Generation Interconnection

System Impact Study Report

for

Queue Project AF1-125

FENTRESS 500 KV

267.5 MW Capacity / 880 MW Energy

August 2020

Table of Contents

1 Introduction

This System Impact Study has been prepared in accordance with the PJM Open Access Transmission Tariff, 205, as well as the System Impact 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 System Impact Study is to determine a plan, with approximate cost and construction time estimates, to connect the subject generation interconnection project to the PJM network at a location specified by the Interconnection Customer. As a requirement for interconnection, the Interconnection Customer may be responsible for the cost of constructing: Network Upgrades, which are facility additions, or upgrades to existing facilities, that are needed to maintain the reliability of the PJM system. All facilities required for interconnection of a generation interconnection project must be designed to meet the technical specifications (on PJM web site) for the appropriate transmission owner.

In some instances an Interconnection Customer may not be responsible for 100% of the identified network upgrade cost because other transmission network uses, e.g. another generation interconnection or merchant transmission upgrade, may also contribute to the need for the same network reinforcement. 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 System Impact Study is performed.

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

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

An Interconnection Customer with a proposed new Customer Facility that has a Maximum Facility Output equal to or greater than 100 MW shall install and maintain, at its expense, phasor measurement units (PMUs). See Section 8.5.3 of Appendix 2 to the Interconnection Service Agreement as well as section 4.3 of PJM Manual 14D for additional information.

3 General

The Interconnection Customer (IC), has proposed an offshore wind generating facility located in City of Chesapeake County, Virginia. The installed facilities will have a total capability of 880 MW with 267.5 MW of this output being recognized by PJM as Capacity. The proposed in-service date for this project is December 31, 2024. This study does not imply a TO commitment to this in-service date.

Queue Number	AF1-125
Project Name	FENTRESS 500 KV
State	Virginia
County	City of Chesapeake
Transmission Owner	Dominion
MFO	880
MWE	880
MWC	267.5
Fuel	Offshore Wind
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

The AF1-125 project will interconnect with the Dominion transmission system. The Point of Interconnection (POI) at a new 230kV breaker-and-a-half substation planned for the AF1-123 and AF1-124 projects. The new substation will be expanded with 5 230kV breakers, creating three new bays for the AF1-125 project. Two of the new positions will be for the interconnection of the AF1-125 project with the third for the new 230kV, 14 mile line to the Fentress substation. The new 230kV line will terminate at Fentress substation where it will be converted to 500kV via a new 500/230 kV auto-transformer. One new 500kV breakers will be required to expand the Fentress substation to accommodate the addition of the new auto-transformer.

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.

5 Cost Summary

The AF1-125 project will be responsible for the following costs:

Description	Total Cost
Total Physical Interconnection Costs	$ 75,200,000
Allocation towards System Network Upgrade Costs*	$ 74,305,894
Total Costs	**$ 149,505,894**

*As your project progresses through the study process and other projects modify their request or withdraw, then your cost allocation could change.

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.

Note 1: PJM Open Access Transmission Tariff (OATT) section 217.3A outline cost allocation rules. The rules are further clarified in PJM Manual 14A Attachment B. The allocation of costs for a network upgrade will start with the first Queue project to cause the need for the upgrade. Later queue projects will receive cost allocation contingent on their contribution to the violation and are allocated to the queues that have not closed less than 5 years following the execution of the first Interconnection Service Agreement which identifies the need for this upgrade.

Note 2: For customers with System Reinforcements listed: If your present cost allocation to a System Reinforcement indicates $0, then please be aware that as changes to the interconnection process occur, such as prior queued projects withdrawing from the queue, reducing in size, etc, the cost responsibilities can change and a cost allocation may be assigned to your project. In addition, although your present cost allocation to a System Reinforcement is presently $0, your project may need this system reinforcement completed to be deliverable to the PJM system. If your project comes into service prior to completion of the system reinforcement, an interim deliverability study for your project will be required.

6 Transmission Owner Scope of Work

Dominion assessed the impact of the proposed Queue Project AF1-125. The project was evaluated as a 267.5 MW Capacity (880 MW Energy) injection at the existing Fentress 500 kV substation, City of Chesapeake county, Virginia in the Dominion Transmission System, for compliance with NERC Reliability Criteria on Dominion Transmission System. The system was assessed using the summer 2023 AF1 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 AF1-125 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
New 230 kV GIS Switchyard with five 230 kV breakers	$ 17,000,000
New 14 mile 230 kV Transmission Line	$ 28,000,000
New 500-230 kV transformer bank	$ 25,000,000
One 230 kV breaker	$ 1,200,000
Two 500 kV breakers at Fentress	$ 4,000,000
Total Physical Interconnection Costs	$ 75,200,000

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 Analysis

The Queue Project AF1-125 was evaluated as an 880.0 MW (Capacity 267.5 MW) injection at the Fentress 500 kV substation in the Dominion area. Project AF1-125 was evaluated for compliance with applicable reliability planning criteria (PJM, NERC, NERC Regional Reliability Councils, and Transmission Owners). Project AF1-125 was studied with a commercial probability of 100%. 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	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC|DC	MW IMPACT
89978938	314686	6CLOVER	230.0	DVP	934610	AD1-087 TAP	230.0	DVP	1	DVP_P1-2: LN 570	single	814.98	98.46	100.9	AC	20.18

11.2 Multiple Facility Contingency

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

ID	FROM BUS#	FROM BUS	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|DC	MW IMPACT
89978253	934060	AD1-033 TAP	230.0	DVP	314481	6LANDSTN	230.0	DVP	1	DVP_P4-2: 2110T2128	breaker	830.0	94.89	102.88	AC	77.88

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	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC|DC	MW IMPACT
71716337	314209	6SKIFF CREEK	230.0	DVP	314386	6KINGS M	230.0	DVP	1	DVP_P1-2: LN 567	single	441.80	129.25	134.44	AC	22.82
71716338	314209	6SKIFF CREEK	230.0	DVP	314386	6KINGS M	230.0	DVP	1	DVP_P1-2: LN 557	single	441.80	171.67	176.32	AC	20.2
71897858	314287	6CHESTF B	230.0	DVP	314276	6BASIN	230.0	DVP	1	DVP_P1-2: LN 563	single	663.64	137.16	139.13	AC	14.98
89978877	314287	6CHESTF B	230.0	DVP	314225	6CHARCTY	230.0	DVP	1	DVP_P1-2: LN 557	single	984.18	101.33	102.86	AC	17.25
71716423	314296	6PENNIMAN	230.0	DVP	314415	6WALR209	230.0	DVP	1	DVP_P1-2: LN 567	single	441.80	117.93	123.12	AC	22.82
71716424	314296	6PENNIMAN	230.0	DVP	314415	6WALR209	230.0	DVP	1	DVP_P1-2: LN 557	single	441.80	160.3	164.94	AC	20.2
71716383	314386	6KINGS M	230.0	DVP	314296	6PENNIMAN	230.0	DVP	1	DVP_P1-2: LN 567	single	441.80	121.55	126.74	AC	22.82
71716384	314386	6KINGS M	230.0	DVP	314296	6PENNIMAN	230.0	DVP	1	DVP_P1-2: LN 557	single	441.80	163.93	168.57	AC	20.2

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|DC	MW IMPACT
71716564	314415	6WALR209	230.0	DVP	314391	6LIGH209	230.0	DVP	1	DVP_P1-2: LN 567	single	441.80	103.23	108.4	AC	22.82
71716565	314415	6WALR209	230.0	DVP	314391	6LIGH209	230.0	DVP	1	DVP_P1-2: LN 557	single	441.80	145.38	150.01	AC	20.2
89978191	314466	6FENTRES	230.0	DVP	314508	6THRASHER	230.0	DVP	1	DVP_P4-2: 231T2026	breaker	830.0	104.04	116.38	AC	107.52
89978275	314481	6LANDSTN	230.0	DVP	314486	6LYNHAVN	230.0	DVP	1	DVP_P4-2: 231T2128	breaker	830.0	102.16	107.73	AC	54.13
89978856	314697	6SEDGE HILL	230.0	DVP	927250	AC1-221 TAP	230.0	DVP	1	DVP_P1-2: LN 570	single	674.92	100.76	103.24	AC	17.18
42881683	314902	8CARSON	500.0	DVP	314914	8MDLTHAN	500.0	DVP	1	DVP_P4-2: 557T574	breaker	3938.0	129.13	135.55	DC	274.43
42881684	314902	8CARSON	500.0	DVP	314914	8MDLTHAN	500.0	DVP	1	DVP_P4-2: H2T557	breaker	3938.0	122.28	128.51	DC	266.19
42881870	314902	8CARSON	500.0	DVP	314914	8MDLTHAN	500.0	DVP	1	DVP_P1-2: LN 557	single	3218.56	124.98	126.19	AC	78.9
42881873	314902	8CARSON	500.0	DVP	314914	8MDLTHAN	500.0	DVP	1	DVP_P1-2: LN 574	single	3218.56	102.15	104.36	AC	68.49
42881673	314903	8CHCKAHM	500.0	DVP	314908	8ELMONT	500.0	DVP	1	DVP_P4-2: 56372	breaker	3144.0	144.92	146.33	AC	290.22
42881674	314903	8CHCKAHM	500.0	DVP	314908	8ELMONT	500.0	DVP	1	DVP_P4-2: 563T576	breaker	3144.0	144.76	146.23	AC	293.75
42881803	314903	8CHCKAHM	500.0	DVP	314908	8ELMONT	500.0	DVP	1	DVP_P1-2: LN 563	single	2442.12	161.1	163.45	AC	85.5
42881804	314903	8CHCKAHM	500.0	DVP	314908	8ELMONT	500.0	DVP	1	DVP_P1-2: LN 576	single	2442.12	159.59	161.8	AC	85.27
42881812	314903	8CHCKAHM	500.0	DVP	314908	8ELMONT	500.0	DVP	1	Base Case	single	2442.12	129.06	131.22	AC	68.83
42881708	314905	8CHANCE	500.0	DVP	314900	8BRISTER	500.0	DVP	1	DVP_P4-2: H1T594	breaker	3351.0	108.14	108.65	AC	168.31
42881709	314905	8CHANCE	500.0	DVP	314900	8BRISTER	500.0	DVP	1	DVP_P4-2: 573T594	breaker	3351.0	107.7	108.21	AC	167.91
42881858	314905	8CHANCE	500.0	DVP	314900	8BRISTER	500.0	DVP	1	DVP_P1-2: LN 594	single	2442.12	143.47	144.11	AC	51.06
42881860	314905	8CHANCE	500.0	DVP	314900	8BRISTER	500.0	DVP	1	DVP_P1-2: LN 573	single	2442.12	136.89	137.56	AC	50.35
42881744	314908	8ELMONT	500.0	DVP	314911	8LADYSMITH	500.0	DVP	1	DVP_P4-2: WT576	breaker	4979.0	100.92	101.3	AC	285.28
42881745	314908	8ELMONT	500.0	DVP	314911	8LADYSMITH	500.0	DVP	1	DVP_P4-2: 57602	breaker	4979.0	100.92	101.3	AC	285.28
42881963	314908	8ELMONT	500.0	DVP	314911	8LADYSMITH	500.0	DVP	1	DVP_P1-2: LN 576	single	4070.20	114.33	115.66	AC	86.75
42881967	314908	8ELMONT	500.0	DVP	314911	8LADYSMITH	500.0	DVP	1	DVP_P1-2: LN 563	single	4070.20	104.95	105.94	AC	75.17
42881693	314911	8LADYSMITH	500.0	DVP	314905	8CHANCE	500.0	DVP	1	DVP_P4-2: SPOTS H1T594	breaker	3351.0	112.64	113.16	AC	170.06

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42881696	314911	8LADYSMITH	500.0	DVP	314905	8CHANCE	500.0	DVP	1	DVP_P4-2: 57302	breaker	3351.0	109.44	109.93	AC	172.52
42881728	314911	8LADYSMITH	500.0	DVP	314922	8POSSUM	500.0	DVP	1	DVP_P4-2: 545T552	breaker	3637.0	105.85	105.91	AC	153.78
42881729	314911	8LADYSMITH	500.0	DVP	314922	8POSSUM	500.0	DVP	1	DVP_P4-2: 539T552	breaker	3637.0	102.45	102.51	AC	152.0
42881885	314911	8LADYSMITH	500.0	DVP	314922	8POSSUM	500.0	DVP	1	DVP_P1-2: LN 581	single	2442.12	130.79	132.35	AC	44.65
42881888	314911	8LADYSMITH	500.0	DVP	314922	8POSSUM	500.0	DVP	1	DVP_P1-2: LN 594	single	2442.12	134.06	135.08	AC	43.89
42881900	314911	8LADYSMITH	500.0	DVP	314905	8CHANCE	500.0	DVP	1	DVP_P1-2: LN 573	single	2738.22	129.4	130.03	AC	52.14
42881901	314911	8LADYSMITH	500.0	DVP	314905	8CHANCE	500.0	DVP	1	DVP_P1-2: LN 594	single	2738.22	128.54	129.1	AC	50.02
42881688	314914	8MDLTHAN	500.0	DVP	314918	8NO ANNA	500.0	DVP	1	DVP_P4-2: 557T574	breaker	3637.0	131.95	138.06	DC	276.21
42881823	314914	8MDLTHAN	500.0	DVP	314918	8NO ANNA	500.0	DVP	1	DVP_P1-2: LN 574	single	2442.12	154.4	155.16	AC	75.3
42881824	314914	8MDLTHAN	500.0	DVP	314918	8NO ANNA	500.0	DVP	1	DVP_P1-2: LN 557	single	2442.12	146.05	146.77	AC	74.73
42881832	314914	8MDLTHAN	500.0	DVP	314918	8NO ANNA	500.0	DVP	1	Base Case	single	2442.12	101.39	103.72	AC	54.86
53098295	314914	8MDLTHAN	500.0	DVP	314918	8NO ANNA	500.0	DVP	1	DVP_P4-2: H2T557	breaker	3637.0	117.73	123.53	DC	261.85
42882002	314916	8MORRSVL	500.0	DVP	314913	8LOUDOUN	500.0	DVP	1	DVP_P1-2: LN 580	single	2738.22	104.75	105.83	AC	33.12
42881713	314918	8NO ANNA	500.0	DVP	314911	8LADYSMITH	500.0	DVP	1	DVP_P4-2: SPOTSH1T594	breaker	3938.0	106.63	107.06	AC	122.05
42881714	314918	8NO ANNA	500.0	DVP	314911	8LADYSMITH	500.0	DVP	1	DVP_P4-2: H1T594	breaker	3938.0	102.58	102.99	AC	115.33
42881735	314918	8NO ANNA	500.0	DVP	314934	8SPOTSYL	500.0	DVP	1	DVP_P4-2: 568T575	breaker	3938.0	105.89	106.27	AC	158.99
42881736	314918	8NO ANNA	500.0	DVP	314934	8SPOTSYL	500.0	DVP	1	DVP_P4-2: H1T575	breaker	3938.0	100.84	101.22	AC	149.72
42881948	314918	8NO ANNA	500.0	DVP	314911	8LADYSMITH	500.0	DVP	1	DVP_P1-2: LN 573	single	3218.56	109.75	111.02	AC	37.37
42881949	314918	8NO ANNA	500.0	DVP	314911	8LADYSMITH	500.0	DVP	1	DVP_P1-2: LN 594	single	3218.56	109.71	110.66	AC	34.98
42881980	314918	8NO ANNA	500.0	DVP	314934	8SPOTSYL	500.0	DVP	1	DVP_P1-2: LN 581	single	3218.56	117.61	118.16	AC	56.62
42881981	314918	8NO ANNA	500.0	DVP	314934	8SPOTSYL	500.0	DVP	1	DVP_P1-2: LN 575	single	3218.56	113.02	114.53	AC	45.45
42882018	314919	8OX	500.0	DVP	314904	8CLIFTON	500.0	DVP	1	DVP_P1-2: LN 569	single	2442.12	101.55	102.19	AC	30.69
42881678	314924	8SURRY	500.0	DVP	314903	8CHCKAHM	500.0	DVP	1	DVP_P4-2: 56372	breaker	3144.0	117.31	124.24	AC	283.96

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42881679	314924	8SURRY	500.0	DVP	314903	8CHCKAHM	500.0	DVP	1	DVP_P4-2: 563T576	breaker	3144.0	105.84	111.13	AC	273.42
42881698	314934	8SPOTSYL	500.0	DVP	314916	8MORRSVL	500.0	DVP	1	DVP_P4-2: 568T575	breaker	3938.0	112.28	112.65	AC	156.73
42881699	314934	8SPOTSYL	500.0	DVP	314916	8MORRSVL	500.0	DVP	1	DVP_P4-2: 57502	breaker	3938.0	106.57	106.9	AC	147.01
42881913	314934	8SPOTSYL	500.0	DVP	314916	8MORRSVL	500.0	DVP	1	DVP_P1-2: LN 575	single	3218.56	119.0	120.49	AC	44.36
42881914	314934	8SPOTSYL	500.0	DVP	314916	8MORRSVL	500.0	DVP	1	DVP_P1-2: LN 552	single	3218.56	122.48	122.86	AC	55.44
42881815	927250	AC1-221 TAP	230.0	DVP	304070	6PERSON230 T	230.0	CPLE	1	DVP_P1-2: LN 570	single	718.0	104.44	106.76	AC	17.18
89978922	934610	AD1-087 TAP	230.0	DVP	314697	6SEDGE HILL	230.0	DVP	1	DVP_P1-2: LN 570	single	814.98	103.71	106.15	AC	20.18

11.4 Steady-State Voltage Requirements

To be determined

11.5 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 LOADING %	POST PROJECT LOADING %	AC|DC	MW IMPACT
71716339	314209	6SKIFF CREEK	230.0	DVP	314386	6KINGS M	230.0	DVP	1	DVP_P1-2: LN 567	operation	441.80	201.67	215.18	AC	75.06
89978727	314209	6SKIFF CREEK	230.0	DVP	314413	6WALR285	230.0	DVP	1	DVP_P1-2: LN 567	operation	678.68	114.85	124.07	AC	72.71
89978930	314227	6LAKESIDE	230.0	DVP	314218	6ELMONT	230.0	DVP	1	DVP_P1-2: LN 557	operation	740.72	100.48	101.46	AC	55.9
89978730	314236	6NRTHEST	230.0	DVP	314218	6ELMONT	230.0	DVP	1	DVP_P1-2: LN 557	operation	678.68	125.3	129.52	AC	59.79
71716425	314296	6PENNIMAN	230.0	DVP	314415	6WALR209	230.0	DVP	1	DVP_P1-2: LN 567	operation	441.80	190.36	203.87	AC	75.06
71716385	314386	6KINGS M	230.0	DVP	314296	6PENNIMAN	230.0	DVP	1	DVP_P1-2: LN 567	operation	441.80	193.98	207.49	AC	75.06

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|DC	MW IMPACT
89978883	314390	6LIGH285	230.0	DVP	314214	6CHCKAHM	230.0	DVP	1	DVP_P1-2: LN 567	operation	678.68	97.37	104.74	AC	72.71
89978741	314391	6LIGH209	230.0	DVP	314388	6LANEXA	230.0	DVP	1	DVP_P1-2: LN 567	operation	663.64	110.64	119.59	AC	75.06
89978765	314413	6WALR285	230.0	DVP	314390	6LIGH285	230.0	DVP	1	DVP_P1-2: LN 567	operation	678.68	106.66	115.89	AC	72.71
71716566	314415	6WALR209	230.0	DVP	314391	6LIGH209	230.0	DVP	1	DVP_P1-2: LN 567	operation	441.80	175.78	189.27	AC	75.06
89978645	314466	6FENTRES	230.0	DVP	314508	6THRASHER	230.0	DVP	1	DVP_P1-2: LN 271-B	operation	678.68	118.34	135.45	AC	123.16
89978800	314466	6FENTRES	230.0	DVP	934060	AD1-033 TAP	230.0	DVP	1	DVP_P1-2: LN 2128	operation	678.68	101.79	114.67	AC	92.65
42881869	314902	8CARSON	500.0	DVP	314914	8MDLTHAN	500.0	DVP	1	DVP_P1-2: LN 557	operation	3218.56	147.07	154.5	DC	259.56
42881877	314902	8CARSON	500.0	DVP	314914	8MDLTHAN	500.0	DVP	1	Base Case	operation	3218.56	105.83	106.69	AC	184.09
42881801	314903	8CHCKAHM	500.0	DVP	314908	8ELMONT	500.0	DVP	1	DVP_P1-2: LN 563	operation	2442.12	179.79	181.62	AC	281.26
42881808	314903	8CHCKAHM	500.0	DVP	314908	8ELMONT	500.0	DVP	1	Base Case	operation	2442.12	145.62	147.2	AC	226.44
42881857	314905	8CHANCE	500.0	DVP	314900	8BRISTER	500.0	DVP	1	DVP_P1-2: LN 594	operation	2442.12	147.75	148.45	AC	167.97
42881962	314908	8ELMONT	500.0	DVP	314911	8LADYSMITH	500.0	DVP	1	DVP_P1-2: LN 576	operation	4070.20	123.39	123.86	AC	285.38
42881881	314911	8LADYSMITH	500.0	DVP	314922	8POSSUM	500.0	DVP	1	DVP_P1-2: LN 581	operation	2442.12	142.24	142.51	AC	146.88
42881891	314911	8LADYSMITH	500.0	DVP	314922	8POSSUM	500.0	DVP	1	Base Case	operation	2442.12	103.85	103.9	AC	113.11
42881899	314911	8LADYSMITH	500.0	DVP	314905	8CHANCE	500.0	DVP	1	DVP_P1-2: LN 573	operation	2738.22	133.54	134.14	AC	171.53
42881821	314914	8MDLTHAN	500.0	DVP	314918	8NO ANNA	500.0	DVP	1	DVP_P1-2: LN 557	operation	2442.12	167.4	175.52	DC	245.83
42881831	314914	8MDLTHAN	500.0	DVP	314918	8NO ANNA	500.0	DVP	1	Base Case	operation	2442.12	121.74	122.37	AC	180.49
42882007	314916	8MORRSVL	500.0	DVP	314913	8LOUDOUN	500.0	DVP	1	DVP_P1-2: LN 568	operation	2738.22	110.84	111.37	AC	104.24
42881946	314918	8NO ANNA	500.0	DVP	314911	8LADYSMITH	500.0	DVP	1	DVP_P1-2: LN 594	operation	3218.56	124.73	125.23	AC	115.06
42881979	314918	8NO ANNA	500.0	DVP	314934	8SPOTSYL	500.0	DVP	1	DVP_P1-2: LN 575	operation	3218.56	123.23	123.69	AC	149.52
42882017	314919	8OX	500.0	DVP	314904	8CLIFTON	500.0	DVP	1	DVP_P1-2: LN 569	operation	2442.12	107.65	108.16	AC	100.97
42882011	314923	8SEPTA	500.0	DVP	314924	8SURRY	500.0	DVP	1	DVP_P1-2: LN 563	operation	2442.12	108.39	113.55	AC	172.74
42881833	314924	8SURRY	500.0	DVP	314903	8CHCKAHM	500.0	DVP	1	DVP_P1-2: LN 563	operation	2442.12	133.73	140.53	AC	268.66
42881893	314927	8YADKIN	500.0	DVP	314928	8SUFFOLK	500.0	DVP	1	DVP_P1-2: LN 579	operation	2442.12	113.21	123.05	AC	613.91

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|DC	MW IMPACT
42881951	314927	8YADKIN	500.0	DVP	314923	8SEPTA	500.0	DVP	1	DVP_P1-2: LN 565	operation	2442.12	103.74	111.9	AC	522.41
42881910	314934	8SPOTSYL	500.0	DVP	314916	8MORRSVL	500.0	DVP	1	DVP_P1-2: LN 575	operation	3218.56	129.09	129.58	AC	145.95
89978767	925330	AB2-190 TAP	230.0	DVP	314303	6HOPEWLL	230.0	DVP	2	DVP_P1-2: LN 2197	operation	678.68	119.75	126.83	AC	55.42
89978749	934060	AD1-033 TAP	230.0	DVP	314481	6LANDSTN	230.0	DVP	1	DVP_P1-2: LN 2128	operation	678.68	105.64	118.52	AC	92.65

11.6 System Reinforcements

ID	Idx	Facility	Upgrade Description	Cost	Cost Allocated to AF1-125	Upgrade Number
42881963,42881967,42881744, 42881745	16	**8ELMONT 500.0 kV - 8LADYSMITH 500.0 kV Ckt 1**	**DVP** **Description :** PJM baseline upgrade b3020: Rebuild 500kV Line #574 Ladysmith to Elmont - 26.2 miles long. The baseline project has a projected in-service date of 12/31/2022. **Type :** FAC **Ratings :** 4330.0/4330.0/4979.0 Note 1: Although Queue Project AF1-125 may not have cost responsibility for this upgrade, Queue Project AF1-125 may need this upgrade in-service to be deliverable to the PJM system. If Queue Project AF1-125 comes into service prior to completion of the upgrade, Queue Project AF1-125 will need an interim study. **DVP** **Description :** PJM Network Upgrade n6063: Replace wave trap at both Ladysmith and Possum Point Substations for the Ladysmith – Possum Pt 500kV line #568. This will increase line rating by 12% to 2913 MVA. The network project had a projected in-service date of 10/01/2019. **Type :** FAC **Total Cost :** $300,000 **Time Estimate :** 14-16 Months **Ratings :** 2598.0/2857.0/3637.0 Queue Project AF1-125 presently does not receive cost allocation for this upgrade. Note 1: as changes to the interconnection process occur, such as prior queued projects withdrawing from the queue, reducing in size, etc, Queue Project AF1-125 could receive cost allocation. Note 2: Although Queue Project AF1-125 may not have cost responsibility for this upgrade, Queue Project AF1-125 may need this upgrade in-service to be deliverable to the PJM system. If Queue Project AF1-125 comes into service prior to completion of the upgrade, Queue Project AF1-125 will need an interim study	See Next Page	See Next Page	b3020, n6063, n6157, n6539
42881728,42881729,42881885, 42881888	18	**8LADYSMITH 500.0 kV - 8POSSUM 500.0 kV Ckt 1**				

<table>
<tr><th>ID</th><th>Idx</th><th>Facility</th><th>Upgrade Description</th><th>Cost</th><th>Cost Allocated to AF1-125</th><th>Upgrade Number</th></tr>
<tr><td>42881963,42881967,42881744, 42881745</td><td>16</td><td>8ELMONT 500.0 kV - 8LADYSMITH 500.0 kV Ckt 1</td><td><u>DVP (cont'd)</u>
Description : PJM Network Upgrade n6157: Relay Change Outs (CT) at Ladysmith and Possum Pt 500 kV substations.
Type : FAC
Total Cost : $120,000
Time Estimate : 6-12 Months
Ratings : 3424.0/3424.0/3937.0

Queue Project AF1-125 presently does not receive cost allocation for this upgrade.

