



**Generation Interconnection
Feasibility Study Report
for
Queue Project AF2-076
SUFFOLK-NUCOR STEEL 230 KV
30 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 Interconnection Customer seeking to interconnect a wind or solar generation facility shall maintain meteorological data facilities as well as provide that meteorological data which is required per Schedule H to the Interconnection Service Agreement and Section 8 of Manual 14D.

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

3 General

The Interconnection Customer (IC), has proposed a Solar generating facility located in City of Suffolk County, Virginia. The installed facilities will have a total capability of 50 MW with 30 MW of this output being recognized by PJM as Capacity. The proposed in-service date for this project is December 01, 2023. This study does not imply a TO commitment to this in-service date.

Queue Number	AF2-076
Project Name	SUFFOLK-NUCOR STEEL 230 KV
State	Virginia
County	City of Suffolk
Transmission Owner	Dominion
MFO	50
MWE	50
MWC	30
Fuel	Solar
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

AF2-076 will interconnect with the Dominion transmission system. The primary POI is a single line tap between Earleys 230 kV substation and Suffolk 230 kV substation. The IC is responsible for securing right-of-way, permits and constructing the proposed attachment line from the solar facility site to the proposed new substation. 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 Sunbury 230 kV substation and Suffolk 230 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 AF2-076 project will be responsible for the following costs:

Description	Total Cost
Total Physical Interconnection Costs	\$ 10,400,000
Total System Network Upgrade Costs	\$ 4,200,000
Total Costs	\$ 14,600,000

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 AF2-076 was evaluated as a 30 MW Capacity (50.0 MW Energy) injection at a single line tap between Nucor Steel 230 kV substation and Suffolk 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 AF2-076 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
New three breaker ring-bus substation	\$ 6,500,000
Re-arrange transmission line to cut-in new substation	\$ 1,800,000
Total Physical Interconnection Costs	\$ 10,400,000

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.

10.1.1 Meteorological Data Reporting Requirements

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

- Back Panel temperature (Fahrenheit)
- Irradiance (Watts/meter²)
- Ambient air temperature (Fahrenheit) – (Accepted, not required)
- Wind speed (meters/second) – (Accepted, not required)
- Wind direction (decimal degrees from true north) – (Accepted, not required)

10.2 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 AF2-076 was evaluated as a 50.0 MW (Capacity 30.0 MW) injection tapping the Suffolk to Nucor Tap 230 kV line in the Dominion area. Project AF2-076 was evaluated for compliance with applicable reliability planning criteria (PJM, NERC, NERC Regional Reliability Councils, and Transmission Owners). Project AF2-076 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)

None

11.2 Multiple Facility Contingency

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

None

11.3 Contribution to Previously Identified Overloads

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

ID	FROM BUS#	FROM BUS	kV	FROM BUS AREA	TO BUS#	TO BUS	kV	TO BUS AREA	CK T ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADIN G %	POST PROJECT LOADIN G %	AC D C	MW IMPAC T
97912480	957820	AF2-076 TAP	230.0	DVP	314537	6SUFFOLK	230.0	DVP	1	DVP_P1-2: LN 2092	single	571.520019531	167.61	172.12	DC	25.87
97912481	957820	AF2-076 TAP	230.0	DVP	314537	6SUFFOLK	230.0	DVP	1	DVP_P1-2: LN 2131	single	571.520019531	166.91	171.42	DC	25.87
97912486	957820	AF2-076 TAP	230.0	DVP	314537	6SUFFOLK	230.0	DVP	1	Base Case	single	571.520019531	104.98	109.54	DC	26.16

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	CK T ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADIN G %	POST PROJECT LOADIN G %	AC D C	MW IMPAC T
97913220	314525	6KINGFOR K	230.0	DVP	314522	6CHCKTUK	230.0	DVP	1	DVP_P1-2: LN 531	operation	678.679992676	102.04	103.28	DC	8.41
97912475	957820	AF2-076 TAP	230.0	DVP	314537	6SUFFOLK	230.0	DVP	1	DVP_P1-2: LN 2092	operation	571.520019531	281.42	288.96	DC	43.12
97912482	957820	AF2-076 TAP	230.0	DVP	314537	6SUFFOLK	230.0	DVP	1	Base Case	operation	571.520019531	151.32	158.95	DC	43.59

11.5 System Reinforcements - Summer Peak Load Flow - Primary POI

ID	Idx	Facility	Upgrade Description	Cost
97912486,97912480,97912481	1	AF2-076 TAP 230.0 kV - 6SUFFOLK 230.0 kV Ckt 1	<u>DVP</u> dom-243 (1365) : Rebuild 2.8 miles of 230 kV Line 246 from AF2-076 Tap to Suffolk with 2-768 ACSS. Project Type : FAC Cost : \$4,200,000 Time Estimate : 36-40 Months	\$4,200,000
			TOTAL COST	\$4,200,000

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
97912480	957820	AF2-076 TAP	DVP	314537	6SUFFOLK	DVP	1	DVP_P1-2: LN 2092	single	571.52	167.61	172.12	DC	25.87

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
314572	3EMPORIA	0.0506	80/20	0.0506
314574	6EVERETS	0.4657	80/20	0.4657
314582	3KELFORD	0.7842	80/20	0.7842
314589	3MURPHYS	0.1032	80/20	0.1032
314623	3WITAKRS	0.2359	80/20	0.2359
314704	3LAWRENC	0.1825	80/20	0.1825
315126	1ROARAP2	1.4097	80/20	1.4097
315128	1ROARAP4	1.3452	80/20	1.3452
315131	1EDGECEMA (Deactivation : 22/04/2019)	9.0439	80/20	9.0439
315132	1EDGECEMB (Deactivation : 22/04/2019)	9.0439	80/20	9.0439
315136	1ROSEMG1	2.3511	80/20	2.3511
315137	1ROSEMS1	1.4579	80/20	1.4579
315138	1ROSEMG2	1.1019	80/20	1.1019
315139	1GASTONA	3.4385	80/20	3.4385
315141	1GASTONB	3.4385	80/20	3.4385
315161	1KERR 4	0.5966	80/20	0.5966
315162	1KERR 5	0.5966	80/20	0.5966
315163	1KERR 6	0.5966	80/20	0.5966
315164	1KERR 7	0.5966	80/20	0.5966
315292	1DOMTR78	2.8729	80/20	2.8729
315294	1DOMTR10	21.5849	80/20	21.5849
315601	1CONETOE2SOL	1.9914	80/20	1.9914
315602	1HOLLOMANSOL	3.5568	80/20	3.5568
315606	3AA2-053SOLA	1.7258	80/20	1.7258
315607	3AA1-063SOLA	1.2920	80/20	1.2920
315608	3AA2-088SOLA	0.7480	80/20	0.7480
315611	6Z1-036WIND	13.8532	80/20	13.8532
315612	3AA2-057SOLA	1.3289	80/20	1.3289
315614	AA2-178 C	3.4313	80/20	3.4313
920591	AA2-165 C	0.1576	80/20	0.1576
920671	AA2-174 C OP	0.0790	80/20	0.0790
922922	AB1-081 C OP	8.5938	80/20	8.5938
923262	AB1-132 C OP (Suspended)	15.2225	80/20	15.2225
923572	AB1-173 C OP	1.8023	80/20	1.8023
923582	AB1-173AC OP	1.8023	80/20	1.8023
923911	AB2-031 C O1	1.7889	80/20	1.7889
923991	AB2-040 C O1	5.8740	80/20	5.8740
924151	AB2-059 C OP	1.7471	80/20	1.7471
924501	AB2-099 C (Suspended)	1.0074	80/20	1.0074

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
924511	AB2-100 C	1.2658	80/20	1.2658
925121	AB2-169 C	2.0776	80/20	2.0776
925171	AB2-174 C O1	0.9219	80/20	0.9219
925591	AC1-034 C	6.5604	80/20	6.5604
925781	AC1-054 C O1	4.5595	80/20	4.5595
926071	AC1-086 C	22.4169	80/20	22.4169
926201	AC1-098 C	8.0374	80/20	8.0374
926211	AC1-099 C	2.6934	80/20	2.6934
927021	AC1-189 C	11.8954	80/20	11.8954
927141	AC1-208 C	10.1471	80/20	10.1471
932631	AC2-084 C	11.4575	80/20	11.4575
933991	AD1-023 C	28.2004	80/20	28.2004
934331	AD1-057 C O1	10.1856	80/20	10.1856
934521	AD1-076 C	113.9255	80/20	113.9255
936401	AD2-051 C O1	19.8648	80/20	19.8648
938171	AE1-026 C O1	69.7636	80/20	69.7636
938221	AE1-035 C	5.1550	80/20	5.1550
940491	AE2-034 C	14.9192	80/20	14.9192
940571	AE2-044 C	4.2969	80/20	4.2969
941541	AE2-151 C	2.0903	80/20	2.0903
942131	AE2-225 C	-1.0773	Adder	-1.27
942171	AE2-229 C	-1.0773	Adder	-1.27
942471	AE2-260 C O1	8.3171	80/20	8.3171
943171	AE2-346 C	2.4178	80/20	2.4178
943911	AF1-059	8.3370	80/20	8.3370
944141	AF1-082	2.7623	80/20	2.7623
945711	AF1-236 C O1	163.3302	80/20	163.3302
946281	AF1-292 C	0.9859	80/20	0.9859
957521	AF2-046 C	20.4051	80/20	20.4051
957531	AF2-047 C	35.4510	80/20	35.4510
957791	AF2-073 C (Withdrawn : 07/02/2020)	41.1750	80/20	41.1750
957801	AF2-074 C (Withdrawn : 07/02/2020)	18.3000	80/20	18.3000
957821	AF2-076 C O1	25.8699	80/20	25.8699
957861	AF2-080 C	10.8039	80/20	10.8039
959231	AF2-214 C	9.2843	80/20	9.2843
959511	AF2-242	13.9123	80/20	13.9123
959731	AF2-264 C	3.3334	80/20	3.3334
960081	AF2-299 C	1.6616	80/20	1.6616
960331	AF2-324 C O1	7.6094	80/20	7.6094
960351	AF2-326 C (Withdrawn : 07/22/2020)	2.4520	80/20	2.4520
960831	AF2-374 C	2.1136	80/20	2.1136
WEC	WEC	0.3333	Confirmed LTF	0.3333
LGEE	LGEE	0.6224	Confirmed LTF	0.6224
CPL	CPL	3.7739	Confirmed LTF	3.7739
CBM-W2	CBM-W2	12.8665	Confirmed LTF	12.8665
NY	NY	0.2909	Confirmed LTF	0.2909
CBM-W1	CBM-W1	12.5600	Confirmed LTF	12.5600
TVA	TVA	2.6600	Confirmed LTF	2.6600
CBM-S2	CBM-S2	22.9639	Confirmed LTF	22.9639
CBM-S1	CBM-S1	14.9015	Confirmed LTF	14.9015

