



Generation Interconnection

Feasibility Study Report

for

Queue Project AF2-266

CLOVER 230 KV

50 MW Capacity / 50 MW Energy

July 2020

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1 Introduction

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

2 Preface

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

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

The Feasibility Study estimates do not include the feasibility, cost, or time required to obtain property rights and permits for construction of the required facilities. The project developer is responsible for the right of way, real estate, and construction permit issues. For properties currently owned by Transmission Owners, the costs may be included in the study.

3 General

The Interconnection Customer (IC), has proposed a Storage generating facility located in Charlotte County, Virginia. The installed facilities will have a total capability of 50 MW with 50 MW of this output being recognized by PJM as Capacity. The proposed in-service date for this project is July 01, 2022. This study does not imply a TO commitment to this in-service date.

Queue Number	AF2-266
Project Name	CLOVER 230 KV
State	Virginia
County	Charlotte
Transmission Owner	Dominion
MFO	50
MWE	50
MWC	50
Fuel	Storage
Basecase Study Year	2023

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

4 Point of Interconnection

AF2-266 project will interconnect with the Dominion’s transmission system via the Clover 230 kV substation. This is the primary Point of Interconnection (POI) chose by the IC with the ITO’s transmission system. The IC is responsible for securing right-of-way, permits and constructing the proposed attachment line from the battery energy storage facility site to the existing switching station. Attachment 1 shows a one-line diagram of the proposed interconnection facilities. The IC may not install any facilities on Dominion’s right-of-way without first obtaining the necessary approval from Dominion Energy.

The IC requested that a secondary POI of a single line tap between Clover 500 kV substation and Rawlings 500 kV substation be reviewed for network impacts. This report does not provide costs for the physical interconnection of the secondary point of interconnection. It was just analyzed for network impacts. Results are shown in the ‘Summer Peak – Load Flow Analysis - Secondary Point of Interconnection’ section of this report.

5 Cost Summary

The AF2-266 project will be responsible for the following costs:

Description	Total Cost
Total Physical Interconnection Costs	\$ 4,500,000
Total System Network Upgrade Costs	\$ 177,155,000
Total Costs	\$ 181,655,000

This cost excludes a Federal Income Tax Gross Up charges. This tax may or may not be charged based on whether this project meets the eligibility requirements of IRS Notice 88-129. If at a future date it is determined

that the Federal Income Tax Gross charge is required, the Transmission Owner shall be reimbursed by the Interconnection Customer for such taxes.

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

6 Transmission Owner Scope of Work

Dominion assessed the impact of the proposed Queue Project AF2-266 was evaluated as a 50 MW Capacity (50.0 MW Energy) injection at the Clover 230 kV substation in the Dominion Transmission System, for compliance with NERC Reliability Criteria on Dominion Transmission System. The system was assessed using the summer 2023 AF2 case provided to Dominion by PJM. When performing a generation analysis, Dominion's main analysis will be load flow study results under single contingency (both normal and stressed system conditions). Dominion Criteria considers a transmission facility overloaded if it exceeds 94% of its emergency rating under normal and stressed system conditions. A full listing of Dominion's Planning Criteria and interconnection requirements can be found in the Company's Facility Connection Requirements which are publicly available at: <http://www.dominionenergy.com>.

The results of these studies evaluate the system under a limited set of operating conditions and do not guarantee the full delivery of the capacity and associated energy of this proposed generation facility under all operating conditions. NERC Planning and Operating Reliability Criteria allow for the re-dispatch of generating units to resolve projected and actual deficiencies in real time and planning studies. Specifically, in Planning Studies, NERC Planning Event 3 and 6 Contingency Conditions (Loss of generator, transmission circuit, transformer, shunt device, or Single Pole of a DC line followed by the loss of a generator, transmission circuit, transformer, shunt device or single pole of a DC line) allow for re-dispatch of generating units to resolve potential reliability deficiencies. For Dominion Planning Criteria the re-dispatch of generating units for these contingency conditions is allowed as long as the projected loading does not exceed 100% of a facility Load Dump Rating.

The required Attachment Facilities, Direct Connection and Non-Direct Connection work for the interconnection of the AF2-266 generation project to the Dominion Transmission System is detailed in the following sections. The associated one-line with the generation project attachment facilities and primary direct and non-direct connection are shown in Attachment 1.

Note that the ITO findings were made from a conceptual review of this project. A more detailed review of the connection facilities and their cost will be identified in a future study phases. Further note that the cost estimate data contained in this document should be considered high level estimates since it was produced without a detailed engineering review. The applicant will be responsible for the actual cost of construction. ITO herein reserves the right to return to any issues in this document and, upon appropriate justification, request additional monies to complete any reinforcements to the transmission systems.

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

Description	Total Cost
Attachment Facilities	\$ 2,100,000
Expansion of the Clover substation	\$ 2,400,000
Total Physical Interconnection Costs	\$ 4,500,000

It is estimated to take 24-30 months to complete this work upon execution of an Interconnection Construction Service Agreement (ICSA). These preliminary cost estimates are based on typical engineering costs. A more detailed engineering cost estimates are normally done when the IC provides an exact site plan location for the generation substation during the Facility Study phase. See Attachment One.

Remote Terminal Work: During the Facilities Study, ITO’s System Protection Engineering Department will review transmission line protection as well as anti-islanding required to accommodate the new generation and interconnection substation. System Protection Engineering will determine the minimal acceptable protection requirements to reliably interconnect the proposed generating facility with the transmission system. The review is based on maintaining system reliability by reviewing ITO’s protection requirements with the known transmission system configuration which includes generating facilities in the area. This review may determine that transmission line protection and communication upgrades are required at remote substations.

7 Schedule

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

8 Transmission Owner Analysis

8.1 Power Flow Analysis

PJM performed a power flow analysis of the transmission system using a 2023 summer peak load flow model and the results were verified by Dominion. Additionally, Dominion performed an analysis of its transmission system and no further deficiencies were identified.

9 Interconnection Customer Requirements

9.1 System Protection

The IC must design its Customer Facilities in accordance with all applicable standards, including the standards in Dominion’s “Dominion Energy Electric Transmission Generator Interconnection Requirements” documented in Dominion’s Facility Interconnection Requirements “Exhibit C” located at:

<https://www.dominionenergy.com/company/moving-energy/electric-transmission-access>. Preliminary

Protection requirements will be provided as part of the Facilities Study. Detailed Protection Requirements will be provided once the project enters the construction phase.

9.2 Compliance Issues and Interconnection Customer Requirements

The proposed Customer Facilities must be designed in accordance with Dominion’s “Dominion’s Facility Interconnection Requirements” document located at: <https://www.dominionenergy.com/company/moving-energy/electric-transmission-access>. In particular, the IC is responsible for the following:

1. The purchase and installation of a fully rated protection device (circuit breaker, circuit switcher, fuse) to protect the IC’s GSU transformer(s).
2. The purchase and installation of the minimum required Dominion generation interconnection relaying and control facilities as described in the System Protection noted above. This includes over/under voltage protection, over/under frequency protection, and zero sequence voltage protection relays.
3. The purchase and installation of supervisory control and data acquisition (“SCADA”) equipment to provide information in a compatible format to the Dominion Transmission System Control Center.
4. Compliance with the Dominion and PJM generator power factor and voltage control requirements.

The GSU(s) associated with the IC queue request shall meet the grounding requirements as noted in Dominion’s “Dominion’s Facility Interconnection Requirements” document located at: <https://www.dominionenergy.com/company/moving-energy/electric-transmission-access>.

The IC will also be required to meet all PJM, SERC, and NERC reliability criteria and operating procedures for standards compliance. For example, the IC will need to properly locate and report the over and under voltage and over and under frequency system protection elements for its units as well as the submission of the generator model and protection data required to satisfy the PJM and SERC audits. Failure to comply with these requirements may result in a disconnection of service if the violation is found to compromise the reliability of the Dominion system.

9.3 Power Factor Requirements

The IC shall design its non-synchronous Customer Facility with the ability to maintain a power factor of at least 0.95 leading (absorbing VARs) to 0.95 lagging (supplying VARs) measured at the high-side of the facility substation transformer(s) connected to the Dominion transmission system.

10 Revenue Metering and SCADA Requirements

10.1 PJM Requirements

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

10.2 Interconnected Transmission Owner Requirements

See Section 3.4.6 “Metering and telecommunications” of Dominion’s “Dominion’s Facility Interconnection Requirements” document located at: <https://www.dominionenergy.com/company/moving-energy/electric-transmission-access>.

11 Summer Peak - Load Flow Analysis - Primary POI

The Queue Project AF2-266 was evaluated as a 50.0 MW (Capacity 50.0 MW) injection at the Clover 230 kV substation in the Dominion area. Project AF2-266 was evaluated for compliance with applicable reliability planning criteria (PJM, NERC, NERC Regional Reliability Councils, and Transmission Owners). Project AF2-266 was studied with a commercial probability of 53%. Potential network impacts were as follows:

11.1 Generation Deliverability

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

ID	FROM BUS#	FROM BUS	kV	FROM BUS AREA	TO BUS#	TO BUS	kV	TO BUS AREA	CK T ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADIN G %	POST PROJECT LOADIN G %	AC D C	MW IMPAC T
106426398	314686	6CLOVER	230.0	DVP	934620	AD1-088 TAP	230.0	DVP	1	DVP_P1-2: LN 556-B	single	571.520019531	98.74	101.51	DC	15.82

11.2 Multiple Facility Contingency

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

None

11.3 Contribution to Previously Identified Overloads

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

ID	FROM BUS#	FROM BUS	kV	FROM BUS AREA	TO BUS#	TO BUS	kV	TO BUS AREA	CK T ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADIN G %	POST PROJECT LOADIN G %	AC D C	MW IMPAC T
106426194	313707	6FORK UNION	230.0	DVP	961060	AF2-397 TAP	230.0	DVP	1	DVP_P1-2: LN 556-B	single	661.760009766	101.83	103.02	DC	7.92
106067155	313802	6PRINCE EDW	230.0	DVP	314692	6FARMVIL	230.0	DVP	1	DVP_P4-2: 556T591	breaker	699.0	109.77	112.04	DC	15.85
106067156	313802	6PRINCE EDW	230.0	DVP	314692	6FARMVIL	230.0	DVP	1	DVP_P4-2: 511T556-A	breaker	699.0	109.76	112.02	DC	15.85
106426282	313802	6PRINCE EDW	230.0	DVP	314692	6FARMVIL	230.0	DVP	1	DVP_P1-2: LN 556-B	single	571.520019531	105.3	108.07	DC	15.82
106426283	313802	6PRINCE EDW	230.0	DVP	314692	6FARMVIL	230.0	DVP	1	314906 8CLOVER 500 314936 AF1-246 TAP 500 1	single	571.520019531	102.98	105.75	DC	15.82
106426222	313867	6BREMODIST	230.0	DVP	313707	6FORK UNION	230.0	DVP	1	DVP_P1-2: LN 556-B	single	661.760009766	102.14	103.43	DC	8.54
106067145	314268	6BRIERY	230.0	DVP	313802	6PRINCE EDW	230.0	DVP	1	DVP_P4-2: 556T591	breaker	699.0	110.64	112.91	DC	15.85
106067146	314268	6BRIERY	230.0	DVP	313802	6PRINCE EDW	230.0	DVP	1	DVP_P4-2: 511T556-A	breaker	699.0	110.63	112.9	DC	15.85
106426275	314268	6BRIERY	230.0	DVP	313802	6PRINCE EDW	230.0	DVP	1	DVP_P1-2: LN 556-B	single	571.520019531	106.37	109.14	DC	15.82

ID	FROM BUS#	FROM BUS	kV	FROM BUS AREA	TO BUS#	TO BUS	kV	TO BUS AREA	CK T ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADIN G %	POST PROJECT LOADIN G %	AC D C	MW IMPAC T
106426276	314268	6BRIERY	230.0	DVP	313802	6PRINCE EDW	230.0	DVP	1	314906 8CLOVE R 500 314936 AF1- 246 TAP 500 1	single	571.520019531	104.05	106.81	DC	15.82
97790401	314677	6BUCKING	230.0	DVP	314747	6BREMO	230.0	DVP	1	DVP_P4 -2: 511T59 1	breaker	699.0	136.82	137.67	DC	14.75
97790402	314677	6BUCKING	230.0	DVP	314747	6BREMO	230.0	DVP	1	DVP_P4 -2: 556T59 1	breaker	699.0	136.91	137.75	DC	14.75
106067000	314677	6BUCKING	230.0	DVP	314747	6BREMO	230.0	DVP	1	DVP_P4 -2: 511T55 6-A	breaker	699.0	136.91	137.75	DC	14.75
106425988	314677	6BUCKING	230.0	DVP	314747	6BREMO	230.0	DVP	1	DVP_P1 -2: LN 556-B	single	571.520019531	134.37	136.95	DC	14.72
106425989	314677	6BUCKING	230.0	DVP	314747	6BREMO	230.0	DVP	1	314906 8CLOVE R 500 314936 AF1- 246 TAP 500 1	single	571.520019531	132.21	134.79	DC	14.72
106067213	314686	6CLOVER	230.0	DVP	934620	AD1-088 TAP	230.0	DVP	1	DVP_P4 -2: 556T59 1	breaker	699.0	101.11	103.38	DC	15.85
106067214	314686	6CLOVER	230.0	DVP	934620	AD1-088 TAP	230.0	DVP	1	DVP_P4 -2: 511T55 6-A	breaker	699.0	101.11	103.38	DC	15.85
106426244	314686	6CLOVER	230.0	DVP	934610	AD1-087 TAP	230.0	DVP	1	DVP_P1 -2: LN 556-B	single	814.979980469	111.68	115.84	DC	33.95
106426245	314686	6CLOVER	230.0	DVP	934610	AD1-087 TAP	230.0	DVP	1	314906 8CLOVE R 500 314936 AF1- 246 TAP 500 1	single	814.979980469	108.18	112.34	DC	33.95
97790416	314692	6FARMVIL	230.0	DVP	314677	6BUCKING	230.0	DVP	1	DVP_P4 -2: 511T59 1	breaker	684.0	135.75	136.61	DC	14.75
97790418	314692	6FARMVIL	230.0	DVP	314677	6BUCKING	230.0	DVP	1	DVP_P4 -2: 556T59 1	breaker	684.0	135.84	136.7	DC	14.75
106067005	314692	6FARMVIL	230.0	DVP	314677	6BUCKING	230.0	DVP	1	DVP_P4 -2: 511T55 6-A	breaker	684.0	135.84	136.7	DC	14.75
106425999	314692	6FARMVIL	230.0	DVP	314677	6BUCKING	230.0	DVP	1	DVP_P1 -2: LN 556-B	single	559.299987793	133.88	136.51	DC	14.72

ID	FROM BUS#	FROM BUS	kV	FROM BUS AREA	TO BUS#	TO BUS	kV	TO BUS AREA	CK T ID	CONT NAME	Type	Rating MVA	PRE PROJE T LOADIN G %	POST PROJE T LOADIN G %	AC D C	MW IMPAC T
106426000	314692	6FARMVIL	230.0	DVP	314677	6BUCKING	230.0	DVP	1	314906 8CLOVE R 500 314936 AF1- 246 TAP 500 1	single	559.299987793	131.67	134.3	DC	14.72
106425929	314697	6SEEDGE HILL	230.0	DVP	927250	AC1-221 TAP	230.0	DVP	1	DVP_P1 -2: LN 556-B	single	674.91998291	132.18	135.49	DC	25.89
106425930	314697	6SEEDGE HILL	230.0	DVP	927250	AC1-221 TAP	230.0	DVP	1	314906 8CLOVE R 500 314936 AF1- 246 TAP 500 1	single	674.91998291	128.95	132.27	DC	25.89
106426205	314747	6BREMO	230.0	DVP	313867	6BREMODI ST	230.0	DVP	1	DVP_P1 -2: LN 556-B	single	661.760009766	104.5	105.79	DC	8.54
107338583	927250	AC1-221 TAP	230.0	DVP	304070	6PERSON2 30 T	230.0	CPL E	1	DVP_P1 -2: LN 556-B	single	718.0	134.61	137.52	DC	25.89
107338584	927250	AC1-221 TAP	230.0	DVP	304070	6PERSON2 30 T	230.0	CPL E	1	314906 8CLOVE R 500 314936 AF1- 246 TAP 500 1	single	718.0	131.58	134.49	DC	25.89
106426124	934610	AD1-087 TAP	230.0	DVP	314697	6SEEDGE HILL	230.0	DVP	1	DVP_P1 -2: LN 556-B	single	814.979980469	121.55	125.72	DC	33.95
106426125	934610	AD1-087 TAP	230.0	DVP	314697	6SEEDGE HILL	230.0	DVP	1	314906 8CLOVE R 500 314936 AF1- 246 TAP 500 1	single	814.979980469	118.06	122.22	DC	33.95
106067136	934620	AD1-088 TAP	230.0	DVP	314268	6BRIERY	230.0	DVP	1	DVP_P4 -2: 556T59 1	break er	699.0	111.22	113.48	DC	15.85
106067137	934620	AD1-088 TAP	230.0	DVP	314268	6BRIERY	230.0	DVP	1	DVP_P4 -2: 511T55 6-A	break er	699.0	111.2	113.47	DC	15.85
106426257	934620	AD1-088 TAP	230.0	DVP	314268	6BRIERY	230.0	DVP	1	DVP_P1 -2: LN 556-B	single	571.520019531	107.07	109.84	DC	15.82
106426258	934620	AD1-088 TAP	230.0	DVP	314268	6BRIERY	230.0	DVP	1	314906 8CLOVE R 500 314936 AF1- 246 TAP 500 1	single	571.520019531	104.75	107.51	DC	15.82
106426092	961060	AF2-397 TAP	230.0	DVP	314765	6MTEAGLE	230.0	DVP	1	DVP_P1 -2: LN 556-B	single	661.760009766	101.81	103.01	DC	7.92

11.4 Potential Congestion due to Local Energy Deliverability

PJM also studied the delivery of the energy portion of this interconnection request. Any problems identified below are likely to result in operational restrictions to the project under study. The developer can proceed with network upgrades to eliminate the operational restriction at their discretion by submitting a Merchant Transmission Interconnection request.

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

ID	FROM BUS#	FROM BUS	kV	FROM BUS AREA	TO BUS#	TO BUS	kV	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADIN G %	POST PROJECT LOADIN G %	AC/D C	MW IMPACT
106426280	313802	6PRINCE EDW	230.0	DVP	314692	6FARMVIL	230.0	DVP	1	DVP_P 1-2: LN 556-B	operati on	571.520019531	131.75	134.52	DC	15.82
106426273	314268	6BRIERY	230.0	DVP	313802	6PRINCE EDW	230.0	DVP	1	DVP_P 1-2: LN 556-B	operati on	571.520019531	132.82	135.59	DC	15.82
106425985	314677	6BUCKIN G	230.0	DVP	314747	6BREMO	230.0	DVP	1	DVP_P 1-2: LN 556-B	operati on	571.520019531	164.45	165.48	DC	14.72
106426242	314686	6CLOVE R	230.0	DVP	934610	AD1-087 TAP	230.0	DVP	1	DVP_P 1-2: LN 556-B	operati on	814.979980469	134.85	139.01	DC	33.95
106426396	314686	6CLOVE R	230.0	DVP	934620	AD1-088 TAP	230.0	DVP	1	DVP_P 1-2: LN 556-B	operati on	571.520019531	121.18	123.95	DC	15.82
106425996	314692	6FARMV IL	230.0	DVP	314677	6BUCKING	230.0	DVP	1	DVP_P 1-2: LN 556-B	operati on	559.299987793	163.07	164.12	DC	14.72
106425927	314697	6SEDGE HILL	230.0	DVP	927250	AC1-221 TAP	230.0	DVP	1	DVP_P 1-2: LN 556-B	operati on	674.91998291	170.97	174.81	DC	25.89
96954541	927250	AC1-221 TAP	230.0	DVP	304070	6PERSON2 30 T	230.0	CPL E	1	Base Case	operati on	542.0	103.51	105.46	DC	10.62
107338580	927250	AC1-221 TAP	230.0	DVP	304070	6PERSON2 30 T	230.0	CPL E	1	DVP_P 1-2: LN 556-B	operati on	718.0	174.65	178.26	DC	25.89
106426122	934610	AD1-087 TAP	230.0	DVP	314697	6SEDGE HILL	230.0	DVP	1	DVP_P 1-2: LN 556-B	operati on	814.979980469	146.52	150.67	DC	33.95
106426255	934620	AD1-088 TAP	230.0	DVP	314268	6BRIERY	230.0	DVP	1	DVP_P 1-2: LN 556-B	operati on	571.520019531	133.52	136.29	DC	15.82

11.5 System Reinforcements - Summer Peak Load Flow - Primary POI

ID	Idx	Facility	Upgrade Description	Cost
106426125,106426124	12	AD1-087 TAP 230.0 kV - 6SEEDGE HILL 230.0 kV Ckt 1	<u>DVP</u> dom-081 (1147) : Rebuild 16.71 miles of 230 kV Line 2068 from AD1-087 Tap to Sedge Hill with 2-795 ACSR. Project Type : FAC Cost : \$25,065,000 Time Estimate : 36-40 Months	\$25,065,000
106426222	4	6BREMODIST 230.0 kV - 6FORK UNION 230.0 kV Ckt 1	<u>DVP</u> dom-202 (1324) : Rebuild 1.63 miles of 230 kV Line 2028 from Fork Union to Bremono Dist with 2-636 ACSR. Project Type : FAC Cost : \$2,445,000 Time Estimate : 30-36 Months	\$2,445,000
106067005,97790416,106426000,106425999,97790418	8	6FARMVIL 230.0 kV - 6BUCKING 230.0 kV Ckt 1	<u>DVP</u> dom-035 (1124) : Rebuild 12.76 miles of 230 kV Line 298 from Buckingham to Farmville with 2-636 ACSR. Project Type : FAC Cost : \$19,140,000 Time Estimate : 30-36 Months	\$19,140,000
106426257,106067137,106067136,106426258	13	AD1-088 TAP 230.0 kV - 6BRIERY 230.0 kV Ckt 1	<u>DVP</u> dom-235 (1334) : Rebuild 5.8 miles of 230 kV line 235 from AD1-088 Tap to Briery with 2-636 ACSR. Project Type : FAC Cost : \$8,700,000 Time Estimate : 30-36 Months	\$8,700,000
106067213,106067214,106426398	1	6CLOVER 230.0 kV - AD1-088 TAP 230.0 kV Ckt 1	<u>DVP</u> dom-228 (1350) : Rebuild 33.36 miles of 230 kV line 235 from Clover to AD1-088 Tap with 2-636 ACSR. Project Type : FAC Cost : \$50,040,000 Time Estimate : 48-60 Months	\$50,040,000
106426194	2	6FORK UNION 230.0 kV - AF2- 397 TAP 230.0 kV Ckt 1	dom-198 (1320) : Rebuild 5 miles of 230 kV Line 2028 from Fork Union to AF2-397 Tap with 2-636 ACSR. Project Type : FAC Cost : \$7,500,000 Time Estimate : 30-36 Months	\$7,500,000
106426244,106426245	7	6CLOVER 230.0 kV - AD1-087 TAP 230.0 kV Ckt 1	<u>DVP</u> No Violation. Dominion Ratings are A: 1046 MVA; B: 1046 MVA; C: 1203 MVA	\$0

ID	Idx	Facility	Upgrade Description	Cost
106426275,106067145,106067146,106426276	5	6BRIERY 230.0 kV - 6PRINCE EDW 230.0 kV Ckt 1	<u>DVP</u> dom-212 (1311) : Rebuild 5.7 miles of 230 kV Line 235 from Briery to Prince EDW with 2-636 ACSR. Project Type : FAC Cost : \$8,550,000 Time Estimate : 30-36 Months	\$8,550,000
106067156,106067155,106426282,106426283	3	6PRINCE EDW 230.0 kV - 6FARMVIL 230.0 kV Ckt 1	<u>DVP</u> dom-199 (1298) : Rebuild 7.2 miles of 230 kV Line 235 from Prince EDW to Farmville with 2-636 ACSR. Project Type : FAC Cost : \$10,800,000 Time Estimate : 30-36 Months	\$10,800,000
107338584,107338583	11	AC1-221 TAP 230.0 kV - 6PERSON230 T 230.0 kV Ckt 1	<u>CPL</u> NonPJMArea (944) : The external (i.e. Non-PJM) Transmission Owner, CPL, will not evaluate this violation until the impact study phase. <u>DVP</u> dom-006 (1072) : For DEV portion, rebuild 2 miles of 230 kV Line 296 from AC1-221 Tap to Persons DEP with 2-636 ACSR. Project Type : FAC Cost : \$3,000,000 Time Estimate : 30-36 Months	\$3,000,000
106425988,106425989,97790401,97790402,106067000	6	6BUCKING 230.0 kV - 6BREMO 230.0 kV Ckt 1	<u>DVP</u> dom-034 (1123) : Rebuild 15.51 miles of 230 kV Line 298 from Buckingham to Brema with 2-636 ACSR. Project Type : FAC Cost : \$23,265,000 Time Estimate : 30-36 Months	\$23,265,000
106425929,106425930	9	6SEDGE HILL 230.0 kV - AC1-221 TAP 230.0 kV Ckt 1	<u>CPL</u> NonPJMArea (939) : The external (i.e. Non-PJM) Transmission Owner, CPL, will not evaluate this violation until the impact study phase. <u>DVP</u> No upgrade needed on Dominion system. Need coordination with Duke.	\$0
106426092	14	AF2-397 TAP 230.0 kV - 6MTEAGLE 230.0 kV Ckt 1	<u>DVP</u> dom-245 (1367) : Rebuild 12.1 miles of 230 kV Line 2028 from Mount Eagle to AF2-397 Tap with 2-636 ACSR. Project Type : FAC Cost : \$18,150,000 Time Estimate : 30-36 Months	\$18,150,000