Note 1: as changes to the interconnection process occur, such as prior queued projects withdrawing from the queue, reducing in size, etc, Queue Project AF1-125 could receive cost allocation.

Note 2: Although Queue Project AF1-125 may not have cost responsibility for this upgrade, Queue Project AF1-125 may need this upgrade in-service to be deliverable to the PJM system. If Queue Project AF1-125 comes into service prior to completion of the upgrade, Queue Project AF1-125 will need an interim study

Description : PJM Network Upgrade n6539. Build new 500 kV Line from Rawlings to Morrisville Substation 110 miles.
Type : CON
Total Cost : $400,000,000
Time Estimate : 60-72 Months

<table><tr><th>Queue</th><th>MW</th><th>Cost %</th><th>Cost $</th></tr><tr><td>AE2-007</td><td>111.51</td><td>5.74%</td><td>$22,948,104</td></tr><tr><td>AE2-031</td><td>50.74</td><td>2.61%</td><td>$10,441,994</td></tr><tr><td>AE2-033</td><td>44.27</td><td>2.28%</td><td>$9,110,506</td></tr><tr><td>AE2-051</td><td>46.09</td><td>2.37%</td><td>$9,485,052</td></tr><tr><td>AE2-094</td><td>103.22</td><td>5.31%</td><td>$21,242,070</td></tr><tr><td>AE2-122</td><td>258.98</td><td>13.32%</td><td>$53,296,565</td></tr><tr><td>AE2-123</td><td>258.98</td><td>13.32%</td><td>$53,296,565</td></tr><tr><td>AE2-124</td><td>258.90</td><td>13.32%</td><td>$53,280,101</td></tr><tr><td>AE2-147</td><td>46.83</td><td>2.41%</td><td>$9,637,339</td></tr><tr><td>AE2-156</td><td>32.48</td><td>1.67%</td><td>$6,684,193</td></tr><tr><td>AE2-270</td><td>49.68</td><td>2.56%</td><td>$10,223,853</td></tr><tr><td>AE2-313</td><td>290.09</td><td>14.92%</td><td>$59,698,820</td></tr><tr><td>AF1-123</td><td>130.64</td><td>6.72%</td><td>$26,884,946</td></tr><tr><td>AF1-124</td><td>130.64</td><td>6.72%</td><td>$26,884,946</td></tr><tr><td>AF1-125</td><td>130.64</td><td>6.72%</td><td>$26,884,946</td></tr></table>
This upgrade will need to be tested during the Facilities Study phase to ensure it does not cause any additional violations.</td><td>$400,420,000</td><td>$26,884,946</td><td>b3020 n6063, n6157, n6539</td></tr>
<tr><td>42881728,42881729,42881885, 42881888</td><td>18</td><td>8LADYSMITH 500.0 kV - 8POSSUM 500.0 kV Ckt 1</td><td></td><td></td><td></td><td></td></tr>
</table>

<table>
<tr><th>ID</th><th>Idx</th><th>Facility</th><th>Upgrade Description</th><th>Cost</th><th>Cost Allocated to AF1-125</th><th>Upgrade Number</th></tr>
<tr><td>89978922</td><td>26</td><td>AD1-087 TAP 230.0 kV - 6SEDGE HILL 230.0 kV Ckt 1</td><td><u>DVP</u>
Description : Rebuild 16.71 miles of 230 kV Line 2068 from AD1-087 Tap to Sedge Hill with 2-795 ACSR.
Type : FAC
Total Cost : $25,065,000
Time Estimate : 36-40 Months
Ratings : 1225.0/1225.0/1409.0

<table><tr><th>Queue</th><th>MW</th><th>Cost %</th><th>Cost $</th></tr><tr><td>AE2-051</td><td>2.48</td><td>1.85%</td><td>$600,134</td></tr><tr><td>AE2-094</td><td>23.72</td><td>17.72%</td><td>$5,739,996</td></tr><tr><td>AE2-122</td><td>11.13</td><td>8.31%</td><td>$2,693,345</td></tr><tr><td>AE2-123</td><td>11.44</td><td>8.54%</td><td>$2,768,362</td></tr><tr><td>AE2-124</td><td>10.39</td><td>7.76%</td><td>$2,514,273</td></tr><tr><td>AE2-313</td><td>23.91</td><td>17.86%</td><td>$5,785,974</td></tr><tr><td>AF1-123</td><td>10.46</td><td>7.81%</td><td>$2,531,212</td></tr><tr><td>AF1-124</td><td>20.18</td><td>15.07%</td><td>$4,883,352</td></tr><tr><td>AF1-125</td><td>20.18</td><td>15.07%</td><td>$4,883,352</td></tr></table></td><td>$25,065,000</td><td>$4,883,352</td><td>n6514</td></tr>
<tr><td>89978191</td><td>10</td><td>6FENTRES 230.0 kV - 6THRASHER 230.0 kV Ckt 1</td><td><u>DVP</u>
Description : Rebuild 5.86 miles of 230 kV Line 2128 from Fentress to Thrasher with 2-636 ACSR. Replace Line Lead at Fentress 230 kV.
Type : FAC
Total Cost : $8,790,000
Time Estimate : 30-36 Months
Ratings : 1047.0/1047.0/1204.0

<table><tr><th>Queue</th><th>MW</th><th>Cost %</th><th>Cost $</th></tr><tr><td>AF1-124</td><td>35.2</td><td>24.66%</td><td>$2,167,937</td></tr><tr><td>AF1-125</td><td>107.52</td><td>75.34%</td><td>$6,622,063</td></tr></table></td><td>$8,790,000</td><td>$6,622,063</td><td>n6853</td></tr>
</table>

<table>
<tr><th>ID</th><th>Idx</th><th>Facility</th><th>Upgrade Description</th><th>Cost</th><th>Cost Allocated to AF1-125</th><th>Upgrade Number</th></tr>
<tr>
<td>42881803,42881674,42881812,42881673,42881804</td>
<td>14</td>
<td>8CHCKAHM 500.0 kV - 8ELMONT 500.0 kV Ckt 1</td>
<td>
<u>DVP</u>
Project Id : n5464
Description : Replace wave trap at Chickahominy Substation.
Type : FAC
Total Cost : $500,000
Time Estimate : 30-36 Months
Ratings : 3424.0/3424.0/3937.0

Queue Project AF1-125 presently does not receive cost allocation for this upgrade.

Note 1: as changes to the interconnection process occur, such as prior queued projects withdrawing from the queue, reducing in size, etc, Queue Project AF1-125 could receive cost allocation.

Note 2: Although Queue Project AF1-125 may not have cost responsibility for this upgrade, Queue Project AF1-125 may need this upgrade in-service to be deliverable to the PJM system. If Queue Project AF1-125 comes into service prior to completion of the upgrade, Queue Project AF1-125 will need an interim study

Project Id : n6207 (dom-021)
Description : Rebuild 3 miles of 230 kV Line 211 from Hopewell to Chesterfield with 2-636 ACSR.
Type : FAC
Total Cost : $85,932,000
Time Estimate : 48-60 Months
Ratings : 4453.0/4453.0/5121.0

<table>
<tr><th>Queue</th><th>MW</th><th>Cost %</th><th>Cost $</th></tr>
<tr><td>Unknown</td><td>528.74</td><td>20.23%</td><td>$17,383,466</td></tr>
<tr><td>AE1-026</td><td>62.85</td><td>2.40%</td><td>$2,066,329</td></tr>
<tr><td>AE1-103</td><td>11.22</td><td>0.43%</td><td>$368,882</td></tr>
<tr><td>AE1-173</td><td>244.70</td><td>9.36%</td><td>$8,045,039</td></tr>
<tr><td>AE1-248</td><td>40.38</td><td>1.54%</td><td>$1,327,579</td></tr>
<tr><td>AE2-007</td><td>316.41</td><td>12.11%</td><td>$10,402,660</td></tr>
<tr><td>AE2-031</td><td>79.11</td><td>3.03%</td><td>$2,600,912</td></tr>
<tr><td>AE2-051</td><td>44.93</td><td>1.72%</td><td>$1,477,170</td></tr>
<tr><td>AE2-094</td><td>82.66</td><td>3.16%</td><td>$2,717,625</td></tr>
<tr><td>AE2-122</td><td>261.14</td><td>9.99%</td><td>$8,585,540</td></tr>
<tr><td>AE2-123</td><td>261.14</td><td>9.99%</td><td>$8,585,540</td></tr>
<tr><td>AE2-124</td><td>261.15</td><td>9.99%</td><td>$8,585,868</td></tr>
<tr><td>AE2-147</td><td>46.14</td><td>1.77%</td><td>$1,516,952</td></tr>
<tr><td>AE2-156</td><td>31.15</td><td>1.19%</td><td>$1,024,123</td></tr>
<tr><td>AE2-270</td><td>36.93</td><td>1.41%</td><td>$1,214,153</td></tr>
<tr><td>AE2-313</td><td>48.58</td><td>1.86%</td><td>$1,597,172</td></tr>
<tr><td>AF1-123</td><td>85.5</td><td>3.27%</td><td>$2,810,997</td></tr>
<tr><td>AF1-124</td><td>85.5</td><td>3.27%</td><td>$2,810,997</td></tr>
<tr><td>AF1-125</td><td>85.5</td><td>3.27%</td><td>$2,810,997</td></tr>
</table>
</td>
<td>$86,432,000</td>
<td>$2,810,997</td>
<td>n5464, n6207</td>
</tr>
</table>

<table>
<tr><th>ID</th><th>Idx</th><th>Facility</th><th>Upgrade Description</th><th>Cost</th><th>Cost Allocated to AF1-125</th><th>Upgrade Number</th></tr>
<tr>
<td>42881823,53098295,42881832,42881824,42881688</td>
<td>19</td>
<td>8MDLTHAN 500.0 kV - 8NO ANNA 500.0 kV Ckt 1</td>
<td>
<u>DVP</u>
Project Id : n6055
Description : Replace Wavetraps at Milothian and North Anna 500kV substations.
Type : FAC
Total Cost : $300,000
Time Estimate : 16-18 Months
Ratings : 3424.0/3424.0/3938.0

Queue Project AF1-125 presently does not receive cost allocation for this upgrade.

Note 1: as changes to the interconnection process occur, such as prior queued projects withdrawing from the queue, reducing in size, etc, Queue Project AF1-125 could receive cost allocation.

Note 2: Although Queue Project AF1-125 may not have cost responsibility for this upgrade, Queue Project AF1-125 may need this upgrade in-service to be deliverable to the PJM system. If Queue Project AF1-125 comes into service prior to completion of the upgrade, Queue Project AF1-125 will need an interim study.

Project Id : n5609 (dom-023)
Description : Rebuild 41.13 miles of 500 kV Line 576 from Midlothian to North Anna with 3-1351.5 125C ACSR.
Type : FAC
Total Cost : $127,503,000
Time Estimate : 48-60 Months
Ratings : 4816.0/4816.0/5539.0

<table>
<tr><th>Queue</th><th>MW</th><th>Cost %</th><th>Cost $</th></tr>
<tr><td>AC2-141</td><td>77.46</td><td>2.75%</td><td>$3,512,306</td></tr>
<tr><td>AD1-025</td><td>41.93</td><td>1.49%</td><td>$1,901,252</td></tr>
<tr><td>AD1-076</td><td>137.77</td><td>4.90%</td><td>$6,246,971</td></tr>
<tr><td>AD1-151</td><td>41.9</td><td>1.49%</td><td>$1,899,892</td></tr>
<tr><td>AE1-026</td><td>67.94</td><td>2.42%</td><td>$3,080,636</td></tr>
<tr><td>AE1-068</td><td>169.18</td><td>6.02%</td><td>$7,671,209</td></tr>
<tr><td>AE1-069</td><td>135.34</td><td>4.81%</td><td>$6,136,786</td></tr>
<tr><td>AE1-072</td><td>47.387</td><td>1.69%</td><td>$2,148,691</td></tr>
<tr><td>AE1-173</td><td>274.68</td><td>9.77%</td><td>$12,454,946</td></tr>
<tr><td>AE1-248</td><td>44.9</td><td>1.60%</td><td>$2,035,922</td></tr>
<tr><td>AE2-007</td><td>308.19</td><td>10.96%</td><td>$13,974,406</td></tr>
<tr><td>AE2-031</td><td>99.14</td><td>3.53%</td><td>$4,495,352</td></tr>
<tr><td>AE2-033</td><td>44.23</td><td>1.57%</td><td>$2,005,542</td></tr>
<tr><td>AE2-051</td><td>52.79</td><td>1.88%</td><td>$2,393,682</td></tr>
<tr><td>AE2-094</td><td>103.32</td><td>3.67%</td><td>$4,684,888</td></tr>
<tr><td>AE2-122</td><td>254.67</td><td>9.06%</td><td>$11,547,623</td></tr>
<tr><td>AE2-123</td><td>254.67</td><td>9.06%</td><td>$11,547,623</td></tr>
<tr><td>AE2-124</td><td>254.69</td><td>9.06%</td><td>$11,548,530</td></tr>
<tr><td>AE2-147</td><td>46.24</td><td>1.64%</td><td>$2,096,682</td></tr>
<tr><td>AE2-156</td><td>28.76</td><td>1.02%</td><td>$1,304,078</td></tr>
<tr><td>AE2-270</td><td>40.32</td><td>1.43%</td><td>$1,828,249</td></tr>
<tr><td>AE2-313</td><td>60.53</td><td>2.15%</td><td>$2,744,641</td></tr>
<tr><td>AF1-123</td><td>75.3</td><td>2.68%</td><td>$3,414,364</td></tr>
<tr><td>AF1-124</td><td>75.3</td><td>2.68%</td><td>$3,414,364</td></tr>
<tr><td>AF1-125</td><td>75.3</td><td>2.68%</td><td>$3,414,364</td></tr>
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<td>$127,803,000</td>
<td>$3,414,364</td>
<td>n6055, n5609</td>
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<table>
<tr><th>ID</th><th>Idx</th><th>Facility</th><th>Upgrade Description</th><th>Cost</th><th>Cost Allocated to AF1-125</th><th>Upgrade Number</th></tr>
<tr><td>89978938</td><td>1</td><td>6CLOVER 230.0 kV - AD1-087 TAP 230.0 kV Ckt 1</td><td><u>DVP</u>
No violation. Dominion Side Ratings: [Rate A: 1046, Rate B: 1046, Rate C: 1203]</td><td>$0</td><td>$0</td><td>N/A</td></tr>
<tr><td>89978877</td><td>6</td><td>6CHESTF B 230.0 kV - 6CHARCTY 230.0 kV Ckt 1</td><td><u>DVP</u>
Description : Rebuild 10.95 miles of 230 kV Line 2017 from Chesterfield to Charles City with 2-795 ACSR and replace wave trap at Chesterfield.
Type : FAC
Total Cost : $16,625,000
Time Estimate : 30-36 Months
Ratings : 1225.0/1225.0/1409.0
<table><tr><th>Queue</th><th>MW</th><th>Cost %</th><th>Cost $</th></tr><tr><td>AE2-156</td><td>2.42</td><td>2.64%</td><td>$438,310</td></tr><tr><td>AE2-260</td><td>19.48</td><td>21.22%</td><td>$3,528,217</td></tr><tr><td>AE2-270</td><td>15.25</td><td>16.61%</td><td>$2,762,079</td></tr><tr><td>AE2-313</td><td>20.14</td><td>21.94%</td><td>$3,647,756</td></tr><tr><td>AF1-124</td><td>17.25</td><td>18.79%</td><td>$3,124,319</td></tr><tr><td>AF1-125</td><td>17.25</td><td>18.79%</td><td>$3,124,319</td></tr></table></td><td>$16,625,000</td><td>$3,124,319</td><td>n6501</td></tr>
<tr><td>71716338,71716337</td><td>4</td><td>6SKIFF CREEK 230.0 kV - 6KINGS M 230.0 kV Ckt 1</td><td rowspan="3"><u>DVP</u>
Description : PJM Baseline Upgrade b3057. Rebuild 6.1 miles of Waller-Skiffess Creek 230 kV Line (#2154) between Waller and Kings Mill to current standards with a minimum summer emergency rating of 1047 MVA utilizing single circuit steel structures. Remove this 6.1 mile section of Line #58 between Waller and Kings Mill. Rebuild the 1.6 miles of Line #2154 and #19 between Kings Mill and Skiffes Creek to current standards with a minimum summer emergency rating of 1047 MVA at 230 kV for Line #2154 and 261 MVA at 115 kV for Line #19, utilizing double circuit steel structures. The baseline project has a projected in-service date of 12/30/2024.
Type : FAC
Ratings : 1047.0/1047.0/1204.0

Note 1: Although Queue Project AF1-125 may not have cost responsibility for this upgrade, Queue Project AF1-125 may need this upgrade in-service to be deliverable to the PJM system. If Queue Project AF1-125 comes into service prior to completion of the upgrade, Queue Project AF1-125 will need an interim study.</td><td rowspan="3">$0</td><td rowspan="3">$0</td><td rowspan="3">b3057</td></tr>
<tr><td>71716383,71716384</td><td>8</td><td>6KINGS M 230.0 kV - 6PENNIMAN 230.0 kV Ckt 1</td></tr>
<tr><td>71716423,71716424</td><td>7</td><td>6PENNIMAN 230.0 kV - 6WALR209 230.0 kV Ckt 1</td></tr>
</table>

<table>
<tr><th>ID</th><th>Idx</th><th>Facility</th><th>Upgrade Description</th><th>Cost</th><th>Cost Allocated to AF1-125</th><th>Upgrade Number</th></tr>
<tr><td>42881870,42881684,42881683, 42881873</td><td>13</td><td>8CARSON 500.0 kV - 8MDLTHAN 500.0 kV Ckt 1</td><td><u>DVP</u>
Description : Rebuild 37.41 miles of 500 kV Line 563 from Carson to Midlothian with 3-1351.5 125C ACSR.
Type : FAC
Total Cost : $115,971,000
Time Estimate : 48-60 Months
Ratings : 4816.0/4816.0/5539.0

<table><tr><th>Queue</th><th>MW</th><th>Cost %</th><th>Cost $</th></tr><tr><td>AE1-068</td><td>78.16</td><td>2.96%</td><td>$3,433,991</td></tr><tr><td>AE1-069</td><td>148.28</td><td>5.62%</td><td>$6,514,741</td></tr><tr><td>AE1-072</td><td>45.84</td><td>1.74%</td><td>$2,013,999</td></tr><tr><td>AE1-173</td><td>292.3</td><td>11.07%</td><td>$12,842,317</td></tr><tr><td>AE2-007</td><td>297.76</td><td>11.28%</td><td>$13,082,204</td></tr><tr><td>AE2-031</td><td>108.56</td><td>4.11%</td><td>$4,769,627</td></tr><tr><td>AE2-051</td><td>57.57</td><td>2.18%</td><td>$2,529,361</td></tr><tr><td>AE2-094</td><td>113.6</td><td>4.30%</td><td>$4,991,061</td></tr><tr><td>AE2-122</td><td>246.83</td><td>9.35%</td><td>$10,844,574</td></tr><tr><td>AE2-123</td><td>246.83</td><td>9.35%</td><td>$10,844,574</td></tr><tr><td>AE2-124</td><td>246.99</td><td>9.36%</td><td>$10,851,604</td></tr><tr><td>AE2-147</td><td>44.67</td><td>1.69%</td><td>$1,962,594</td></tr><tr><td>AE2-260</td><td>18.76</td><td>0.71%</td><td>$824,228</td></tr><tr><td>AE2-313</td><td>65.67</td><td>2.49%</td><td>$2,885,238</td></tr><tr><td>AF1-123</td><td>78.9</td><td>2.99%</td><td>$3,466,503</td></tr><tr><td>AF1-124</td><td>274.43</td><td>10.40%</td><td>$12,057,191</td></tr><tr><td>AF1-125</td><td>274.43</td><td>10.40%</td><td>$12,057,191</td></tr></table></td><td>$115,971,000</td><td>$12,057,191</td><td>n6172</td></tr>
<tr><td>42881900,42881901,42881696, 42881693</td><td>17</td><td>8LADYSMITH 500.0 kV - 8CHANCE 500.0 kV Ckt 1</td><td><u>DVP</u>
Description : PJM baseline upgrade b3021: Rebuild 500kV Line #581 Ladysmith to Chancellor - 15.2 miles long. The baseline project has a projected in-service date of 12/31/2023.
Type : FAC
Ratings : 4330.0/4330.0/4979.0

Note 1: Although Queue Project AF1-125 may not have cost responsibility for this upgrade, Queue Project AF1-125 may need this upgrade in-service to be deliverable to the PJM system. If Queue Project AF1-125 comes into service prior to completion of the upgrade, Queue Project AF1-125 will need an interim study.</td><td>$0</td><td>$0</td><td>b3021</td></tr>
<tr><td>42881815</td><td>25</td><td>AC1-221 TAP 230.0 kV - 6PERSON230 T 230.0 kV Ckt 1</td><td><u>DVP</u>
The line rating at DVP portion of this tie line is 904MVA (normal), 904MVA (Emergency) and 1105 MVA (Load Dump). Therefore, the line limiting element is not overloaded on the DVP portion of this line.

<u>CPLE</u>
An affected systems study will need to be completed with Duke/Progress to determine upgrades required on the Duke/Progress system.</td><td>$0</td><td>$0</td><td>N/A</td></tr>
</table>

<table>
<tr><th>ID</th><th>Idx</th><th>Facility</th><th>Upgrade Description</th><th>Cost</th><th>Cost Allocated to AF1-125</th><th>Upgrade Number</th></tr>
<tr><td>42881858,42881860,42881708, 42881709</td><td>15</td><td>8CHANCE 500.0 kV - 8BRISTER 500.0 kV Ckt 1</td><td><u>DVP</u>
Description : PJM baseline upgrade b3019: Rebuild 500kV Line #552 Bristers to Chancellor 21.6 miles long. The baseline project has a projected in-service date of 12/31/2023.
Type : FAC
Ratings : 4330.0/4330.0/4979.0

Note 1: Although Queue Project AF1-125 may not have cost responsibility for this upgrade, Queue Project AF1-125 may need this upgrade in-service to be deliverable to the PJM system. If Queue Project AF1-125 comes into service prior to completion of the upgrade, Queue Project AF1-125 will need an interim study.</td><td>$0</td><td>$0</td><td>b3019</td></tr>
<tr><td>42882002</td><td>2</td><td>8MORRSVL 500.0 kV - 8LOUDOUN 500.0 kV Ckt 1</td><td><u>DVP</u>
Description : PJM baseline upgrade b3211: Rebuild the 1.3 mile section of 500 kV Line No.569 (Loudoun - Morrisville) with single-circuit 500 kV structures at the current 500 kV standard. This will increase the rating of the line to 3424 MVA. The baseline project has a projected in-service date of 12/31/2024.
Type : FAC

Note 1: Although Queue Project AF1-125 may not have cost responsibility for this upgrade, Queue Project AF1-125 may need this upgrade in-service to be deliverable to the PJM system. If Queue Project AF1-125 comes into service prior to completion of the upgrade, Queue Project AF1-125 will need an interim study.</td><td>$0</td><td>$0</td><td>b3211</td></tr>
<tr><td>89978275</td><td>11</td><td>6LANDSTN 230.0 kV - 6LYNHAVN 230.0 kV Ckt 1</td><td><u>DVP</u>
Description : Rebuild 5.88 miles of 230 kV Line 2026 from Landstown to Lynnhaven with 2-636 ACSR.
Type : FAC
Total Cost : $14,700,000
Time Estimate : 30-36 Months
Ratings : 1047.0/1047.0/1204.0

<table><tr><th>Queue</th><th>MW</th><th>Cost %</th><th>Cost $</th></tr><tr><td>AE2-124</td><td>513.66</td><td>82.59%</td><td>$12,141,115</td></tr><tr><td>AF1-124</td><td>54.13</td><td>8.70%</td><td>$1,279,443</td></tr><tr><td>AF1-125</td><td>54.13</td><td>8.70%</td><td>$1,279,443</td></tr></table></td><td>$14,700,000</td><td>$1,279,443</td><td>n6607</td></tr>
</table>

ID	Idx	Facility	Upgrade Description	Cost	Cost Allocated to AF1-125	Upgrade Number
71716565,71716564	9	**6WALR209 230.0 kV - 6LIGH209 230.0 kV Ckt 1**	**DVP** **Description :** PJM Baseline Upgrade b3056: Partial Rebuild 230 kV Line #2113 Waller to Lightfoot. The baseline project has a projected in-service date of 12/30/2024. **Type :** FAC **Ratings :** 1047.0/1047.0/1204.0 Note 1: Although Queue Project AF1-125 may not have cost responsibility for this upgrade, Queue Project AF1-125 may need this upgrade in-service to be deliverable to the PJM system. If Queue Project AF1-125 comes into service prior to completion of the upgrade, Queue Project AF1-125 will need an interim study.	$0	$0	b3056
42882018	22	**8OX 500.0 kV - 8CLIFTON 500.0 kV Ckt 1**	**DVP** **Description :** Replace Wavetraps at Ox and Clifton 500 kV substations. **Type :** FAC **Total Cost :** $300,000 **Time Estimate :** 16-18 Months **Ratings :** 3424.0/3424.0/3938.0 Queue Project AF1-125 presently does not receive cost allocation for this upgrade. Note 1: as changes to the interconnection process occur, such as prior queued projects withdrawing from the queue, reducing in size, etc, Queue Project AF1-125 could receive cost allocation. Note 2: Although Queue Project AF1-125 may not have cost responsibility for this upgrade, Queue Project AF1-125 may need this upgrade in-service to be deliverable to the PJM system. If Queue Project AF1-125 comes into service prior to completion of the upgrade, Queue Project AF1-125 will need an interim study	$300,000	$0	n6161

<table>
<tr><th>ID</th><th>Idx</th><th>Facility</th><th>Upgrade Description</th><th>Cost</th><th>Cost Allocated to AF1-125</th><th>Upgrade Number</th></tr>
<tr><td>42881678,42881679</td><td>23</td><td>8SURRY 500.0 kV - 8CHCKAHM 500.0 kV Ckt 1</td><td><u>DVP</u>
Description : Replace Terminal Equipment at Surry and Chickahominy Substations.
Type : FAC
Total Cost : $4,000,000
Time Estimate : 16-18 Months
Ratings : 3424.0/3424.0/3938.0

Queue Project AF1-125 presently does not receive cost allocation for this upgrade.