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
MADISON	MADISON	0.7056	Confirmed LTF	0.7056
MEC	MEC	1.9799	Confirmed LTF	1.9799
AA2-074	AA2-074	2.5717	LTF	2.5717

11.7 Queue Dependencies

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

Queue Number	Project Name	Status
AA1-063	Huntsville (Cabin Creek) 69kV	Withdrawn
AA2-053	Carolina-Jackson 115kV	In Service
AA2-057	Hornertown-Whitakers 115kV	In Service
AA2-074	CPL-PJM	Confirmed
AA2-088	Boykins-Handsome 115kV	In Service
AA2-165	Hornertown-Whitakers 115kV	In Service
AA2-174	Carolina-Jackson 115kV	In Service
AA2-178	Mackeys 230kV	Under Construction
AB1-081	Anaconda-Mayo Dunbar 115kV	Under Construction
AB1-132	Thelma 230kV	Suspended
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
AB2-059	Benson-Dunbar 115kV	Under Construction
AB2-099	Ahoskie 34.5kV	Suspended
AB2-100	Clubhouse-Lakeview 230kV	Under Construction
AB2-169	Pantago-Five Points 115kV	Partially in Service - Under Construction
AB2-174	Emporia-Trego 115kV	Under Construction
AC1-034	Heartsease DP - Mayo Dunbar 115kV	Active
AC1-054	Kerr Dam-Eatons Ferry 115 kV	Engineering and Procurement
AC1-086	Thelma 230kV	Active
AC1-098	Dawson-South Justice 115kV	Engineering and Procurement
AC1-099	Dawson-South Justice 115kV	Engineering and Procurement
AC1-189	Chinquapin-Everetts 230kV	Active
AC1-208	Cox-Whitakers 115kV	Engineering and Procurement
AC2-084	Dawson-South Justice 115kV	Active
AD1-023	Cashie-Trowbridge 230 kV	Active
AD1-057	Hornertown-Hathaway 230 kV	Active
AD1-076	Trowbridge 230 kV	Active
AD2-051	Earleys – Northampton 230kV	Active
AE1-026	Cashie 230 kV	Active
AE1-035	Earleys 230 kV	Engineering and Procurement
AE2-034	Mackeys 230 kV	Active

Queue Number	Project Name	Status
AE2-044	Anaconda-Dunbar 115 kV	Active
AE2-151	Earleys 34.5kV	Engineering and Procurement
AE2-225	Suffolk 34 kV	Engineering and Procurement
AE2-229	Suffolk 34 kV	Engineering and Procurement
AE2-260	Clubhouse 230 kV	Active
AE2-346	Ahoskie 34.5 kV	Active
AF1-059	Brodnax-South Hill 115 kV	Active
AF1-082	Heartsease-Mayo Dunbar DP	Active
AF1-236	Mackeys 230 kV	Active
AF1-292	Fields Crossroads 34.5 kV	Active
AF2-046	Tunis-Mapleton 115 kV	Active
AF2-047	Creswell-Riders Creek 115 kV	Active
AF2-073	Nucor Steel-Suffolk 230 kV	Withdrawn
AF2-074	Nucor Steel-Suffolk 230 kV	Withdrawn
AF2-076	Suffolk-Nucor Steel 230 kV	Active
AF2-080	Chinquapin-Everetts 230 kV	Active
AF2-214	Heartsease DP-Anaconda 115 kV	Active
AF2-242	Wharton 115 kV	Active
AF2-264	Tunis 34.5 kV	Active
AF2-299	Fields 34.5 kV	Active
AF2-324	Edgecombe 230 kV	Active
AF2-326	Battleboro 34.5kV	Withdrawn
AF2-374	Woodland 34.5 kV	Active
Z1-036	WinFall-Chowan 230kV	Suspended

11.8 Contingency Descriptions - Primary POI

Contingency Name	Contingency Definition
Base Case	
DVP_P1-2: LN 2131	CONTINGENCY 'DVP_P1-2: LN 2131' OPEN BRANCH FROM BUS 313714 TO BUS 313885 CKT 1 /* 6PERQUIMANS 230.00 - 6WALBMRL 230.00 OPEN BRANCH FROM BUS 313885 TO BUS 314637 CKT 1 /* 6WALBMRL 230.00 - 6EDENTON 230.00 OPEN BRANCH FROM BUS 314203 TO BUS 314637 CKT 1 /* 6MACKEYS 230.00 - 6EDENTON 230.00 OPEN BUS 313885 /* ISLAND: 6WALBMRL 230.00 OPEN BUS 314637 /* ISLAND: 6EDENTON 230.00 END
DVP_P1-2: LN 531	CONTINGENCY 'DVP_P1-2: LN 531' OPEN BRANCH FROM BUS 314924 TO BUS 314928 CKT 1 /* 8SURREY 500.00 - 8SUFFOLK 500.00 END

Contingency Name	Contingency Definition
DVP_P1-2: LN 2092	CONTINGENCY 'DVP_P1-2: LN 2092' OPEN BRANCH FROM BUS 313714 TO BUS 314662 CKT 1 /* 6PERQUIMANS 230.00 - 6S HERTFORD 230.00 OPEN BRANCH FROM BUS 314651 TO BUS 314662 CKT 1 /* 6WINFALL 230.00 - 6S HERTFORD 230.00 OPEN BUS 314662 /* ISLAND: 6S HERTFORD 230.00 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 AF2-076 was evaluated as a 50.0 MW (Capacity 30.0 MW) injection tapping the Suffolk to Sunbury 230 kV line in the Dominion area. Project AF2-076 was evaluated for compliance with applicable reliability planning criteria (PJM, NERC, NERC Regional Reliability Councils, and Transmission Owners). Project AF2-076 was studied with a commercial probability of 53%. Potential network impacts were as follows:

13.1 Generation Deliverability

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

None

13.2 Multiple Facility Contingency

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

None

13.3 Contribution to Previously Identified Overloads

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

ID	FROM BUS#	FROM BUS	kV	FROM BUS AREA	TO BUS#	TO BUS	kV	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC/D C	MW IMPACT
97718989	313851	6ECITYDP2	230.0	DVP	314638	6ELIZ CT	230.0	DVP	1	DVP_P4-2: 246T247	breaker	1204.0	141.67	144.47	DC	33.71
97718990	313851	6ECITYDP2	230.0	DVP	314638	6ELIZ CT	230.0	DVP	1	DVP_P4-2: 24742	breaker	1204.0	119.34	122.06	DC	32.8
148725403	313851	6ECITYDP2	230.0	DVP	314638	6ELIZ CT	230.0	DVP	1	DVP_P4-2: 246T2034	breaker	1204.0	165.43	168.74	DC	39.87
148725404	313851	6ECITYDP2	230.0	DVP	314638	6ELIZ CT	230.0	DVP	1	DVP_P4-2: 24642	breaker	1204.0	141.74	144.54	DC	33.7
148725405	313851	6ECITYDP2	230.0	DVP	314638	6ELIZ CT	230.0	DVP	1	DVP_P4-2: 24662	breaker	1204.0	141.75	144.56	DC	33.77
148725467	314466	6FENTRES	230.0	DVP	314508	6THRASH ER	230.0	DVP	1	DVP_P4-2: 246T2034	breaker	830.0	136.82	138.55	DC	14.35
97719111	314550	6HICKORY	230.0	DVP	314466	6FENTRES	230.0	DVP	1	DVP_P4-2: 246T247	breaker	699.0	114.44	116.91	DC	17.2
148725427	314550	6HICKORY	230.0	DVP	314466	6FENTRES	230.0	DVP	1	DVP_P4-2: 246T2034	breaker	699.0	143.59	146.51	DC	20.35
148725428	314550	6HICKORY	230.0	DVP	314466	6FENTRES	230.0	DVP	1	DVP_P4-2: 24662	breaker	699.0	114.95	117.41	DC	17.24
148725429	314550	6HICKORY	230.0	DVP	314466	6FENTRES	230.0	DVP	1	DVP_P4-2: 24642	breaker	699.0	114.47	116.93	DC	17.2
148725482	314561	6CAROLNA	230.0	DVP	314583	6LAKEVE W	230.0	DVP	1	DVP_P4-2: 24662	breaker	459.0	132.05	132.51	DC	4.74
97152426	314596	3POPLR C	115.0	DVP	314573	3EVERETS	115.0	DVP	1	DVP_P4-2: 246T2034	breaker	349.0	207.97	210.37	DC	8.36

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
97152421	314614	3TRWBRD G2	115.0	DVP	314596	3POPLR C	115.0	DVP	1	DVP_P4 -2: 246T2034	breaker	350.0	209.01	211.4	DC	8.36
148725283	314638	6ELIZ CT	230.0	DVP	314647	6SHAWBR O	230.0	DVP	1	DVP_P4 -2: 246T2034	breaker	699.0	282.76	288.46	DC	39.87
148725284	314638	6ELIZ CT	230.0	DVP	314647	6SHAWBR O	230.0	DVP	1	DVP_P4 -2: 24642	breaker	699.0	240.24	245.06	DC	33.7
148988792	314638	6ELIZ CT	230.0	DVP	314647	6SHAWBR O	230.0	DVP	1	DVP_P1 -2: LN 247-B	single	571.520019531	118.82	122.26	DC	19.66
97718984	314639	6TANGLE W	230.0	DVP	313851	6ECITYDP 2	230.0	DVP	1	DVP_P4 -2: 246T247	breaker	1204.0	143.65	146.45	DC	33.71
97718985	314639	6TANGLE W	230.0	DVP	313851	6ECITYDP 2	230.0	DVP	1	DVP_P4 -2: 24742	breaker	1204.0	121.32	124.04	DC	32.8
148725388	314639	6TANGLE W	230.0	DVP	313851	6ECITYDP 2	230.0	DVP	1	DVP_P4 -2: 246T2034	breaker	1204.0	167.41	170.72	DC	39.87
148725389	314639	6TANGLE W	230.0	DVP	313851	6ECITYDP 2	230.0	DVP	1	DVP_P4 -2: 24642	breaker	1204.0	143.71	146.51	DC	33.7
148725390	314639	6TANGLE W	230.0	DVP	313851	6ECITYDP 2	230.0	DVP	1	DVP_P4 -2: 24662	breaker	1204.0	143.73	146.53	DC	33.77
148725492	314645	6SLIGO L269	230.0	DVP	957870	AF2-081 TAP	230.0	DVP	1	DVP_P4 -2: 246T2034	breaker	699.0	132.36	135.15	DC	19.49
148725493	314645	6SLIGO L269	230.0	DVP	957870	AF2-081 TAP	230.0	DVP	1	DVP_P4 -2: 24642	breaker	699.0	106.25	108.61	DC	16.47
148725494	314645	6SLIGO L269	230.0	DVP	957870	AF2-081 TAP	230.0	DVP	1	DVP_P4 -2: 246T247	breaker	699.0	106.2	108.56	DC	16.48
148725495	314645	6SLIGO L269	230.0	DVP	957870	AF2-081 TAP	230.0	DVP	1	DVP_P4 -2: 24662	breaker	699.0	105.57	107.93	DC	16.51
148725519	314647	6SHAWBR O	230.0	DVP	938530	AE1-072 TAP	230.0	DVP	1	DVP_P4 -2: 246T2034	breaker	699.0	123.1	125.89	DC	19.49
97718979	314651	6WINFALL	230.0	DVP	314639	6TANGLE W	230.0	DVP	1	DVP_P4 -2: 246T247	breaker	1163.0	152.69	155.59	DC	33.71
97718980	314651	6WINFALL	230.0	DVP	314639	6TANGLE W	230.0	DVP	1	DVP_P4 -2: 24742	breaker	1163.0	127.94	130.76	DC	32.81
148725368	314651	6WINFALL	230.0	DVP	314639	6TANGLE W	230.0	DVP	1	DVP_P4 -2: 246T2034	breaker	1163.0	175.57	179.0	DC	39.87
148725369	314651	6WINFALL	230.0	DVP	314639	6TANGLE W	230.0	DVP	1	DVP_P4 -2: 24642	breaker	1163.0	152.77	155.67	DC	33.71
148725370	314651	6WINFALL	230.0	DVP	314639	6TANGLE W	230.0	DVP	1	DVP_P4 -2: 24662	breaker	1163.0	152.77	155.67	DC	33.78

