149	KEMPTON ;1E	10.32
290021	O50 E	11.46
290051	GSG-6; E	6.16
290108	LEEDK;1U E	14.23
293061	N-015 E	8.96
293644	O22 E1	5.93
293645	O22 E2	11.51
294392	P-010 E	11.37
295109	WESTBROOK E	3.3
909145	X2-052	36.23
914641	Y2-103	26.18
915011	Y3-013 1	2.18
915021	Y3-013 2	2.18
915031	Y3-013 3	2.18
916221	Z1-073 E	3.18
916502	Z1-106 E1	0.73
916504	Z1-106 E2	0.73
916512	Z1-107 E	1.5
916522	Z1-108 E	1.45
917711	Z2-114 C	0.06
917712	Z2-114 E	0.4

Bus #	Bus	MW Impact
918052	AA1-018 E	9.8
920272	AA2-123 E	1.43
924471	AB2-096	24.87
925302	AB2-191 E	0.82
926311	AC1-109 1	1.1
926321	AC1-109 2	1.1
926331	AC1-110 1	1.1
926341	AC1-110 2	1.1
926351	AC1-111 1	0.44
926361	AC1-111 2	0.44
926371	AC1-111 3	0.44
926381	AC1-111 4	0.44
926391	AC1-111 5	0.44
926401	AC1-111 6	0.44
926431	AC1-114	1.4
927091	AC1-204 1	41.9
927101	AC1-204 2	41.91
927451	AC1-142A 1	2.42
927461	AC1-142A 2	2.42
927511	AC1-113 1	0.7
927521	AC1-113 2	0.7
930042	AB1-006 E	17.03
930391	AB1-080	2.15
930481	AB1-089	38.75
930501	AB1-091 O1	40.14
930741	AB1-122 1O1	41.99
930751	AB1-122 2O1	42.66
932601	AC2-080 C O1	3.72
932602	AC2-080 E O1	24.91
932881	AC2-115 1	1.4
932891	AC2-115 2	1.4
932921	AC2-116	0.49
932931	AC2-117	5.17
933411	AC2-154 C	1.4
933412	AC2-154 E	2.28
933431	AC2-156 C O1	0.55
933432	AC2-156 E O1	0.9
933911	AD1-013 C	1.08
933912	AD1-013 E	1.73
933931	AD1-016 C	0.54
933932	AD1-016 E	0.89
934101	AD1-039 1	4.12
934111	AD1-039 2	4.18
934401	AD1-064 C O1	1.88
934402	AD1-064 E O1	8.8
934431	AD1-067 C	0.08
934432	AD1-067 E	0.33
934701	AD1-098 C O1	4.06
934702	AD1-098 E O1	2.96
934721	AD1-100 C	11.12
934722	AD1-100 E	51.9
934871	AD1-116 C	0.57

Bus #	Bus	MW Impact
934872	AD1-116 E	0.93
934971	AD1-129 C	0.53
934972	AD1-129 E	0.35
935001	AD1-133 C O1	12.63
935002	AD1-133 E O1	8.42
935271	AD1-137 C	5.69
935272	AD1-137 E	38.05
936291	AD2-038 C O1	1.41
936292	AD2-038 E O1	9.44
936371	AD2-047 C O1	1.25
936372	AD2-047 E O1	13.49
936461	AD2-060	1.47
936511	AD2-066 C O1	4.99
936512	AD2-066 E O1	3.33
936781	AD2-101 C	2.48
936782	AD2-101 E	11.59
936961	AD2-130	0.32
936981	AD2-132 C	5.04
936982	AD2-132 E	23.6
937001	AD2-134 C	1.61
937002	AD2-134 E	6.66
937031	AD2-137 C O1	1.92
937032	AD2-137 E O1	9.0
937041	AD2-138 C	5.04
937042	AD2-138 E	23.6
937051	AD2-140 C O1	1.92
937052	AD2-140 E O1	8.99
937061	AD2-141 C O1	1.91
937062	AD2-141 E O1	9.0
937071	AD2-142 C O1	3.84
937072	AD2-142 E O1	17.98
937121	AD2-148 C O1	1.93
937122	AD2-148 E O1	9.02
937131	AD2-149 C O1	1.93
937132	AD2-149 E O1	9.02
937141	AD2-150 C O1	1.93
937142	AD2-150 E O1	9.02
937181	AD2-155 C O1	1.93
937182	AD2-155 E O1	9.02
937321	AD2-175 C	8.98
937322	AD2-175 E	5.98
937331	AD2-176 C O1	4.29
937332	AD2-176 E O1	2.86
937401	AD2-194 1	4.51
937411	AD2-194 2	4.51
938012	AE1-002 E O1	3.86
938511	AE1-070 1	5.29
938521	AE1-070 2	4.84
938671	AE1-089 C	74.55
938672	AE1-089 E	102.34
938851	AE1-113 C O1	5.18
938852	AE1-113 E O1	16.3

Bus #	Bus	MW Impact
939321	AE1-163 C O1	3.54
939322	AE1-163 E O1	21.77
939351	AE1-166 C O1	5.85
939352	AE1-166 E O1	5.4
939401	AE1-172 C O1	3.71
939402	AE1-172 E O1	17.38
939641	AE1-194 C	5.61
939642	AE1-194 E	37.52
939651	AE1-195 C	5.61
939652	AE1-195 E	37.52
939691	AE1-199	1.41
939701	AE1-201 C	1.17
939702	AE1-201 E	0.26
939732	AE1-204 E	0.17
939861	AE1-222 1	46.37
939871	AE1-222 2	47.11
939921	AE1-228 C O1	5.92
939922	AE1-228 E O1	3.95
939961	AE1-233 C O1	1.36
939962	AE1-233 E O1	5.62
940101	AE1-252 C O1	6.33
940102	AE1-252 E O1	4.22
AB2-013	AB2-013	10.01
AE1-033	AE1-033	10.77
CARR	CARR	0.59
CATAWBA	CATAWBA	0.05
CBM-S1	CBM-S1	4.6
CBM-W1	CBM-W1	19.73
CBM-W2	CBM-W2	68.15
CIN	CIN	7.05
DEARBORN	DEARBORN	1.82
G-007	G-007	1.64
HAMLET	HAMLET	0.34
IPL	IPL	3.28
LGEE	LGEE	0.73
MEC	MEC	25.32
O-066	O-066	5.54
RENSSELAER	RENSSELAER	0.47
WEC	WEC	4.7
Z1-043	Z1-043	17.65

Affected Systems

MISO

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

Contingency Name	Contingency Definition
COMED_P7_345-L19601_B-S+_345-L9801__R-S_FSA	CONTINGENCY 'COMED_P7_345-L19601_B-S+_345-L9801__R-S_FSA' TRIP BRANCH FROM BUS 270790 TO BUS 270770 CKT 1 / KATYD; B 345 GOODI;4B 345 TRIP BRANCH FROM BUS 918050 TO BUS 270769 CKT 1 / AA1-018 GOODINGS ;2R 345 END
AEP_P1-2_#8907	CONTINGENCY 'AEP_P1-2_#8907' OPEN BRANCH FROM BUS 247712 TO BUS 346809 CKT 1 / 247712 05SULLIVAN 345 346809 7CASEY 345 1 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 / DRES; 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
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_116-45-TR82__	CONTINGENCY 'COMED_P4_116-45-TR82__' TRIP BRANCH FROM BUS 270769 TO BUS 271565 TO BUS 275324 CKT 1 / GOODINGS ;2R 345 GOODINGS ; R 138 GOODINGS ;2C 34.5 DISCONNECT BUS 270769 / GOODINGS ;2R 345 END
COMED_P4_112-45-BT4-5__	CONTINGENCY 'COMED_P4_112-45-BT4-5__' TRIP BRANCH FROM BUS 270666 TO BUS 270664 CKT 1 / B ISL;BT 345 B ISL; B 345 TRIP BRANCH FROM BUS 270666 TO BUS 270926 CKT 1 / B ISL;BT 345 WILTO; B 345 TRIP BRANCH FROM BUS 270770 TO BUS 270666 CKT 1 / GOODI;4B 345 B ISL;BT 345 TRIP BRANCH FROM BUS 270852 TO BUS 270704 CKT 1 / PONTI; B 345 LORET; B 345 END
COMED_P7_345-L0301__B-S+_345-L9801__R-S_FSA	CONTINGENCY 'COMED_P7_345-L0301__B-S+_345-L9801__R-S_FSA' TRIP BRANCH FROM BUS 270854 TO BUS 270790 CKT 1 / POWER; B 345 KATYDID TRIP BRANCH FROM BUS 918050 TO BUS 270769 CKT 1 / AA1-018 GOODINGS ;2R 345 END

Contingency Name	Contingency Definition
AEP_P4_#3128_05EUGENE 345_A2	CONTINGENCY 'AEP_P4_#3128_05EUGENE 345_A2' OPEN BRANCH FROM BUS 243221 TO BUS 249504 CKT 1 / 243221 05EUGENE 345 249504 08CAYSUB 345 1 OPEN BRANCH FROM BUS 243221 TO BUS 348885 CKT 1 / 243221 05EUGENE 345 348885 7BUNSONVILLE 345 1 END
COMED_P2-2_116_GG-345R__2_NO_FSA	CONTINGENCY 'COMED_P2-2_116_GG-345R__2_NO_FSA' DISCONNECT BUS 270769 / GOODI;2R 345 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
COMED_P1-2_345-L1223_TR-S	CONTINGENCY 'COMED_P1-2_345-L1223_TR-S' TRIP BRANCH FROM BUS 270717 TO BUS 270731 CKT 1 / DRES; R 345 ELECT;4R 345 TRIP BRANCH FROM BUS 275180 TO BUS 270717 CKT 1 / DRES;3M 138 DRES; R 345 TRIP BRANCH FROM BUS 275180 TO BUS 271336 CKT 1 / DRES;3M 138 DRES; B 138 TRIP BRANCH FROM BUS 275180 TO BUS 275280 CKT 1 / DRES;3M 138 DRES;3C 34.5 END
COMED_P1-2_345-L1202__B-S-A	CONTINGENCY 'COMED_P1-2_345-L1202__B-S-A' TRIP BRANCH FROM BUS 270716 TO BUS 930750 CKT 1 / DRES; B 345 AB1-122 TAP 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
AEP_P1-2_#286	CONTINGENCY 'AEP_P1-2_#286' OPEN BRANCH FROM BUS 243221 TO BUS 348885 CKT 1 / 243221 05EUGENE 345 348885 7BUNSONVILLE 345 1 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_P4_116-45-L9801_FSA	CONTINGENCY 'COMED_P4_116-45-L9801_FSA' TRIP BRANCH FROM BUS 918050 TO BUS 270769 CKT 1 / AA1-018 GOODINGS ;2R 345 DISCONNECT BUS 270769 / GOODI;2R 345 END

Contingency Name	Contingency Definition
COMED_P4_116-45-L11614_	CONTINGENCY 'COMED_P4_116-45-L11614_' TRIP BRANCH FROM BUS 270667 TO BUS 270665 CKT 1 / B ISL;RT 345 B ISL; R 345 TRIP BRANCH FROM BUS 270667 TO BUS 270927 CKT 1 / B ISL;RT 345 WILTO; R 345 TRIP BRANCH FROM BUS 270769 TO BUS 270667 CKT 1 / GOODI;2R 345 B ISL;RT 345 DISCONNECT BUS 270769 / GOODI;2R 345 END
COMED_P2-2_116_GG-345R__2_FSA	CONTINGENCY 'COMED_P2-2_116_GG-345R__2_FSA' DISCONNECT BUS 270769 / GOODI;2R 345 DISCONNECT BUS 918050 / AA1-018 TAP /ADDED FOR NO FSA CASE END
Base Case	
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_111-45-L1223T_	CONTINGENCY 'COMED_P4_111-45-L1223T_' TRIP BRANCH FROM BUS 270717 TO BUS 270731 CKT 1 / DRESDEN ; R 345 ELEC JUNC;4R 345 TRIP BRANCH FROM BUS 275180 TO BUS 270717 CKT 1 / DRESDEN ;3M 138 DRESDEN ; R 345 TRIP BRANCH FROM BUS 275180 TO BUS 271336 CKT 1 / DRESDEN ;3M 138 DRESDEN ; B 138 TRIP BRANCH FROM BUS 275180 TO BUS 275280 CKT 1 / DRESDEN ;3M 138 DRESDEN ;3C 34.5 DISCONNECT BUS 270731 / ELEC JUNC;4R 345 DISCONNECT BUS 275184 / ELEC JUNC;4M 138 END
COMED_P7_345-L1202__B-S+_345-L1227__R-S-A	CONTINGENCY 'COMED_P7_345-L1202__B-S+_345-L1227__R-S-A' TRIP BRANCH FROM BUS 270716 TO BUS 930750 CKT 1 / DRESDEN ; B 345 AB1-122 TAP 345 TRIP BRANCH FROM BUS 930740 TO BUS 270717 CKT 1 / AB1-122 TAP 345 DRESDEN ; R 345 END
COMED_P1-2_345-L19601_B-S	CONTINGENCY 'COMED_P1-2_345-L19601_B-S' TRIP BRANCH FROM BUS 270790 TO BUS 270770 CKT 1 / KATYD; B 345 GOODI;4B 345 END
AEP_P4_#8805_05OLIVE 345_D	CONTINGENCY 'AEP_P4_#8805_05OLIVE 345_D' OPEN BRANCH FROM BUS 243229 TO BUS 932600 CKT 1 / 243229 05OLIVE 345 932600 AC2-080 TAP 345 1 /* CONTINGENCY LINE ADDED FOR AE1 BUILD OPEN BRANCH FROM BUS 243229 TO BUS 274804 CKT 1 / 243229 05OLIVE 345 274804 UNIV PK N;RP 345 1 END

Contingency Name	Contingency Definition
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
AEP_P1-2_#697A	CONTINGENCY 'AEP_P1-2_#697A' OPEN BRANCH FROM BUS 243229 TO BUS 274804 CKT 1 / 243229 05OLIVE 345 274804 UNIV PK N;RP 345 1 END
COMED_P1-2_345-L11622_R-S	CONTINGENCY 'COMED_P1-2_345-L11622_R-S' TRIP BRANCH FROM BUS 270737 TO BUS 270769 CKT 1 / ELWOO; R 345 GOODI;1R 345 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

Short Circuit

No issues identified

Secondary Point of Interconnection Network Impacts

The Queue Project AE1-163 was evaluated as a 350 MW (Capacity 49 MW) injection tapping the Powerton; B to Katydid; B 345 kV line in the ComEd area. Project AE1-163 was evaluated for compliance with applicable reliability planning criteria (PJM, NERC, NERC Regional Reliability Councils, and Transmission Owners). Project AE1-163 was studied with a commercial probability of 53%. Potential network impacts were as follows:

Summer Peak Load Flow

Generation Deliverability

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

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
768657	270855	POWERTON ; R	CE	349662	7TAZEWELL	AMIL	1	COMED_P1-2_345-L1202__B-S-A	single	1479.0	77.6	79.15	DC	23.08

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
450193	270644	WILTON ;	CE	243206	05DUMONT	AEP	1	AEP_P4_#8805_05OLIVE345_D	breaker	4105.0	96.18	96.87	DC	95.48
768235	270644	WILTON ;	CE	243206	05DUMONT	AEP	1	AEP_P4_#8805_05OLIVE345_D	breaker	4105.0	96.18	96.87	DC	95.48
768168	270716	DRESDEN ; B	CE	270928	WOLFS ; B	CE	1	COMED_P4_012-45-BT5-6	breaker	1479.0	90.47	91.3	DC	27.4
768154	270717	DRESDEN ; R	CE	270697	COLLINS ; R	CE	1	COMED_P4_111-45-L1223T	breaker	1528.0	99.32	99.98	DC	22.23
769339	918050	AA1-018 TAP	CE	270769	GOODINGS ; 2R	CE	1	COMED_P7_345-L1202_B-S_+ 345-L1227_R-S-A	tower	1494.0	88.0	91.55	DC	52.97
769216	930750	AB1-122 TAP	CE	270716	DRESDEN ; B	CE	1	COMED_P7_345-L19601_B-S_+ 345-L9801_R-S_FSA	tower	1768.0	93.14	98.33	DC	91.71
769217	930750	AB1-122 TAP	CE	270716	DRESDEN ; B	CE	1	COMED_P7_345-L0301_B-S_+ 345-L9801_R-S_FSA-B	tower	1768.0	88.68	93.87	DC	91.74
769398	936290	AD2-038 TAP	CE	918050	AA1-018 TAP	CE	1	COMED_P7_345-L1202_B-S_+ 345-L1227_R-S-A	tower	1494.0	81.65	85.2	DC	53.0

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
449890	243918	05ELDERBRYSS	AEP	938670	AE1-089 TAP	AEP	1	AEP_P4_#2978_05DUMONT 765_B	breaker	1409.0	116.23	117.02	DC	24.83
449891	243918	05ELDERBRYSS	AEP	938670	AE1-089 TAP	AEP	1	COMED_P4_112-65-BT4-5	breaker	1409.0	107.51	108.14	DC	26.72
449892	243918	05ELDERBRYSS	AEP	938670	AE1-089 TAP	AEP	1	COMED_P4_112-65-BT3-4	breaker	1409.0	107.51	108.14	DC	26.72
449893	243918	05ELDERBRYSS	AEP	938670	AE1-089 TAP	AEP	1	COMED_P4_023-65-BT2-3	breaker	1409.0	107.51	108.14	DC	26.72
768127	255104	17GREEN_ACRE	NIPS	270771	GREENACRE; T	CE	1	AEP_P4_#2978_05DUMONT 765_B	breaker	1091.0	102.11	102.91	DC	28.77
767961	255112	17STJOHN	NIPS	270886	ST JOHN ; T	CE	1	AEP_P4_#2978_05DUMONT 765_B	breaker	1091.0	107.42	108.55	DC	32.86
767962	255112	17STJOHN	NIPS	270886	ST JOHN ; T	CE	1	COMED_P4_023-65-BT2-3	breaker	1091.0	109.85	110.89	DC	33.06
767963	255112	17STJOHN	NIPS	270886	ST JOHN ; T	CE	1	COMED_P4_112-65-BT4-5	breaker	1091.0	107.65	108.76	DC	33.06
767964	255112	17STJOHN	NIPS	270886	ST JOHN ; T	CE	1	COMED_P4_112-65-BT3-4	breaker	1091.0	107.65	108.76	DC	33.06
449565	255113	17STILLWELL	NIPS	243219	05DUMONT	AEP	1	AEP_P4_#2978_05DUMONT 765_B	breaker	1409.0	172.47	173.34	DC	48.63
451418	270644	WILTON ;	CE	243206	05DUMONT	AEP	1	COMED_P7_345-L94507_B-S_+ 345-L97008_R-S	tower	4105.0	102.92	103.52	DC	104.93
451419	270644	WILTON ;	CE	243206	05DUMONT	AEP	1	COMED_P7_345-L6607_B-S_+ 345-L97008_R-S	tower	4105.0	102.06	102.72	DC	105.08
769328	270644	WILTON ;	CE	243206	05DUMONT	AEP	1	COMED_P7_345-L94507_B-S_+ 345-L97008_R-S	tower	4105.0	102.92	103.52	DC	104.93

ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CK T ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADIN G %	POST PROJECT LOADIN G %	AC/D C	MW IMPACT
769329	270644	WILTON ;	CE	243206	05DUMONT	AEP	1	COMED_P7_345-L6607_B-S_+ 345-L97008_R-S	tower	4105.0	102.06	102.72	DC	105.08
768132	270677	BURNHAM ;OR	CE	255109	17MUNSTER	NIPS	1	AEP_P4_#2978_05DUMONT 765_B	breaker	1441.0	111.89	112.63	DC	39.07
768111	270728	E FRANKFO; B	CE	274750	CRETE EC ;BP	CE	1	AEP_P4_#2978_05DUMONT 765_B	breaker	1399.0	109.4	110.67	DC	47.47
768112	270728	E FRANKFO; B	CE	274750	CRETE EC ;BP	CE	1	COMED_P4_023-65-BT2-3__	breaker	1399.0	109.09	110.33	DC	47.66
768113	270728	E FRANKFO; B	CE	274750	CRETE EC ;BP	CE	1	COMED_P4_112-65-BT4-5__	breaker	1399.0	109.0	110.25	DC	47.67
768114	270728	E FRANKFO; B	CE	274750	CRETE EC ;BP	CE	1	COMED_P4_112-65-BT3-4__	breaker	1399.0	109.0	110.24	DC	47.67
767501	270770	GOODINGS ;4B	CE	270766	GOODINGS ;3B	CE	1	COMED_P2-2_116_GG-345R_2_NO_FSA	bus	1802.0	115.0	119.36	DC	78.12
767502	270770	GOODINGS ;4B	CE	270766	GOODINGS ;3B	CE	1	COMED_P2-2_116_GG-345R_2_FSA	bus	1802.0	114.5	118.86	DC	78.12
768013	270770	GOODINGS ;4B	CE	270766	GOODINGS ;3B	CE	1	COMED_P4_116-45-L11614__	breaker	1802.0	119.46	123.81	DC	77.92
768014	270770	GOODINGS ;4B	CE	270766	GOODINGS ;3B	CE	1	COMED_P4_116-45-L9801_FSA	breaker	1802.0	115.0	119.36	DC	78.12
768015	270770	GOODINGS ;4B	CE	270766	GOODINGS ;3B	CE	1	COMED_P4_116-45-TR82__	breaker	1802.0	114.96	119.32	DC	78.12
768016	270770	GOODINGS ;4B	CE	270766	GOODINGS ;3B	CE	1	COMED_P4_112-45-BT4-5__	breaker	1802.0	107.48	112.44	DC	88.72
449829	270771	GREENACRE; T	CE	243229	05OLIVE	AEP	1	AEP_P4_#2978_05DUMONT 765_B	breaker	971.0	114.71	115.61	DC	28.77
768003	270771	GREENACRE; T	CE	243229	05OLIVE	AEP	1	AEP_P4_#2978_05DUMONT 765_B	breaker	971.0	114.71	115.61	DC	28.77
767966	270886	ST JOHN ; T	CE	255104	17GREEN_ACR E	NIPS	1	AEP_P4_#2978_05DUMONT 765_B	breaker	1091.0	107.42	108.55	DC	32.86
767967	270886	ST JOHN ; T	CE	255104	17GREEN_ACR E	NIPS	1	COMED_P4_023-65-BT2-3__	breaker	1091.0	109.85	110.89	DC	33.06
767968	270886	ST JOHN ; T	CE	255104	17GREEN_ACR E	NIPS	1	COMED_P4_112-65-BT4-5__	breaker	1091.0	107.65	108.76	DC	33.06
767969	270886	ST JOHN ; T	CE	255104	17GREEN_ACR E	NIPS	1	COMED_P4_112-65-BT3-4__	breaker	1091.0	107.65	108.76	DC	33.06
767827	270926	WILTON ; B	CE	275232	WILTON ;3M	CE	1	COMED_P4_112-65-BT5-6__	breaker	1379.0	165.19	165.79	DC	51.47
767829	270927	WILTON ; R	CE	275233	WILTON ;4M	CE	1	COMED_P4_112-65-BT2-3__	breaker	1379.0	162.62	163.52	DC	52.56
767859	274750	CRETE EC ;BP	CE	255112	17STJOHN	NIPS	1	AEP_P4_#2978_05DUMONT 765_B	breaker	1399.0	122.54	123.9	DC	46.91
767860	274750	CRETE EC ;BP	CE	255112	17STJOHN	NIPS	1	COMED_P4_023-65-BT2-3__	breaker	1399.0	121.96	123.32	DC	47.1
767861	274750	CRETE EC ;BP	CE	255112	17STJOHN	NIPS	1	COMED_P4_112-65-BT4-5__	breaker	1399.0	121.89	123.25	DC	47.11
767862	274750	CRETE EC ;BP	CE	255112	17STJOHN	NIPS	1	COMED_P4_112-65-BT3-4__	breaker	1399.0	121.88	123.25	DC	47.11
449698	274804	UNIV PK N;RP	CE	243229	05OLIVE	AEP	1	AEP_P4_#2978_05DUMONT 765_B	breaker	971.0	133.25	134.38	DC	33.04
449699	274804	UNIV PK N;RP	CE	243229	05OLIVE	AEP	1	COMED_P4_023-65-BT2-3__	breaker	971.0	131.06	132.29	DC	33.29
449700	274804	UNIV PK N;RP	CE	243229	05OLIVE	AEP	1	COMED_P4_112-65-BT4-5__	breaker	971.0	132.01	133.14	DC	33.29
449701	274804	UNIV PK N;RP	CE	243229	05OLIVE	AEP	1	COMED_P4_112-65-BT3-4__	breaker	971.0	132.01	133.14	DC	33.29
449702	274804	UNIV PK N;RP	CE	243229	05OLIVE	AEP	1	COMED_P4_023-65-BT4-5__	breaker	971.0	132.01	133.14	DC	33.29
767921	274804	UNIV PK N;RP	CE	243229	05OLIVE	AEP	1	AEP_P4_#2978_05DUMONT 765_B	breaker	971.0	133.25	134.38	DC	33.04
767922	274804	UNIV PK N;RP	CE	243229	05OLIVE	AEP	1	COMED_P4_023-65-BT2-3__	breaker	971.0	131.06	132.29	DC	33.29
767923	274804	UNIV PK N;RP	CE	243229	05OLIVE	AEP	1	COMED_P4_112-65-BT4-5__	breaker	971.0	132.01	133.14	DC	33.29
767924	274804	UNIV PK N;RP	CE	243229	05OLIVE	AEP	1	COMED_P4_112-65-BT3-4__	breaker	971.0	132.01	133.14	DC	33.29

ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CK T ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADIN G %	POST PROJECT LOADIN G %	AC D C	MW IMPACT
767925	274804	UNIV PK N;RP	CE	243229	05OLIVE	AEP	1	COMED_P4_023-65-BT4-5	breaker	971.0	132.01	133.14	DC	33.29
767826	275232	WILTON ;3M	CE	270644	WILTON ;	CE	1	COMED_P4_112-65-BT5-6	breaker	1379.0	165.19	165.79	DC	51.47
767831	275233	WILTON ;4M	CE	270644	WILTON ;	CE	1	COMED_P4_112-65-BT2-3	breaker	1379.0	162.62	163.52	DC	52.56
449665	346809	7CASEY	AMIL	247712	05SULLIVAN	AEP	1	AEP_P4_#3128_05EUGEN E 345_A2	breaker	1466.0	142.87	143.62	DC	24.25
769035	930740	AB1-122 TAP	CE	270717	DRESDEN ; R	CE	1	COMED_P7_345-L19601_B-S_+ 345-L9801_R-S_FSA	tower	1195.0	128.16	134.68	DC	77.86
769036	930740	AB1-122 TAP	CE	270717	DRESDEN ; R	CE	1	COMED_P7_345-L0301_B-S_+ 345-L9801_R-S_FSA-B	tower	1195.0	123.5	130.03	DC	77.89
449827	938670	AE1-089 TAP	AEP	243219	05DUMONT	AEP	1	AEP_P4_#2978_05DUMONT 765_B	breaker	1409.0	124.59	125.39	DC	24.83

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
450854	243918	05ELDERBRYSS	AEP	938670	AE1-089 TAP	AEP	1	AEP_P1-2_#695A	operation	1409.0	107.51	108.14	DC	26.72
768842	255104	17GREEN_ACRE	NIPS	270771	GREENACRE; T	CE	1	AEP_P1-2_#695A	operation	1091.0	100.82	101.62	DC	29.06
768669	255112	17STJOHN	NIPS	270886	ST JOHN ; T	CE	1	AEP_P1-2_#695A	operation	1091.0	107.64	108.75	DC	33.06
450389	255113	17STILLWELL	NIPS	243219	05DUMONT	AEP	1	AEP_P1-2_#695A	operation	1409.0	168.92	169.82	DC	49.81
450395	255113	17STILLWELL	NIPS	243219	05DUMONT	AEP	1	Base Case	operation	1409.0	110.4	110.95	DC	29.23
450918	270644	WILTON ;	CE	243206	05DUMONT	AEP	1	Base Case	operation	3555.0	105.01	105.57	DC	88.13
450919	270644	WILTON ;	CE	243206	05DUMONT	AEP	1	AEP_P1-2_#697A	operation	4105.0	96.14	96.83	DC	95.53
768915	270644	WILTON ;	CE	243206	05DUMONT	AEP	1	Base Case	operation	3555.0	105.01	105.57	DC	88.13
768916	270644	WILTON ;	CE	243206	05DUMONT	AEP	1	AEP_P1-2_#697A	operation	4105.0	96.14	96.83	DC	95.53
768841	270677	BURNHAM ;OR	CE	255109	17MUNSTER	NIPS	1	AEP_P1-2_#695A	operation	1441.0	111.05	111.79	DC	39.32
768866	270717	DRESDEN ; R	CE	270697	COLLINS ; R	CE	1	COMED_P1-2_345-L1223_TR-S	operation	1528.0	99.18	99.84	DC	22.18
768819	270728	E FRANKFO; B	CE	274750	CRETE EC;BP	CE	1	AEP_P1-2_#695A	operation	1399.0	108.96	110.2	DC	47.66
768891	270770	GOODINGS ;4B	CE	270766	GOODINGS ;3B	CE	1	COMED_P1-2_345-L11613AB-S	operation	1802.0	101.18	106.15	DC	88.78
768895	270770	GOODINGS ;4B	CE	270766	GOODINGS ;3B	CE	1	Base Case	operation	1560.0	95.43	99.9	DC	69.22
450634	270771	GREENACRE; T	CE	243229	05OLIVE	AEP	1	AEP_P1-2_#695A	operation	971.0	113.25	114.16	DC	29.06
768718	270771	GREENACRE; T	CE	243229	05OLIVE	AEP	1	AEP_P1-2_#695A	operation	971.0	113.25	114.16	DC	29.06
768656	270855	POWERTON ; R	CE	349662	7TAZEWELL	AMIL	1	COMED_P1-2_345-L1202_B-S-A	operation	1479.0	103.04	114.16	DC	164.87
768665	270886	ST JOHN ; T	CE	255104	17GREEN_ACRE	NIPS	1	AEP_P1-2_#695A	operation	1091.0	107.64	108.75	DC	33.06
768945	270926	WILTON ; B	CE	275232	WILTON ;3M	CE	1	COMED_P1-2_765-L11216_-S	operation	1379.0	103.69	104.08	DC	32.29
768914	270927	WILTON ; R	CE	275233	WILTON ;4M	CE	1	COMED_P1-2_765-L11216_-S	operation	1379.0	104.88	105.47	DC	33.91
768587	274750	CRETE EC ;BP	CE	255112	17STJOHN	NIPS	1	AEP_P1-2_#695A	operation	1399.0	121.84	123.21	DC	47.1
768588	274750	CRETE EC ;BP	CE	255112	17STJOHN	NIPS	1	Base Case	operation	1091.0	78.84	80.18	DC	32.5

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
450559	274804	UNIV PK N;RP	CE	243229	05OLIVE	AEP	1	AEP_P1-2_#695A	operation	971.0	131.99	133.13	DC	33.29
768647	274804	UNIV PK N;RP	CE	243229	05OLIVE	AEP	1	AEP_P1-2_#695A	operation	971.0	131.99	133.13	DC	33.29
450553	346809	7CASEY	AMIL	247712	05SULLIVAN	AEP	1	AEP_P1-2_#286	operation	1466.0	137.18	137.95	DC	24.85
450554	346809	7CASEY	AMIL	247712	05SULLIVAN	AEP	1	Base Case	operation	1334.0	121.45	122.14	DC	20.3
451028	348885	7BUNSONVILLE	AMIL	243221	05EUGENE	AEP	1	AEP_P1-2_#8907	operation	1793.0	100.66	101.09	DC	22.59
768522	930740	AB1-122 TAP	CE	270717	DRESDEN ; R	CE	1	COMED_P1-2_345-L1202_B-S-A	operation	1195.0	111.37	115.29	DC	46.82
768532	930740	AB1-122 TAP	CE	270717	DRESDEN ; R	CE	1	Base Case	operation	1195.0	87.99	91.13	DC	37.51
768614	930750	AB1-122 TAP	CE	270716	DRESDEN ; B	CE	1	Base Case	operation	1201.0	97.83	101.49	DC	43.93
768615	930750	AB1-122 TAP	CE	270716	DRESDEN ; B	CE	1	COMED_P1-2_345-L19601_B-S	operation	1479.0	93.42	98.46	DC	74.54
450725	938670	AE1-089 TAP	AEP	243219	05DUMONT	AEP	1	AEP_P1-2_#695A	operation	1409.0	114.97	115.83	DC	26.72

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 gauge 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.

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
768657	270855	POWERTON ; R	CE	349662	7TAZEWELL	AMIL	1	COMED_P1-2_345-L1202__B-S-A	single	1479.0	77.6	79.15	DC	23.08

Bus #	Bus	MW Impact
274677	POWERTON ;5U	73.29
274678	POWERTON ;6U	73.44
274861	TOP CROP ;1U	0.9
274862	TOP CROP ;2U	1.75
274879	MINONK ;1U	3.81
918051	AA1-018 C	0.89
930751	AB1-122 2O1	357.35
934111	AD1-039 2	35.02
934871	AD1-116 C	2.26
936291	AD2-038 C O1	8.97
938851	AE1-113 C O1	33.31
939321	AE1-163 C O1	23.08
939871	AE1-222 2	394.63
AC1-056	AC1-056	6.51
AE1-080A	AE1-080A	18.52
BAYOU	BAYOU	3.24
BIG_CAJUN1	BIG_CAJUN1	4.77
BIG_CAJUN2	BIG_CAJUN2	9.61
BLUEG	BLUEG	5.05
CALDERWOOD	CALDERWOOD	0.97
CANNELTON	CANNELTON	0.47
CARR	CARR	0.23
CATAWBA	CATAWBA	0.47
CHEOAH	CHEOAH	0.88
CHILHOWEE	CHILHOWEE	0.32
CHOCTAW	CHOCTAW	2.89
COFFEEN	COFFEEN	2.36
COTTONWOOD	COTTONWOOD	13.17
DUCKCREEK	DUCKCREEK	24.17
EDWARDS	EDWARDS	12.15
ELMERSMITH	ELMERSMITH	0.86
FARMERCITY	FARMERCITY	1.94
GIBSON	GIBSON	0.32
HAMLET	HAMLET	1.47
MECS	MECS	0.98
NEWTON	NEWTON	4.2
PRAIRIE	PRAIRIE	11.16
RENSSELAER	RENSSELAER	0.18
SANTEETLA	SANTEETLA	0.26
SMITHLAND	SMITHLAND	0.6

Bus #	Bus	MW Impact
TATANKA	TATANKA	3.01
TILTON	TILTON	1.46
TRIMBLE	TRIMBLE	0.53
TVA	TVA	4.17
UNIONPOWER	UNIONPOWER	2.25

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
769328	270644	WILTON ;	CE	243206	05DUMONT	AEP	1	COMED_P7_345-L94507_B-S+_345-L97008_R-S	tower	4105.0	102.92	103.52	DC	104.93

Bus #	Bus	MW Impact
270859	PWR VTR EC;R	32.17
274722	S-055 E	29.55
274772	LINCOLN ;3U	4.7
274773	LINCOLN ;4U	4.7
274774	LINCOLN ;5U	4.7
274775	LINCOLN ;6U	4.7
274776	LINCOLN ;7U	4.7
274777	LINCOLN ;8U	4.7
274832	U4-027	28.06
274859	EASYR;U1 E	29.13
274860	EASYR;U2 E	29.13
274888	PILOT HIL;1E	44.3
274890	CAYUG;1U E	36.07
274891	CAYUG;2U E	36.07
275149	KEMPTON ;1E	44.3
290021	O50 E	49.24
290051	GSG-6; E	28.08
290108	LEEDK;1U E	65.57
293061	N-015 E	41.22
293516	O-009 E1	23.79
293517	O-009 E2	12.09
293518	O-009 E3	13.31
293644	O22 E1	25.31
293645	O22 E2	49.12
293715	O-029 E	25.78
293716	O-029 E	14.13
293717	O-029 E	12.99
293771	O-035 E	16.49
294392	P-010 E	52.34
294763	P-046 E	24.88
295109	WESTBROOK E	15.03
295111	SUBLETTE E	6.87
296125	R-030 C3	9.31
296128	R-030 E3	37.24
296271	R-030 C2	9.2
296272	R-030 E2	36.8
296308	R-030 C1	9.2
296309	R-030 E1	36.8
910542	X3-005 E	1.57
914641	Y2-103	118.19

Bus #	Bus	MW Impact
915011	Y3-013 1	9.85
915021	Y3-013 2	9.85
915031	Y3-013 3	9.85
916211	Z1-072 E	12.48
916221	Z1-073 E	14.49
916502	Z1-106 E1	3.41
916504	Z1-106 E2	3.41
916512	Z1-107 E	6.53
916522	Z1-108 E	6.62
917502	Z2-087 E	48.13
918052	AA1-018 E	40.41
919221	AA1-146	46.5
919581	AA2-030	46.5
919621	AA2-039 C	3.78
919622	AA2-039 E	25.31
920272	AA2-123 E	6.51
924471	AB2-096	112.6
925161	AB2-173	8.29
925302	AB2-191 E	3.72
925581	AC1-033 C	3.62
925582	AC1-033 E	24.22
926311	AC1-109 1	5.21
926321	AC1-109 2	5.21
926331	AC1-110 1	5.12
926341	AC1-110 2	5.12
926351	AC1-111 1	2.07
926361	AC1-111 2	2.07
926371	AC1-111 3	2.07
926381	AC1-111 4	2.07
926391	AC1-111 5	2.07
926401	AC1-111 6	2.07
926431	AC1-114	6.32
926821	AC1-168 C O1	2.98
926822	AC1-168 E O1	20.01
927091	AC1-204 1	184.27
927101	AC1-204 2	184.31
927201	AC1-214 C O1	5.29
927202	AC1-214 E O1	16.83
927451	AC1-142A 1	10.61
927461	AC1-142A 2	10.61
927511	AC1-113 1	3.16
927521	AC1-113 2	3.16
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	175.15
930501	AB1-091 O1	173.97

Bus #	Bus	MW Impact
930741	AB1-122 1O1	194.95
930751	AB1-122 2O1	188.67
932881	AC2-115 1	6.32
932891	AC2-115 2	6.32
932921	AC2-116	2.21
932931	AC2-117	14.95
933341	AC2-147 C	2.31
933342	AC2-147 E	3.77
933411	AC2-154 C	6.01
933412	AC2-154 E	9.81
933431	AC2-156 C O1	2.64
933432	AC2-156 E O1	4.3
933911	AD1-013 C	4.95
933912	AD1-013 E	7.9
933931	AD1-016 C	2.47
933932	AD1-016 E	4.03
934051	AD1-031 C O1	7.35
934052	AD1-031 E O1	11.99
934101	AD1-039 1	19.1
934111	AD1-039 2	18.49
934401	AD1-064 C O1	8.56
934402	AD1-064 E O1	40.08
934431	AD1-067 C	0.35
934432	AD1-067 E	1.48
934651	AD1-096 C	2.37
934652	AD1-096 E	3.86
934701	AD1-098 C O1	18.47
934702	AD1-098 E O1	13.48
934721	AD1-100 C	51.04
934722	AD1-100 E	238.17
934871	AD1-116 C	2.35
934872	AD1-116 E	3.84
934881	AD1-117 C	14.23
934882	AD1-117 E	9.49
934971	AD1-129 C	2.4
934972	AD1-129 E	1.6
935001	AD1-133 C O1	55.95
935002	AD1-133 E O1	37.3
936291	AD2-038 C O1	5.86
936292	AD2-038 E O1	39.2
936371	AD2-047 C O1	5.38
936372	AD2-047 E O1	57.91
936461	AD2-060	6.33
936511	AD2-066 C O1	21.47
936512	AD2-066 E O1	14.31
936781	AD2-101 C	10.68
936782	AD2-101 E	49.98
936791	AD2-102 C	31.89
936792	AD2-102 E	30.64
936961	AD2-130	1.4
937001	AD2-134 C	7.34
937002	AD2-134 E	30.33

Bus #	Bus	MW Impact
937031	AD2-137 C O1	10.26
937032	AD2-137 E O1	48.01
937051	AD2-140 C O1	10.5
937052	AD2-140 E O1	49.17
937061	AD2-141 C O1	10.44
937062	AD2-141 E O1	49.23
937071	AD2-142 C O1	21.0
937072	AD2-142 E O1	98.34
937121	AD2-148 C O1	8.35
937122	AD2-148 E O1	39.1
937131	AD2-149 C O1	8.35
937132	AD2-149 E O1	39.1
937141	AD2-150 C O1	8.35
937142	AD2-150 E O1	39.1
937181	AD2-155 C O1	8.35
937182	AD2-155 E O1	39.1
937311	AD2-172 C	6.53
937312	AD2-172 E	9.02
937321	AD2-175 C	38.91
937322	AD2-175 E	25.94
937331	AD2-176 C O1	19.52
937332	AD2-176 E O1	13.01
937401	AD2-194 1	19.82
937411	AD2-194 2	19.82
937531	AD2-214 C	11.6
937532	AD2-214 E	5.46
938012	AE1-002 E O1	20.59
938511	AE1-070 1	23.28
938521	AE1-070 2	21.31
938851	AE1-113 C O1	21.75
938852	AE1-113 E O1	68.37
938861	AE1-114 C O1	9.46
938862	AE1-114 E O1	36.16
939051	AE1-134 1	3.61
939061	AE1-134 2	3.61
939321	AE1-163 C O1	14.69
939322	AE1-163 E O1	90.24
939351	AE1-166 C O1	26.27
939352	AE1-166 E O1	24.25
939401	AE1-172 C O1	16.57
939402	AE1-172 E O1	77.57
939631	AE1-193 C O1	17.95
939632	AE1-193 E O1	120.14
939641	AE1-194 C	21.1
939642	AE1-194 E	141.24
939651	AE1-195 C	21.1
939652	AE1-195 E	141.24
939681	AE1-198 C O1	53.3
939682	AE1-198 E O1	45.3
939691	AE1-199	6.42
939701	AE1-201 C	5.34
939702	AE1-201 E	1.17

Bus #	Bus	MW Impact
939732	AE1-204 E	0.77
939741	AE1-205 C O1	23.29
939742	AE1-205 E O1	32.16
939861	AE1-222 1	215.29
939871	AE1-222 2	208.36
939921	AE1-228 C O1	27.02
939922	AE1-228 E O1	18.01
939961	AE1-233 C O1	6.29
939962	AE1-233 E O1	25.97
940101	AE1-252 C O1	27.05
940102	AE1-252 E O1	18.03
AB2-013	AB2-013	41.07
AE1-033	AE1-033	47.69
BLUEG	BLUEG	16.82
CALDERWOOD	CALDERWOOD	0.23
CANNELTON	CANNELTON	0.26
CARR	CARR	1.97
CATAWBA	CATAWBA	0.8
CBM-S1	CBM-S1	3.44
CBM-W1	CBM-W1	76.96
CBM-W2	CBM-W2	140.68
CHEOAH	CHEOAH	0.24
CHILHOWEE	CHILHOWEE	0.07
DEARBORN	DEARBORN	6.43
ELMERSMITH	ELMERSMITH	0.27
G-007	G-007	5.53
GIBSON	GIBSON	0.08
HAMLET	HAMLET	3.02
MEC	MEC	98.2
O-066	O-066	18.61
RENSSELAER	RENSSELAER	1.56
SANTEETLA	SANTEETLA	0.08
TRIMBLE	TRIMBLE	1.99
WEC	WEC	20.94
Z1-043	Z1-043	73.86

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
768168	270716	DRESDEN ; B	CE	270928	WOLFS ; B	CE	1	COMED_P4_012-45-BT5-6__	breaker	1479.0	90.47	91.3	DC	27.4

Bus #	Bus	MW Impact
274658	DRESDEN ;2U	78.0
274677	POWERTON ;5U	12.82
274678	POWERTON ;6U	12.7
274836	EQUISTAR ; R	4.45
274879	MINONK ;1U	1.89
290021	O50 E	49.28
904211	W3-135	0.36
916502	Z1-106 E1	0.62
916504	Z1-106 E2	0.61
930751	AB1-122 2O1	318.92
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	5.53
938852	AE1-113 E O1	17.37
939321	AE1-163 C O1	3.84
939322	AE1-163 E O1	23.56
939871	AE1-222 2	352.2
953201	J715 C	1.34
953202	J715 E	7.25
AB2-013	AB2-013	10.17
BLUEG	BLUEG	0.42
CALDERWOOD	CALDERWOOD	0.01
CARR	CARR	0.07
CATAWBA	CATAWBA	0.03
CBM-S1	CBM-S1	0.09
CBM-W2	CBM-W2	7.73
CHEOAH	CHEOAH	0.01
CHILHOWEE	CHILHOWEE	0.0
CIN	CIN	0.16
DEARBORN	DEARBORN	0.27
FARMERCITY	FARMERCITY	0.1
G-007	G-007	0.2
HAMLET	HAMLET	0.12
IPL	IPL	0.03
O-066	O-066	0.67
RENSSELAER	RENSSELAER	0.06
SANTEETLA	SANTEETLA	0.0
TATANKA	TATANKA	0.72

Bus #	Bus	MW Impact
TRIMBLE	TRIMBLE	0.05
Z1-043	Z1-043	16.14

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
768154	270717	DRESDEN ; R	CE	270697	COLLINS ; R	CE	1	COMED_P4_111-45-L1223T_	breaker	1528.0	99.32	99.98	DC	22.23

Bus #	Bus	MW Impact
274659	DRESDEN ;3U	42.28
274729	ELWOOD EC;1P	2.69
274731	ELWOOD EC;2P	2.69
274733	ELWOOD EC;3P	2.69
274735	ELWOOD EC;4P	2.69
274736	ELWOOD EC;9P	2.66
274890	CAYUG;1U E	9.67
274891	CAYUG;2U E	9.67
276150	W2-048 E	0.97
290021	O50 E	11.1
290261	S-027 E	15.15
290265	S-028 E	15.15
296125	R-030 C3	3.8
296128	R-030 E3	15.19
296271	R-030 C2	3.75
296272	R-030 E2	15.01
296308	R-030 C1	3.75
296309	R-030 E1	15.01
905082	W4-005 E	25.39
909052	X2-022 E	13.53
917502	Z2-087 E	19.63
924041	AB2-047 C O1	3.61
924042	AB2-047 E O1	24.18
924261	AB2-070 C O1	1.95
924262	AB2-070 E O1	13.08
925771	AC1-053 C	1.93
925772	AC1-053 E	12.91
926841	AC1-171 C O1	0.6
926842	AC1-171 E O1	4.0
927091	AC1-204 1	64.57
927101	AC1-204 2	65.35
930741	AB1-122 1O1	173.78
930751	AB1-122 2O1	33.89
934101	AD1-039 1	17.03
934111	AD1-039 2	3.32
935001	AD1-133 C O1	39.0
935002	AD1-133 E O1	26.0
935141	AD1-148	3.54
936291	AD2-038 C O1	1.13
936292	AD2-038 E O1	7.56
936771	AD2-100 C O1	7.92

Bus #	Bus	MW Impact
936772	AD2-100 E O1	5.28
936972	AD2-131 E O1	1.67
937161	AD2-153 C O1	2.52
937162	AD2-153 E O1	11.79
937171	AD2-154 C O1	2.52
937172	AD2-154 E O1	11.79
937211	AD2-159 C	2.74
937212	AD2-159 E	12.84
937401	AD2-194 1	6.94
937411	AD2-194 2	7.03
938511	AE1-070 1	8.16
938521	AE1-070 2	7.55
938851	AE1-113 C O1	4.19
938852	AE1-113 E O1	13.18
939321	AE1-163 C O1	3.11
939322	AE1-163 E O1	19.12
939401	AE1-172 C O1	3.31
939402	AE1-172 E O1	15.48
939741	AE1-205 C O1	9.44
939742	AE1-205 E O1	13.03
939861	AE1-222 1	191.92
939871	AE1-222 2	37.43
940101	AE1-252 C O1	7.26
940102	AE1-252 E O1	4.84
951741	J474 C	1.23
951742	J474 E	6.63
952651	J756 C	1.67
952652	J756 E	9.05
954181	J884	6.11
AB2-013	AB2-013	11.51
CARR	CARR	0.16
CBM-S1	CBM-S1	2.68
CBM-S2	CBM-S2	0.28
CBM-W1	CBM-W1	3.41
CBM-W2	CBM-W2	44.28
CIN	CIN	2.13
CPL	CPL	0.02
DEARBORN	DEARBORN	0.86
G-007	G-007	0.45
IPL	IPL	0.97
LGEE	LGEE	0.09
MEC	MEC	12.36
O-066	O-066	1.51
RENSSELAER	RENSSELAER	0.13
Z1-043	Z1-043	11.82