Note 1: as changes to the interconnection process occur, such as prior queued projects withdrawing from the queue, reducing in size, etc, Queue Project AF1-125 could receive cost allocation.

Note 2: Although Queue Project AF1-125 may not have cost responsibility for this upgrade, Queue Project AF1-125 may need this upgrade in-service to be deliverable to the PJM system. If Queue Project AF1-125 comes into service prior to completion of the upgrade, Queue Project AF1-125 will need an interim study</td><td>$4,000,000</td><td>$0</td><td>n6324</td></tr>
<tr><td>42881913,42881698,42881699, 42881914</td><td>24</td><td>8SPOTSYL 500.0 kV - 8MORRSVL 500.0 kV Ckt 1</td><td><u>DVP</u>
Description : Rebuild 18.75 miles of 500 kV Line 594 from Spotsylvania to Morrisvile with 3-1351.5 113C ACSR.
Type : FAC
Total Cost : $58,125,000
Time Estimate : 48-60 Months
Ratings : 4453.0/4453.0/5121.0

<table>
<tr><th>Queue</th><th>MW</th><th>Cost %</th><th>Cost $</th></tr>
<tr><td>AE1-069</td><td>11.49</td><td>1.27%</td><td>$735,607</td></tr>
<tr><td>AE1-173</td><td>178.09</td><td>19.62%</td><td>$11,401,462</td></tr>
<tr><td>AE1-206</td><td>62.76</td><td>6.91%</td><td>$4,017,990</td></tr>
<tr><td>AE2-007</td><td>210.87</td><td>23.23%</td><td>$13,500,216</td></tr>
<tr><td>AE2-031</td><td>38.03</td><td>4.19%</td><td>$2,434,738</td></tr>
<tr><td>AE2-034</td><td>9.99</td><td>1.10%</td><td>$639,575</td></tr>
<tr><td>AE2-094</td><td>45.55</td><td>5.02%</td><td>$2,916,180</td></tr>
<tr><td>AE2-122</td><td>34.55</td><td>3.81%</td><td>$2,211,943</td></tr>
<tr><td>AE2-123</td><td>35.51</td><td>3.91%</td><td>$2,273,404</td></tr>
<tr><td>AE2-124</td><td>32.28</td><td>3.56%</td><td>$2,066,614</td></tr>
<tr><td>AE2-250</td><td>8.73</td><td>0.96%</td><td>$558,908</td></tr>
<tr><td>AE2-270</td><td>32.60</td><td>3.59%</td><td>$2,087,101</td></tr>
<tr><td>AE2-313</td><td>41.13</td><td>4.53%</td><td>$2,633,205</td></tr>
<tr><td>AF1-123</td><td>55.44</td><td>6.11%</td><td>$3,549,352</td></tr>
<tr><td>AF1-124</td><td>55.44</td><td>6.11%</td><td>$3,549,352</td></tr>
<tr><td>AF1-125</td><td>55.44</td><td>6.11%</td><td>$3,549,352</td></tr>
</table></td><td>$58,125,000</td><td>$3,549,352</td><td>n6160</td></tr>
<tr><td>89978856</td><td>12</td><td>6SEDGE HILL 230.0 kV - AC1-221 TAP 230.0 kV Ckt 1</td><td><u>DVP</u>
No upgrade needed on Dominion system. Need coordination with Duke.

<u>CPLE</u>
An affected systems study will need to be completed with Duke/Progress to determine upgrades required on the Duke/Progress system.</td><td>$0</td><td>$0</td><td>N/A</td></tr>
</table>

<table>
<tr><th>ID</th><th>Idx</th><th>Facility</th><th>Upgrade Description</th><th>Cost</th><th>Cost Allocated to AF1-125</th><th>Upgrade Number</th></tr>
<tr>
<td>42881713,42881948,42881714, 42881949</td>
<td>20</td>
<td>8NO ANNA 500.0 kV - 8LADYSMITH 500.0 kV Ckt 1</td>
<td><u>DVP</u>
Description : Rebuild 14.53 miles of 500 kV Line 575 from North Anna to Ladysmith with 3-1351.5 113C ACSR.
Type : FAC
Total Cost : $45,043,000
Time Estimate : 48-60 Months
Ratings : 4453.0/4453.0/5121.0

<table>
<tr><th>Queue</th><th>MW</th><th>Cost %</th><th>Cost $</th></tr>
<tr><td>AE2-031</td><td>34.63</td><td>5.83%</td><td>$2,628,248</td></tr>
<tr><td>AE2-094</td><td>41.5</td><td>6.99%</td><td>$3,149,648</td></tr>
<tr><td>AE2-122</td><td>115.02</td><td>19.38%</td><td>$8,729,458</td></tr>
<tr><td>AE2-123</td><td>115.02</td><td>19.38%</td><td>$8,729,458</td></tr>
<tr><td>AE2-124</td><td>115.08</td><td>19.39%</td><td>$8,734,011</td></tr>
<tr><td>AE2-313</td><td>62.52</td><td>10.53%</td><td>$4,744,963</td></tr>
<tr><td>AF1-123</td><td>34.98</td><td>5.89%</td><td>$2,654,812</td></tr>
<tr><td>AF1-124</td><td>37.37</td><td>6.30%</td><td>$2,836,201</td></tr>
<tr><td>AF1-125</td><td>37.37</td><td>6.30%</td><td>$2,836,201</td></tr>
</table>
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<td>$45,043,000</td>
<td>$2,836,201</td>
<td>n6574</td>
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<td>89978253</td>
<td>3</td>
<td>AD1-033 TAP 230.0 kV - 6LANDSTN 230.0 kV Ckt 1</td>
<td><u>DVP</u>
Description : Rebuild 8.2 miles of 230 kV Line 271 from Landstown to AD1-033 Tap with 2-636 ACSR.
Type : FAC
Total Cost : $20,500,000
Time Estimate : 30-36 Months
Ratings : 1047.0/1047.0/1204.0

<table>
<tr><th>Queue</th><th>MW</th><th>Cost %</th><th>Cost $</th></tr>
<tr><td>AE2-124</td><td>513.66</td><td>86.83%</td><td>$17,801,045</td></tr>
<tr><td>AF1-125</td><td>77.88</td><td>13.17%</td><td>$918,303</td></tr>
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<td>$20,500,000</td>
<td>$918,303</td>
<td>n6605</td>
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<tr>
<td>42881980,42881981,42881736, 42881735</td>
<td>21</td>
<td>8NO ANNA 500.0 kV - 8SPOTSYL 500.0 kV Ckt 1</td>
<td><u>DVP</u>
Description : Rebuild 14.02 miles of 500 kV Line 573 from North Anna to Spotsylvania with 3-1351.5 113C ACSR.
Type : FAC
Total Cost : $43,462,000
Time Estimate : 48-60 Months
Ratings : 4453.0/4453.0/5121.0

<table>
<tr><th>Queue</th><th>MW</th><th>Cost %</th><th>Cost $</th></tr>
<tr><td>AE1-075</td><td>2.36</td><td>0.29%</td><td>$125,075</td></tr>
<tr><td>AE1-173</td><td>108.39</td><td>13.22%</td><td>$5,744,444</td></tr>
<tr><td>AE1-206</td><td>63.74</td><td>7.77%</td><td>$3,378,087</td></tr>
<tr><td>AE2-007</td><td>213.18</td><td>26.00%</td><td>$11,298,095</td></tr>
<tr><td>AE2-031</td><td>38.46</td><td>4.69%</td><td>$2,038,300</td></tr>
<tr><td>AE2-094</td><td>46.07</td><td>5.62%</td><td>$2,441,614</td></tr>
<tr><td>AE2-122</td><td>34.93</td><td>4.26%</td><td>$1,851,217</td></tr>
<tr><td>AE2-123</td><td>35.9</td><td>4.38%</td><td>$1,902,625</td></tr>
<tr><td>AE2-124</td><td>32.64</td><td>3.98%</td><td>$1,729,852</td></tr>
<tr><td>AE2-270</td><td>32.95</td><td>4.02%</td><td>$1,746,281</td></tr>
<tr><td>AE2-313</td><td>41.59</td><td>5.07%</td><td>$2,204,183</td></tr>
<tr><td>AF1-123</td><td>56.62</td><td>6.90%</td><td>$3,000,742</td></tr>
<tr><td>AF1-124</td><td>56.62</td><td>6.90%</td><td>$3,000,742</td></tr>
<tr><td>AF1-125</td><td>56.62</td><td>6.90%</td><td>$3,000,742</td></tr>
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<td>$43,462,000</td>
<td>$3,000,742</td>
<td>n6132</td>
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<tr><th>ID</th><th>Idx</th><th>Facility</th><th>Upgrade Description</th><th>Cost</th><th>Cost Allocated to AF1-125</th><th>Upgrade Number</th></tr>
<tr><td>71897858</td><td>5</td><td>6CHESTF B 230.0 kV - 6BASIN 230.0 kV Ckt 1</td><td><u>DVP</u>
Description : Rebuild 12.4 miles of 230 kV Line 259 from Chesterfield to Basin with 2-636 ACSR.
Type : FAC
Total Cost : $31,000,000
Time Estimate : 30-36 Months
Ratings : 1047.0/1047.0/1204.0

<table><tr><th>Queue</th><th>MW</th><th>Cost %</th><th>Cost $</th></tr><tr><td>AE1-069</td><td>9.09</td><td>3.04%</td><td>$941,780</td></tr><tr><td>AE1-085</td><td>9.61</td><td>3.21%</td><td>$995,655</td></tr><tr><td>AE1-149</td><td>13.77</td><td>4.60%</td><td>$1,426,657</td></tr><tr><td>AE1-173</td><td>53.3</td><td>17.81%</td><td>$5,522,208</td></tr><tr><td>AE2-000B</td><td>10.26</td><td>3.43%</td><td>$1,062,999</td></tr><tr><td>AE2-027</td><td>12.15</td><td>4.06%</td><td>$1,258,815</td></tr><tr><td>AE2-031</td><td>21.17</td><td>7.08%</td><td>$2,193,342</td></tr><tr><td>AE2-033</td><td>17.96</td><td>6.00%</td><td>$1,860,767</td></tr><tr><td>AE2-051</td><td>5.71</td><td>1.91%</td><td>$591,591</td></tr><tr><td>AE2-094</td><td>22.19</td><td>7.42%</td><td>$2,299,021</td></tr><tr><td>AE2-157</td><td>11.22</td><td>3.75%</td><td>$1,162,461</td></tr><tr><td>AE2-250</td><td>9.6</td><td>3.21%</td><td>$994,619</td></tr><tr><td>AE2-260</td><td>20.47</td><td>6.84%</td><td>$2,120,818</td></tr><tr><td>AE2-270</td><td>14.89</td><td>4.98%</td><td>$1,542,696</td></tr><tr><td>AE2-313</td><td>22.88</td><td>7.65%</td><td>$2,370,509</td></tr><tr><td>AF1-123</td><td>14.98</td><td>5.01%</td><td>$1,552,020</td></tr><tr><td>AF1-124</td><td>14.98</td><td>5.01%</td><td>$1,552,020</td></tr><tr><td>AF1-125</td><td>14.98</td><td>5.01%</td><td>$1,552,020</td></tr></table></td><td>$31,000,000</td><td>$1,552,020</td><td>n6130</td></tr>
<tr><td></td><td></td><td></td><td>TOTAL COST</td><td>$998,236,000</td><td>$72,933,293</td><td></td></tr>
</table>

Note : For customers with System Reinforcements listed: If your present cost allocation to a System Reinforcement indicates $0, then please be aware that as changes to the interconnection process occur, such as prior queued projects withdrawing from the queue, reducing in size, etc, the cost responsibilities can change and a cost allocation may be assigned to your project. In addition, although your present cost allocation to a System Reinforcement is presently $0, your project may need this system reinforcement completed to be deliverable to the PJM system. If your project comes into service prior to completion of the system reinforcement, an interim deliverability study for your project will be required.

11.7 Flow Gate Details

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".

11.7.1 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
89978938	314686	6CLOVER	DVP	934610	AD1-087 TAP	DVP	1	DVP_P1-2: LN 570	single	814.98	98.46	100.9	AC	20.18

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
314295	6BIRDNECK	0.0193	80/20	0.0193
314421	6WINCHST	0.0562	80/20	0.0562
314491	3PENDLTN	0.1441	80/20	0.1441
314507	3THOMPSN	0.1462	80/20	0.1462
314677	6BUCKING	0.2249	80/20	0.2249
314947	8GREENSVILLE	36.1618	80/20	36.1618
315092	1YORKTN3	9.8659	80/20	9.8659
315098	1CHESPKA	0.1939	80/20	0.1939
315099	**1CHESPKB (Deactivation : 31/05/2019)**	**1.2324**	**80/20**	**1.2324**
315102	1BRUNSWICKG1	6.1931	80/20	6.1931
315103	1BRUNSWICKG2	6.1931	80/20	6.1931
315104	1BRUNSWICKG3	6.1931	80/20	6.1931
315105	1BRUNSWICKS1	12.8662	80/20	12.8662
315108	1ELIZAR1	1.4307	80/20	1.4307
315109	1ELIZAR2	1.4059	80/20	1.4059
315110	1ELIZAR3	1.4490	80/20	1.4490
315116	1SURRY 1	10.3456	80/20	10.3456
315120	1GRAVEL4	1.0644	80/20	1.0644
315153	1CLOVER1	23.8378	80/20	23.8378
315154	1CLOVER2	23.6003	80/20	23.6003
315233	1SURRY 2	11.4257	80/20	11.4257
315260	1GOSPORTA	0.1545	80/20	0.1545
315261	1GOSPORTB	0.1974	80/20	0.1974
315262	1GOSPORTC	0.1675	80/20	0.1675
925781	AC1-054 C O1	-3.8589	Adder	-4.54
925991	AC1-075 C	-8.3468	Adder	-9.82
926021	AC1-080 C	-2.7895	Adder	-3.28
926271	**AC1-105 C O1 (Suspended)**	**-8.9982**	**Adder**	**-10.59**
926641	AC1-145 C	-2.0399	Adder	-2.4
926661	AC1-147 C	0.9257	80/20	0.9257
926751	AC1-161 C O1	13.7453	80/20	13.7453
927251	AC1-221 C	-3.2203	Adder	-3.79
927261	AC1-222 C	-6.5498	Adder	-7.71
932041	AC2-012 C	4.1878	80/20	4.1878
932511	AC2-071 C	1.2509	80/20	1.2509
933291	AC2-141 C	13.7453	80/20	13.7453
933731	AC2-196 C	0.7208	80/20	0.7208
934061	AD1-033 C	3.0299	80/20	3.0299
934311	AD1-055 C	-4.5477	Adder	-5.35
934341	AD1-058 C	-8.0727	Adder	-9.5

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
934621	AD1-088 C	12.8106	80/20	12.8106
937251	AD2-164 (Withdrawn : 06/30/2020)	1.8687	80/20	1.8687
938491	AE1-068 C O1	39.4218	80/20	39.4218
938501	AE1-069 C O1	31.8787	80/20	31.8787
939311	AE1-162 C	0.8519	80/20	0.8519
939411	AE1-173 C	44.9760	80/20	44.9760
940251	AE2-007 O1	71.4089	80/20	71.4089
940471	AE2-031 C	22.4216	80/20	22.4216
940641	AE2-051 C O1	9.0792	80/20	9.0792
940891	AE2-078 C	0.9156	80/20	0.9156
940901	AE2-079 C	0.9156	80/20	0.9156
940911	AE2-080 C (Withdrawn : 04/28/2020)	0.9156	80/20	0.9156
941031	AE2-094 C	24.2486	80/20	24.2486
941281	AE2-122 C O1	11.5282	80/20	11.5282
941291	AE2-123 C O1	11.8474	80/20	11.8474
941301	AE2-124 C O1	10.7588	80/20	10.7588
941591	AE2-156 O1	7.3680	80/20	7.3680
941791	AE2-182 C	2.0813	80/20	2.0813
942931	AE2-313 C	24.2772	80/20	24.2772
943621	AF1-033 C	0.9156	80/20	0.9156
944011	AF1-069 C	7.9229	80/20	7.9229
944501	AF1-115 C O1	2.7883	80/20	2.7883
944581	AF1-123 C O1	20.1802	80/20	20.1802
944591	AF1-124 C O1	20.1802	80/20	20.1802
944601	AF1-125 C O1	20.1802	80/20	20.1802
945811	AF1-246 C O1	10.5290	80/20	10.5290
NEWTON	NEWTON	4.2969	Confirmed LTF	4.2969
FARMERCITY	FARMERCITY	0.2443	Confirmed LTF	0.2443
G-007A	G-007A	3.4212	Confirmed LTF	3.4212
VFT	VFT	9.1009	Confirmed LTF	9.1009
PRAIRIE	PRAIRIE	11.5047	Confirmed LTF	11.5047
AC1-131	AC1-131	9.7222	LTF	9.7222
COFFEEN	COFFEEN	0.8016	Confirmed LTF	0.8016
CHEOAH	CHEOAH	3.4189	Confirmed LTF	3.4189
EDWARDS	EDWARDS	1.2989	Confirmed LTF	1.2989
TILTON	TILTON	2.3071	Confirmed LTF	2.3071
GIBSON	GIBSON	2.0874	Confirmed LTF	2.0874
CALDERWOOD	CALDERWOOD	3.3379	Confirmed LTF	3.3379
BLUEG	BLUEG	6.4805	Confirmed LTF	6.4805
TRIMBLE	TRIMBLE	2.0585	Confirmed LTF	2.0585
CATAWBA	CATAWBA	3.5325	Confirmed LTF	3.5325

11.7.2 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
42882002	314916	8MORRSVL	DVP	314913	8LOUDOUN	DVP	1	DVP_P1-2: LN 580	single	2738.22	104.75	105.83	AC	33.12

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
314078	3REMNGTN	0.2975	80/20	0.2975
314250	6ROCKVILLE	0.2549	80/20	0.2549
315021	1REMNGT1	5.9813	80/20	5.9813
315022	1REMNGT2	5.9891	80/20	5.9891
315023	1REMNGT3	6.0128	80/20	6.0128
315024	1REMNGT4	5.9891	80/20	5.9891
315028	1M RUN A	6.6441	80/20	6.6441
315029	1M RUN B	6.5907	80/20	6.5907
315030	1M RUN C	6.6441	80/20	6.6441
315074	**1HOPCGN1 (Deactivation : 25/06/2019)**	**4.9497**	**Adder**	**5.82**
315075	**1HOPCGN2 (Deactivation : 25/06/2019)**	**4.8855**	**Adder**	**5.75**
315083	**1SPRUNCA (Deactivation : 12/01/2021)**	**6.3701**	**Adder**	**7.49**
315084	**1SPRUNCB (Deactivation : 12/01/2021)**	**7.4942**	**80/20**	**7.4942**
315172	1LOISA A	2.2948	80/20	2.2948
315173	1LOISA B	2.3067	80/20	2.3067
315174	1LOISA C	2.3067	80/20	2.3067
315175	1LOISA D	2.3067	80/20	2.3067
315176	1LOISA E	4.7027	80/20	4.7027
315177	1S ANNAG1	1.5796	80/20	1.5796
315178	1S ANNAS1	0.8117	80/20	0.8117
315179	1S ANNAG2	1.5796	80/20	1.5796
315180	1S ANNAS2	0.8117	80/20	0.8117
315225	1N ANNA1	31.9839	80/20	31.9839
315226	1N ANNA2	31.9974	80/20	31.9974
315270	1WARREN G1	15.1974	80/20	15.1974
315271	1WARREN G2	15.1974	80/20	15.1974
315272	1WARREN G3	15.1974	80/20	15.1974
315273	1WARREN S1	28.4745	80/20	28.4745
315611	6Z1-036WIND	3.9021	Adder	4.59
923831	AB2-022 C	1.3374	Adder	1.57
924241	AB2-068 OP	114.3549	Adder	134.54
925021	AB2-158 C	1.9100	80/20	1.9100
925051	**AB2-160 C O1 (Suspended)**	**3.2370**	**Adder**	**3.81**
925061	**AB2-161 C O1 (Suspended)**	**1.9816**	**Adder**	**2.33**
925331	AB2-190 C	11.9038	Adder	14.0
925671	**AC1-043 C (Suspended)**	**7.9268**	**80/20**	**7.9268**

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
925861	AC1-065 C	1.9792	Adder	2.33
926001	AC1-076 C (Suspended)	4.9559	80/20	4.9559
926291	AC1-107 O1 (Suspended)	172.6112	Adder	203.07
926481	AC1-120 C O1	8.1469	80/20	8.1469
926501	AC1-121 C O1	2.7979	80/20	2.7979
926611	AC1-143 C O1	9.0006	80/20	9.0006
926661	AC1-147 C	1.3246	Adder	1.56
926731	AC1-158 C	14.8063	80/20	14.8063
926751	AC1-161 C O1	17.8727	Adder	21.03
926781	AC1-164 C	23.6139	Adder	27.78
927041	AC1-191 C O1	5.6420	Adder	6.64
932041	AC2-012 C	5.9923	Adder	7.05
932501	AC2-070 C	0.9916	Adder	1.17
932581	AC2-078 C O1	2.4014	Adder	2.83
932591	AC2-079 C O1	3.3536	Adder	3.95
932831	AC2-110 C	0.7917	Adder	0.93
933011	AC2-125	1.6111	Adder	1.9
933021	AC2-126	1.6219	Adder	1.91
933151	AC2-133 1	0.2251	80/20	0.2251
933161	AC2-133 2	0.2251	80/20	0.2251
933171	AC2-133 3	0.2251	80/20	0.2251
933181	AC2-133 4	0.4218	80/20	0.4218
933261	AC2-137 C	1.2246	Adder	1.44
933291	AC2-141 C	17.8727	Adder	21.03
933501	AC2-165 C	5.7282	Adder	6.74
933731	AC2-196 C	1.0479	Adder	1.23
934011	AD1-025 C	10.0055	Adder	11.77
934061	AD1-033 C	4.4018	Adder	5.18
934141	AD1-041 C	3.1138	Adder	3.66
934571	AD1-082 C	4.5160	Adder	5.31
934861	AD1-115 C	3.9634	80/20	3.9634
935111	AD1-144 C	1.0109	Adder	1.19
935161	AD1-151 C O1	9.5656	Adder	11.25
936041	AD2-007 C	0.4780	Adder	0.56
936051	AD2-008 C	1.7419	Adder	2.05
936151	AD2-021	0.1396	Adder	0.16
936301	AD2-039 C	0.7917	Adder	0.93
936661	AD2-085 C	2.0127	Adder	2.37
936761	AD2-097 C	0.2517	80/20	0.2517
937221	AD2-160 C O1	3.4198	Adder	4.02
937251	AD2-164 (Withdrawn : 06/30/2020)	2.8185	Adder	3.32
937541	AD2-215 C	1.0213	Adder	1.2
938031	AE1-004 C	0.7917	Adder	0.93
938291	AE1-044 C O1	28.3603	80/20	28.3603
938491	AE1-068 C O1	32.8953	Adder	38.7
938501	AE1-069 C O1	25.7816	Adder	30.33
938531	AE1-072 C O1	10.2374	Adder	12.04
938551	AE1-074 C	1.7512	80/20	1.7512
938561	AE1-075 C	1.2510	Adder	1.47
938631	AE1-085 C O1	5.2590	Adder	6.19
939191	AE1-149 C O1	6.3306	Adder	7.45

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
939221	AE1-153 C O1	17.0092	80/20	17.0092
939231	AE1-154 C	1.7679	80/20	1.7679
939261	AE1-157 C O1	8.4210	Adder	9.91
939271	AE1-158 C O1	8.5942	Adder	10.11
939311	AE1-162 C	1.2658	Adder	1.49
939411	AE1-173 C	51.0653	Adder	60.08
939421	**AE1-174 C (Withdrawn : 06/16/2020)**	**0.2126**	**Adder**	**0.25**
939431	AE1-175 C	1.4135	Adder	1.66
939611	AE1-191 C	6.2276	Adder	7.33
939751	AE1-206 C O1	18.5597	Adder	21.83
940061	AE2-000B C	6.2577	Adder	7.36
940231	AE2-005 C	0.7917	Adder	0.93
940251	AE2-007 O1	101.7465	Adder	119.7
940431	AE2-027 C O1	7.6971	Adder	9.06
940471	AE2-031 C	17.9551	Adder	21.12
940481	AE2-033 C	8.9554	Adder	10.54
940541	AE2-040 O1	1.5915	Adder	1.87
940551	AE2-041 O1	4.1769	Adder	4.91
940641	AE2-051 C O1	9.6229	Adder	11.32
940651	AE2-052	2.1102	Adder	2.48
940891	AE2-078 C	1.3950	Adder	1.64
940901	AE2-079 C	1.3950	Adder	1.64
940911	**AE2-080 C (Withdrawn : 04/28/2020)**	**1.3950**	**Adder**	**1.64**
941031	AE2-094 C	21.4796	Adder	25.27
941101	AE2-104 C O1	1.9530	Adder	2.3
941281	AE2-122 C O1	16.6711	Adder	19.61
941291	AE2-123 C O1	17.1327	Adder	20.16
941301	AE2-124 C O1	15.5762	Adder	18.32
941361	AE2-132	0.6988	80/20	0.6988
941381	**AE2-134 (Suspended)**	**3.4150**	**80/20**	**3.4150**
941501	AE2-147 C	9.1662	Adder	10.78
941581	AE2-155 C	0.3772	Adder	0.44
941591	AE2-156 O1	10.5153	Adder	12.37
941851	AE2-190 C	4.9952	80/20	4.9952
942001	AE2-212 C	1.2795	Adder	1.51
942131	AE2-225 C	1.2453	Adder	1.47
942151	AE2-227 C	1.2993	Adder	1.53
942161	AE2-228 C	1.2848	Adder	1.51
942171	AE2-229 C	1.2453	Adder	1.47
942191	AE2-231 C O1	2.8591	Adder	3.36
942341	AE2-247 C	0.8724	Adder	1.03
942371	AE2-250 C O1	5.7499	Adder	6.76
942401	AE2-253 C	3.5970	Adder	4.23
942551	AE2-270	15.9426	Adder	18.76
942851	AE2-304 C	0.3634	Adder	0.43
942931	AE2-313 C	19.4410	Adder	22.87
943431	AF1-014 C	0.7500	Adder	0.88
943461	AF1-017 C	0.7893	Adder	0.93
943471	AF1-018	4.1769	Adder	4.91
943611	AF1-032 C	1.0170	Adder	1.2
943621	AF1-033 C	1.3950	Adder	1.64