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
97719161	938530	AE1-072 TAP	230.0	DVP	314645	6SLIGO L269	230.0	DVP	1	DVP_P4 -2: 246T247	breaker	699.0	107.32	109.68	DC	16.48
148725487	938530	AE1-072 TAP	230.0	DVP	314645	6SLIGO L269	230.0	DVP	1	DVP_P4 -2: 246T2034	breaker	699.0	133.46	136.25	DC	19.49
148725488	938530	AE1-072 TAP	230.0	DVP	314645	6SLIGO L269	230.0	DVP	1	DVP_P4 -2: 24642	breaker	699.0	107.35	109.71	DC	16.47
148725490	938530	AE1-072 TAP	230.0	DVP	314645	6SLIGO L269	230.0	DVP	1	DVP_P4 -2: 24662	breaker	699.0	106.67	109.03	DC	16.51
148725462	957870	AF2-081 TAP	230.0	DVP	314466	6FENTRES	230.0	DVP	1	DVP_P4 -2: 246T2034	breaker	699.0	132.33	135.12	DC	19.49
148725463	957870	AF2-081 TAP	230.0	DVP	314466	6FENTRES	230.0	DVP	1	DVP_P4 -2: 24662	breaker	699.0	105.52	107.89	DC	16.51
148725464	957870	AF2-081 TAP	230.0	DVP	314466	6FENTRES	230.0	DVP	1	DVP_P4 -2: 24642	breaker	699.0	105.08	107.43	DC	16.47
148725465	957870	AF2-081 TAP	230.0	DVP	314466	6FENTRES	230.0	DVP	1	DVP_P4 -2: 246T247	breaker	699.0	105.05	107.41	DC	16.48

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 PROJECT LOADIN G %	POST PROJECT LOADIN G %	AC D C	MW IMPAC T
148989184	313851	6ECITYDP2	230.0	DVP	314638	6ELIZ CT	230.0	DVP	1	DVP_P 1-2: LN 247-B	operation	984.179992676	145.87	149.2	DC	32.77
97913220	314525	6KINGFOR K	230.0	DVP	314522	6CHCKTUK	230.0	DVP	1	DVP_P 1-2: LN 531	operation	678.679992676	102.04	103.27	DC	8.32
148988786	314638	6ELIZ CT	230.0	DVP	314647	6SHAWB RO	230.0	DVP	1	DVP_P 1-2: LN 247-B	operation	571.520019531	247.84	253.57	DC	32.76
148989124	314639	6TANGLE W	230.0	DVP	313851	6ECITYDP2	230.0	DVP	1	DVP_P 1-2: LN 247-B	operation	984.179992676	148.29	151.62	DC	32.77

ID	FROM BUS#	FROM BUS	kV	FRO M BUS ARE A	TO BUS#	TO BUS	kV	TO BUS ARE A	CK T ID	CONT NAME	Type	Rating MVA	PRE PROJEC T LOADIN G %	POST PROJEC T LOADIN G %	AC D C	MW IMPAC T
1489890 20	31465 1	6WINFAL L	230. 0	DVP	31463 9	6TANGLE W	230. 0	DVP	1	DVP_P 1-2: LN 247-B	operati on	898.6400146 48	165.44	169.08	DC	32.77
1489891 19	95782 0	AF2-076 TAP	230. 0	DVP	31453 7	6SUFFOLK	230. 0	DVP	1	DVP_P 1-2: LN 2020	operati on	984.1799926 76	147.81	152.53	DC	46.44

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
148725403	313851	6ECITYDP2	DVP	314638	6ELIZ CT	DVP	1	DVP_P4-2: 246T2034	breaker	1204.0	165.43	168.74	DC	39.87

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
314574	6EVERETS	0.2337	50/50	0.2337
314639	6TANGLEW	2.0229	50/50	2.0229
315292	1DOMTR78	4.3474	50/50	4.3474
315294	1DOMTR10	32.6637	50/50	32.6637
315605	6W1-029WIND	3.7138	50/50	3.7138
315611	6Z1-036WIND	29.4645	50/50	29.4645
315614	AA2-178 C	6.4356	50/50	6.4356
901082	W1-029 E	144.3330	50/50	144.3330
916042	Z1-036 E (Suspended)	197.4121	50/50	197.4121
917122	Z2-027 E	5.0261	50/50	5.0261
918532	AA1-067 E	0.5807	50/50	0.5807
920692	AA2-178 E	15.9898	50/50	15.9898
923831	AB2-022 C	-1.5512	Adder	-1.82
925121	AB2-169 C	2.5856	50/50	2.5856
925122	AB2-169 E	13.4519	50/50	13.4519
927021	AC1-189 C	5.6593	50/50	5.6593
927022	AC1-189 E	2.8191	50/50	2.8191
933991	AD1-023 C	47.6565	50/50	47.6565
933992	AD1-023 E	25.9443	50/50	25.9443
934521	AD1-076 C	196.6982	50/50	196.6982
934522	AD1-076 E	100.1584	50/50	100.1584
940491	AE2-034 C	27.9821	50/50	27.9821
940492	AE2-034 E	11.9923	50/50	11.9923
941501	AE2-147 C	71.7678	50/50	71.7678
941502	AE2-147 E	47.8452	50/50	47.8452
942851	AE2-304 C	2.8078	50/50	2.8078
942852	AE2-304 E	1.0919	50/50	1.0919
944871	AF1-152 C	23.9226	50/50	23.9226
944872	AF1-152 E	15.9484	50/50	15.9484
945711	AF1-236 C O1	306.3372	50/50	306.3372
945712	AF1-236 E O1	499.8132	50/50	499.8132
957531	AF2-047 C	66.4908	50/50	66.4908
957532	AF2-047 E	33.4452	50/50	33.4452
957821	AF2-076 C O2	23.9223	50/50	23.9223
957822	AF2-076 E O2	15.9482	50/50	15.9482
957861	AF2-080 C	5.1400	50/50	5.1400
957862	AF2-080 E	2.2786	50/50	2.2786
959511	AF2-242	13.9469	50/50	13.9469
WEC	WEC	0.1298	Confirmed LTF	0.1298
LGEE	LGEE	0.2425	Confirmed LTF	0.2425
CPLE	CPLE	1.6094	Confirmed LTF	1.6094

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
CBM-W2	CBM-W2	5.1597	Confirmed LTF	5.1597
NY	NY	0.1382	Confirmed LTF	0.1382
CBM-W1	CBM-W1	4.8789	Confirmed LTF	4.8789
TVA	TVA	1.0780	Confirmed LTF	1.0780
O-066	O-066	2.0093	Confirmed LTF	2.0093
CBM-S2	CBM-S2	9.6064	Confirmed LTF	9.6064
CBM-S1	CBM-S1	6.0151	Confirmed LTF	6.0151
G-007	G-007	0.3141	Confirmed LTF	0.3141
MADISON	MADISON	0.3004	Confirmed LTF	0.3004
MEC	MEC	0.7818	Confirmed LTF	0.7818

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
148725467	314466	6FENTRES	DVP	314508	6THRASHER	DVP	1	DVP_P4-2: 246T2034	breaker	830.0	136.82	138.55	DC	14.35

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
314638	6ELIZ CT	0.4059	50/50	0.4059
314639	6TANGLEW	0.7285	50/50	0.7285
314643	3O INLET	0.8401	50/50	0.8401
315294	1DOMTR10	9.9579	Adder	11.72
315603	6AA1-139SOLA	4.7814	50/50	4.7814
315605	6W1-029WIND	1.3370	50/50	1.3370
315611	6Z1-036WIND	10.6033	50/50	10.6033
315614	AA2-178 C	2.3139	50/50	2.3139
901082	W1-029 E	51.9597	50/50	51.9597
913392	Y1-086 E	3.8390	50/50	3.8390
916042	Z1-036 E (Suspended)	71.0422	50/50	71.0422
917122	Z2-027 E	1.8100	50/50	1.8100
919152	AA1-139 E	11.8796	50/50	11.8796
920692	AA2-178 E	5.7490	50/50	5.7490
923831	AB2-022 C	4.0248	50/50	4.0248
923832	AB2-022 E	2.1672	50/50	2.1672
925122	AB2-169 E	4.0882	Adder	4.81
926661	AC1-147 C	-1.0166	Adder	-1.2
933731	AC2-196 C	3.4291	50/50	3.4291
933732	AC2-196 E	2.2838	50/50	2.2838
933991	AD1-023 C	17.1235	50/50	17.1235
933992	AD1-023 E	9.3221	50/50	9.3221
934061	AD1-033 C	11.9125	50/50	11.9125
934062	AD1-033 E	7.9416	50/50	7.9416
934521	AD1-076 C	70.6759	50/50	70.6759
934522	AD1-076 E	35.9881	50/50	35.9881
937221	AD2-160 C O1	10.9454	50/50	10.9454
937222	AD2-160 E O1	5.7396	50/50	5.7396
938531	AE1-072 C O1	32.1535	50/50	32.1535
938532	AE1-072 E O1	16.7615	50/50	16.7615
939311	AE1-162 C	-0.5884	Adder	-0.69
940491	AE2-034 C	10.0607	50/50	10.0607
940492	AE2-034 E	4.3117	50/50	4.3117
941501	AE2-147 C	25.8363	50/50	25.8363
941502	AE2-147 E	17.2242	50/50	17.2242
941592	AE2-156 BAT	9.0010	Merchant Transmission	9.0010
942401	AE2-253 C	11.5127	50/50	11.5127
942402	AE2-253 E	5.1724	50/50	5.1724
942851	AE2-304 C	1.0107	50/50	1.0107
942852	AE2-304 E	0.3930	50/50	0.3930
944581	AF1-123 C O1	24.9317	Adder	29.33