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
769339	918050	AA1-018 TAP	CE	270769	GOODINGS ;2R	CE	1	COMED_P7_345-L1202__B-S+_345-L1227__R-S-A	tower	1494.0	88.0	91.55	DC	52.97

Bus #	Bus	MW Impact
274677	POWERTON ;5U	24.82
274678	POWERTON ;6U	24.88
274879	MINONK ;1U	1.29
290021	O50 E	33.68
293644	O22 E1	6.5
293645	O22 E2	12.61
294401	BSHIL;1U E	4.59
294410	BSHIL;2U E	4.59
918051	AA1-018 C	1.89
918052	AA1-018 E	82.43
919621	AA2-039 C	1.12
919622	AA2-039 E	7.49
925581	AC1-033 C	0.75
925582	AC1-033 E	5.03
926841	AC1-171 C O1	0.64
926842	AC1-171 E O1	4.29
930741	AB1-122 1O1	102.48
930751	AB1-122 2O1	121.04
934051	AD1-031 C O1	1.53
934052	AD1-031 E O1	2.49
934101	AD1-039 1	10.04
934111	AD1-039 2	11.86
934871	AD1-116 C	4.8
934872	AD1-116 E	7.83
936291	AD2-038 C O1	8.22
936292	AD2-038 E O1	54.98
938851	AE1-113 C O1	30.5
938852	AE1-113 E O1	95.89
939321	AE1-163 C O1	7.42
939322	AE1-163 E O1	45.55
939631	AE1-193 C O1	3.73
939632	AE1-193 E O1	24.94
939681	AE1-198 C O1	11.07
939682	AE1-198 E O1	9.4
939861	AE1-222 1	113.17
939871	AE1-222 2	133.67
951631	J456 C	1.31
951632	J456 E	7.1
954702	J844 E	20.17
990901	L-005 E	7.01

Bus #	Bus	MW Impact
AB2-013	AB2-013	21.27
CARR	CARR	0.05
CBM-S1	CBM-S1	2.46
CBM-S2	CBM-S2	0.52
CBM-W1	CBM-W1	4.37
CBM-W2	CBM-W2	37.42
CIN	CIN	0.84
CPLE	CPLE	0.14
DEARBORN	DEARBORN	0.49
G-007	G-007	0.12
IPL	IPL	0.4
LGEE	LGEE	0.09
MEC	MEC	14.95
O-066	O-066	0.42
RENSSELAER	RENSSELAER	0.04
Z1-043	Z1-043	13.46

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
769216	930750	AB1-122 TAP	CE	270716	DRESDEN ; B	CE	1	COMED_P7_345-L19601_B-S_+_345-L9801__R-S_FSA	tower	1768.0	93.14	98.33	DC	91.71

Bus #	Bus	MW Impact
274677	POWERTON ;5U	30.9
274678	POWERTON ;6U	30.69
274861	TOP CROP ;1U	0.82
274862	TOP CROP ;2U	1.59
274879	MINONK ;1U	3.37
290021	O50 E	87.99
293644	O22 E1	21.38
293645	O22 E2	41.5
918051	AA1-018 C	0.78
918052	AA1-018 E	33.95
930751	AB1-122 2O1	521.0
934111	AD1-039 2	51.06
934871	AD1-116 C	1.98
934872	AD1-116 E	3.23
936291	AD2-038 C O1	5.07
936292	AD2-038 E O1	33.96
938851	AE1-113 C O1	18.84
938852	AE1-113 E O1	59.23
939321	AE1-163 C O1	12.84
939322	AE1-163 E O1	78.87
939871	AE1-222 2	575.36
AB2-013	AB2-013	23.94
CARR	CARR	0.03
CBM-S1	CBM-S1	2.85
CBM-S2	CBM-S2	0.66
CBM-W1	CBM-W1	3.44
CBM-W2	CBM-W2	42.04
CIN	CIN	1.13
CPL	CPL	0.2
DEARBORN	DEARBORN	0.47
G-007	G-007	0.06
IPL	IPL	0.57
LGEE	LGEE	0.14
MEC	MEC	15.32
O-066	O-066	0.21
RENSSELAER	RENSSELAER	0.02
Z1-043	Z1-043	13.56

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
769398	936290	AD2-038 TAP	CE	918050	AA1-018 TAP	CE	1	COMED_P7_345-L1202__B-S+_345-L1227__R-S-A	tower	1494.0	81.65	85.2	DC	53.0

Bus #	Bus	MW Impact
274677	POWERTON ;5U	24.83
274678	POWERTON ;6U	24.89
274879	MINONK ;1U	1.29
290021	O50 E	33.7
293644	O22 E1	6.5
293645	O22 E2	12.63
293771	O-035 E	3.1
294401	BSHIL;1U E	4.6
294410	BSHIL;2U E	4.6
916211	Z1-072 E	2.34
919621	AA2-039 C	1.12
919622	AA2-039 E	7.5
925581	AC1-033 C	0.75
925582	AC1-033 E	5.04
926841	AC1-171 C O1	0.64
926842	AC1-171 E O1	4.29
927201	AC1-214 C O1	0.99
927202	AC1-214 E O1	3.16
930741	AB1-122 1O1	102.53
930751	AB1-122 2O1	121.11
934051	AD1-031 C O1	1.53
934052	AD1-031 E O1	2.49
934101	AD1-039 1	10.05
934111	AD1-039 2	11.87
936291	AD2-038 C O1	8.22
936292	AD2-038 E O1	55.0
938851	AE1-113 C O1	30.51
938852	AE1-113 E O1	95.92
939321	AE1-163 C O1	7.42
939322	AE1-163 E O1	45.58
939631	AE1-193 C O1	3.73
939632	AE1-193 E O1	24.99
939681	AE1-198 C O1	11.09
939682	AE1-198 E O1	9.42
939861	AE1-222 1	113.23
939871	AE1-222 2	133.74
951631	J456 C	1.31
951632	J456 E	7.1
953951	J859	8.13
954702	J844 E	20.17

Bus #	Bus	MW Impact
990901	L-005 E	7.02
AB2-013	AB2-013	21.29
CARR	CARR	0.04
CBM-S1	CBM-S1	2.49
CBM-S2	CBM-S2	0.53
CBM-W1	CBM-W1	4.43
CBM-W2	CBM-W2	37.66
CIN	CIN	0.86
CPL	CPL	0.15
DEARBORN	DEARBORN	0.48
G-007	G-007	0.11
IPL	IPL	0.42
LGEE	LGEE	0.09
MEC	MEC	15.0
O-066	O-066	0.38
RENSSELAER	RENSSELAER	0.04
Z1-043	Z1-043	13.48

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
449890	243918	05ELDERBRYSS	AEP	938670	AE1-089 TAP	AEP	1	AEP_P4_#2978_05DUMONT 765_B	breaker	1409.0	116.23	117.02	DC	24.83

Bus #	Bus	MW Impact
247900	05FR-11G E	6.85
247901	05FR-12G E	6.74
247902	05FR-21G E	7.2
247903	05FR-22G E	6.89
247904	05FR-3G E	13.96
247905	05FR-4G E	10.5
247906	05MDL-1G E	15.63
247907	05MDL-2G E	7.75
247912	05MDL-3G E	8.11
247913	05MDL-4G E	7.83
247943	T-127 E	7.83
270859	PWR VTR EC;R	7.11
274722	S-055 E	6.55
274809	UNIV PK N;5U	0.8
274811	UNIV PK N;7U	0.8
274812	UNIV PK N;8U	0.8
274814	UNIV PK N;0U	0.8
274815	UNIV PK N;XU	0.8
274859	EASYR;U1 E	5.56
274860	EASYR;U2 E	5.56
274888	PILOT HIL;1E	10.32
274890	CAYUG;1U E	8.28
274891	CAYUG;2U E	8.28
275149	KEMPTON ;1E	10.32
290021	O50 E	11.46
290051	GSG-6; E	6.16
290108	LEEDK;1U E	14.23
293061	N-015 E	8.96
293644	O22 E1	5.93
293645	O22 E2	11.51
294392	P-010 E	11.37
294763	P-046 E	5.56
295109	WESTBROOK E	3.3
909145	X2-052	36.23
914641	Y2-103	26.18
915011	Y3-013 1	2.18
915021	Y3-013 2	2.18
915031	Y3-013 3	2.18
916221	Z1-073 E	3.18
916502	Z1-106 E1	0.73

Bus #	Bus	MW Impact
916504	Z1-106 E2	0.73
916512	Z1-107 E	1.5
916522	Z1-108 E	1.45
917711	Z2-114 C	0.06
917712	Z2-114 E	0.4
918052	AA1-018 E	9.8
920272	AA2-123 E	1.43
924471	AB2-096	24.87
925302	AB2-191 E	0.82
926311	AC1-109 1	1.1
926321	AC1-109 2	1.1
926331	AC1-110 1	1.1
926341	AC1-110 2	1.1
926351	AC1-111 1	0.44
926361	AC1-111 2	0.44
926371	AC1-111 3	0.44
926381	AC1-111 4	0.44
926391	AC1-111 5	0.44
926401	AC1-111 6	0.44
926431	AC1-114	1.4
926821	AC1-168 C O1	0.7
926822	AC1-168 E O1	4.71
927091	AC1-204 1	41.9
927101	AC1-204 2	41.91
927451	AC1-142A 1	2.42
927461	AC1-142A 2	2.42
927511	AC1-113 1	0.7
927521	AC1-113 2	0.7
927531	AC1-185 1	0.41
927541	AC1-185 2	0.41
927551	AC1-185 3	0.41
927561	AC1-185 4	0.41
927571	AC1-185 5	0.41
927581	AC1-185 6	0.41
927591	AC1-185 7	0.41
927601	AC1-185 8	0.41
930042	AB1-006 E	17.03
930391	AB1-080	2.15
930481	AB1-089	38.75
930501	AB1-091 O1	40.14
930741	AB1-122 1O1	41.99
930751	AB1-122 2O1	42.66
932601	AC2-080 C O1	3.72
932602	AC2-080 E O1	24.91
932881	AC2-115 1	1.4
932891	AC2-115 2	1.4
932921	AC2-116	0.49
932931	AC2-117	5.17
933341	AC2-147 C	0.52
933342	AC2-147 E	0.85
933411	AC2-154 C	1.4
933412	AC2-154 E	2.28

Bus #	Bus	MW Impact
933431	AC2-156 C O1	0.55
933432	AC2-156 E O1	0.9
933911	AD1-013 C	1.08
933912	AD1-013 E	1.73
933931	AD1-016 C	0.54
933932	AD1-016 E	0.89
934101	AD1-039 1	4.12
934111	AD1-039 2	4.18
934401	AD1-064 C O1	1.88
934402	AD1-064 E O1	8.8
934431	AD1-067 C	0.08
934432	AD1-067 E	0.33
934651	AD1-096 C	0.53
934652	AD1-096 E	0.86
934701	AD1-098 C O1	4.06
934702	AD1-098 E O1	2.96
934721	AD1-100 C	11.12
934722	AD1-100 E	51.9
934871	AD1-116 C	0.57
934872	AD1-116 E	0.93
934881	AD1-117 C	3.21
934882	AD1-117 E	2.14
934971	AD1-129 C	0.53
934972	AD1-129 E	0.35
935001	AD1-133 C O1	12.63
935002	AD1-133 E O1	8.42
935271	AD1-137 C	5.69
935272	AD1-137 E	38.05
936291	AD2-038 C O1	1.41
936292	AD2-038 E O1	9.44
936371	AD2-047 C O1	1.25
936372	AD2-047 E O1	13.49
936461	AD2-060	1.47
936511	AD2-066 C O1	4.99
936512	AD2-066 E O1	3.33
936781	AD2-101 C	2.48
936782	AD2-101 E	11.59
936791	AD2-102 C	7.12
936792	AD2-102 E	6.84
936961	AD2-130	0.32
936981	AD2-132 C	5.04
936982	AD2-132 E	23.6
937001	AD2-134 C	1.61
937002	AD2-134 E	6.66
937031	AD2-137 C O1	1.92
937032	AD2-137 E O1	9.0
937041	AD2-138 C	5.04
937042	AD2-138 E	23.6
937051	AD2-140 C O1	1.92
937052	AD2-140 E O1	8.99
937061	AD2-141 C O1	1.91
937062	AD2-141 E O1	9.0

Bus #	Bus	MW Impact
937071	AD2-142 C O1	3.84
937072	AD2-142 E O1	17.98
937121	AD2-148 C O1	1.93
937122	AD2-148 E O1	9.02
937131	AD2-149 C O1	1.93
937132	AD2-149 E O1	9.02
937141	AD2-150 C O1	1.93
937142	AD2-150 E O1	9.02
937181	AD2-155 C O1	1.93
937182	AD2-155 E O1	9.02
937311	AD2-172 C	1.46
937312	AD2-172 E	2.02
937321	AD2-175 C	8.98
937322	AD2-175 E	5.98
937331	AD2-176 C O1	4.29
937332	AD2-176 E O1	2.86
937401	AD2-194 1	4.51
937411	AD2-194 2	4.51
938012	AE1-002 E O1	3.86
938511	AE1-070 1	5.29
938521	AE1-070 2	4.84
938851	AE1-113 C O1	5.24
938852	AE1-113 E O1	16.46
938861	AE1-114 C O1	2.13
938862	AE1-114 E O1	8.16
939321	AE1-163 C O1	3.48
939322	AE1-163 E O1	21.35
939351	AE1-166 C O1	5.85
939352	AE1-166 E O1	5.4
939401	AE1-172 C O1	3.71
939402	AE1-172 E O1	17.38
939641	AE1-194 C	5.61
939642	AE1-194 E	37.52
939651	AE1-195 C	5.61
939652	AE1-195 E	37.52
939691	AE1-199	1.41
939701	AE1-201 C	1.17
939702	AE1-201 E	0.26
939732	AE1-204 E	0.17
939861	AE1-222 1	46.37
939871	AE1-222 2	47.11
939921	AE1-228 C O1	5.92
939922	AE1-228 E O1	3.95
939961	AE1-233 C O1	1.36
939962	AE1-233 E O1	5.62
940101	AE1-252 C O1	6.21
940102	AE1-252 E O1	4.14
AB2-013	AB2-013	10.01
AE1-033	AE1-033	10.77
CARR	CARR	0.59
CATAWBA	CATAWBA	0.05
CBM-S1	CBM-S1	4.6

Bus #	Bus	MW Impact
CBM-W1	CBM-W1	19.73
CBM-W2	CBM-W2	68.15
CIN	CIN	7.05
DEARBORN	DEARBORN	1.82
G-007	G-007	1.64
HAMLET	HAMLET	0.34
IPL	IPL	3.28
LGEE	LGEE	0.73
MEC	MEC	25.32
O-066	O-066	5.54
RENSSELAER	RENSSELAER	0.47
WEC	WEC	4.7
Z1-043	Z1-043	17.65

Index 9

ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CK T ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADIN G %	POST PROJECT LOADIN G %	AC D C	MW IMPACT
768127	255104	17GREEN_ACR E	NIPS	270771	GREENACR E; T	CE	1	AEP_P4_#2978_05DUMONT 765_B	breaker	1091.0	102.11	102.91	DC	28.77

Bus #	Bus	MW Impact
270859	PWR VTR EC;R	8.06
274722	S-055 E	7.52
274751	CRETE EC ;1U	1.93
274752	CRETE EC ;2U	1.93
274753	CRETE EC ;3U	1.93
274754	CRETE EC ;4U	1.93
274832	U4-027	7.11
274859	EASYR;U1 E	7.3
274860	EASYR;U2 E	7.3
274888	PILOT HIL;1E	12.4
274890	CAYUG;1U E	8.92
274891	CAYUG;2U E	8.92
275149	KEMPTON ;1E	12.4
290021	O50 E	12.98
290051	GSG-6; E	6.94
290108	LEEDK;1U E	16.14
293061	N-015 E	10.24
293516	O-009 E1	5.99
293517	O-009 E2	3.04
293518	O-009 E3	3.35
293644	O22 E1	7.24
293645	O22 E2	14.06
293715	O-029 E	6.47
293716	O-029 E	3.55
293717	O-029 E	3.26
294392	P-010 E	13.0
294763	P-046 E	6.23
295109	WESTBROOK E	3.72
295111	SUBLETTE E	1.72
910542	X3-005 E	0.52
914641	Y2-103	30.09
915011	Y3-013 1	2.51
915021	Y3-013 2	2.51
915031	Y3-013 3	2.51
916221	Z1-073 E	3.58
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	10.62
919221	AA1-146	11.67

Bus #	Bus	MW Impact
919581	AA2-030	11.67
920272	AA2-123 E	1.63
924471	AB2-096	28.21
925161	AB2-173	2.08
925302	AB2-191 E	0.92
925881	AC1-067 O1	102.57
926311	AC1-109 1	1.27
926321	AC1-109 2	1.27
926331	AC1-110 1	1.27
926341	AC1-110 2	1.27
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	5.08
927091	AC1-204 1	48.76
927101	AC1-204 2	48.73
927201	AC1-214 C O1	0.74
927202	AC1-214 E O1	2.34
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	43.76
930501	AB1-091 O1	49.15
930741	AB1-122 1O1	47.58
930751	AB1-122 2O1	49.75
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	2.75
933431	AC2-156 C O1	0.64
933432	AC2-156 E O1	1.04
933911	AD1-013 C	1.22
933912	AD1-013 E	1.95
933931	AD1-016 C	0.62
933932	AD1-016 E	1.01

Bus #	Bus	MW Impact
934101	AD1-039 1	4.66
934111	AD1-039 2	4.88
934401	AD1-064 C O1	2.13
934402	AD1-064 E O1	9.99
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	4.57
934702	AD1-098 E O1	3.34
934721	AD1-100 C	12.94
934722	AD1-100 E	60.39
934871	AD1-116 C	0.62
934872	AD1-116 E	1.01
934881	AD1-117 C	3.57
934882	AD1-117 E	2.38
934971	AD1-129 C	0.6
934972	AD1-129 E	0.4
935001	AD1-133 C O1	13.73
935002	AD1-133 E O1	9.15
936291	AD2-038 C O1	1.54
936292	AD2-038 E O1	10.32
936371	AD2-047 C O1	1.51
936372	AD2-047 E O1	16.21
936461	AD2-060	1.77
936511	AD2-066 C O1	5.56
936512	AD2-066 E O1	3.71
936781	AD2-101 C	3.17
936782	AD2-101 E	14.84
936791	AD2-102 C	8.0
936792	AD2-102 E	7.69
936961	AD2-130	0.38
937001	AD2-134 C	1.82
937002	AD2-134 E	7.5
937031	AD2-137 C O1	2.31
937032	AD2-137 E O1	10.8
937051	AD2-140 C O1	2.32
937052	AD2-140 E O1	10.87
937061	AD2-141 C O1	2.31
937062	AD2-141 E O1	10.88
937071	AD2-142 C O1	4.64
937072	AD2-142 E O1	21.73
937121	AD2-148 C O1	2.36
937122	AD2-148 E O1	11.04
937131	AD2-149 C O1	2.36
937132	AD2-149 E O1	11.04
937141	AD2-150 C O1	2.36
937142	AD2-150 E O1	11.04
937181	AD2-155 C O1	2.36
937182	AD2-155 E O1	11.04
937311	AD2-172 C	1.64
937312	AD2-172 E	2.26

Bus #	Bus	MW Impact
937321	AD2-175 C	10.99
937322	AD2-175 E	7.33
937331	AD2-176 C O1	4.89
937332	AD2-176 E O1	3.26
937401	AD2-194 1	5.24
937411	AD2-194 2	5.24
937531	AD2-214 C	2.92
937532	AD2-214 E	1.37
938012	AE1-002 E O1	4.63
938511	AE1-070 1	6.16
938521	AE1-070 2	5.63
938851	AE1-113 C O1	5.72
938852	AE1-113 E O1	17.99
938861	AE1-114 C O1	2.37
938862	AE1-114 E O1	9.06
939051	AE1-134 1	0.91
939061	AE1-134 2	0.91
939321	AE1-163 C O1	4.03
939322	AE1-163 E O1	24.74
939351	AE1-166 C O1	6.84
939352	AE1-166 E O1	6.31
939401	AE1-172 C O1	4.1
939402	AE1-172 E O1	19.18
939641	AE1-194 C	10.88
939642	AE1-194 E	72.84
939651	AE1-195 C	10.88
939652	AE1-195 E	72.84
939691	AE1-199	1.59
939701	AE1-201 C	1.34
939702	AE1-201 E	0.29
939732	AE1-204 E	0.2
939861	AE1-222 1	52.55
939871	AE1-222 2	54.95
939921	AE1-228 C O1	6.68
939922	AE1-228 E O1	4.45
939961	AE1-233 C O1	1.55
939962	AE1-233 E O1	6.39
940101	AE1-252 C O1	6.69
940102	AE1-252 E O1	4.46
951721	J643	15.51
952581	J740 C	3.4
952582	J740 E	18.42
953871	J847	8.38
AB2-013	AB2-013	10.64
AE1-033	AE1-033	12.03
BLUEG	BLUEG	2.86
CANNELTON	CANNELTON	0.0
CARR	CARR	0.5
CATAWBA	CATAWBA	0.16
CBM-S1	CBM-S1	1.36
CBM-W1	CBM-W1	19.98
CBM-W2	CBM-W2	38.44

Bus #	Bus	MW Impact
CIN	CIN	0.12
DEARBORN	DEARBORN	2.29
G-007	G-007	1.38
HAMLET	HAMLET	0.65
MEC	MEC	25.05
O-066	O-066	4.65
RENSSELAER	RENSSELAER	0.39
SANTEETLA	SANTEETLA	0.0
TRIMBLE	TRIMBLE	0.34
WEC	WEC	5.32
Z1-043	Z1-043	18.82

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
767962	255112	17STJOHN	NIPS	270886	ST JOHN ; T	CE	1	COMED_P4_023-65-BT2-3__	breaker	1091.0	109.85	110.89	DC	33.06

Bus #	Bus	MW Impact
270859	PWR VTR EC;R	9.04
274654	BRAIDWOOD;1U	19.05
274655	BRAIDWOOD;2U	18.24
274661	LASCO STA;2U	17.6
274687	WILL CNTY;4U	8.03
274704	KENDALL ;1C	2.81
274705	KENDALL ;1S	1.88
274706	KENDALL ;2C	2.81
274707	KENDALL ;2S	1.88
274722	S-055 E	8.45
274751	CRETE EC ;1U	3.36
274752	CRETE EC ;2U	3.36
274753	CRETE EC ;3U	3.36
274754	CRETE EC ;4U	3.36
274859	EASYR;U1 E	8.17
274860	EASYR;U2 E	8.17
274861	TOP CROP ;1U	0.33
274862	TOP CROP ;2U	0.63
274888	PILOT HIL;1E	12.81
274890	CAYUG;1U E	9.74
274891	CAYUG;2U E	9.74
275149	KEMPTON ;1E	12.81
290021	O50 E	14.65
290051	GSG-6; E	7.78
290108	LEEDK;1U E	18.09
293061	N-015 E	11.61
293516	O-009 E1	6.69
293517	O-009 E2	3.4
293518	O-009 E3	3.74
293644	O22 E1	8.5
293645	O22 E2	16.51
293715	O-029 E	7.24
293716	O-029 E	3.97
293717	O-029 E	3.65
294392	P-010 E	14.75
294763	P-046 E	6.98
295109	WESTBROOK E	4.16
295111	SUBLETTE E	1.92
914641	Y2-103	33.8
915011	Y3-013 1	2.82

Bus #	Bus	MW Impact
915021	Y3-013 2	2.82
915031	Y3-013 3	2.82
916221	Z1-073 E	4.01
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	11.64
919221	AA1-146	13.04
919581	AA2-030	13.04
920272	AA2-123 E	1.83
924471	AB2-096	31.63
925161	AB2-173	2.33
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
926821	AC1-168 C O1	0.85
926822	AC1-168 E O1	5.68
927091	AC1-204 1	55.19
927101	AC1-204 2	55.12
927451	AC1-142A 1	3.2
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	49.05
930501	AB1-091 O1	50.61
930741	AB1-122 1O1	52.99
930751	AB1-122 2O1	56.33
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	1.06
933411	AC2-154 C	1.74
933412	AC2-154 E	2.84