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
944011	AF1-069 C	7.0182	Adder	8.26
944111	AF1-079 C	3.3590	80/20	3.3590
944501	AF1-115 C O1	4.2484	Adder	5.0
944581	AF1-123 C O1	28.1558	Adder	33.12
944591	AF1-124 C O1	28.1558	Adder	33.12
944601	AF1-125 C O1	28.1558	Adder	33.12
944631	AF1-128 O1	28.1578	Adder	33.13
944871	AF1-152 C	3.0554	Adder	3.59
945361	AF1-201 C O1	9.4493	Adder	11.12
946001	AF1-265	16.2805	Adder	19.15
946011	AF1-266	7.4964	Adder	8.82
946261	AF1-291 C	1.2849	Adder	1.51
946371	AF1-301 C	13.4588	80/20	13.4588
WEC	WEC	0.2690	Confirmed LTF	0.2690
LGEE	LGEE	0.5876	Confirmed LTF	0.5876
CPLE	CPLE	4.8501	Confirmed LTF	4.8501
CBM-W2	CBM-W2	15.6265	Confirmed LTF	15.6265
NY	NY	2.2618	Confirmed LTF	2.2618
TVA	TVA	3.6736	Confirmed LTF	3.6736
CBM-S2	CBM-S2	33.2928	Confirmed LTF	33.2928
CBM-S1	CBM-S1	19.8346	Confirmed LTF	19.8346
MADISON	MADISON	1.3265	Confirmed LTF	1.3265
MEC	MEC	1.9815	Confirmed LTF	1.9815
AA2-074	AA2-074	3.3030	LTF	3.3030
CBM-W1	CBM-W1	8.6819	Confirmed LTF	8.6819

11.7.3 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
89978253	934060	AD1-033 TAP	DVP	314481	6LANDSTN	DVP	1	DVP_P4-2: 2110T2128	breaker	830.0	94.89	102.88	AC	77.88

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
314638	6ELIZ CT	0.2719	50/50	0.2719
314639	6TANGLEW	0.4387	50/50	0.4387
314643	3O INLET	0.6631	50/50	0.6631
315294	1DOMTR10	3.3026	Adder	3.89
315603	6AA1-139SOLA	3.9637	50/50	3.9637
315605	6W1-029WIND	0.5600	50/50	0.5600
315611	6Z1-036WIND	4.5568	50/50	4.5568
901082	W1-029 E	21.1969	50/50	21.1969
913392	Y1-086 E	2.5052	50/50	2.5052
916042	**Z1-036 E (Suspended)**	**30.5303**	**50/50**	**30.5303**
917122	Z2-027 E	1.0616	50/50	1.0616
919152	AA1-139 E	9.5911	50/50	9.5911
920692	AA2-178 E	1.7742	Adder	2.09
923831	AB2-022 C	2.6264	50/50	2.6264
923832	AB2-022 E	1.4142	50/50	1.4142
926661	AC1-147 C	-1.8978	Adder	-2.23
933731	AC2-196 C	3.0723	50/50	3.0723
933732	AC2-196 E	2.0462	50/50	2.0462
933991	AD1-023 C	3.9502	Adder	4.65
933992	AD1-023 E	2.1505	Adder	2.53
934061	AD1-033 C	15.0654	50/50	15.0654
934062	AD1-033 E	10.0436	50/50	10.0436
934521	AD1-076 C	18.8854	Adder	22.22
934522	AD1-076 E	9.6164	Adder	11.31
937221	AD2-160 C O1	9.1236	50/50	9.1236
937222	AD2-160 E O1	4.7844	50/50	4.7844
938171	AE1-026 C O1	8.7745	Adder	10.32
938172	AE1-026 E O1	2.3149	Adder	2.72
938531	AE1-072 C O1	25.0592	50/50	25.0592
938532	AE1-072 E O1	13.0633	50/50	13.0633
939311	AE1-162 C	-0.8242	Adder	-0.97
940491	AE2-034 C	3.1048	Adder	3.65
940492	AE2-034 E	1.3306	Adder	1.57
941501	AE2-147 C	10.5399	50/50	10.5399
941502	AE2-147 E	7.0266	50/50	7.0266
941592	AE2-156 BAT	16.0760	50/50	16.0760
942401	AE2-253 C	9.5965	50/50	9.5965
942402	AE2-253 E	4.3115	50/50	4.3115
942851	AE2-304 C	0.4501	50/50	0.4501
942852	AE2-304 E	0.1750	50/50	0.1750
944581	AF1-123 C O1	20.1227	Adder	23.67
944582	AF1-123 E O1	46.0753	Adder	54.21

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
944591	AF1-124 C O1	20.1227	Adder	23.67
944592	AF1-124 E O1	46.0753	Adder	54.21
944601	AF1-125 C O1	20.1227	Adder	23.67
944602	AF1-125 E O1	46.0753	Adder	54.21
944871	AF1-152 C	3.5133	50/50	3.5133
944872	AF1-152 E	2.3422	50/50	2.3422
945711	AF1-236 C O1	33.9905	Adder	39.99
945712	AF1-236 E O1	55.4582	Adder	65.24
WEC	WEC	0.0583	Confirmed LTF	0.0583
LGEE	LGEE	0.1084	Confirmed LTF	0.1084
CPLE	CPLE	0.4948	Confirmed LTF	0.4948
CBM-W2	CBM-W2	2.0557	Confirmed LTF	2.0557
NY	NY	0.0077	Confirmed LTF	0.0077
TVA	TVA	0.4102	Confirmed LTF	0.4102
O-066	O-066	0.1949	Confirmed LTF	0.1949
CBM-S2	CBM-S2	3.1732	Confirmed LTF	3.1732
CBM-S1	CBM-S1	2.3260	Confirmed LTF	2.3260
G-007	G-007	0.0312	Confirmed LTF	0.0312
MADISON	MADISON	0.0907	Confirmed LTF	0.0907
MEC	MEC	0.3321	Confirmed LTF	0.3321
CBM-W1	CBM-W1	2.2393	Confirmed LTF	2.2393

11.7.4 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
71716338	314209	6SKIFF CREEK	DVP	314386	6KINGS M	DVP	1	DVP_P1-2: LN 557	single	441.80	171.67	176.32	AC	20.2

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
314295	6BIRDNECK	0.0195	80/20	0.0195
314421	6WINCHST	0.1098	80/20	0.1098
314491	3PENDLTN	0.1458	80/20	0.1458
314507	3THOMPSN	0.1461	80/20	0.1461
315092	1YORKTN3	20.3411	80/20	20.3411
315098	1CHESPKA	0.1932	80/20	0.1932
315099	**1CHESPKB (Deactivation : 31/05/2019)**	**1.2279**	**80/20**	**1.2279**
315108	1ELIZAR1	1.4247	80/20	1.4247
315109	1ELIZAR2	1.4000	80/20	1.4000
315110	1ELIZAR3	1.4430	80/20	1.4430
315233	1SURRY 2	14.5570	80/20	14.5570
315260	1GOSPORTA	0.1542	80/20	0.1542
315261	1GOSPORTB	0.1970	80/20	0.1970
315262	1GOSPORTC	0.1672	80/20	0.1672
315294	1DOMTR10	2.9066	Adder	3.42
315603	6AA1-139SOLA	1.0788	80/20	1.0788
315611	6Z1-036WIND	2.1677	Adder	2.55
923801	AB2-015 C OP	2.3481	Adder	2.76
923831	AB2-022 C	0.7786	Adder	0.92
924241	AB2-068 OP	103.2758	80/20	103.2758
925861	AC1-065 C	-2.5583	Adder	-3.01
926291	**AC1-107 O1 (Suspended)**	**155.8880**	**80/20**	**155.8880**
926661	AC1-147 C	0.9223	80/20	0.9223
926751	AC1-161 C O1	14.0481	80/20	14.0481
926781	AC1-164 C	-19.0946	Adder	-22.46
932041	AC2-012 C	4.1724	80/20	4.1724
932501	AC2-070 C	-0.5249	Adder	-0.62
932591	AC2-079 C O1	1.4249	Adder	1.68
932831	AC2-110 C	-1.0233	Adder	-1.2
933261	AC2-137 C	-0.7993	Adder	-0.94
933271	AC2-138 C	-0.5947	Adder	-0.7
933291	AC2-141 C	14.0481	80/20	14.0481
933731	AC2-196 C	0.7381	80/20	0.7381
933991	AD1-023 C	3.5935	Adder	4.23
934061	AD1-033 C	3.0983	80/20	3.0983
934191	AD1-046 C	-2.9704	Adder	-3.49
934521	AD1-076 C	15.2326	Adder	17.92
935111	AD1-144 C	0.7444	80/20	0.7444
936151	AD2-021	-0.0912	Adder	-0.11
936301	AD2-039 C	-1.0233	Adder	-1.2
936341	AD2-044 C	-0.1858	Adder	-0.22

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
936661	AD2-085 C	0.8470	Adder	1.0
937221	AD2-160 C O1	2.3905	80/20	2.3905
937251	AD2-164 (Withdrawn : 06/30/2020)	3.5319	80/20	3.5319
937541	AD2-215 C	0.7521	80/20	0.7521
938031	AE1-004 C	-1.0233	Adder	-1.2
938171	AE1-026 C O1	8.6470	Adder	10.17
938221	AE1-035 C	0.5727	Adder	0.67
938531	AE1-072 C O1	7.1110	80/20	7.1110
938771	AE1-103 C O1	1.0103	Adder	1.19
938961	AE1-124 C	-1.2868	Adder	-1.51
939311	AE1-162 C	0.6648	Adder	0.78
939411	AE1-173 C	23.5946	Adder	27.76
939421	AE1-174 C (Withdrawn : 06/16/2020)	0.1621	80/20	0.1621
939431	AE1-175 C	1.0782	80/20	1.0782
940251	AE2-007 O1	71.1089	80/20	71.1089
940491	AE2-034 C	2.1213	Adder	2.5
940641	AE2-051 C O1	3.9902	Adder	4.69
940891	AE2-078 C	0.8060	Adder	0.95
940901	AE2-079 C	0.8060	Adder	0.95
940911	AE2-080 C (Withdrawn : 04/28/2020)	0.8060	Adder	0.95
941101	AE2-104 C O1	1.0530	Adder	1.24
941281	AE2-122 C O1	11.6871	80/20	11.6871
941291	AE2-123 C O1	12.0107	80/20	12.0107
941301	AE2-124 C O1	10.9266	80/20	10.9266
941501	AE2-147 C	5.2563	Adder	6.18
941591	AE2-156 O1	7.3330	80/20	7.3330
942131	AE2-225 C	0.8695	80/20	0.8695
942171	AE2-229 C	0.8695	80/20	0.8695
942341	AE2-247 C	0.3657	Adder	0.43
942401	AE2-253 C	2.5144	80/20	2.5144
942851	AE2-304 C	0.2051	Adder	0.24
943461	AF1-017 C	0.3309	Adder	0.39
943611	AF1-032 C	0.7101	80/20	0.7101
943621	AF1-033 C	0.8060	Adder	0.95
944501	AF1-115 C O1	2.4548	Adder	2.89
944581	AF1-123 C O1	20.1989	80/20	20.1989
944591	AF1-124 C O1	20.1989	80/20	20.1989
944601	AF1-125 C O1	20.1989	80/20	20.1989
944871	AF1-152 C	1.7521	Adder	2.06
945361	AF1-201 C O1	4.4622	Adder	5.25
945711	AF1-236 C O1	23.2231	Adder	27.32
WEC	WEC	0.1210	Confirmed LTF	0.1210
LGEE	LGEE	0.2311	Confirmed LTF	0.2311
CPLE	CPLE	1.6412	Confirmed LTF	1.6412
CBM-W2	CBM-W2	5.4791	Confirmed LTF	5.4791
NY	NY	0.3008	Confirmed LTF	0.3008
TVA	TVA	1.1942	Confirmed LTF	1.1942
CBM-S2	CBM-S2	10.8780	Confirmed LTF	10.8780
CBM-S1	CBM-S1	6.5604	Confirmed LTF	6.5604
MADISON	MADISON	0.3891	Confirmed LTF	0.3891

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
MEC	MEC	0.7770	Confirmed LTF	0.7770
CBM-W1	CBM-W1	4.4160	Confirmed LTF	4.4160

11.7.5 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
71897858	314287	6CHESTFB	DVP	314276	6BASIN	DVP	1	DVP_P1-2: LN 563	single	663.64	137.16	139.13	AC	14.98

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
314314	3LOCKS	0.2033	80/20	0.2033
314435	6SAPONY	0.2904	80/20	0.2904
314572	3EMPORIA	0.0363	80/20	0.0363
314704	3LAWRENC	0.1405	80/20	0.1405
315065	**1CHESTF6 (Deactivation : 31/05/2023)**	**30.4070**	**80/20**	**30.4070**
315074	**1HOPCGN1 (Deactivation : 25/06/2019)**	**6.0125**	**80/20**	**6.0125**
315075	**1HOPCGN2 (Deactivation : 25/06/2019)**	**5.9346**	**80/20**	**5.9346**
315076	1HOPPOLC	1.2213	80/20	1.2213
315077	1HOPHCF1	1.9090	80/20	1.9090
315078	1HOPHCF2	1.9090	80/20	1.9090
315079	1HOPHCF3	1.9090	80/20	1.9090
315080	1HOPHCF4	2.8980	80/20	2.8980
315116	1SURRY 1	11.7383	80/20	11.7383
315117	1GRAVELC	0.4114	80/20	0.4114
315119	1GRAVEL3	1.1925	80/20	1.1925
315120	1GRAVEL4	1.2077	80/20	1.2077
315121	1GRAVEL5	1.1925	80/20	1.1925
315122	1GRAVEL6	1.2063	80/20	1.2063
315131	**1EDGECMA (Deactivation : 22/04/2019)**	**2.7859**	**Adder**	**3.28**
315132	**1EDGECMB (Deactivation : 22/04/2019)**	**2.7859**	**Adder**	**3.28**
315136	1ROSEMG1	1.0029	80/20	1.0029
315137	1ROSEMS1	0.6219	80/20	0.6219
315138	1ROSEMG2	0.4700	80/20	0.4700
315139	1GASTONA	1.4875	80/20	1.4875
315141	1GASTONB	1.4875	80/20	1.4875
315294	1DOMTR10	3.2938	Adder	3.88
315611	6Z1-036WIND	1.9771	Adder	2.33
922922	AB1-081 C OP	2.6785	Adder	3.15
923262	**AB1-132 C OP (Suspended)**	**6.4134**	**80/20**	**6.4134**
923572	AB1-173 C OP	1.0441	80/20	1.0441
923582	AB1-173AC OP	1.0441	80/20	1.0441
923801	AB2-015 C OP	2.8547	Adder	3.36
923831	AB2-022 C	0.6484	Adder	0.76
923911	AB2-031 C O1	1.0364	80/20	1.0364
923991	**AB2-040 C O1 (Suspended)**	**3.4030**	**80/20**	**3.4030**

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
924501	AB2-099 C (Suspended)	0.1916	Adder	0.23
924511	AB2-100 C	1.1385	80/20	1.1385
924811	AB2-134 C OP	1.2914	80/20	1.2914
925051	AB2-160 C O1 (Suspended)	3.4893	80/20	3.4893
925061	AB2-161 C O1 (Suspended)	1.8930	80/20	1.8930
925171	AB2-174 C O1	0.5888	80/20	0.5888
925331	AB2-190 C	11.6670	80/20	11.6670
925591	AC1-034 C	2.0447	Adder	2.41
926071	AC1-086 C	9.4445	80/20	9.4445
926201	AC1-098 C	1.9921	Adder	2.34
926211	AC1-099 C	0.6676	Adder	0.79
926661	AC1-147 C	0.6339	Adder	0.75
927021	AC1-189 C	2.5718	Adder	3.03
927141	AC1-208 C	2.9521	Adder	3.47
927221	AC1-216 C O1	0.9859	80/20	0.9859
932041	AC2-012 C	2.8678	Adder	3.37
932581	AC2-078 C O1	2.9843	80/20	2.9843
932591	AC2-079 C O1	2.7639	80/20	2.7639
932631	AC2-084 C	2.8398	Adder	3.34
933731	AC2-196 C	0.4907	Adder	0.58
933991	AD1-023 C	4.0472	Adder	4.76
934011	AD1-025 C	9.5660	80/20	9.5660
934061	AD1-033 C	2.0642	Adder	2.43
934331	AD1-057 C O1	3.3983	Adder	4.0
934521	AD1-076 C	16.5438	Adder	19.46
934571	AD1-082 C	4.3140	80/20	4.3140
935111	AD1-144 C	0.5008	Adder	0.59
935161	AD1-151 C O1	9.3753	80/20	9.3753
936041	AD2-007 C	0.4570	80/20	0.4570
936051	AD2-008 C	1.6654	80/20	1.6654
936401	AD2-051 C O1	2.8194	Adder	3.32
936661	AD2-085 C	1.6709	80/20	1.6709
937221	AD2-160 C O1	1.6168	Adder	1.9
937541	AD2-215 C	0.5060	Adder	0.6
938171	AE1-026 C O1	9.9448	Adder	11.7
938221	AE1-035 C	0.7169	Adder	0.84
938491	AE1-068 C O1	16.9582	Adder	19.95
938501	AE1-069 C O1	13.2586	Adder	15.6
938531	AE1-072 C O1	4.8786	Adder	5.74
938561	AE1-075 C	-0.6368	Adder	-0.75
938631	AE1-085 C O1	6.3185	80/20	6.3185
938771	AE1-103 C O1	1.1990	Adder	1.41
939191	AE1-149 C O1	8.1930	80/20	8.1930
939311	AE1-162 C	0.8528	80/20	0.8528
939411	AE1-173 C	25.0186	Adder	29.43
940061	AE2-000B C	5.9778	80/20	5.9778
940251	AE2-007 O1	48.3689	Adder	56.9
940431	AE2-027 C O1	3.4327	Adder	4.04
940471	AE2-031 C	9.2127	Adder	10.84
940481	AE2-033 C	10.3080	80/20	10.3080
940491	AE2-034 C	2.1527	Adder	2.53

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
940541	AE2-040 O1	1.8656	80/20	1.8656
940571	AE2-044 C	1.3392	Adder	1.58
940641	AE2-051 C O1	4.7981	Adder	5.64
940651	AE2-052	2.7310	80/20	2.7310
940891	AE2-078 C	0.9668	80/20	0.9668
940901	AE2-079 C	0.9668	80/20	0.9668
940911	**AE2-080 C (Withdrawn : 04/28/2020)**	**0.9668**	**80/20**	**0.9668**
941031	AE2-094 C	11.1237	Adder	13.09
941101	AE2-104 C O1	1.0801	Adder	1.27
941281	AE2-122 C O1	7.8851	Adder	9.28
941291	AE2-123 C O1	8.1034	Adder	9.53
941301	AE2-124 C O1	7.3589	Adder	8.66
941501	AE2-147 C	4.5426	Adder	5.34
941541	AE2-151 C	0.3527	Adder	0.41
941591	AE2-156 O1	5.0176	Adder	5.9
942001	AE2-212 C	2.5214	80/20	2.5214
942131	AE2-225 C	0.6096	Adder	0.72
942161	AE2-228 C	2.9050	80/20	2.9050
942171	AE2-229 C	0.6096	Adder	0.72
942341	AE2-247 C	0.7265	80/20	0.7265
942371	AE2-250 C O1	6.1981	80/20	6.1981
942401	AE2-253 C	1.7006	Adder	2.0
942471	AE2-260 C O1	8.1369	80/20	8.1369
942551	AE2-270	15.6255	80/20	15.6255
942851	AE2-304 C	0.1819	Adder	0.21
942931	AE2-313 C	9.9751	Adder	11.74
943171	AE2-346 C	0.4598	Adder	0.54
943461	AF1-017 C	0.6573	80/20	0.6573
943611	AF1-032 C	0.4978	Adder	0.59
943621	AF1-033 C	0.9668	80/20	0.9668
943911	AF1-059	5.2454	Adder	6.17
944011	AF1-069 C	3.6345	Adder	4.28
944141	AF1-082	0.8609	Adder	1.01
944501	AF1-115 C O1	2.9442	80/20	2.9442
944581	AF1-123 C O1	12.7330	Adder	14.98
944591	AF1-124 C O1	12.7330	Adder	14.98
944601	AF1-125 C O1	12.7330	Adder	14.98
944871	AF1-152 C	1.5142	Adder	1.78
945711	AF1-236 C O1	23.5670	Adder	27.73
946011	AF1-266	8.6286	80/20	8.6286
946261	AF1-291 C	2.9317	80/20	2.9317
946281	AF1-292 C	0.7469	80/20	0.7469
WEC	WEC	0.1654	Confirmed LTF	0.1654
LGEE	LGEE	0.3178	Confirmed LTF	0.3178
CPLE	CPLE	2.4370	Confirmed LTF	2.4370
CBM-W2	CBM-W2	7.8214	Confirmed LTF	7.8214
NY	NY	0.4855	Confirmed LTF	0.4855
TVA	TVA	1.7276	Confirmed LTF	1.7276
CBM-S2	CBM-S2	16.0973	Confirmed LTF	16.0973
CBM-S1	CBM-S1	9.4402	Confirmed LTF	9.4402
MADISON	MADISON	0.5867	Confirmed LTF	0.5867

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
MEC	MEC	1.0853	Confirmed LTF	1.0853
AA2-074	AA2-074	1.6601	LTF	1.6601
CBM-W1	CBM-W1	5.9673	Confirmed LTF	5.9673

11.7.6 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
89978877	314287	6CHESTFB	DVP	314225	6CHARCTY	DVP	1	DVP_P1-2: LN 557	single	984.18	101.33	102.86	AC	17.25

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
314314	3LOCKS	0.2303	80/20	0.2303
314435	6SAPONY	0.2758	80/20	0.2758
314572	3EMPORIA	0.0357	80/20	0.0357
314704	3LAWRENC	0.1400	80/20	0.1400
315065	**1CHESTF6 (Deactivation : 31/05/2023)**	**28.2536**	**80/20**	**28.2536**
315074	**1HOPCGN1 (Deactivation : 25/06/2019)**	**6.1060**	**80/20**	**6.1060**
315075	**1HOPCGN2 (Deactivation : 25/06/2019)**	**6.0269**	**80/20**	**6.0269**
315076	1HOPPOLC	1.2403	80/20	1.2403
315077	1HOPHCF1	1.9387	80/20	1.9387
315078	1HOPHCF2	1.9387	80/20	1.9387
315079	1HOPHCF3	1.9387	80/20	1.9387
315080	1HOPHCF4	2.9431	80/20	2.9431
315083	**1SPRUNCA (Deactivation : 12/01/2021)**	**3.2163**	**Adder**	**3.78**
315084	**1SPRUNCB (Deactivation : 12/01/2021)**	**3.2163**	**Adder**	**3.78**
315116	1SURRY 1	12.9350	80/20	12.9350
315117	1GRAVELC	0.4533	80/20	0.4533
315119	1GRAVEL3	1.3140	80/20	1.3140
315120	1GRAVEL4	1.3309	80/20	1.3309
315121	1GRAVEL5	1.3140	80/20	1.3140
315122	1GRAVEL6	1.3293	80/20	1.3293
315131	**1EDGECMA (Deactivation : 22/04/2019)**	**2.7396**	**Adder**	**3.22**
315132	**1EDGECMB (Deactivation : 22/04/2019)**	**2.7396**	**Adder**	**3.22**
315136	1ROSEMG1	0.9893	80/20	0.9893
315137	1ROSEMS1	0.6135	80/20	0.6135
315138	1ROSEMG2	0.4637	80/20	0.4637
315139	1GASTONA	1.4676	80/20	1.4676
315141	1GASTONB	1.4676	80/20	1.4676
315294	1DOMTR10	3.4706	Adder	4.08
315611	6Z1-036WIND	2.1789	Adder	2.56
922922	AB1-081 C OP	2.6356	Adder	3.1
923262	**AB1-132 C OP (Suspended)**	**6.3277**	**80/20**	**6.3277**
923572	AB1-173 C OP	1.0322	80/20	1.0322
923582	AB1-173AC OP	1.0322	80/20	1.0322
923801	AB2-015 C OP	3.5630	80/20	3.5630

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
923831	AB2-022 C	0.7295	Adder	0.86
923911	AB2-031 C O1	1.0246	80/20	1.0246
923991	AB2-040 C O1 (Suspended)	3.3642	80/20	3.3642
924241	AB2-068 OP	53.3302	Adder	62.74
924501	AB2-099 C (Suspended)	0.1982	Adder	0.23
924511	AB2-100 C	1.0996	80/20	1.0996
924811	AB2-134 C OP	1.3589	80/20	1.3589
925051	AB2-160 C O1 (Suspended)	3.9529	80/20	3.9529
925061	AB2-161 C O1 (Suspended)	1.9445	80/20	1.9445
925171	AB2-174 C O1	0.5804	80/20	0.5804
925331	AB2-190 C	12.2270	80/20	12.2270
925591	AC1-034 C	2.0120	Adder	2.37
925781	AC1-054 C O1	2.0789	Adder	2.45
926071	AC1-086 C	9.3183	80/20	9.3183
926201	AC1-098 C	2.0064	Adder	2.36
926211	AC1-099 C	0.6724	Adder	0.79
926291	AC1-107 O1 (Suspended)	80.4984	Adder	94.7
926661	AC1-147 C	0.7231	Adder	0.85
926751	AC1-161 C O1	8.5568	Adder	10.07
927021	AC1-189 C	2.5822	Adder	3.04
927141	AC1-208 C	2.9535	Adder	3.47
927221	AC1-216 C O1	1.0375	80/20	1.0375
932041	AC2-012 C	3.2713	Adder	3.85
932581	AC2-078 C O1	2.9658	80/20	2.9658
932591	AC2-079 C O1	2.9025	80/20	2.9025
932631	AC2-084 C	2.8603	Adder	3.37
933291	AC2-141 C	8.5568	Adder	10.07
933731	AC2-196 C	0.5606	Adder	0.66
933991	AD1-023 C	4.2824	Adder	5.04
934011	AD1-025 C	10.0662	80/20	10.0662
934061	AD1-033 C	2.3580	Adder	2.77
934331	AD1-057 C O1	3.3467	Adder	3.94
934521	AD1-076 C	17.6069	Adder	20.71
934571	AD1-082 C	4.4313	80/20	4.4313
935111	AD1-144 C	0.5704	Adder	0.67
935161	AD1-151 C O1	9.8253	80/20	9.8253
936041	AD2-007 C	0.4809	80/20	0.4809
936051	AD2-008 C	1.7525	80/20	1.7525
936401	AD2-051 C O1	2.9307	Adder	3.45
936661	AD2-085 C	1.7527	80/20	1.7527
937221	AD2-160 C O1	1.8392	Adder	2.16
937251	AD2-164 (Withdrawn : 06/30/2020)	1.3515	Adder	1.59
937541	AD2-215 C	0.5763	Adder	0.68
938171	AE1-026 C O1	10.4887	Adder	12.34
938221	AE1-035 C	0.7464	Adder	0.88
938491	AE1-068 C O1	14.8966	Adder	17.53
938501	AE1-069 C O1	11.6686	Adder	13.73
938531	AE1-072 C O1	5.5306	Adder	6.51
938631	AE1-085 C O1	6.3035	80/20	6.3035