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
944582	AF1-123 E O1	57.0865	Adder	67.16
944591	AF1-124 C O1	24.9317	Adder	29.33
944592	AF1-124 E O1	57.0865	Adder	67.16
944601	AF1-125 C O1	24.9317	Adder	29.33
944602	AF1-125 E O1	57.0865	Adder	67.16
944871	AF1-152 C	8.6121	50/50	8.6121
944872	AF1-152 E	5.7414	50/50	5.7414
945711	AF1-236 C O1	110.1405	50/50	110.1405
945712	AF1-236 E O1	179.7029	50/50	179.7029
957531	AF2-047 C	23.9061	50/50	23.9061
957532	AF2-047 E	12.0249	50/50	12.0249
957632	AF2-057 BAT	1.0062	Merchant Transmission	1.0062
957821	AF2-076 C O2	8.6121	50/50	8.6121
957822	AF2-076 E O2	5.7414	50/50	5.7414
957871	AF2-081 C O2	18.4968	50/50	18.4968
957872	AF2-081 E O2	7.9272	50/50	7.9272
959511	AF2-242	2.2368	Adder	4.97
WEC	WEC	0.0586	Confirmed LTF	0.0586
LGEE	LGEE	0.1090	Confirmed LTF	0.1090
CPL	CPL	0.6258	Confirmed LTF	0.6258
CBM-W2	CBM-W2	2.2195	Confirmed LTF	2.2195
NY	NY	0.0398	Confirmed LTF	0.0398
CBM-W1	CBM-W1	2.2143	Confirmed LTF	2.2143
TVA	TVA	0.4564	Confirmed LTF	0.4564
O-066	O-066	0.6115	Confirmed LTF	0.6115
CBM-S2	CBM-S2	3.8553	Confirmed LTF	3.8553
CBM-S1	CBM-S1	2.5645	Confirmed LTF	2.5645
G-007	G-007	0.0957	Confirmed LTF	0.0957
MADISON	MADISON	0.1189	Confirmed LTF	0.1189
MEC	MEC	0.3448	Confirmed LTF	0.3448

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
148725427	314550	6HICKORY	DVP	314466	6FENTRES	DVP	1	DVP_P4-2: 246T2034	breaker	699.0	143.59	146.51	DC	20.35

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
314638	6ELIZ CT	0.5753	50/50	0.5753
314639	6TANGLEW	1.0326	50/50	1.0326
314643	3O INLET	1.1904	50/50	1.1904
315294	1DOMTR10	14.1649	Adder	16.66
315603	6AA1-139SOLA	8.8423	50/50	8.8423
315605	6W1-029WIND	1.8957	50/50	1.8957
315611	6Z1-036WIND	15.0396	50/50	15.0396
315614	AA2-178 C	3.2845	50/50	3.2845
901082	W1-029 E	73.6742	50/50	73.6742
913392	Y1-086 E	5.4414	50/50	5.4414
916042	Z1-036 E (Suspended)	100.7651	50/50	100.7651
917122	Z2-027 E	2.5657	50/50	2.5657
919152	AA1-139 E	21.9694	50/50	21.9694
920692	AA2-178 E	8.1605	50/50	8.1605
923831	AB2-022 C	5.7047	50/50	5.7047
923832	AB2-022 E	3.0717	50/50	3.0717
925122	AB2-169 E	5.8313	Adder	6.86
933991	AD1-023 C	24.3201	50/50	24.3201
933992	AD1-023 E	13.2399	50/50	13.2399
934521	AD1-076 C	100.3791	50/50	100.3791
934522	AD1-076 E	51.1129	50/50	51.1129
937221	AD2-160 C O1	23.4550	50/50	23.4550
937222	AD2-160 E O1	12.2995	50/50	12.2995
938531	AE1-072 C O1	41.5944	50/50	41.5944
938532	AE1-072 E O1	21.6831	50/50	21.6831
940491	AE2-034 C	14.2808	50/50	14.2808
940492	AE2-034 E	6.1204	50/50	6.1204
941501	AE2-147 C	36.6336	50/50	36.6336
941502	AE2-147 E	24.4224	50/50	24.4224
942401	AE2-253 C	24.6706	50/50	24.6706
942402	AE2-253 E	11.0839	50/50	11.0839
942851	AE2-304 C	1.4332	50/50	1.4332
942852	AE2-304 E	0.5574	50/50	0.5574
944871	AF1-152 C	12.2112	50/50	12.2112
944872	AF1-152 E	8.1408	50/50	8.1408
945711	AF1-236 C O1	156.3412	50/50	156.3412
945712	AF1-236 E O1	255.0830	50/50	255.0830
957531	AF2-047 C	33.9340	50/50	33.9340
957532	AF2-047 E	17.0690	50/50	17.0690
957821	AF2-076 C O2	12.2112	50/50	12.2112
957822	AF2-076 E O2	8.1408	50/50	8.1408

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
957871	AF2-081 C O2	17.3807	50/50	17.3807
957872	AF2-081 E O2	7.4489	50/50	7.4489
959511	AF2-242	3.2025	Adder	7.11
WEC	WEC	0.0558	Confirmed LTF	0.0558
LGEE	LGEE	0.1050	Confirmed LTF	0.1050
CPL	CPL	0.7998	Confirmed LTF	0.7998
CBM-W2	CBM-W2	2.3587	Confirmed LTF	2.3587
NY	NY	0.0901	Confirmed LTF	0.0901
CBM-W1	CBM-W1	2.0641	Confirmed LTF	2.0641
TVA	TVA	0.5026	Confirmed LTF	0.5026
O-066	O-066	1.2499	Confirmed LTF	1.2499
CBM-S2	CBM-S2	4.7107	Confirmed LTF	4.7107
CBM-S1	CBM-S1	2.7860	Confirmed LTF	2.7860
G-007	G-007	0.1955	Confirmed LTF	0.1955
MADISON	MADISON	0.1532	Confirmed LTF	0.1532
MEC	MEC	0.3464	Confirmed LTF	0.3464

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
148725482	314561	6CAROLNA	DVP	314583	6LAKEVEW	DVP	1	DVP_P4-2: 24662	breaker	459.0	132.05	132.51	DC	4.74

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
314539	3UNCAMP	1.3867	Adder	1.63
314541	3WATKINS	0.5635	50/50	0.5635
314574	6EVERETS	0.2246	50/50	0.2246
314582	3KELFORD	0.6104	50/50	0.6104
314589	3MURPHYS	0.1208	50/50	0.1208
315115	1S HAMPT1	1.3232	50/50	1.3232
315126	1ROARAP2	2.5989	50/50	2.5989
315128	1ROARAP4	2.4801	50/50	2.4801
315292	1DOMTR78	1.4847	50/50	1.4847
315294	1DOMTR10	11.1547	50/50	11.1547
315602	1HOLLOMANSOL	2.5611	50/50	2.5611
315606	3AA2-053SOLA	2.6290	50/50	2.6290
315607	3AA1-063SOLA	2.2895	50/50	2.2895
315608	3AA2-088SOLA	1.2654	50/50	1.2654
315611	6Z1-036WIND	3.8305	Adder	4.51
315614	AA2-178 C	1.5446	50/50	1.5446
900672	V4-068 E	0.3837	50/50	0.3837
901082	W1-029 E	14.5727	Adder	17.14
907092	X1-038 E	3.4668	Adder	4.08
916042	Z1-036 E (Suspended)	25.6642	Adder	30.19
917122	Z2-027 E	0.3811	Adder	0.45
917332	Z2-043 E	1.5385	50/50	1.5385
918492	AA1-063AE OP	6.2585	50/50	6.2585
918512	AA1-065 E OP	6.6482	50/50	6.6482
918532	AA1-067 E	0.5579	50/50	0.5579
919692	AA2-053 E OP	6.5443	50/50	6.5443
919702	AA2-057 E OP	1.4439	Adder	1.7
920042	AA2-088 E OP	11.9691	50/50	11.9691
920592	AA2-165 E	0.1985	Adder	0.23
920671	AA2-174 C OP	0.1204	50/50	0.1204
920672	AA2-174 E OP	0.7562	50/50	0.7562
920692	AA2-178 E	3.8376	50/50	3.8376
923572	AB1-173 C OP	1.6011	50/50	1.6011
923573	AB1-173 E OP	0.7472	50/50	0.7472
923582	AB1-173AC OP	1.6011	50/50	1.6011
923583	AB1-173AE OP	0.7472	50/50	0.7472
923801	AB2-015 C OP	6.5360	50/50	6.5360
923802	AB2-015 E OP	5.3595	50/50	5.3595
923911	AB2-031 C O1	1.5892	50/50	1.5892
923912	AB2-031 E O1	0.7828	50/50	0.7828
923991	AB2-040 C O1	5.2184	50/50	5.2184
923992	AB2-040 E O1	4.2696	50/50	4.2696