Bus #	Bus	MW Impact
933431	AC2-156 C O1	0.71
933432	AC2-156 E O1	1.16
933911	AD1-013 C	1.37
933912	AD1-013 E	2.19
933931	AD1-016 C	0.69
933932	AD1-016 E	1.13
934101	AD1-039 1	5.19
934111	AD1-039 2	5.52
934401	AD1-064 C O1	2.39
934402	AD1-064 E O1	11.2
934431	AD1-067 C	0.1
934432	AD1-067 E	0.41
934651	AD1-096 C	0.66
934652	AD1-096 E	1.08
934701	AD1-098 C O1	5.12
934702	AD1-098 E O1	3.74
934721	AD1-100 C	14.27
934722	AD1-100 E	66.6
934871	AD1-116 C	0.68
934872	AD1-116 E	1.11
934881	AD1-117 C	3.99
934882	AD1-117 E	2.66
934971	AD1-129 C	0.67
934972	AD1-129 E	0.45
935001	AD1-133 C O1	15.16
935002	AD1-133 E O1	10.11
936291	AD2-038 C O1	1.71
936292	AD2-038 E O1	11.45
936371	AD2-047 C O1	1.56
936372	AD2-047 E O1	16.75
936461	AD2-060	1.83
936511	AD2-066 C O1	6.19
936512	AD2-066 E O1	4.13
936781	AD2-101 C	3.09
936782	AD2-101 E	14.46
936791	AD2-102 C	8.96
936792	AD2-102 E	8.61
936961	AD2-130	0.42
937001	AD2-134 C	2.03
937002	AD2-134 E	8.4
937031	AD2-137 C O1	2.44
937032	AD2-137 E O1	11.43
937051	AD2-140 C O1	2.44
937052	AD2-140 E O1	11.42
937061	AD2-141 C O1	2.43
937062	AD2-141 E O1	11.44
937071	AD2-142 C O1	4.88
937072	AD2-142 E O1	22.85
937121	AD2-148 C O1	2.43
937122	AD2-148 E O1	11.37
937131	AD2-149 C O1	2.43
937132	AD2-149 E O1	11.37

Bus #	Bus	MW Impact
937141	AD2-150 C O1	2.43
937142	AD2-150 E O1	11.37
937181	AD2-155 C O1	2.43
937182	AD2-155 E O1	11.37
937311	AD2-172 C	1.83
937312	AD2-172 E	2.53
937321	AD2-175 C	11.32
937322	AD2-175 E	7.55
937331	AD2-176 C O1	5.48
937332	AD2-176 E O1	3.65
937401	AD2-194 1	5.94
937411	AD2-194 2	5.93
937531	AD2-214 C	0.8
937532	AD2-214 E	0.38
938012	AE1-002 E O1	4.9
938511	AE1-070 1	6.97
938521	AE1-070 2	6.37
938851	AE1-113 C O1	6.35
938852	AE1-113 E O1	19.97
938861	AE1-114 C O1	2.65
938862	AE1-114 E O1	10.14
939051	AE1-134 1	1.01
939061	AE1-134 2	1.01
939321	AE1-163 C O1	4.63
939322	AE1-163 E O1	28.43
939351	AE1-166 C O1	7.6
939352	AE1-166 E O1	7.02
939401	AE1-172 C O1	4.47
939402	AE1-172 E O1	20.95
939641	AE1-194 C	18.96
939642	AE1-194 E	126.86
939651	AE1-195 C	18.96
939652	AE1-195 E	126.86
939691	AE1-199	1.78
939701	AE1-201 C	1.5
939702	AE1-201 E	0.33
939732	AE1-204 E	0.22
939861	AE1-222 1	58.52
939871	AE1-222 2	62.2
939921	AE1-228 C O1	7.48
939922	AE1-228 E O1	4.99
939961	AE1-233 C O1	1.73
939962	AE1-233 E O1	7.16
940101	AE1-252 C O1	7.31
940102	AE1-252 E O1	4.87
AB2-013	AB2-013	11.87
AE1-033	AE1-033	13.47
BLUEG	BLUEG	5.05
CALDERWOOD	CALDERWOOD	0.09
CANNELTON	CANNELTON	0.11
CARR	CARR	0.56
CATAWBA	CATAWBA	0.23

Bus #	Bus	MW Impact
CBM-S1	CBM-S1	0.77
CBM-W1	CBM-W1	20.04
CBM-W2	CBM-W2	37.14
CHEOAH	CHEOAH	0.09
CHILHOWEE	CHILHOWEE	0.03
DEARBORN	DEARBORN	2.24
ELMERSMITH	ELMERSMITH	0.14
G-007	G-007	1.57
GIBSON	GIBSON	0.06
HAMLET	HAMLET	0.87
MEC	MEC	27.58
O-066	O-066	5.3
RENSSELAER	RENSSELAER	0.45
SANTEETLA	SANTEETLA	0.03
TRIMBLE	TRIMBLE	0.59
WEC	WEC	5.97
Z1-043	Z1-043	20.98

Index 11

ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CK T ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADIN G %	POST PROJECT LOADIN G %	AC D C	MW IMPACT
449565	255113	17STILLWEL	NIPS	243219	05DUMONT	AEP	1	AEP_P4_#2978_05DUMONT 765_B	breaker	1409.0	172.47	173.34	DC	48.63

Bus #	Bus	MW Impact
270859	PWR VTR EC;R	13.92
274722	S-055 E	12.95
274724	RIVER EC ;11	4.75
274788	SE CHICAG;5U	1.14
274789	SE CHICAG;6U	1.14
274790	SE CHICAG;7U	1.14
274791	SE CHICAG;8U	1.14
274795	SE CHICAG;2U	1.12
274832	U4-027	12.45
274859	EASYR;U1 E	12.67
274860	EASYR;U2 E	12.67
274888	PILOT HIL;1E	22.3
274890	CAYUG;1U E	15.76
274891	CAYUG;2U E	15.76
275149	KEMPTON ;1E	22.3
290021	O50 E	22.31
290051	GSG-6; E	12.02
290108	LEEDK;1U E	27.92
293061	N-015 E	17.54
293516	O-009 E1	10.45
293517	O-009 E2	5.31
293518	O-009 E3	5.85
293644	O22 E1	11.95
293645	O22 E2	23.2
293715	O-029 E	11.27
293716	O-029 E	6.18
293717	O-029 E	5.68
293771	O-035 E	7.36
294392	P-010 E	22.27
294763	P-046 E	10.8
295109	WESTBROOK E	6.44
295111	SUBLETTE E	2.99
910542	X3-005 E	1.0
914641	Y2-103	51.8
915011	Y3-013 1	4.32
915021	Y3-013 2	4.32
915031	Y3-013 3	4.32
916211	Z1-072 E	5.57
916221	Z1-073 E	6.2
916502	Z1-106 E1	1.45
916504	Z1-106 E2	1.45

Bus #	Bus	MW Impact
916512	Z1-107 E	3.03
916522	Z1-108 E	2.86
918052	AA1-018 E	18.74
919221	AA1-146	20.28
919581	AA2-030	20.28
920272	AA2-123 E	2.81
924471	AB2-096	48.73
925161	AB2-173	3.62
925302	AB2-191 E	1.59
925581	AC1-033 C	1.61
925582	AC1-033 E	10.81
925881	AC1-067 O1	198.49
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	0.88
926361	AC1-111 2	0.88
926371	AC1-111 3	0.88
926381	AC1-111 4	0.88
926391	AC1-111 5	0.88
926401	AC1-111 6	0.88
926431	AC1-114	2.74
926821	AC1-168 C O1	1.32
926822	AC1-168 E O1	8.85
927091	AC1-204 1	83.26
927101	AC1-204 2	83.23
927201	AC1-214 C O1	2.36
927202	AC1-214 E O1	7.51
927451	AC1-142A 1	4.83
927461	AC1-142A 2	4.84
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	75.67
930501	AB1-091 O1	88.22
930741	AB1-122 1O1	82.42
930751	AB1-122 2O1	84.95
932881	AC2-115 1	2.74
932891	AC2-115 2	2.74
932921	AC2-116	0.96
932931	AC2-117	5.81
933341	AC2-147 C	1.0
933342	AC2-147 E	1.64
933411	AC2-154 C	3.03

Bus #	Bus	MW Impact
933412	AC2-154 E	4.94
933431	AC2-156 C O1	1.1
933432	AC2-156 E O1	1.79
933911	AD1-013 C	2.12
933912	AD1-013 E	3.38
933931	AD1-016 C	1.07
933932	AD1-016 E	1.74
934101	AD1-039 1	8.08
934111	AD1-039 2	8.33
934401	AD1-064 C O1	3.69
934402	AD1-064 E O1	17.25
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	7.91
934702	AD1-098 E O1	5.78
934721	AD1-100 C	22.45
934722	AD1-100 E	104.76
934871	AD1-116 C	1.09
934872	AD1-116 E	1.78
934881	AD1-117 C	6.19
934882	AD1-117 E	4.13
934971	AD1-129 C	1.04
934972	AD1-129 E	0.69
935001	AD1-133 C O1	24.06
935002	AD1-133 E O1	16.04
936291	AD2-038 C O1	2.69
936292	AD2-038 E O1	18.02
936371	AD2-047 C O1	2.71
936372	AD2-047 E O1	29.15
936461	AD2-060	3.19
936511	AD2-066 C O1	9.67
936512	AD2-066 E O1	6.45
936781	AD2-101 C	5.9
936782	AD2-101 E	27.62
936791	AD2-102 C	13.85
936792	AD2-102 E	13.3
936961	AD2-130	0.66
937001	AD2-134 C	3.14
937002	AD2-134 E	12.98
937031	AD2-137 C O1	4.08
937032	AD2-137 E O1	19.09
937051	AD2-140 C O1	4.11
937052	AD2-140 E O1	19.25
937061	AD2-141 C O1	4.09
937062	AD2-141 E O1	19.27
937071	AD2-142 C O1	8.22
937072	AD2-142 E O1	38.5
937121	AD2-148 C O1	4.23
937122	AD2-148 E O1	19.82
937131	AD2-149 C O1	4.23

Bus #	Bus	MW Impact
937132	AD2-149 E O1	19.82
937141	AD2-150 C O1	4.23
937142	AD2-150 E O1	19.82
937181	AD2-155 C O1	4.23
937182	AD2-155 E O1	19.82
937311	AD2-172 C	2.83
937312	AD2-172 E	3.91
937321	AD2-175 C	19.73
937322	AD2-175 E	13.15
937331	AD2-176 C O1	8.43
937332	AD2-176 E O1	5.62
937401	AD2-194 1	8.95
937411	AD2-194 2	8.95
937531	AD2-214 C	5.1
937532	AD2-214 E	2.4
938012	AE1-002 E O1	8.18
938511	AE1-070 1	10.52
938521	AE1-070 2	9.62
938851	AE1-113 C O1	10.0
938852	AE1-113 E O1	31.44
938861	AE1-114 C O1	4.11
938862	AE1-114 E O1	15.72
939051	AE1-134 1	1.58
939061	AE1-134 2	1.58
939321	AE1-163 C O1	6.81
939322	AE1-163 E O1	41.82
939351	AE1-166 C O1	11.8
939352	AE1-166 E O1	10.89
939401	AE1-172 C O1	7.21
939402	AE1-172 E O1	33.74
939631	AE1-193 C O1	4.73
939632	AE1-193 E O1	31.63
939641	AE1-194 C	10.24
939642	AE1-194 E	68.55
939651	AE1-195 C	10.24
939652	AE1-195 E	68.55
939681	AE1-198 C O1	23.78
939682	AE1-198 E O1	20.2
939691	AE1-199	2.75
939701	AE1-201 C	2.31
939702	AE1-201 E	0.51
939732	AE1-204 E	0.34
939861	AE1-222 1	91.02
939871	AE1-222 2	93.81
939921	AE1-228 C O1	11.56
939922	AE1-228 E O1	7.71
939961	AE1-233 C O1	2.67
939962	AE1-233 E O1	11.05
940101	AE1-252 C O1	11.82
940102	AE1-252 E O1	7.88
951721	J643	25.73
952581	J740 C	4.3

Bus #	Bus	MW Impact
952582	J740 E	23.28
953871	J847	13.1
954751	J351	434.54
AB2-013	AB2-013	18.6
AE1-033	AE1-033	20.85
BLUEG	BLUEG	1.07
CARR	CARR	0.9
CATAWBA	CATAWBA	0.22
CBM-S1	CBM-S1	3.95
CBM-W1	CBM-W1	35.83
CBM-W2	CBM-W2	81.92
CIN	CIN	3.3
DEARBORN	DEARBORN	4.0
G-007	G-007	2.51
HAMLET	HAMLET	0.96
IPL	IPL	1.12
MEC	MEC	44.69
O-066	O-066	8.44
RENSSELAER	RENSSELAER	0.71
TRIMBLE	TRIMBLE	0.16
WEC	WEC	9.2
Z1-043	Z1-043	32.93

Index 12

ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CK T ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADIN G %	POST PROJECT LOADIN G %	AC D C	MW IMPAC T
768132	270677	BURNHAM ;OR	CE	255109	17MUNSTER	NIPS	1	AEP_P4_#2978_05DUMONT 765_B	breaker	1441.0	111.89	112.63	DC	39.07

Bus #	Bus	MW Impact
270859	PWR VTR EC;R	11.75
274722	S-055 E	10.96
274723	RIVER EC ;12	4.32
274792	SE CHICAG;9U	0.96
274793	SE CHICAG;0U	0.96
274794	SE CHICAG;1U	0.96
274795	SE CHICAG;2U	0.96
274832	U4-027	10.31
274859	EASYR;U1 E	10.61
274860	EASYR;U2 E	10.61
274888	PILOT HIL;1E	20.48
274890	CAYUG;1U E	13.4
274891	CAYUG;2U E	13.4
275149	KEMPTON ;1E	20.48
290021	O50 E	18.57
290051	GSG-6; E	10.13
290108	LEEDK;1U E	23.57
293061	N-015 E	14.82
293516	O-009 E1	8.7
293517	O-009 E2	4.42
293518	O-009 E3	4.87
293644	O22 E1	9.26
293645	O22 E2	17.98
293715	O-029 E	9.4
293716	O-029 E	5.15
293717	O-029 E	4.74
293771	O-035 E	6.09
294392	P-010 E	18.82
294763	P-046 E	9.07
295109	WESTBROOK E	5.42
295111	SUBLETTE E	2.5
296125	R-030 C3	3.43
296128	R-030 E3	13.71
296271	R-030 C2	3.39
296272	R-030 E2	13.54
296308	R-030 C1	3.39
296309	R-030 E1	13.54
910541	X3-005 C	0.08
910542	X3-005 E	0.91
914641	Y2-103	43.82
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	4.61
916221	Z1-073 E	5.23
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	8.96
918052	AA1-018 E	16.81
919221	AA1-146	16.93
919581	AA2-030	16.93
920272	AA2-123 E	2.37
924471	AB2-096	41.11
925161	AB2-173	3.02
925302	AB2-191 E	1.34
925881	AC1-067 O1	301.08
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	0.75
926361	AC1-111 2	0.75
926371	AC1-111 3	0.75
926381	AC1-111 4	0.75
926391	AC1-111 5	0.75
926401	AC1-111 6	0.75
926431	AC1-114	2.31
926821	AC1-168 C O1	1.1
926822	AC1-168 E O1	7.36
927091	AC1-204 1	70.09
927101	AC1-204 2	70.14
927201	AC1-214 C O1	1.95
927202	AC1-214 E O1	6.21
927451	AC1-142A 1	4.09
927461	AC1-142A 2	4.09
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	63.73
930501	AB1-091 O1	82.27
930741	AB1-122 1O1	70.02
930751	AB1-122 2O1	70.99
932881	AC2-115 1	2.31
932891	AC2-115 2	2.31

Bus #	Bus	MW Impact
932921	AC2-116	0.81
932931	AC2-117	5.3
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	2.85
933931	AD1-016 C	0.9
933932	AD1-016 E	1.47
934101	AD1-039 1	6.86
934111	AD1-039 2	6.96
934401	AD1-064 C O1	3.11
934402	AD1-064 E O1	14.56
934431	AD1-067 C	0.13
934432	AD1-067 E	0.53
934651	AD1-096 C	0.86
934652	AD1-096 E	1.41
934701	AD1-098 C O1	6.66
934702	AD1-098 E O1	4.86
934721	AD1-100 C	19.54
934722	AD1-100 E	91.19
934871	AD1-116 C	0.98
934872	AD1-116 E	1.6
934881	AD1-117 C	5.18
934882	AD1-117 E	3.46
934971	AD1-129 C	0.88
934972	AD1-129 E	0.58
935001	AD1-133 C O1	20.3
935002	AD1-133 E O1	13.53
936291	AD2-038 C O1	2.33
936292	AD2-038 E O1	15.58
936371	AD2-047 C O1	2.49
936372	AD2-047 E O1	26.77
936461	AD2-060	2.93
936511	AD2-066 C O1	8.14
936512	AD2-066 E O1	5.43
936781	AD2-101 C	4.75
936782	AD2-101 E	22.22
936791	AD2-102 C	11.64
936792	AD2-102 E	11.19
936961	AD2-130	0.56
937001	AD2-134 C	2.65
937002	AD2-134 E	10.94
937031	AD2-137 C O1	3.67
937032	AD2-137 E O1	17.17
937051	AD2-140 C O1	3.72
937052	AD2-140 E O1	17.42
937061	AD2-141 C O1	3.7
937062	AD2-141 E O1	17.44

Bus #	Bus	MW Impact
937071	AD2-142 C O1	7.44
937072	AD2-142 E O1	34.83
937121	AD2-148 C O1	3.94
937122	AD2-148 E O1	18.43
937131	AD2-149 C O1	3.94
937132	AD2-149 E O1	18.43
937141	AD2-150 C O1	3.94
937142	AD2-150 E O1	18.43
937181	AD2-155 C O1	3.94
937182	AD2-155 E O1	18.43
937311	AD2-172 C	2.38
937312	AD2-172 E	3.29
937321	AD2-175 C	18.34
937322	AD2-175 E	12.23
937331	AD2-176 C O1	7.12
937332	AD2-176 E O1	4.75
937401	AD2-194 1	7.54
937411	AD2-194 2	7.54
937531	AD2-214 C	4.24
937532	AD2-214 E	1.99
938012	AE1-002 E O1	7.36
938511	AE1-070 1	8.86
938521	AE1-070 2	8.11
938851	AE1-113 C O1	8.65
938852	AE1-113 E O1	27.18
938861	AE1-114 C O1	3.45
938862	AE1-114 E O1	13.17
939051	AE1-134 1	1.32
939061	AE1-134 2	1.32
939321	AE1-163 C O1	5.47
939322	AE1-163 E O1	33.6
939351	AE1-166 C O1	10.23
939352	AE1-166 E O1	9.45
939401	AE1-172 C O1	6.18
939402	AE1-172 E O1	28.94
939691	AE1-199	2.32
939701	AE1-201 C	1.95
939702	AE1-201 E	0.43
939732	AE1-204 E	0.28
939741	AE1-205 C O1	8.57
939742	AE1-205 E O1	11.84
939861	AE1-222 1	77.33
939871	AE1-222 2	78.4
939921	AE1-228 C O1	9.74
939922	AE1-228 E O1	6.49
939961	AE1-233 C O1	2.26
939962	AE1-233 E O1	9.34
940101	AE1-252 C O1	10.05
940102	AE1-252 E O1	6.7
AB2-013	AB2-013	15.32
AE1-033	AE1-033	17.49
BLUEG	BLUEG	5.47

Bus #	Bus	MW Impact
CALDERWOOD	CALDERWOOD	0.06
CANNELTON	CANNELTON	0.08
CARR	CARR	0.73
CATAWBA	CATAWBA	0.27
CBM-S1	CBM-S1	1.44
CBM-W1	CBM-W1	23.88
CBM-W2	CBM-W2	51.81
CHEOAH	CHEOAH	0.06
CHILHOWEE	CHILHOWEE	0.02
DEARBORN	DEARBORN	2.93
ELMERSMITH	ELMERSMITH	0.08
G-007	G-007	2.03
GIBSON	GIBSON	0.04
HAMLET	HAMLET	1.05
MEC	MEC	36.09
O-066	O-066	6.84
RENSSELAER	RENSSELAER	0.58
SANTEETLA	SANTEETLA	0.02
TRIMBLE	TRIMBLE	0.65
WEC	WEC	7.74
Z1-043	Z1-043	27.27

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
768114	270728	E FRANKFO; B	CE	274750	CRETE EC ;BP	CE	1	COMED_P4_112- 65-BT3-4__	breaker	1399.0	109.0	110.24	DC	47.67

Bus #	Bus	MW Impact
270859	PWR VTR EC;R	12.8
274654	BRAIDWOOD;1U	27.4
274655	BRAIDWOOD;2U	26.22
274660	LASCO STA;1U	25.04
274661	LASCO STA;2U	25.08
274675	JOLIET 29;7U	11.31
274676	JOLIET 29;8U	11.32
274687	WILL CNTY;4U	11.43
274704	KENDALL ;1C	4.02
274705	KENDALL ;1S	2.68
274706	KENDALL ;2C	4.02
274707	KENDALL ;2S	2.68
274722	S-055 E	11.98
274736	ELWOOD EC;9P	3.25
274832	U4-027	11.25
274859	EASYR;U1 E	11.58
274860	EASYR;U2 E	11.58
274861	TOP CROP ;1U	0.48
274862	TOP CROP ;2U	0.92
274888	PILOT HIL;1E	17.21
274890	CAYUG;1U E	13.68
274891	CAYUG;2U E	13.68
275149	KEMPTON ;1E	17.21
290021	O50 E	20.89
290051	GSG-6; E	11.0
290108	LEEDK;1U E	25.57
293061	N-015 E	16.52
293516	O-009 E1	9.49
293517	O-009 E2	4.82
293518	O-009 E3	5.31
293644	O22 E1	12.4
293645	O22 E2	24.06
293715	O-029 E	10.26
293716	O-029 E	5.62
293717	O-029 E	5.17
293771	O-035 E	6.63
294392	P-010 E	20.98
294763	P-046 E	9.89
295109	WESTBROOK E	5.89
295111	SUBLETTE E	2.72

Bus #	Bus	MW Impact
914641	Y2-103	47.9
915011	Y3-013 1	3.99
915021	Y3-013 2	3.99
915031	Y3-013 3	3.99
916211	Z1-072 E	5.02
916221	Z1-073 E	5.68
916502	Z1-106 E1	1.34
916504	Z1-106 E2	1.34
916512	Z1-107 E	2.57
916522	Z1-108 E	2.64
918052	AA1-018 E	16.28
919221	AA1-146	18.49
919581	AA2-030	18.49
920272	AA2-123 E	2.59
924471	AB2-096	44.79
925161	AB2-173	3.3
925302	AB2-191 E	1.46
925581	AC1-033 C	1.45
925582	AC1-033 E	9.74
926311	AC1-109 1	2.01
926321	AC1-109 2	2.01
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	8.06
927091	AC1-204 1	78.74
927101	AC1-204 2	78.6
927201	AC1-214 C O1	2.13
927202	AC1-214 E O1	6.77
927451	AC1-142A 1	4.56
927461	AC1-142A 2	4.56
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	69.46
930501	AB1-091 O1	67.8
930741	AB1-122 1O1	75.1
930751	AB1-122 2O1	80.29

Bus #	Bus	MW Impact
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	1.5
933411	AC2-154 C	2.34
933412	AC2-154 E	3.81
933431	AC2-156 C O1	1.0
933432	AC2-156 E O1	1.64
933911	AD1-013 C	1.94
933912	AD1-013 E	3.09
933931	AD1-016 C	0.98
933932	AD1-016 E	1.6
934101	AD1-039 1	7.36
934111	AD1-039 2	7.87
934401	AD1-064 C O1	3.39
934402	AD1-064 E O1	15.86
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	7.24
934702	AD1-098 E O1	5.29
934721	AD1-100 C	20.04
934722	AD1-100 E	93.51
934871	AD1-116 C	0.95
934872	AD1-116 E	1.55
934881	AD1-117 C	5.65
934882	AD1-117 E	3.77
934971	AD1-129 C	0.96
934972	AD1-129 E	0.64
935001	AD1-133 C O1	21.43
935002	AD1-133 E O1	14.28
936291	AD2-038 C O1	2.42
936292	AD2-038 E O1	16.17
936371	AD2-047 C O1	2.09
936372	AD2-047 E O1	22.5
936461	AD2-060	2.46
936511	AD2-066 C O1	8.76
936512	AD2-066 E O1	5.84
936781	AD2-101 C	3.99
936782	AD2-101 E	18.7
936791	AD2-102 C	12.7
936792	AD2-102 E	12.2
936961	AD2-130	0.6
937001	AD2-134 C	2.88
937002	AD2-134 E	11.88
937031	AD2-137 C O1	3.35
937032	AD2-137 E O1	15.69
937051	AD2-140 C O1	3.33
937052	AD2-140 E O1	15.61
937061	AD2-141 C O1	3.32