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
938771	AE1-103 C O1	1.5028	80/20	1.5028
939191	AE1-149 C O1	8.1054	80/20	8.1054
939311	AE1-162 C	0.9505	80/20	0.9505
939411	AE1-173 C	24.3372	Adder	28.63
940061	AE2-000B C	6.1404	80/20	6.1404
940251	AE2-007 O1	55.2446	Adder	64.99
940431	AE2-027 C O1	6.8450	80/20	6.8450
940471	AE2-031 C	8.1020	Adder	9.53
940481	AE2-033 C	9.8060	80/20	9.8060
940491	AE2-034 C	2.3212	Adder	2.73
940541	AE2-040 O1	1.7716	80/20	1.7716
940571	AE2-044 C	1.3178	Adder	1.55
940641	AE2-051 C O1	4.4156	Adder	5.19
940651	AE2-052	2.7018	80/20	2.7018
940891	AE2-078 C	1.0890	80/20	1.0890
940901	AE2-079 C	1.0890	80/20	1.0890
940911	**AE2-080 C (Withdrawn : 04/28/2020)**	**1.0890**	**80/20**	**1.0890**
941031	AE2-094 C	9.7377	Adder	11.46
941101	AE2-104 C O1	1.3912	80/20	1.3912
941281	AE2-122 C O1	9.0007	Adder	10.59
941291	AE2-123 C O1	9.2500	Adder	10.88
941301	AE2-124 C O1	8.4003	Adder	9.88
941501	AE2-147 C	5.0658	Adder	5.96
941541	AE2-151 C	0.3645	Adder	0.43
941591	AE2-156 O1	5.7282	Adder	6.74
942001	AE2-212 C	2.3792	80/20	2.3792
942131	AE2-225 C	0.6866	Adder	0.81
942161	AE2-228 C	2.7086	80/20	2.7086
942171	AE2-229 C	0.6866	Adder	0.81
942341	AE2-247 C	0.7617	80/20	0.7617
942371	AE2-250 C O1	7.0216	80/20	7.0216
942401	AE2-253 C	1.9346	Adder	2.28
942471	AE2-260 C O1	7.8416	80/20	7.8416
942551	AE2-270	16.3755	80/20	16.3755
942851	AE2-304 C	0.2017	Adder	0.24
942931	AE2-313 C	8.7725	Adder	10.32
943171	AE2-346 C	0.4757	Adder	0.56
943461	AF1-017 C	0.6892	80/20	0.6892
943611	AF1-032 C	0.5607	Adder	0.66
943621	AF1-033 C	1.0890	80/20	1.0890
943911	AF1-059	5.3371	Adder	6.28
944011	AF1-069 C	3.1817	Adder	3.74
944141	AF1-082	0.8472	Adder	1.0
944501	AF1-115 C O1	3.3165	80/20	3.3165
944581	AF1-123 C O1	14.6657	Adder	17.25
944591	AF1-124 C O1	14.6657	Adder	17.25
944601	AF1-125 C O1	14.6657	Adder	17.25
944631	AF1-128 O1	11.7296	Adder	13.8
944871	AF1-152 C	1.6886	Adder	1.99
945711	AF1-236 C O1	25.4118	Adder	29.9
946011	AF1-266	8.2084	80/20	8.2084

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
946261	AF1-291 C	2.7275	80/20	2.7275
946281	AF1-292 C	0.7315	80/20	0.7315
WEC	WEC	0.1292	Confirmed LTF	0.1292
LGEE	LGEE	0.2504	Confirmed LTF	0.2504
CPLE	CPLE	2.2888	Confirmed LTF	2.2888
CBM-W2	CBM-W2	6.6994	Confirmed LTF	6.6994
NY	NY	0.4723	Confirmed LTF	0.4723
TVA	TVA	1.5134	Confirmed LTF	1.5134
CBM-S2	CBM-S2	14.8835	Confirmed LTF	14.8835
CBM-S1	CBM-S1	8.1962	Confirmed LTF	8.1962
MADISON	MADISON	0.5584	Confirmed LTF	0.5584
MEC	MEC	0.8898	Confirmed LTF	0.8898
AA2-074	AA2-074	1.5584	LTF	1.5584
CBM-W1	CBM-W1	4.5912	Confirmed LTF	4.5912

11.7.7 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
71716424	314296	6PENNIMAN	DVP	314415	6WALR209	DVP	1	DVP_P1-2: LN 557	single	441.80	160.3	164.94	AC	20.2

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
314295	6BIRDNECK	0.0195	80/20	0.0195
314421	6WINCHST	0.1098	80/20	0.1098
314491	3PENDLTN	0.1458	80/20	0.1458
314507	3THOMPSN	0.1461	80/20	0.1461
315092	1YORKTN3	20.3411	80/20	20.3411
315098	1CHESPKA	0.1932	80/20	0.1932
315099	**1CHESPKB (Deactivation : 31/05/2019)**	**1.2279**	**80/20**	**1.2279**
315108	1ELIZAR1	1.4247	80/20	1.4247
315109	1ELIZAR2	1.4000	80/20	1.4000
315110	1ELIZAR3	1.4430	80/20	1.4430
315233	1SURRY 2	14.5570	80/20	14.5570
315260	1GOSPORTA	0.1542	80/20	0.1542
315261	1GOSPORTB	0.1970	80/20	0.1970
315262	1GOSPORTC	0.1672	80/20	0.1672
315294	1DOMTR10	2.9066	Adder	3.42
315603	6AA1-139SOLA	1.0788	80/20	1.0788
315611	6Z1-036WIND	2.1677	Adder	2.55
923801	AB2-015 C OP	2.3481	Adder	2.76
923831	AB2-022 C	0.7786	Adder	0.92
924241	AB2-068 OP	103.2758	80/20	103.2758
925861	AC1-065 C	-2.5583	Adder	-3.01
926291	**AC1-107 O1 (Suspended)**	**155.8880**	**80/20**	**155.8880**
926661	AC1-147 C	0.9223	80/20	0.9223
926751	AC1-161 C O1	14.0481	80/20	14.0481
926781	AC1-164 C	-19.0946	Adder	-22.46
932041	AC2-012 C	4.1724	80/20	4.1724
932501	AC2-070 C	-0.5249	Adder	-0.62
932591	AC2-079 C O1	1.4249	Adder	1.68
932831	AC2-110 C	-1.0233	Adder	-1.2
933261	AC2-137 C	-0.7993	Adder	-0.94
933271	AC2-138 C	-0.5947	Adder	-0.7
933291	AC2-141 C	14.0481	80/20	14.0481
933731	AC2-196 C	0.7381	80/20	0.7381
933991	AD1-023 C	3.5935	Adder	4.23
934061	AD1-033 C	3.0983	80/20	3.0983
934191	AD1-046 C	-2.9704	Adder	-3.49
934521	AD1-076 C	15.2326	Adder	17.92
935111	AD1-144 C	0.7444	80/20	0.7444
936151	AD2-021	-0.0912	Adder	-0.11
936301	AD2-039 C	-1.0233	Adder	-1.2
936341	AD2-044 C	-0.1858	Adder	-0.22

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
936661	AD2-085 C	0.8470	Adder	1.0
937221	AD2-160 C O1	2.3905	80/20	2.3905
937251	**AD2-164 (Withdrawn : 06/30/2020)**	**3.5319**	**80/20**	**3.5319**
937541	AD2-215 C	0.7521	80/20	0.7521
938031	AE1-004 C	-1.0233	Adder	-1.2
938171	AE1-026 C O1	8.6470	Adder	10.17
938221	AE1-035 C	0.5727	Adder	0.67
938531	AE1-072 C O1	7.1110	80/20	7.1110
938771	AE1-103 C O1	1.0103	Adder	1.19
938961	AE1-124 C	-1.2868	Adder	-1.51
939311	AE1-162 C	0.6648	Adder	0.78
939411	AE1-173 C	23.5946	Adder	27.76
939421	**AE1-174 C (Withdrawn : 06/16/2020)**	**0.1621**	**80/20**	**0.1621**
939431	AE1-175 C	1.0782	80/20	1.0782
940251	AE2-007 O1	71.1089	80/20	71.1089
940491	AE2-034 C	2.1213	Adder	2.5
940641	AE2-051 C O1	3.9902	Adder	4.69
940891	AE2-078 C	0.8060	Adder	0.95
940901	AE2-079 C	0.8060	Adder	0.95
940911	**AE2-080 C (Withdrawn : 04/28/2020)**	**0.8060**	**Adder**	**0.95**
941101	AE2-104 C O1	1.0530	Adder	1.24
941281	AE2-122 C O1	11.6871	80/20	11.6871
941291	AE2-123 C O1	12.0107	80/20	12.0107
941301	AE2-124 C O1	10.9266	80/20	10.9266
941501	AE2-147 C	5.2563	Adder	6.18
941591	AE2-156 O1	7.3330	80/20	7.3330
942131	AE2-225 C	0.8695	80/20	0.8695
942171	AE2-229 C	0.8695	80/20	0.8695
942341	AE2-247 C	0.3657	Adder	0.43
942401	AE2-253 C	2.5144	80/20	2.5144
942851	AE2-304 C	0.2051	Adder	0.24
943461	AF1-017 C	0.3309	Adder	0.39
943611	AF1-032 C	0.7101	80/20	0.7101
943621	AF1-033 C	0.8060	Adder	0.95
944501	AF1-115 C O1	2.4548	Adder	2.89
944581	AF1-123 C O1	20.1989	80/20	20.1989
944591	AF1-124 C O1	20.1989	80/20	20.1989
944601	AF1-125 C O1	20.1989	80/20	20.1989
944871	AF1-152 C	1.7521	Adder	2.06
945361	AF1-201 C O1	4.4622	Adder	5.25
945711	AF1-236 C O1	23.2231	Adder	27.32
WEC	WEC	0.1210	Confirmed LTF	0.1210
LGEE	LGEE	0.2311	Confirmed LTF	0.2311
CPLE	CPLE	1.6412	Confirmed LTF	1.6412
CBM-W2	CBM-W2	5.4791	Confirmed LTF	5.4791
NY	NY	0.3008	Confirmed LTF	0.3008
TVA	TVA	1.1942	Confirmed LTF	1.1942
CBM-S2	CBM-S2	10.8780	Confirmed LTF	10.8780
CBM-S1	CBM-S1	6.5604	Confirmed LTF	6.5604
MADISON	MADISON	0.3891	Confirmed LTF	0.3891

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
MEC	MEC	0.7770	Confirmed LTF	0.7770
CBM-W1	CBM-W1	4.4160	Confirmed LTF	4.4160

11.7.8 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
71716384	314386	6KINGSM	DVP	314296	6PENNIMAN	DVP	1	DVP_P1-2: LN 557	single	441.80	163.93	168.57	AC	20.2

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
314295	6BIRDNECK	0.0195	80/20	0.0195
314421	6WINCHST	0.1098	80/20	0.1098
314491	3PENDLTN	0.1458	80/20	0.1458
314507	3THOMPSN	0.1461	80/20	0.1461
315092	1YORKTN3	20.3411	80/20	20.3411
315098	1CHESPKA	0.1932	80/20	0.1932
315099	**1CHESPKB (Deactivation : 31/05/2019)**	**1.2279**	**80/20**	**1.2279**
315108	1ELIZAR1	1.4247	80/20	1.4247
315109	1ELIZAR2	1.4000	80/20	1.4000
315110	1ELIZAR3	1.4430	80/20	1.4430
315233	1SURRY 2	14.5570	80/20	14.5570
315260	1GOSPORTA	0.1542	80/20	0.1542
315261	1GOSPORTB	0.1970	80/20	0.1970
315262	1GOSPORTC	0.1672	80/20	0.1672
315294	1DOMTR10	2.9066	Adder	3.42
315603	6AA1-139SOLA	1.0788	80/20	1.0788
315611	6Z1-036WIND	2.1677	Adder	2.55
923801	AB2-015 C OP	2.3481	Adder	2.76
923831	AB2-022 C	0.7786	Adder	0.92
924241	AB2-068 OP	103.2758	80/20	103.2758
925861	AC1-065 C	-2.5583	Adder	-3.01
926291	**AC1-107 O1 (Suspended)**	**155.8880**	**80/20**	**155.8880**
926661	AC1-147 C	0.9223	80/20	0.9223
926751	AC1-161 C O1	14.0481	80/20	14.0481
926781	AC1-164 C	-19.0946	Adder	-22.46
932041	AC2-012 C	4.1724	80/20	4.1724
932501	AC2-070 C	-0.5249	Adder	-0.62
932591	AC2-079 C O1	1.4249	Adder	1.68
932831	AC2-110 C	-1.0233	Adder	-1.2
933261	AC2-137 C	-0.7993	Adder	-0.94
933271	AC2-138 C	-0.5947	Adder	-0.7
933291	AC2-141 C	14.0481	80/20	14.0481
933731	AC2-196 C	0.7381	80/20	0.7381
933991	AD1-023 C	3.5935	Adder	4.23
934061	AD1-033 C	3.0983	80/20	3.0983
934191	AD1-046 C	-2.9704	Adder	-3.49
934521	AD1-076 C	15.2326	Adder	17.92
935111	AD1-144 C	0.7444	80/20	0.7444
936151	AD2-021	-0.0912	Adder	-0.11
936301	AD2-039 C	-1.0233	Adder	-1.2
936341	AD2-044 C	-0.1858	Adder	-0.22

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
936661	AD2-085 C	0.8470	Adder	1.0
937221	AD2-160 C O1	2.3905	80/20	2.3905
937251	AD2-164 (Withdrawn : 06/30/2020)	3.5319	80/20	3.5319
937541	AD2-215 C	0.7521	80/20	0.7521
938031	AE1-004 C	-1.0233	Adder	-1.2
938171	AE1-026 C O1	8.6470	Adder	10.17
938221	AE1-035 C	0.5727	Adder	0.67
938531	AE1-072 C O1	7.1110	80/20	7.1110
938771	AE1-103 C O1	1.0103	Adder	1.19
938961	AE1-124 C	-1.2868	Adder	-1.51
939311	AE1-162 C	0.6648	Adder	0.78
939411	AE1-173 C	23.5946	Adder	27.76
939421	AE1-174 C (Withdrawn : 06/16/2020)	0.1621	80/20	0.1621
939431	AE1-175 C	1.0782	80/20	1.0782
940251	AE2-007 O1	71.1089	80/20	71.1089
940491	AE2-034 C	2.1213	Adder	2.5
940641	AE2-051 C O1	3.9902	Adder	4.69
940891	AE2-078 C	0.8060	Adder	0.95
940901	AE2-079 C	0.8060	Adder	0.95
940911	AE2-080 C (Withdrawn : 04/28/2020)	0.8060	Adder	0.95
941101	AE2-104 C O1	1.0530	Adder	1.24
941281	AE2-122 C O1	11.6871	80/20	11.6871
941291	AE2-123 C O1	12.0107	80/20	12.0107
941301	AE2-124 C O1	10.9266	80/20	10.9266
941501	AE2-147 C	5.2563	Adder	6.18
941591	AE2-156 O1	7.3330	80/20	7.3330
942131	AE2-225 C	0.8695	80/20	0.8695
942171	AE2-229 C	0.8695	80/20	0.8695
942341	AE2-247 C	0.3657	Adder	0.43
942401	AE2-253 C	2.5144	80/20	2.5144
942851	AE2-304 C	0.2051	Adder	0.24
943461	AF1-017 C	0.3309	Adder	0.39
943611	AF1-032 C	0.7101	80/20	0.7101
943621	AF1-033 C	0.8060	Adder	0.95
944501	AF1-115 C O1	2.4548	Adder	2.89
944581	AF1-123 C O1	20.1989	80/20	20.1989
944591	AF1-124 C O1	20.1989	80/20	20.1989
944601	AF1-125 C O1	20.1989	80/20	20.1989
944871	AF1-152 C	1.7521	Adder	2.06
945361	AF1-201 C O1	4.4622	Adder	5.25
945711	AF1-236 C O1	23.2231	Adder	27.32
WEC	WEC	0.1210	Confirmed LTF	0.1210
LGEE	LGEE	0.2311	Confirmed LTF	0.2311
CPLE	CPLE	1.6412	Confirmed LTF	1.6412
CBM-W2	CBM-W2	5.4791	Confirmed LTF	5.4791
NY	NY	0.3008	Confirmed LTF	0.3008
TVA	TVA	1.1942	Confirmed LTF	1.1942
CBM-S2	CBM-S2	10.8780	Confirmed LTF	10.8780
CBM-S1	CBM-S1	6.5604	Confirmed LTF	6.5604
MADISON	MADISON	0.3891	Confirmed LTF	0.3891

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
MEC	MEC	0.7770	Confirmed LTF	0.7770
CBM-W1	CBM-W1	4.4160	Confirmed LTF	4.4160

11.7.9 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
71716565	314415	6WALR209	DVP	314391	6LIGH209	DVP	1	DVP_P1-2: LN 557	single	441.80	145.38	150.01	AC	20.2

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
314295	6BIRDNECK	0.0195	80/20	0.0195
314421	6WINCHST	0.1098	80/20	0.1098
314491	3PENDLTN	0.1458	80/20	0.1458
314507	3THOMPSN	0.1461	80/20	0.1461
315092	1YORKTN3	20.3411	80/20	20.3411
315098	1CHESPKA	0.1932	80/20	0.1932
315099	**1CHESPKB (Deactivation : 31/05/2019)**	**1.2279**	**80/20**	**1.2279**
315108	1ELIZAR1	1.4247	80/20	1.4247
315109	1ELIZAR2	1.4000	80/20	1.4000
315110	1ELIZAR3	1.4430	80/20	1.4430
315233	1SURRY 2	14.5570	80/20	14.5570
315260	1GOSPORTA	0.1542	80/20	0.1542
315261	1GOSPORTB	0.1970	80/20	0.1970
315262	1GOSPORTC	0.1672	80/20	0.1672
315294	1DOMTR10	2.9066	Adder	3.42
315603	6AA1-139SOLA	1.0788	80/20	1.0788
315611	6Z1-036WIND	2.1677	Adder	2.55
923801	AB2-015 C OP	2.3481	Adder	2.76
923831	AB2-022 C	0.7786	Adder	0.92
924241	AB2-068 OP	103.2758	80/20	103.2758
925861	AC1-065 C	-2.5583	Adder	-3.01
926291	**AC1-107 O1 (Suspended)**	**155.8880**	**80/20**	**155.8880**
926661	AC1-147 C	0.9223	80/20	0.9223
926751	AC1-161 C O1	14.0481	80/20	14.0481
926781	AC1-164 C	-19.0946	Adder	-22.46
932041	AC2-012 C	4.1724	80/20	4.1724
932501	AC2-070 C	-0.5249	Adder	-0.62
932591	AC2-079 C O1	1.4249	Adder	1.68
932831	AC2-110 C	-1.0233	Adder	-1.2
933261	AC2-137 C	-0.7993	Adder	-0.94
933271	AC2-138 C	-0.5947	Adder	-0.7
933291	AC2-141 C	14.0481	80/20	14.0481
933731	AC2-196 C	0.7381	80/20	0.7381
933991	AD1-023 C	3.5935	Adder	4.23
934061	AD1-033 C	3.0983	80/20	3.0983
934191	AD1-046 C	-2.9704	Adder	-3.49
934521	AD1-076 C	15.2326	Adder	17.92
935111	AD1-144 C	0.7444	80/20	0.7444
936151	AD2-021	-0.0912	Adder	-0.11
936301	AD2-039 C	-1.0233	Adder	-1.2
936341	AD2-044 C	-0.1858	Adder	-0.22

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
936661	AD2-085 C	0.8470	Adder	1.0
937221	AD2-160 C O1	2.3905	80/20	2.3905
937251	AD2-164 (Withdrawn : 06/30/2020)	3.5319	80/20	3.5319
937541	AD2-215 C	0.7521	80/20	0.7521
938031	AE1-004 C	-1.0233	Adder	-1.2
938171	AE1-026 C O1	8.6470	Adder	10.17
938221	AE1-035 C	0.5727	Adder	0.67
938531	AE1-072 C O1	7.1110	80/20	7.1110
938771	AE1-103 C O1	1.0103	Adder	1.19
938961	AE1-124 C	-1.2868	Adder	-1.51
939311	AE1-162 C	0.6648	Adder	0.78
939411	AE1-173 C	23.5946	Adder	27.76
939421	AE1-174 C (Withdrawn : 06/16/2020)	0.1621	80/20	0.1621
939431	AE1-175 C	1.0782	80/20	1.0782
940251	AE2-007 O1	71.1089	80/20	71.1089
940491	AE2-034 C	2.1213	Adder	2.5
940641	AE2-051 C O1	3.9902	Adder	4.69
940891	AE2-078 C	0.8060	Adder	0.95
940901	AE2-079 C	0.8060	Adder	0.95
940911	AE2-080 C (Withdrawn : 04/28/2020)	0.8060	Adder	0.95
941101	AE2-104 C O1	1.0530	Adder	1.24
941281	AE2-122 C O1	11.6871	80/20	11.6871
941291	AE2-123 C O1	12.0107	80/20	12.0107
941301	AE2-124 C O1	10.9266	80/20	10.9266
941501	AE2-147 C	5.2563	Adder	6.18
941591	AE2-156 O1	7.3330	80/20	7.3330
942131	AE2-225 C	0.8695	80/20	0.8695
942171	AE2-229 C	0.8695	80/20	0.8695
942341	AE2-247 C	0.3657	Adder	0.43
942401	AE2-253 C	2.5144	80/20	2.5144
942851	AE2-304 C	0.2051	Adder	0.24
943461	AF1-017 C	0.3309	Adder	0.39
943611	AF1-032 C	0.7101	80/20	0.7101
943621	AF1-033 C	0.8060	Adder	0.95
944501	AF1-115 C O1	2.4548	Adder	2.89
944581	AF1-123 C O1	20.1989	80/20	20.1989
944591	AF1-124 C O1	20.1989	80/20	20.1989
944601	AF1-125 C O1	20.1989	80/20	20.1989
944871	AF1-152 C	1.7521	Adder	2.06
945361	AF1-201 C O1	4.4622	Adder	5.25
945711	AF1-236 C O1	23.2231	Adder	27.32
WEC	WEC	0.1210	Confirmed LTF	0.1210
LGEE	LGEE	0.2311	Confirmed LTF	0.2311
CPLE	CPLE	1.6412	Confirmed LTF	1.6412
CBM-W2	CBM-W2	5.4791	Confirmed LTF	5.4791
NY	NY	0.3008	Confirmed LTF	0.3008
TVA	TVA	1.1942	Confirmed LTF	1.1942
CBM-S2	CBM-S2	10.8780	Confirmed LTF	10.8780
CBM-S1	CBM-S1	6.5604	Confirmed LTF	6.5604
MADISON	MADISON	0.3891	Confirmed LTF	0.3891

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
MEC	MEC	0.7770	Confirmed LTF	0.7770
CBM-W1	CBM-W1	4.4160	Confirmed LTF	4.4160

11.7.10 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
89978191	314466	6FENTRES	DVP	314508	6THRASHER	DVP	1	DVP_P4-2: 231T2026	breaker	830.0	104.04	116.38	AC	107.52

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
314491	3PENDLTN	0.2287	50/50	0.2287
314638	6ELIZ CT	0.3097	50/50	0.3097
314639	6TANGLEW	0.4838	50/50	0.4838
314643	3O INLET	0.7874	50/50	0.7874
315603	6AA1-139SOLA	4.7577	50/50	4.7577
315605	6W1-029WIND	0.5292	50/50	0.5292
315611	6Z1-036WIND	4.4519	50/50	4.4519
901082	W1-029 E	20.0313	50/50	20.0313
913392	Y1-086 E	2.8531	50/50	2.8531
916042	**Z1-036 E (Suspended)**	**29.8274**	**50/50**	**29.8274**
916192	Z1-068 E	0.7966	Adder	0.94
917122	Z2-027 E	1.1708	50/50	1.1708
919152	AA1-139 E	11.5124	50/50	11.5124
920692	AA2-178 E	1.5994	Adder	1.88
923831	AB2-022 C	2.9912	50/50	2.9912
923832	AB2-022 E	1.6106	50/50	1.6106
925522	AC1-027 E	0.7379	50/50	0.7379
926661	AC1-147 C	-1.1350	Adder	-1.34
933731	AC2-196 C	3.7664	50/50	3.7664
933732	AC2-196 E	2.5084	50/50	2.5084
934061	AD1-033 C	14.8235	50/50	14.8235
934062	AD1-033 E	9.8823	50/50	9.8823
934521	AD1-076 C	15.5952	Adder	18.35
934522	AD1-076 E	7.9410	Adder	9.34
937221	AD2-160 C O1	11.0251	50/50	11.0251
937222	AD2-160 E O1	5.7814	50/50	5.7814
938531	AE1-072 C O1	29.8452	50/50	29.8452
938532	AE1-072 E O1	15.5583	50/50	15.5583
939311	AE1-162 C	-0.6344	Adder	-0.75
940491	AE2-034 C	2.7989	Adder	3.29
940492	AE2-034 E	1.1995	Adder	1.41
941281	AE2-122 C O1	23.4473	50/50	23.4473
941282	AE2-122 E O1	94.6155	50/50	94.6155
941291	AE2-123 C O1	24.0965	50/50	24.0965
941292	AE2-123 E O1	93.9662	50/50	93.9662
941301	AE2-124 C O1	35.4410	50/50	35.4410
941302	AE2-124 E O1	155.5108	50/50	155.5108
941501	AE2-147 C	9.9603	50/50	9.9603
941502	AE2-147 E	6.6402	50/50	6.6402
941592	AE2-156 BAT	10.1860	50/50	10.1860
942401	AE2-253 C	11.5965	50/50	11.5965