ID	Idx	Facility	Upgrade Description	Cost
106426205	10	6BREMO 230.0 kV - 6BREMODIST 230.0 kV Ckt 1	<u>DVP</u> dom-071 (1160) : Rebuild 0.16 miles of Line 2028 from Bremo to Bremo Dist with 2-636 ACSR. Project Type : FAC Cost : \$500,000 Time Estimate : 30-36 Months	\$500,000
			TOTAL COST	\$177,155,000

11.6 Flow Gate Details - Primary POI

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

11.6.1 Index 1

ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC/DC	MW IMPACT
106067214	314686	6CLOVER	DVP	934620	AD1-088 TAP	DVP	1	DVP_P4-2: 511T556-A	breaker	699.0	101.11	103.38	DC	15.85

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
315153	1CLOVER1	24.1422	50/50	24.1422
315154	1CLOVER2	23.9016	50/50	23.9016
315266	1PLYWOOD A	0.9389	50/50	0.9389
925611	AC1-036 C	-0.3478	Adder	-0.41
925991	AC1-075 C	3.1972	Adder	3.76
925992	AC1-075 E	1.8115	Adder	2.13
926021	AC1-080 C	1.0685	Adder	1.26
926022	AC1-080 E	0.6010	Adder	0.71
926271	AC1-105 C O1 (Suspended)	3.8688	50/50	3.8688
926272	AC1-105 E O1 (Suspended)	1.9259	50/50	1.9259
926451	AC1-116 C	-0.2683	Adder	-0.32
927251	AC1-221 C	1.4819	50/50	1.4819
927252	AC1-221 E	1.4819	50/50	1.4819
927261	AC1-222 C	3.0620	50/50	3.0620
927262	AC1-222 E	2.9149	50/50	2.9149
932761	AC2-100 C	3.4104	50/50	3.4104
932762	AC2-100 E	1.6646	50/50	1.6646
934311	AD1-055 C	2.1260	50/50	2.1260
934312	AD1-055 E	0.5482	50/50	0.5482
934341	AD1-058 C	3.7149	50/50	3.7149
934342	AD1-058 E	0.9439	50/50	0.9439
934611	AD1-087 C O1	12.3358	50/50	12.3358
934612	AD1-087 E O1	5.7976	50/50	5.7976
934991	AD1-131 C	1.2180	50/50	1.2180
934992	AD1-131 E	0.8120	50/50	0.8120
935171	AD1-152 C O1	12.2592	50/50	12.2592
935172	AD1-152 E O1	8.1728	50/50	8.1728
935221	AD1-157 C	-1.1710	Adder	-1.38
935222	AD1-157 E	-0.7807	Adder	-0.92
936161	AD2-022 C O1	2.9386	Adder	3.46
936162	AD2-022 E O1	1.7632	Adder	2.07
936171	AD2-023 C O1	1.7142	Adder	2.02
936172	AD2-023 E O1	0.9306	Adder	1.09
937481	AD2-202 C O1	3.2691	50/50	3.2691
937482	AD2-202 E O1	1.8389	50/50	1.8389
938561	AE1-075 C	-0.6494	Adder	-0.76
940241	AE2-006	-0.1769	Adder	-0.21
942751	AE2-291 C O1	4.3135	Adder	5.07
942752	AE2-291 E O1	2.8757	Adder	3.38

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
942761	AE2-292 C O1	5.3707	Adder	6.32
942762	AE2-292 E O1	3.5805	Adder	4.21
943901	AF1-058 C	1.7239	50/50	1.7239
943902	AF1-058 E	1.1493	50/50	1.1493
945811	AF1-246 C O1	13.3140	50/50	13.3140
945812	AF1-246 E O1	18.3860	50/50	18.3860
946293	AF1-293 BAT	7.5791	Merchant Transmission	7.5791
957481	AF2-042 C O1	95.1000	50/50	95.1000
957482	AF2-042 E O1	63.4000	50/50	63.4000
958503	AF2-144 BAT	0.3346	Merchant Transmission	0.3346
959751	AF2-266 O1	15.8505	50/50	15.8505
960061	AF2-297 C O1	6.8957	50/50	6.8957
960062	AF2-297 E O1	4.5971	50/50	4.5971
960821	AF2-373 C	0.2137	Adder	0.47
960822	AF2-373 E	0.3205	Adder	0.71
961063	AF2-397 BAT	5.3082	50/50	5.3082
WEC	WEC	0.2432	Confirmed LTF	0.2432
LGEE	LGEE	0.4604	Confirmed LTF	0.4604
CPL	CPL	2.6553	Confirmed LTF	2.6553
CBM-W2	CBM-W2	9.8853	Confirmed LTF	9.8853
NY	NY	0.3058	Confirmed LTF	0.3058
CBM-W1	CBM-W1	9.0697	Confirmed LTF	9.0697
TVA	TVA	2.0902	Confirmed LTF	2.0902
O-066	O-066	4.3075	Confirmed LTF	4.3075
CBM-S2	CBM-S2	18.0798	Confirmed LTF	18.0798
CBM-S1	CBM-S1	11.6383	Confirmed LTF	11.6383
G-007	G-007	0.6718	Confirmed LTF	0.6718
MADISON	MADISON	0.5927	Confirmed LTF	0.5927
MEC	MEC	1.4825	Confirmed LTF	1.4825
AA2-074	AA2-074	1.8099	LTF	1.8099

11.6.2 Index 2

ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC DC	MW IMPACT
106426194	313707	6FORK UNION	DVP	961060	AF2-397 TAP	DVP	1	DVP_P1-2: LN 556-B	single	661.76	101.83	103.02	DC	7.92

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
313853	3PONTONDP	0.1175	80/20	0.1175
314333	6POWHATN	0.5026	80/20	0.5026
314429	3JTRSVLE	0.4701	80/20	0.4701
314572	3EMPORIA	0.0248	80/20	0.0248
314677	6BUCKING	0.8262	80/20	0.8262
314704	3LAWRENC	0.1498	80/20	0.1498
315153	1CLOVER1	12.0661	80/20	12.0661
315154	1CLOVER2	11.9459	80/20	11.9459
315158	1KERR 1	0.2503	80/20	0.2503
315159	1KERR 2	0.7008	80/20	0.7008
315160	1KERR 3	0.7008	80/20	0.7008
315161	1KERR 4	0.7008	80/20	0.7008
315162	1KERR 5	0.7008	80/20	0.7008
315163	1KERR 6	0.7008	80/20	0.7008
315164	1KERR 7	0.7008	80/20	0.7008
315191	1BEARGRDN G1	11.1138	80/20	11.1138
315192	1BEARGRDN G2	11.1138	80/20	11.1138
315193	1BEARGRDN S1	22.8730	80/20	22.8730
315266	1PLYWOOD A	0.8613	80/20	0.8613
920291	AA2-127	2.3088	80/20	2.3088
923572	AB1-173 C OP	0.7619	80/20	0.7619
923582	AB1-173AC OP	0.7619	80/20	0.7619
923911	AB2-031 C O1	0.7563	80/20	0.7563
923991	AB2-040 C O1	2.4834	80/20	2.4834
924021	AB2-043 C O1	0.4215	80/20	0.4215
924161	AB2-060 C OP	1.2385	80/20	1.2385
924301	AB2-077 C O1 (Suspended)	1.5268	80/20	1.5268
924311	AB2-078 C O1 (Suspended)	1.5268	80/20	1.5268
924321	AB2-079 C O1 (Suspended)	1.5268	80/20	1.5268
925171	AB2-174 C O1	0.4120	80/20	0.4120
925611	AC1-036 C	0.9926	80/20	0.9926
925781	AC1-054 C O1	3.8323	80/20	3.8323
925831	AC1-062	0.0698	80/20	0.0698
925991	AC1-075 C	3.0973	80/20	3.0973
926021	AC1-080 C	1.0351	80/20	1.0351
926271	AC1-105 C O1 (Suspended)	3.8528	80/20	3.8528
926451	AC1-116 C	-1.2114	Adder	-1.43
927251	AC1-221 C	1.0129	80/20	1.0129

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
927261	AC1-222 C	2.3539	80/20	2.3539
932511	AC2-071 C	4.7190	80/20	4.7190
932761	AC2-100 C	2.3312	80/20	2.3312
933501	AC2-165 C	14.0739	80/20	14.0739
934311	AD1-055 C	1.6344	80/20	1.6344
934341	AD1-058 C	2.5393	80/20	2.5393
934611	AD1-087 C O1	6.5833	80/20	6.5833
934621	AD1-088 C	18.2491	80/20	18.2491
934991	AD1-131 C	0.8326	80/20	0.8326
935171	AD1-152 C O1	6.5424	80/20	6.5424
935221	AD1-157 C	2.0350	80/20	2.0350
936261	AD2-033 C	12.9496	80/20	12.9496
936361	AD2-046 C O1	5.5797	80/20	5.5797
936481	AD2-063 C O1	13.1904	80/20	13.1904
937481	AD2-202 C O1	1.7446	80/20	1.7446
938371	AE1-056 C	8.7731	80/20	8.7731
938551	AE1-074 C	0.7727	80/20	0.7727
938561	AE1-075 C	2.5546	80/20	2.5546
938821	AE1-108 C	26.5834	80/20	26.5834
939181	AE1-148 C O1	5.5739	80/20	5.5739
940241	AE2-006	0.5050	80/20	0.5050
940661	AE2-053 O1	2.0644	80/20	2.0644
941011	AE2-092 C	20.8855	80/20	20.8855
941791	AE2-182 C	2.9648	80/20	2.9648
942451	AE2-258	1.8230	80/20	1.8230
942461	AE2-259 C O1	15.7908	80/20	15.7908
942751	AE2-291 C O1	4.3709	80/20	4.3709
942761	AE2-292 C O1	5.4422	80/20	5.4422
943901	AF1-058 C	1.3072	80/20	1.3072
943911	AF1-059	9.7380	80/20	9.7380
945811	AF1-246 C O1	6.6545	80/20	6.6545
946281	AF1-292 C	0.5161	80/20	0.5161
946291	AF1-293 C O1	34.5352	80/20	34.5352
946301	AF1-294 C	5.2376	80/20	5.2376
946591	AF1-323 C	8.5226	80/20	8.5226
957481	AF2-042 C O1	47.5320	80/20	47.5320
957911	AF2-085	1.5186	80/20	1.5186
958131	AF2-107 C	4.5188	80/20	4.5188
958211	AF2-115 C	3.1937	80/20	3.1937
958501	AF2-144 C	2.1534	80/20	2.1534
958801	AF2-171 C O1	19.0548	80/20	19.0548
959311	AF2-222 C	17.9610	80/20	17.9610
959531	AF2-244 C	1.9845	80/20	1.9845
959751	AF2-266 O1	7.9220	80/20	7.9220
960061	AF2-297 C O1	5.2286	80/20	5.2286
960081	AF2-299 C	0.8699	80/20	0.8699
960111	AF2-302 C	3.0991	80/20	3.0991
960811	AF2-372 C	0.9644	80/20	0.9644
960821	AF2-373 C	0.6692	80/20	0.6692
961081	AF2-399 C	0.4122	80/20	0.4122
WEC	WEC	0.0847	Confirmed LTF	0.0847
LGEE	LGEE	0.1683	Confirmed LTF	0.1683

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
CPL	CPL	2.5382	Confirmed LTF	2.5382
CBM-W2	CBM-W2	6.0115	Confirmed LTF	6.0115
NY	NY	0.3832	Confirmed LTF	0.3832
CBM-W1	CBM-W1	2.8022	Confirmed LTF	2.8022
TVA	TVA	1.4504	Confirmed LTF	1.4504
CBM-S2	CBM-S2	16.2765	Confirmed LTF	16.2765
CBM-S1	CBM-S1	7.6510	Confirmed LTF	7.6510
MADISON	MADISON	0.6471	Confirmed LTF	0.6471
MEC	MEC	0.6992	Confirmed LTF	0.6992
AA2-074	AA2-074	1.7271	LTF	1.7271

11.6.3 Index 3

ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC DC	MW IMPACT
106067156	313802	6PRINCE EDW	DVP	314692	6FARMVIL	DVP	1	DVP_P4-2: 511T556-A	breaker	699.0	109.76	112.02	DC	15.85

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
315153	1CLOVER1	24.1422	50/50	24.1422
315154	1CLOVER2	23.9016	50/50	23.9016
315266	1PLYWOOD A	0.9389	50/50	0.9389
925611	AC1-036 C	-0.3478	Adder	-0.41
925991	AC1-075 C	3.1972	Adder	3.76
925992	AC1-075 E	1.8115	Adder	2.13
926021	AC1-080 C	1.0685	Adder	1.26
926022	AC1-080 E	0.6010	Adder	0.71
926271	AC1-105 C O1 (Suspended)	3.8688	50/50	3.8688
926272	AC1-105 E O1 (Suspended)	1.9259	50/50	1.9259
926451	AC1-116 C	-0.2683	Adder	-0.32
927251	AC1-221 C	1.4819	50/50	1.4819
927252	AC1-221 E	1.4819	50/50	1.4819
927261	AC1-222 C	3.0620	50/50	3.0620
927262	AC1-222 E	2.9149	50/50	2.9149
932761	AC2-100 C	3.4104	50/50	3.4104
932762	AC2-100 E	1.6646	50/50	1.6646
934311	AD1-055 C	2.1260	50/50	2.1260
934312	AD1-055 E	0.5482	50/50	0.5482
934341	AD1-058 C	3.7149	50/50	3.7149
934342	AD1-058 E	0.9439	50/50	0.9439
934611	AD1-087 C O1	12.3358	50/50	12.3358
934612	AD1-087 E O1	5.7976	50/50	5.7976
934621	AD1-088 C	41.9311	50/50	41.9311
934622	AD1-088 E	19.7323	50/50	19.7323
934991	AD1-131 C	1.2180	50/50	1.2180
934992	AD1-131 E	0.8120	50/50	0.8120
935171	AD1-152 C O1	12.2592	50/50	12.2592
935172	AD1-152 E O1	8.1728	50/50	8.1728
935221	AD1-157 C	-1.1710	Adder	-1.38
935222	AD1-157 E	-0.7807	Adder	-0.92
936161	AD2-022 C O1	2.9386	Adder	3.46
936162	AD2-022 E O1	1.7632	Adder	2.07
936171	AD2-023 C O1	1.7142	Adder	2.02
936172	AD2-023 E O1	0.9306	Adder	1.09
937481	AD2-202 C O1	3.2691	50/50	3.2691
937482	AD2-202 E O1	1.8389	50/50	1.8389
938561	AE1-075 C	-0.6494	Adder	-0.76
940241	AE2-006	-0.1769	Adder	-0.21

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
941791	AE2-182 C	6.8123	50/50	6.8123
941792	AE2-182 E	3.1713	50/50	3.1713
942751	AE2-291 C O1	4.3135	Adder	5.07
942752	AE2-291 E O1	2.8757	Adder	3.38
942761	AE2-292 C O1	5.3707	Adder	6.32
942762	AE2-292 E O1	3.5805	Adder	4.21
943901	AF1-058 C	1.7239	50/50	1.7239
943902	AF1-058 E	1.1493	50/50	1.1493
945811	AF1-246 C O1	13.3140	50/50	13.3140
945812	AF1-246 E O1	18.3860	50/50	18.3860
946293	AF1-293 BAT	7.5791	Merchant Transmission	7.5791
957481	AF2-042 C O1	95.1000	50/50	95.1000
957482	AF2-042 E O1	63.4000	50/50	63.4000
958503	AF2-144 BAT	0.3346	Merchant Transmission	0.3346
959751	AF2-266 O1	15.8505	50/50	15.8505
960061	AF2-297 C O1	6.8957	50/50	6.8957
960062	AF2-297 E O1	4.5971	50/50	4.5971
960821	AF2-373 C	0.2137	Adder	0.47
960822	AF2-373 E	0.3205	Adder	0.71
961063	AF2-397 BAT	5.3082	50/50	5.3082
WEC	WEC	0.2432	Confirmed LTF	0.2432
LGEE	LGEE	0.4604	Confirmed LTF	0.4604
CPL	CPL	2.6553	Confirmed LTF	2.6553
CBM-W2	CBM-W2	9.8853	Confirmed LTF	9.8853
NY	NY	0.3058	Confirmed LTF	0.3058
CBM-W1	CBM-W1	9.0697	Confirmed LTF	9.0697
TVA	TVA	2.0902	Confirmed LTF	2.0902
O-066	O-066	4.3075	Confirmed LTF	4.3075
CBM-S2	CBM-S2	18.0798	Confirmed LTF	18.0798
CBM-S1	CBM-S1	11.6383	Confirmed LTF	11.6383
G-007	G-007	0.6718	Confirmed LTF	0.6718
MADISON	MADISON	0.5927	Confirmed LTF	0.5927
MEC	MEC	1.4825	Confirmed LTF	1.4825
AA2-074	AA2-074	1.8099	LTF	1.8099

11.6.4 Index 4

ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC DC	MW IMPACT
106426222	313867	6BREMODIST	DVP	313707	6FORK UNION	DVP	1	DVP_P1-2: LN 556-B	single	661.76	102.14	103.43	DC	8.54

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
313853	3PONTONDP	0.1280	80/20	0.1280
314333	6POWHATN	0.5554	80/20	0.5554
314429	3JTRSVLE	0.5122	80/20	0.5122
314572	3EMPORIA	0.0272	80/20	0.0272
314677	6BUCKING	0.9062	80/20	0.9062
314704	3LAWRENC	0.1630	80/20	0.1630
315153	1CLOVER1	13.0021	80/20	13.0021
315154	1CLOVER2	12.8725	80/20	12.8725
315158	1KERR 1	0.2691	80/20	0.2691
315159	1KERR 2	0.7535	80/20	0.7535
315160	1KERR 3	0.7535	80/20	0.7535
315161	1KERR 4	0.7535	80/20	0.7535
315162	1KERR 5	0.7535	80/20	0.7535
315163	1KERR 6	0.7535	80/20	0.7535
315164	1KERR 7	0.7535	80/20	0.7535
315191	1BEARGRDN G1	12.2119	80/20	12.2119
315192	1BEARGRDN G2	12.2119	80/20	12.2119
315193	1BEARGRDN S1	25.1329	80/20	25.1329
315266	1PLYWOOD A	0.9082	80/20	0.9082
920291	AA2-127	2.5369	80/20	2.5369
923572	AB1-173 C OP	0.8339	80/20	0.8339
923582	AB1-173AC OP	0.8339	80/20	0.8339
923911	AB2-031 C O1	0.8277	80/20	0.8277
923991	AB2-040 C O1	2.7179	80/20	2.7179
924021	AB2-043 C O1	0.4547	80/20	0.4547
924161	AB2-060 C OP	1.3368	80/20	1.3368
924301	AB2-077 C O1 (Suspended)	1.6458	80/20	1.6458
924311	AB2-078 C O1 (Suspended)	1.6458	80/20	1.6458
924321	AB2-079 C O1 (Suspended)	1.6458	80/20	1.6458
925171	AB2-174 C O1	0.4511	80/20	0.4511
925611	AC1-036 C	1.0777	80/20	1.0777
925781	AC1-054 C O1	4.1305	80/20	4.1305
925831	AC1-062	0.0760	80/20	0.0760
925991	AC1-075 C	2.9357	80/20	2.9357
926021	AC1-080 C	0.9811	80/20	0.9811
926271	AC1-105 C O1 (Suspended)	4.0693	80/20	4.0693
926451	AC1-116 C	-1.0918	Adder	-1.28
927251	AC1-221 C	1.0627	80/20	1.0627

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
927261	AC1-222 C	2.4288	80/20	2.4288
932511	AC2-071 C	5.1757	80/20	5.1757
932761	AC2-100 C	2.4457	80/20	2.4457
933501	AC2-165 C	15.5274	80/20	15.5274
934311	AD1-055 C	1.6864	80/20	1.6864
934341	AD1-058 C	2.6641	80/20	2.6641
934611	AD1-087 C O1	7.0557	80/20	7.0557
934621	AD1-088 C	19.9085	80/20	19.9085
934991	AD1-131 C	0.8735	80/20	0.8735
935171	AD1-152 C O1	7.0118	80/20	7.0118
935221	AD1-157 C	2.2191	80/20	2.2191
936261	AD2-033 C	14.0478	80/20	14.0478
936361	AD2-046 C O1	6.0033	80/20	6.0033
936481	AD2-063 C O1	14.2722	80/20	14.2722
937481	AD2-202 C O1	1.8698	80/20	1.8698
938371	AE1-056 C	9.5669	80/20	9.5669
938551	AE1-074 C	0.8794	80/20	0.8794
938561	AE1-075 C	2.8232	80/20	2.8232
939181	AE1-148 C O1	5.9983	80/20	5.9983
940241	AE2-006	0.5483	80/20	0.5483
940661	AE2-053 O1	2.2216	80/20	2.2216
941791	AE2-182 C	3.2344	80/20	3.2344
942451	AE2-258	1.9665	80/20	1.9665
942461	AE2-259 C O1	17.2536	80/20	17.2536
942751	AE2-291 C O1	3.9150	80/20	3.9150
942761	AE2-292 C O1	4.8745	80/20	4.8745
943901	AF1-058 C	1.3716	80/20	1.3716
943911	AF1-059	10.5510	80/20	10.5510
945811	AF1-246 C O1	7.1702	80/20	7.1702
946281	AF1-292 C	0.5660	80/20	0.5660
946301	AF1-294 C	5.7065	80/20	5.7065
957481	AF2-042 C O1	51.2160	80/20	51.2160
957911	AF2-085	1.7128	80/20	1.7128
958211	AF2-115 C	3.4796	80/20	3.4796
958501	AF2-144 C	2.3799	80/20	2.3799
958801	AF2-171 C O1	20.7585	80/20	20.7585
959311	AF2-222 C	19.5130	80/20	19.5130
959531	AF2-244 C	2.1932	80/20	2.1932
959751	AF2-266 O1	8.5365	80/20	8.5365
960061	AF2-297 C O1	5.4864	80/20	5.4864
960081	AF2-299 C	0.9539	80/20	0.9539
960811	AF2-372 C	1.0396	80/20	1.0396
960821	AF2-373 C	0.7112	80/20	0.7112
961081	AF2-399 C	0.4490	80/20	0.4490
WEC	WEC	0.0173	Confirmed LTF	0.0173
LGEE	LGEE	0.0359	Confirmed LTF	0.0359
CPL	CPL	2.6228	Confirmed LTF	2.6228
CBM-W2	CBM-W2	4.3817	Confirmed LTF	4.3817
NY	NY	0.3478	Confirmed LTF	0.3478
CBM-W1	CBM-W1	0.2127	Confirmed LTF	0.2127
TVA	TVA	1.1760	Confirmed LTF	1.1760
CBM-S2	CBM-S2	16.1898	Confirmed LTF	16.1898

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
CBM-S1	CBM-S1	5.9299	Confirmed LTF	5.9299
MADISON	MADISON	0.6895	Confirmed LTF	0.6895
MEC	MEC	0.3655	Confirmed LTF	0.3655
AA2-074	AA2-074	1.7833	LTF	1.7833

11.6.5 Index 5

ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC DC	MW IMPACT
106067146	314268	6BRIERY	DVP	313802	6PRINCE EDW	DVP	1	DVP_P4-2: 511T556-A	breaker	699.0	110.63	112.9	DC	15.85