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
924501	AB2-099 C (Suspended)	0.8489	50/50	0.8489
924502	AB2-099 E (Suspended)	0.3638	50/50	0.3638
925121	AB2-169 C	1.0546	50/50	1.0546
925122	AB2-169 E	5.4870	50/50	5.4870
925172	AB2-174 E O1	2.5704	Adder	3.02
925781	AC1-054 C O1	6.7920	50/50	6.7920
925782	AC1-054 E O1	3.1289	50/50	3.1289
926201	AC1-098 C	6.2096	50/50	6.2096
926202	AC1-098 E	3.6994	50/50	3.6994
926211	AC1-099 C	2.0809	50/50	2.0809
926212	AC1-099 E	1.2221	50/50	1.2221
927021	AC1-189 C	2.9785	Adder	3.5
927022	AC1-189 E	1.4837	Adder	1.75
927141	AC1-208 C	8.8490	50/50	8.8490
927142	AC1-208 E	3.9294	50/50	3.9294
932631	AC2-084 C	8.8520	50/50	8.8520
932632	AC2-084 E	4.3600	50/50	4.3600
933991	AD1-023 C	16.3108	50/50	16.3108
933992	AD1-023 E	8.8796	50/50	8.8796
934521	AD1-076 C	59.7079	50/50	59.7079
934522	AD1-076 E	30.4032	50/50	30.4032
936361	AD2-046 C O1	4.4554	Adder	5.24
936362	AD2-046 E O1	2.0488	Adder	2.41
936401	AD2-051 C O1	15.0116	50/50	15.0116
936402	AD2-051 E O1	6.4458	50/50	6.4458
938171	AE1-026 C O1	42.4597	50/50	42.4597
938172	AE1-026 E O1	11.2019	50/50	11.2019
938221	AE1-035 C	3.7119	50/50	3.7119
938222	AE1-035 E	1.8283	50/50	1.8283
938771	AE1-103 C O1	2.0801	Adder	2.45
938772	AE1-103 E O1	2.8725	Adder	3.38
939181	AE1-148 C O1	4.2926	Adder	5.05
939182	AE1-148 E O1	2.8617	Adder	3.37
940491	AE2-034 C	6.7158	50/50	6.7158
940492	AE2-034 E	2.8782	50/50	2.8782
940661	AE2-053 O1	1.5898	Adder	1.87
941501	AE2-147 C	7.2461	Adder	8.52
941502	AE2-147 E	4.8307	Adder	5.68
941541	AE2-151 C	1.6316	50/50	1.6316
941542	AE2-151 E	0.8785	50/50	0.8785
942851	AE2-304 C	0.3164	Adder	0.37
942852	AE2-304 E	0.1230	Adder	0.14
943171	AE2-346 C	2.0373	50/50	2.0373
943172	AE2-346 E	0.8731	50/50	0.8731
944871	AF1-152 C	2.4154	Adder	2.84
944872	AF1-152 E	1.6102	Adder	1.89
945711	AF1-236 C O1	73.5220	50/50	73.5220
945712	AF1-236 E O1	119.9570	50/50	119.9570
946012	AF1-266 BAT	7.7897	Merchant Transmission	7.7897
957521	AF2-046 C	22.1177	50/50	22.1177
957522	AF2-046 E	11.1253	50/50	11.1253
957531	AF2-047 C	15.9580	50/50	15.9580

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
957532	AF2-047 E	8.0270	50/50	8.0270
957821	AF2-076 C O2	1.2801	Adder	2.84
957822	AF2-076 E O2	0.8534	Adder	1.89
957861	AF2-080 C	1.4337	Adder	3.18
957862	AF2-080 E	0.6356	Adder	1.41
959511	AF2-242	6.9466	50/50	6.9466
959731	AF2-264 C	3.1187	50/50	3.1187
959732	AF2-264 E	1.5361	50/50	1.5361
960831	AF2-374 C	2.0085	50/50	2.0085
960832	AF2-374 E	3.2769	50/50	3.2769
961091	AF2-400 C	0.3529	50/50	0.3529
961092	AF2-400 E	0.5791	50/50	0.5791
WEC	WEC	0.0469	Confirmed LTF	0.0469
LGEE	LGEE	0.0879	Confirmed LTF	0.0879
CPL	CPL	0.5768	Confirmed LTF	0.5768
CBM-W2	CBM-W2	1.7854	Confirmed LTF	1.7854
NY	NY	0.0503	Confirmed LTF	0.0503
CBM-W1	CBM-W1	1.7639	Confirmed LTF	1.7639
TVA	TVA	0.3682	Confirmed LTF	0.3682
O-066	O-066	0.7392	Confirmed LTF	0.7392
CBM-S2	CBM-S2	3.2368	Confirmed LTF	3.2368
CBM-S1	CBM-S1	2.0704	Confirmed LTF	2.0704
G-007	G-007	0.1154	Confirmed LTF	0.1154
MADISON	MADISON	0.0948	Confirmed LTF	0.0948
MEC	MEC	0.2765	Confirmed LTF	0.2765

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
97152426	314596	3POPLR C	DVP	314573	3EVERETS	DVP	1	DVP_P4-2: 246T2034	breaker	349.0	207.97	210.37	DC	8.36

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
314638	6ELIZ CT	0.1516	50/50	0.1516
314639	6TANGLEW	0.3233	50/50	0.3233
315292	1DOMTR78	3.5406	50/50	3.5406
315294	1DOMTR10	26.6017	50/50	26.6017
315605	6W1-029WIND	0.7789	50/50	0.7789
315611	6Z1-036WIND	7.8780	50/50	7.8780
315614	AA2-178 C	2.6663	50/50	2.6663
901082	W1-029 E	30.2723	50/50	30.2723
913392	Y1-086 E	1.4343	50/50	1.4343
916042	Z1-036 E (Suspended)	52.7826	50/50	52.7826
917122	Z2-027 E	0.8032	50/50	0.8032
919152	AA1-139 E	2.1120	Adder	2.48
920692	AA2-178 E	6.6245	50/50	6.6245
923831	AB2-022 C	1.5037	50/50	1.5037
923832	AB2-022 E	0.8097	50/50	0.8097
925121	AB2-169 C	1.0532	50/50	1.0532
925122	AB2-169 E	5.4793	50/50	5.4793
933991	AD1-023 C	24.8547	50/50	24.8547
933992	AD1-023 E	13.5309	50/50	13.5309
934521	AD1-076 C	102.5855	50/50	102.5855
934522	AD1-076 E	52.2364	50/50	52.2364
937221	AD2-160 C O1	1.6870	Adder	1.98
937222	AD2-160 E O1	0.8847	Adder	1.04
938531	AE1-072 C O1	6.5296	Adder	7.68
938532	AE1-072 E O1	3.4039	Adder	4.0
940491	AE2-034 C	11.5928	50/50	11.5928
940492	AE2-034 E	4.9684	50/50	4.9684
941501	AE2-147 C	15.0525	50/50	15.0525
941502	AE2-147 E	10.0350	50/50	10.0350
942401	AE2-253 C	1.7745	Adder	2.09
942402	AE2-253 E	0.7972	Adder	0.94
942851	AE2-304 C	0.6542	50/50	0.6542
942852	AE2-304 E	0.2544	50/50	0.2544
944871	AF1-152 C	5.0175	50/50	5.0175
944872	AF1-152 E	3.3450	50/50	3.3450
945711	AF1-236 C O1	126.9140	50/50	126.9140
945712	AF1-236 E O1	207.0702	50/50	207.0702
957531	AF2-047 C	27.5468	50/50	27.5468
957532	AF2-047 E	13.8562	50/50	13.8562
957821	AF2-076 C O2	5.0175	50/50	5.0175
957822	AF2-076 E O2	3.3450	50/50	3.3450

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
957871	AF2-081 C O2	1.7233	Adder	3.83
957872	AF2-081 E O2	0.7386	Adder	1.64
960123	AF2-303 BAT	2.1425	Merchant Transmission	2.1425
NEWTON	NEWTON	0.4900	Confirmed LTF	0.4900
FARMERCITY	FARMERCITY	0.0284	Confirmed LTF	0.0284
G-007A	G-007A	0.4244	Confirmed LTF	0.4244
VFT	VFT	1.1352	Confirmed LTF	1.1352
CALDERWOOD	CALDERWOOD	0.4031	Confirmed LTF	0.4031
PRAIRIE	PRAIRIE	1.3380	Confirmed LTF	1.3380
CHEOAH	CHEOAH	0.4134	Confirmed LTF	0.4134
EDWARDS	EDWARDS	0.1470	Confirmed LTF	0.1470
TILTON	TILTON	0.2589	Confirmed LTF	0.2589
GIBSON	GIBSON	0.2353	Confirmed LTF	0.2353
BLUEG	BLUEG	0.7239	Confirmed LTF	0.7239
TRIMBLE	TRIMBLE	0.2298	Confirmed LTF	0.2298
CATAWBA	CATAWBA	0.4368	Confirmed LTF	0.4368

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
97152421	314614	3TRWBRDG2	DVP	314596	3POPLR C	DVP	1	DVP_P4-2: 246T2034	breaker	350.0	209.01	211.4	DC	8.36

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
314638	6ELIZ CT	0.1516	50/50	0.1516
314639	6TANGLEW	0.3233	50/50	0.3233
315292	1DOMTR78	3.5406	50/50	3.5406
315294	1DOMTR10	26.6017	50/50	26.6017
315605	6W1-029WIND	0.7789	50/50	0.7789
315611	6Z1-036WIND	7.8780	50/50	7.8780
315614	AA2-178 C	2.6663	50/50	2.6663
901082	W1-029 E	30.2723	50/50	30.2723
913392	Y1-086 E	1.4343	50/50	1.4343
916042	Z1-036 E (Suspended)	52.7826	50/50	52.7826
917122	Z2-027 E	0.8032	50/50	0.8032
919152	AA1-139 E	2.1120	Adder	2.48
920692	AA2-178 E	6.6245	50/50	6.6245
923831	AB2-022 C	1.5037	50/50	1.5037
923832	AB2-022 E	0.8097	50/50	0.8097
925121	AB2-169 C	1.0532	50/50	1.0532
925122	AB2-169 E	5.4793	50/50	5.4793
933991	AD1-023 C	24.8547	50/50	24.8547
933992	AD1-023 E	13.5309	50/50	13.5309
934521	AD1-076 C	102.5855	50/50	102.5855
934522	AD1-076 E	52.2364	50/50	52.2364
937221	AD2-160 C O1	1.6870	Adder	1.98
937222	AD2-160 E O1	0.8847	Adder	1.04
938531	AE1-072 C O1	6.5296	Adder	7.68
938532	AE1-072 E O1	3.4039	Adder	4.0
940491	AE2-034 C	11.5928	50/50	11.5928
940492	AE2-034 E	4.9684	50/50	4.9684
941501	AE2-147 C	15.0525	50/50	15.0525
941502	AE2-147 E	10.0350	50/50	10.0350
942401	AE2-253 C	1.7745	Adder	2.09
942402	AE2-253 E	0.7972	Adder	0.94
942851	AE2-304 C	0.6542	50/50	0.6542
942852	AE2-304 E	0.2544	50/50	0.2544
944871	AF1-152 C	5.0175	50/50	5.0175
944872	AF1-152 E	3.3450	50/50	3.3450
945711	AF1-236 C O1	126.9140	50/50	126.9140
945712	AF1-236 E O1	207.0702	50/50	207.0702
957531	AF2-047 C	27.5468	50/50	27.5468
957532	AF2-047 E	13.8562	50/50	13.8562
957821	AF2-076 C O2	5.0175	50/50	5.0175
957822	AF2-076 E O2	3.3450	50/50	3.3450

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
957871	AF2-081 C O2	1.7233	Adder	3.83
957872	AF2-081 E O2	0.7386	Adder	1.64
960123	AF2-303 BAT	2.1425	Merchant Transmission	2.1425
NEWTON	NEWTON	0.4900	Confirmed LTF	0.4900
FARMERCITY	FARMERCITY	0.0284	Confirmed LTF	0.0284
G-007A	G-007A	0.4244	Confirmed LTF	0.4244
VFT	VFT	1.1352	Confirmed LTF	1.1352
CALDERWOOD	CALDERWOOD	0.4031	Confirmed LTF	0.4031
PRAIRIE	PRAIRIE	1.3380	Confirmed LTF	1.3380
CHEOAH	CHEOAH	0.4134	Confirmed LTF	0.4134
EDWARDS	EDWARDS	0.1470	Confirmed LTF	0.1470
TILTON	TILTON	0.2589	Confirmed LTF	0.2589
GIBSON	GIBSON	0.2353	Confirmed LTF	0.2353
BLUEG	BLUEG	0.7239	Confirmed LTF	0.7239
TRIMBLE	TRIMBLE	0.2298	Confirmed LTF	0.2298
CATAWBA	CATAWBA	0.4368	Confirmed LTF	0.4368