Bus #	Bus	MW Impact
937062	AD2-141 E O1	15.63
937071	AD2-142 C O1	6.67
937072	AD2-142 E O1	31.23
937121	AD2-148 C O1	3.26
937122	AD2-148 E O1	15.24
937131	AD2-149 C O1	3.26
937132	AD2-149 E O1	15.24
937141	AD2-150 C O1	3.26
937142	AD2-150 E O1	15.24
937181	AD2-155 C O1	3.26
937182	AD2-155 E O1	15.24
937311	AD2-172 C	2.6
937312	AD2-172 E	3.58
937321	AD2-175 C	15.17
937322	AD2-175 E	10.11
937331	AD2-176 C O1	7.76
937332	AD2-176 E O1	5.17
937401	AD2-194 1	8.47
937411	AD2-194 2	8.45
937531	AD2-214 C	4.62
937532	AD2-214 E	2.18
938012	AE1-002 E O1	6.73
938511	AE1-070 1	9.95
938521	AE1-070 2	9.09
938851	AE1-113 C O1	8.97
938852	AE1-113 E O1	28.2
938861	AE1-114 C O1	3.76
938862	AE1-114 E O1	14.36
939051	AE1-134 1	1.44
939061	AE1-134 2	1.44
939321	AE1-163 C O1	6.67
939322	AE1-163 E O1	41.0
939351	AE1-166 C O1	10.72
939352	AE1-166 E O1	9.89
939401	AE1-172 C O1	6.27
939402	AE1-172 E O1	29.37
939631	AE1-193 C O1	1.03
939632	AE1-193 E O1	6.92
939681	AE1-198 C O1	21.43
939682	AE1-198 E O1	18.21
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	82.94
939871	AE1-222 2	88.67
939921	AE1-228 C O1	10.58
939922	AE1-228 E O1	7.05
939961	AE1-233 C O1	2.45
939962	AE1-233 E O1	10.13
940101	AE1-252 C O1	10.26
940102	AE1-252 E O1	6.84

Bus #	Bus	MW Impact
AB2-013	AB2-013	16.9
AE1-033	AE1-033	19.08
BLUEG	BLUEG	6.65
CALDERWOOD	CALDERWOOD	0.07
CANNELTON	CANNELTON	0.13
CARR	CARR	0.74
CATAWBA	CATAWBA	0.28
CBM-S1	CBM-S1	1.38
CBM-W1	CBM-W1	26.87
CBM-W2	CBM-W2	54.0
CHEOAH	CHEOAH	0.07
CHILHOWEE	CHILHOWEE	0.02
DEARBORN	DEARBORN	2.91
ELMERSMITH	ELMERSMITH	0.15
G-007	G-007	2.06
GIBSON	GIBSON	0.08
HAMLET	HAMLET	1.08
MEC	MEC	39.21
O-066	O-066	6.95
RENSSELAER	RENSSELAER	0.58
SANTEETLA	SANTEETLA	0.02
TRIMBLE	TRIMBLE	0.78
WEC	WEC	8.47
Z1-043	Z1-043	29.78

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
768013	270770	GOODINGS ;4B	CE	270766	GOODINGS ;3B	CE	1	COMED_P4_116-45-L11614_	breaker	1802.0	119.46	123.81	DC	77.92

Bus #	Bus	MW Impact
270859	PWR VTR EC;R	7.96
274722	S-055 E	7.38
274728	ELWOOD EC;5P	4.75
274730	ELWOOD EC;6P	4.75
274732	ELWOOD EC;7P	4.75
274734	ELWOOD EC;8P	4.75
274735	ELWOOD EC;4P	4.72
274736	ELWOOD EC;9P	4.75
274832	U4-027	8.21
274859	EASYR;U1 E	7.73
274860	EASYR;U2 E	7.73
274861	TOP CROP ;1U	0.95
274862	TOP CROP ;2U	1.84
290021	O50 E	25.65
290051	GSG-6; E	6.67
293516	O-009 E1	6.67
293517	O-009 E2	3.39
293518	O-009 E3	3.73
293644	O22 E1	24.77
293645	O22 E2	48.08
293715	O-029 E	7.07
293716	O-029 E	3.88
293717	O-029 E	3.56
293771	O-035 E	4.74
294401	BSHIL;1U E	6.6
294410	BSHIL;2U E	6.6
294763	P-046 E	6.37
295109	WESTBROOK E	3.57
295111	SUBLETTE E	1.82
914641	Y2-103	29.53
915011	Y3-013 1	2.46
915021	Y3-013 2	2.46
915031	Y3-013 3	2.46
916211	Z1-072 E	3.58
916221	Z1-073 E	3.44
916502	Z1-106 E1	0.78
916504	Z1-106 E2	0.78
916522	Z1-108 E	1.6
918052	AA1-018 E	19.58
919221	AA1-146	12.7
919581	AA2-030	12.7

Bus #	Bus	MW Impact
919621	AA2-039 C	1.61
919622	AA2-039 E	10.77
920272	AA2-123 E	1.59
924471	AB2-096	27.85
925161	AB2-173	2.27
925302	AB2-191 E	0.88
925581	AC1-033 C	1.08
925582	AC1-033 E	7.24
926331	AC1-110 1	1.2
926341	AC1-110 2	1.2
926431	AC1-114	1.59
926841	AC1-171 C O1	0.79
926842	AC1-171 E O1	5.24
927091	AC1-204 1	115.11
927101	AC1-204 2	114.46
927201	AC1-214 C O1	1.52
927202	AC1-214 E O1	4.83
927451	AC1-142A 1	3.64
927461	AC1-142A 2	3.67
927511	AC1-113 1	0.79
927521	AC1-113 2	0.79
927531	AC1-185 1	0.48
927541	AC1-185 2	0.48
927551	AC1-185 3	0.48
927561	AC1-185 4	0.48
927571	AC1-185 5	0.48
927581	AC1-185 6	0.48
927591	AC1-185 7	0.48
927601	AC1-185 8	0.48
930481	AB1-089	43.91
930741	AB1-122 1O1	65.29
930751	AB1-122 2O1	95.35
932881	AC2-115 1	1.59
932891	AC2-115 2	1.59
932921	AC2-116	0.56
933341	AC2-147 C	0.61
933342	AC2-147 E	0.99
933911	AD1-013 C	1.17
933912	AD1-013 E	1.87
933931	AD1-016 C	0.61
933932	AD1-016 E	0.99
934051	AD1-031 C O1	2.2
934052	AD1-031 E O1	3.58
934101	AD1-039 1	6.4
934111	AD1-039 2	9.34
934401	AD1-064 C O1	2.11
934402	AD1-064 E O1	9.87
934431	AD1-067 C	0.08
934432	AD1-067 E	0.35
934651	AD1-096 C	0.6
934652	AD1-096 E	0.99
934701	AD1-098 C O1	4.41

Bus #	Bus	MW Impact
934702	AD1-098 E O1	3.22
934871	AD1-116 C	1.14
934872	AD1-116 E	1.86
934881	AD1-117 C	3.74
934882	AD1-117 E	2.49
934971	AD1-129 C	0.6
934972	AD1-129 E	0.4
935001	AD1-133 C O1	14.7
935002	AD1-133 E O1	9.8
936291	AD2-038 C O1	2.98
936292	AD2-038 E O1	19.92
936511	AD2-066 C O1	6.45
936512	AD2-066 E O1	4.3
936791	AD2-102 C	8.1
936792	AD2-102 E	7.78
937001	AD2-134 C	1.74
937002	AD2-134 E	7.2
937311	AD2-172 C	1.67
937312	AD2-172 E	2.31
937331	AD2-176 C O1	4.78
937332	AD2-176 E O1	3.18
937401	AD2-194 1	12.38
937411	AD2-194 2	12.31
937531	AD2-214 C	3.27
937532	AD2-214 E	1.54
938511	AE1-070 1	14.54
938521	AE1-070 2	13.23
938851	AE1-113 C O1	11.05
938852	AE1-113 E O1	34.75
938861	AE1-114 C O1	2.49
938862	AE1-114 E O1	9.5
939051	AE1-134 1	0.99
939061	AE1-134 2	0.99
939321	AE1-163 C O1	10.91
939322	AE1-163 E O1	67.01
939631	AE1-193 C O1	5.36
939632	AE1-193 E O1	35.9
939681	AE1-198 C O1	15.93
939682	AE1-198 E O1	13.53
939691	AE1-199	1.52
939701	AE1-201 C	1.31
939702	AE1-201 E	0.29
939732	AE1-204 E	0.19
939861	AE1-222 1	72.1
939871	AE1-222 2	105.3
939921	AE1-228 C O1	6.37
939922	AE1-228 E O1	4.25
990901	L-005 E	9.75
AB2-013	AB2-013	17.74
AE1-033	AE1-033	12.31
BLUEG	BLUEG	2.87
CANNELTON	CANNELTON	0.0

Bus #	Bus	MW Impact
CARR	CARR	0.36
CATAWBA	CATAWBA	0.06
CBM-S1	CBM-S1	2.13
CBM-W1	CBM-W1	18.07
CBM-W2	CBM-W2	45.91
DEARBORN	DEARBORN	1.82
G-007	G-007	0.99
GIBSON	GIBSON	0.01
HAMLET	HAMLET	0.28
MEC	MEC	29.52
O-066	O-066	3.34
RENSSELAER	RENSSELAER	0.28
TRIMBLE	TRIMBLE	0.35
WEC	WEC	5.37
Z1-043	Z1-043	19.7

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
768003	270771	GREENACRE; T	CE	243229	05OLIVE	AEP	1	AEP_P4_#2978_05DUMONT 765_B	breaker	971.0	114.71	115.61	DC	28.77

Bus #	Bus	MW Impact
270859	PWR VTR EC;R	8.06
274722	S-055 E	7.52
274751	CRETE EC ;1U	1.93
274752	CRETE EC ;2U	1.93
274753	CRETE EC ;3U	1.93
274754	CRETE EC ;4U	1.93
274832	U4-027	7.11
274859	EASYR;U1 E	7.3
274860	EASYR;U2 E	7.3
274888	PILOT HIL;1E	12.4
274890	CAYUG;1U E	8.92
274891	CAYUG;2U E	8.92
275149	KEMPTON ;1E	12.4
290021	O50 E	12.98
290051	GSG-6; E	6.94
290108	LEEDK;1U E	16.14
293061	N-015 E	10.24
293516	O-009 E1	5.99
293517	O-009 E2	3.04
293518	O-009 E3	3.35
293644	O22 E1	7.24
293645	O22 E2	14.06
293715	O-029 E	6.47
293716	O-029 E	3.55
293717	O-029 E	3.26
294392	P-010 E	13.0
294763	P-046 E	6.23
295109	WESTBROOK E	3.72
295111	SUBLETTE E	1.72
910542	X3-005 E	0.52
914641	Y2-103	30.09
915011	Y3-013 1	2.51
915021	Y3-013 2	2.51
915031	Y3-013 3	2.51
916221	Z1-073 E	3.58
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	10.62
919221	AA1-146	11.67

Bus #	Bus	MW Impact
919581	AA2-030	11.67
920272	AA2-123 E	1.63
924471	AB2-096	28.21
925161	AB2-173	2.08
925302	AB2-191 E	0.92
925881	AC1-067 O1	102.57
926311	AC1-109 1	1.27
926321	AC1-109 2	1.27
926331	AC1-110 1	1.27
926341	AC1-110 2	1.27
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	5.08
927091	AC1-204 1	48.76
927101	AC1-204 2	48.73
927201	AC1-214 C O1	0.74
927202	AC1-214 E O1	2.34
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	43.76
930501	AB1-091 O1	49.15
930741	AB1-122 1O1	47.58
930751	AB1-122 2O1	49.75
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	2.75
933431	AC2-156 C O1	0.64
933432	AC2-156 E O1	1.04
933911	AD1-013 C	1.22
933912	AD1-013 E	1.95
933931	AD1-016 C	0.62
933932	AD1-016 E	1.01

Bus #	Bus	MW Impact
934101	AD1-039 1	4.66
934111	AD1-039 2	4.88
934401	AD1-064 C O1	2.13
934402	AD1-064 E O1	9.99
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	4.57
934702	AD1-098 E O1	3.34
934721	AD1-100 C	12.94
934722	AD1-100 E	60.39
934871	AD1-116 C	0.62
934872	AD1-116 E	1.01
934881	AD1-117 C	3.57
934882	AD1-117 E	2.38
934971	AD1-129 C	0.6
934972	AD1-129 E	0.4
935001	AD1-133 C O1	13.73
935002	AD1-133 E O1	9.15
936291	AD2-038 C O1	1.54
936292	AD2-038 E O1	10.32
936371	AD2-047 C O1	1.51
936372	AD2-047 E O1	16.21
936461	AD2-060	1.77
936511	AD2-066 C O1	5.56
936512	AD2-066 E O1	3.71
936781	AD2-101 C	3.17
936782	AD2-101 E	14.84
936791	AD2-102 C	8.0
936792	AD2-102 E	7.69
936961	AD2-130	0.38
937001	AD2-134 C	1.82
937002	AD2-134 E	7.5
937031	AD2-137 C O1	2.31
937032	AD2-137 E O1	10.8
937051	AD2-140 C O1	2.32
937052	AD2-140 E O1	10.87
937061	AD2-141 C O1	2.31
937062	AD2-141 E O1	10.88
937071	AD2-142 C O1	4.64
937072	AD2-142 E O1	21.73
937121	AD2-148 C O1	2.36
937122	AD2-148 E O1	11.04
937131	AD2-149 C O1	2.36
937132	AD2-149 E O1	11.04
937141	AD2-150 C O1	2.36
937142	AD2-150 E O1	11.04
937181	AD2-155 C O1	2.36
937182	AD2-155 E O1	11.04
937311	AD2-172 C	1.64
937312	AD2-172 E	2.26

Bus #	Bus	MW Impact
937321	AD2-175 C	10.99
937322	AD2-175 E	7.33
937331	AD2-176 C O1	4.89
937332	AD2-176 E O1	3.26
937401	AD2-194 1	5.24
937411	AD2-194 2	5.24
937531	AD2-214 C	2.92
937532	AD2-214 E	1.37
938012	AE1-002 E O1	4.63
938511	AE1-070 1	6.16
938521	AE1-070 2	5.63
938851	AE1-113 C O1	5.72
938852	AE1-113 E O1	17.99
938861	AE1-114 C O1	2.37
938862	AE1-114 E O1	9.06
939051	AE1-134 1	0.91
939061	AE1-134 2	0.91
939321	AE1-163 C O1	4.03
939322	AE1-163 E O1	24.74
939351	AE1-166 C O1	6.84
939352	AE1-166 E O1	6.31
939401	AE1-172 C O1	4.1
939402	AE1-172 E O1	19.18
939641	AE1-194 C	10.88
939642	AE1-194 E	72.84
939651	AE1-195 C	10.88
939652	AE1-195 E	72.84
939691	AE1-199	1.59
939701	AE1-201 C	1.34
939702	AE1-201 E	0.29
939732	AE1-204 E	0.2
939861	AE1-222 1	52.55
939871	AE1-222 2	54.95
939921	AE1-228 C O1	6.68
939922	AE1-228 E O1	4.45
939961	AE1-233 C O1	1.55
939962	AE1-233 E O1	6.39
940101	AE1-252 C O1	6.69
940102	AE1-252 E O1	4.46
951721	J643	15.51
952581	J740 C	3.4
952582	J740 E	18.42
953871	J847	8.38
AB2-013	AB2-013	10.64
AE1-033	AE1-033	12.03
BLUEG	BLUEG	2.86
CANNELTON	CANNELTON	0.0
CARR	CARR	0.5
CATAWBA	CATAWBA	0.16
CBM-S1	CBM-S1	1.36
CBM-W1	CBM-W1	19.98
CBM-W2	CBM-W2	38.44

Bus #	Bus	MW Impact
CIN	CIN	0.12
DEARBORN	DEARBORN	2.29
G-007	G-007	1.38
HAMLET	HAMLET	0.65
MEC	MEC	25.05
O-066	O-066	4.65
RENSSELAER	RENSSELAER	0.39
SANTEETLA	SANTEETLA	0.0
TRIMBLE	TRIMBLE	0.34
WEC	WEC	5.32
Z1-043	Z1-043	18.82

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
767967	270886	ST JOHN ; T	CE	255104	17GREEN_ACRE	NIPS	1	COMED_P4_023-65-BT2-3__	breaker	1091.0	109.85	110.89	DC	33.06

Bus #	Bus	MW Impact
270859	PWR VTR EC;R	9.04
274654	BRAIDWOOD;1U	19.05
274655	BRAIDWOOD;2U	18.24
274661	LASCO STA;2U	17.6
274687	WILL CNTY;4U	8.03
274704	KENDALL ;1C	2.81
274705	KENDALL ;1S	1.88
274706	KENDALL ;2C	2.81
274707	KENDALL ;2S	1.88
274722	S-055 E	8.45
274751	CRETE EC ;1U	3.36
274752	CRETE EC ;2U	3.36
274753	CRETE EC ;3U	3.36
274754	CRETE EC ;4U	3.36
274859	EASYR;U1 E	8.17
274860	EASYR;U2 E	8.17
274861	TOP CROP ;1U	0.33
274862	TOP CROP ;2U	0.63
274888	PILOT HIL;1E	12.81
274890	CAYUG;1U E	9.74
274891	CAYUG;2U E	9.74
275149	KEMPTON ;1E	12.81
290021	O50 E	14.65
290051	GSG-6; E	7.78
290108	LEEDK;1U E	18.09
293061	N-015 E	11.61
293516	O-009 E1	6.69
293517	O-009 E2	3.4
293518	O-009 E3	3.74
293644	O22 E1	8.5
293645	O22 E2	16.51
293715	O-029 E	7.24
293716	O-029 E	3.97
293717	O-029 E	3.65
294392	P-010 E	14.75
294763	P-046 E	6.98
295109	WESTBROOK E	4.16
295111	SUBLETTE E	1.92
914641	Y2-103	33.8
915011	Y3-013 1	2.82

Bus #	Bus	MW Impact
915021	Y3-013 2	2.82
915031	Y3-013 3	2.82
916221	Z1-073 E	4.01
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	11.64
919221	AA1-146	13.04
919581	AA2-030	13.04
920272	AA2-123 E	1.83
924471	AB2-096	31.63
925161	AB2-173	2.33
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
926821	AC1-168 C O1	0.85
926822	AC1-168 E O1	5.68
927091	AC1-204 1	55.19
927101	AC1-204 2	55.12
927451	AC1-142A 1	3.2
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	49.05
930501	AB1-091 O1	50.61
930741	AB1-122 1O1	52.99
930751	AB1-122 2O1	56.33
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	1.06
933411	AC2-154 C	1.74
933412	AC2-154 E	2.84

Bus #	Bus	MW Impact
933431	AC2-156 C O1	0.71
933432	AC2-156 E O1	1.16
933911	AD1-013 C	1.37
933912	AD1-013 E	2.19
933931	AD1-016 C	0.69
933932	AD1-016 E	1.13
934101	AD1-039 1	5.19
934111	AD1-039 2	5.52
934401	AD1-064 C O1	2.39
934402	AD1-064 E O1	11.2
934431	AD1-067 C	0.1
934432	AD1-067 E	0.41
934651	AD1-096 C	0.66
934652	AD1-096 E	1.08
934701	AD1-098 C O1	5.12
934702	AD1-098 E O1	3.74
934721	AD1-100 C	14.27
934722	AD1-100 E	66.6
934871	AD1-116 C	0.68
934872	AD1-116 E	1.11
934881	AD1-117 C	3.99
934882	AD1-117 E	2.66
934971	AD1-129 C	0.67
934972	AD1-129 E	0.45
935001	AD1-133 C O1	15.16
935002	AD1-133 E O1	10.11
936291	AD2-038 C O1	1.71
936292	AD2-038 E O1	11.45
936371	AD2-047 C O1	1.56
936372	AD2-047 E O1	16.75
936461	AD2-060	1.83
936511	AD2-066 C O1	6.19
936512	AD2-066 E O1	4.13
936781	AD2-101 C	3.09
936782	AD2-101 E	14.46
936791	AD2-102 C	8.96
936792	AD2-102 E	8.61
936961	AD2-130	0.42
937001	AD2-134 C	2.03
937002	AD2-134 E	8.4
937031	AD2-137 C O1	2.44
937032	AD2-137 E O1	11.43
937051	AD2-140 C O1	2.44
937052	AD2-140 E O1	11.42
937061	AD2-141 C O1	2.43
937062	AD2-141 E O1	11.44
937071	AD2-142 C O1	4.88
937072	AD2-142 E O1	22.85
937121	AD2-148 C O1	2.43
937122	AD2-148 E O1	11.37
937131	AD2-149 C O1	2.43
937132	AD2-149 E O1	11.37

Bus #	Bus	MW Impact
937141	AD2-150 C O1	2.43
937142	AD2-150 E O1	11.37
937181	AD2-155 C O1	2.43
937182	AD2-155 E O1	11.37
937311	AD2-172 C	1.83
937312	AD2-172 E	2.53
937321	AD2-175 C	11.32
937322	AD2-175 E	7.55
937331	AD2-176 C O1	5.48
937332	AD2-176 E O1	3.65
937401	AD2-194 1	5.94
937411	AD2-194 2	5.93
937531	AD2-214 C	0.8
937532	AD2-214 E	0.38
938012	AE1-002 E O1	4.9
938511	AE1-070 1	6.97
938521	AE1-070 2	6.37
938851	AE1-113 C O1	6.35
938852	AE1-113 E O1	19.97
938861	AE1-114 C O1	2.65
938862	AE1-114 E O1	10.14
939051	AE1-134 1	1.01
939061	AE1-134 2	1.01
939321	AE1-163 C O1	4.63
939322	AE1-163 E O1	28.43
939351	AE1-166 C O1	7.6
939352	AE1-166 E O1	7.02
939401	AE1-172 C O1	4.47
939402	AE1-172 E O1	20.95
939641	AE1-194 C	18.96
939642	AE1-194 E	126.86
939651	AE1-195 C	18.96
939652	AE1-195 E	126.86
939691	AE1-199	1.78
939701	AE1-201 C	1.5
939702	AE1-201 E	0.33
939732	AE1-204 E	0.22
939861	AE1-222 1	58.52
939871	AE1-222 2	62.2
939921	AE1-228 C O1	7.48
939922	AE1-228 E O1	4.99
939961	AE1-233 C O1	1.73
939962	AE1-233 E O1	7.16
940101	AE1-252 C O1	7.31
940102	AE1-252 E O1	4.87
AB2-013	AB2-013	11.87
AE1-033	AE1-033	13.47
BLUEG	BLUEG	5.05
CALDERWOOD	CALDERWOOD	0.09
CANNELTON	CANNELTON	0.11
CARR	CARR	0.56
CATAWBA	CATAWBA	0.23

Bus #	Bus	MW Impact
CBM-S1	CBM-S1	0.77
CBM-W1	CBM-W1	20.04
CBM-W2	CBM-W2	37.14
CHEOAH	CHEOAH	0.09
CHILHOWEE	CHILHOWEE	0.03
DEARBORN	DEARBORN	2.24
ELMERSMITH	ELMERSMITH	0.14
G-007	G-007	1.57
GIBSON	GIBSON	0.06
HAMLET	HAMLET	0.87
MEC	MEC	27.58
O-066	O-066	5.3
RENSSELAER	RENSSELAER	0.45
SANTEETLA	SANTEETLA	0.03
TRIMBLE	TRIMBLE	0.59
WEC	WEC	5.97
Z1-043	Z1-043	20.98

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
767827	270926	WILTON ; B	CE	275232	WILTON ;3M	CE	1	COMED_P4_112-65-BT5-6__	breaker	1379.0	165.19	165.79	DC	51.47