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
315153	1CLOVER1	24.1422	50/50	24.1422
315154	1CLOVER2	23.9016	50/50	23.9016
315266	1PLYWOOD A	0.9389	50/50	0.9389
925611	AC1-036 C	-0.3478	Adder	-0.41
925991	AC1-075 C	3.1972	Adder	3.76
925992	AC1-075 E	1.8115	Adder	2.13
926021	AC1-080 C	1.0685	Adder	1.26
926022	AC1-080 E	0.6010	Adder	0.71
926271	AC1-105 C O1 (Suspended)	3.8688	50/50	3.8688
926272	AC1-105 E O1 (Suspended)	1.9259	50/50	1.9259
926451	AC1-116 C	-0.2683	Adder	-0.32
927251	AC1-221 C	1.4819	50/50	1.4819
927252	AC1-221 E	1.4819	50/50	1.4819
927261	AC1-222 C	3.0620	50/50	3.0620
927262	AC1-222 E	2.9149	50/50	2.9149
932761	AC2-100 C	3.4104	50/50	3.4104
932762	AC2-100 E	1.6646	50/50	1.6646
934311	AD1-055 C	2.1260	50/50	2.1260
934312	AD1-055 E	0.5482	50/50	0.5482
934341	AD1-058 C	3.7149	50/50	3.7149
934342	AD1-058 E	0.9439	50/50	0.9439
934611	AD1-087 C O1	12.3358	50/50	12.3358
934612	AD1-087 E O1	5.7976	50/50	5.7976
934621	AD1-088 C	41.9311	50/50	41.9311
934622	AD1-088 E	19.7323	50/50	19.7323
934991	AD1-131 C	1.2180	50/50	1.2180
934992	AD1-131 E	0.8120	50/50	0.8120
935171	AD1-152 C O1	12.2592	50/50	12.2592
935172	AD1-152 E O1	8.1728	50/50	8.1728
935221	AD1-157 C	-1.1710	Adder	-1.38
935222	AD1-157 E	-0.7807	Adder	-0.92
936161	AD2-022 C O1	2.9386	Adder	3.46
936162	AD2-022 E O1	1.7632	Adder	2.07
936171	AD2-023 C O1	1.7142	Adder	2.02
936172	AD2-023 E O1	0.9306	Adder	1.09
937481	AD2-202 C O1	3.2691	50/50	3.2691
937482	AD2-202 E O1	1.8389	50/50	1.8389
938561	AE1-075 C	-0.6494	Adder	-0.76
940241	AE2-006	-0.1769	Adder	-0.21

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
941791	AE2-182 C	6.8123	50/50	6.8123
941792	AE2-182 E	3.1713	50/50	3.1713
942751	AE2-291 C O1	4.3135	Adder	5.07
942752	AE2-291 E O1	2.8757	Adder	3.38
942761	AE2-292 C O1	5.3707	Adder	6.32
942762	AE2-292 E O1	3.5805	Adder	4.21
943901	AF1-058 C	1.7239	50/50	1.7239
943902	AF1-058 E	1.1493	50/50	1.1493
945811	AF1-246 C O1	13.3140	50/50	13.3140
945812	AF1-246 E O1	18.3860	50/50	18.3860
946293	AF1-293 BAT	7.5791	Merchant Transmission	7.5791
957481	AF2-042 C O1	95.1000	50/50	95.1000
957482	AF2-042 E O1	63.4000	50/50	63.4000
958503	AF2-144 BAT	0.3346	Merchant Transmission	0.3346
959751	AF2-266 O1	15.8505	50/50	15.8505
960061	AF2-297 C O1	6.8957	50/50	6.8957
960062	AF2-297 E O1	4.5971	50/50	4.5971
960821	AF2-373 C	0.2137	Adder	0.47
960822	AF2-373 E	0.3205	Adder	0.71
961063	AF2-397 BAT	5.3082	50/50	5.3082
WEC	WEC	0.2432	Confirmed LTF	0.2432
LGEE	LGEE	0.4604	Confirmed LTF	0.4604
CPL	CPL	2.6553	Confirmed LTF	2.6553
CBM-W2	CBM-W2	9.8853	Confirmed LTF	9.8853
NY	NY	0.3058	Confirmed LTF	0.3058
CBM-W1	CBM-W1	9.0697	Confirmed LTF	9.0697
TVA	TVA	2.0902	Confirmed LTF	2.0902
O-066	O-066	4.3075	Confirmed LTF	4.3075
CBM-S2	CBM-S2	18.0798	Confirmed LTF	18.0798
CBM-S1	CBM-S1	11.6383	Confirmed LTF	11.6383
G-007	G-007	0.6718	Confirmed LTF	0.6718
MADISON	MADISON	0.5927	Confirmed LTF	0.5927
MEC	MEC	1.4825	Confirmed LTF	1.4825
AA2-074	AA2-074	1.8099	LTF	1.8099

11.6.6 Index 6

ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC DC	MW IMPACT
106067000	314677	6BUCKING	DVP	314747	6BREMO	DVP	1	DVP_P4-2: 511T556-A	breaker	699.0	136.91	137.75	DC	14.75

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
313853	3PONTONDP	0.2225	50/50	0.2225
314429	3JTRSVLE	0.8900	50/50	0.8900
314677	6BUCKING	1.6254	50/50	1.6254
315153	1CLOVER1	22.4660	50/50	22.4660
315154	1CLOVER2	22.2421	50/50	22.2421
924022	AB2-043 E O1	3.2830	Adder	3.86
924032	AB2-045 E	4.3975	50/50	4.3975
924162	AB2-060 E OP	5.0960	Adder	6.0
924301	AB2-077 C O1 (Suspended)	2.2889	Adder	2.69
924302	AB2-077 E O1 (Suspended)	1.5259	Adder	1.8
924311	AB2-078 C O1 (Suspended)	2.2889	Adder	2.69
924312	AB2-078 E O1 (Suspended)	1.5259	Adder	1.8
924321	AB2-079 C O1 (Suspended)	2.2889	Adder	2.69
924322	AB2-079 E O1 (Suspended)	1.5259	Adder	1.8
925611	AC1-036 C	1.8363	50/50	1.8363
925612	AC1-036 E	2.9961	50/50	2.9961
925781	AC1-054 C O1	5.1714	Adder	6.08
925782	AC1-054 E O1	2.3823	Adder	2.8
925831	AC1-062	0.1321	50/50	0.1321
925991	AC1-075 C	4.2224	Adder	4.97
925992	AC1-075 E	2.3923	Adder	2.81
926021	AC1-080 C	1.4111	Adder	1.66
926022	AC1-080 E	0.7938	Adder	0.93
926271	AC1-105 C O1 (Suspended)	5.7567	Adder	6.77
926272	AC1-105 E O1 (Suspended)	2.8657	Adder	3.37
926451	AC1-116 C	-0.3880	Adder	-0.46
927251	AC1-221 C	1.4229	Adder	1.67
927252	AC1-221 E	1.4229	Adder	1.67
927261	AC1-222 C	3.4591	Adder	4.07
927262	AC1-222 E	3.2930	Adder	3.87
932511	AC2-071 C	9.2835	50/50	9.2835
932512	AC2-071 E	4.6767	50/50	4.6767
932761	AC2-100 C	3.2747	Adder	3.85

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
932762	AC2-100 E	1.5984	Adder	1.88
934311	AD1-055 C	2.4018	Adder	2.83
934312	AD1-055 E	0.6193	Adder	0.73
934341	AD1-058 C	3.5671	Adder	4.2
934342	AD1-058 E	0.9064	Adder	1.07
934611	AD1-087 C O1	10.2490	Adder	12.06
934612	AD1-087 E O1	4.8168	Adder	5.67
934621	AD1-088 C	35.2759	50/50	35.2759
934622	AD1-088 E	16.6004	50/50	16.6004
934991	AD1-131 C	1.1695	Adder	1.38
934992	AD1-131 E	0.7797	Adder	0.92
935171	AD1-152 C O1	10.1853	Adder	11.98
935172	AD1-152 E O1	6.7902	Adder	7.99
935221	AD1-157 C	3.8759	50/50	3.8759
935222	AD1-157 E	2.5840	50/50	2.5840
936261	AD2-033 C	23.8079	50/50	23.8079
936262	AD2-033 E	15.8720	50/50	15.8720
936361	AD2-046 C O1	7.9875	Adder	9.4
936362	AD2-046 E O1	3.6731	Adder	4.32
936481	AD2-063 C O1	20.2427	Adder	23.81
936482	AD2-063 E O1	13.3827	Adder	15.74
937481	AD2-202 C O1	2.7161	Adder	3.2
937482	AD2-202 E O1	1.5278	Adder	1.8
938371	AE1-056 C	16.7096	50/50	16.7096
938372	AE1-056 E	9.1300	50/50	9.1300
939181	AE1-148 C O1	8.0045	Adder	9.42
939182	AE1-148 E O1	5.3363	Adder	6.28
940241	AE2-006	0.9343	50/50	0.9343
940661	AE2-053 O1	2.9646	Adder	3.49
941791	AE2-182 C	5.7311	50/50	5.7311
941792	AE2-182 E	2.6679	50/50	2.6679
942451	AE2-258	2.7391	Adder	3.22
942461	AE2-259 C O1	30.4818	50/50	30.4818
942462	AE2-259 E O1	20.3212	50/50	20.3212
942751	AE2-291 C O1	5.6712	Adder	6.67
942752	AE2-291 E O1	3.7808	Adder	4.45
942761	AE2-292 C O1	7.0612	Adder	8.31
942762	AE2-292 E O1	4.7075	Adder	5.54
943901	AF1-058 C	1.9498	Adder	2.29
943902	AF1-058 E	1.2999	Adder	1.53
943911	AF1-059	13.3220	Adder	15.67
945811	AF1-246 C O1	10.5311	Adder	12.39
945812	AF1-246 E O1	14.5430	Adder	17.11
946293	AF1-293 BAT	11.0414	Merchant Transmission	11.0414
946301	AF1-294 C	9.9165	50/50	9.9165
946302	AF1-294 E	6.6110	50/50	6.6110
957481	AF2-042 C O1	39.8679	Adder	88.5
957482	AF2-042 E O1	26.5786	Adder	59.0
958211	AF2-115 C	6.0467	50/50	6.0467
958212	AF2-115 E	4.0311	50/50	4.0311
958801	AF2-171 C O1	36.0558	50/50	36.0558
958802	AF2-171 E O1	24.0372	50/50	24.0372

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
959311	AF2-222 C	33.3580	50/50	33.3580
959312	AF2-222 E	22.3499	50/50	22.3499
959751	AF2-266 O1	6.6449	Adder	14.75
960061	AF2-297 C O1	4.1336	Adder	9.18
960062	AF2-297 E O1	2.7558	Adder	6.12
960811	AF2-372 C	0.7663	Adder	1.7
960812	AF2-372 E	1.2505	Adder	2.78
960821	AF2-373 C	0.5309	Adder	1.18
960822	AF2-373 E	0.7963	Adder	1.77
961063	AF2-397 BAT	4.0902	Merchant Transmission	4.0902
961081	AF2-399 C	0.7802	50/50	0.7802
961082	AF2-399 E	1.3191	50/50	1.3191
WEC	WEC	0.2974	Confirmed LTF	0.2974
LGEE	LGEE	0.5619	Confirmed LTF	0.5619
CPL	CPL	3.4934	Confirmed LTF	3.4934
CBM-W2	CBM-W2	12.4079	Confirmed LTF	12.4079
NY	NY	0.3932	Confirmed LTF	0.3932
CBM-W1	CBM-W1	11.0588	Confirmed LTF	11.0588
TVA	TVA	2.6432	Confirmed LTF	2.6432
O-066	O-066	5.4835	Confirmed LTF	5.4835
CBM-S2	CBM-S2	23.4437	Confirmed LTF	23.4437
CBM-S1	CBM-S1	14.6544	Confirmed LTF	14.6544
G-007	G-007	0.8549	Confirmed LTF	0.8549
MADISON	MADISON	0.7822	Confirmed LTF	0.7822
MEC	MEC	1.8337	Confirmed LTF	1.8337
AA2-074	AA2-074	2.3805	LTF	2.3805

11.6.7 Index 7

ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC DC	MW IMPACT
106426244	314686	6CLOVER	DVP	934610	AD1-087 TAP	DVP	1	DVP_P1-2: LN 556-B	single	814.98	111.68	115.84	DC	33.95

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
313853	3PONTONDP	0.0707	80/20	0.0707
314333	6POWHATN	0.1384	80/20	0.1384
314429	3JTRSVLE	0.2828	80/20	0.2828
314677	6BUCKING	0.4694	80/20	0.4694
315153	1CLOVER1	51.7091	80/20	51.7091
315154	1CLOVER2	51.1938	80/20	51.1938
315191	1BEARGRDN G1	3.1145	80/20	3.1145
315192	1BEARGRDN G2	3.1145	80/20	3.1145
315193	1BEARGRDN S1	6.4099	80/20	6.4099
920291	AA2-127	0.6470	80/20	0.6470
925611	AC1-036 C	0.3848	80/20	0.3848
925831	AC1-062	0.0420	80/20	0.0420
925991	AC1-075 C	-3.3297	Adder	-3.92
926021	AC1-080 C	-1.1128	Adder	-1.31
926271	AC1-105 C O1 (Suspended)	-3.4045	Adder	-4.01
926451	AC1-116 C	0.2932	80/20	0.2932
927251	AC1-221 C	-1.3047	Adder	-1.53
927261	AC1-222 C	-2.6803	Adder	-3.15
932511	AC2-071 C	2.6809	80/20	2.6809
933501	AC2-165 C	3.8965	80/20	3.8965
934311	AD1-055 C	-1.8610	Adder	-2.19
934341	AD1-058 C	-3.2706	Adder	-3.85
934621	AD1-088 C	29.1619	80/20	29.1619
935221	AD1-157 C	1.3385	80/20	1.3385
936261	AD2-033 C	4.2728	80/20	4.2728
938371	AE1-056 C	5.7703	80/20	5.7703
938561	AE1-075 C	0.7037	80/20	0.7037
938821	AE1-108 C	6.5977	80/20	6.5977
940241	AE2-006	0.1958	80/20	0.1958
941011	AE2-092 C	6.4559	80/20	6.4559
941791	AE2-182 C	4.7378	80/20	4.7378
942461	AE2-259 C O1	12.3990	80/20	12.3990
945811	AF1-246 C O1	28.5180	80/20	28.5180
946291	AF1-293 C O1	9.6964	80/20	9.6964
946301	AF1-294 C	3.1505	80/20	3.1505
946591	AF1-323 C	2.0140	80/20	2.0140
957481	AF2-042 C O1	203.7000	80/20	203.7000
958211	AF2-115 C	1.9211	80/20	1.9211
958501	AF2-144 C	0.5932	80/20	0.5932
958801	AF2-171 C O1	11.3616	80/20	11.3616
959311	AF2-222 C	7.6050	80/20	7.6050

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
959531	AF2-244 C	0.5467	80/20	0.5467
959751	AF2-266 O1	33.9495	80/20	33.9495
960111	AF2-302 C	0.7324	80/20	0.7324
961061	AF2-397 C O1	7.4950	80/20	7.4950
961081	AF2-399 C	0.2471	80/20	0.2471
NEWTON	NEWTON	1.4044	Confirmed LTF	1.4044
FARMERCITY	FARMERCITY	0.0797	Confirmed LTF	0.0797
G-007A	G-007A	0.4100	Confirmed LTF	0.4100
VFT	VFT	1.0772	Confirmed LTF	1.0772
CALDERWOOD	CALDERWOOD	1.0760	Confirmed LTF	1.0760
PRAIRIE	PRAIRIE	3.7479	Confirmed LTF	3.7479
CHEOAH	CHEOAH	1.1026	Confirmed LTF	1.1026
EDWARDS	EDWARDS	0.4263	Confirmed LTF	0.4263
TILTON	TILTON	0.7566	Confirmed LTF	0.7566
GIBSON	GIBSON	0.6825	Confirmed LTF	0.6825
BLUEG	BLUEG	2.1162	Confirmed LTF	2.1162
TRIMBLE	TRIMBLE	0.6723	Confirmed LTF	0.6723
CATAWBA	CATAWBA	1.1473	Confirmed LTF	1.1473

11.6.8 Index 8

ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC DC	MW IMPACT
106425999	314692	6FARMVIL	DVP	314677	6BUCKING	DVP	1	DVP_P1-2: LN 556-B	single	559.3	133.88	136.51	DC	14.72

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
313853	3PONTONDP	0.2224	80/20	0.2224
314429	3JTRSVLE	0.8896	80/20	0.8896
314572	3EMPORIA	0.0293	80/20	0.0293
314704	3LAWRENC	0.2187	80/20	0.2187
315126	1ROARAP2	0.5607	80/20	0.5607
315153	1CLOVER1	22.4218	80/20	22.4218
315154	1CLOVER2	22.1984	80/20	22.1984
315158	1KERR 1	0.4153	80/20	0.4153
315159	1KERR 2	1.1628	80/20	1.1628
315160	1KERR 3	1.1628	80/20	1.1628
315161	1KERR 4	1.1628	80/20	1.1628
315162	1KERR 5	1.1628	80/20	1.1628
315163	1KERR 6	1.1628	80/20	1.1628
315164	1KERR 7	1.1628	80/20	1.1628
315266	1PLYWOOD A	1.5012	80/20	1.5012
923572	AB1-173 C OP	0.9002	80/20	0.9002
923582	AB1-173AC OP	0.9002	80/20	0.9002
923911	AB2-031 C O1	0.8935	80/20	0.8935
923991	AB2-040 C O1	2.9339	80/20	2.9339
924021	AB2-043 C O1	0.7440	80/20	0.7440
924161	AB2-060 C OP	2.1946	80/20	2.1946
924301	AB2-077 C O1 (Suspended)	2.6887	80/20	2.6887
924311	AB2-078 C O1 (Suspended)	2.6887	80/20	2.6887
924321	AB2-079 C O1 (Suspended)	2.6887	80/20	2.6887
925171	AB2-174 C O1	0.4863	80/20	0.4863
925611	AC1-036 C	1.8348	80/20	1.8348
925781	AC1-054 C O1	6.0711	80/20	6.0711
925831	AC1-062	0.1320	80/20	0.1320
925991	AC1-075 C	4.9476	80/20	4.9476
926021	AC1-080 C	1.6535	80/20	1.6535
926271	AC1-105 C O1 (Suspended)	6.7531	80/20	6.7531
926451	AC1-116 C	-0.3868	Adder	-0.46
927251	AC1-221 C	1.6590	80/20	1.6590
927261	AC1-222 C	4.0556	80/20	4.0556
932761	AC2-100 C	3.8180	80/20	3.8180
934311	AD1-055 C	2.8159	80/20	2.8159
934341	AD1-058 C	4.1589	80/20	4.1589
934611	AD1-087 C O1	12.0253	80/20	12.0253

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
934621	AD1-088 C	35.2595	80/20	35.2595
934991	AD1-131 C	1.3636	80/20	1.3636
935171	AD1-152 C O1	11.9506	80/20	11.9506
935221	AD1-157 C	3.8743	80/20	3.8743
936161	AD2-022 C O1	4.1580	80/20	4.1580
936171	AD2-023 C O1	2.4255	80/20	2.4255
936261	AD2-033 C	23.7869	80/20	23.7869
936361	AD2-046 C O1	9.3757	80/20	9.3757
936481	AD2-063 C O1	23.7879	80/20	23.7879
937481	AD2-202 C O1	3.1868	80/20	3.1868
938371	AE1-056 C	16.7026	80/20	16.7026
938561	AE1-075 C	-0.9128	Adder	-1.07
939181	AE1-148 C O1	9.3965	80/20	9.3965
940241	AE2-006	0.9335	80/20	0.9335
940661	AE2-053 O1	3.4802	80/20	3.4802
941791	AE2-182 C	5.7284	80/20	5.7284
942451	AE2-258	3.2178	80/20	3.2178
942461	AE2-259 C O1	30.4746	80/20	30.4746
942751	AE2-291 C O1	6.6426	80/20	6.6426
942761	AE2-292 C O1	8.2707	80/20	8.2707
943901	AF1-058 C	2.2862	80/20	2.2862
943911	AF1-059	15.6650	80/20	15.6650
945811	AF1-246 C O1	12.3648	80/20	12.3648
946281	AF1-292 C	0.6079	80/20	0.6079
946301	AF1-294 C	9.9116	80/20	9.9116
957481	AF2-042 C O1	88.3200	80/20	88.3200
958211	AF2-115 C	6.0437	80/20	6.0437
958801	AF2-171 C O1	36.0378	80/20	36.0378
959311	AF2-222 C	33.3330	80/20	33.3330
959751	AF2-266 O1	14.7210	80/20	14.7210
960061	AF2-297 C O1	9.1450	80/20	9.1450
960081	AF2-299 C	1.0245	80/20	1.0245
960811	AF2-372 C	1.6984	80/20	1.6984
960821	AF2-373 C	1.1755	80/20	1.1755
961081	AF2-399 C	0.7798	80/20	0.7798
WEC	WEC	0.2914	Confirmed LTF	0.2914
LGEE	LGEE	0.5505	Confirmed LTF	0.5505
CPL	CPL	3.4140	Confirmed LTF	3.4140
CBM-W2	CBM-W2	12.1212	Confirmed LTF	12.1212
NY	NY	0.3777	Confirmed LTF	0.3777
CBM-W1	CBM-W1	10.8337	Confirmed LTF	10.8337
TVA	TVA	2.5802	Confirmed LTF	2.5802
CBM-S2	CBM-S2	22.8888	Confirmed LTF	22.8888
CBM-S1	CBM-S1	14.3136	Confirmed LTF	14.3136
MADISON	MADISON	0.7620	Confirmed LTF	0.7620
MEC	MEC	1.7940	Confirmed LTF	1.7940
AA2-074	AA2-074	2.3261	LTF	2.3261

11.6.9 Index 9

ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC DC	MW IMPACT
106425929	314697	6SEEDGE HILL	DVP	927250	AC1-221 TAP	DVP	1	DVP_P1-2: LN 556-B	single	674.92	132.18	135.49	DC	25.89

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
313853	3PONTONDP	0.1294	80/20	0.1294
314429	3JTRSVLE	0.5174	80/20	0.5174
314677	6BUCKING	0.4258	80/20	0.4258
315153	1CLOVER1	39.4381	80/20	39.4381
315154	1CLOVER2	39.0451	80/20	39.0451
315156	1HALLBR1	1.1309	80/20	1.1309
315158	1KERR 1	0.3659	80/20	0.3659
315159	1KERR 2	1.0244	80/20	1.0244
315160	1KERR 3	1.0244	80/20	1.0244
315161	1KERR 4	1.0244	80/20	1.0244
315162	1KERR 5	1.0244	80/20	1.0244
315163	1KERR 6	1.0244	80/20	1.0244
315164	1KERR 7	1.0244	80/20	1.0244
315192	1BEARGRDN G2	2.8787	80/20	2.8787
315193	1BEARGRDN S1	5.9246	80/20	5.9246
315266	1PLYWOOD A	3.3432	80/20	3.3432
924021	AB2-043 C O1	0.7329	80/20	0.7329
924161	AB2-060 C OP	2.1135	80/20	2.1135
924301	AB2-077 C O1 (Suspended)	2.7328	80/20	2.7328
924311	AB2-078 C O1 (Suspended)	2.7328	80/20	2.7328
924321	AB2-079 C O1 (Suspended)	2.7328	80/20	2.7328
925611	AC1-036 C	1.3105	80/20	1.3105
925661	AC1-042 C	1.3657	Adder	1.61
925781	AC1-054 C O1	5.0298	80/20	5.0298
925831	AC1-062	0.0768	80/20	0.0768
925991	AC1-075 C	11.9864	80/20	11.9864
926021	AC1-080 C	4.0059	80/20	4.0059
926271	AC1-105 C O1 (Suspended)	14.5305	80/20	14.5305
926641	AC1-145 C	1.6258	Adder	1.91
927251	AC1-221 C	-2.4414	Adder	-2.87
927261	AC1-222 C	10.1431	80/20	10.1431
932511	AC2-071 C	2.4320	80/20	2.4320
934311	AD1-055 C	7.0426	80/20	7.0426
934341	AD1-058 C	-6.1203	Adder	-7.2
934611	AD1-087 C O1	27.0094	80/20	27.0094
934621	AD1-088 C	24.0247	80/20	24.0247
935171	AD1-152 C O1	26.8416	80/20	26.8416
935221	AD1-157 C	2.1223	80/20	2.1223