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
148725283	314638	6ELIZ CT	DVP	314647	6SHAWBRO	DVP	1	DVP_P4-2: 246T2034	breaker	699.0	282.76	288.46	DC	39.87

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
314574	6EVERETS	0.2337	50/50	0.2337
314638	6ELIZ CT	1.1269	50/50	1.1269
314639	6TANGLEW	2.0228	50/50	2.0228
315292	1DOMTR78	4.3471	50/50	4.3471
315294	1DOMTR10	32.6611	50/50	32.6611
315605	6W1-029WIND	3.7137	50/50	3.7137
315611	6Z1-036WIND	29.4629	50/50	29.4629
315614	AA2-178 C	6.4353	50/50	6.4353
901082	W1-029 E	144.3258	50/50	144.3258
913392	Y1-086 E	10.6588	50/50	10.6588
916042	Z1-036 E (Suspended)	197.4017	50/50	197.4017
917122	Z2-027 E	5.0258	50/50	5.0258
918532	AA1-067 E	0.5805	50/50	0.5805
920692	AA2-178 E	15.9888	50/50	15.9888
923831	AB2-022 C	11.1745	50/50	11.1745
923832	AB2-022 E	6.0171	50/50	6.0171
925121	AB2-169 C	2.5853	50/50	2.5853
925122	AB2-169 E	13.4509	50/50	13.4509
927021	AC1-189 C	5.6572	50/50	5.6572
927022	AC1-189 E	2.8180	50/50	2.8180
933991	AD1-023 C	47.6534	50/50	47.6534
933992	AD1-023 E	25.9426	50/50	25.9426
934521	AD1-076 C	196.6853	50/50	196.6853
934522	AD1-076 E	100.1519	50/50	100.1519
940491	AE2-034 C	27.9804	50/50	27.9804
940492	AE2-034 E	11.9916	50/50	11.9916
941501	AE2-147 C	71.7642	50/50	71.7642
941502	AE2-147 E	47.8428	50/50	47.8428
942851	AE2-304 C	2.8077	50/50	2.8077
942852	AE2-304 E	1.0919	50/50	1.0919
944871	AF1-152 C	23.9214	50/50	23.9214
944872	AF1-152 E	15.9476	50/50	15.9476
945711	AF1-236 C O1	306.3188	50/50	306.3188
945712	AF1-236 E O1	499.7832	50/50	499.7832
957531	AF2-047 C	66.4868	50/50	66.4868
957532	AF2-047 E	33.4432	50/50	33.4432
957821	AF2-076 C O2	23.9211	50/50	23.9211
957822	AF2-076 E O2	15.9474	50/50	15.9474
957861	AF2-080 C	5.1381	50/50	5.1381
957862	AF2-080 E	2.2777	50/50	2.2777
959511	AF2-242	13.9450	50/50	13.9450

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
WEC	WEC	0.1285	Confirmed LTF	0.1285
LGEE	LGEE	0.2402	Confirmed LTF	0.2402
CPL	CPL	1.6068	Confirmed LTF	1.6068
CBM-W2	CBM-W2	5.1269	Confirmed LTF	5.1269
NY	NY	0.1405	Confirmed LTF	0.1405
CBM-W1	CBM-W1	4.8289	Confirmed LTF	4.8289
TVA	TVA	1.0724	Confirmed LTF	1.0724
O-066	O-066	2.0362	Confirmed LTF	2.0362
CBM-S2	CBM-S2	9.5832	Confirmed LTF	9.5832
CBM-S1	CBM-S1	5.9810	Confirmed LTF	5.9810
G-007	G-007	0.3182	Confirmed LTF	0.3182
MADISON	MADISON	0.3004	Confirmed LTF	0.3004
MEC	MEC	0.7754	Confirmed LTF	0.7754

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
148725388	314639	6TANGLEW	DVP	313851	6ECITYDP2	DVP	1	DVP_P4-2: 246T2034	breaker	1204.0	167.41	170.72	DC	39.87

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
314574	6EVERETS	0.2337	50/50	0.2337
314639	6TANGLEW	2.0229	50/50	2.0229
315292	1DOMTR78	4.3474	50/50	4.3474
315294	1DOMTR10	32.6637	50/50	32.6637
315605	6W1-029WIND	3.7138	50/50	3.7138
315611	6Z1-036WIND	29.4645	50/50	29.4645
315614	AA2-178 C	6.4356	50/50	6.4356
901082	W1-029 E	144.3330	50/50	144.3330
916042	21-036 E (Suspended)	197.4121	50/50	197.4121
917122	Z2-027 E	5.0261	50/50	5.0261
918532	AA1-067 E	0.5807	50/50	0.5807
920692	AA2-178 E	15.9898	50/50	15.9898
923831	AB2-022 C	-1.5512	Adder	-1.82
925121	AB2-169 C	2.5856	50/50	2.5856
925122	AB2-169 E	13.4519	50/50	13.4519
927021	AC1-189 C	5.6593	50/50	5.6593
927022	AC1-189 E	2.8191	50/50	2.8191
933991	AD1-023 C	47.6565	50/50	47.6565
933992	AD1-023 E	25.9443	50/50	25.9443
934521	AD1-076 C	196.6982	50/50	196.6982
934522	AD1-076 E	100.1584	50/50	100.1584
940491	AE2-034 C	27.9821	50/50	27.9821
940492	AE2-034 E	11.9923	50/50	11.9923
941501	AE2-147 C	71.7678	50/50	71.7678
941502	AE2-147 E	47.8452	50/50	47.8452
942851	AE2-304 C	2.8078	50/50	2.8078
942852	AE2-304 E	1.0919	50/50	1.0919
944871	AF1-152 C	23.9226	50/50	23.9226
944872	AF1-152 E	15.9484	50/50	15.9484
945711	AF1-236 C O1	306.3372	50/50	306.3372
945712	AF1-236 E O1	499.8132	50/50	499.8132
957531	AF2-047 C	66.4908	50/50	66.4908
957532	AF2-047 E	33.4452	50/50	33.4452
957821	AF2-076 C O2	23.9223	50/50	23.9223
957822	AF2-076 E O2	15.9482	50/50	15.9482
957861	AF2-080 C	5.1400	50/50	5.1400
957862	AF2-080 E	2.2786	50/50	2.2786
959511	AF2-242	13.9469	50/50	13.9469
WEC	WEC	0.1298	Confirmed LTF	0.1298
LGEE	LGEE	0.2425	Confirmed LTF	0.2425
CPLE	CPLE	1.6094	Confirmed LTF	1.6094

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
CBM-W2	CBM-W2	5.1597	Confirmed LTF	5.1597
NY	NY	0.1382	Confirmed LTF	0.1382
CBM-W1	CBM-W1	4.8789	Confirmed LTF	4.8789
TVA	TVA	1.0780	Confirmed LTF	1.0780
O-066	O-066	2.0093	Confirmed LTF	2.0093
CBM-S2	CBM-S2	9.6064	Confirmed LTF	9.6064
CBM-S1	CBM-S1	6.0151	Confirmed LTF	6.0151
G-007	G-007	0.3141	Confirmed LTF	0.3141
MADISON	MADISON	0.3004	Confirmed LTF	0.3004
MEC	MEC	0.7818	Confirmed LTF	0.7818

13.5.9 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
148725492	314645	6SLIGO L269	DVP	957870	AF2-081 TAP	DVP	1	DVP_P4-2: 246T2034	breaker	699.0	132.36	135.15	DC	19.49

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
314638	6ELIZ CT	0.5509	50/50	0.5509
314639	6TANGLEW	0.9890	50/50	0.9890
314643	3O INLET	1.1400	50/50	1.1400
315294	1DOMTR10	13.5684	Adder	15.96
315603	6AA1-139SOLA	4.4203	50/50	4.4203
315605	6W1-029WIND	1.8155	50/50	1.8155
315611	6Z1-036WIND	14.4035	50/50	14.4035
315614	AA2-178 C	3.1458	50/50	3.1458
901082	W1-029 E	70.5574	50/50	70.5574
913392	Y1-086 E	5.2110	50/50	5.2110
916042	Z1-036 E (Suspended)	96.5033	50/50	96.5033
917122	Z2-027 E	2.4571	50/50	2.4571
919152	AA1-139 E	10.9825	50/50	10.9825
920692	AA2-178 E	7.8158	50/50	7.8158
923831	AB2-022 C	5.4631	50/50	5.4631
923832	AB2-022 E	2.9417	50/50	2.9417
925122	AB2-169 E	5.5865	Adder	6.57
933991	AD1-023 C	23.2929	50/50	23.2929
933992	AD1-023 E	12.6807	50/50	12.6807
934521	AD1-076 C	96.1395	50/50	96.1395
934522	AD1-076 E	48.9541	50/50	48.9541
937221	AD2-160 C O1	5.8685	Adder	6.9
937222	AD2-160 E O1	3.0774	Adder	3.62
938531	AE1-072 C O1	47.6001	50/50	47.6001
938532	AE1-072 E O1	24.8139	50/50	24.8139
940491	AE2-034 C	13.6777	50/50	13.6777
940492	AE2-034 E	5.8619	50/50	5.8619
941501	AE2-147 C	35.0838	50/50	35.0838
941502	AE2-147 E	23.3892	50/50	23.3892
942401	AE2-253 C	6.1726	Adder	7.26
942402	AE2-253 E	2.7732	Adder	3.26
942851	AE2-304 C	1.3726	50/50	1.3726
942852	AE2-304 E	0.5338	50/50	0.5338
944871	AF1-152 C	11.6946	50/50	11.6946
944872	AF1-152 E	7.7964	50/50	7.7964
945711	AF1-236 C O1	149.7385	50/50	149.7385
945712	AF1-236 E O1	244.3101	50/50	244.3101
957531	AF2-047 C	32.5009	50/50	32.5009
957532	AF2-047 E	16.3481	50/50	16.3481
957821	AF2-076 C O2	11.6946	50/50	11.6946
957822	AF2-076 E O2	7.7964	50/50	7.7964