Bus #	Bus	MW Impact
270859	PWR VTR EC;R	14.81
274722	S-055 E	13.75
274772	LINCOLN ;3U	3.36
274773	LINCOLN ;4U	3.36
274774	LINCOLN ;5U	3.36
274775	LINCOLN ;6U	3.36
274776	LINCOLN ;7U	3.36
274777	LINCOLN ;8U	3.36
274859	EASYR;U1 E	13.46
274860	EASYR;U2 E	13.46
274888	PILOT HIL;1E	23.62
274890	CAYUG;1U E	20.25
274891	CAYUG;2U E	20.25
275149	KEMPTON ;1E	23.62
290021	O50 E	23.75
290051	GSG-6; E	12.8
290108	LEEDK;1U E	29.74
293061	N-015 E	19.44
293516	O-009 E1	1.0
293517	O-009 E2	0.51
293518	O-009 E3	0.56
293644	O22 E1	12.55
293645	O22 E2	24.37
293715	O-029 E	11.98
293716	O-029 E	6.57
293717	O-029 E	6.04
294392	P-010 E	24.69
294763	P-046 E	11.48
295109	WESTBROOK E	6.85
295111	SUBLETTE E	3.18
296125	R-030 C3	4.98
296128	R-030 E3	19.93
296271	R-030 C2	4.92
296272	R-030 E2	19.7
296308	R-030 C1	4.92
296309	R-030 E1	19.7
910542	X3-005 E	0.9
914641	Y2-103	55.02
915011	Y3-013 1	4.58
915021	Y3-013 2	4.58
915031	Y3-013 3	4.58

Bus #	Bus	MW Impact
916221	Z1-073 E	6.61
916502	Z1-106 E1	1.55
916504	Z1-106 E2	1.55
916512	Z1-107 E	3.17
916522	Z1-108 E	3.04
917502	Z2-087 E	25.76
918052	AA1-018 E	20.13
919221	AA1-146	21.54
919581	AA2-030	21.54
920272	AA2-123 E	2.99
924041	AB2-047 C O1	4.75
924042	AB2-047 E O1	31.79
924471	AB2-096	51.84
925161	AB2-173	3.84
925302	AB2-191 E	1.7
925881	AC1-067 O1	168.51
926311	AC1-109 1	2.34
926321	AC1-109 2	2.34
926331	AC1-110 1	2.33
926341	AC1-110 2	2.33
926351	AC1-111 1	0.94
926361	AC1-111 2	0.94
926371	AC1-111 3	0.94
926381	AC1-111 4	0.94
926391	AC1-111 5	0.94
926401	AC1-111 6	0.94
926431	AC1-114	2.91
926821	AC1-168 C O1	1.43
926822	AC1-168 E O1	9.59
927091	AC1-204 1	88.93
927101	AC1-204 2	88.93
927451	AC1-142A 1	5.12
927461	AC1-142A 2	5.12
927511	AC1-113 1	1.46
927521	AC1-113 2	1.46
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	80.5
930501	AB1-091 O1	93.97
930741	AB1-122 1O1	89.35
930751	AB1-122 2O1	90.31
932881	AC2-115 1	2.91
932891	AC2-115 2	2.91
932921	AC2-116	1.02
932931	AC2-117	6.52
933341	AC2-147 C	1.07

Bus #	Bus	MW Impact
933342	AC2-147 E	1.74
933411	AC2-154 C	3.21
933412	AC2-154 E	5.23
933431	AC2-156 C O1	1.17
933432	AC2-156 E O1	1.91
933911	AD1-013 C	2.25
933912	AD1-013 E	3.6
933931	AD1-016 C	1.14
933932	AD1-016 E	1.85
934101	AD1-039 1	8.76
934111	AD1-039 2	8.85
934401	AD1-064 C O1	3.92
934402	AD1-064 E O1	18.37
934431	AD1-067 C	0.16
934432	AD1-067 E	0.68
934651	AD1-096 C	1.09
934652	AD1-096 E	1.78
934701	AD1-098 C O1	8.43
934702	AD1-098 E O1	6.15
934721	AD1-100 C	29.44
934722	AD1-100 E	137.37
934871	AD1-116 C	1.17
934872	AD1-116 E	1.91
934881	AD1-117 C	6.58
934882	AD1-117 E	4.39
934971	AD1-129 C	1.11
934972	AD1-129 E	0.74
935001	AD1-133 C O1	27.42
935002	AD1-133 E O1	18.28
936291	AD2-038 C O1	2.88
936292	AD2-038 E O1	19.29
936371	AD2-047 C O1	2.87
936372	AD2-047 E O1	30.87
936461	AD2-060	3.37
936511	AD2-066 C O1	10.36
936512	AD2-066 E O1	6.91
936781	AD2-101 C	5.83
936782	AD2-101 E	27.31
936791	AD2-102 C	14.71
936792	AD2-102 E	14.14
936961	AD2-130	0.69
937001	AD2-134 C	3.35
937002	AD2-134 E	13.82
937031	AD2-137 C O1	7.17
937032	AD2-137 E O1	33.59
937051	AD2-140 C O1	7.53
937052	AD2-140 E O1	35.28
937061	AD2-141 C O1	7.49
937062	AD2-141 E O1	35.32
937071	AD2-142 C O1	15.07
937072	AD2-142 E O1	70.55
937121	AD2-148 C O1	4.51

Bus #	Bus	MW Impact
937122	AD2-148 E O1	21.13
937131	AD2-149 C O1	4.51
937132	AD2-149 E O1	21.13
937141	AD2-150 C O1	4.51
937142	AD2-150 E O1	21.13
937181	AD2-155 C O1	4.51
937182	AD2-155 E O1	21.13
937311	AD2-172 C	3.01
937312	AD2-172 E	4.16
937321	AD2-175 C	21.03
937322	AD2-175 E	14.02
937331	AD2-176 C O1	8.97
937332	AD2-176 E O1	5.98
937401	AD2-194 1	9.56
937411	AD2-194 2	9.56
938012	AE1-002 E O1	14.4
938511	AE1-070 1	11.24
938521	AE1-070 2	10.28
938851	AE1-113 C O1	10.7
938852	AE1-113 E O1	33.64
938861	AE1-114 C O1	4.37
938862	AE1-114 E O1	16.72
939051	AE1-134 1	1.67
939061	AE1-134 2	1.67
939321	AE1-163 C O1	7.21
939322	AE1-163 E O1	44.26
939351	AE1-166 C O1	14.52
939352	AE1-166 E O1	13.41
939401	AE1-172 C O1	9.52
939402	AE1-172 E O1	44.57
939691	AE1-199	2.93
939701	AE1-201 C	2.45
939702	AE1-201 E	0.54
939732	AE1-204 E	0.36
939741	AE1-205 C O1	12.48
939742	AE1-205 E O1	17.23
939861	AE1-222 1	98.68
939871	AE1-222 2	99.73
939921	AE1-228 C O1	12.31
939922	AE1-228 E O1	8.21
939961	AE1-233 C O1	2.85
939962	AE1-233 E O1	11.77
940101	AE1-252 C O1	15.19
940102	AE1-252 E O1	10.13
AB2-013	AB2-013	19.85
AE1-033	AE1-033	22.1
BLUEG	BLUEG	7.86
CALDERWOOD	CALDERWOOD	0.1
CANNELTON	CANNELTON	0.09
CARR	CARR	0.96
CATAWBA	CATAWBA	0.38
CBM-S1	CBM-S1	1.85

Bus #	Bus	MW Impact
CBM-W1	CBM-W1	37.32
CBM-W2	CBM-W2	71.02
CHEOAH	CHEOAH	0.1
CHILHOWEE	CHILHOWEE	0.03
DEARBORN	DEARBORN	2.9
ELMERSMITH	ELMERSMITH	0.07
G-007	G-007	2.69
GIBSON	GIBSON	0.0
HAMLET	HAMLET	1.46
MEC	MEC	46.58
O-066	O-066	9.06
RENSSELAER	RENSSELAER	0.76
SANTEETLA	SANTEETLA	0.03
TRIMBLE	TRIMBLE	0.94
WEC	WEC	9.75
Z1-043	Z1-043	35.51

Index 18

ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC DC	MW IMPACT
767829	270927	WILTON	CE	275233	WILTON	CE	1	COMED_P4_112-65-BT2-3__	breaker	1379.0	162.62	163.52	DC	52.56

Bus #	Bus	MW Impact
270859	PWR VTR EC;R	15.13
274722	S-055 E	14.05
274772	LINCOLN ;3U	3.45
274773	LINCOLN ;4U	3.45
274774	LINCOLN ;5U	3.45
274775	LINCOLN ;6U	3.45
274776	LINCOLN ;7U	3.45
274777	LINCOLN ;8U	3.45
274832	U4-027	6.82
274859	EASYR;U1 E	13.75
274860	EASYR;U2 E	13.75
274888	PILOT HIL;1E	24.11
274890	CAYUG;1U E	20.66
274891	CAYUG;2U E	20.66
275149	KEMPTON ;1E	24.11
290021	O50 E	24.25
290051	GSG-6; E	13.07
290108	LEEDK;1U E	30.37
293061	N-015 E	19.85
293516	O-009 E1	11.37
293517	O-009 E2	5.78
293518	O-009 E3	6.36
293644	O22 E1	12.82
293645	O22 E2	24.89
293715	O-029 E	12.24
293716	O-029 E	6.71
293717	O-029 E	6.17
293771	O-035 E	8.08
294392	P-010 E	25.21
294763	P-046 E	11.72
295109	WESTBROOK E	7.0
295111	SUBLETTE E	3.24
296125	R-030 C3	5.08
296128	R-030 E3	20.34
296271	R-030 C2	5.02
296272	R-030 E2	20.09
296308	R-030 C1	5.02
296309	R-030 E1	20.09
910542	X3-005 E	0.91
914641	Y2-103	56.19
915011	Y3-013 1	4.68

Bus #	Bus	MW Impact
915021	Y3-013 2	4.68
915031	Y3-013 3	4.68
916211	Z1-072 E	6.11
916221	Z1-073 E	6.75
916502	Z1-106 E1	1.58
916504	Z1-106 E2	1.58
916512	Z1-107 E	3.23
916522	Z1-108 E	3.11
917502	Z2-087 E	26.28
918052	AA1-018 E	20.57
919221	AA1-146	22.0
919581	AA2-030	22.0
920272	AA2-123 E	3.06
924041	AB2-047 C O1	4.85
924042	AB2-047 E O1	32.43
924471	AB2-096	52.94
925161	AB2-173	3.92
925302	AB2-191 E	1.73
925881	AC1-067 O1	172.23
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	0.96
926361	AC1-111 2	0.96
926371	AC1-111 3	0.96
926381	AC1-111 4	0.96
926391	AC1-111 5	0.96
926401	AC1-111 6	0.96
926431	AC1-114	2.97
926821	AC1-168 C O1	1.46
926822	AC1-168 E O1	9.79
927091	AC1-204 1	90.83
927101	AC1-204 2	90.83
927201	AC1-214 C O1	2.59
927202	AC1-214 E O1	8.24
927451	AC1-142A 1	5.23
927461	AC1-142A 2	5.23
927511	AC1-113 1	1.49
927521	AC1-113 2	1.49
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	82.21
930501	AB1-091 O1	95.92
930741	AB1-122 1O1	91.25
930751	AB1-122 2O1	92.24

Bus #	Bus	MW Impact
932881	AC2-115 1	2.97
932891	AC2-115 2	2.97
932921	AC2-116	1.04
932931	AC2-117	6.67
933341	AC2-147 C	1.09
933342	AC2-147 E	1.78
933411	AC2-154 C	3.27
933412	AC2-154 E	5.34
933431	AC2-156 C O1	1.2
933432	AC2-156 E O1	1.95
933911	AD1-013 C	2.3
933912	AD1-013 E	3.68
933931	AD1-016 C	1.16
933932	AD1-016 E	1.89
934101	AD1-039 1	8.94
934111	AD1-039 2	9.04
934401	AD1-064 C O1	4.01
934402	AD1-064 E O1	18.76
934431	AD1-067 C	0.16
934432	AD1-067 E	0.69
934651	AD1-096 C	1.11
934652	AD1-096 E	1.82
934701	AD1-098 C O1	8.6
934702	AD1-098 E O1	6.28
934721	AD1-100 C	30.02
934722	AD1-100 E	140.09
934871	AD1-116 C	1.2
934872	AD1-116 E	1.95
934881	AD1-117 C	6.72
934882	AD1-117 E	4.48
934971	AD1-129 C	1.13
934972	AD1-129 E	0.75
935001	AD1-133 C O1	27.99
935002	AD1-133 E O1	18.66
936291	AD2-038 C O1	2.94
936292	AD2-038 E O1	19.7
936371	AD2-047 C O1	2.93
936372	AD2-047 E O1	31.51
936461	AD2-060	3.44
936511	AD2-066 C O1	10.58
936512	AD2-066 E O1	7.05
936781	AD2-101 C	5.95
936782	AD2-101 E	27.88
936791	AD2-102 C	15.03
936792	AD2-102 E	14.44
936961	AD2-130	0.7
937001	AD2-134 C	3.42
937002	AD2-134 E	14.12
937031	AD2-137 C O1	7.31
937032	AD2-137 E O1	34.21
937051	AD2-140 C O1	7.67
937052	AD2-140 E O1	35.93

Bus #	Bus	MW Impact
937061	AD2-141 C O1	7.63
937062	AD2-141 E O1	35.97
937071	AD2-142 C O1	15.35
937072	AD2-142 E O1	71.86
937121	AD2-148 C O1	4.61
937122	AD2-148 E O1	21.57
937131	AD2-149 C O1	4.61
937132	AD2-149 E O1	21.57
937141	AD2-150 C O1	4.61
937142	AD2-150 E O1	21.57
937181	AD2-155 C O1	4.61
937182	AD2-155 E O1	21.57
937311	AD2-172 C	3.08
937312	AD2-172 E	4.25
937321	AD2-175 C	21.46
937322	AD2-175 E	14.31
937331	AD2-176 C O1	9.17
937332	AD2-176 E O1	6.11
937401	AD2-194 1	9.77
937411	AD2-194 2	9.77
938012	AE1-002 E O1	14.67
938511	AE1-070 1	11.48
938521	AE1-070 2	10.5
938851	AE1-113 C O1	10.93
938852	AE1-113 E O1	34.37
938861	AE1-114 C O1	4.47
938862	AE1-114 E O1	17.07
939051	AE1-134 1	1.71
939061	AE1-134 2	1.71
939321	AE1-163 C O1	7.36
939322	AE1-163 E O1	45.2
939351	AE1-166 C O1	14.82
939352	AE1-166 E O1	13.68
939401	AE1-172 C O1	9.71
939402	AE1-172 E O1	45.45
939691	AE1-199	2.99
939701	AE1-201 C	2.51
939702	AE1-201 E	0.55
939732	AE1-204 E	0.37
939741	AE1-205 C O1	12.73
939742	AE1-205 E O1	17.58
939861	AE1-222 1	100.77
939871	AE1-222 2	101.86
939921	AE1-228 C O1	12.57
939922	AE1-228 E O1	8.38
939961	AE1-233 C O1	2.91
939962	AE1-233 E O1	12.02
940101	AE1-252 C O1	15.49
940102	AE1-252 E O1	10.33
AB2-013	AB2-013	20.27
AE1-033	AE1-033	22.58
BLUEG	BLUEG	8.03

Bus #	Bus	MW Impact
CALDERWOOD	CALDERWOOD	0.1
CANNELTON	CANNELTON	0.09
CARR	CARR	0.98
CATAWBA	CATAWBA	0.39
CBM-S1	CBM-S1	1.88
CBM-W1	CBM-W1	38.11
CBM-W2	CBM-W2	72.48
CHEOAH	CHEOAH	0.1
CHILHOWEE	CHILHOWEE	0.03
DEARBORN	DEARBORN	2.96
ELMERSMITH	ELMERSMITH	0.07
G-007	G-007	2.75
GIBSON	GIBSON	0.0
HAMLET	HAMLET	1.49
MEC	MEC	47.56
O-066	O-066	9.26
RENSSELAER	RENSSELAER	0.77
SANTEETLA	SANTEETLA	0.03
TRIMBLE	TRIMBLE	0.96
WEC	WEC	9.96
Z1-043	Z1-043	36.25

Index 19

ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC DC	MW IMPACT
767862	274750	CRETE EC ;BP	CE	255112	17STJOHN	NIPS	1	COMED_P4_112-65-BT3-4__	breaker	1399.0	121.88	123.25	DC	47.11

Bus #	Bus	MW Impact
270859	PWR VTR EC;R	12.64
274654	BRAIDWOOD;1U	27.1
274655	BRAIDWOOD;2U	25.93
274661	LASCO STA;2U	24.8
274687	WILL CNTY;4U	11.3
274704	KENDALL ;1C	3.98
274705	KENDALL ;1S	2.65
274706	KENDALL ;2C	3.98
274707	KENDALL ;2S	2.65
274722	S-055 E	11.83
274751	CRETE EC ;1U	5.76
274752	CRETE EC ;2U	5.76
274753	CRETE EC ;3U	5.76
274754	CRETE EC ;4U	5.76
274859	EASYR;U1 E	11.42
274860	EASYR;U2 E	11.42
274861	TOP CROP ;1U	0.47
274862	TOP CROP ;2U	0.91
274888	PILOT HIL;1E	16.99
274890	CAYUG;1U E	13.49
274891	CAYUG;2U E	13.49
275149	KEMPTON ;1E	16.99
290021	O50 E	20.63
290051	GSG-6; E	10.86
290108	LEEDK;1U E	25.25
293061	N-015 E	16.33
293516	O-009 E1	9.36
293517	O-009 E2	4.75
293518	O-009 E3	5.24
293644	O22 E1	12.27
293645	O22 E2	23.81
293715	O-029 E	10.12
293716	O-029 E	5.55
293717	O-029 E	5.1
294392	P-010 E	20.74
294763	P-046 E	9.76
295109	WESTBROOK E	5.81
295111	SUBLETTE E	2.69
914641	Y2-103	47.33
915011	Y3-013 1	3.94
915021	Y3-013 2	3.94

Bus #	Bus	MW Impact
915031	Y3-013 3	3.94
916221	Z1-073 E	5.6
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	16.07
919221	AA1-146	18.24
919581	AA2-030	18.24
920272	AA2-123 E	2.55
924471	AB2-096	44.23
925161	AB2-173	3.25
925302	AB2-191 E	1.44
926311	AC1-109 1	1.99
926321	AC1-109 2	1.99
926331	AC1-110 1	1.99
926341	AC1-110 2	1.99
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	2.48
926821	AC1-168 C O1	1.18
926822	AC1-168 E O1	7.95
927091	AC1-204 1	77.85
927101	AC1-204 2	77.71
927451	AC1-142A 1	4.51
927461	AC1-142A 2	4.51
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	68.58
930501	AB1-091 O1	66.92
930741	AB1-122 1O1	74.18
930751	AB1-122 2O1	79.37
932881	AC2-115 1	2.48
932891	AC2-115 2	2.48
932921	AC2-116	0.87
933341	AC2-147 C	0.91
933342	AC2-147 E	1.48
933411	AC2-154 C	2.31
933412	AC2-154 E	3.76
933431	AC2-156 C O1	0.99

Bus #	Bus	MW Impact
933432	AC2-156 E O1	1.62
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	7.27
934111	AD1-039 2	7.78
934401	AD1-064 C O1	3.35
934402	AD1-064 E O1	15.66
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	7.15
934702	AD1-098 E O1	5.22
934721	AD1-100 C	19.8
934722	AD1-100 E	92.39
934871	AD1-116 C	0.94
934872	AD1-116 E	1.53
934881	AD1-117 C	5.58
934882	AD1-117 E	3.72
934971	AD1-129 C	0.94
934972	AD1-129 E	0.63
935001	AD1-133 C O1	21.14
935002	AD1-133 E O1	14.09
936291	AD2-038 C O1	2.39
936292	AD2-038 E O1	15.96
936371	AD2-047 C O1	2.06
936372	AD2-047 E O1	22.2
936461	AD2-060	2.43
936511	AD2-066 C O1	8.65
936512	AD2-066 E O1	5.76
936781	AD2-101 C	3.94
936782	AD2-101 E	18.44
936791	AD2-102 C	12.53
936792	AD2-102 E	12.04
936961	AD2-130	0.59
937001	AD2-134 C	2.84
937002	AD2-134 E	11.73
937031	AD2-137 C O1	3.31
937032	AD2-137 E O1	15.49
937051	AD2-140 C O1	3.29
937052	AD2-140 E O1	15.42
937061	AD2-141 C O1	3.27
937062	AD2-141 E O1	15.43
937071	AD2-142 C O1	6.59
937072	AD2-142 E O1	30.83
937121	AD2-148 C O1	3.21
937122	AD2-148 E O1	15.04
937131	AD2-149 C O1	3.21
937132	AD2-149 E O1	15.04
937141	AD2-150 C O1	3.21

Bus #	Bus	MW Impact
937142	AD2-150 E O1	15.04
937181	AD2-155 C O1	3.21
937182	AD2-155 E O1	15.04
937311	AD2-172 C	2.56
937312	AD2-172 E	3.54
937321	AD2-175 C	14.97
937322	AD2-175 E	9.98
937331	AD2-176 C O1	7.66
937332	AD2-176 E O1	5.11
937401	AD2-194 1	8.37
937411	AD2-194 2	8.36
937531	AD2-214 C	1.12
937532	AD2-214 E	0.53
938012	AE1-002 E O1	6.64
938511	AE1-070 1	9.84
938521	AE1-070 2	8.98
938851	AE1-113 C O1	8.86
938852	AE1-113 E O1	27.84
938861	AE1-114 C O1	3.71
938862	AE1-114 E O1	14.17
939051	AE1-134 1	1.42
939061	AE1-134 2	1.42
939321	AE1-163 C O1	6.6
939322	AE1-163 E O1	40.51
939351	AE1-166 C O1	10.59
939352	AE1-166 E O1	9.78
939401	AE1-172 C O1	6.19
939402	AE1-172 E O1	28.98
939641	AE1-194 C	32.45
939642	AE1-194 E	217.15
939651	AE1-195 C	32.45
939652	AE1-195 E	217.15
939691	AE1-199	2.48
939701	AE1-201 C	2.1
939702	AE1-201 E	0.46
939732	AE1-204 E	0.31
939861	AE1-222 1	81.92
939871	AE1-222 2	87.66
939921	AE1-228 C O1	10.44
939922	AE1-228 E O1	6.96
939961	AE1-233 C O1	2.42
939962	AE1-233 E O1	10.0
940101	AE1-252 C O1	10.12
940102	AE1-252 E O1	6.74
AB2-013	AB2-013	16.66
AE1-033	AE1-033	18.83
BLUEG	BLUEG	7.46
CALDERWOOD	CALDERWOOD	0.15
CANNELTON	CANNELTON	0.18
CARR	CARR	0.8
CATAWBA	CATAWBA	0.34
CBM-S1	CBM-S1	0.87

Bus #	Bus	MW Impact
CBM-W1	CBM-W1	25.94
CBM-W2	CBM-W2	50.2
CHEOAH	CHEOAH	0.15
CHILHOWEE	CHILHOWEE	0.05
DEARBORN	DEARBORN	3.06
ELMERSMITH	ELMERSMITH	0.24
G-007	G-007	2.23
GIBSON	GIBSON	0.11
HAMLET	HAMLET	1.27
MEC	MEC	38.47
O-066	O-066	7.52
RENSSELAER	RENSSELAER	0.63
SANTEETLA	SANTEETLA	0.05
TRIMBLE	TRIMBLE	0.87
WEC	WEC	8.36
Z1-043	Z1-043	29.36

Index 20

ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC DC	MW IMPACT
767921	274804	UNIV PK N;RP	CE	243229	05OLIVE	AEP	1	AEP_P4_#2978_05DUMONT 765_B	breaker	971.0	133.25	134.38	DC	33.04

Bus #	Bus	MW Impact
270859	PWR VTR EC;R	9.79
274722	S-055 E	9.15
274808	UNIV PK N;4U	1.62
274809	UNIV PK N;5U	1.62
274811	UNIV PK N;7U	1.62
274812	UNIV PK N;8U	1.62
274814	UNIV PK N;0U	1.62
274815	UNIV PK N;XU	1.62
274832	U4-027	8.61
274859	EASYR;U1 E	8.84
274860	EASYR;U2 E	8.84
274888	PILOT HIL;1E	14.86
274890	CAYUG;1U E	10.7
274891	CAYUG;2U E	10.7
275149	KEMPTON ;1E	14.86
290021	O50 E	15.62
290051	GSG-6; E	8.43
290108	LEEDK;1U E	19.61
293061	N-015 E	12.6
293516	O-009 E1	7.26
293517	O-009 E2	3.69
293518	O-009 E3	4.06
293644	O22 E1	7.88
293645	O22 E2	15.3
293715	O-029 E	7.84
293716	O-029 E	4.3
293717	O-029 E	3.95
293771	O-035 E	5.09
294392	P-010 E	16.0
294401	BSHIL;1U E	6.8
294410	BSHIL;2U E	6.8
294763	P-046 E	7.56
295109	WESTBROOK E	4.51
295111	SUBLETTE E	2.08
910542	X3-005 E	0.51
914641	Y2-103	36.59
915011	Y3-013 1	3.05
915021	Y3-013 2	3.05
915031	Y3-013 3	3.05
916211	Z1-072 E	3.85