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
936261	AD2-033 C	17.8675	80/20	17.8675
936361	AD2-046 C O1	8.4639	80/20	8.4639
936481	AD2-063 C O1	20.4093	80/20	20.4093
937481	AD2-202 C O1	7.1578	80/20	7.1578
938371	AE1-056 C	9.1494	80/20	9.1494
939181	AE1-148 C O1	8.5347	80/20	8.5347
939941	AE1-230 C	0.6161	Adder	0.72
940241	AE2-006	0.6667	80/20	0.6667
940661	AE2-053 O1	3.1610	80/20	3.1610
941791	AE2-182 C	3.9032	80/20	3.9032
941801	AE2-185 C	3.0805	Adder	3.62
941821	AE2-187 C	3.0805	Adder	3.62
942451	AE2-258	3.1698	80/20	3.1698
942461	AE2-259 C O1	14.4012	80/20	14.4012
942671	AE2-283 C	3.3886	Adder	3.99
942751	AE2-291 C O1	15.7260	80/20	15.7260
942761	AE2-292 C O1	19.5804	80/20	19.5804
943901	AF1-058 C	5.7522	80/20	5.7522
943911	AF1-059	14.3780	80/20	14.3780
945081	AF1-173	1.1937	Adder	1.4
945811	AF1-246 C O1	21.7505	80/20	21.7505
946301	AF1-294 C	5.7653	80/20	5.7653
957481	AF2-042 C O1	155.3610	80/20	155.3610
958211	AF2-115 C	3.5154	80/20	3.5154
958801	AF2-171 C O1	21.0762	80/20	21.0762
959311	AF2-222 C	23.0530	80/20	23.0530
959751	AF2-266 O1	25.8930	80/20	25.8930
960061	AF2-297 C O1	23.0088	80/20	23.0088
960811	AF2-372 C	1.7262	80/20	1.7262
960821	AF2-373 C	2.1290	80/20	2.1290
961081	AF2-399 C	0.4546	80/20	0.4546
961121	AF2-403	0.3628	Adder	0.81
NEWTON	NEWTON	1.6150	Confirmed LTF	1.6150
FARMERCITY	FARMERCITY	0.0953	Confirmed LTF	0.0953
G-007A	G-007A	0.4939	Confirmed LTF	0.4939
VFT	VFT	1.3094	Confirmed LTF	1.3094
CALDERWOOD	CALDERWOOD	1.4284	Confirmed LTF	1.4284
PRAIRIE	PRAIRIE	4.4893	Confirmed LTF	4.4893
AC1-131	AC1-131	5.1015	LTF	5.1015
CHEOAH	CHEOAH	1.4720	Confirmed LTF	1.4720
EDWARDS	EDWARDS	0.4816	Confirmed LTF	0.4816
TILTON	TILTON	0.8429	Confirmed LTF	0.8429
GIBSON	GIBSON	0.7671	Confirmed LTF	0.7671
BLUEG	BLUEG	2.3314	Confirmed LTF	2.3314
TRIMBLE	TRIMBLE	0.7379	Confirmed LTF	0.7379
CATAWBA	CATAWBA	1.6961	Confirmed LTF	1.6961

11.6.10 Index 10

ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC DC	MW IMPACT
106426205	314747	6BREMO	DVP	313867	6BREMODIST	DVP	1	DVP_P1-2: LN 556-B	single	661.76	104.5	105.79	DC	8.54

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
313853	3PONTONDP	0.1280	80/20	0.1280
314333	6POWHATN	0.5554	80/20	0.5554
314429	3JTRSVLE	0.5122	80/20	0.5122
314572	3EMPORIA	0.0272	80/20	0.0272
314677	6BUCKING	0.9062	80/20	0.9062
314704	3LAWRENC	0.1630	80/20	0.1630
315153	1CLOVER1	13.0021	80/20	13.0021
315154	1CLOVER2	12.8725	80/20	12.8725
315158	1KERR 1	0.2691	80/20	0.2691
315159	1KERR 2	0.7535	80/20	0.7535
315160	1KERR 3	0.7535	80/20	0.7535
315161	1KERR 4	0.7535	80/20	0.7535
315162	1KERR 5	0.7535	80/20	0.7535
315163	1KERR 6	0.7535	80/20	0.7535
315164	1KERR 7	0.7535	80/20	0.7535
315191	1BEARGRDN G1	12.2119	80/20	12.2119
315192	1BEARGRDN G2	12.2119	80/20	12.2119
315193	1BEARGRDN S1	25.1329	80/20	25.1329
315266	1PLYWOOD A	0.9082	80/20	0.9082
920291	AA2-127	2.5369	80/20	2.5369
923572	AB1-173 C OP	0.8339	80/20	0.8339
923582	AB1-173AC OP	0.8339	80/20	0.8339
923911	AB2-031 C O1	0.8277	80/20	0.8277
923991	AB2-040 C O1	2.7179	80/20	2.7179
924021	AB2-043 C O1	0.4547	80/20	0.4547
924161	AB2-060 C OP	1.3368	80/20	1.3368
924301	AB2-077 C O1 (Suspended)	1.6458	80/20	1.6458
924311	AB2-078 C O1 (Suspended)	1.6458	80/20	1.6458
924321	AB2-079 C O1 (Suspended)	1.6458	80/20	1.6458
925171	AB2-174 C O1	0.4511	80/20	0.4511
925611	AC1-036 C	1.0777	80/20	1.0777
925781	AC1-054 C O1	4.1305	80/20	4.1305
925831	AC1-062	0.0760	80/20	0.0760
925991	AC1-075 C	2.9357	80/20	2.9357
926021	AC1-080 C	0.9811	80/20	0.9811
926271	AC1-105 C O1 (Suspended)	4.0693	80/20	4.0693
926451	AC1-116 C	-1.0918	Adder	-1.28
927251	AC1-221 C	1.0627	80/20	1.0627

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
927261	AC1-222 C	2.4288	80/20	2.4288
932511	AC2-071 C	5.1757	80/20	5.1757
932761	AC2-100 C	2.4457	80/20	2.4457
933501	AC2-165 C	15.5274	80/20	15.5274
934311	AD1-055 C	1.6864	80/20	1.6864
934341	AD1-058 C	2.6641	80/20	2.6641
934611	AD1-087 C O1	7.0557	80/20	7.0557
934621	AD1-088 C	19.9085	80/20	19.9085
934991	AD1-131 C	0.8735	80/20	0.8735
935171	AD1-152 C O1	7.0118	80/20	7.0118
935221	AD1-157 C	2.2191	80/20	2.2191
936261	AD2-033 C	14.0478	80/20	14.0478
936361	AD2-046 C O1	6.0033	80/20	6.0033
936481	AD2-063 C O1	14.2722	80/20	14.2722
937481	AD2-202 C O1	1.8698	80/20	1.8698
938371	AE1-056 C	9.5669	80/20	9.5669
938551	AE1-074 C	0.8794	80/20	0.8794
938561	AE1-075 C	2.8232	80/20	2.8232
939181	AE1-148 C O1	5.9983	80/20	5.9983
940241	AE2-006	0.5483	80/20	0.5483
940661	AE2-053 O1	2.2216	80/20	2.2216
941791	AE2-182 C	3.2344	80/20	3.2344
942451	AE2-258	1.9665	80/20	1.9665
942461	AE2-259 C O1	17.2536	80/20	17.2536
942751	AE2-291 C O1	3.9150	80/20	3.9150
942761	AE2-292 C O1	4.8745	80/20	4.8745
943901	AF1-058 C	1.3716	80/20	1.3716
943911	AF1-059	10.5510	80/20	10.5510
945811	AF1-246 C O1	7.1702	80/20	7.1702
946281	AF1-292 C	0.5660	80/20	0.5660
946301	AF1-294 C	5.7065	80/20	5.7065
957481	AF2-042 C O1	51.2160	80/20	51.2160
957911	AF2-085	1.7128	80/20	1.7128
958211	AF2-115 C	3.4796	80/20	3.4796
958501	AF2-144 C	2.3799	80/20	2.3799
958801	AF2-171 C O1	20.7585	80/20	20.7585
959311	AF2-222 C	19.5130	80/20	19.5130
959531	AF2-244 C	2.1932	80/20	2.1932
959751	AF2-266 O1	8.5365	80/20	8.5365
960061	AF2-297 C O1	5.4864	80/20	5.4864
960081	AF2-299 C	0.9539	80/20	0.9539
960811	AF2-372 C	1.0396	80/20	1.0396
960821	AF2-373 C	0.7112	80/20	0.7112
961081	AF2-399 C	0.4490	80/20	0.4490
WEC	WEC	0.0173	Confirmed LTF	0.0173
LGEE	LGEE	0.0359	Confirmed LTF	0.0359
CPL	CPL	2.6228	Confirmed LTF	2.6228
CBM-W2	CBM-W2	4.3817	Confirmed LTF	4.3817
NY	NY	0.3478	Confirmed LTF	0.3478
CBM-W1	CBM-W1	0.2127	Confirmed LTF	0.2127
TVA	TVA	1.1760	Confirmed LTF	1.1760
CBM-S2	CBM-S2	16.1898	Confirmed LTF	16.1898

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
CBM-S1	CBM-S1	5.9299	Confirmed LTF	5.9299
MADISON	MADISON	0.6895	Confirmed LTF	0.6895
MEC	MEC	0.3655	Confirmed LTF	0.3655
AA2-074	AA2-074	1.7833	LTF	1.7833

11.6.11 Index 11

ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC DC	MW IMPACT
107338583	927250	AC1-221 TAP	DVP	304070	6PERSON230 T	CPL	1	DVP_P1-2: LN 556-B	single	718.0	134.61	137.52	DC	25.89

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
313853	3PONTONDP	0.1294	80/20	0.1294
314429	3JTRSVLE	0.5174	80/20	0.5174
314677	6BUCKING	0.4258	80/20	0.4258
315153	1CLOVER1	39.4381	80/20	39.4381
315154	1CLOVER2	39.0451	80/20	39.0451
315156	1HALLBR1	1.1309	80/20	1.1309
315158	1KERR 1	0.3659	80/20	0.3659
315159	1KERR 2	1.0244	80/20	1.0244
315160	1KERR 3	1.0244	80/20	1.0244
315161	1KERR 4	1.0244	80/20	1.0244
315162	1KERR 5	1.0244	80/20	1.0244
315163	1KERR 6	1.0244	80/20	1.0244
315164	1KERR 7	1.0244	80/20	1.0244
315192	1BEARGRDN G2	2.8787	80/20	2.8787
315193	1BEARGRDN S1	5.9246	80/20	5.9246
315266	1PLYWOOD A	3.3432	80/20	3.3432
924021	AB2-043 C O1	0.7329	80/20	0.7329
924161	AB2-060 C OP	2.1135	80/20	2.1135
924301	AB2-077 C O1 (Suspended)	2.7328	80/20	2.7328
924311	AB2-078 C O1 (Suspended)	2.7328	80/20	2.7328
924321	AB2-079 C O1 (Suspended)	2.7328	80/20	2.7328
925611	AC1-036 C	1.3105	80/20	1.3105
925781	AC1-054 C O1	5.0298	80/20	5.0298
925831	AC1-062	0.0768	80/20	0.0768
925991	AC1-075 C	11.9864	80/20	11.9864
926021	AC1-080 C	4.0059	80/20	4.0059
926271	AC1-105 C O1 (Suspended)	14.5305	80/20	14.5305
927251	AC1-221 C	11.7277	80/20	11.7277
927261	AC1-222 C	10.1431	80/20	10.1431
932511	AC2-071 C	2.4320	80/20	2.4320
932761	AC2-100 C	26.9899	80/20	26.9899
934311	AD1-055 C	7.0426	80/20	7.0426
934341	AD1-058 C	29.3997	80/20	29.3997
934611	AD1-087 C O1	27.0094	80/20	27.0094
934621	AD1-088 C	24.0247	80/20	24.0247
934991	AD1-131 C	9.6392	80/20	9.6392
935171	AD1-152 C O1	26.8416	80/20	26.8416
935221	AD1-157 C	2.1223	80/20	2.1223

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
936261	AD2-033 C	17.8675	80/20	17.8675
936361	AD2-046 C O1	8.4639	80/20	8.4639
936481	AD2-063 C O1	20.4093	80/20	20.4093
937481	AD2-202 C O1	7.1578	80/20	7.1578
938371	AE1-056 C	9.1494	80/20	9.1494
939181	AE1-148 C O1	8.5347	80/20	8.5347
940241	AE2-006	0.6667	80/20	0.6667
940661	AE2-053 O1	3.1610	80/20	3.1610
941791	AE2-182 C	3.9032	80/20	3.9032
942451	AE2-258	3.1698	80/20	3.1698
942461	AE2-259 C O1	14.4012	80/20	14.4012
942751	AE2-291 C O1	15.7260	80/20	15.7260
942761	AE2-292 C O1	19.5804	80/20	19.5804
943901	AF1-058 C	5.7522	80/20	5.7522
943911	AF1-059	14.3780	80/20	14.3780
945811	AF1-246 C O1	21.7505	80/20	21.7505
946301	AF1-294 C	5.7653	80/20	5.7653
957481	AF2-042 C O1	155.3610	80/20	155.3610
958211	AF2-115 C	3.5154	80/20	3.5154
958801	AF2-171 C O1	21.0762	80/20	21.0762
959311	AF2-222 C	23.0530	80/20	23.0530
959751	AF2-266 O1	25.8930	80/20	25.8930
960061	AF2-297 C O1	23.0088	80/20	23.0088
960811	AF2-372 C	1.7262	80/20	1.7262
960821	AF2-373 C	2.1290	80/20	2.1290
961081	AF2-399 C	0.4546	80/20	0.4546
NEWTON	NEWTON	1.6150	Confirmed LTF	1.6150
FARMERCITY	FARMERCITY	0.0953	Confirmed LTF	0.0953
G-007A	G-007A	0.4939	Confirmed LTF	0.4939
VFT	VFT	1.3094	Confirmed LTF	1.3094
CALDERWOOD	CALDERWOOD	1.4284	Confirmed LTF	1.4284
PRAIRIE	PRAIRIE	4.4893	Confirmed LTF	4.4893
AC1-131	AC1-131	5.1015	LTF	5.1015
CHEOAH	CHEOAH	1.4720	Confirmed LTF	1.4720
EDWARDS	EDWARDS	0.4816	Confirmed LTF	0.4816
TILTON	TILTON	0.8429	Confirmed LTF	0.8429
GIBSON	GIBSON	0.7671	Confirmed LTF	0.7671
BLUEG	BLUEG	2.3314	Confirmed LTF	2.3314
TRIMBLE	TRIMBLE	0.7379	Confirmed LTF	0.7379
CATAWBA	CATAWBA	1.6961	Confirmed LTF	1.6961

11.6.12 Index 12

ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC DC	MW IMPACT
106426124	934610	AD1-087 TAP	DVP	314697	6SEEDGE HILL	DVP	1	DVP_P1-2: LN 556-B	single	814.98	121.55	125.72	DC	33.95

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
313853	3PONTONDP	0.0707	80/20	0.0707
314333	6POWHATN	0.1384	80/20	0.1384
314429	3JTRSVLE	0.2828	80/20	0.2828
314677	6BUCKING	0.4694	80/20	0.4694
315153	1CLOVER1	51.7091	80/20	51.7091
315154	1CLOVER2	51.1938	80/20	51.1938
315191	1BEARGRDN G1	3.1145	80/20	3.1145
315192	1BEARGRDN G2	3.1145	80/20	3.1145
315193	1BEARGRDN S1	6.4099	80/20	6.4099
920291	AA2-127	0.6470	80/20	0.6470
925611	AC1-036 C	0.3848	80/20	0.3848
925831	AC1-062	0.0420	80/20	0.0420
925991	AC1-075 C	-3.3297	Adder	-3.92
926021	AC1-080 C	-1.1128	Adder	-1.31
926271	AC1-105 C O1 (Suspended)	-3.4045	Adder	-4.01
926451	AC1-116 C	0.2932	80/20	0.2932
927251	AC1-221 C	-1.3047	Adder	-1.53
927261	AC1-222 C	-2.6803	Adder	-3.15
932511	AC2-071 C	2.6809	80/20	2.6809
933501	AC2-165 C	3.8965	80/20	3.8965
934311	AD1-055 C	-1.8610	Adder	-2.19
934341	AD1-058 C	-3.2706	Adder	-3.85
934611	AD1-087 C O1	35.7744	80/20	35.7744
934621	AD1-088 C	29.1619	80/20	29.1619
935171	AD1-152 C O1	35.5522	80/20	35.5522
935221	AD1-157 C	1.3385	80/20	1.3385
936261	AD2-033 C	4.2728	80/20	4.2728
937481	AD2-202 C O1	9.4806	80/20	9.4806
938371	AE1-056 C	5.7703	80/20	5.7703
938561	AE1-075 C	0.7037	80/20	0.7037
938821	AE1-108 C	6.5977	80/20	6.5977
940241	AE2-006	0.1958	80/20	0.1958
941011	AE2-092 C	6.4559	80/20	6.4559
941791	AE2-182 C	4.7378	80/20	4.7378
942461	AE2-259 C O1	12.3990	80/20	12.3990
945811	AF1-246 C O1	28.5180	80/20	28.5180
946291	AF1-293 C O1	9.6964	80/20	9.6964
946301	AF1-294 C	3.1505	80/20	3.1505
946591	AF1-323 C	2.0140	80/20	2.0140
957481	AF2-042 C O1	203.7000	80/20	203.7000
958211	AF2-115 C	1.9211	80/20	1.9211

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
958501	AF2-144 C	0.5932	80/20	0.5932
958801	AF2-171 C O1	11.3616	80/20	11.3616
959311	AF2-222 C	7.6050	80/20	7.6050
959531	AF2-244 C	0.5467	80/20	0.5467
959751	AF2-266 O1	33.9495	80/20	33.9495
960111	AF2-302 C	0.7324	80/20	0.7324
961061	AF2-397 C O1	7.4950	80/20	7.4950
961081	AF2-399 C	0.2471	80/20	0.2471
NEWTON	NEWTON	1.4044	Confirmed LTF	1.4044
FARMERCITY	FARMERCITY	0.0797	Confirmed LTF	0.0797
G-007A	G-007A	0.4100	Confirmed LTF	0.4100
VFT	VFT	1.0772	Confirmed LTF	1.0772
CALDERWOOD	CALDERWOOD	1.0760	Confirmed LTF	1.0760
PRAIRIE	PRAIRIE	3.7479	Confirmed LTF	3.7479
CHEOAH	CHEOAH	1.1026	Confirmed LTF	1.1026
EDWARDS	EDWARDS	0.4263	Confirmed LTF	0.4263
TILTON	TILTON	0.7566	Confirmed LTF	0.7566
GIBSON	GIBSON	0.6825	Confirmed LTF	0.6825
BLUEG	BLUEG	2.1162	Confirmed LTF	2.1162
TRIMBLE	TRIMBLE	0.6723	Confirmed LTF	0.6723
CATAWBA	CATAWBA	1.1473	Confirmed LTF	1.1473

11.6.13 Index 13

ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC DC	MW IMPACT
106067137	934620	AD1-088 TAP	DVP	314268	6BRIERY	DVP	1	DVP_P4-2:511T556-A	breaker	699.0	111.2	113.47	DC	15.85

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
315153	1CLOVER1	24.1422	50/50	24.1422
315154	1CLOVER2	23.9016	50/50	23.9016
315266	1PLYWOOD A	0.9389	50/50	0.9389
925611	AC1-036 C	-0.3478	Adder	-0.41
925991	AC1-075 C	3.1972	Adder	3.76
925992	AC1-075 E	1.8115	Adder	2.13
926021	AC1-080 C	1.0685	Adder	1.26
926022	AC1-080 E	0.6010	Adder	0.71
926271	AC1-105 C O1 (Suspended)	3.8688	50/50	3.8688
926272	AC1-105 E O1 (Suspended)	1.9259	50/50	1.9259
926451	AC1-116 C	-0.2683	Adder	-0.32
927251	AC1-221 C	1.4819	50/50	1.4819
927252	AC1-221 E	1.4819	50/50	1.4819
927261	AC1-222 C	3.0620	50/50	3.0620
927262	AC1-222 E	2.9149	50/50	2.9149
932761	AC2-100 C	3.4104	50/50	3.4104
932762	AC2-100 E	1.6646	50/50	1.6646
934311	AD1-055 C	2.1260	50/50	2.1260
934312	AD1-055 E	0.5482	50/50	0.5482
934341	AD1-058 C	3.7149	50/50	3.7149
934342	AD1-058 E	0.9439	50/50	0.9439
934611	AD1-087 C O1	12.3358	50/50	12.3358
934612	AD1-087 E O1	5.7976	50/50	5.7976
934621	AD1-088 C	41.9311	50/50	41.9311
934622	AD1-088 E	19.7323	50/50	19.7323
934991	AD1-131 C	1.2180	50/50	1.2180
934992	AD1-131 E	0.8120	50/50	0.8120
935171	AD1-152 C O1	12.2592	50/50	12.2592
935172	AD1-152 E O1	8.1728	50/50	8.1728
935221	AD1-157 C	-1.1710	Adder	-1.38
935222	AD1-157 E	-0.7807	Adder	-0.92
936161	AD2-022 C O1	2.9386	Adder	3.46
936162	AD2-022 E O1	1.7632	Adder	2.07
936171	AD2-023 C O1	1.7142	Adder	2.02
936172	AD2-023 E O1	0.9306	Adder	1.09
937481	AD2-202 C O1	3.2691	50/50	3.2691
937482	AD2-202 E O1	1.8389	50/50	1.8389
938561	AE1-075 C	-0.6494	Adder	-0.76
940241	AE2-006	-0.1769	Adder	-0.21

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
941791	AE2-182 C	6.8123	50/50	6.8123
941792	AE2-182 E	3.1713	50/50	3.1713
942751	AE2-291 C O1	4.3135	Adder	5.07
942752	AE2-291 E O1	2.8757	Adder	3.38
942761	AE2-292 C O1	5.3707	Adder	6.32
942762	AE2-292 E O1	3.5805	Adder	4.21
943901	AF1-058 C	1.7239	50/50	1.7239
943902	AF1-058 E	1.1493	50/50	1.1493
945811	AF1-246 C O1	13.3140	50/50	13.3140
945812	AF1-246 E O1	18.3860	50/50	18.3860
946293	AF1-293 BAT	7.5791	Merchant Transmission	7.5791
957481	AF2-042 C O1	95.1000	50/50	95.1000
957482	AF2-042 E O1	63.4000	50/50	63.4000
958503	AF2-144 BAT	0.3346	Merchant Transmission	0.3346
959751	AF2-266 O1	15.8505	50/50	15.8505
960061	AF2-297 C O1	6.8957	50/50	6.8957
960062	AF2-297 E O1	4.5971	50/50	4.5971
960821	AF2-373 C	0.2137	Adder	0.47
960822	AF2-373 E	0.3205	Adder	0.71
961063	AF2-397 BAT	5.3082	50/50	5.3082
WEC	WEC	0.2432	Confirmed LTF	0.2432
LGEE	LGEE	0.4604	Confirmed LTF	0.4604
CPL	CPL	2.6553	Confirmed LTF	2.6553
CBM-W2	CBM-W2	9.8853	Confirmed LTF	9.8853
NY	NY	0.3058	Confirmed LTF	0.3058
CBM-W1	CBM-W1	9.0697	Confirmed LTF	9.0697
TVA	TVA	2.0902	Confirmed LTF	2.0902
O-066	O-066	4.3075	Confirmed LTF	4.3075
CBM-S2	CBM-S2	18.0798	Confirmed LTF	18.0798
CBM-S1	CBM-S1	11.6383	Confirmed LTF	11.6383
G-007	G-007	0.6718	Confirmed LTF	0.6718
MADISON	MADISON	0.5927	Confirmed LTF	0.5927
MEC	MEC	1.4825	Confirmed LTF	1.4825
AA2-074	AA2-074	1.8099	LTF	1.8099

11.6.14 Index 14

ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC DC	MW IMPACT
106426092	961060	AF2-397 TAP	DVP	314765	6MTEAGLE	DVP	1	DVP_P1-2: LN 556-B	single	661.76	101.81	103.01	DC	7.92

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
313853	3PONTONDP	0.1175	80/20	0.1175
314333	6POWHATN	0.5026	80/20	0.5026
314429	3JTRSVLE	0.4701	80/20	0.4701
314572	3EMPORIA	0.0248	80/20	0.0248
314677	6BUCKING	0.8262	80/20	0.8262
314704	3LAWRENC	0.1498	80/20	0.1498
315153	1CLOVER1	12.0661	80/20	12.0661
315154	1CLOVER2	11.9459	80/20	11.9459
315158	1KERR 1	0.2503	80/20	0.2503
315159	1KERR 2	0.7008	80/20	0.7008
315160	1KERR 3	0.7008	80/20	0.7008
315161	1KERR 4	0.7008	80/20	0.7008
315162	1KERR 5	0.7008	80/20	0.7008
315163	1KERR 6	0.7008	80/20	0.7008
315164	1KERR 7	0.7008	80/20	0.7008
315191	1BEARGRDN G1	11.1138	80/20	11.1138
315192	1BEARGRDN G2	11.1138	80/20	11.1138
315193	1BEARGRDN S1	22.8730	80/20	22.8730
315266	1PLYWOOD A	0.8613	80/20	0.8613
920291	AA2-127	2.3088	80/20	2.3088
923572	AB1-173 C OP	0.7619	80/20	0.7619
923582	AB1-173AC OP	0.7619	80/20	0.7619
923911	AB2-031 C O1	0.7563	80/20	0.7563
923991	AB2-040 C O1	2.4834	80/20	2.4834
924021	AB2-043 C O1	0.4215	80/20	0.4215
924161	AB2-060 C OP	1.2385	80/20	1.2385
924301	AB2-077 C O1 (Suspended)	1.5268	80/20	1.5268
924311	AB2-078 C O1 (Suspended)	1.5268	80/20	1.5268
924321	AB2-079 C O1 (Suspended)	1.5268	80/20	1.5268
925171	AB2-174 C O1	0.4120	80/20	0.4120
925611	AC1-036 C	0.9926	80/20	0.9926
925781	AC1-054 C O1	3.8323	80/20	3.8323
925831	AC1-062	0.0698	80/20	0.0698
925991	AC1-075 C	3.0973	80/20	3.0973
926021	AC1-080 C	1.0351	80/20	1.0351
926271	AC1-105 C O1 (Suspended)	3.8528	80/20	3.8528
926451	AC1-116 C	-1.2114	Adder	-1.43
927251	AC1-221 C	1.0129	80/20	1.0129