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
959511	AF2-242	3.0687	Adder	6.81
WEC	WEC	0.0567	Confirmed LTF	0.0567
LGEE	LGEE	0.1067	Confirmed LTF	0.1067
CPL	CPL	0.7733	Confirmed LTF	0.7733
CBM-W2	CBM-W2	2.3505	Confirmed LTF	2.3505
NY	NY	0.0796	Confirmed LTF	0.0796
CBM-W1	CBM-W1	2.1142	Confirmed LTF	2.1142
TVA	TVA	0.4970	Confirmed LTF	0.4970
O-066	O-066	1.1222	Confirmed LTF	1.1222
CBM-S2	CBM-S2	4.5778	Confirmed LTF	4.5778
CBM-S1	CBM-S1	2.7605	Confirmed LTF	2.7605
G-007	G-007	0.1758	Confirmed LTF	0.1758
MADISON	MADISON	0.1472	Confirmed LTF	0.1472
MEC	MEC	0.3496	Confirmed LTF	0.3496

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
148725519	314647	6SHAWBRO	DVP	938530	AE1-072 TAP	DVP	1	DVP_P4-2: 246T2034	breaker	699.0	123.1	125.89	DC	19.49

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
314638	6ELIZ CT	0.5509	50/50	0.5509
314639	6TANGLEW	0.9890	50/50	0.9890
314643	3O INLET	1.1400	50/50	1.1400
315294	1DOMTR10	13.5684	Adder	15.96
315603	6AA1-139SOLA	4.4203	50/50	4.4203
315605	6W1-029WIND	1.8155	50/50	1.8155
315611	6Z1-036WIND	14.4035	50/50	14.4035
315614	AA2-178 C	3.1458	50/50	3.1458
901082	W1-029 E	70.5574	50/50	70.5574
913392	Y1-086 E	5.2110	50/50	5.2110
916042	Z1-036 E (Suspended)	96.5033	50/50	96.5033
917122	Z2-027 E	2.4571	50/50	2.4571
919152	AA1-139 E	10.9825	50/50	10.9825
920692	AA2-178 E	7.8158	50/50	7.8158
923831	AB2-022 C	5.4631	50/50	5.4631
923832	AB2-022 E	2.9417	50/50	2.9417
925122	AB2-169 E	5.5865	Adder	6.57
933991	AD1-023 C	23.2929	50/50	23.2929
933992	AD1-023 E	12.6807	50/50	12.6807
934521	AD1-076 C	96.1395	50/50	96.1395
934522	AD1-076 E	48.9541	50/50	48.9541
937221	AD2-160 C O1	5.8685	Adder	6.9
937222	AD2-160 E O1	3.0774	Adder	3.62
940491	AE2-034 C	13.6777	50/50	13.6777
940492	AE2-034 E	5.8619	50/50	5.8619
941501	AE2-147 C	35.0838	50/50	35.0838
941502	AE2-147 E	23.3892	50/50	23.3892
942401	AE2-253 C	6.1726	Adder	7.26
942402	AE2-253 E	2.7732	Adder	3.26
942851	AE2-304 C	1.3726	50/50	1.3726
942852	AE2-304 E	0.5338	50/50	0.5338
944871	AF1-152 C	11.6946	50/50	11.6946
944872	AF1-152 E	7.7964	50/50	7.7964
945711	AF1-236 C O1	149.7385	50/50	149.7385
945712	AF1-236 E O1	244.3101	50/50	244.3101
957531	AF2-047 C	32.5009	50/50	32.5009
957532	AF2-047 E	16.3481	50/50	16.3481
957821	AF2-076 C O2	11.6946	50/50	11.6946
957822	AF2-076 E O2	7.7964	50/50	7.7964
959511	AF2-242	3.0687	Adder	6.81
WEC	WEC	0.0567	Confirmed LTF	0.0567

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
LGEE	LGEE	0.1067	Confirmed LTF	0.1067
CPL	CPL	0.7733	Confirmed LTF	0.7733
CBM-W2	CBM-W2	2.3505	Confirmed LTF	2.3505
NY	NY	0.0796	Confirmed LTF	0.0796
CBM-W1	CBM-W1	2.1142	Confirmed LTF	2.1142
TVA	TVA	0.4970	Confirmed LTF	0.4970
O-066	O-066	1.1222	Confirmed LTF	1.1222
CBM-S2	CBM-S2	4.5778	Confirmed LTF	4.5778
CBM-S1	CBM-S1	2.7605	Confirmed LTF	2.7605
G-007	G-007	0.1758	Confirmed LTF	0.1758
MADISON	MADISON	0.1472	Confirmed LTF	0.1472
MEC	MEC	0.3496	Confirmed LTF	0.3496

13.5.11 Index 11

ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC DC	MW IMPACT
148725368	314651	6WINFALL	DVP	314639	6TANGLEW	DVP	1	DVP_P4-2: 246T2034	breaker	1163.0	175.57	179.0	DC	39.87

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
314574	6EVERETS	0.2339	50/50	0.2339
315292	1DOMTR78	4.3480	50/50	4.3480
315294	1DOMTR10	32.6683	50/50	32.6683
315605	6W1-029WIND	3.7142	50/50	3.7142
315611	6Z1-036WIND	29.4672	50/50	29.4672
315614	AA2-178 C	6.4363	50/50	6.4363
901082	W1-029 E	144.3457	50/50	144.3457
916042	Z1-036 E (Suspended)	197.4304	50/50	197.4304
918532	AA1-067 E	0.5810	50/50	0.5810
920692	AA2-178 E	15.9914	50/50	15.9914
923831	AB2-022 C	-1.5504	Adder	-1.82
925121	AB2-169 C	2.5861	50/50	2.5861
925122	AB2-169 E	13.4547	50/50	13.4547
927021	AC1-189 C	5.6631	50/50	5.6631
927022	AC1-189 E	2.8209	50/50	2.8209
933991	AD1-023 C	47.6620	50/50	47.6620
933992	AD1-023 E	25.9472	50/50	25.9472
934521	AD1-076 C	196.7206	50/50	196.7206
934522	AD1-076 E	100.1699	50/50	100.1699
940491	AE2-034 C	27.9850	50/50	27.9850
940492	AE2-034 E	11.9936	50/50	11.9936
941501	AE2-147 C	71.7741	50/50	71.7741
941502	AE2-147 E	47.8494	50/50	47.8494
942851	AE2-304 C	2.8081	50/50	2.8081
942852	AE2-304 E	1.0920	50/50	1.0920
944871	AF1-152 C	23.9247	50/50	23.9247
944872	AF1-152 E	15.9498	50/50	15.9498
945711	AF1-236 C O1	306.3694	50/50	306.3694
945712	AF1-236 E O1	499.8658	50/50	499.8658
957531	AF2-047 C	66.4977	50/50	66.4977
957532	AF2-047 E	33.4488	50/50	33.4488
957821	AF2-076 C O2	23.9244	50/50	23.9244
957822	AF2-076 E O2	15.9496	50/50	15.9496
957861	AF2-080 C	5.1434	50/50	5.1434
957862	AF2-080 E	2.2801	50/50	2.2801
959511	AF2-242	13.9502	50/50	13.9502
WEC	WEC	0.1323	Confirmed LTF	0.1323
LGEE	LGEE	0.2470	Confirmed LTF	0.2470
CPL	CPL	1.6147	Confirmed LTF	1.6147
CBM-W2	CBM-W2	5.2252	Confirmed LTF	5.2252
NY	NY	0.1338	Confirmed LTF	0.1338

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
CBM-W1	CBM-W1	4.9790	Confirmed LTF	4.9790
TVA	TVA	1.0892	Confirmed LTF	1.0892
O-066	O-066	1.9555	Confirmed LTF	1.9555
CBM-S2	CBM-S2	9.6526	Confirmed LTF	9.6526
CBM-S1	CBM-S1	6.0833	Confirmed LTF	6.0833
G-007	G-007	0.3058	Confirmed LTF	0.3058
MADISON	MADISON	0.3004	Confirmed LTF	0.3004
MEC	MEC	0.7945	Confirmed LTF	0.7945

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
148725487	938530	AE1-072 TAP	DVP	314645	6SLIGO L269	DVP	1	DVP_P4-2: 246T2034	breaker	699.0	133.46	136.25	DC	19.49

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
314638	6ELIZ CT	0.5509	50/50	0.5509
314639	6TANGLEW	0.9890	50/50	0.9890
314643	3O INLET	1.1400	50/50	1.1400
315294	1DOMTR10	13.5684	Adder	15.96
315603	6AA1-139SOLA	4.4203	50/50	4.4203
315605	6W1-029WIND	1.8155	50/50	1.8155
315611	6Z1-036WIND	14.4035	50/50	14.4035
315614	AA2-178 C	3.1458	50/50	3.1458
901082	W1-029 E	70.5574	50/50	70.5574
913392	Y1-086 E	5.2110	50/50	5.2110
916042	Z1-036 E (Suspended)	96.5033	50/50	96.5033
917122	Z2-027 E	2.4571	50/50	2.4571
919152	AA1-139 E	10.9825	50/50	10.9825
920692	AA2-178 E	7.8158	50/50	7.8158
923831	AB2-022 C	5.4631	50/50	5.4631
923832	AB2-022 E	2.9417	50/50	2.9417
925122	AB2-169 E	5.5865	Adder	6.57
933991	AD1-023 C	23.2929	50/50	23.2929
933992	AD1-023 E	12.6807	50/50	12.6807
934521	AD1-076 C	96.1395	50/50	96.1395
934522	AD1-076 E	48.9541	50/50	48.9541
937221	AD2-160 C O1	5.8685	Adder	6.9
937222	AD2-160 E O1	3.0774	Adder	3.62
938531	AE1-072 C O1	47.6001	50/50	47.6001
938532	AE1-072 E O1	24.8139	50/50	24.8139
940491	AE2-034 C	13.6777	50/50	13.6777
940492	AE2-034 E	5.8619	50/50	5.8619
941501	AE2-147 C	35.0838	50/50	35.0838
941502	AE2-147 E	23.3892	50/50	23.3892
942401	AE2-253 C	6.1726	Adder	7.26
942402	AE2-253 E	2.7732	Adder	3.26
942851	AE2-304 C	1.3726	50/50	1.3726
942852	AE2-304 E	0.5338	50/50	0.5338
944871	AF1-152 C	11.6946	50/50	11.6946
944872	AF1-152 E	7.7964	50/50	7.7964
945711	AF1-236 C O1	149.7385	50/50	149.7385
945712	AF1-236 E O1	244.3101	50/50	244.3101
957531	AF2-047 C	32.5009	50/50	32.5009
957532	AF2-047 E	16.3481	50/50	16.3481
957821	AF2-076 C O2	11.6946	50/50	11.6946
957822	AF2-076 E O2	7.7964	50/50	7.7964