Bus #	Bus	MW Impact
916221	Z1-073 E	4.35
916502	Z1-106 E1	1.02
916504	Z1-106 E2	1.02
916512	Z1-107 E	2.17
916522	Z1-108 E	2.02
918052	AA1-018 E	14.29
919221	AA1-146	14.12
919581	AA2-030	14.12
919621	AA2-039 C	1.66
919622	AA2-039 E	11.1
920272	AA2-123 E	1.98
924471	AB2-096	34.27
925161	AB2-173	2.52
925302	AB2-191 E	1.12
925581	AC1-033 C	1.11
925582	AC1-033 E	7.46
925881	AC1-067 O1	97.44
926311	AC1-109 1	1.55
926321	AC1-109 2	1.55
926331	AC1-110 1	1.54
926341	AC1-110 2	1.54
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	6.18
927091	AC1-204 1	59.17
927101	AC1-204 2	59.21
927201	AC1-214 C O1	1.63
927202	AC1-214 E O1	5.19
927451	AC1-142A 1	3.45
927461	AC1-142A 2	3.45
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	53.11
930501	AB1-091 O1	57.12
930741	AB1-122 1O1	58.21
930751	AB1-122 2O1	59.68
932881	AC2-115 1	1.92
932891	AC2-115 2	1.92

Bus #	Bus	MW Impact
932921	AC2-116	0.67
932931	AC2-117	10.39
933341	AC2-147 C	0.7
933342	AC2-147 E	1.15
933411	AC2-154 C	2.02
933412	AC2-154 E	3.29
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	1.23
934051	AD1-031 C O1	2.26
934052	AD1-031 E O1	3.69
934101	AD1-039 1	5.7
934111	AD1-039 2	5.85
934401	AD1-064 C O1	2.59
934402	AD1-064 E O1	12.13
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	5.55
934702	AD1-098 E O1	4.05
934721	AD1-100 C	15.58
934722	AD1-100 E	72.69
934871	AD1-116 C	0.83
934872	AD1-116 E	1.36
934881	AD1-117 C	4.32
934882	AD1-117 E	2.88
934971	AD1-129 C	0.73
934972	AD1-129 E	0.49
935001	AD1-133 C O1	16.67
935002	AD1-133 E O1	11.11
936291	AD2-038 C O1	1.97
936292	AD2-038 E O1	13.19
936371	AD2-047 C O1	1.8
936372	AD2-047 E O1	19.42
936461	AD2-060	2.12
936511	AD2-066 C O1	6.83
936512	AD2-066 E O1	4.55
936781	AD2-101 C	3.51
936782	AD2-101 E	16.41
936791	AD2-102 C	9.71
936792	AD2-102 E	9.33
936961	AD2-130	0.46
937001	AD2-134 C	2.2
937002	AD2-134 E	9.1
937031	AD2-137 C O1	2.69
937032	AD2-137 E O1	12.6
937051	AD2-140 C O1	2.69
937052	AD2-140 E O1	12.61

Bus #	Bus	MW Impact
937061	AD2-141 C O1	2.68
937062	AD2-141 E O1	12.63
937071	AD2-142 C O1	5.39
937072	AD2-142 E O1	25.22
937121	AD2-148 C O1	2.74
937122	AD2-148 E O1	12.83
937131	AD2-149 C O1	2.74
937132	AD2-149 E O1	12.83
937141	AD2-150 C O1	2.74
937142	AD2-150 E O1	12.83
937181	AD2-155 C O1	2.74
937182	AD2-155 E O1	12.83
937311	AD2-172 C	1.98
937312	AD2-172 E	2.74
937321	AD2-175 C	12.77
937322	AD2-175 E	8.51
937331	AD2-176 C O1	5.94
937332	AD2-176 E O1	3.96
937401	AD2-194 1	6.36
937411	AD2-194 2	6.37
937531	AD2-214 C	3.53
937532	AD2-214 E	1.66
938012	AE1-002 E O1	5.4
938511	AE1-070 1	7.48
938521	AE1-070 2	6.84
938851	AE1-113 C O1	7.32
938852	AE1-113 E O1	23.0
938861	AE1-114 C O1	2.87
938862	AE1-114 E O1	10.98
939051	AE1-134 1	1.1
939061	AE1-134 2	1.1
939321	AE1-163 C O1	4.63
939322	AE1-163 E O1	28.42
939351	AE1-166 C O1	8.28
939352	AE1-166 E O1	7.64
939401	AE1-172 C O1	4.91
939402	AE1-172 E O1	22.97
939631	AE1-193 C O1	5.53
939632	AE1-193 E O1	37.0
939681	AE1-198 C O1	16.41
939682	AE1-198 E O1	13.95
939691	AE1-199	1.93
939701	AE1-201 C	1.62
939702	AE1-201 E	0.36
939732	AE1-204 E	0.24
939861	AE1-222 1	64.28
939871	AE1-222 2	65.91
939921	AE1-228 C O1	8.11
939922	AE1-228 E O1	5.4
939961	AE1-233 C O1	1.88
939962	AE1-233 E O1	7.77
940101	AE1-252 C O1	8.02

Bus #	Bus	MW Impact
940102	AE1-252 E O1	5.35
990901	L-005 E	5.05
AB2-013	AB2-013	12.84
AE1-033	AE1-033	14.59
BLUEG	BLUEG	4.41
CALDERWOOD	CALDERWOOD	0.05
CANNELTON	CANNELTON	0.06
CARR	CARR	0.61
CATAWBA	CATAWBA	0.23
CBM-S1	CBM-S1	1.22
CBM-W1	CBM-W1	21.89
CBM-W2	CBM-W2	43.2
CHEOAH	CHEOAH	0.05
CHILHOWEE	CHILHOWEE	0.01
DEARBORN	DEARBORN	2.62
ELMERSMITH	ELMERSMITH	0.06
G-007	G-007	1.71
GIBSON	GIBSON	0.02
HAMLET	HAMLET	0.88
MEC	MEC	30.08
O-066	O-066	5.77
RENSSELAER	RENSSELAER	0.49
SANTEETLA	SANTEETLA	0.02
TRIMBLE	TRIMBLE	0.52
WEC	WEC	6.46
Z1-043	Z1-043	22.86

Index 21

ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC DC	MW IMPACT
767826	275232	WILTON ;3M	CE	270644	WILTON ;	CE	1	COMED_P4_112-65-BT5-6__	breaker	1379.0	165.19	165.79	DC	51.47

Bus #	Bus	MW Impact
270859	PWR VTR EC;R	14.81
274722	S-055 E	13.75
274772	LINCOLN ;3U	3.36
274773	LINCOLN ;4U	3.36
274774	LINCOLN ;5U	3.36
274775	LINCOLN ;6U	3.36
274776	LINCOLN ;7U	3.36
274777	LINCOLN ;8U	3.36
274859	EASYR;U1 E	13.46
274860	EASYR;U2 E	13.46
274888	PILOT HIL;1E	23.62
274890	CAYUG;1U E	20.25
274891	CAYUG;2U E	20.25
275149	KEMPTON ;1E	23.62
290021	O50 E	23.75
290051	GSG-6; E	12.8
290108	LEEDK;1U E	29.74
293061	N-015 E	19.44
293516	O-009 E1	1.0
293517	O-009 E2	0.51
293518	O-009 E3	0.56
293644	O22 E1	12.55
293645	O22 E2	24.37
293715	O-029 E	11.98
293716	O-029 E	6.57
293717	O-029 E	6.04
294392	P-010 E	24.69
294763	P-046 E	11.48
295109	WESTBROOK E	6.85
295111	SUBLETTE E	3.18
296125	R-030 C3	4.98
296128	R-030 E3	19.93
296271	R-030 C2	4.92
296272	R-030 E2	19.7
296308	R-030 C1	4.92
296309	R-030 E1	19.7
910542	X3-005 E	0.9
914641	Y2-103	55.02
915011	Y3-013 1	4.58
915021	Y3-013 2	4.58
915031	Y3-013 3	4.58

Bus #	Bus	MW Impact
916221	Z1-073 E	6.61
916502	Z1-106 E1	1.55
916504	Z1-106 E2	1.55
916512	Z1-107 E	3.17
916522	Z1-108 E	3.04
917502	Z2-087 E	25.76
918052	AA1-018 E	20.13
919221	AA1-146	21.54
919581	AA2-030	21.54
920272	AA2-123 E	2.99
924041	AB2-047 C O1	4.75
924042	AB2-047 E O1	31.79
924471	AB2-096	51.84
925161	AB2-173	3.84
925302	AB2-191 E	1.7
925881	AC1-067 O1	168.51
926311	AC1-109 1	2.34
926321	AC1-109 2	2.34
926331	AC1-110 1	2.33
926341	AC1-110 2	2.33
926351	AC1-111 1	0.94
926361	AC1-111 2	0.94
926371	AC1-111 3	0.94
926381	AC1-111 4	0.94
926391	AC1-111 5	0.94
926401	AC1-111 6	0.94
926431	AC1-114	2.91
926821	AC1-168 C O1	1.43
926822	AC1-168 E O1	9.59
927091	AC1-204 1	88.93
927101	AC1-204 2	88.93
927451	AC1-142A 1	5.12
927461	AC1-142A 2	5.12
927511	AC1-113 1	1.46
927521	AC1-113 2	1.46
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	80.5
930501	AB1-091 O1	93.97
930741	AB1-122 1O1	89.35
930751	AB1-122 2O1	90.31
932881	AC2-115 1	2.91
932891	AC2-115 2	2.91
932921	AC2-116	1.02
932931	AC2-117	6.52
933341	AC2-147 C	1.07

Bus #	Bus	MW Impact
933342	AC2-147 E	1.74
933411	AC2-154 C	3.21
933412	AC2-154 E	5.23
933431	AC2-156 C O1	1.17
933432	AC2-156 E O1	1.91
933911	AD1-013 C	2.25
933912	AD1-013 E	3.6
933931	AD1-016 C	1.14
933932	AD1-016 E	1.85
934101	AD1-039 1	8.76
934111	AD1-039 2	8.85
934401	AD1-064 C O1	3.92
934402	AD1-064 E O1	18.37
934431	AD1-067 C	0.16
934432	AD1-067 E	0.68
934651	AD1-096 C	1.09
934652	AD1-096 E	1.78
934701	AD1-098 C O1	8.43
934702	AD1-098 E O1	6.15
934721	AD1-100 C	29.44
934722	AD1-100 E	137.37
934871	AD1-116 C	1.17
934872	AD1-116 E	1.91
934881	AD1-117 C	6.58
934882	AD1-117 E	4.39
934971	AD1-129 C	1.11
934972	AD1-129 E	0.74
935001	AD1-133 C O1	27.42
935002	AD1-133 E O1	18.28
936291	AD2-038 C O1	2.88
936292	AD2-038 E O1	19.29
936371	AD2-047 C O1	2.87
936372	AD2-047 E O1	30.87
936461	AD2-060	3.37
936511	AD2-066 C O1	10.36
936512	AD2-066 E O1	6.91
936781	AD2-101 C	5.83
936782	AD2-101 E	27.31
936791	AD2-102 C	14.71
936792	AD2-102 E	14.14
936961	AD2-130	0.69
937001	AD2-134 C	3.35
937002	AD2-134 E	13.82
937031	AD2-137 C O1	7.17
937032	AD2-137 E O1	33.59
937051	AD2-140 C O1	7.53
937052	AD2-140 E O1	35.28
937061	AD2-141 C O1	7.49
937062	AD2-141 E O1	35.32
937071	AD2-142 C O1	15.07
937072	AD2-142 E O1	70.55
937121	AD2-148 C O1	4.51

Bus #	Bus	MW Impact
937122	AD2-148 E O1	21.13
937131	AD2-149 C O1	4.51
937132	AD2-149 E O1	21.13
937141	AD2-150 C O1	4.51
937142	AD2-150 E O1	21.13
937181	AD2-155 C O1	4.51
937182	AD2-155 E O1	21.13
937311	AD2-172 C	3.01
937312	AD2-172 E	4.16
937321	AD2-175 C	21.03
937322	AD2-175 E	14.02
937331	AD2-176 C O1	8.97
937332	AD2-176 E O1	5.98
937401	AD2-194 1	9.56
937411	AD2-194 2	9.56
938012	AE1-002 E O1	14.4
938511	AE1-070 1	11.24
938521	AE1-070 2	10.28
938851	AE1-113 C O1	10.7
938852	AE1-113 E O1	33.64
938861	AE1-114 C O1	4.37
938862	AE1-114 E O1	16.72
939051	AE1-134 1	1.67
939061	AE1-134 2	1.67
939321	AE1-163 C O1	7.21
939322	AE1-163 E O1	44.26
939351	AE1-166 C O1	14.52
939352	AE1-166 E O1	13.41
939401	AE1-172 C O1	9.52
939402	AE1-172 E O1	44.57
939691	AE1-199	2.93
939701	AE1-201 C	2.45
939702	AE1-201 E	0.54
939732	AE1-204 E	0.36
939741	AE1-205 C O1	12.48
939742	AE1-205 E O1	17.23
939861	AE1-222 1	98.68
939871	AE1-222 2	99.73
939921	AE1-228 C O1	12.31
939922	AE1-228 E O1	8.21
939961	AE1-233 C O1	2.85
939962	AE1-233 E O1	11.77
940101	AE1-252 C O1	15.19
940102	AE1-252 E O1	10.13
AB2-013	AB2-013	19.85
AE1-033	AE1-033	22.1
BLUEG	BLUEG	7.86
CALDERWOOD	CALDERWOOD	0.1
CANNELTON	CANNELTON	0.09
CARR	CARR	0.96
CATAWBA	CATAWBA	0.38
CBM-S1	CBM-S1	1.85

Bus #	Bus	MW Impact
CBM-W1	CBM-W1	37.32
CBM-W2	CBM-W2	71.02
CHEOAH	CHEOAH	0.1
CHILHOWEE	CHILHOWEE	0.03
DEARBORN	DEARBORN	2.9
ELMERSMITH	ELMERSMITH	0.07
G-007	G-007	2.69
GIBSON	GIBSON	0.0
HAMLET	HAMLET	1.46
MEC	MEC	46.58
O-066	O-066	9.06
RENSSELAER	RENSSELAER	0.76
SANTEETLA	SANTEETLA	0.03
TRIMBLE	TRIMBLE	0.94
WEC	WEC	9.75
Z1-043	Z1-043	35.51

Index 22

ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC DC	MW IMPACT
767831	275233	WILTON ;4M	CE	270644	WILTON ;	CE	1	COMED_P4_112-65-BT2-3__	breaker	1379.0	162.62	163.52	DC	52.56

Bus #	Bus	MW Impact
270859	PWR VTR EC;R	15.13
274722	S-055 E	14.05
274772	LINCOLN ;3U	3.45
274773	LINCOLN ;4U	3.45
274774	LINCOLN ;5U	3.45
274775	LINCOLN ;6U	3.45
274776	LINCOLN ;7U	3.45
274777	LINCOLN ;8U	3.45
274832	U4-027	6.82
274859	EASYR;U1 E	13.75
274860	EASYR;U2 E	13.75
274888	PILOT HIL;1E	24.11
274890	CAYUG;1U E	20.66
274891	CAYUG;2U E	20.66
275149	KEMPTON ;1E	24.11
290021	O50 E	24.25
290051	GSG-6; E	13.07
290108	LEEDK;1U E	30.37
293061	N-015 E	19.85
293516	O-009 E1	11.37
293517	O-009 E2	5.78
293518	O-009 E3	6.36
293644	O22 E1	12.82
293645	O22 E2	24.89
293715	O-029 E	12.24
293716	O-029 E	6.71
293717	O-029 E	6.17
293771	O-035 E	8.08
294392	P-010 E	25.21
294763	P-046 E	11.72
295109	WESTBROOK E	7.0
295111	SUBLETTE E	3.24
296125	R-030 C3	5.08
296128	R-030 E3	20.34
296271	R-030 C2	5.02
296272	R-030 E2	20.09
296308	R-030 C1	5.02
296309	R-030 E1	20.09
910542	X3-005 E	0.91
914641	Y2-103	56.19
915011	Y3-013 1	4.68

Bus #	Bus	MW Impact
915021	Y3-013 2	4.68
915031	Y3-013 3	4.68
916211	Z1-072 E	6.11
916221	Z1-073 E	6.75
916502	Z1-106 E1	1.58
916504	Z1-106 E2	1.58
916512	Z1-107 E	3.23
916522	Z1-108 E	3.11
917502	Z2-087 E	26.28
918052	AA1-018 E	20.57
919221	AA1-146	22.0
919581	AA2-030	22.0
920272	AA2-123 E	3.06
924041	AB2-047 C O1	4.85
924042	AB2-047 E O1	32.43
924471	AB2-096	52.94
925161	AB2-173	3.92
925302	AB2-191 E	1.73
925881	AC1-067 O1	172.23
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	0.96
926361	AC1-111 2	0.96
926371	AC1-111 3	0.96
926381	AC1-111 4	0.96
926391	AC1-111 5	0.96
926401	AC1-111 6	0.96
926431	AC1-114	2.97
926821	AC1-168 C O1	1.46
926822	AC1-168 E O1	9.79
927091	AC1-204 1	90.83
927101	AC1-204 2	90.83
927201	AC1-214 C O1	2.59
927202	AC1-214 E O1	8.24
927451	AC1-142A 1	5.23
927461	AC1-142A 2	5.23
927511	AC1-113 1	1.49
927521	AC1-113 2	1.49
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	82.21
930501	AB1-091 O1	95.92
930741	AB1-122 1O1	91.25
930751	AB1-122 2O1	92.24

Bus #	Bus	MW Impact
932881	AC2-115 1	2.97
932891	AC2-115 2	2.97
932921	AC2-116	1.04
932931	AC2-117	6.67
933341	AC2-147 C	1.09
933342	AC2-147 E	1.78
933411	AC2-154 C	3.27
933412	AC2-154 E	5.34
933431	AC2-156 C O1	1.2
933432	AC2-156 E O1	1.95
933911	AD1-013 C	2.3
933912	AD1-013 E	3.68
933931	AD1-016 C	1.16
933932	AD1-016 E	1.89
934101	AD1-039 1	8.94
934111	AD1-039 2	9.04
934401	AD1-064 C O1	4.01
934402	AD1-064 E O1	18.76
934431	AD1-067 C	0.16
934432	AD1-067 E	0.69
934651	AD1-096 C	1.11
934652	AD1-096 E	1.82
934701	AD1-098 C O1	8.6
934702	AD1-098 E O1	6.28
934721	AD1-100 C	30.02
934722	AD1-100 E	140.09
934871	AD1-116 C	1.2
934872	AD1-116 E	1.95
934881	AD1-117 C	6.72
934882	AD1-117 E	4.48
934971	AD1-129 C	1.13
934972	AD1-129 E	0.75
935001	AD1-133 C O1	27.99
935002	AD1-133 E O1	18.66
936291	AD2-038 C O1	2.94
936292	AD2-038 E O1	19.7
936371	AD2-047 C O1	2.93
936372	AD2-047 E O1	31.51
936461	AD2-060	3.44
936511	AD2-066 C O1	10.58
936512	AD2-066 E O1	7.05
936781	AD2-101 C	5.95
936782	AD2-101 E	27.88
936791	AD2-102 C	15.03
936792	AD2-102 E	14.44
936961	AD2-130	0.7
937001	AD2-134 C	3.42
937002	AD2-134 E	14.12
937031	AD2-137 C O1	7.31
937032	AD2-137 E O1	34.21
937051	AD2-140 C O1	7.67
937052	AD2-140 E O1	35.93

Bus #	Bus	MW Impact
937061	AD2-141 C O1	7.63
937062	AD2-141 E O1	35.97
937071	AD2-142 C O1	15.35
937072	AD2-142 E O1	71.86
937121	AD2-148 C O1	4.61
937122	AD2-148 E O1	21.57
937131	AD2-149 C O1	4.61
937132	AD2-149 E O1	21.57
937141	AD2-150 C O1	4.61
937142	AD2-150 E O1	21.57
937181	AD2-155 C O1	4.61
937182	AD2-155 E O1	21.57
937311	AD2-172 C	3.08
937312	AD2-172 E	4.25
937321	AD2-175 C	21.46
937322	AD2-175 E	14.31
937331	AD2-176 C O1	9.17
937332	AD2-176 E O1	6.11
937401	AD2-194 1	9.77
937411	AD2-194 2	9.77
938012	AE1-002 E O1	14.67
938511	AE1-070 1	11.48
938521	AE1-070 2	10.5
938851	AE1-113 C O1	10.93
938852	AE1-113 E O1	34.37
938861	AE1-114 C O1	4.47
938862	AE1-114 E O1	17.07
939051	AE1-134 1	1.71
939061	AE1-134 2	1.71
939321	AE1-163 C O1	7.36
939322	AE1-163 E O1	45.2
939351	AE1-166 C O1	14.82
939352	AE1-166 E O1	13.68
939401	AE1-172 C O1	9.71
939402	AE1-172 E O1	45.45
939691	AE1-199	2.99
939701	AE1-201 C	2.51
939702	AE1-201 E	0.55
939732	AE1-204 E	0.37
939741	AE1-205 C O1	12.73
939742	AE1-205 E O1	17.58
939861	AE1-222 1	100.77
939871	AE1-222 2	101.86
939921	AE1-228 C O1	12.57
939922	AE1-228 E O1	8.38
939961	AE1-233 C O1	2.91
939962	AE1-233 E O1	12.02
940101	AE1-252 C O1	15.49
940102	AE1-252 E O1	10.33
AB2-013	AB2-013	20.27
AE1-033	AE1-033	22.58
BLUEG	BLUEG	8.03

Bus #	Bus	MW Impact
CALDERWOOD	CALDERWOOD	0.1
CANNELTON	CANNELTON	0.09
CARR	CARR	0.98
CATAWBA	CATAWBA	0.39
CBM-S1	CBM-S1	1.88
CBM-W1	CBM-W1	38.11
CBM-W2	CBM-W2	72.48
CHEOAH	CHEOAH	0.1
CHILHOWEE	CHILHOWEE	0.03
DEARBORN	DEARBORN	2.96
ELMERSMITH	ELMERSMITH	0.07
G-007	G-007	2.75
GIBSON	GIBSON	0.0
HAMLET	HAMLET	1.49
MEC	MEC	47.56
O-066	O-066	9.26
RENSSELAER	RENSSELAER	0.77
SANTEETLA	SANTEETLA	0.03
TRIMBLE	TRIMBLE	0.96
WEC	WEC	9.96
Z1-043	Z1-043	36.25

Index 23

ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC DC	MW IMPACT
449665	346809	7CASEY	AMIL	247712	05SULLIVAN	AEP	1	AEP_P4_#3128_05EUGENE 345_A2	breaker	1466.0	142.87	143.62	DC	24.25

Bus #	Bus	MW Impact
270859	PWR VTR EC;R	6.24
274650	KINCAID ;1U	14.71
274651	KINCAID ;2U	14.73
274832	U4-027	8.54
274853	TWINGROVE;U1	0.74
274854	TWINGROVE;U2	0.74
274859	EASYR;U1 E	6.8
274860	EASYR;U2 E	6.8
274890	CAYUG;1U E	10.14
274891	CAYUG;2U E	10.14
276150	W2-048 E	2.05
290021	O50 E	10.78
290051	GSG-6; E	5.68
290108	LEEDK;1U E	12.4
290261	S-027 E	19.36
290265	S-028 E	19.36
293516	O-009 E1	6.47
293517	O-009 E2	3.29
293518	O-009 E3	3.62
293644	O22 E1	4.9
293645	O22 E2	9.51
293715	O-029 E	6.65
293716	O-029 E	3.65
293717	O-029 E	3.35
293771	O-035 E	5.18
294401	BSHIL;1U E	7.08
294410	BSHIL;2U E	7.08
294763	P-046 E	5.38
295109	WESTBROOK E	3.04
295111	SUBLETTE E	1.65
296125	R-030 C3	3.34
296128	R-030 E3	13.34
296271	R-030 C2	3.3
296272	R-030 E2	13.18
296308	R-030 C1	3.3
296309	R-030 E1	13.18
905081	W4-005 C	0.98
905082	W4-005 E	42.62
909052	X2-022 E	28.51
916211	Z1-072 E	3.92
916221	Z1-073 E	2.93