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
927261	AC1-222 C	2.3539	80/20	2.3539
932511	AC2-071 C	4.7190	80/20	4.7190
932761	AC2-100 C	2.3312	80/20	2.3312
933501	AC2-165 C	14.0739	80/20	14.0739
934311	AD1-055 C	1.6344	80/20	1.6344
934341	AD1-058 C	2.5393	80/20	2.5393
934611	AD1-087 C O1	6.5833	80/20	6.5833
934621	AD1-088 C	18.2491	80/20	18.2491
934991	AD1-131 C	0.8326	80/20	0.8326
935171	AD1-152 C O1	6.5424	80/20	6.5424
935221	AD1-157 C	2.0350	80/20	2.0350
936261	AD2-033 C	12.9496	80/20	12.9496
936361	AD2-046 C O1	5.5797	80/20	5.5797
936481	AD2-063 C O1	13.1904	80/20	13.1904
937481	AD2-202 C O1	1.7446	80/20	1.7446
938371	AE1-056 C	8.7731	80/20	8.7731
938551	AE1-074 C	0.7727	80/20	0.7727
938561	AE1-075 C	2.5546	80/20	2.5546
938821	AE1-108 C	26.5834	80/20	26.5834
939181	AE1-148 C O1	5.5739	80/20	5.5739
940241	AE2-006	0.5050	80/20	0.5050
940661	AE2-053 O1	2.0644	80/20	2.0644
941011	AE2-092 C	20.8855	80/20	20.8855
941791	AE2-182 C	2.9648	80/20	2.9648
942451	AE2-258	1.8230	80/20	1.8230
942461	AE2-259 C O1	15.7908	80/20	15.7908
942751	AE2-291 C O1	4.3709	80/20	4.3709
942761	AE2-292 C O1	5.4422	80/20	5.4422
943901	AF1-058 C	1.3072	80/20	1.3072
943911	AF1-059	9.7380	80/20	9.7380
945811	AF1-246 C O1	6.6545	80/20	6.6545
946281	AF1-292 C	0.5161	80/20	0.5161
946291	AF1-293 C O1	34.5352	80/20	34.5352
946301	AF1-294 C	5.2376	80/20	5.2376
946591	AF1-323 C	8.5226	80/20	8.5226
957481	AF2-042 C O1	47.5320	80/20	47.5320
957911	AF2-085	1.5186	80/20	1.5186
958131	AF2-107 C	4.5188	80/20	4.5188
958211	AF2-115 C	3.1937	80/20	3.1937
958501	AF2-144 C	2.1534	80/20	2.1534
958801	AF2-171 C O1	19.0548	80/20	19.0548
959311	AF2-222 C	17.9610	80/20	17.9610
959531	AF2-244 C	1.9845	80/20	1.9845
959751	AF2-266 O1	7.9220	80/20	7.9220
960061	AF2-297 C O1	5.2286	80/20	5.2286
960081	AF2-299 C	0.8699	80/20	0.8699
960111	AF2-302 C	3.0991	80/20	3.0991
960811	AF2-372 C	0.9644	80/20	0.9644
960821	AF2-373 C	0.6692	80/20	0.6692
961061	AF2-397 C O1	40.3229	80/20	40.3229
961081	AF2-399 C	0.4122	80/20	0.4122
WEC	WEC	0.0847	Confirmed LTF	0.0847

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
LGEE	LGEE	0.1683	Confirmed LTF	0.1683
CPL	CPL	2.5382	Confirmed LTF	2.5382
CBM-W2	CBM-W2	6.0115	Confirmed LTF	6.0115
NY	NY	0.3832	Confirmed LTF	0.3832
CBM-W1	CBM-W1	2.8022	Confirmed LTF	2.8022
TVA	TVA	1.4504	Confirmed LTF	1.4504
CBM-S2	CBM-S2	16.2765	Confirmed LTF	16.2765
CBM-S1	CBM-S1	7.6510	Confirmed LTF	7.6510
MADISON	MADISON	0.6471	Confirmed LTF	0.6471
MEC	MEC	0.6992	Confirmed LTF	0.6992
AA2-074	AA2-074	1.7271	LTF	1.7271

11.7 Queue Dependencies

The Queue Projects below are listed in one or more indices for the overloads identified in your report. These projects contribute to the loading of the overloaded facilities identified in your report. The percent overload of a facility and cost allocation you may have towards a particular reinforcement could vary depending on the action of these earlier projects. The status of each project at the time of the analysis is presented in the table. This list may change as earlier projects withdraw or modify their requests.

Queue Number	Project Name	Status
AA2-074	CPL-PJM	Confirmed
AA2-127	Bear Garden 230kV	In Service
AB1-173	Brink-Trego 115kV	Engineering and Procurement
AB1-173A	Brink-Trego 115kV	Engineering and Procurement
AB2-031	Brink-Trego 115kV	Engineering and Procurement
AB2-040	Brink 115kV	Engineering and Procurement
AB2-043	Chase City 115kV	Under Construction
AB2-045	Buckingham 34.5kV	In Service
AB2-060	Chase City-Lunenburg 115kV	Under Construction
AB2-077	Buggs Island-Chase City 115kV	Suspended
AB2-078	Buggs Island-Chase City 115kV	Suspended
AB2-079	Buggs Island-Chase City 115kV	Suspended
AB2-174	Emporia-Trego 115kV	Under Construction
AC1-036	Twittys Creek 34.5kV	Engineering and Procurement
AC1-042	Altavista-Mt. Airy 69kV	Engineering and Procurement
AC1-054	Kerr Dam-Eatons Ferry 115 kV	Engineering and Procurement
AC1-062	Jetersville 34.5kV	In Service
AC1-075	Perth-Hickory Grove 115kV	Engineering and Procurement
AC1-080	Perth-Hickory Grove 115kV	Engineering and Procurement
AC1-105	Halifax-Mt. Laurel 115kV	Suspended
AC1-116	Mount Eagle 34.5kV	Engineering and Procurement
AC1-131	PJM-CPL	Confirmed
AC1-145	Gretna DP 69 kV	Engineering and Procurement
AC1-221	Halifax-Person 230kV	Engineering and Procurement
AC1-222	Crystal Hill-Halifax 115kV	Engineering and Procurement

Queue Number	Project Name	Status
AC2-071	Buckingham 35kV	Engineering and Procurement
AC2-100	Halifax-Person 230kV	Active
AC2-165	Bremo-Powhatan 230kV	Active
AD1-055	Crystal Hill-Halifax 115 kV	Engineering and Procurement
AD1-058	Halifax-Person 230 kV	Engineering and Procurement
AD1-087	Clover-Sedge Hill 230 kV	Active
AD1-088	Briery-Clover 230 kV	Active
AD1-131	Sedge Hill-Person 230 kV	Active
AD1-152	Clover-Sedge Hill 230 kV	Active
AD1-157	South Creek 34.5 kV	Engineering and Procurement
AD2-022	East Danville-Roxborough 230 kV	Active
AD2-023	E. Danville-Roxborough 230 kV	Active
AD2-033	Chase City-Lunenburg 115 kV	Active
AD2-046	Boydton DP-Kerr Dam 115 kV	Active
AD2-063	Central-Chase City 115kV	Active
AD2-202	Clover-Sedge Hill 230kV	Active
AE1-056	Red House-South Creek 115 kV	Active
AE1-074	Winterpock 34.5 kV	Engineering and Procurement
AE1-075	Powhatan 34.5 kV	Engineering and Procurement
AE1-108	Bremo-Scottsville 138 kV	Active
AE1-148	Kerr Dam-Ridge Rd 115 kV	Active
AE1-230	Shockoe 69 kV	Active
AE2-006	Twittys Creek 34.5 kV	Engineering and Procurement
AE2-053	Kerr Dam-Ridge Road 115 kV	Active
AE2-092	Kidds Store-Sherwood 115 kV	Active
AE2-182	Briery-Clover 230 kV	Active
AE2-185	Gladys DP-Stonemill Switching Station 69 kV	Active
AE2-187	Shockoe DP-Chatham 69 kV	Active
AE2-258	Chase City 115 kV	Active
AE2-259	Curdsville-Willis Mtn 115 kV	Active
AE2-283	Gladys-Stone Mill 69 kV	Active
AE2-291	Grit DP-Perth 115 kV	Active
AE2-292	Grit DP-Perth 115 kV	Active
AF1-058	Welco 34.5 kV	Engineering and Procurement
AF1-059	Brodnax-South Hill 115 kV	Active
AF1-173	Gretna DP-Shockoe DP 69 kV	Active
AF1-246	Clover-Rawlings 500 kV	Active
AF1-292	Fields Crossroads 34.5 kV	Active
AF1-293	Kidds Store-Fort Union 115 kV	Active
AF1-294	Jetersville-Ponton 115 kV	Active
AF1-323	Scottsville-Colleen 138 kV	Active
AF2-042	Clover 500 kV	Active
AF2-085	Midlothian 34.5 kV	Active
AF2-107	Clifford 138 kV	Active
AF2-115	Jetersville-Ponton 115 kV	Active
AF2-144	Powhatan 34.5 kV	Active
AF2-171	Madisonville 115 kV	Active
AF2-222	Madisonville DP-Twitty's Creek 115 kV	Active
AF2-244	Powhatan 34.5 kV	Active
AF2-266	Clover 230 kV	Active
AF2-297	Sedge Hill 115 kV	Active
AF2-299	Fields 34.5 kV	Active

Queue Number	Project Name	Status
AF2-302	Scottsville-Colleen 138 kV	Active
AF2-372	Black Branch 34.5 kV	Active
AF2-373	Mount Laurel 115 kV	Active
AF2-397	Fork Union-Mt. Eagle 230 kV	Active
AF2-399	Crewe 12.5 kV	Active
AF2-403	Shockoe DP-Chatham 69 kV	Active

11.8 Contingency Descriptions - Primary POI

Contingency Name	Contingency Definition
314906 8CLOVER 500 314936 AF1-246 TAP 500 1	CONTINGENCY '314906 8CLOVER 500 314936 AF1-246 TAP 500 1' OPEN BRANCH FROM BUS 314906 TO BUS 945810 CKT 1 END
DVP_P1-2: LN 556-B	CONTINGENCY 'DVP_P1-2: LN 556-B' OPEN BRANCH FROM BUS 945810 TO BUS 314936 CKT 1 /* AF1-246 TAP 500.00 - 8RAWLINGS 500.00 END
DVP_P4-2: 556T591	CONTINGENCY 'DVP_P4-2: 556T591' /* RAWLINGS 500 KV OPEN BRANCH FROM BUS 945810 TO BUS 314936 CKT 1 /* AF1-246 TAP 500.00 - 8RAWLINGS 500.00 OPEN BRANCH FROM BUS 314935 TO BUS 314936 CKT 1 /* 8HERITAGE 500.00 - 8RAWLINGS 500.00 END
Base Case	
DVP_P4-2: 511T556-A	CONTINGENCY 'DVP_P4-2: 511T556-A' /* RAWLINGS 500 KV OPEN BRANCH FROM BUS 940470 TO BUS 314936 CKT 1 /* AE2-031 TAP 500.00 - 8RAWLINGS 500.00 OPEN BRANCH FROM BUS 945810 TO BUS 314936 CKT 1 /* AF1-246 TAP 500.00 - 8RAWLINGS 500.00 END
DVP_P4-2: 511T591	CONTINGENCY 'DVP_P4-2: 511T591' /* RAWLINGS 500 KV OPEN BRANCH FROM BUS 940470 TO BUS 314936 CKT 1 /* AE2-031 TAP 500.00 - 8RAWLINGS 500.00 OPEN BRANCH FROM BUS 314935 TO BUS 314936 CKT 1 /* 8HERITAGE 500.00 - 8RAWLINGS 500.00 END

12 Short Circuit Analysis - Primary POI

Short circuit analysis will be provided in the System Impact Study report.

13 Summer Peak - Load Flow Analysis - Secondary POI

The Queue Project AF2-266 was evaluated as a 50.1 MW (Capacity 50.0 MW) injection tapping the Clover to Rawlings 500 kV line in the Dominion area. Project AF2-266 was evaluated for compliance with applicable reliability planning criteria (PJM, NERC, NERC Regional Reliability Councils, and Transmission Owners). Project AF2-266 was studied with a commercial probability of 53%. Potential network impacts were as follows:

13.1 Generation Deliverability

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

ID	FROM BUS#	FROM BUS	kV	FROM BUS AREA	TO BUS#	TO BUS	kV	TO BUS AREA	CK T ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADIN G %	POST PROJECT LOADIN G %	AC D C	MW IMPACT
106426398	314686	6CLOVER	230.0	DVP	934620	AD1-088 TAP	230.0	DVP	1	DVP_P1-2: LN 556-B	single	571.520019531	98.74	101.51	DC	15.82

13.2 Multiple Facility Contingency

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

None

13.3 Contribution to Previously Identified Overloads

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

ID	FROM BUS#	FROM BUS	kV	FROM BUS AREA	TO BUS#	TO BUS	kV	TO BUS AREA	CK T ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADIN G %	POST PROJECT LOADIN G %	AC D C	MW IMPACT
149179314	313707	6FORK UNION	230.0	DVP	314765	6MTEAGLE	230.0	DVP	1	DVP_P1-2: LN 556-B	single	661.760009766	101.88	103.08	DC	7.92
97790549	313802	6PRINCE EDW	230.0	DVP	314692	6FARMVIL	230.0	DVP	1	DVP_P4-2: 511T5 91	breaker	699.0	109.67	111.94	DC	15.85
106067155	313802	6PRINCE EDW	230.0	DVP	314692	6FARMVIL	230.0	DVP	1	DVP_P4-2: 556T5 91	breaker	699.0	109.77	112.04	DC	15.85
106426282	313802	6PRINCE EDW	230.0	DVP	314692	6FARMVIL	230.0	DVP	1	DVP_P1-2: LN 556-B	single	571.520019531	105.3	108.07	DC	15.82
148824983	313802	6PRINCE EDW	230.0	DVP	314692	6FARMVIL	230.0	DVP	1	DVP_P4-2: 511T5 56	breaker	699.0	109.76	112.02	DC	15.85
106426222	313867	6BREMODIST	230.0	DVP	313707	6FORK UNION	230.0	DVP	1	DVP_P1-2: LN 556-B	single	661.760009766	102.2	103.49	DC	8.54
97790548	314268	6BRIERY	230.0	DVP	313802	6PRINCE EDW	230.0	DVP	1	DVP_P4-2: 511T5 91	breaker	699.0	110.54	112.81	DC	15.85
106067145	314268	6BRIERY	230.0	DVP	313802	6PRINCE EDW	230.0	DVP	1	DVP_P4-2: 556T5 91	breaker	699.0	110.64	112.91	DC	15.85
106426275	314268	6BRIERY	230.0	DVP	313802	6PRINCE EDW	230.0	DVP	1	DVP_P1-2: LN 556-B	single	571.520019531	106.37	109.14	DC	15.82
148824974	314268	6BRIERY	230.0	DVP	313802	6PRINCE EDW	230.0	DVP	1	DVP_P4-2: 511T5 56	breaker	699.0	110.63	112.9	DC	15.85

ID	FROM BUS#	FROM BUS	kV	FROM BUS AREA	TO BUS#	TO BUS	kV	TO BUS AREA	CK T ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADIN G %	POST PROJECT LOADIN G %	AC D C	MW IMPAC T
9779040 1	31467 7	6BUCKING	230.0	DVP	31474 7	6BREMO	230.0	DVP	1	DVP_P 4-2: 511T5 91	breaker	699.0	148.78	149.66	DC	14.75
9779040 2	31467 7	6BUCKING	230.0	DVP	31474 7	6BREMO	230.0	DVP	1	DVP_P 4-2: 556T5 91	breaker	699.0	148.86	149.74	DC	14.75
9779040 3	31467 7	6BUCKING	230.0	DVP	31474 7	6BREMO	230.0	DVP	1	DVP_P 4-2: 511T5 56	breaker	699.0	148.86	149.74	DC	14.75
1064259 88	31467 7	6BUCKING	230.0	DVP	31474 7	6BREMO	230.0	DVP	1	DVP_P 1-2: LN 556-B	single	571.5200195 31	134.5	137.07	DC	14.72
1060672 13	31468 6	6CLOVER	230.0	DVP	93462 0	AD1-088 TAP	230.0	DVP	1	DVP_P 4-2: 556T5 91	breaker	699.0	101.11	103.38	DC	15.85
1064262 44	31468 6	6CLOVER	230.0	DVP	93461 0	AD1-087 TAP	230.0	DVP	1	DVP_P 1-2: LN 556-B	single	814.9799804 69	111.74	115.91	DC	33.95
1488250 39	31468 6	6CLOVER	230.0	DVP	93462 0	AD1-088 TAP	230.0	DVP	1	DVP_P 4-2: 511T5 56	breaker	699.0	101.11	103.38	DC	15.85
9779041 6	31469 2	6FARMVIL	230.0	DVP	31467 7	6BUCKING	230.0	DVP	1	DVP_P 4-2: 511T5 91	breaker	684.0	147.97	148.87	DC	14.75
9779041 7	31469 2	6FARMVIL	230.0	DVP	31467 7	6BUCKING	230.0	DVP	1	DVP_P 4-2: 511T5 56	breaker	684.0	148.06	148.96	DC	14.75
9779041 8	31469 2	6FARMVIL	230.0	DVP	31467 7	6BUCKING	230.0	DVP	1	DVP_P 4-2: 556T5 91	breaker	684.0	148.06	148.96	DC	14.75
1064259 99	31469 2	6FARMVIL	230.0	DVP	31467 7	6BUCKING	230.0	DVP	1	DVP_P 1-2: LN 556-B	single	559.2999877 93	134.01	136.64	DC	14.72
1064259 29	31469 7	6SEDGE HILL	230.0	DVP	92725 0	AC1-221 TAP	230.0	DVP	1	DVP_P 1-2: LN 556-B	single	674.9199829 1	132.27	135.6	DC	25.89
1064262 05	31474 7	6BREMO	230.0	DVP	31386 7	6BREMODI ST	230.0	DVP	1	DVP_P 1-2: LN 556-B	single	661.7600097 66	104.56	105.85	DC	8.54
9695453 8	92725 0	AC1-221 TAP	230.0	DVP	30407 0	6PERSON2 30 T	230.0	CPL E	1	DVP_P 1-2: LN 570	single	718.0	116.79	118.15	DC	9.72
1073385 83	92725 0	AC1-221 TAP	230.0	DVP	30407 0	6PERSON2 30 T	230.0	CPL E	1	DVP_P 1-2: LN 556-B	single	718.0	134.74	137.66	DC	25.89
9806135 2	93461 0	AD1-087 TAP	230.0	DVP	31469 7	6SEDGE HILL	230.0	DVP	1	DVP_P 1-2: LN 570	single	814.9799804 69	109.65	111.0	DC	12.55
1064261 24	93461 0	AD1-087 TAP	230.0	DVP	31469 7	6SEDGE HILL	230.0	DVP	1	DVP_P 1-2: LN 556-B	single	814.9799804 69	121.62	125.79	DC	33.95
9779054 7	93462 0	AD1-088 TAP	230.0	DVP	31426 8	6BRIERY	230.0	DVP	1	DVP_P 4-2: 511T5 91	breaker	699.0	111.12	113.38	DC	15.85
1060671 36	93462 0	AD1-088 TAP	230.0	DVP	31426 8	6BRIERY	230.0	DVP	1	DVP_P 4-2: 556T5 91	breaker	699.0	111.22	113.48	DC	15.85

ID	FROM BUS#	FROM BUS	kV	FROM BUS AREA	TO BUS#	TO BUS	kV	TO BUS AREA	CK T ID	CONT NAME	Type	Rating MVA	PRE PROJE T LOADIN G %	POST PROJE T LOADIN G %	AC D C	MW IMPAC T
106426257	934620	AD1-088 TAP	230.0	DVP	314268	6BRIERY	230.0	DVP	1	DVP_P 1-2: LN 556-B	single	571.520019531	107.07	109.84	DC	15.82
148824969	934620	AD1-088 TAP	230.0	DVP	314268	6BRIERY	230.0	DVP	1	DVP_P 4-2: 511T5 56	breaker	699.0	111.2	113.47	DC	15.85

13.4 Potential Congestion due to Local Energy Deliverability

PJM also studied the delivery of the energy portion of this interconnection request. Any problems identified below are likely to result in operational restrictions to the project under study. The developer can proceed with network upgrades to eliminate the operational restriction at their discretion by submitting a Merchant Transmission Interconnection request.