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
959511	AF2-242	3.0687	Adder	6.81
WEC	WEC	0.0567	Confirmed LTF	0.0567
LGEE	LGEE	0.1067	Confirmed LTF	0.1067
CPL	CPL	0.7733	Confirmed LTF	0.7733
CBM-W2	CBM-W2	2.3505	Confirmed LTF	2.3505
NY	NY	0.0796	Confirmed LTF	0.0796
CBM-W1	CBM-W1	2.1142	Confirmed LTF	2.1142
TVA	TVA	0.4970	Confirmed LTF	0.4970
O-066	O-066	1.1222	Confirmed LTF	1.1222
CBM-S2	CBM-S2	4.5778	Confirmed LTF	4.5778
CBM-S1	CBM-S1	2.7605	Confirmed LTF	2.7605
G-007	G-007	0.1758	Confirmed LTF	0.1758
MADISON	MADISON	0.1472	Confirmed LTF	0.1472
MEC	MEC	0.3496	Confirmed LTF	0.3496

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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
148725462	957870	AF2-081 TAP	DVP	314466	6FENTRES	DVP	1	DVP_P4-2: 246T2034	breaker	699.0	132.33	135.12	DC	19.49

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
314638	6ELIZ CT	0.5509	50/50	0.5509
314639	6TANGLEW	0.9890	50/50	0.9890
314643	3O INLET	1.1400	50/50	1.1400
315294	1DOMTR10	13.5684	Adder	15.96
315603	6AA1-139SOLA	4.4203	50/50	4.4203
315605	6W1-029WIND	1.8155	50/50	1.8155
315611	6Z1-036WIND	14.4035	50/50	14.4035
315614	AA2-178 C	3.1458	50/50	3.1458
901082	W1-029 E	70.5574	50/50	70.5574
913392	Y1-086 E	5.2110	50/50	5.2110
916042	Z1-036 E (Suspended)	96.5033	50/50	96.5033
917122	Z2-027 E	2.4571	50/50	2.4571
919152	AA1-139 E	10.9825	50/50	10.9825
920692	AA2-178 E	7.8158	50/50	7.8158
923831	AB2-022 C	5.4631	50/50	5.4631
923832	AB2-022 E	2.9417	50/50	2.9417
925122	AB2-169 E	5.5865	Adder	6.57
933991	AD1-023 C	23.2929	50/50	23.2929
933992	AD1-023 E	12.6807	50/50	12.6807
934521	AD1-076 C	96.1395	50/50	96.1395
934522	AD1-076 E	48.9541	50/50	48.9541
937221	AD2-160 C O1	5.8685	Adder	6.9
937222	AD2-160 E O1	3.0774	Adder	3.62
938531	AE1-072 C O1	47.6001	50/50	47.6001
938532	AE1-072 E O1	24.8139	50/50	24.8139
940491	AE2-034 C	13.6777	50/50	13.6777
940492	AE2-034 E	5.8619	50/50	5.8619
941501	AE2-147 C	35.0838	50/50	35.0838
941502	AE2-147 E	23.3892	50/50	23.3892
942401	AE2-253 C	6.1726	Adder	7.26
942402	AE2-253 E	2.7732	Adder	3.26
942851	AE2-304 C	1.3726	50/50	1.3726
942852	AE2-304 E	0.5338	50/50	0.5338
944871	AF1-152 C	11.6946	50/50	11.6946
944872	AF1-152 E	7.7964	50/50	7.7964
945711	AF1-236 C O1	149.7385	50/50	149.7385
945712	AF1-236 E O1	244.3101	50/50	244.3101
957531	AF2-047 C	32.5009	50/50	32.5009
957532	AF2-047 E	16.3481	50/50	16.3481
957821	AF2-076 C O2	11.6946	50/50	11.6946
957822	AF2-076 E O2	7.7964	50/50	7.7964

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
957871	AF2-081 C O2	33.9254	50/50	33.9254
957872	AF2-081 E O2	14.5394	50/50	14.5394
959511	AF2-242	3.0687	Adder	6.81
WEC	WEC	0.0567	Confirmed LTF	0.0567
LGEE	LGEE	0.1067	Confirmed LTF	0.1067
CPLE	CPLE	0.7733	Confirmed LTF	0.7733
CBM-W2	CBM-W2	2.3505	Confirmed LTF	2.3505
NY	NY	0.0796	Confirmed LTF	0.0796
CBM-W1	CBM-W1	2.1142	Confirmed LTF	2.1142
TVA	TVA	0.4970	Confirmed LTF	0.4970
O-066	O-066	1.1222	Confirmed LTF	1.1222
CBM-S2	CBM-S2	4.5778	Confirmed LTF	4.5778
CBM-S1	CBM-S1	2.7605	Confirmed LTF	2.7605
G-007	G-007	0.1758	Confirmed LTF	0.1758
MADISON	MADISON	0.1472	Confirmed LTF	0.1472
MEC	MEC	0.3496	Confirmed LTF	0.3496

13.6 Contingency Descriptions - Secondary POI

Contingency Name	Contingency Definition
DVP_P4-2: 246T2034	CONTINGENCY 'DVP_P4-2: 246T2034' /* EARLEYS 230 KV OPEN BRANCH FROM BUS 314537 TO BUS 957820 CKT 1 /* 6SUFFOLK 230.00 - 6NUCO TP 230.00 OPEN BRANCH FROM BUS 314569 TO BUS 314575 CKT 1 /* 6EARLEYS 230.00 - 6NUCO TP 230.00 OPEN BRANCH FROM BUS 314575 TO BUS 314590 CKT 1 /* 6NUCO TP 230.00 - 6NUCOR 230.00 OPEN BUS 314575 /* ISLAND: 6NUCO TP 230.00 OPEN BUS 314590 /* ISLAND: 6NUCOR 230.00 OPEN BRANCH FROM BUS 314569 TO BUS 314620 CKT 1 /* 6EARLEYS 230.00 - 6CASHIE 230.00 OPEN BRANCH FROM BUS 933990 TO BUS 314620 CKT 1 /* AD1-023 TAP 230.00 - 6CASHIE 230.00 OPEN BUS 314620 /* ISLAND: 6CASHIE 230.00 END
DVP_P1-2: LN 2020	CONTINGENCY 'DVP_P1-2: LN 2020' OPEN BRANCH FROM BUS 313851 TO BUS 314638 CKT 1 /* 6ECITYDP2 230.00 - 6ELIZ CT 230.00 OPEN BRANCH FROM BUS 313851 TO BUS 314639 CKT 1 /* 6ECITYDP2 230.00 - 6TANGLEW 230.00 OPEN BRANCH FROM BUS 314639 TO BUS 314651 CKT 1 /* 6TANGLEW 230.00 - 6WINFALL 230.00 OPEN BUS 313851 /* ISLAND: 6ECITYDP2 230.00 OPEN BUS 314639 /* ISLAND: 6TANGLEW 230.00 OPEN BUS 917122 /* ISLAND: Z2-027 E 230.00 END

Contingency Name	Contingency Definition
DVP_P1-2: LN 531	CONTINGENCY 'DVP_P1-2: LN 531' OPEN BRANCH FROM BUS 314924 TO BUS 314928 CKT 1 /* 8SURREY 500.00 - 8SUFFOLK 500.00 END
DVP_P4-2: 24742	CONTINGENCY 'DVP_P4-2: 24742' /* SUFFOLK 230 KV OPEN BRANCH FROM BUS 314537 TO BUS 957820 CKT 1 /* 6SUFFOLK 230.00 - AF2- 076 TAP 230.00 OPEN BRANCH FROM BUS 314536 TO BUS 314537 CKT 1 /* 3SUFFOLK 115.00 - 6SUFFOLK 230.00 OPEN BRANCH FROM BUS 314537 TO BUS 314928 CKT 1 /* 6SUFFOLK 230.00 - 8SUFFOLK 500.00 REMOVE SWSHUNT FROM BUS 314537 END
DVP_P4-2: 24642	CONTINGENCY 'DVP_P4-2: 24642' /* SUFFOLK 230 KV OPEN BRANCH FROM BUS 314537 TO BUS 957820 CKT 1 /* 6SUFFOLK 230.00 - 6NUCO TP 230.00 OPEN BRANCH FROM BUS 314569 TO BUS 314575 CKT 1 /* 6EARLEYS 230.00 - 6NUCO TP 230.00 OPEN BRANCH FROM BUS 314575 TO BUS 314590 CKT 1 /* 6NUCO TP 230.00 - 6NUCOR 230.00 OPEN BUS 314575 /* ISLAND: 6NUCO TP 230.00 OPEN BUS 314590 /* ISLAND: 6NUCOR 230.00 OPEN BRANCH FROM BUS 314536 TO BUS 314537 CKT 3 /* 3SUFFOLK 115.00 - 6SUFFOLK 230.00 OPEN BRANCH FROM BUS 314537 TO BUS 314928 CKT 2 /* 6SUFFOLK 230.00 - 8SUFFOLK 500.00 END
DVP_P4-2: 24662	CONTINGENCY 'DVP_P4-2: 24662' /* EARLEYS 230 KV OPEN BRANCH FROM BUS 314537 TO BUS 957820 CKT 1 /* 6SUFFOLK 230.00 - AF2- 076 TAP 230.00 OPEN BRANCH FROM BUS 314569 TO BUS 314575 CKT 1 /* 6EARLEYS 230.00 - 6NUCO TP 230.00 OPEN BRANCH FROM BUS 314575 TO BUS 314590 CKT 1 /* 6NUCO TP 230.00 - 6NUCOR 230.00 OPEN BUS 314575 /* ISLAND: 6NUCO TP 230.00 OPEN BUS 314590 /* ISLAND: 6NUCOR 230.00 OPEN BRANCH FROM BUS 314568 TO BUS 314569 CKT 1 /* 3EARLEYS 115.00 - 6EARLEYS 230.00 END

Contingency Name	Contingency Definition
DVP_P4-2: 246T247	CONTINGENCY 'DVP_P4-2: 246T247' /* SUFFOLK 230 KV OPEN BRANCH FROM BUS 314537 TO BUS 957820 CKT 1 /* 6SUFFOLK 230.00 - 6NUCO TP 230.00 OPEN BRANCH FROM BUS 314569 TO BUS 314575 CKT 1 /* 6EARLEYS 230.00 - 6NUCO TP 230.00 OPEN BRANCH FROM BUS 314575 TO BUS 314590 CKT 1 /* 6NUCO TP 230.00 - 6NUCOR 230.00 OPEN BUS 314575 /* ISLAND: 6NUCO TP 230.00 OPEN BUS 314590 /* ISLAND: 6NUCOR 230.00 OPEN BRANCH FROM BUS 314537 TO BUS 957820 CKT 1 /* 6SUFFOLK 230.00 - AF2- 076 TAP 230.00 END
DVP_P1-2: LN 247-B	CONTINGENCY 'DVP_P1-2: LN 247-B' OPEN BRANCH FROM BUS 314537 TO BUS 957820 CKT 1 /* 6SUFFOLK 230.00 - AF2- 076 TAP 230.00 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