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
942402	AE2-253 E	5.2100	50/50	5.2100
942851	AE2-304 C	0.4462	50/50	0.4462
942852	AE2-304 E	0.1735	50/50	0.1735
944581	AF1-123 C O1	32.6831	50/50	32.6831
944582	AF1-123 E O1	74.8352	50/50	74.8352
944591	AF1-124 C O1	32.6831	50/50	32.6831
944592	AF1-124 E O1	74.8352	50/50	74.8352
944601	AF1-125 C O1	32.6831	50/50	32.6831
944602	AF1-125 E O1	74.8352	50/50	74.8352
944871	AF1-152 C	3.3201	50/50	3.3201
944872	AF1-152 E	2.2134	50/50	2.2134
945711	AF1-236 C O1	30.6411	Adder	36.05
945712	AF1-236 E O1	49.9933	Adder	58.82
WEC	WEC	0.0334	Confirmed LTF	0.0334
LGEE	LGEE	0.0622	Confirmed LTF	0.0622
CPLE	CPLE	0.2712	Confirmed LTF	0.2712
CBM-W2	CBM-W2	1.1712	Confirmed LTF	1.1712
NY	NY	0.0022	Confirmed LTF	0.0022
TVA	TVA	0.2324	Confirmed LTF	0.2324
O-066	O-066	0.0806	Confirmed LTF	0.0806
CBM-S2	CBM-S2	1.7745	Confirmed LTF	1.7745
CBM-S1	CBM-S1	1.3206	Confirmed LTF	1.3206
G-007	G-007	0.0135	Confirmed LTF	0.0135
MADISON	MADISON	0.0504	Confirmed LTF	0.0504
MEC	MEC	0.1907	Confirmed LTF	0.1907
CBM-W1	CBM-W1	1.2885	Confirmed LTF	1.2885

11.7.11 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
89978275	314481	6LANDSTN	DVP	314486	6LYNHAVN	DVP	1	DVP_P4-2: 231T2128	breaker	830.0	102.16	107.73	AC	54.13

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
314491	3PENDLTN	0.2432	50/50	0.2432
314638	6ELIZ CT	0.1688	50/50	0.1688
314639	6TANGLEW	0.2676	50/50	0.2676
314643	3O INLET	0.4212	50/50	0.4212
315603	6AA1-139SOLA	2.5330	50/50	2.5330
315611	6Z1-036WIND	2.2174	Adder	2.61
901082	W1-029 E	10.1418	Adder	11.93
913392	Y1-086 E	1.5551	50/50	1.5551
916042	**Z1-036 E (Suspended)**	**14.8566**	**Adder**	**17.48**
917122	Z2-027 E	0.6476	50/50	0.6476
919152	AA1-139 E	6.1294	50/50	6.1294
923831	AB2-022 C	1.6303	50/50	1.6303
923832	AB2-022 E	0.8779	50/50	0.8779
925522	AC1-027 E	0.7847	50/50	0.7847
926661	AC1-147 C	-0.9960	Adder	-1.17
933731	AC2-196 C	1.9869	50/50	1.9869
933732	AC2-196 E	1.3233	50/50	1.3233
934061	AD1-033 C	9.7217	50/50	9.7217
934062	AD1-033 E	6.4812	50/50	6.4812
937221	AD2-160 C O1	5.8525	50/50	5.8525
937222	AD2-160 E O1	3.0690	50/50	3.0690
938531	AE1-072 C O1	15.9446	50/50	15.9446
938532	AE1-072 E O1	8.3119	50/50	8.3119
941281	AE2-122 C O1	26.4950	50/50	26.4950
941282	AE2-122 E O1	106.9137	50/50	106.9137
941291	AE2-123 C O1	27.2286	50/50	27.2286
941292	AE2-123 E O1	106.1800	50/50	106.1800
941301	AE2-124 C O1	57.8526	50/50	57.8526
941302	AE2-124 E O1	253.8503	50/50	253.8503
941501	AE2-147 C	5.0429	Adder	5.93
941502	AE2-147 E	3.3619	Adder	3.96
941592	AE2-156 BAT	8.2610	Merchant Transmission	8.2610
942401	AE2-253 C	6.1558	50/50	6.1558
942402	AE2-253 E	2.7657	50/50	2.7657
942851	AE2-304 C	0.2207	Adder	0.26
942852	AE2-304 E	0.0858	Adder	0.1
944581	AF1-123 C O1	13.9858	Adder	16.45
944582	AF1-123 E O1	32.0236	Adder	37.67
944591	AF1-124 C O1	13.9858	Adder	16.45
944592	AF1-124 E O1	32.0236	Adder	37.67
944601	AF1-125 C O1	13.9858	Adder	16.45

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
944602	AF1-125 E O1	32.0236	Adder	37.67
944871	AF1-152 C	1.6810	Adder	1.98
944872	AF1-152 E	1.1206	Adder	1.32
WEC	WEC	0.0271	Confirmed LTF	0.0271
LGEE	LGEE	0.0502	Confirmed LTF	0.0502
CPLE	CPLE	0.2223	Confirmed LTF	0.2223
CBM-W2	CBM-W2	0.9500	Confirmed LTF	0.9500
NY	NY	0.0017	Confirmed LTF	0.0017
TVA	TVA	0.1876	Confirmed LTF	0.1876
O-066	O-066	0.0672	Confirmed LTF	0.0672
CBM-S2	CBM-S2	1.4392	Confirmed LTF	1.4392
CBM-S1	CBM-S1	1.0735	Confirmed LTF	1.0735
G-007	G-007	0.0114	Confirmed LTF	0.0114
MADISON	MADISON	0.0403	Confirmed LTF	0.0403
MEC	MEC	0.1541	Confirmed LTF	0.1541
CBM-W1	CBM-W1	1.0383	Confirmed LTF	1.0383

11.7.12 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
89978856	314697	6SEDGE HILL	DVP	927250	AC1-221 TAP	DVP	1	DVP_P1-2: LN 570	single	674.92	100.76	103.24	AC	17.18

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
313853	3PONTONDP	0.0726	80/20	0.0726
314333	6POWHATN	0.1597	80/20	0.1597
314429	3JTRSVLE	0.2903	80/20	0.2903
314677	6BUCKING	0.2459	80/20	0.2459
314704	3LAWRENC	0.1296	80/20	0.1296
314947	8GREENSVILLE	29.3573	80/20	29.3573
315102	1BRUNSWICKG1	5.0143	80/20	5.0143
315103	1BRUNSWICKG2	5.0143	80/20	5.0143
315104	1BRUNSWICKG3	5.0143	80/20	5.0143
315105	1BRUNSWICKS1	10.4172	80/20	10.4172
315108	1ELIZAR1	1.2217	80/20	1.2217
315109	1ELIZAR2	1.2004	80/20	1.2004
315110	1ELIZAR3	1.2373	80/20	1.2373
315153	1CLOVER1	18.3055	80/20	18.3055
315154	1CLOVER2	18.1231	80/20	18.1231
315191	1BEARGRDN G1	1.9941	80/20	1.9941
315192	1BEARGRDN G2	1.9941	80/20	1.9941
315193	1BEARGRDN S1	4.1041	80/20	4.1041
315233	1SURRY 2	9.7196	80/20	9.7196
315266	1PLYWOOD A	2.2188	80/20	2.2188
920291	AA2-127	0.4143	80/20	0.4143
924021	AB2-043 C O1	0.4294	80/20	0.4294
924161	AB2-060 C OP	1.2365	80/20	1.2365
924301	**AB2-077 C O1 (Suspended)**	**1.5619**	**80/20**	**1.5619**
924311	**AB2-078 C O1 (Suspended)**	**1.5619**	**80/20**	**1.5619**
924321	**AB2-079 C O1 (Suspended)**	**1.5619**	**80/20**	**1.5619**
925611	AC1-036 C	0.7303	80/20	0.7303
925831	AC1-062	0.0431	80/20	0.0431
925991	AC1-075 C	7.3605	80/20	7.3605
926021	AC1-080 C	2.4599	80/20	2.4599
926271	**AC1-105 C O1 (Suspended)**	**9.4152**	**80/20**	**9.4152**
926751	AC1-161 C O1	11.6142	80/20	11.6142
927251	AC1-221 C	-4.0100	Adder	-4.72
927261	AC1-222 C	6.6002	80/20	6.6002
932511	AC2-071 C	1.3679	80/20	1.3679
933291	AC2-141 C	11.6142	80/20	11.6142
933501	AC2-165 C	3.7973	80/20	3.7973
934311	AD1-055 C	4.5827	80/20	4.5827

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
934341	AD1-058 C	-10.0526	Adder	-11.83
934611	AD1-087 C O1	15.4256	80/20	15.4256
934621	AD1-088 C	11.6703	80/20	11.6703
935171	AD1-152 C O1	15.3298	80/20	15.3298
935221	AD1-157 C	1.1517	80/20	1.1517
936261	AD2-033 C	10.0012	80/20	10.0012
936361	AD2-046 C O1	3.9429	80/20	3.9429
936481	AD2-063 C O1	11.5398	80/20	11.5398
937481	AD2-202 C O1	4.0879	80/20	4.0879
938371	AE1-056 C	4.9652	80/20	4.9652
938491	AE1-068 C O1	32.0747	80/20	32.0747
938501	AE1-069 C O1	25.8801	80/20	25.8801
938561	AE1-075 C	0.7906	80/20	0.7906
939181	AE1-148 C O1	4.0408	80/20	4.0408
939411	AE1-173 C	37.5216	80/20	37.5216
940241	AE2-006	0.3716	80/20	0.3716
940251	AE2-007 O1	60.9685	80/20	60.9685
940471	AE2-031 C	18.1586	80/20	18.1586
940641	AE2-051 C O1	7.5267	80/20	7.5267
940661	AE2-053 O1	1.4966	80/20	1.4966
941031	AE2-094 C	19.8145	80/20	19.8145
941591	AE2-156 O1	6.2920	80/20	6.2920
941791	AE2-182 C	1.8960	80/20	1.8960
942451	AE2-258	1.8086	80/20	1.8086
942461	AE2-259 C O1	7.6710	80/20	7.6710
942751	AE2-291 C O1	9.2290	80/20	9.2290
942761	AE2-292 C O1	11.4910	80/20	11.4910
942931	AE2-313 C	19.6614	80/20	19.6614
943901	AF1-058 C	3.7817	80/20	3.7817
943911	AF1-059	8.9160	80/20	8.9160
944011	AF1-069 C	6.4742	80/20	6.4742
944581	AF1-123 C O1	17.1788	80/20	17.1788
944591	AF1-124 C O1	17.1788	80/20	17.1788
944601	AF1-125 C O1	17.1788	80/20	17.1788
945811	AF1-246 C O1	8.1551	80/20	8.1551
946301	AF1-294 C	3.1498	80/20	3.1498
NEWTON	NEWTON	4.1916	Confirmed LTF	4.1916
FARMERCITY	FARMERCITY	0.2422	Confirmed LTF	0.2422
G-007A	G-007A	3.0808	Confirmed LTF	3.0808
VFT	VFT	8.1980	Confirmed LTF	8.1980
PRAIRIE	PRAIRIE	11.4143	Confirmed LTF	11.4143
AC1-131	AC1-131	10.9298	LTF	10.9298
COFFEEN	COFFEEN	0.7836	Confirmed LTF	0.7836
CHEOAH	CHEOAH	3.5530	Confirmed LTF	3.5530
EDWARDS	EDWARDS	1.2576	Confirmed LTF	1.2576
TILTON	TILTON	2.2208	Confirmed LTF	2.2208
GIBSON	GIBSON	2.0164	Confirmed LTF	2.0164
CALDERWOOD	CALDERWOOD	3.4596	Confirmed LTF	3.4596
BLUEG	BLUEG	6.2062	Confirmed LTF	6.2062
TRIMBLE	TRIMBLE	1.9678	Confirmed LTF	1.9678
CATAWBA	CATAWBA	3.8521	Confirmed LTF	3.8521

11.7.13 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
42881683	314902	8CARSON	DVP	314914	8MDLTHAN	DVP	1	DVP_P4-2: 557T574	breaker	3938.0	129.13	135.55	DC	274.43

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
314295	6BIRDNECK	0.0807	50/50	0.0807
314491	3PENDLTN	0.6017	50/50	0.6017
314947	8GREENSVILLE	104.5794	50/50	104.5794
315102	1BRUNSWICKG1	17.1241	50/50	17.1241
315103	1BRUNSWICKG2	17.1241	50/50	17.1241
315104	1BRUNSWICKG3	17.1241	50/50	17.1241
315105	1BRUNSWICKS1	35.5752	50/50	35.5752
315108	1ELIZAR1	5.8727	50/50	5.8727
315109	1ELIZAR2	5.7707	50/50	5.7707
315110	1ELIZAR3	5.9479	50/50	5.9479
315233	1SURRY 2	46.3527	50/50	46.3527
315603	6AA1-139SOLA	4.5027	50/50	4.5027
916192	Z1-068 E	3.1879	50/50	3.1879
919152	AA1-139 E	10.8954	50/50	10.8954
924241	AB2-068 OP	328.6954	50/50	328.6954
925522	AC1-027 E	1.9414	50/50	1.9414
926291	**AC1-107 O1 (Suspended)**	**496.1440**	**50/50**	**496.1440**
926751	AC1-161 C O1	54.7911	50/50	54.7911
926752	AC1-161 E O1	23.3889	50/50	23.3889
933291	AC2-141 C	54.7911	50/50	54.7911
933292	AC2-141 E	23.3889	50/50	23.3889
933731	AC2-196 C	3.0549	50/50	3.0549
933732	AC2-196 E	2.0346	50/50	2.0346
934061	AD1-033 C	12.8192	50/50	12.8192
934062	AD1-033 E	8.5462	50/50	8.5462
937221	AD2-160 C O1	9.9535	50/50	9.9535
937222	AD2-160 E O1	5.2195	50/50	5.2195
938491	AE1-068 C O1	118.0174	50/50	118.0174
938492	AE1-068 E O1	65.1826	50/50	65.1826
938501	AE1-069 C O1	92.1926	50/50	92.1926
938502	AE1-069 E O1	52.7074	50/50	52.7074
938531	AE1-072 C O1	29.7565	50/50	29.7565
938532	AE1-072 E O1	15.5120	50/50	15.5120
939411	AE1-173 C	173.3472	50/50	173.3472
939412	AE1-173 E	115.5648	50/50	115.5648
940251	AE2-007 O1	293.0957	50/50	293.0957
940471	AE2-031 C	64.3382	50/50	64.3382
940472	AE2-031 E	42.8922	50/50	42.8922
940641	AE2-051 C O1	34.1316	50/50	34.1316
940642	AE2-051 E O1	22.7544	50/50	22.7544
941031	AE2-094 C	77.5322	50/50	77.5322

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
941032	AE2-094 E	34.7248	50/50	34.7248
941281	AE2-122 C O1	48.2627	50/50	48.2627
941282	AE2-122 E O1	194.7517	50/50	194.7517
941291	AE2-123 C O1	49.5991	50/50	49.5991
941292	AE2-123 E O1	193.4153	50/50	193.4153
941301	AE2-124 C O1	45.1336	50/50	45.1336
941302	AE2-124 E O1	198.0408	50/50	198.0408
941591	AE2-156 O1	30.2200	50/50	30.2200
942401	AE2-253 C	10.4694	50/50	10.4694
942402	AE2-253 E	4.7036	50/50	4.7036
942931	AE2-313 C	69.6628	50/50	69.6628
942932	AE2-313 E	46.4419	50/50	46.4419
944011	AF1-069 C	25.3327	50/50	25.3327
944012	AF1-069 E	9.8412	50/50	9.8412
944581	AF1-123 C O1	83.4199	50/50	83.4199
944582	AF1-123 E O1	191.0081	50/50	191.0081
944591	AF1-124 C O1	83.4199	50/50	83.4199
944592	AF1-124 E O1	191.0081	50/50	191.0081
944601	AF1-125 C O1	83.4199	50/50	83.4199
944602	AF1-125 E O1	191.0081	50/50	191.0081
945811	AF1-246 C O1	12.8881	50/50	12.8881
945812	AF1-246 E O1	17.7979	50/50	17.7979
WEC	WEC	1.1813	Confirmed LTF	1.1813
LGEE	LGEE	2.2637	Confirmed LTF	2.2637
CPLE	CPLE	12.8371	Confirmed LTF	12.8371
CBM-W2	CBM-W2	49.1973	Confirmed LTF	49.1973
NY	NY	2.6422	Confirmed LTF	2.6422
TVA	TVA	10.4846	Confirmed LTF	10.4846
O-066	O-066	36.4896	Confirmed LTF	36.4896
CBM-S2	CBM-S2	88.0352	Confirmed LTF	88.0352
CBM-S1	CBM-S1	58.2257	Confirmed LTF	58.2257
G-007	G-007	5.6940	Confirmed LTF	5.6940
MADISON	MADISON	3.0220	Confirmed LTF	3.0220
MEC	MEC	7.2824	Confirmed LTF	7.2824
AA2-074	AA2-074	8.7484	LTF	8.7484
CBM-W1	CBM-W1	43.5223	Confirmed LTF	43.5223

11.7.14 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
42881803	314903	8CHCKAHM	DVP	314908	8ELMONT	DVP	1	DVP_P1-2: LN 563	single	2442.12	161.1	163.45	AC	85.5

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
314295	6BIRDNECK	0.0832	80/20	0.0832
314421	6WINCHST	0.2541	80/20	0.2541
314491	3PENDLTN	0.6211	80/20	0.6211
314507	3THOMPSN	0.6243	80/20	0.6243
315092	1YORKTN3	45.2455	80/20	45.2455
315098	1CHESPKA	0.8257	80/20	0.8257
315099	**1CHESPKB (Deactivation : 31/05/2019)**	**5.2483**	**80/20**	**5.2483**
315108	1ELIZAR1	6.0818	80/20	6.0818
315109	1ELIZAR2	5.9762	80/20	5.9762
315110	1ELIZAR3	6.1596	80/20	6.1596
315233	1SURRY 2	55.0968	80/20	55.0968
315260	1GOSPORTA	0.6591	80/20	0.6591
315261	1GOSPORTB	0.8418	80/20	0.8418
315262	1GOSPORTC	0.7144	80/20	0.7144
315294	1DOMTR10	13.7193	Adder	16.14
315603	6AA1-139SOLA	4.6035	80/20	4.6035
315611	6Z1-036WIND	9.4988	Adder	11.18
923262	**AB1-132 C OP (Suspended)**	**15.3974**	**Adder**	**18.11**
923801	AB2-015 C OP	11.1724	Adder	13.14
923831	AB2-022 C	3.3415	Adder	3.93
924241	AB2-068 OP	610.0724	80/20	610.0724
924501	**AB2-099 C (Suspended)**	**0.7114**	**Adder**	**0.84**
925061	**AB2-161 C O1 (Suspended)**	**4.1648**	**Adder**	**4.9**
925331	AB2-190 C	23.1831	Adder	27.27
925861	AC1-065 C	4.3082	Adder	5.07
926071	AC1-086 C	22.6745	Adder	26.68
926291	**AC1-107 O1 (Suspended)**	**920.8640**	**80/20**	**920.8640**
926661	AC1-147 C	3.9422	80/20	3.9422
926751	AC1-161 C O1	57.4975	80/20	57.4975
926781	AC1-164 C	54.7875	Adder	64.46
932041	AC2-012 C	17.8336	80/20	17.8336
932581	AC2-078 C O1	4.3603	Adder	5.13
932591	AC2-079 C O1	7.4862	Adder	8.81
932631	AC2-084 C	2.4708	Adder	2.91
932831	AC2-110 C	1.7233	Adder	2.03
933261	AC2-137 C	2.2722	Adder	2.67
933291	AC2-141 C	57.4975	80/20	57.4975
933731	AC2-196 C	3.1389	80/20	3.1389
933991	AD1-023 C	16.8580	Adder	19.83

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
934011	AD1-025 C	19.7909	Adder	23.28
934061	AD1-033 C	13.1788	80/20	13.1788
934141	AD1-041 C	6.8195	Adder	8.02
934521	AD1-076 C	70.6294	Adder	83.09
934571	AD1-082 C	9.4913	Adder	11.17
935111	AD1-144 C	2.4916	Adder	2.93
935161	AD1-151 C O1	18.6293	Adder	21.92
936041	AD2-007 C	0.9454	Adder	1.11
936051	AD2-008 C	3.4455	Adder	4.05
936151	AD2-021	0.2591	Adder	0.3
936301	AD2-039 C	1.7233	Adder	2.03
936401	AD2-051 C O1	10.8495	Adder	12.76
936591	AD2-074 C	6.0123	Adder	7.07
936661	AD2-085 C	4.4805	Adder	5.27
937221	AD2-160 C O1	10.1913	80/20	10.1913
937251	**AD2-164 (Withdrawn : 06/30/2020)**	**8.5074**	**80/20**	**8.5074**
937541	AD2-215 C	2.5172	Adder	2.96
938031	AE1-004 C	1.7233	Adder	2.03
938171	AE1-026 C O1	40.8444	Adder	48.05
938221	AE1-035 C	2.7835	Adder	3.27
938491	AE1-068 C O1	70.4914	Adder	82.93
938501	AE1-069 C O1	55.0958	Adder	64.82
938531	AE1-072 C O1	30.3777	80/20	30.3777
938631	AE1-085 C O1	9.7644	Adder	11.49
938771	AE1-103 C O1	4.7610	Adder	5.6
939191	AE1-149 C O1	11.1716	Adder	13.14
939311	AE1-162 C	2.9820	Adder	3.51
939411	AE1-173 C	119.8337	Adder	140.98
939421	**AE1-174 C (Withdrawn : 06/16/2020)**	**0.6370**	**80/20**	**0.6370**
939431	AE1-175 C	4.2362	80/20	4.2362
939611	AE1-191 C	13.6389	Adder	16.05
940061	AE2-000B C	13.1519	Adder	15.47
940231	AE2-005 C	1.7233	Adder	2.03
940251	AE2-007 O1	303.5845	80/20	303.5845
940471	AE2-031 C	38.4200	Adder	45.2
940481	AE2-033 C	16.4751	Adder	19.38
940491	AE2-034 C	9.6144	Adder	11.31
940541	AE2-040 O1	2.9117	Adder	3.43
940551	AE2-041 O1	9.4010	Adder	11.06
940641	AE2-051 C O1	21.9241	Adder	25.79
940651	AE2-052	3.7239	Adder	4.38
940891	AE2-078 C	3.2006	Adder	3.77
940901	AE2-079 C	3.2006	Adder	3.77
940911	**AE2-080 C (Withdrawn : 04/28/2020)**	**3.2006**	**Adder**	**3.77**
941031	AE2-094 C	46.2597	Adder	54.42
941101	AE2-104 C O1	4.6964	Adder	5.53
941281	AE2-122 C O1	49.7770	80/20	49.7770
941291	AE2-123 C O1	51.1554	80/20	51.1554
941301	AE2-124 C O1	46.5236	80/20	46.5236
941501	AE2-147 C	22.6279	Adder	26.62

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
941541	AE2-151 C	1.3158	Adder	1.55
941591	AE2-156 O1	31.3300	80/20	31.3300
942131	AE2-225 C	3.1026	Adder	3.65
942171	AE2-229 C	3.1026	Adder	3.65
942341	AE2-247 C	1.9399	Adder	2.28
942401	AE2-253 C	10.7195	80/20	10.7195
942471	AE2-260 C O1	15.1415	Adder	17.81
942551	AE2-270	31.0488	Adder	36.53
942851	AE2-304 C	0.8913	Adder	1.05
942931	AE2-313 C	41.5996	Adder	48.94
943171	AE2-346 C	1.7073	Adder	2.01
943431	AF1-014 C	1.6326	Adder	1.92
943461	AF1-017 C	1.7552	Adder	2.06
943471	AF1-018	9.4010	Adder	11.06
943611	AF1-032 C	2.5338	Adder	2.98
943621	AF1-033 C	3.2006	Adder	3.77
943741	AF1-042 C	3.1460	Adder	3.7
944011	AF1-069 C	15.1148	Adder	17.78
944501	AF1-115 C O1	9.7473	Adder	11.47
944581	AF1-123 C O1	85.4957	80/20	85.4957
944591	AF1-124 C O1	85.4957	80/20	85.4957
944601	AF1-125 C O1	85.4957	80/20	85.4957
944631	AF1-128 O1	47.8052	Adder	56.24
944871	AF1-152 C	7.5426	Adder	8.87
945361	AF1-201 C O1	23.4304	Adder	27.57
945711	AF1-236 C O1	105.2544	Adder	123.83
945811	AF1-246 C O1	7.7969	Adder	9.17
946011	AF1-266	13.7909	Adder	16.22
WEC	WEC	0.5547	Confirmed LTF	0.5547
LGEE	LGEE	1.0708	Confirmed LTF	1.0708
CPLE	CPLE	9.3470	Confirmed LTF	9.3470
CBM-W2	CBM-W2	28.1736	Confirmed LTF	28.1736
NY	NY	1.8664	Confirmed LTF	1.8664
TVA	TVA	6.3378	Confirmed LTF	6.3378
CBM-S2	CBM-S2	61.4703	Confirmed LTF	61.4703
CBM-S1	CBM-S1	34.3697	Confirmed LTF	34.3697
MADISON	MADISON	2.3043	Confirmed LTF	2.3043
MEC	MEC	3.7802	Confirmed LTF	3.7802
AA2-074	AA2-074	6.3648	LTF	6.3648
CBM-W1	CBM-W1	19.8158	Confirmed LTF	19.8158