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

ID	FROM BUS#	FROM BUS	kV	FROM BUS AREA	TO BUS#	TO BUS	kV	TO BUS AREA	CK T ID	CONT NAME	Type	Rating MVA	PRE PROJE T LOADIN G %	POST PROJE T LOADIN G %	AC D C	MW IMPAC T
106426280	313802	6PRINCE EDW	230.0	DVP	314692	6FARMVIL	230.0	DVP	1	DVP_P 1-2: LN 556-B	operation	571.520019531	131.75	134.52	DC	15.82
106426273	314268	6BRIERY	230.0	DVP	313802	6PRINCE EDW	230.0	DVP	1	DVP_P 1-2: LN 556-B	operation	571.520019531	132.82	135.59	DC	15.82
106425985	314677	6BUCKING	230.0	DVP	314747	6BREMO	230.0	DVP	1	DVP_P 1-2: LN 556-B	operation	571.520019531	179.04	180.12	DC	14.72
106426242	314686	6CLOVE R	230.0	DVP	934610	AD1-087 TAP	230.0	DVP	1	DVP_P 1-2: LN 556-B	operation	814.979980469	136.21	140.37	DC	33.95
106426396	314686	6CLOVE R	230.0	DVP	934620	AD1-088 TAP	230.0	DVP	1	DVP_P 1-2: LN 556-B	operation	571.520019531	121.18	123.95	DC	15.82
106425996	314692	6FARMVIL	230.0	DVP	314677	6BUCKING	230.0	DVP	1	DVP_P 1-2: LN 556-B	operation	559.299987793	177.98	179.08	DC	14.72
106425927	314697	6SEDGE HILL	230.0	DVP	927250	AC1-221 TAP	230.0	DVP	1	DVP_P 1-2: LN 556-B	operation	674.91998291	173.82	177.66	DC	25.89
96954541	927250	AC1-221 TAP	230.0	DVP	304070	6PERSON2 30 T	230.0	CPL E	1	Base Case	operation	542.0	101.27	102.78	DC	8.19
107338580	927250	AC1-221 TAP	230.0	DVP	304070	6PERSON2 30 T	230.0	CPL E	1	DVP_P 1-2: LN 556-B	operation	718.0	177.33	180.94	DC	25.89
106426122	934610	AD1-087 TAP	230.0	DVP	314697	6SEDGE HILL	230.0	DVP	1	DVP_P 1-2: LN 556-B	operation	814.979980469	147.88	152.04	DC	33.95
106426255	934620	AD1-088 TAP	230.0	DVP	314268	6BRIERY	230.0	DVP	1	DVP_P 1-2: LN 556-B	operation	571.520019531	133.52	136.29	DC	15.82

13.5 Flow Gate Details - Secondary POI

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

13.5.1 Index 1

ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC DC	MW IMPACT
148825039	314686	6CLOVER	DVP	934620	AD1-088 TAP	DVP	1	DVP_P4-2: 511T556	breaker	699.0	101.11	103.38	DC	15.85

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
315153	1CLOVER1	24.1422	50/50	24.1422
315154	1CLOVER2	23.9016	50/50	23.9016
315266	1PLYWOOD A	0.9389	50/50	0.9389
925611	AC1-036 C	-0.3478	Adder	-0.41
925991	AC1-075 C	3.1972	Adder	3.76
925992	AC1-075 E	1.8115	Adder	2.13
926021	AC1-080 C	1.0685	Adder	1.26
926022	AC1-080 E	0.6010	Adder	0.71
926271	AC1-105 C O1 (Suspended)	3.8688	50/50	3.8688
926272	AC1-105 E O1 (Suspended)	1.9259	50/50	1.9259
926451	AC1-116 C	-0.2683	Adder	-0.32
927251	AC1-221 C	1.4819	50/50	1.4819
927252	AC1-221 E	1.4819	50/50	1.4819
927261	AC1-222 C	3.0620	50/50	3.0620
927262	AC1-222 E	2.9149	50/50	2.9149
932761	AC2-100 C	3.4104	50/50	3.4104
932762	AC2-100 E	1.6646	50/50	1.6646
934311	AD1-055 C	2.1260	50/50	2.1260
934312	AD1-055 E	0.5482	50/50	0.5482
934341	AD1-058 C	3.7149	50/50	3.7149
934342	AD1-058 E	0.9439	50/50	0.9439
934611	AD1-087 C O1	12.3358	50/50	12.3358
934612	AD1-087 E O1	5.7976	50/50	5.7976
934991	AD1-131 C	1.2180	50/50	1.2180
934992	AD1-131 E	0.8120	50/50	0.8120
935171	AD1-152 C O1	12.2592	50/50	12.2592
935172	AD1-152 E O1	8.1728	50/50	8.1728
935221	AD1-157 C	-1.1710	Adder	-1.38
935222	AD1-157 E	-0.7807	Adder	-0.92
936161	AD2-022 C O1	2.9386	Adder	3.46
936162	AD2-022 E O1	1.7632	Adder	2.07
936171	AD2-023 C O1	1.7142	Adder	2.02
936172	AD2-023 E O1	0.9306	Adder	1.09
937481	AD2-202 C O1	3.2691	50/50	3.2691
937482	AD2-202 E O1	1.8389	50/50	1.8389
938561	AE1-075 C	-0.6494	Adder	-0.76
940241	AE2-006	-0.1769	Adder	-0.21
942751	AE2-291 C O1	4.3135	Adder	5.07
942752	AE2-291 E O1	2.8757	Adder	3.38
942761	AE2-292 C O1	5.3707	Adder	6.32

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
942762	AE2-292 E O1	3.5805	Adder	4.21
943901	AF1-058 C	1.7239	50/50	1.7239
943902	AF1-058 E	1.1493	50/50	1.1493
945811	AF1-246 C O1	13.3140	50/50	13.3140
945812	AF1-246 E O1	18.3860	50/50	18.3860
946293	AF1-293 BAT	7.5791	Merchant Transmission	7.5791
957481	AF2-042 C O2	95.1000	50/50	95.1000
957482	AF2-042 E O2	63.4000	50/50	63.4000
958503	AF2-144 BAT	0.3346	Merchant Transmission	0.3346
959751	AF2-266 O2	15.8500	50/50	15.8500
960061	AF2-297 C O2	9.3019	50/50	9.3019
960062	AF2-297 E O2	6.2013	50/50	6.2013
960821	AF2-373 C	0.2137	Adder	0.47
960822	AF2-373 E	0.3205	Adder	0.71
961063	AF2-397 BAT	5.3724	50/50	5.3724
WEC	WEC	0.2432	Confirmed LTF	0.2432
LGEE	LGEE	0.4604	Confirmed LTF	0.4604
CPL	CPL	2.6553	Confirmed LTF	2.6553
CBM-W2	CBM-W2	9.8853	Confirmed LTF	9.8853
NY	NY	0.3058	Confirmed LTF	0.3058
CBM-W1	CBM-W1	9.0697	Confirmed LTF	9.0697
TVA	TVA	2.0902	Confirmed LTF	2.0902
O-066	O-066	4.3075	Confirmed LTF	4.3075
CBM-S2	CBM-S2	18.0798	Confirmed LTF	18.0798
CBM-S1	CBM-S1	11.6383	Confirmed LTF	11.6383
G-007	G-007	0.6718	Confirmed LTF	0.6718
MADISON	MADISON	0.5927	Confirmed LTF	0.5927
MEC	MEC	1.4825	Confirmed LTF	1.4825
AA2-074	AA2-074	1.8099	LTF	1.8099

13.5.2 Index 2

ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC DC	MW IMPACT
149179314	313707	6FORK UNION	DVP	314765	6MTEAGLE	DVP	1	DVP_P1-2: LN 556-B	single	661.76	101.88	103.08	DC	7.92

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
313853	3PONTONDP	0.1175	80/20	0.1175
314333	6POWHATN	0.5026	80/20	0.5026
314429	3JTRSVLE	0.4701	80/20	0.4701
314572	3EMPORIA	0.0248	80/20	0.0248
314677	6BUCKING	0.8262	80/20	0.8262
314704	3LAWRENC	0.1498	80/20	0.1498
315153	1CLOVER1	12.0661	80/20	12.0661
315154	1CLOVER2	11.9459	80/20	11.9459
315158	1KERR 1	0.2503	80/20	0.2503
315159	1KERR 2	0.7008	80/20	0.7008
315160	1KERR 3	0.7008	80/20	0.7008
315161	1KERR 4	0.7008	80/20	0.7008
315162	1KERR 5	0.7008	80/20	0.7008
315163	1KERR 6	0.7008	80/20	0.7008
315164	1KERR 7	0.7008	80/20	0.7008
315191	1BEARGRDN G1	11.1138	80/20	11.1138
315192	1BEARGRDN G2	11.1138	80/20	11.1138
315193	1BEARGRDN S1	22.8730	80/20	22.8730
315266	1PLYWOOD A	0.8613	80/20	0.8613
920291	AA2-127	2.3088	80/20	2.3088
923572	AB1-173 C OP	0.7619	80/20	0.7619
923582	AB1-173AC OP	0.7619	80/20	0.7619
923911	AB2-031 C O1	0.7563	80/20	0.7563
923991	AB2-040 C O1	2.4834	80/20	2.4834
924021	AB2-043 C O1	0.4215	80/20	0.4215
924161	AB2-060 C OP	1.2385	80/20	1.2385
924301	AB2-077 C O1 (Suspended)	1.5268	80/20	1.5268
924311	AB2-078 C O1 (Suspended)	1.5268	80/20	1.5268
924321	AB2-079 C O1 (Suspended)	1.5268	80/20	1.5268
925171	AB2-174 C O1	0.4120	80/20	0.4120
925611	AC1-036 C	0.9926	80/20	0.9926
925781	AC1-054 C O1	3.8323	80/20	3.8323
925831	AC1-062	0.0698	80/20	0.0698
925991	AC1-075 C	3.0973	80/20	3.0973
926021	AC1-080 C	1.0351	80/20	1.0351
926271	AC1-105 C O1 (Suspended)	3.8528	80/20	3.8528
926451	AC1-116 C	-1.2114	Adder	-1.43
927251	AC1-221 C	1.0129	80/20	1.0129

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
927261	AC1-222 C	2.3539	80/20	2.3539
932511	AC2-071 C	4.7190	80/20	4.7190
932761	AC2-100 C	2.3312	80/20	2.3312
933501	AC2-165 C	14.0739	80/20	14.0739
934311	AD1-055 C	1.6344	80/20	1.6344
934341	AD1-058 C	2.5393	80/20	2.5393
934611	AD1-087 C O1	6.5833	80/20	6.5833
934621	AD1-088 C	18.2491	80/20	18.2491
934991	AD1-131 C	0.8326	80/20	0.8326
935171	AD1-152 C O1	6.5424	80/20	6.5424
935221	AD1-157 C	2.0350	80/20	2.0350
936261	AD2-033 C	12.9496	80/20	12.9496
936361	AD2-046 C O1	5.5797	80/20	5.5797
936481	AD2-063 C O1	13.1904	80/20	13.1904
937481	AD2-202 C O1	1.7446	80/20	1.7446
938371	AE1-056 C	8.7731	80/20	8.7731
938551	AE1-074 C	0.7727	80/20	0.7727
938561	AE1-075 C	2.5546	80/20	2.5546
938821	AE1-108 C	26.5834	80/20	26.5834
939181	AE1-148 C O1	5.5739	80/20	5.5739
940241	AE2-006	0.5050	80/20	0.5050
940661	AE2-053 O1	2.0644	80/20	2.0644
941011	AE2-092 C	20.8855	80/20	20.8855
941791	AE2-182 C	2.9648	80/20	2.9648
942451	AE2-258	1.8230	80/20	1.8230
942461	AE2-259 C O1	15.7908	80/20	15.7908
942751	AE2-291 C O1	4.3709	80/20	4.3709
942761	AE2-292 C O1	5.4422	80/20	5.4422
943901	AF1-058 C	1.3072	80/20	1.3072
943911	AF1-059	9.7380	80/20	9.7380
945811	AF1-246 C O1	6.6545	80/20	6.6545
946281	AF1-292 C	0.5161	80/20	0.5161
946291	AF1-293 C O1	34.5352	80/20	34.5352
946301	AF1-294 C	5.2376	80/20	5.2376
946591	AF1-323 C	8.5226	80/20	8.5226
957481	AF2-042 C O2	47.5320	80/20	47.5320
957911	AF2-085	1.5186	80/20	1.5186
958131	AF2-107 C	4.5188	80/20	4.5188
958211	AF2-115 C	3.1937	80/20	3.1937
958501	AF2-144 C	2.1534	80/20	2.1534
958801	AF2-171 C O2	19.3986	80/20	19.3986
959311	AF2-222 C	17.9610	80/20	17.9610
959531	AF2-244 C	1.9845	80/20	1.9845
959751	AF2-266 O2	7.9220	80/20	7.9220
960061	AF2-297 C O2	5.4797	80/20	5.4797
960081	AF2-299 C	0.8699	80/20	0.8699
960111	AF2-302 C	3.0991	80/20	3.0991
960811	AF2-372 C	0.9644	80/20	0.9644
960821	AF2-373 C	0.6692	80/20	0.6692
961061	AF2-397 C O2	28.3280	80/20	28.3280
961081	AF2-399 C	0.4122	80/20	0.4122
WEC	WEC	0.0847	Confirmed LTF	0.0847

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
LGEE	LGEE	0.1683	Confirmed LTF	0.1683
CPL	CPL	2.5382	Confirmed LTF	2.5382
CBM-W2	CBM-W2	6.0115	Confirmed LTF	6.0115
NY	NY	0.3832	Confirmed LTF	0.3832
CBM-W1	CBM-W1	2.8022	Confirmed LTF	2.8022
TVA	TVA	1.4504	Confirmed LTF	1.4504
CBM-S2	CBM-S2	16.2765	Confirmed LTF	16.2765
CBM-S1	CBM-S1	7.6510	Confirmed LTF	7.6510
MADISON	MADISON	0.6471	Confirmed LTF	0.6471
MEC	MEC	0.6992	Confirmed LTF	0.6992
AA2-074	AA2-074	1.7271	LTF	1.7271

13.5.3 Index 3

ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC DC	MW IMPACT
148824983	313802	6PRINCE EDW	DVP	314692	6FARMVIL	DVP	1	DVP_P4-2: 511T556	breaker	699.0	109.76	112.02	DC	15.85

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
315153	1CLOVER1	24.1422	50/50	24.1422
315154	1CLOVER2	23.9016	50/50	23.9016
315266	1PLYWOOD A	0.9389	50/50	0.9389
925611	AC1-036 C	-0.3478	Adder	-0.41
925991	AC1-075 C	3.1972	Adder	3.76
925992	AC1-075 E	1.8115	Adder	2.13
926021	AC1-080 C	1.0685	Adder	1.26
926022	AC1-080 E	0.6010	Adder	0.71
926271	AC1-105 C O1 (Suspended)	3.8688	50/50	3.8688
926272	AC1-105 E O1 (Suspended)	1.9259	50/50	1.9259
926451	AC1-116 C	-0.2683	Adder	-0.32
927251	AC1-221 C	1.4819	50/50	1.4819
927252	AC1-221 E	1.4819	50/50	1.4819
927261	AC1-222 C	3.0620	50/50	3.0620
927262	AC1-222 E	2.9149	50/50	2.9149
932761	AC2-100 C	3.4104	50/50	3.4104
932762	AC2-100 E	1.6646	50/50	1.6646
934311	AD1-055 C	2.1260	50/50	2.1260
934312	AD1-055 E	0.5482	50/50	0.5482
934341	AD1-058 C	3.7149	50/50	3.7149
934342	AD1-058 E	0.9439	50/50	0.9439
934611	AD1-087 C O1	12.3358	50/50	12.3358
934612	AD1-087 E O1	5.7976	50/50	5.7976
934621	AD1-088 C	41.9311	50/50	41.9311
934622	AD1-088 E	19.7323	50/50	19.7323
934991	AD1-131 C	1.2180	50/50	1.2180
934992	AD1-131 E	0.8120	50/50	0.8120
935171	AD1-152 C O1	12.2592	50/50	12.2592
935172	AD1-152 E O1	8.1728	50/50	8.1728
935221	AD1-157 C	-1.1710	Adder	-1.38
935222	AD1-157 E	-0.7807	Adder	-0.92
936161	AD2-022 C O1	2.9386	Adder	3.46
936162	AD2-022 E O1	1.7632	Adder	2.07
936171	AD2-023 C O1	1.7142	Adder	2.02
936172	AD2-023 E O1	0.9306	Adder	1.09
937481	AD2-202 C O1	3.2691	50/50	3.2691
937482	AD2-202 E O1	1.8389	50/50	1.8389
938561	AE1-075 C	-0.6494	Adder	-0.76
940241	AE2-006	-0.1769	Adder	-0.21
941791	AE2-182 C	6.8123	50/50	6.8123

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
941792	AE2-182 E	3.1713	50/50	3.1713
942751	AE2-291 C O1	4.3135	Adder	5.07
942752	AE2-291 E O1	2.8757	Adder	3.38
942761	AE2-292 C O1	5.3707	Adder	6.32
942762	AE2-292 E O1	3.5805	Adder	4.21
943901	AF1-058 C	1.7239	50/50	1.7239
943902	AF1-058 E	1.1493	50/50	1.1493
945811	AF1-246 C O1	13.3140	50/50	13.3140
945812	AF1-246 E O1	18.3860	50/50	18.3860
946293	AF1-293 BAT	7.5791	Merchant Transmission	7.5791
957481	AF2-042 C O2	95.1000	50/50	95.1000
957482	AF2-042 E O2	63.4000	50/50	63.4000
958503	AF2-144 BAT	0.3346	Merchant Transmission	0.3346
959751	AF2-266 O2	15.8500	50/50	15.8500
960061	AF2-297 C O2	9.3019	50/50	9.3019
960062	AF2-297 E O2	6.2013	50/50	6.2013
960821	AF2-373 C	0.2137	Adder	0.47
960822	AF2-373 E	0.3205	Adder	0.71
961063	AF2-397 BAT	5.3724	50/50	5.3724
WEC	WEC	0.2432	Confirmed LTF	0.2432
LGEE	LGEE	0.4604	Confirmed LTF	0.4604
CPL	CPL	2.6553	Confirmed LTF	2.6553
CBM-W2	CBM-W2	9.8853	Confirmed LTF	9.8853
NY	NY	0.3058	Confirmed LTF	0.3058
CBM-W1	CBM-W1	9.0697	Confirmed LTF	9.0697
TVA	TVA	2.0902	Confirmed LTF	2.0902
O-066	O-066	4.3075	Confirmed LTF	4.3075
CBM-S2	CBM-S2	18.0798	Confirmed LTF	18.0798
CBM-S1	CBM-S1	11.6383	Confirmed LTF	11.6383
G-007	G-007	0.6718	Confirmed LTF	0.6718
MADISON	MADISON	0.5927	Confirmed LTF	0.5927
MEC	MEC	1.4825	Confirmed LTF	1.4825
AA2-074	AA2-074	1.8099	LTF	1.8099

13.5.4 Index 4

ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC DC	MW IMPACT
106426222	313867	6BREMODIST	DVP	313707	6FORK UNION	DVP	1	DVP_P1-2: LN 556-B	single	661.76	102.2	103.49	DC	8.54

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
313853	3PONTONDP	0.1280	80/20	0.1280
314333	6POWHATN	0.5554	80/20	0.5554
314429	3JTRSVLE	0.5122	80/20	0.5122
314572	3EMPORIA	0.0272	80/20	0.0272
314677	6BUCKING	0.9062	80/20	0.9062
314704	3LAWRENC	0.1630	80/20	0.1630
315153	1CLOVER1	13.0021	80/20	13.0021
315154	1CLOVER2	12.8725	80/20	12.8725
315158	1KERR 1	0.2691	80/20	0.2691
315159	1KERR 2	0.7535	80/20	0.7535
315160	1KERR 3	0.7535	80/20	0.7535
315161	1KERR 4	0.7535	80/20	0.7535
315162	1KERR 5	0.7535	80/20	0.7535
315163	1KERR 6	0.7535	80/20	0.7535
315164	1KERR 7	0.7535	80/20	0.7535
315191	1BEARGRDN G1	12.2119	80/20	12.2119
315192	1BEARGRDN G2	12.2119	80/20	12.2119
315193	1BEARGRDN S1	25.1329	80/20	25.1329
315266	1PLYWOOD A	0.9082	80/20	0.9082
920291	AA2-127	2.5369	80/20	2.5369
923572	AB1-173 C OP	0.8339	80/20	0.8339
923582	AB1-173AC OP	0.8339	80/20	0.8339
923911	AB2-031 C O1	0.8277	80/20	0.8277
923991	AB2-040 C O1	2.7179	80/20	2.7179
924021	AB2-043 C O1	0.4547	80/20	0.4547
924161	AB2-060 C OP	1.3368	80/20	1.3368
924301	AB2-077 C O1 (Suspended)	1.6458	80/20	1.6458
924311	AB2-078 C O1 (Suspended)	1.6458	80/20	1.6458
924321	AB2-079 C O1 (Suspended)	1.6458	80/20	1.6458
925171	AB2-174 C O1	0.4511	80/20	0.4511
925611	AC1-036 C	1.0777	80/20	1.0777
925781	AC1-054 C O1	4.1305	80/20	4.1305
925831	AC1-062	0.0760	80/20	0.0760
925991	AC1-075 C	2.9357	80/20	2.9357
926021	AC1-080 C	0.9811	80/20	0.9811
926271	AC1-105 C O1 (Suspended)	4.0693	80/20	4.0693
926451	AC1-116 C	-1.0918	Adder	-1.28
927251	AC1-221 C	1.0627	80/20	1.0627

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
927261	AC1-222 C	2.4288	80/20	2.4288
932511	AC2-071 C	5.1757	80/20	5.1757
932761	AC2-100 C	2.4457	80/20	2.4457
933501	AC2-165 C	15.5274	80/20	15.5274
934311	AD1-055 C	1.6864	80/20	1.6864
934341	AD1-058 C	2.6641	80/20	2.6641
934611	AD1-087 C O1	7.0557	80/20	7.0557
934621	AD1-088 C	19.9085	80/20	19.9085
934991	AD1-131 C	0.8735	80/20	0.8735
935171	AD1-152 C O1	7.0118	80/20	7.0118
935221	AD1-157 C	2.2191	80/20	2.2191
936261	AD2-033 C	14.0478	80/20	14.0478
936361	AD2-046 C O1	6.0033	80/20	6.0033
936481	AD2-063 C O1	14.2722	80/20	14.2722
937481	AD2-202 C O1	1.8698	80/20	1.8698
938371	AE1-056 C	9.5669	80/20	9.5669
938551	AE1-074 C	0.8794	80/20	0.8794
938561	AE1-075 C	2.8232	80/20	2.8232
939181	AE1-148 C O1	5.9983	80/20	5.9983
940241	AE2-006	0.5483	80/20	0.5483
940661	AE2-053 O1	2.2216	80/20	2.2216
941791	AE2-182 C	3.2344	80/20	3.2344
942451	AE2-258	1.9665	80/20	1.9665
942461	AE2-259 C O1	17.2536	80/20	17.2536
942751	AE2-291 C O1	3.9150	80/20	3.9150
942761	AE2-292 C O1	4.8745	80/20	4.8745
943901	AF1-058 C	1.3716	80/20	1.3716
943911	AF1-059	10.5510	80/20	10.5510
945811	AF1-246 C O1	7.1702	80/20	7.1702
946281	AF1-292 C	0.5660	80/20	0.5660
946301	AF1-294 C	5.7065	80/20	5.7065
957481	AF2-042 C O2	51.2160	80/20	51.2160
957911	AF2-085	1.7128	80/20	1.7128
958211	AF2-115 C	3.4796	80/20	3.4796
958501	AF2-144 C	2.3799	80/20	2.3799
958801	AF2-171 C O2	21.1383	80/20	21.1383
959311	AF2-222 C	19.5130	80/20	19.5130
959531	AF2-244 C	2.1932	80/20	2.1932
959751	AF2-266 O2	8.5360	80/20	8.5360
960061	AF2-297 C O2	5.8291	80/20	5.8291
960081	AF2-299 C	0.9539	80/20	0.9539
960811	AF2-372 C	1.0396	80/20	1.0396
960821	AF2-373 C	0.7112	80/20	0.7112
961081	AF2-399 C	0.4490	80/20	0.4490
WEC	WEC	0.0173	Confirmed LTF	0.0173
LGEE	LGEE	0.0359	Confirmed LTF	0.0359
CPL	CPL	2.6228	Confirmed LTF	2.6228
CBM-W2	CBM-W2	4.3817	Confirmed LTF	4.3817
NY	NY	0.3478	Confirmed LTF	0.3478
CBM-W1	CBM-W1	0.2127	Confirmed LTF	0.2127
TVA	TVA	1.1760	Confirmed LTF	1.1760
CBM-S2	CBM-S2	16.1898	Confirmed LTF	16.1898

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
CBM-S1	CBM-S1	5.9299	Confirmed LTF	5.9299
MADISON	MADISON	0.6895	Confirmed LTF	0.6895
MEC	MEC	0.3655	Confirmed LTF	0.3655
AA2-074	AA2-074	1.7833	LTF	1.7833

13.5.5 Index 5

ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC DC	MW IMPACT
148824974	314268	6BRIERY	DVP	313802	6PRINCE EDW	DVP	1	DVP_P4-2: 511T556	breaker	699.0	110.63	112.9	DC	15.85

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
315153	1CLOVER1	24.1422	50/50	24.1422
315154	1CLOVER2	23.9016	50/50	23.9016
315266	1PLYWOOD A	0.9389	50/50	0.9389
925611	AC1-036 C	-0.3478	Adder	-0.41
925991	AC1-075 C	3.1972	Adder	3.76
925992	AC1-075 E	1.8115	Adder	2.13
926021	AC1-080 C	1.0685	Adder	1.26
926022	AC1-080 E	0.6010	Adder	0.71
926271	AC1-105 C O1 (Suspended)	3.8688	50/50	3.8688
926272	AC1-105 E O1 (Suspended)	1.9259	50/50	1.9259
926451	AC1-116 C	-0.2683	Adder	-0.32
927251	AC1-221 C	1.4819	50/50	1.4819
927252	AC1-221 E	1.4819	50/50	1.4819
927261	AC1-222 C	3.0620	50/50	3.0620
927262	AC1-222 E	2.9149	50/50	2.9149
932761	AC2-100 C	3.4104	50/50	3.4104
932762	AC2-100 E	1.6646	50/50	1.6646
934311	AD1-055 C	2.1260	50/50	2.1260
934312	AD1-055 E	0.5482	50/50	0.5482
934341	AD1-058 C	3.7149	50/50	3.7149
934342	AD1-058 E	0.9439	50/50	0.9439
934611	AD1-087 C O1	12.3358	50/50	12.3358
934612	AD1-087 E O1	5.7976	50/50	5.7976
934621	AD1-088 C	41.9311	50/50	41.9311
934622	AD1-088 E	19.7323	50/50	19.7323
934991	AD1-131 C	1.2180	50/50	1.2180
934992	AD1-131 E	0.8120	50/50	0.8120
935171	AD1-152 C O1	12.2592	50/50	12.2592
935172	AD1-152 E O1	8.1728	50/50	8.1728
935221	AD1-157 C	-1.1710	Adder	-1.38
935222	AD1-157 E	-0.7807	Adder	-0.92
936161	AD2-022 C O1	2.9386	Adder	3.46
936162	AD2-022 E O1	1.7632	Adder	2.07
936171	AD2-023 C O1	1.7142	Adder	2.02
936172	AD2-023 E O1	0.9306	Adder	1.09
937481	AD2-202 C O1	3.2691	50/50	3.2691
937482	AD2-202 E O1	1.8389	50/50	1.8389
938561	AE1-075 C	-0.6494	Adder	-0.76
940241	AE2-006	-0.1769	Adder	-0.21
941791	AE2-182 C	6.8123	50/50	6.8123