Bus #	Bus	MW Impact
917502	Z2-087 E	17.32
918052	AA1-018 E	7.91
919221	AA1-146	11.65
919581	AA2-030	11.65
919621	AA2-039 C	1.73
919622	AA2-039 E	11.55
920272	AA2-123 E	1.22
924041	AB2-047 C O1	3.3
924042	AB2-047 E O1	22.1
924261	AB2-070 C O1	3.84
924262	AB2-070 E O1	25.68
924471	AB2-096	21.83
925161	AB2-173	2.08
925302	AB2-191 E	0.75
925581	AC1-033 C	1.16
925582	AC1-033 E	7.76
925771	AC1-053 C	3.87
925772	AC1-053 E	25.93
926431	AC1-114	1.3
926821	AC1-168 C O1	0.83
926822	AC1-168 E O1	5.54
926841	AC1-171 C O1	1.14
926842	AC1-171 E O1	7.61
927201	AC1-214 C O1	1.66
927202	AC1-214 E O1	5.29
927511	AC1-113 1	0.65
927521	AC1-113 2	0.65
927531	AC1-185 1	0.43
927541	AC1-185 2	0.43
927551	AC1-185 3	0.43
927561	AC1-185 4	0.43
927571	AC1-185 5	0.43
927581	AC1-185 6	0.43
927591	AC1-185 7	0.43
927601	AC1-185 8	0.43
930481	AB1-089	35.32
930741	AB1-122 1O1	34.94
932881	AC2-115 1	1.3
932891	AC2-115 2	1.3
932921	AC2-116	0.45
933341	AC2-147 C	0.54
933342	AC2-147 E	0.88
933911	AD1-013 C	0.99
933912	AD1-013 E	1.59
933931	AD1-016 C	0.46
933932	AD1-016 E	0.76
934051	AD1-031 C O1	2.35
934052	AD1-031 E O1	3.84
934101	AD1-039 1	3.42
934401	AD1-064 C O1	1.64
934402	AD1-064 E O1	7.66
934431	AD1-067 C	0.07

Bus #	Bus	MW Impact
934432	AD1-067 E	0.3
934651	AD1-096 C	0.51
934652	AD1-096 E	0.83
934701	AD1-098 C O1	3.77
934702	AD1-098 E O1	2.75
934871	AD1-116 C	0.46
934872	AD1-116 E	0.75
934881	AD1-117 C	3.31
934882	AD1-117 E	2.21
934971	AD1-129 C	0.47
934972	AD1-129 E	0.31
935001	AD1-133 C O1	14.12
935002	AD1-133 E O1	9.41
935141	AD1-148	7.45
936291	AD2-038 C O1	1.34
936292	AD2-038 E O1	8.98
936511	AD2-066 C O1	4.76
936512	AD2-066 E O1	3.17
936771	AD2-100 C O1	21.12
936772	AD2-100 E O1	14.08
936791	AD2-102 C	6.72
936792	AD2-102 E	6.46
936972	AD2-131 E O1	8.38
937001	AD2-134 C	1.48
937002	AD2-134 E	6.13
937161	AD2-153 C O1	3.2
937162	AD2-153 E O1	15.0
937171	AD2-154 C O1	3.2
937172	AD2-154 E O1	15.0
937211	AD2-159 C	4.61
937212	AD2-159 E	21.56
937311	AD2-172 C	1.41
937312	AD2-172 E	1.95
937331	AD2-176 C O1	3.65
937332	AD2-176 E O1	2.44
937531	AD2-214 C	3.23
937532	AD2-214 E	1.52
938851	AE1-113 C O1	4.98
938852	AE1-113 E O1	15.67
938861	AE1-114 C O1	2.2
938862	AE1-114 E O1	8.42
939051	AE1-134 1	0.91
939061	AE1-134 2	0.91
939321	AE1-163 C O1	3.4
939322	AE1-163 E O1	20.86
939401	AE1-172 C O1	4.02
939402	AE1-172 E O1	18.81
939631	AE1-193 C O1	5.75
939632	AE1-193 E O1	38.49
939681	AE1-198 C O1	17.08
939682	AE1-198 E O1	14.51
939691	AE1-199	1.29

Bus #	Bus	MW Impact
939701	AE1-201 C	1.0
939702	AE1-201 E	0.22
939741	AE1-205 C O1	8.33
939742	AE1-205 E O1	11.5
939861	AE1-222 1	38.59
939921	AE1-228 C O1	5.41
939922	AE1-228 E O1	3.61
939961	AE1-233 C O1	1.15
939962	AE1-233 E O1	4.76
940101	AE1-252 C O1	7.6
940102	AE1-252 E O1	5.07
950291	J291	3.2
950701	J196 C	1.33
950702	J196 E	5.3
951001	J339	6.03
951741	J474 C	2.02
951742	J474 E	10.95
952251	J641	10.35
952271	J644	9.57
952321	J734	5.07
952651	J756 C	2.46
952652	J756 E	13.33
952871	J757 C	4.06
952872	J757 E	21.98
953241	J467 C	2.76
953242	J467 E	14.91
953371	J808	9.06
953401	J811	17.76
953431	J853	11.11
953641	J813	43.81
953651	J815	32.11
953671	J817	10.67
953741	J826 C	1.65
953742	J826 E	8.94
953801	J835 C	2.68
953802	J835 E	14.48
953851	J845 C	1.72
953852	J845 E	9.32
953881	J848 C	5.27
953882	J848 E	28.51
953951	J859	9.79
954081	J872 C	4.44
954082	J872 E	24.03
954181	J884	7.67
954411	J912	14.24
954681	J949	38.92
954721	J750 C	2.11
954722	J750 E	11.4
954761	J468 C	7.08
954762	J468 E	28.32
990901	L-005 E	11.18
AB2-013	AB2-013	13.3

Bus #	Bus	MW Impact
AE1-033	AE1-033	10.55
AE1-042	AE1-042	10.08
BLUEG	BLUEG	10.38
CARR	CARR	0.29
CBM-S1	CBM-S1	13.17
CBM-S2	CBM-S2	2.35
CBM-W1	CBM-W1	28.23
CBM-W2	CBM-W2	199.79
CIN	CIN	3.85
CPL	CPL	0.56
DEARBORN	DEARBORN	0.69
G-007	G-007	0.8
GIBSON	GIBSON	0.02
MEC	MEC	45.61
O-066	O-066	2.69
RENSSELAER	RENSSELAER	0.23
TRIMBLE	TRIMBLE	1.31
WEC	WEC	4.13
Z1-043	Z1-043	21.97

Index 24

ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC DC	MW IMPACT
769035	930740	AB1-122 TAP	CE	270717	DRESDEN ; R	CE	1	COMED_P7_345-L19601_B-S_+_345-L9801__R-S_FSA	tower	1195.0	128.16	134.68	DC	77.86

Bus #	Bus	MW Impact
274677	POWERTON ;5U	26.24
274678	POWERTON ;6U	26.31
274861	TOP CROP ;1U	0.7
274862	TOP CROP ;2U	1.35
274879	MINONK ;1U	0.74
290021	O50 E	19.44
293644	O22 E1	18.15
293645	O22 E2	35.22
294401	BSHIL;1U E	6.21
294410	BSHIL;2U E	6.21
918051	AA1-018 C	0.67
918052	AA1-018 E	29.1
919621	AA2-039 C	1.51
919622	AA2-039 E	10.13
925581	AC1-033 C	1.02
925582	AC1-033 E	6.81
926841	AC1-171 C O1	0.85
926842	AC1-171 E O1	5.66
930741	AB1-122 1O1	524.81
934051	AD1-031 C O1	2.06
934052	AD1-031 E O1	3.37
934101	AD1-039 1	51.43
934871	AD1-116 C	1.69
934872	AD1-116 E	2.77
936291	AD2-038 C O1	4.35
936292	AD2-038 E O1	29.11
938851	AE1-113 C O1	16.15
938852	AE1-113 E O1	50.77
939321	AE1-163 C O1	10.9
939322	AE1-163 E O1	66.96
939631	AE1-193 C O1	5.04
939632	AE1-193 E O1	33.74
939681	AE1-198 C O1	14.97
939682	AE1-198 E O1	12.72
939861	AE1-222 1	579.57
954702	J844 E	27.32
990901	L-005 E	9.43
AB2-013	AB2-013	28.99
CARR	CARR	0.04
CBM-S1	CBM-S1	3.25

Bus #	Bus	MW Impact
CBM-S2	CBM-S2	0.73
CBM-W1	CBM-W1	6.57
CBM-W2	CBM-W2	48.55
CIN	CIN	1.0
CPL	CPL	0.21
DEARBORN	DEARBORN	0.55
G-007	G-007	0.1
IPL	IPL	0.49
LGEE	LGEE	0.12
MEC	MEC	20.19
O-066	O-066	0.35
RENSSELAER	RENSSELAER	0.03
Z1-043	Z1-043	18.2

Index 25

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
449827	938670	AE1-089 TAP	AEP	243219	05DUMONT	AEP	1	AEP_P4_#2978_05DUMONT 765_B	breaker	1409.0	124.59	125.39	DC	24.83

Bus #	Bus	MW Impact
247900	05FR-11G E	6.85
247901	05FR-12G E	6.74
247902	05FR-21G E	7.2
247903	05FR-22G E	6.89
247904	05FR-3G E	13.96
247905	05FR-4G E	10.5
247906	05MDL-1G E	15.63
247907	05MDL-2G E	7.75
247912	05MDL-3G E	8.11
247913	05MDL-4G E	7.83
247943	T-127 E	7.83
270859	PWR VTR EC;R	7.11
274722	S-055 E	6.55
274809	UNIV PK N;5U	0.8
274811	UNIV PK N;7U	0.8
274812	UNIV PK N;8U	0.8
274814	UNIV PK N;0U	0.8
274815	UNIV PK N;XU	0.8
274888	PILOT HIL;1E	10.32
275149	KEMPTON ;1E	10.32
290021	O50 E	11.46
290051	GSG-6; E	6.16
290108	LEEDK;1U E	14.23
293061	N-015 E	8.96
293644	O22 E1	5.93
293645	O22 E2	11.51
294392	P-010 E	11.37
295109	WESTBROOK E	3.3
909145	X2-052	36.23
914641	Y2-103	26.18
915011	Y3-013 1	2.18
915021	Y3-013 2	2.18
915031	Y3-013 3	2.18
916221	Z1-073 E	3.18
916502	Z1-106 E1	0.73
916504	Z1-106 E2	0.73
916512	Z1-107 E	1.5
916522	Z1-108 E	1.45
917711	Z2-114 C	0.06
917712	Z2-114 E	0.4

Bus #	Bus	MW Impact
918052	AA1-018 E	9.8
920272	AA2-123 E	1.43
924471	AB2-096	24.87
925302	AB2-191 E	0.82
926311	AC1-109 1	1.1
926321	AC1-109 2	1.1
926331	AC1-110 1	1.1
926341	AC1-110 2	1.1
926351	AC1-111 1	0.44
926361	AC1-111 2	0.44
926371	AC1-111 3	0.44
926381	AC1-111 4	0.44
926391	AC1-111 5	0.44
926401	AC1-111 6	0.44
926431	AC1-114	1.4
927091	AC1-204 1	41.9
927101	AC1-204 2	41.91
927451	AC1-142A 1	2.42
927461	AC1-142A 2	2.42
927511	AC1-113 1	0.7
927521	AC1-113 2	0.7
930042	AB1-006 E	17.03
930391	AB1-080	2.15
930481	AB1-089	38.75
930501	AB1-091 O1	40.14
930741	AB1-122 1O1	41.99
930751	AB1-122 2O1	42.66
932601	AC2-080 C O1	3.72
932602	AC2-080 E O1	24.91
932881	AC2-115 1	1.4
932891	AC2-115 2	1.4
932921	AC2-116	0.49
932931	AC2-117	5.17
933411	AC2-154 C	1.4
933412	AC2-154 E	2.28
933431	AC2-156 C O1	0.55
933432	AC2-156 E O1	0.9
933911	AD1-013 C	1.08
933912	AD1-013 E	1.73
933931	AD1-016 C	0.54
933932	AD1-016 E	0.89
934101	AD1-039 1	4.12
934111	AD1-039 2	4.18
934401	AD1-064 C O1	1.88
934402	AD1-064 E O1	8.8
934431	AD1-067 C	0.08
934432	AD1-067 E	0.33
934701	AD1-098 C O1	4.06
934702	AD1-098 E O1	2.96
934721	AD1-100 C	11.12
934722	AD1-100 E	51.9
934871	AD1-116 C	0.57

Bus #	Bus	MW Impact
934872	AD1-116 E	0.93
934971	AD1-129 C	0.53
934972	AD1-129 E	0.35
935001	AD1-133 C O1	12.63
935002	AD1-133 E O1	8.42
935271	AD1-137 C	5.69
935272	AD1-137 E	38.05
936291	AD2-038 C O1	1.41
936292	AD2-038 E O1	9.44
936371	AD2-047 C O1	1.25
936372	AD2-047 E O1	13.49
936461	AD2-060	1.47
936511	AD2-066 C O1	4.99
936512	AD2-066 E O1	3.33
936781	AD2-101 C	2.48
936782	AD2-101 E	11.59
936961	AD2-130	0.32
936981	AD2-132 C	5.04
936982	AD2-132 E	23.6
937001	AD2-134 C	1.61
937002	AD2-134 E	6.66
937031	AD2-137 C O1	1.92
937032	AD2-137 E O1	9.0
937041	AD2-138 C	5.04
937042	AD2-138 E	23.6
937051	AD2-140 C O1	1.92
937052	AD2-140 E O1	8.99
937061	AD2-141 C O1	1.91
937062	AD2-141 E O1	9.0
937071	AD2-142 C O1	3.84
937072	AD2-142 E O1	17.98
937121	AD2-148 C O1	1.93
937122	AD2-148 E O1	9.02
937131	AD2-149 C O1	1.93
937132	AD2-149 E O1	9.02
937141	AD2-150 C O1	1.93
937142	AD2-150 E O1	9.02
937181	AD2-155 C O1	1.93
937182	AD2-155 E O1	9.02
937321	AD2-175 C	8.98
937322	AD2-175 E	5.98
937331	AD2-176 C O1	4.29
937332	AD2-176 E O1	2.86
937401	AD2-194 1	4.51
937411	AD2-194 2	4.51
938012	AE1-002 E O1	3.86
938511	AE1-070 1	5.29
938521	AE1-070 2	4.84
938671	AE1-089 C	74.55
938672	AE1-089 E	102.34
938851	AE1-113 C O1	5.24
938852	AE1-113 E O1	16.46

Bus #	Bus	MW Impact
939321	AE1-163 C O1	3.48
939322	AE1-163 E O1	21.35
939351	AE1-166 C O1	5.85
939352	AE1-166 E O1	5.4
939401	AE1-172 C O1	3.71
939402	AE1-172 E O1	17.38
939641	AE1-194 C	5.61
939642	AE1-194 E	37.52
939651	AE1-195 C	5.61
939652	AE1-195 E	37.52
939691	AE1-199	1.41
939701	AE1-201 C	1.17
939702	AE1-201 E	0.26
939732	AE1-204 E	0.17
939861	AE1-222 1	46.37
939871	AE1-222 2	47.11
939921	AE1-228 C O1	5.92
939922	AE1-228 E O1	3.95
939961	AE1-233 C O1	1.36
939962	AE1-233 E O1	5.62
AB2-013	AB2-013	10.01
AE1-033	AE1-033	10.77
CARR	CARR	0.59
CATAWBA	CATAWBA	0.05
CBM-S1	CBM-S1	4.6
CBM-W1	CBM-W1	19.73
CBM-W2	CBM-W2	68.15
CIN	CIN	7.05
DEARBORN	DEARBORN	1.82
G-007	G-007	1.64
HAMLET	HAMLET	0.34
IPL	IPL	3.28
LGEE	LGEE	0.73
MEC	MEC	25.32
O-066	O-066	5.54
RENSSELAER	RENSSELAER	0.47
WEC	WEC	4.7
Z1-043	Z1-043	17.65

Affected Systems

MISO

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

Contingency Name	Contingency Definition
COMED_P7_345-L19601_B-S+_345-L9801__R-S_FSA	CONTINGENCY 'COMED_P7_345-L19601_B-S+_345-L9801__R-S_FSA' TRIP BRANCH FROM BUS 270790 TO BUS 270770 CKT 1 / KATYD; B 345 GOODI;4B 345 TRIP BRANCH FROM BUS 918050 TO BUS 270769 CKT 1 / AA1-018 GOODINGS ;2R 345 END
COMED_P7_345-L0301_B-S+_345-L9801__R-S_FSA-B	CONTINGENCY 'COMED_P7_345-L0301_B-S+_345-L9801__R-S_FSA-B' TRIP BRANCH FROM BUS 939320 TO BUS 270790 CKT 1 / AE1-163 TAP 345 KATYDID TRIP BRANCH FROM BUS 918050 TO BUS 270769 CKT 1 / AA1-018 GOODINGS ;2R 345 END
AEP_P1-2_#8907	CONTINGENCY 'AEP_P1-2_#8907' OPEN BRANCH FROM BUS 247712 TO BUS 346809 CKT 1 / 247712 05SULLIVAN 345 346809 7CASEY 345 1 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 / DRES; 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
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_116-45-TR82__	CONTINGENCY 'COMED_P4_116-45-TR82__' TRIP BRANCH FROM BUS 270769 TO BUS 271565 TO BUS 275324 CKT 1 / GOODINGS ;2R 345 GOODINGS ; R 138 GOODINGS ;2C 34.5 DISCONNECT BUS 270769 / GOODINGS ;2R 345 END
COMED_P4_112-45-BT4-5__	CONTINGENCY 'COMED_P4_112-45-BT4-5__' TRIP BRANCH FROM BUS 270666 TO BUS 270664 CKT 1 / B ISL;BT 345 B ISL; B 345 TRIP BRANCH FROM BUS 270666 TO BUS 270926 CKT 1 / B ISL;BT 345 WILTO; B 345 TRIP BRANCH FROM BUS 270770 TO BUS 270666 CKT 1 / GOODI;4B 345 B ISL;BT 345 TRIP BRANCH FROM BUS 270852 TO BUS 270704 CKT 1 / PONTI; B 345 LORET; B 345 END

Contingency Name	Contingency Definition
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
AEP_P4_#3128_05EUGENE 345_A2	CONTINGENCY 'AEP_P4_#3128_05EUGENE 345_A2' OPEN BRANCH FROM BUS 243221 TO BUS 249504 CKT 1 / 243221 05EUGENE 345 249504 08CAYSUB 345 1 OPEN BRANCH FROM BUS 243221 TO BUS 348885 CKT 1 / 243221 05EUGENE 345 348885 7BUNSONVILLE 345 1 END
COMED_P2-2_116_GG-345R__2_NO_FSA	CONTINGENCY 'COMED_P2-2_116_GG-345R__2_NO_FSA' DISCONNECT BUS 270769 / GOODI;2R 345 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
COMED_P1-2_345-L1223_TR-S	CONTINGENCY 'COMED_P1-2_345-L1223_TR-S' TRIP BRANCH FROM BUS 270717 TO BUS 270731 CKT 1 / DRES; R 345 ELECT;4R 345 TRIP BRANCH FROM BUS 275180 TO BUS 270717 CKT 1 / DRES;3M 138 DRES; R 345 TRIP BRANCH FROM BUS 275180 TO BUS 271336 CKT 1 / DRES;3M 138 DRES; B 138 TRIP BRANCH FROM BUS 275180 TO BUS 275280 CKT 1 / DRES;3M 138 DRES;3C 34.5 END
COMED_P1-2_345-L1202__B-S-A	CONTINGENCY 'COMED_P1-2_345-L1202__B-S-A' TRIP BRANCH FROM BUS 270716 TO BUS 930750 CKT 1 / DRES;DEN ; B 345 AB1-122 TAP 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
AEP_P1-2_#286	CONTINGENCY 'AEP_P1-2_#286' OPEN BRANCH FROM BUS 243221 TO BUS 348885 CKT 1 / 243221 05EUGENE 345 348885 7BUNSONVILLE 345 1 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

Contingency Name	Contingency Definition
COMED_P4_116-45-L9801_FSA	CONTINGENCY 'COMED_P4_116-45-L9801_FSA' TRIP BRANCH FROM BUS 918050 TO BUS 270769 CKT 1 / AA1-018 GOODINGS ;2R 345 DISCONNECT BUS 270769 / GOODI;2R 345 END
COMED_P4_116-45-L11614_	CONTINGENCY 'COMED_P4_116-45-L11614_' TRIP BRANCH FROM BUS 270667 TO BUS 270665 CKT 1 / B ISL;RT 345 B ISL; R 345 TRIP BRANCH FROM BUS 270667 TO BUS 270927 CKT 1 / B ISL;RT 345 WILTO; R 345 TRIP BRANCH FROM BUS 270769 TO BUS 270667 CKT 1 / GOODI;2R 345 B ISL;RT 345 DISCONNECT BUS 270769 / GOODI;2R 345 END
COMED_P2-2_116_GG-345R__2_FSA	CONTINGENCY 'COMED_P2-2_116_GG-345R__2_FSA' DISCONNECT BUS 270769 / GOODI;2R 345 DISCONNECT BUS 918050 / AA1-018 TAP /ADDED FOR NO FSA CASE END
Base Case	
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_P1-2_345-L11613AB-S	CONTINGENCY 'COMED_P1-2_345-L11613AB-S' TRIP BRANCH FROM BUS 270666 TO BUS 270664 CKT 1 / B ISL;BT 345 B ISL; B 345 TRIP BRANCH FROM BUS 270666 TO BUS 270926 CKT 1 / B ISL;BT 345 WILTO; B 345 TRIP BRANCH FROM BUS 270770 TO BUS 270666 CKT 1 / GOODI;4B 345 B ISL;BT 345 END
COMED_P4_111-45-L1223T_	CONTINGENCY 'COMED_P4_111-45-L1223T_' TRIP BRANCH FROM BUS 270717 TO BUS 270731 CKT 1 / DRESDEN ; R 345 ELEC JUNC;4R 345 TRIP BRANCH FROM BUS 275180 TO BUS 270717 CKT 1 / DRESDEN ;3M 138 DRESDEN ; R 345 TRIP BRANCH FROM BUS 275180 TO BUS 271336 CKT 1 / DRESDEN ;3M 138 DRESDEN ; B 138 TRIP BRANCH FROM BUS 275180 TO BUS 275280 CKT 1 / DRESDEN ;3M 138 DRESDEN ;3C 34.5 DISCONNECT BUS 270731 / ELEC JUNC;4R 345 DISCONNECT BUS 275184 / ELEC JUNC;4M 138 END
COMED_P7_345-L1202__B-S_+_345-L1227__R-S-A	CONTINGENCY 'COMED_P7_345-L1202__B-S_+_345-L1227__R-S-A' TRIP BRANCH FROM BUS 270716 TO BUS 930750 CKT 1 / DRESDEN ; B 345 AB1-122 TAP 345 TRIP BRANCH FROM BUS 930740 TO BUS 270717 CKT 1 / AB1-122 TAP 345 DRESDEN ; R 345 END
COMED_P1-2_345-L19601_B-S	CONTINGENCY 'COMED_P1-2_345-L19601_B-S' TRIP BRANCH FROM BUS 270790 TO BUS 270770 CKT 1 / KATYD; B 345 GOODI;4B 345 END

Contingency Name	Contingency Definition
AEP_P4_#8805_05OLIVE 345_D	CONTINGENCY 'AEP_P4_#8805_05OLIVE 345_D' OPEN BRANCH FROM BUS 243229 TO BUS 932600 CKT 1 / 243229 05OLIVE 345 932600 AC2-080 TAP 345 1 /* CONTINGENCY LINE ADDED FOR AE1 BUILD OPEN BRANCH FROM BUS 243229 TO BUS 274804 CKT 1 / 243229 05OLIVE 345 274804 UNIV PK N;RP 345 1 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
AEP_P1-2_#697A	CONTINGENCY 'AEP_P1-2_#697A' OPEN BRANCH FROM BUS 243229 TO BUS 274804 CKT 1 / 243229 05OLIVE 345 274804 UNIV PK N;RP 345 1 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

Short Circuit

No issues identified.