11.7.15 Index 15

ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC|DC	MW IMPACT
42881858	314905	8CHANCE	DVP	314900	8BRISTER	DVP	1	DVP_P1-2: LN 594	single	2442.12	143.47	144.11	AC	51.06

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
314229	6MT RD221	0.1462	80/20	0.1462
314236	6NRTHEST	0.2227	80/20	0.2227
314241	6OLDCHRC	0.9007	80/20	0.9007
314250	6ROCKVILLE	0.3967	80/20	0.3967
315037	1LDYSMT1	5.7589	80/20	5.7589
315038	1LDYSMT2	5.7550	80/20	5.7550
315039	1LDYSMT3	6.0904	80/20	6.0904
315040	1LDYSMT4	6.1019	80/20	6.1019
315041	1LDYSMT5	6.1209	80/20	6.1209
315043	1FOUR RIVERA	3.5992	80/20	3.5992
315044	1FOUR RIVERB	3.5992	80/20	3.5992
315045	1FOUR RIVERC	4.4155	80/20	4.4155
315046	1FOUR RIVERD	3.5992	80/20	3.5992
315047	1FOUR RIVERE	3.5992	80/20	3.5992
315048	1FOUR RIVERF	4.4155	80/20	4.4155
315067	1DARBY 1	3.0671	80/20	3.0671
315068	1DARBY 2	3.0707	80/20	3.0707
315069	1DARBY 3	3.0814	80/20	3.0814
315070	1DARBY 4	3.0850	80/20	3.0850
315074	**1HOPCGN1 (Deactivation : 25/06/2019)**	**7.7620**	**Adder**	**9.13**
315075	**1HOPCGN2 (Deactivation : 25/06/2019)**	**7.6614**	**Adder**	**9.01**
315083	**1SPRUNCA (Deactivation : 12/01/2021)**	**9.8679**	**Adder**	**11.61**
315084	**1SPRUNCB (Deactivation : 12/01/2021)**	**9.8679**	**Adder**	**11.61**
315225	1N ANNA1	42.3910	80/20	42.3910
315226	1N ANNA2	42.4088	80/20	42.4088
315610	6AA1-145GAS	12.6157	80/20	12.6157
315611	6Z1-036WIND	6.0051	Adder	7.06
923801	AB2-015 C OP	7.5106	Adder	8.84
923831	AB2-022 C	2.0607	Adder	2.42
924061	AB2-050	0.7421	80/20	0.7421
924241	AB2-068 OP	220.1938	80/20	220.1938
925051	**AB2-160 C O1 (Suspended)**	**5.0391**	**Adder**	**5.93**
925061	**AB2-161 C O1 (Suspended)**	**3.0616**	**Adder**	**3.6**
925331	AB2-190 C	18.5935	Adder	21.87
925861	AC1-065 C	3.1137	Adder	3.66
926001	**AC1-076 C (Suspended)**	**3.8405**	**Adder**	**4.52**

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
926291	AC1-107 O1 (Suspended)	332.3680	80/20	332.3680
926551	AC1-134	1.8553	80/20	1.8553
926661	AC1-147 C	2.0441	Adder	2.4
926731	AC1-158 C	15.5332	80/20	15.5332
926751	AC1-161 C O1	27.5904	Adder	32.46
926781	AC1-164 C	37.6993	Adder	44.35
927041	AC1-191 C O1	9.0276	Adder	10.62
932041	AC2-012 C	9.2472	Adder	10.88
932501	AC2-070 C	1.8789	80/20	1.8789
932581	AC2-078 C O1	3.7182	Adder	4.37
932591	AC2-079 C O1	5.1761	Adder	6.09
932831	AC2-110 C	1.2455	Adder	1.47
933011	AC2-125	3.2063	80/20	3.2063
933021	AC2-126	3.2279	80/20	3.2279
933261	AC2-137 C	2.2971	80/20	2.2971
933291	AC2-141 C	27.5904	Adder	32.46
933731	AC2-196 C	1.6158	Adder	1.9
934011	AD1-025 C	15.6225	Adder	18.38
934061	AD1-033 C	6.7880	Adder	7.99
934141	AD1-041 C	4.8924	Adder	5.76
934571	AD1-082 C	6.9771	Adder	8.21
935111	AD1-144 C	1.5624	Adder	1.84
935161	AD1-151 C O1	14.9412	Adder	17.58
936041	AD2-007 C	0.7463	Adder	0.88
936051	AD2-008 C	2.7198	Adder	3.2
936151	AD2-021	0.2619	80/20	0.2619
936301	AD2-039 C	1.2455	Adder	1.47
936591	AD2-074 C	4.9387	Adder	5.81
936661	AD2-085 C	3.1065	Adder	3.65
937221	AD2-160 C O1	5.2721	Adder	6.2
937251	AD2-164 (Withdrawn : 06/30/2020)	4.4017	Adder	5.18
937541	AD2-215 C	1.5785	Adder	1.86
938031	AE1-004 C	1.2455	Adder	1.47
938491	AE1-068 C O1	49.1307	Adder	57.8
938501	AE1-069 C O1	38.5080	Adder	45.3
938531	AE1-072 C O1	15.7797	Adder	18.56
938551	AE1-074 C	2.2639	Adder	2.66
938631	AE1-085 C O1	8.1396	Adder	9.58
938771	AE1-103 C O1	3.1791	Adder	3.74
939191	AE1-149 C O1	9.8058	Adder	11.54
939241	AE1-155 C	13.3735	Adder	15.73
939261	AE1-157 C O1	16.6134	80/20	16.6134
939271	AE1-158 C O1	16.9551	80/20	16.9551
939311	AE1-162 C	1.9633	Adder	2.31
939411	AE1-173 C	77.2262	Adder	90.85
939421	AE1-174 C (Withdrawn : 06/16/2020)	0.3350	Adder	0.39
939431	AE1-175 C	2.2280	Adder	2.62
939611	AE1-191 C	9.7849	Adder	11.51
939751	AE1-206 C O1	35.7407	80/20	35.7407
940061	AE2-000B C	9.6681	Adder	11.37
940231	AE2-005 C	1.2455	Adder	1.47

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
940251	AE2-007 O1	157.0076	Adder	184.71
940431	AE2-027 C O1	12.0405	Adder	14.17
940471	AE2-031 C	26.7906	Adder	31.52
940481	AE2-033 C	13.6730	Adder	16.09
940541	AE2-040 O1	2.4305	Adder	2.86
940551	AE2-041 O1	6.5848	Adder	7.75
940641	AE2-051 C O1	14.4593	Adder	17.01
940651	AE2-052	3.2686	Adder	3.85
940891	AE2-078 C	2.1719	Adder	2.56
940901	AE2-079 C	2.1719	Adder	2.56
940911	**AE2-080 C (Withdrawn : 04/28/2020)**	**2.1719**	**Adder**	**2.56**
941031	AE2-094 C	32.0820	Adder	37.74
941101	AE2-104 C O1	3.0104	Adder	3.54
941281	AE2-122 C O1	25.7150	Adder	30.25
941291	AE2-123 C O1	26.4271	Adder	31.09
941301	AE2-124 C O1	24.0257	Adder	28.27
941381	**AE2-134 (Suspended)**	**2.6464**	**Adder**	**3.11**
941501	AE2-147 C	14.1181	Adder	16.61
941581	AE2-155 C	0.7148	80/20	0.7148
941591	AE2-156 O1	16.2265	Adder	19.09
942001	AE2-212 C	1.9910	Adder	2.34
942131	AE2-225 C	1.9197	Adder	2.26
942151	AE2-227 C	2.0495	Adder	2.41
942161	AE2-228 C	2.0083	Adder	2.36
942171	AE2-229 C	1.9197	Adder	2.26
942191	AE2-231 C O1	5.6121	80/20	5.6121
942341	AE2-247 C	1.3466	Adder	1.58
942371	AE2-250 C O1	8.9510	Adder	10.53
942401	AE2-253 C	5.5454	Adder	6.52
942551	AE2-270	24.9020	Adder	29.3
942851	AE2-304 C	0.5595	Adder	0.66
942931	AE2-313 C	29.0078	Adder	34.13
943431	AF1-014 C	1.1799	Adder	1.39
943461	AF1-017 C	1.2184	Adder	1.43
943471	AF1-018	6.5848	Adder	7.75
943611	AF1-032 C	1.5678	Adder	1.84
943621	AF1-033 C	2.1719	Adder	2.56
943741	AF1-042 C	2.5842	Adder	3.04
944011	AF1-069 C	10.4824	Adder	12.33
944501	AF1-115 C O1	6.6143	Adder	7.78
944581	AF1-123 C O1	43.4013	Adder	51.06
944591	AF1-124 C O1	43.4013	Adder	51.06
944601	AF1-125 C O1	43.4013	Adder	51.06
944631	AF1-128 O1	44.5102	Adder	52.36
944871	AF1-152 C	4.7060	Adder	5.54
945361	AF1-201 C O1	14.7959	Adder	17.41
945711	AF1-236 C O1	36.0284	Adder	42.39
946001	AF1-265	31.3515	80/20	31.3515
946011	AF1-266	11.4454	Adder	13.47
946261	AF1-291 C	2.0085	Adder	2.36
WEC	WEC	0.6451	Confirmed LTF	0.6451

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
LGEE	LGEE	1.3019	Confirmed LTF	1.3019
CPLE	CPLE	7.4161	Confirmed LTF	7.4161
CBM-W2	CBM-W2	28.8042	Confirmed LTF	28.8042
NY	NY	2.6738	Confirmed LTF	2.6738
TVA	TVA	6.3168	Confirmed LTF	6.3168
CBM-S2	CBM-S2	51.7541	Confirmed LTF	51.7541
CBM-S1	CBM-S1	34.9150	Confirmed LTF	34.9150
MADISON	MADISON	1.8628	Confirmed LTF	1.8628
MEC	MEC	4.1235	Confirmed LTF	4.1235
AA2-074	AA2-074	5.0535	LTF	5.0535
CBM-W1	CBM-W1	22.8808	Confirmed LTF	22.8808

11.7.16 Index 16

ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC|DC	MW IMPACT
42881963	314908	8ELMONT	DVP	314911	8LADYSMITH	DVP	1	DVP_P1-2: LN 576	single	4070.20	114.33	115.66	AC	86.75

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
314229	6MT RD221	0.2447	80/20	0.2447
314236	6NRTHEST	0.3727	80/20	0.3727
314241	6OLDCHRC	1.5396	80/20	1.5396
314309	6IRON208	0.8890	80/20	0.8890
314421	6WINCHST	0.2658	80/20	0.2658
315060	**1CHESTF5 (Deactivation : 31/05/2023)**	**20.2273**	**80/20**	**20.2273**
315061	1CHESTG7	7.8495	80/20	7.8495
315062	1CHESTS7	3.6034	80/20	3.6034
315063	1CHESTG8	7.7234	80/20	7.7234
315064	1CHESTS8	3.9758	80/20	3.9758
315067	1DARBY 1	5.1621	80/20	5.1621
315068	1DARBY 2	5.1682	80/20	5.1682
315069	1DARBY 3	5.1863	80/20	5.1863
315070	1DARBY 4	5.1923	80/20	5.1923
315074	**1HOPCGN1 (Deactivation : 25/06/2019)**	**13.0541**	**Adder**	**15.36**
315075	**1HOPCGN2 (Deactivation : 25/06/2019)**	**12.8849**	**Adder**	**15.16**
315076	1HOPPOLC	3.1195	80/20	3.1195
315077	1HOPHCF1	4.8761	80/20	4.8761
315078	1HOPHCF2	4.8761	80/20	4.8761
315079	1HOPHCF3	4.8761	80/20	4.8761
315080	1HOPHCF4	7.4023	80/20	7.4023
315083	**1SPRUNCA (Deactivation : 12/01/2021)**	**16.0950**	**Adder**	**18.94**
315084	**1SPRUNCB (Deactivation : 12/01/2021)**	**16.0950**	**Adder**	**18.94**
315092	1YORKTN3	46.6581	80/20	46.6581
315233	1SURRY 2	50.8599	80/20	50.8599
315294	1DOMTR10	15.5408	Adder	18.28
315611	6Z1-036WIND	10.1698	Adder	11.96
923801	AB2-015 C OP	12.6535	Adder	14.89
923831	AB2-022 C	3.4950	Adder	4.11
924241	AB2-068 OP	429.7240	80/20	429.7240
924501	**AB2-099 C (Suspended)**	**0.8318**	**Adder**	**0.98**
925051	**AB2-160 C O1 (Suspended)**	**8.3556**	**Adder**	**9.83**
925061	**AB2-161 C O1 (Suspended)**	**5.1391**	**Adder**	**6.05**
925331	AB2-190 C	31.3998	Adder	36.94
925861	AC1-065 C	5.0293	Adder	5.92

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
926291	AC1-107 O1 (Suspended)	648.6400	80/20	648.6400
926661	AC1-147 C	3.4714	Adder	4.08
926751	AC1-161 C O1	47.2015	Adder	55.53
926781	AC1-164 C	77.1917	80/20	77.1917
927041	AC1-191 C O1	14.4377	Adder	16.99
932041	AC2-012 C	15.7041	Adder	18.48
932501	AC2-070 C	3.2117	80/20	3.2117
932581	AC2-078 C O1	6.1971	Adder	7.29
932591	AC2-079 C O1	8.7170	Adder	10.26
932831	AC2-110 C	2.0117	Adder	2.37
933061	AC2-130	0.7928	80/20	0.7928
933261	AC2-137 C	3.9478	80/20	3.9478
933291	AC2-141 C	47.2015	Adder	55.53
933731	AC2-196 C	2.7438	Adder	3.23
933991	AD1-023 C	18.9800	Adder	22.33
934011	AD1-025 C	26.3935	Adder	31.05
934061	AD1-033 C	11.5265	Adder	13.56
934141	AD1-041 C	7.8339	Adder	9.22
934521	AD1-076 C	78.9054	Adder	92.83
934571	AD1-082 C	11.7117	Adder	13.78
935111	AD1-144 C	2.6513	Adder	3.12
935161	AD1-151 C O1	25.2320	Adder	29.68
936041	AD2-007 C	1.2608	Adder	1.48
936051	AD2-008 C	4.5950	Adder	5.41
936151	AD2-021	0.4502	80/20	0.4502
936301	AD2-039 C	2.0117	Adder	2.37
936401	AD2-051 C O1	12.5255	Adder	14.74
936661	AD2-085 C	5.2307	Adder	6.15
937221	AD2-160 C O1	8.9495	Adder	10.53
937251	AD2-164 (Withdrawn : 06/30/2020)	8.8649	80/20	8.8649
937541	AD2-215 C	2.6786	Adder	3.15
938031	AE1-004 C	2.0117	Adder	2.37
938171	AE1-026 C O1	46.1937	Adder	54.35
938221	AE1-035 C	3.2062	Adder	3.77
938491	AE1-068 C O1	79.0883	Adder	93.05
938501	AE1-069 C O1	62.0334	Adder	72.98
938531	AE1-072 C O1	26.7790	Adder	31.5
938551	AE1-074 C	3.6080	Adder	4.24
938631	AE1-085 C O1	13.5804	Adder	15.98
938771	AE1-103 C O1	5.3589	Adder	6.3
939191	AE1-149 C O1	16.3226	Adder	19.2
939311	AE1-162 C	3.3313	Adder	3.92
939411	AE1-173 C	126.8186	Adder	149.2
939421	AE1-174 C (Withdrawn : 06/16/2020)	0.6811	80/20	0.6811
939431	AE1-175 C	4.5290	80/20	4.5290
939611	AE1-191 C	15.6677	Adder	18.43
940061	AE2-000B C	16.2287	Adder	19.09
940231	AE2-005 C	2.0117	Adder	2.37
940251	AE2-007 O1	266.6497	Adder	313.71
940431	AE2-027 C O1	20.0063	Adder	23.54
940471	AE2-031 C	43.0611	Adder	50.66

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
940481	AE2-033 C	22.5013	Adder	26.47
940491	AE2-034 C	10.5640	Adder	12.43
940541	AE2-040 O1	3.9966	Adder	4.7
940551	AE2-041 O1	10.7518	Adder	12.65
940641	AE2-051 C O1	23.4725	Adder	27.61
940651	AE2-052	5.4409	Adder	6.4
940891	AE2-078 C	3.6891	Adder	4.34
940901	AE2-079 C	3.6891	Adder	4.34
940911	**AE2-080 C (Withdrawn : 04/28/2020)**	**3.6891**	**Adder**	**4.34**
941031	AE2-094 C	51.5750	Adder	60.68
941101	AE2-104 C O1	5.0912	Adder	5.99
941281	AE2-122 C O1	43.6652	Adder	51.37
941291	AE2-123 C O1	44.8743	Adder	52.79
941301	AE2-124 C O1	40.7959	Adder	48.0
941501	AE2-147 C	23.9254	Adder	28.15
941541	AE2-151 C	1.5382	Adder	1.81
941581	AE2-155 C	1.2218	80/20	1.2218
941591	AE2-156 O1	27.5578	Adder	32.42
942001	AE2-212 C	3.2975	Adder	3.88
942131	AE2-225 C	3.2541	Adder	3.83
942151	AE2-227 C	4.0424	80/20	4.0424
942161	AE2-228 C	3.3344	Adder	3.92
942171	AE2-229 C	3.2541	Adder	3.83
942341	AE2-247 C	2.2673	Adder	2.67
942371	AE2-250 C O1	14.8422	Adder	17.46
942401	AE2-253 C	9.4133	Adder	11.07
942471	AE2-260 C O1	20.0791	Adder	23.62
942551	AE2-270	42.0533	Adder	49.47
942851	AE2-304 C	0.9479	Adder	1.12
942931	AE2-313 C	46.6248	Adder	54.85
943171	AE2-346 C	1.9963	Adder	2.35
943431	AF1-014 C	1.9058	Adder	2.24
943461	AF1-017 C	2.0514	Adder	2.41
943471	AF1-018	10.7518	Adder	12.65
943611	AF1-032 C	2.6575	Adder	3.13
943621	AF1-033 C	3.6891	Adder	4.34
944011	AF1-069 C	16.8515	Adder	19.83
944501	AF1-115 C O1	11.2351	Adder	13.22
944581	AF1-123 C O1	73.7377	Adder	86.75
944591	AF1-124 C O1	73.7377	Adder	86.75
944601	AF1-125 C O1	73.7377	Adder	86.75
944631	AF1-128 O1	88.8755	80/20	88.8755
944871	AF1-152 C	7.9751	Adder	9.38
945361	AF1-201 C O1	24.7684	Adder	29.14
945711	AF1-236 C O1	115.6505	Adder	136.06
946011	AF1-266	18.8354	Adder	22.16
946261	AF1-291 C	3.3352	Adder	3.92
946281	AF1-292 C	0.8553	Adder	1.01
WEC	WEC	1.7353	Confirmed LTF	1.7353
LGEE	LGEE	3.3620	Confirmed LTF	3.3620
CPLE	CPLE	12.7378	Confirmed LTF	12.7378

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
CBM-W2	CBM-W2	63.4971	Confirmed LTF	63.4971
NY	NY	4.1022	Confirmed LTF	4.1022
TVA	TVA	12.9864	Confirmed LTF	12.9864
CBM-S2	CBM-S2	91.9829	Confirmed LTF	91.9829
CBM-S1	CBM-S1	73.6724	Confirmed LTF	73.6724
MADISON	MADISON	2.8022	Confirmed LTF	2.8022
MEC	MEC	10.0822	Confirmed LTF	10.0822
AA2-074	AA2-074	8.6913	LTF	8.6913
CBM-W1	CBM-W1	64.4640	Confirmed LTF	64.4640

11.7.17 Index 17

ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC|DC	MW IMPACT
42881900	314911	8LADYSMITH	DVP	314905	8CHANCE	DVP	1	DVP_P1-2: LN 573	single	2738.22	129.4	130.03	AC	52.14

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
314229	6MT RD221	0.1496	80/20	0.1496
314236	6NRTHEST	0.2278	80/20	0.2278
314241	6OLDCHRC	0.9218	80/20	0.9218
314250	6ROCKVILLE	0.4051	80/20	0.4051
315037	1LDYSMT1	5.9350	80/20	5.9350
315038	1LDYSMT2	5.9310	80/20	5.9310
315039	1LDYSMT3	6.2767	80/20	6.2767
315040	1LDYSMT4	6.2885	80/20	6.2885
315041	1LDYSMT5	6.3081	80/20	6.3081
315043	1FOUR RIVERA	3.6909	80/20	3.6909
315044	1FOUR RIVERB	3.6909	80/20	3.6909
315045	1FOUR RIVERC	4.5281	80/20	4.5281
315046	1FOUR RIVERD	3.6909	80/20	3.6909
315047	1FOUR RIVERE	3.6909	80/20	3.6909
315048	1FOUR RIVERF	4.5281	80/20	4.5281
315067	1DARBY 1	3.1368	80/20	3.1368
315068	1DARBY 2	3.1404	80/20	3.1404
315069	1DARBY 3	3.1514	80/20	3.1514
315070	1DARBY 4	3.1551	80/20	3.1551
315074	**1HOPCGN1 (Deactivation : 25/06/2019)**	**7.9328**	**Adder**	**9.33**
315075	**1HOPCGN2 (Deactivation : 25/06/2019)**	**7.8300**	**Adder**	**9.21**
315083	**1SPRUNCA (Deactivation : 12/01/2021)**	**10.0749**	**Adder**	**11.85**
315084	**1SPRUNCB (Deactivation : 12/01/2021)**	**10.0749**	**Adder**	**11.85**
315225	1N ANNA1	43.2057	80/20	43.2057
315226	1N ANNA2	43.2239	80/20	43.2239
315610	6AA1-145GAS	12.9373	80/20	12.9373
315611	6Z1-036WIND	6.1298	Adder	7.21
923801	AB2-015 C OP	7.6627	Adder	9.01
923831	AB2-022 C	2.1039	Adder	2.48
924061	AB2-050	0.7610	80/20	0.7610
924241	AB2-068 OP	225.3984	80/20	225.3984
925051	**AB2-160 C O1 (Suspended)**	**5.1478**	**Adder**	**6.06**
925061	**AB2-161 C O1 (Suspended)**	**3.1263**	**Adder**	**3.68**
925331	AB2-190 C	18.9991	Adder	22.35
925861	AC1-065 C	3.1869	Adder	3.75
926291	**AC1-107 O1 (Suspended)**	**340.2240**	**80/20**	**340.2240**

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
926551	AC1-134	1.9025	80/20	1.9025
926661	AC1-147 C	2.0875	Adder	2.46
926751	AC1-161 C O1	28.1780	Adder	33.15
926781	AC1-164 C	45.3744	80/20	45.3744
927041	AC1-191 C O1	9.2459	Adder	10.88
932041	AC2-012 C	9.4434	Adder	11.11
932501	AC2-070 C	1.9229	80/20	1.9229
932581	AC2-078 C O1	3.7973	Adder	4.47
932591	AC2-079 C O1	5.2854	Adder	6.22
932831	AC2-110 C	1.2748	Adder	1.5
933011	AC2-125	3.3044	80/20	3.3044
933021	AC2-126	3.3266	80/20	3.3266
933261	AC2-137 C	2.3498	80/20	2.3498
933291	AC2-141 C	28.1780	Adder	33.15
933731	AC2-196 C	1.6500	Adder	1.94
934011	AD1-025 C	15.9628	Adder	18.78
934061	AD1-033 C	6.9315	Adder	8.15
934141	AD1-041 C	5.0079	Adder	5.89
934571	AD1-082 C	7.1247	Adder	8.38
935111	AD1-144 C	1.5956	Adder	1.88
935161	AD1-151 C O1	15.2671	Adder	17.96
936041	AD2-007 C	0.7626	Adder	0.9
936051	AD2-008 C	2.7791	Adder	3.27
936151	AD2-021	0.2680	80/20	0.2680
936301	AD2-039 C	1.2748	Adder	1.5
936591	AD2-074 C	5.0667	Adder	5.96
936661	AD2-085 C	3.1720	Adder	3.73
937221	AD2-160 C O1	5.3833	Adder	6.33
937251	**AD2-164 (Withdrawn : 06/30/2020)**	**4.4984**	**Adder**	**5.29**
937541	AD2-215 C	1.6120	Adder	1.9
938031	AE1-004 C	1.2748	Adder	1.5
938491	AE1-068 C O1	50.0835	Adder	58.92
938501	AE1-069 C O1	39.2522	Adder	46.18
938531	AE1-072 C O1	16.1116	Adder	18.95
938551	AE1-074 C	2.3087	Adder	2.72
938631	AE1-085 C O1	8.3130	Adder	9.78
938771	AE1-103 C O1	3.2439	Adder	3.82
939191	AE1-149 C O1	10.0149	Adder	11.78
939241	AE1-155 C	13.7238	Adder	16.15
939261	AE1-157 C O1	17.0973	80/20	17.0973
939271	AE1-158 C O1	17.4489	80/20	17.4489
939311	AE1-162 C	2.0054	Adder	2.36
939411	AE1-173 C	78.7970	Adder	92.7
939421	**AE1-174 C (Withdrawn : 06/16/2020)**	**0.3425**	**Adder**	**0.4**
939431	AE1-175 C	2.2780	Adder	2.68
939611	AE1-191 C	10.0159	Adder	11.78
939751	AE1-206 C O1	36.6350	80/20	36.6350
940061	AE2-000B C	9.8726	Adder	11.61
940231	AE2-005 C	1.2748	Adder	1.5
940251	AE2-007 O1	160.3386	Adder	188.63
940431	AE2-027 C O1	12.3043	Adder	14.48