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
941792	AE2-182 E	3.1713	50/50	3.1713
942751	AE2-291 C O1	4.3135	Adder	5.07
942752	AE2-291 E O1	2.8757	Adder	3.38
942761	AE2-292 C O1	5.3707	Adder	6.32
942762	AE2-292 E O1	3.5805	Adder	4.21
943901	AF1-058 C	1.7239	50/50	1.7239
943902	AF1-058 E	1.1493	50/50	1.1493
945811	AF1-246 C O1	13.3140	50/50	13.3140
945812	AF1-246 E O1	18.3860	50/50	18.3860
946293	AF1-293 BAT	7.5791	Merchant Transmission	7.5791
957481	AF2-042 C O2	95.1000	50/50	95.1000
957482	AF2-042 E O2	63.4000	50/50	63.4000
958503	AF2-144 BAT	0.3346	Merchant Transmission	0.3346
959751	AF2-266 O2	15.8500	50/50	15.8500
960061	AF2-297 C O2	9.3019	50/50	9.3019
960062	AF2-297 E O2	6.2013	50/50	6.2013
960821	AF2-373 C	0.2137	Adder	0.47
960822	AF2-373 E	0.3205	Adder	0.71
961063	AF2-397 BAT	5.3724	50/50	5.3724
WEC	WEC	0.2432	Confirmed LTF	0.2432
LGEE	LGEE	0.4604	Confirmed LTF	0.4604
CPL	CPL	2.6553	Confirmed LTF	2.6553
CBM-W2	CBM-W2	9.8853	Confirmed LTF	9.8853
NY	NY	0.3058	Confirmed LTF	0.3058
CBM-W1	CBM-W1	9.0697	Confirmed LTF	9.0697
TVA	TVA	2.0902	Confirmed LTF	2.0902
O-066	O-066	4.3075	Confirmed LTF	4.3075
CBM-S2	CBM-S2	18.0798	Confirmed LTF	18.0798
CBM-S1	CBM-S1	11.6383	Confirmed LTF	11.6383
G-007	G-007	0.6718	Confirmed LTF	0.6718
MADISON	MADISON	0.5927	Confirmed LTF	0.5927
MEC	MEC	1.4825	Confirmed LTF	1.4825
AA2-074	AA2-074	1.8099	LTF	1.8099

13.5.6 Index 6

ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC DC	MW IMPACT
97790403	314677	6BUCKING	DVP	314747	6BREMO	DVP	1	DVP_P4-2: 511T556	breaker	699.0	148.86	149.74	DC	14.75

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
313853	3PONTONDP	0.2225	50/50	0.2225
314429	3JTRSVLE	0.8900	50/50	0.8900
314677	6BUCKING	1.6254	50/50	1.6254
315153	1CLOVER1	22.4668	50/50	22.4668
315154	1CLOVER2	22.2429	50/50	22.2429
924022	AB2-043 E O1	3.2830	Adder	3.86
924032	AB2-045 E	4.3975	50/50	4.3975
924162	AB2-060 E OP	5.0960	Adder	6.0
924301	AB2-077 C O1 (Suspended)	2.2889	Adder	2.69
924302	AB2-077 E O1 (Suspended)	1.5259	Adder	1.8
924311	AB2-078 C O1 (Suspended)	2.2889	Adder	2.69
924312	AB2-078 E O1 (Suspended)	1.5259	Adder	1.8
924321	AB2-079 C O1 (Suspended)	2.2889	Adder	2.69
924322	AB2-079 E O1 (Suspended)	1.5259	Adder	1.8
925611	AC1-036 C	1.8363	50/50	1.8363
925612	AC1-036 E	2.9961	50/50	2.9961
925781	AC1-054 C O1	5.1714	Adder	6.08
925782	AC1-054 E O1	2.3823	Adder	2.8
925831	AC1-062	0.1321	50/50	0.1321
925991	AC1-075 C	4.2224	Adder	4.97
925992	AC1-075 E	2.3923	Adder	2.81
926021	AC1-080 C	1.4111	Adder	1.66
926022	AC1-080 E	0.7938	Adder	0.93
926271	AC1-105 C O1 (Suspended)	5.7567	Adder	6.77
926272	AC1-105 E O1 (Suspended)	2.8657	Adder	3.37
926451	AC1-116 C	-0.3880	Adder	-0.46
927251	AC1-221 C	1.4229	Adder	1.67
927252	AC1-221 E	1.4229	Adder	1.67
927261	AC1-222 C	3.4591	Adder	4.07
927262	AC1-222 E	3.2930	Adder	3.87
932511	AC2-071 C	9.2835	50/50	9.2835
932512	AC2-071 E	4.6767	50/50	4.6767
932761	AC2-100 C	3.2747	Adder	3.85
932762	AC2-100 E	1.5984	Adder	1.88

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
934311	AD1-055 C	2.4018	Adder	2.83
934312	AD1-055 E	0.6193	Adder	0.73
934341	AD1-058 C	3.5671	Adder	4.2
934342	AD1-058 E	0.9064	Adder	1.07
934611	AD1-087 C O1	10.2490	Adder	12.06
934612	AD1-087 E O1	4.8168	Adder	5.67
934621	AD1-088 C	35.2759	50/50	35.2759
934622	AD1-088 E	16.6004	50/50	16.6004
934991	AD1-131 C	1.1695	Adder	1.38
934992	AD1-131 E	0.7797	Adder	0.92
935171	AD1-152 C O1	10.1853	Adder	11.98
935172	AD1-152 E O1	6.7902	Adder	7.99
935221	AD1-157 C	3.8759	50/50	3.8759
935222	AD1-157 E	2.5840	50/50	2.5840
936261	AD2-033 C	23.8079	50/50	23.8079
936262	AD2-033 E	15.8720	50/50	15.8720
936361	AD2-046 C O1	7.9875	Adder	9.4
936362	AD2-046 E O1	3.6731	Adder	4.32
936481	AD2-063 C O1	20.2427	Adder	23.81
936482	AD2-063 E O1	13.3827	Adder	15.74
937481	AD2-202 C O1	2.7161	Adder	3.2
937482	AD2-202 E O1	1.5278	Adder	1.8
938371	AE1-056 C	16.7096	50/50	16.7096
938372	AE1-056 E	9.1300	50/50	9.1300
939181	AE1-148 C O1	8.0045	Adder	9.42
939182	AE1-148 E O1	5.3363	Adder	6.28
940241	AE2-006	0.9343	50/50	0.9343
940661	AE2-053 O1	2.9646	Adder	3.49
941791	AE2-182 C	5.7311	50/50	5.7311
941792	AE2-182 E	2.6679	50/50	2.6679
942451	AE2-258	2.7391	Adder	3.22
942461	AE2-259 C O1	30.4818	50/50	30.4818
942462	AE2-259 E O1	20.3212	50/50	20.3212
942751	AE2-291 C O1	5.6712	Adder	6.67
942752	AE2-291 E O1	3.7808	Adder	4.45
942761	AE2-292 C O1	7.0612	Adder	8.31
942762	AE2-292 E O1	4.7075	Adder	5.54
943901	AF1-058 C	1.9498	Adder	2.29
943902	AF1-058 E	1.2999	Adder	1.53
943911	AF1-059	13.3220	Adder	15.67
945811	AF1-246 C O1	10.5311	Adder	12.39
945812	AF1-246 E O1	17.1094	50/50	17.1094
946293	AF1-293 BAT	11.0414	Merchant Transmission	11.0414
946301	AF1-294 C	9.9165	50/50	9.9165
946302	AF1-294 E	6.6110	50/50	6.6110
957481	AF2-042 C O2	88.4970	50/50	88.4970
957482	AF2-042 E O2	58.9980	50/50	58.9980
958211	AF2-115 C	6.0467	50/50	6.0467
958212	AF2-115 E	4.0311	50/50	4.0311
958801	AF2-171 C O2	36.7731	50/50	36.7731
958802	AF2-171 E O2	24.5154	50/50	24.5154
959311	AF2-222 C	33.3580	50/50	33.3580

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
959312	AF2-222 E	22.3499	50/50	22.3499
959751	AF2-266 O2	6.6446	Adder	14.75
960061	AF2-297 C O2	4.4171	Adder	9.8
960062	AF2-297 E O2	2.9448	Adder	6.54
960811	AF2-372 C	0.7663	Adder	1.7
960812	AF2-372 E	1.2505	Adder	2.78
960821	AF2-373 C	0.5309	Adder	1.18
960822	AF2-373 E	0.7963	Adder	1.77
961063	AF2-397 BAT	4.1525	Merchant Transmission	4.1525
961081	AF2-399 C	0.7802	50/50	0.7802
961082	AF2-399 E	1.3191	50/50	1.3191
WEC	WEC	0.2974	Confirmed LTF	0.2974
LGEE	LGEE	0.5619	Confirmed LTF	0.5619
CPL	CPL	3.4934	Confirmed LTF	3.4934
CBM-W2	CBM-W2	12.4079	Confirmed LTF	12.4079
NY	NY	0.3932	Confirmed LTF	0.3932
CBM-W1	CBM-W1	11.0588	Confirmed LTF	11.0588
TVA	TVA	2.6432	Confirmed LTF	2.6432
O-066	O-066	5.4835	Confirmed LTF	5.4835
CBM-S2	CBM-S2	23.4437	Confirmed LTF	23.4437
CBM-S1	CBM-S1	14.6544	Confirmed LTF	14.6544
G-007	G-007	0.8549	Confirmed LTF	0.8549
MADISON	MADISON	0.7822	Confirmed LTF	0.7822
MEC	MEC	1.8337	Confirmed LTF	1.8337
AA2-074	AA2-074	2.3805	LTF	2.3805

13.5.7 Index 7

ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC DC	MW IMPACT
106426244	314686	6CLOVER	DVP	934610	AD1-087 TAP	DVP	1	DVP_P1-2: LN 556-B	single	814.98	111.74	115.91	DC	33.95

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
313853	3PONTONDP	0.0707	80/20	0.0707
314333	6POWHATN	0.1384	80/20	0.1384
314429	3JTRSVLE	0.2828	80/20	0.2828
314677	6BUCKING	0.4694	80/20	0.4694
315153	1CLOVER1	51.7091	80/20	51.7091
315154	1CLOVER2	51.1938	80/20	51.1938
315191	1BEARGRDN G1	3.1145	80/20	3.1145
315192	1BEARGRDN G2	3.1145	80/20	3.1145
315193	1BEARGRDN S1	6.4099	80/20	6.4099
920291	AA2-127	0.6470	80/20	0.6470
925611	AC1-036 C	0.3848	80/20	0.3848
925831	AC1-062	0.0420	80/20	0.0420
925991	AC1-075 C	-3.3297	Adder	-3.92
926021	AC1-080 C	-1.1128	Adder	-1.31
926271	AC1-105 C O1 (Suspended)	-3.4045	Adder	-4.01
926451	AC1-116 C	0.2932	80/20	0.2932
927251	AC1-221 C	-1.3047	Adder	-1.53
927261	AC1-222 C	-2.6803	Adder	-3.15
932511	AC2-071 C	2.6809	80/20	2.6809
933501	AC2-165 C	3.8965	80/20	3.8965
934311	AD1-055 C	-1.8610	Adder	-2.19
934341	AD1-058 C	-3.2706	Adder	-3.85
934621	AD1-088 C	29.1619	80/20	29.1619
935221	AD1-157 C	1.3385	80/20	1.3385
936261	AD2-033 C	4.2728	80/20	4.2728
938371	AE1-056 C	5.7703	80/20	5.7703
938561	AE1-075 C	0.7037	80/20	0.7037
938821	AE1-108 C	6.5977	80/20	6.5977
940241	AE2-006	0.1958	80/20	0.1958
941011	AE2-092 C	6.4559	80/20	6.4559
941791	AE2-182 C	4.7378	80/20	4.7378
942461	AE2-259 C O1	12.3990	80/20	12.3990
945811	AF1-246 C O1	28.5180	80/20	28.5180
946291	AF1-293 C O1	9.6964	80/20	9.6964
946301	AF1-294 C	3.1505	80/20	3.1505
946591	AF1-323 C	2.0140	80/20	2.0140
957481	AF2-042 C O2	203.7000	80/20	203.7000
958211	AF2-115 C	1.9211	80/20	1.9211
958501	AF2-144 C	0.5932	80/20	0.5932
958801	AF2-171 C O2	11.8980	80/20	11.8980
959311	AF2-222 C	7.6050	80/20	7.6050

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
959531	AF2-244 C	0.5467	80/20	0.5467
959751	AF2-266 O2	33.9500	80/20	33.9500
960111	AF2-302 C	0.7324	80/20	0.7324
961061	AF2-397 C O2	7.5925	80/20	7.5925
961081	AF2-399 C	0.2471	80/20	0.2471
NEWTON	NEWTON	1.4044	Confirmed LTF	1.4044
FARMERCITY	FARMERCITY	0.0797	Confirmed LTF	0.0797
G-007A	G-007A	0.4100	Confirmed LTF	0.4100
VFT	VFT	1.0772	Confirmed LTF	1.0772
CALDERWOOD	CALDERWOOD	1.0760	Confirmed LTF	1.0760
PRAIRIE	PRAIRIE	3.7479	Confirmed LTF	3.7479
CHEOAH	CHEOAH	1.1026	Confirmed LTF	1.1026
EDWARDS	EDWARDS	0.4263	Confirmed LTF	0.4263
TILTON	TILTON	0.7566	Confirmed LTF	0.7566
GIBSON	GIBSON	0.6825	Confirmed LTF	0.6825
BLUEG	BLUEG	2.1162	Confirmed LTF	2.1162
TRIMBLE	TRIMBLE	0.6723	Confirmed LTF	0.6723
CATAWBA	CATAWBA	1.1473	Confirmed LTF	1.1473

13.5.8 Index 8

ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC DC	MW IMPACT
97790418	314692	6FARMVIL	DVP	314677	6BUCKING	DVP	1	DVP_P4-2: 556T591	breaker	684.0	148.06	148.96	DC	14.75

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
313853	3PONTONDP	0.2225	50/50	0.2225
314429	3JTRSVLE	0.8902	50/50	0.8902
315153	1CLOVER1	22.4721	50/50	22.4721
315154	1CLOVER2	22.2481	50/50	22.2481
924022	AB2-043 E O1	3.2840	Adder	3.86
924162	AB2-060 E OP	5.0975	Adder	6.0
924301	AB2-077 C O1 (Suspended)	2.2896	Adder	2.69
924302	AB2-077 E O1 (Suspended)	1.5264	Adder	1.8
924311	AB2-078 C O1 (Suspended)	2.2896	Adder	2.69
924312	AB2-078 E O1 (Suspended)	1.5264	Adder	1.8
924321	AB2-079 C O1 (Suspended)	2.2896	Adder	2.69
924322	AB2-079 E O1 (Suspended)	1.5264	Adder	1.8
925611	AC1-036 C	1.8367	50/50	1.8367
925612	AC1-036 E	2.9967	50/50	2.9967
925781	AC1-054 C O1	5.1741	Adder	6.09
925782	AC1-054 E O1	2.3836	Adder	2.8
925831	AC1-062	0.1321	50/50	0.1321
925991	AC1-075 C	4.2247	Adder	4.97
925992	AC1-075 E	2.3936	Adder	2.82
926021	AC1-080 C	1.4119	Adder	1.66
926022	AC1-080 E	0.7942	Adder	0.93
926271	AC1-105 C O1 (Suspended)	5.7587	Adder	6.77
926272	AC1-105 E O1 (Suspended)	2.8667	Adder	3.37
926451	AC1-116 C	-0.3877	Adder	-0.46
927251	AC1-221 C	1.4238	Adder	1.68
927252	AC1-221 E	1.4238	Adder	1.68
927261	AC1-222 C	3.4605	Adder	4.07
927262	AC1-222 E	3.2943	Adder	3.88
932761	AC2-100 C	3.2767	Adder	3.85
932762	AC2-100 E	1.5993	Adder	1.88
934311	AD1-055 C	2.4027	Adder	2.83
934312	AD1-055 E	0.6196	Adder	0.73
934341	AD1-058 C	3.5693	Adder	4.2
934342	AD1-058 E	0.9069	Adder	1.07

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
934611	AD1-087 C O1	10.2518	Adder	12.06
934612	AD1-087 E O1	4.8182	Adder	5.67
934621	AD1-088 C	35.2809	50/50	35.2809
934622	AD1-088 E	16.6028	50/50	16.6028
934991	AD1-131 C	1.1702	Adder	1.38
934992	AD1-131 E	0.7802	Adder	0.92
935171	AD1-152 C O1	10.1882	Adder	11.99
935172	AD1-152 E O1	6.7921	Adder	7.99
935221	AD1-157 C	3.8766	50/50	3.8766
935222	AD1-157 E	2.5844	50/50	2.5844
936261	AD2-033 C	23.8134	50/50	23.8134
936262	AD2-033 E	15.8756	50/50	15.8756
936361	AD2-046 C O1	7.9908	Adder	9.4
936362	AD2-046 E O1	3.6746	Adder	4.32
936481	AD2-063 C O1	20.2480	Adder	23.82
936482	AD2-063 E O1	13.3862	Adder	15.75
937481	AD2-202 C O1	2.7168	Adder	3.2
937482	AD2-202 E O1	1.5282	Adder	1.8
938371	AE1-056 C	16.7123	50/50	16.7123
938372	AE1-056 E	9.1315	50/50	9.1315
938561	AE1-075 C	-0.9180	Adder	-1.08
939181	AE1-148 C O1	8.0077	Adder	9.42
939182	AE1-148 E O1	5.3385	Adder	6.28
940241	AE2-006	0.9345	50/50	0.9345
940661	AE2-053 O1	2.9658	Adder	3.49
941791	AE2-182 C	5.7319	50/50	5.7319
941792	AE2-182 E	2.6683	50/50	2.6683
942451	AE2-258	2.7399	Adder	3.22
942461	AE2-259 C O1	30.4860	50/50	30.4860
942462	AE2-259 E O1	20.3240	50/50	20.3240
942751	AE2-291 C O1	5.6749	Adder	6.68
942752	AE2-291 E O1	3.7832	Adder	4.45
942761	AE2-292 C O1	7.0658	Adder	8.31
942762	AE2-292 E O1	4.7105	Adder	5.54
943901	AF1-058 C	1.9505	Adder	2.29
943902	AF1-058 E	1.3004	Adder	1.53
943911	AF1-059	13.3280	Adder	15.68
945811	AF1-246 C O1	10.5336	Adder	12.39
945812	AF1-246 E O1	17.1135	50/50	17.1135
946293	AF1-293 BAT	11.0357	Merchant Transmission	11.0357
946301	AF1-294 C	9.9182	50/50	9.9182
946302	AF1-294 E	6.6122	50/50	6.6122
957481	AF2-042 C O2	88.5180	50/50	88.5180
957482	AF2-042 E O2	59.0120	50/50	59.0120
958211	AF2-115 C	6.0477	50/50	6.0477
958212	AF2-115 E	4.0318	50/50	4.0318
958503	AF2-144 BAT	0.4731	Merchant Transmission	0.4731
958801	AF2-171 C O2	36.7794	50/50	36.7794
958802	AF2-171 E O2	24.5196	50/50	24.5196
959311	AF2-222 C	33.3650	50/50	33.3650
959312	AF2-222 E	22.3545	50/50	22.3545
959751	AF2-266 O2	6.6462	Adder	14.75

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
960061	AF2-297 C O2	4.4186	Adder	9.81
960062	AF2-297 E O2	2.9458	Adder	6.54
960811	AF2-372 C	0.7665	Adder	1.7
960812	AF2-372 E	1.2509	Adder	2.78
960821	AF2-373 C	0.5310	Adder	1.18
960822	AF2-373 E	0.7965	Adder	1.77
961063	AF2-397 BAT	4.1505	Merchant Transmission	4.1505
961081	AF2-399 C	0.7803	50/50	0.7803
961082	AF2-399 E	1.3193	50/50	1.3193
WEC	WEC	0.2996	Confirmed LTF	0.2996
LGEE	LGEE	0.5659	Confirmed LTF	0.5659
CPL	CPL	3.4980	Confirmed LTF	3.4980
CBM-W2	CBM-W2	12.4652	Confirmed LTF	12.4652
NY	NY	0.3893	Confirmed LTF	0.3893
CBM-W1	CBM-W1	11.1464	Confirmed LTF	11.1464
TVA	TVA	2.6530	Confirmed LTF	2.6530
O-066	O-066	5.4365	Confirmed LTF	5.4365
CBM-S2	CBM-S2	23.4841	Confirmed LTF	23.4841
CBM-S1	CBM-S1	14.7140	Confirmed LTF	14.7140
G-007	G-007	0.8476	Confirmed LTF	0.8476
MADISON	MADISON	0.7822	Confirmed LTF	0.7822
MEC	MEC	1.8448	Confirmed LTF	1.8448
AA2-074	AA2-074	2.3836	LTF	2.3836

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ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC DC	MW IMPACT
106425929	314697	6SEEDGE HILL	DVP	927250	AC1-221 TAP	DVP	1	DVP_P1-2: LN 556-B	single	674.92	132.27	135.6	DC	25.89

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
313853	3PONTONDP	0.1294	80/20	0.1294
314429	3JTRSVLE	0.5174	80/20	0.5174
314677	6BUCKING	0.4258	80/20	0.4258
315153	1CLOVER1	39.4381	80/20	39.4381
315154	1CLOVER2	39.0451	80/20	39.0451
315156	1HALLBR1	1.1309	80/20	1.1309
315158	1KERR 1	0.3659	80/20	0.3659
315159	1KERR 2	1.0244	80/20	1.0244
315160	1KERR 3	1.0244	80/20	1.0244
315161	1KERR 4	1.0244	80/20	1.0244
315162	1KERR 5	1.0244	80/20	1.0244
315163	1KERR 6	1.0244	80/20	1.0244
315164	1KERR 7	1.0244	80/20	1.0244
315192	1BEARGRDN G2	2.8787	80/20	2.8787
315193	1BEARGRDN S1	5.9246	80/20	5.9246
315266	1PLYWOOD A	3.3432	80/20	3.3432
924021	AB2-043 C O1	0.7329	80/20	0.7329
924161	AB2-060 C OP	2.1135	80/20	2.1135
924301	AB2-077 C O1 (Suspended)	2.7328	80/20	2.7328
924311	AB2-078 C O1 (Suspended)	2.7328	80/20	2.7328
924321	AB2-079 C O1 (Suspended)	2.7328	80/20	2.7328
925611	AC1-036 C	1.3105	80/20	1.3105
925661	AC1-042 C	1.3657	Adder	1.61
925781	AC1-054 C O1	5.0298	80/20	5.0298
925831	AC1-062	0.0768	80/20	0.0768
925991	AC1-075 C	11.9864	80/20	11.9864
926021	AC1-080 C	4.0059	80/20	4.0059
926271	AC1-105 C O1 (Suspended)	14.5305	80/20	14.5305
926641	AC1-145 C	1.6258	Adder	1.91
927251	AC1-221 C	-2.4414	Adder	-2.87
927261	AC1-222 C	10.1431	80/20	10.1431
932511	AC2-071 C	2.4320	80/20	2.4320
934311	AD1-055 C	7.0426	80/20	7.0426
934341	AD1-058 C	-6.1203	Adder	-7.2
934611	AD1-087 C O1	27.0094	80/20	27.0094
934621	AD1-088 C	24.0247	80/20	24.0247
935171	AD1-152 C O1	26.8416	80/20	26.8416
935221	AD1-157 C	2.1223	80/20	2.1223

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
936261	AD2-033 C	17.8675	80/20	17.8675
936361	AD2-046 C O1	8.4639	80/20	8.4639
936481	AD2-063 C O1	20.4093	80/20	20.4093
937481	AD2-202 C O1	7.1578	80/20	7.1578
938371	AE1-056 C	9.1494	80/20	9.1494
939181	AE1-148 C O1	8.5347	80/20	8.5347
939941	AE1-230 C	0.6161	Adder	0.72
940241	AE2-006	0.6667	80/20	0.6667
940661	AE2-053 O1	3.1610	80/20	3.1610
941791	AE2-182 C	3.9032	80/20	3.9032
941801	AE2-185 C	3.0805	Adder	3.62
941821	AE2-187 C	3.0805	Adder	3.62
942451	AE2-258	3.1698	80/20	3.1698
942461	AE2-259 C O1	14.4012	80/20	14.4012
942671	AE2-283 C	3.3886	Adder	3.99
942751	AE2-291 C O1	15.7260	80/20	15.7260
942761	AE2-292 C O1	19.5804	80/20	19.5804
943901	AF1-058 C	5.7522	80/20	5.7522
943911	AF1-059	14.3780	80/20	14.3780
945081	AF1-173	1.1937	Adder	1.4
945811	AF1-246 C O1	21.7505	80/20	21.7505
946301	AF1-294 C	5.7653	80/20	5.7653
957481	AF2-042 C O2	155.3610	80/20	155.3610
958211	AF2-115 C	3.5154	80/20	3.5154
958801	AF2-171 C O2	21.1149	80/20	21.1149
959311	AF2-222 C	23.0530	80/20	23.0530
959751	AF2-266 O2	25.8935	80/20	25.8935
960061	AF2-297 C O2	28.8259	80/20	28.8259
960811	AF2-372 C	1.7262	80/20	1.7262
960821	AF2-373 C	2.1290	80/20	2.1290
961081	AF2-399 C	0.4546	80/20	0.4546
961121	AF2-403	0.3628	Adder	0.81
NEWTON	NEWTON	1.6150	Confirmed LTF	1.6150
FARMERCITY	FARMERCITY	0.0953	Confirmed LTF	0.0953
G-007A	G-007A	0.4939	Confirmed LTF	0.4939
VFT	VFT	1.3094	Confirmed LTF	1.3094
CALDERWOOD	CALDERWOOD	1.4284	Confirmed LTF	1.4284
PRAIRIE	PRAIRIE	4.4893	Confirmed LTF	4.4893
AC1-131	AC1-131	5.1015	LTF	5.1015
CHEOAH	CHEOAH	1.4720	Confirmed LTF	1.4720
EDWARDS	EDWARDS	0.4816	Confirmed LTF	0.4816
TILTON	TILTON	0.8429	Confirmed LTF	0.8429
GIBSON	GIBSON	0.7671	Confirmed LTF	0.7671
BLUEG	BLUEG	2.3314	Confirmed LTF	2.3314
TRIMBLE	TRIMBLE	0.7379	Confirmed LTF	0.7379
CATAWBA	CATAWBA	1.6961	Confirmed LTF	1.6961

13.5.10 Index 10

ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC DC	MW IMPACT
106426205	314747	6BREMO	DVP	313867	6BREMODIST	DVP	1	DVP_P1-2: LN 556-B	single	661.76	104.56	105.85	DC	8.54

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
313853	3PONTONDP	0.1280	80/20	0.1280
314333	6POWHATN	0.5554	80/20	0.5554
314429	3JTRSVLE	0.5122	80/20	0.5122
314572	3EMPORIA	0.0272	80/20	0.0272
314677	6BUCKING	0.9062	80/20	0.9062
314704	3LAWRENC	0.1630	80/20	0.1630
315153	1CLOVER1	13.0021	80/20	13.0021
315154	1CLOVER2	12.8725	80/20	12.8725
315158	1KERR 1	0.2691	80/20	0.2691
315159	1KERR 2	0.7535	80/20	0.7535
315160	1KERR 3	0.7535	80/20	0.7535
315161	1KERR 4	0.7535	80/20	0.7535
315162	1KERR 5	0.7535	80/20	0.7535
315163	1KERR 6	0.7535	80/20	0.7535
315164	1KERR 7	0.7535	80/20	0.7535
315191	1BEARGRDN G1	12.2119	80/20	12.2119
315192	1BEARGRDN G2	12.2119	80/20	12.2119
315193	1BEARGRDN S1	25.1329	80/20	25.1329
315266	1PLYWOOD A	0.9082	80/20	0.9082
920291	AA2-127	2.5369	80/20	2.5369
923572	AB1-173 C OP	0.8339	80/20	0.8339
923582	AB1-173AC OP	0.8339	80/20	0.8339
923911	AB2-031 C O1	0.8277	80/20	0.8277
923991	AB2-040 C O1	2.7179	80/20	2.7179
924021	AB2-043 C O1	0.4547	80/20	0.4547
924161	AB2-060 C OP	1.3368	80/20	1.3368
924301	AB2-077 C O1 (Suspended)	1.6458	80/20	1.6458
924311	AB2-078 C O1 (Suspended)	1.6458	80/20	1.6458
924321	AB2-079 C O1 (Suspended)	1.6458	80/20	1.6458
925171	AB2-174 C O1	0.4511	80/20	0.4511
925611	AC1-036 C	1.0777	80/20	1.0777
925781	AC1-054 C O1	4.1305	80/20	4.1305
925831	AC1-062	0.0760	80/20	0.0760
925991	AC1-075 C	2.9357	80/20	2.9357
926021	AC1-080 C	0.9811	80/20	0.9811
926271	AC1-105 C O1 (Suspended)	4.0693	80/20	4.0693
926451	AC1-116 C	-1.0918	Adder	-1.28
927251	AC1-221 C	1.0627	80/20	1.0627

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
927261	AC1-222 C	2.4288	80/20	2.4288
932511	AC2-071 C	5.1757	80/20	5.1757
932761	AC2-100 C	2.4457	80/20	2.4457
933501	AC2-165 C	15.5274	80/20	15.5274
934311	AD1-055 C	1.6864	80/20	1.6864
934341	AD1-058 C	2.6641	80/20	2.6641
934611	AD1-087 C O1	7.0557	80/20	7.0557
934621	AD1-088 C	19.9085	80/20	19.9085
934991	AD1-131 C	0.8735	80/20	0.8735
935171	AD1-152 C O1	7.0118	80/20	7.0118
935221	AD1-157 C	2.2191	80/20	2.2191
936261	AD2-033 C	14.0478	80/20	14.0478
936361	AD2-046 C O1	6.0033	80/20	6.0033
936481	AD2-063 C O1	14.2722	80/20	14.2722
937481	AD2-202 C O1	1.8698	80/20	1.8698
938371	AE1-056 C	9.5669	80/20	9.5669
938551	AE1-074 C	0.8794	80/20	0.8794
938561	AE1-075 C	2.8232	80/20	2.8232
939181	AE1-148 C O1	5.9983	80/20	5.9983
940241	AE2-006	0.5483	80/20	0.5483
940661	AE2-053 O1	2.2216	80/20	2.2216
941791	AE2-182 C	3.2344	80/20	3.2344
942451	AE2-258	1.9665	80/20	1.9665
942461	AE2-259 C O1	17.2536	80/20	17.2536
942751	AE2-291 C O1	3.9150	80/20	3.9150
942761	AE2-292 C O1	4.8745	80/20	4.8745
943901	AF1-058 C	1.3716	80/20	1.3716
943911	AF1-059	10.5510	80/20	10.5510
945811	AF1-246 C O1	7.1702	80/20	7.1702
946281	AF1-292 C	0.5660	80/20	0.5660
946301	AF1-294 C	5.7065	80/20	5.7065
957481	AF2-042 C O2	51.2160	80/20	51.2160
957911	AF2-085	1.7128	80/20	1.7128
958211	AF2-115 C	3.4796	80/20	3.4796
958501	AF2-144 C	2.3799	80/20	2.3799
958801	AF2-171 C O2	21.1383	80/20	21.1383
959311	AF2-222 C	19.5130	80/20	19.5130
959531	AF2-244 C	2.1932	80/20	2.1932
959751	AF2-266 O2	8.5360	80/20	8.5360
960061	AF2-297 C O2	5.8291	80/20	5.8291
960081	AF2-299 C	0.9539	80/20	0.9539
960811	AF2-372 C	1.0396	80/20	1.0396
960821	AF2-373 C	0.7112	80/20	0.7112
961081	AF2-399 C	0.4490	80/20	0.4490
WEC	WEC	0.0173	Confirmed LTF	0.0173
LGEE	LGEE	0.0359	Confirmed LTF	0.0359
CPL	CPL	2.6228	Confirmed LTF	2.6228
CBM-W2	CBM-W2	4.3817	Confirmed LTF	4.3817
NY	NY	0.3478	Confirmed LTF	0.3478
CBM-W1	CBM-W1	0.2127	Confirmed LTF	0.2127
TVA	TVA	1.1760	Confirmed LTF	1.1760
CBM-S2	CBM-S2	16.1898	Confirmed LTF	16.1898

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
CBM-S1	CBM-S1	5.9299	Confirmed LTF	5.9299
MADISON	MADISON	0.6895	Confirmed LTF	0.6895
MEC	MEC	0.3655	Confirmed LTF	0.3655
AA2-074	AA2-074	1.7833	LTF	1.7833

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ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC DC	MW IMPACT
107338583	927250	AC1-221 TAP	DVP	304070	6PERSON230 T	CPL	1	DVP_P1-2: LN 556-B	single	718.0	134.74	137.66	DC	25.89

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
313853	3PONTONDP	0.1294	80/20	0.1294
314429	3JTRSVLE	0.5174	80/20	0.5174
314677	6BUCKING	0.4258	80/20	0.4258
315153	1CLOVER1	39.4381	80/20	39.4381
315154	1CLOVER2	39.0451	80/20	39.0451
315156	1HALLBR1	1.1309	80/20	1.1309
315158	1KERR 1	0.3659	80/20	0.3659
315159	1KERR 2	1.0244	80/20	1.0244
315160	1KERR 3	1.0244	80/20	1.0244
315161	1KERR 4	1.0244	80/20	1.0244
315162	1KERR 5	1.0244	80/20	1.0244
315163	1KERR 6	1.0244	80/20	1.0244
315164	1KERR 7	1.0244	80/20	1.0244
315192	1BEARGRDN G2	2.8787	80/20	2.8787
315193	1BEARGRDN S1	5.9246	80/20	5.9246
315266	1PLYWOOD A	3.3432	80/20	3.3432
924021	AB2-043 C O1	0.7329	80/20	0.7329
924161	AB2-060 C OP	2.1135	80/20	2.1135
924301	AB2-077 C O1 (Suspended)	2.7328	80/20	2.7328
924311	AB2-078 C O1 (Suspended)	2.7328	80/20	2.7328
924321	AB2-079 C O1 (Suspended)	2.7328	80/20	2.7328
925611	AC1-036 C	1.3105	80/20	1.3105
925781	AC1-054 C O1	5.0298	80/20	5.0298
925831	AC1-062	0.0768	80/20	0.0768
925991	AC1-075 C	11.9864	80/20	11.9864
926021	AC1-080 C	4.0059	80/20	4.0059
926271	AC1-105 C O1 (Suspended)	14.5305	80/20	14.5305
927251	AC1-221 C	11.7277	80/20	11.7277
927261	AC1-222 C	10.1431	80/20	10.1431
932511	AC2-071 C	2.4320	80/20	2.4320
932761	AC2-100 C	26.9899	80/20	26.9899
934311	AD1-055 C	7.0426	80/20	7.0426
934341	AD1-058 C	29.3997	80/20	29.3997
934611	AD1-087 C O1	27.0094	80/20	27.0094
934621	AD1-088 C	24.0247	80/20	24.0247
934991	AD1-131 C	9.6392	80/20	9.6392
935171	AD1-152 C O1	26.8416	80/20	26.8416
935221	AD1-157 C	2.1223	80/20	2.1223

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
936261	AD2-033 C	17.8675	80/20	17.8675
936361	AD2-046 C O1	8.4639	80/20	8.4639
936481	AD2-063 C O1	20.4093	80/20	20.4093
937481	AD2-202 C O1	7.1578	80/20	7.1578
938371	AE1-056 C	9.1494	80/20	9.1494
939181	AE1-148 C O1	8.5347	80/20	8.5347
940241	AE2-006	0.6667	80/20	0.6667
940661	AE2-053 O1	3.1610	80/20	3.1610
941791	AE2-182 C	3.9032	80/20	3.9032
942451	AE2-258	3.1698	80/20	3.1698
942461	AE2-259 C O1	14.4012	80/20	14.4012
942751	AE2-291 C O1	15.7260	80/20	15.7260
942761	AE2-292 C O1	19.5804	80/20	19.5804
943901	AF1-058 C	5.7522	80/20	5.7522
943911	AF1-059	14.3780	80/20	14.3780
945811	AF1-246 C O1	21.7505	80/20	21.7505
946301	AF1-294 C	5.7653	80/20	5.7653
957481	AF2-042 C O2	155.3610	80/20	155.3610
958211	AF2-115 C	3.5154	80/20	3.5154
958801	AF2-171 C O2	21.1149	80/20	21.1149
959311	AF2-222 C	23.0530	80/20	23.0530
959751	AF2-266 O2	25.8935	80/20	25.8935
960061	AF2-297 C O2	28.8259	80/20	28.8259
960811	AF2-372 C	1.7262	80/20	1.7262
960821	AF2-373 C	2.1290	80/20	2.1290
961081	AF2-399 C	0.4546	80/20	0.4546
NEWTON	NEWTON	1.6150	Confirmed LTF	1.6150
FARMERCITY	FARMERCITY	0.0953	Confirmed LTF	0.0953
G-007A	G-007A	0.4939	Confirmed LTF	0.4939
VFT	VFT	1.3094	Confirmed LTF	1.3094
CALDERWOOD	CALDERWOOD	1.4284	Confirmed LTF	1.4284
PRAIRIE	PRAIRIE	4.4893	Confirmed LTF	4.4893
AC1-131	AC1-131	5.1015	LTF	5.1015
CHEOAH	CHEOAH	1.4720	Confirmed LTF	1.4720
EDWARDS	EDWARDS	0.4816	Confirmed LTF	0.4816
TILTON	TILTON	0.8429	Confirmed LTF	0.8429
GIBSON	GIBSON	0.7671	Confirmed LTF	0.7671
BLUEG	BLUEG	2.3314	Confirmed LTF	2.3314
TRIMBLE	TRIMBLE	0.7379	Confirmed LTF	0.7379
CATAWBA	CATAWBA	1.6961	Confirmed LTF	1.6961

13.5.12 Index 12

ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC DC	MW IMPACT
106426124	934610	AD1-087 TAP	DVP	314697	6SEEDGE HILL	DVP	1	DVP_P1-2: LN 556-B	single	814.98	121.62	125.79	DC	33.95

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
313853	3PONTONDP	0.0707	80/20	0.0707
314333	6POWHATN	0.1384	80/20	0.1384
314429	3JTRSVLE	0.2828	80/20	0.2828
314677	6BUCKING	0.4694	80/20	0.4694
315153	1CLOVER1	51.7091	80/20	51.7091
315154	1CLOVER2	51.1938	80/20	51.1938
315191	1BEARGRDN G1	3.1145	80/20	3.1145
315192	1BEARGRDN G2	3.1145	80/20	3.1145
315193	1BEARGRDN S1	6.4099	80/20	6.4099
920291	AA2-127	0.6470	80/20	0.6470
925611	AC1-036 C	0.3848	80/20	0.3848
925831	AC1-062	0.0420	80/20	0.0420
925991	AC1-075 C	-3.3297	Adder	-3.92
926021	AC1-080 C	-1.1128	Adder	-1.31
926271	AC1-105 C O1 (Suspended)	-3.4045	Adder	-4.01
926451	AC1-116 C	0.2932	80/20	0.2932
927251	AC1-221 C	-1.3047	Adder	-1.53
927261	AC1-222 C	-2.6803	Adder	-3.15
932511	AC2-071 C	2.6809	80/20	2.6809
933501	AC2-165 C	3.8965	80/20	3.8965
934311	AD1-055 C	-1.8610	Adder	-2.19
934341	AD1-058 C	-3.2706	Adder	-3.85
934611	AD1-087 C O1	35.7744	80/20	35.7744
934621	AD1-088 C	29.1619	80/20	29.1619
935171	AD1-152 C O1	35.5522	80/20	35.5522
935221	AD1-157 C	1.3385	80/20	1.3385
936261	AD2-033 C	4.2728	80/20	4.2728
937481	AD2-202 C O1	9.4806	80/20	9.4806
938371	AE1-056 C	5.7703	80/20	5.7703
938561	AE1-075 C	0.7037	80/20	0.7037
938821	AE1-108 C	6.5977	80/20	6.5977
940241	AE2-006	0.1958	80/20	0.1958
941011	AE2-092 C	6.4559	80/20	6.4559
941791	AE2-182 C	4.7378	80/20	4.7378
942461	AE2-259 C O1	12.3990	80/20	12.3990
945811	AF1-246 C O1	28.5180	80/20	28.5180
946291	AF1-293 C O1	9.6964	80/20	9.6964
946301	AF1-294 C	3.1505	80/20	3.1505
946591	AF1-323 C	2.0140	80/20	2.0140
957481	AF2-042 C O2	203.7000	80/20	203.7000
958211	AF2-115 C	1.9211	80/20	1.9211

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
958501	AF2-144 C	0.5932	80/20	0.5932
958801	AF2-171 C O2	11.8980	80/20	11.8980
959311	AF2-222 C	7.6050	80/20	7.6050
959531	AF2-244 C	0.5467	80/20	0.5467
959751	AF2-266 O2	33.9500	80/20	33.9500
960111	AF2-302 C	0.7324	80/20	0.7324
961061	AF2-397 C O2	7.5925	80/20	7.5925
961081	AF2-399 C	0.2471	80/20	0.2471
NEWTON	NEWTON	1.4044	Confirmed LTF	1.4044
FARMERCITY	FARMERCITY	0.0797	Confirmed LTF	0.0797
G-007A	G-007A	0.4100	Confirmed LTF	0.4100
VFT	VFT	1.0772	Confirmed LTF	1.0772
CALDERWOOD	CALDERWOOD	1.0760	Confirmed LTF	1.0760
PRAIRIE	PRAIRIE	3.7479	Confirmed LTF	3.7479
CHEOAH	CHEOAH	1.1026	Confirmed LTF	1.1026
EDWARDS	EDWARDS	0.4263	Confirmed LTF	0.4263
TILTON	TILTON	0.7566	Confirmed LTF	0.7566
GIBSON	GIBSON	0.6825	Confirmed LTF	0.6825
BLUEG	BLUEG	2.1162	Confirmed LTF	2.1162
TRIMBLE	TRIMBLE	0.6723	Confirmed LTF	0.6723
CATAWBA	CATAWBA	1.1473	Confirmed LTF	1.1473

13.5.13 Index 13

ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC DC	MW IMPACT
148824969	934620	AD1-088 TAP	DVP	314268	6BRIERY	DVP	1	DVP_P4-2:511T556	breaker	699.0	111.2	113.47	DC	15.85

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
315153	1CLOVER1	24.1422	50/50	24.1422
315154	1CLOVER2	23.9016	50/50	23.9016
315266	1PLYWOOD A	0.9389	50/50	0.9389
925611	AC1-036 C	-0.3478	Adder	-0.41
925991	AC1-075 C	3.1972	Adder	3.76
925992	AC1-075 E	1.8115	Adder	2.13
926021	AC1-080 C	1.0685	Adder	1.26
926022	AC1-080 E	0.6010	Adder	0.71
926271	AC1-105 C O1 (Suspended)	3.8688	50/50	3.8688
926272	AC1-105 E O1 (Suspended)	1.9259	50/50	1.9259
926451	AC1-116 C	-0.2683	Adder	-0.32
927251	AC1-221 C	1.4819	50/50	1.4819
927252	AC1-221 E	1.4819	50/50	1.4819
927261	AC1-222 C	3.0620	50/50	3.0620
927262	AC1-222 E	2.9149	50/50	2.9149
932761	AC2-100 C	3.4104	50/50	3.4104
932762	AC2-100 E	1.6646	50/50	1.6646
934311	AD1-055 C	2.1260	50/50	2.1260
934312	AD1-055 E	0.5482	50/50	0.5482
934341	AD1-058 C	3.7149	50/50	3.7149
934342	AD1-058 E	0.9439	50/50	0.9439
934611	AD1-087 C O1	12.3358	50/50	12.3358
934612	AD1-087 E O1	5.7976	50/50	5.7976
934621	AD1-088 C	41.9311	50/50	41.9311
934622	AD1-088 E	19.7323	50/50	19.7323
934991	AD1-131 C	1.2180	50/50	1.2180
934992	AD1-131 E	0.8120	50/50	0.8120
935171	AD1-152 C O1	12.2592	50/50	12.2592
935172	AD1-152 E O1	8.1728	50/50	8.1728
935221	AD1-157 C	-1.1710	Adder	-1.38
935222	AD1-157 E	-0.7807	Adder	-0.92
936161	AD2-022 C O1	2.9386	Adder	3.46
936162	AD2-022 E O1	1.7632	Adder	2.07
936171	AD2-023 C O1	1.7142	Adder	2.02
936172	AD2-023 E O1	0.9306	Adder	1.09
937481	AD2-202 C O1	3.2691	50/50	3.2691
937482	AD2-202 E O1	1.8389	50/50	1.8389
938561	AE1-075 C	-0.6494	Adder	-0.76
940241	AE2-006	-0.1769	Adder	-0.21
941791	AE2-182 C	6.8123	50/50	6.8123

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
941792	AE2-182 E	3.1713	50/50	3.1713
942751	AE2-291 C O1	4.3135	Adder	5.07
942752	AE2-291 E O1	2.8757	Adder	3.38
942761	AE2-292 C O1	5.3707	Adder	6.32
942762	AE2-292 E O1	3.5805	Adder	4.21
943901	AF1-058 C	1.7239	50/50	1.7239
943902	AF1-058 E	1.1493	50/50	1.1493
945811	AF1-246 C O1	13.3140	50/50	13.3140
945812	AF1-246 E O1	18.3860	50/50	18.3860
946293	AF1-293 BAT	7.5791	Merchant Transmission	7.5791
957481	AF2-042 C O2	95.1000	50/50	95.1000
957482	AF2-042 E O2	63.4000	50/50	63.4000
958503	AF2-144 BAT	0.3346	Merchant Transmission	0.3346
959751	AF2-266 O2	15.8500	50/50	15.8500
960061	AF2-297 C O2	9.3019	50/50	9.3019
960062	AF2-297 E O2	6.2013	50/50	6.2013
960821	AF2-373 C	0.2137	Adder	0.47
960822	AF2-373 E	0.3205	Adder	0.71
961063	AF2-397 BAT	5.3724	50/50	5.3724
WEC	WEC	0.2432	Confirmed LTF	0.2432
LGEE	LGEE	0.4604	Confirmed LTF	0.4604
CPL	CPL	2.6553	Confirmed LTF	2.6553
CBM-W2	CBM-W2	9.8853	Confirmed LTF	9.8853
NY	NY	0.3058	Confirmed LTF	0.3058
CBM-W1	CBM-W1	9.0697	Confirmed LTF	9.0697
TVA	TVA	2.0902	Confirmed LTF	2.0902
O-066	O-066	4.3075	Confirmed LTF	4.3075
CBM-S2	CBM-S2	18.0798	Confirmed LTF	18.0798
CBM-S1	CBM-S1	11.6383	Confirmed LTF	11.6383
G-007	G-007	0.6718	Confirmed LTF	0.6718
MADISON	MADISON	0.5927	Confirmed LTF	0.5927
MEC	MEC	1.4825	Confirmed LTF	1.4825
AA2-074	AA2-074	1.8099	LTF	1.8099

13.6 Contingency Descriptions - Secondary POI

Contingency Name	Contingency Definition
DVP_P1-2: LN 556-B	CONTINGENCY 'DVP_P1-2: LN 556-B' OPEN BRANCH FROM BUS 945810 TO BUS 314936 CKT 1 /* AF1-246 TAP 500.00 - 8RAWLINGS 500.00 END
DVP_P1-2: LN 570	CONTINGENCY 'DVP_P1-2: LN 570' OPEN BRANCH FROM BUS 304183 TO BUS 314935 CKT 1 /* 8WAKE 500 TT500.00 - 8HERITAGE 500.00 END
DVP_P4-2: 511T556	CONTINGENCY 'DVP_P4-2: 511T556' /* RAWLINGS 500 KV OPEN BRANCH FROM BUS 940470 TO BUS 314936 CKT 1 /* AE2-031 TAP 500.00 - 8RAWLINGS 500.00 OPEN BRANCH FROM BUS 945810 TO BUS 314936 CKT 1 /* AF1-246 TAP 500.00 - 8RAWLINGS 500.00 END
DVP_P4-2: 556T591	CONTINGENCY 'DVP_P4-2: 556T591' /* RAWLINGS 500 KV OPEN BRANCH FROM BUS 945810 TO BUS 314936 CKT 1 /* AF1-246 TAP 500.00 - 8RAWLINGS 500.00 OPEN BRANCH FROM BUS 314935 TO BUS 314936 CKT 1 /* 8HERITAGE 500.00 - 8RAWLINGS 500.00 END
Base Case	
DVP_P4-2: 511T591	CONTINGENCY 'DVP_P4-2: 511T591' /* RAWLINGS 500 KV OPEN BRANCH FROM BUS 940470 TO BUS 314936 CKT 1 /* AE2-031 TAP 500.00 - 8RAWLINGS 500.00 OPEN BRANCH FROM BUS 314935 TO BUS 314936 CKT 1 /* 8HERITAGE 500.00 - 8RAWLINGS 500.00 END

14 Affected Systems

14.1 TVA

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

14.2 Duke Energy Progress

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

Attachment 1: One Line Diagram