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
940471	AE2-031 C	27.3068	Adder	32.13
940481	AE2-033 C	13.9491	Adder	16.41
940541	AE2-040 O1	2.4798	Adder	2.92
940551	AE2-041 O1	6.7395	Adder	7.93
940641	AE2-051 C O1	14.7500	Adder	17.35
940651	AE2-052	3.3383	Adder	3.93
940891	AE2-078 C	2.2190	Adder	2.61
940901	AE2-079 C	2.2190	Adder	2.61
940911	**AE2-080 C (Withdrawn : 04/28/2020)**	**2.2190**	**Adder**	**2.61**
941031	AE2-094 C	32.7090	Adder	38.48
941101	AE2-104 C O1	3.0736	Adder	3.62
941281	AE2-122 C O1	26.2593	Adder	30.89
941291	AE2-123 C O1	26.9865	Adder	31.75
941301	AE2-124 C O1	24.5344	Adder	28.86
941501	AE2-147 C	14.4126	Adder	16.96
941581	AE2-155 C	0.7315	80/20	0.7315
941591	AE2-156 O1	16.5707	Adder	19.49
942001	AE2-212 C	2.0340	Adder	2.39
942131	AE2-225 C	1.9601	Adder	2.31
942151	AE2-227 C	2.0950	Adder	2.46
942161	AE2-228 C	2.0519	Adder	2.41
942171	AE2-229 C	1.9601	Adder	2.31
942191	AE2-231 C O1	5.7708	80/20	5.7708
942341	AE2-247 C	1.3750	Adder	1.62
942371	AE2-250 C O1	9.1442	Adder	10.76
942401	AE2-253 C	5.6624	Adder	6.66
942551	AE2-270	25.4452	Adder	29.94
942851	AE2-304 C	0.5711	Adder	0.67
942931	AE2-313 C	29.5666	Adder	34.78
943431	AF1-014 C	1.2077	Adder	1.42
943461	AF1-017 C	1.2441	Adder	1.46
943471	AF1-018	6.7395	Adder	7.93
943611	AF1-032 C	1.6008	Adder	1.88
943621	AF1-033 C	2.2190	Adder	2.61
943741	AF1-042 C	2.6512	Adder	3.12
944011	AF1-069 C	10.6873	Adder	12.57
944501	AF1-115 C O1	6.7578	Adder	7.95
944581	AF1-123 C O1	44.3199	Adder	52.14
944591	AF1-124 C O1	44.3199	Adder	52.14
944601	AF1-125 C O1	44.3199	Adder	52.14
944631	AF1-128 O1	45.5105	Adder	53.54
944871	AF1-152 C	4.8042	Adder	5.65
945361	AF1-201 C O1	15.1309	Adder	17.8
945711	AF1-236 C O1	51.4930	Adder	60.58
946001	AF1-265	32.1360	80/20	32.1360
946011	AF1-266	11.6765	Adder	13.74
946261	AF1-291 C	2.0522	Adder	2.41
WEC	WEC	0.6665	Confirmed LTF	0.6665
LGEE	LGEE	1.3407	Confirmed LTF	1.3407
CPLE	CPLE	7.5484	Confirmed LTF	7.5484
CBM-W2	CBM-W2	29.4922	Confirmed LTF	29.4922

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
NY	NY	2.6256	Confirmed LTF	2.6256
TVA	TVA	6.4484	Confirmed LTF	6.4484
CBM-S2	CBM-S2	52.6731	Confirmed LTF	52.6731
CBM-S1	CBM-S1	35.6647	Confirmed LTF	35.6647
MADISON	MADISON	1.8850	Confirmed LTF	1.8850
MEC	MEC	4.2410	Confirmed LTF	4.2410
AA2-074	AA2-074	5.1439	LTF	5.1439
CBM-W1	CBM-W1	23.7190	Confirmed LTF	23.7190

11.7.18 Index 18

ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC|DC	MW IMPACT
42881888	314911	8LADYSMITH	DVP	314922	8POSSUM	DVP	1	DVP_P1-2: LN 594	single	2442.12	134.06	135.08	AC	43.89

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
314229	6MT RD221	0.1238	80/20	0.1238
314236	6NRTHEST	0.1890	80/20	0.1890
314241	6OLDCHRC	0.7628	80/20	0.7628
314250	6ROCKVILLE	0.3381	80/20	0.3381
314309	6IRON208	0.4507	80/20	0.4507
315043	1FOUR RIVERA	2.9866	80/20	2.9866
315044	1FOUR RIVERB	2.9866	80/20	2.9866
315045	1FOUR RIVERC	3.6639	80/20	3.6639
315046	1FOUR RIVERD	2.9866	80/20	2.9866
315047	1FOUR RIVERE	2.9866	80/20	2.9866
315048	1FOUR RIVERF	3.6639	80/20	3.6639
315060	**1CHESTF5 (Deactivation : 31/05/2023)**	**10.1294**	**80/20**	**10.1294**
315061	1CHESTG7	3.9309	80/20	3.9309
315063	1CHESTG8	3.8677	80/20	3.8677
315064	1CHESTS8	1.9910	80/20	1.9910
315067	1DARBY 1	2.6030	80/20	2.6030
315068	1DARBY 2	2.6060	80/20	2.6060
315069	1DARBY 3	2.6151	80/20	2.6151
315070	1DARBY 4	2.6182	80/20	2.6182
315074	**1HOPCGN1 (Deactivation : 25/06/2019)**	**6.6187**	**Adder**	**7.79**
315075	**1HOPCGN2 (Deactivation : 25/06/2019)**	**6.5330**	**Adder**	**7.69**
315083	**1SPRUNCA (Deactivation : 12/01/2021)**	**9.9029**	**80/20**	**9.9029**
315084	**1SPRUNCB (Deactivation : 12/01/2021)**	**9.9029**	**80/20**	**9.9029**
315225	1N ANNA1	35.8645	80/20	35.8645
315226	1N ANNA2	35.8796	80/20	35.8796
315610	6AA1-145GAS	10.4684	80/20	10.4684
315611	6Z1-036WIND	5.1923	Adder	6.11
923801	AB2-015 C OP	6.5148	Adder	7.66
923831	AB2-022 C	1.7757	Adder	2.09
924061	AB2-050	0.6158	80/20	0.6158
924241	AB2-068 OP	188.2560	80/20	188.2560
925051	**AB2-160 C O1 (Suspended)**	**4.3047**	**Adder**	**5.06**
925061	**AB2-161 C O1 (Suspended)**	**2.6302**	**Adder**	**3.09**
925331	AB2-190 C	15.8841	Adder	18.69
925861	AC1-065 C	2.5955	Adder	3.05

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
926291	AC1-107 O1 (Suspended)	284.1600	80/20	284.1600
926551	AC1-134	1.5395	80/20	1.5395
926661	AC1-147 C	1.7565	Adder	2.07
926731	AC1-158 C	12.9451	80/20	12.9451
926751	AC1-161 C O1	23.7001	Adder	27.88
926781	AC1-164 C	37.5956	80/20	37.5956
927041	AC1-191 C O1	7.5052	Adder	8.83
932041	AC2-012 C	7.9463	Adder	9.35
932501	AC2-070 C	1.5913	80/20	1.5913
932581	AC2-078 C O1	3.1874	Adder	3.75
932591	AC2-079 C O1	4.4513	Adder	5.24
932831	AC2-110 C	1.0382	Adder	1.22
933011	AC2-125	2.1290	Adder	2.5
933021	AC2-126	2.1433	Adder	2.52
933261	AC2-137 C	1.9481	80/20	1.9481
933291	AC2-141 C	23.7001	Adder	27.88
933731	AC2-196 C	1.3894	Adder	1.63
934011	AD1-025 C	13.3493	Adder	15.71
934061	AD1-033 C	5.8366	Adder	6.87
934141	AD1-041 C	4.0685	Adder	4.79
934571	AD1-082 C	5.9941	Adder	7.05
935111	AD1-144 C	1.3425	Adder	1.58
935161	AD1-151 C O1	12.7640	Adder	15.02
936041	AD2-007 C	0.6377	Adder	0.75
936051	AD2-008 C	2.3241	Adder	2.73
936151	AD2-021	0.2222	80/20	0.2222
936301	AD2-039 C	1.0382	Adder	1.22
936661	AD2-085 C	2.6714	Adder	3.14
936761	AD2-097 C	0.3326	80/20	0.3326
937221	AD2-160 C O1	4.5361	Adder	5.34
937251	AD2-164 (Withdrawn : 06/30/2020)	3.7587	Adder	4.42
937541	AD2-215 C	1.3564	Adder	1.6
938031	AE1-004 C	1.0382	Adder	1.22
938491	AE1-068 C O1	42.6584	Adder	50.19
938501	AE1-069 C O1	33.4676	Adder	39.37
938531	AE1-072 C O1	13.5831	Adder	15.98
938551	AE1-074 C	2.2780	80/20	2.2780
938631	AE1-085 C O1	6.9802	Adder	8.21
938771	AE1-103 C O1	2.7548	Adder	3.24
939191	AE1-149 C O1	8.4033	Adder	9.89
939261	AE1-157 C O1	11.2262	Adder	13.21
939271	AE1-158 C O1	11.4571	Adder	13.48
939311	AE1-162 C	1.6830	Adder	1.98
939411	AE1-173 C	66.5611	Adder	78.31
939421	AE1-174 C (Withdrawn : 06/16/2020)	0.2852	Adder	0.34
939431	AE1-175 C	1.8964	Adder	2.23
939611	AE1-191 C	8.1371	Adder	9.57
939751	AE1-206 C O1	29.8104	80/20	29.8104
940061	AE2-000B C	8.3059	Adder	9.77
940231	AE2-005 C	1.0382	Adder	1.22
940251	AE2-007 O1	134.9246	Adder	158.73

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
940431	AE2-027 C O1	10.2614	Adder	12.07
940471	AE2-031 C	23.2410	Adder	27.34
940481	AE2-033 C	11.8264	Adder	13.91
940541	AE2-040 O1	2.1002	Adder	2.47
940551	AE2-041 O1	5.4995	Adder	6.47
940641	AE2-051 C O1	12.4726	Adder	14.67
940651	AE2-052	2.8011	Adder	3.3
940891	AE2-078 C	1.8583	Adder	2.19
940901	AE2-079 C	1.8583	Adder	2.19
940911	**AE2-080 C (Withdrawn : 04/28/2020)**	**1.8583**	**Adder**	**2.19**
941031	AE2-094 C	27.8058	Adder	32.71
941101	AE2-104 C O1	2.5921	Adder	3.05
941281	AE2-122 C O1	22.1061	Adder	26.01
941291	AE2-123 C O1	22.7182	Adder	26.73
941301	AE2-124 C O1	20.6542	Adder	24.3
941501	AE2-147 C	12.1796	Adder	14.33
941581	AE2-155 C	0.6054	80/20	0.6054
941591	AE2-156 O1	13.9442	Adder	16.4
942001	AE2-212 C	1.7020	Adder	2.0
942131	AE2-225 C	1.6522	Adder	1.94
942151	AE2-227 C	2.0496	80/20	2.0496
942161	AE2-228 C	1.7141	Adder	2.02
942171	AE2-229 C	1.6522	Adder	1.94
942191	AE2-231 C O1	4.5073	80/20	4.5073
942341	AE2-247 C	1.1580	Adder	1.36
942371	AE2-250 C O1	7.6465	Adder	9.0
942401	AE2-253 C	4.7712	Adder	5.61
942551	AE2-270	21.2734	Adder	25.03
942851	AE2-304 C	0.4832	Adder	0.57
942931	AE2-313 C	25.1644	Adder	29.61
943431	AF1-014 C	0.9835	Adder	1.16
943461	AF1-017 C	1.0477	Adder	1.23
943471	AF1-018	5.4995	Adder	6.47
943611	AF1-032 C	1.3493	Adder	1.59
943621	AF1-033 C	1.8583	Adder	2.19
944011	AF1-069 C	9.0852	Adder	10.69
944501	AF1-115 C O1	5.6592	Adder	6.66
944581	AF1-123 C O1	37.3100	Adder	43.89
944591	AF1-124 C O1	37.3100	Adder	43.89
944601	AF1-125 C O1	37.3100	Adder	43.89
944631	AF1-128 O1	37.8311	Adder	44.51
944871	AF1-152 C	4.0599	Adder	4.78
945361	AF1-201 C O1	12.5100	Adder	14.72
945711	AF1-236 C O1	56.7517	Adder	66.77
946001	AF1-265	26.1495	80/20	26.1495
946011	AF1-266	9.8996	Adder	11.65
946261	AF1-291 C	1.7142	Adder	2.02
WEC	WEC	0.9787	Confirmed LTF	0.9787
LGEE	LGEE	1.8918	Confirmed LTF	1.8918
CPLE	CPLE	6.8690	Confirmed LTF	6.8690
CBM-W2	CBM-W2	35.2170	Confirmed LTF	35.2170

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
NY	NY	2.8767	Confirmed LTF	2.8767
TVA	TVA	7.1540	Confirmed LTF	7.1540
CBM-S2	CBM-S2	49.8583	Confirmed LTF	49.8583
CBM-S1	CBM-S1	40.7000	Confirmed LTF	40.7000
MADISON	MADISON	1.4797	Confirmed LTF	1.4797
MEC	MEC	5.6441	Confirmed LTF	5.6441
AA2-074	AA2-074	4.6877	LTF	4.6877
CBM-W1	CBM-W1	36.4041	Confirmed LTF	36.4041

11.7.19 Index 19

ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC|DC	MW IMPACT
42881823	314914	8MDLTHAN	DVP	314918	8NO ANNA	DVP	1	DVP_P1-2: LN 574	single	2442.12	154.4	155.16	AC	75.3

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
314295	6BIRDNECK	0.0741	80/20	0.0741
314491	3PENDLTN	0.5535	80/20	0.5535
314507	3THOMPSN	0.5569	80/20	0.5569
314947	8GREENSVILLE	88.9755	80/20	88.9755
315074	**1HOPCGN1 (Deactivation : 25/06/2019)**	**9.9182**	**Adder**	**11.67**
315075	**1HOPCGN2 (Deactivation : 25/06/2019)**	**9.7897**	**Adder**	**11.52**
315083	**1SPRUNCA (Deactivation : 12/01/2021)**	**13.1429**	**Adder**	**15.46**
315084	**1SPRUNCB (Deactivation : 12/01/2021)**	**13.1429**	**Adder**	**15.46**
315098	1CHESPKA	0.7360	80/20	0.7360
315099	**1CHESPKB (Deactivation : 31/05/2019)**	**4.6783**	**80/20**	**4.6783**
315102	1BRUNSWICKG1	14.6138	80/20	14.6138
315103	1BRUNSWICKG2	14.6138	80/20	14.6138
315104	1BRUNSWICKG3	14.6138	80/20	14.6138
315105	1BRUNSWICKS1	30.3601	80/20	30.3601
315108	1ELIZAR1	5.4114	80/20	5.4114
315109	1ELIZAR2	5.3174	80/20	5.3174
315110	1ELIZAR3	5.4806	80/20	5.4806
315131	**1EDGECMA (Deactivation : 22/04/2019)**	**11.1433**	**Adder**	**13.11**
315132	**1EDGECMB (Deactivation : 22/04/2019)**	**11.1433**	**Adder**	**13.11**
315260	1GOSPORTA	0.5877	80/20	0.5877
315261	1GOSPORTB	0.7506	80/20	0.7506
315262	1GOSPORTC	0.6371	80/20	0.6371
315294	1DOMTR10	13.9105	Adder	16.37
315603	6AA1-139SOLA	4.1307	80/20	4.1307
315611	6Z1-036WIND	8.9077	Adder	10.48
922922	AB1-081 C OP	10.7528	Adder	12.65
923262	**AB1-132 C OP (Suspended)**	**17.8079**	**Adder**	**20.95**
923572	AB1-173 C OP	2.8657	Adder	3.37
923582	AB1-173AC OP	2.8657	Adder	3.37
923801	AB2-015 C OP	11.1749	Adder	13.15
923831	AB2-022 C	3.0384	Adder	3.57
923911	AB2-031 C O1	2.8444	Adder	3.35
923991	**AB2-040 C O1 (Suspended)**	**9.3399**	**Adder**	**10.99**

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
924501	AB2-099 C (Suspended)	0.7490	Adder	0.88
925051	AB2-160 C O1 (Suspended)	6.7285	Adder	7.92
925061	AB2-161 C O1 (Suspended)	4.3791	Adder	5.15
925331	AB2-190 C	24.6292	Adder	28.98
925591	AC1-034 C	8.2086	Adder	9.66
925781	AC1-054 C O1	8.6332	Adder	10.16
926071	AC1-086 C	26.2242	Adder	30.85
926201	AC1-098 C	7.6662	Adder	9.02
926211	AC1-099 C	2.5690	Adder	3.02
926291	AC1-107 O1 (Suspended)	255.1534	Adder	300.18
926661	AC1-147 C	3.5140	80/20	3.5140
926751	AC1-161 C O1	47.7183	80/20	47.7183
926781	AC1-164 C	42.8830	Adder	50.45
927021	AC1-189 C	10.5414	Adder	12.4
927141	AC1-208 C	11.2018	Adder	13.18
932041	AC2-012 C	15.8967	80/20	15.8967
932581	AC2-078 C O1	5.2012	Adder	6.12
932591	AC2-079 C O1	7.4785	Adder	8.8
932631	AC2-084 C	10.9285	Adder	12.86
933261	AC2-137 C	2.2238	Adder	2.62
933291	AC2-141 C	47.7183	80/20	47.7183
933501	AC2-165 C	12.0156	Adder	14.14
933731	AC2-196 C	2.7935	80/20	2.7935
933991	AD1-023 C	16.9267	Adder	19.91
934011	AD1-025 C	20.7694	Adder	24.43
934061	AD1-033 C	11.7310	80/20	11.7310
934331	AD1-057 C O1	12.3077	Adder	14.48
934521	AD1-076 C	70.2041	Adder	82.59
934571	AD1-082 C	9.9797	Adder	11.74
934611	AD1-087 C O1	10.0774	Adder	11.86
935111	AD1-144 C	2.2523	Adder	2.65
935161	AD1-151 C O1	19.7913	Adder	23.28
935171	AD1-152 C O1	10.0148	Adder	11.78
936041	AD2-007 C	0.9922	Adder	1.17
936051	AD2-008 C	3.6159	Adder	4.25
936151	AD2-021	0.2536	Adder	0.3
936401	AD2-051 C O1	11.2535	Adder	13.24
936661	AD2-085 C	4.4863	Adder	5.28
937221	AD2-160 C O1	9.1230	80/20	9.1230
937251	AD2-164 (Withdrawn : 06/30/2020)	5.8959	Adder	6.94
937481	AD2-202 C O1	2.6706	Adder	3.14
937541	AD2-215 C	2.2755	Adder	2.68
938171	AE1-026 C O1	41.2528	Adder	48.53
938221	AE1-035 C	2.8789	Adder	3.39
938491	AE1-068 C O1	100.1860	80/20	100.1860
938501	AE1-069 C O1	78.4369	80/20	78.4369
938531	AE1-072 C O1	27.3260	80/20	27.3260
938551	AE1-074 C	3.8746	80/20	3.8746
938561	AE1-075 C	2.7279	Adder	3.21
938631	AE1-085 C O1	11.4231	Adder	13.44

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
938771	AE1-103 C O1	4.7195	Adder	5.55
939191	AE1-149 C O1	13.6619	Adder	16.07
939311	AE1-162 C	2.7604	Adder	3.25
939411	AE1-173 C	148.6944	80/20	148.6944
939421	**AE1-174 C (Withdrawn : 06/16/2020)**	**0.4210**	**Adder**	**0.5**
939431	AE1-175 C	2.7999	Adder	3.29
940061	AE2-000B C	13.8287	Adder	16.27
940251	AE2-007 O1	270.1829	80/20	270.1829
940431	AE2-027 C O1	15.4756	Adder	18.21
940471	AE2-031 C	54.6360	80/20	54.6360
940481	AE2-033 C	20.7334	Adder	24.39
940491	AE2-034 C	9.3427	Adder	10.99
940541	AE2-040 O1	3.6831	Adder	4.33
940571	AE2-044 C	5.3764	Adder	6.33
940641	AE2-051 C O1	28.7865	80/20	28.7865
940651	AE2-052	4.5540	Adder	5.36
940891	AE2-078 C	2.9660	Adder	3.49
940901	AE2-079 C	2.9660	Adder	3.49
940911	**AE2-080 C (Withdrawn : 04/28/2020)**	**2.9660**	**Adder**	**3.49**
941031	AE2-094 C	65.5456	80/20	65.5456
941101	AE2-104 C O1	4.4068	Adder	5.18
941281	AE2-122 C O1	44.3506	80/20	44.3506
941291	AE2-123 C O1	45.5787	80/20	45.5787
941301	AE2-124 C O1	41.4508	80/20	41.4508
941501	AE2-147 C	20.8485	Adder	24.53
941541	AE2-151 C	1.3867	Adder	1.63
941591	AE2-156 O1	27.9050	80/20	27.9050
942001	AE2-212 C	2.6677	Adder	3.14
942131	AE2-225 C	2.8187	Adder	3.32
942151	AE2-227 C	2.4765	Adder	2.91
942161	AE2-228 C	2.6074	Adder	3.07
942171	AE2-229 C	2.8187	Adder	3.32
942341	AE2-247 C	1.9443	Adder	2.29
942371	AE2-250 C O1	11.9519	Adder	14.06
942401	AE2-253 C	9.5958	80/20	9.5958
942471	AE2-260 C O1	18.4890	Adder	21.75
942551	AE2-270	32.9855	Adder	38.81
942851	AE2-304 C	0.8281	Adder	0.97
942931	AE2-313 C	59.1576	80/20	59.1576
943171	AE2-346 C	1.7977	Adder	2.11
943461	AF1-017 C	1.7591	Adder	2.07
943611	AF1-032 C	2.3019	Adder	2.71
943621	AF1-033 C	2.9660	Adder	3.49
943911	AF1-059	20.0234	Adder	23.56
944011	AF1-069 C	21.4162	80/20	21.4162
944141	AF1-082	3.4563	Adder	4.07
944501	AF1-115 C O1	9.0328	Adder	10.63
944581	AF1-123 C O1	75.2986	80/20	75.2986
944591	AF1-124 C O1	75.2986	80/20	75.2986
944601	AF1-125 C O1	75.2986	80/20	75.2986
944631	AF1-128 O1	53.6244	Adder	63.09

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
944871	AF1-152 C	6.9495	Adder	8.18
945361	AF1-201 C O1	18.5949	Adder	21.88
945711	AF1-236 C O1	102.2802	Adder	120.33
945811	AF1-246 C O1	11.6449	80/20	11.6449
946011	AF1-266	17.3555	Adder	20.42
946261	AF1-291 C	2.6066	Adder	3.07
946281	AF1-292 C	1.9152	Adder	2.25
WEC	WEC	1.3570	Confirmed LTF	1.3570
LGEE	LGEE	2.6192	Confirmed LTF	2.6192
CPLE	CPLE	12.1723	Confirmed LTF	12.1723
CBM-W2	CBM-W2	52.8910	Confirmed LTF	52.8910
NY	NY	3.1549	Confirmed LTF	3.1549
TVA	TVA	11.0502	Confirmed LTF	11.0502
CBM-S2	CBM-S2	85.5035	Confirmed LTF	85.5035
CBM-S1	CBM-S1	62.0171	Confirmed LTF	62.0171
MADISON	MADISON	2.7881	Confirmed LTF	2.7881
MEC	MEC	8.1118	Confirmed LTF	8.1118
AA2-074	AA2-074	8.2998	LTF	8.2998
CBM-W1	CBM-W1	50.1776	Confirmed LTF	50.1776

11.7.20 Index 20

ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC|DC	MW IMPACT
42881948	314918	8NO ANNA	DVP	314911	8LADYSMITH	DVP	1	DVP_P1-2: LN 573	single	3218.56	109.75	111.02	AC	37.37

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
314295	6BIRDNECK	0.0365	80/20	0.0365
314333	6POWHATN	0.4313	80/20	0.4313
314435	6SAPONY	0.3591	80/20	0.3591
314947	8GREENSVILLE	54.9818	80/20	54.9818
315083	**1SPRUNCA (Deactivation : 12/01/2021)**	**5.9357**	**Adder**	**6.98**
315084	**1SPRUNCB (Deactivation : 12/01/2021)**	**5.9357**	**Adder**	**6.98**
315102	1BRUNSWICKG1	9.0221	80/20	9.0221
315103	1BRUNSWICKG2	9.0221	80/20	9.0221
315104	1BRUNSWICKG3	9.0221	80/20	9.0221
315105	1BRUNSWICKS1	18.7433	80/20	18.7433
315131	**1EDGECMA (Deactivation : 22/04/2019)**	**6.1339**	**Adder**	**7.22**
315132	**1EDGECMB (Deactivation : 22/04/2019)**	**6.1339**	**Adder**	**7.22**
315153	1CLOVER1	12.7583	80/20	12.7583
315154	1CLOVER2	12.6312	80/20	12.6312
315172	1LOISA A	3.0942	80/20	3.0942
315173	1LOISA B	3.1102	80/20	3.1102
315174	1LOISA C	3.1102	80/20	3.1102
315175	1LOISA D	3.1102	80/20	3.1102
315176	1LOISA E	6.3409	80/20	6.3409
315177	1S ANNAG1	2.2588	80/20	2.2588
315178	1S ANNAS1	1.1608	80/20	1.1608
315179	1S ANNAG2	2.2588	80/20	2.2588
315180	1S ANNAS2	1.1608	80/20	1.1608
315225	1N ANNA1	116.0032	80/20	116.0032
315226	1N ANNA2	116.0521	80/20	116.0521
315294	1DOMTR10	7.2326	Adder	8.51
315603	6AA1-139SOLA	2.0477	80/20	2.0477
315611	6Z1-036WIND	4.4862	Adder	5.28
922922	AB1-081 C OP	5.9233	Adder	6.97
923262	**AB1-132 C OP (Suspended)**	**9.5662**	**Adder**	**11.25**
923572	AB1-173 C OP	1.5564	Adder	1.83
923582	AB1-173AC OP	1.5564	Adder	1.83
923801	AB2-015 C OP	5.7077	Adder	6.71
923831	AB2-022 C	1.5129	Adder	1.78
923911	AB2-031 C O1	1.5448	Adder	1.82
923991	**AB2-040 C O1 (Suspended)**	**5.0726**	**Adder**	**5.97**

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
924301	AB2-077 C O1 (Suspended)	1.3478	Adder	1.59
924311	AB2-078 C O1 (Suspended)	1.3478	Adder	1.59
924321	AB2-079 C O1 (Suspended)	1.3478	Adder	1.59
924501	AB2-099 C (Suspended)	0.3933	Adder	0.46
924511	AB2-100 C	1.6638	80/20	1.6638
925021	AB2-158 C	4.4091	80/20	4.4091
925061	AB2-161 C O1 (Suspended)	2.1142	Adder	2.49
925591	AC1-034 C	4.5218	Adder	5.32
925611	AC1-036 C	0.6525	Adder	0.77
925781	AC1-054 C O1	4.9172	Adder	5.78
926071	AC1-086 C	14.0873	Adder	16.57
926201	AC1-098 C	4.1331	Adder	4.86
926211	AC1-099 C	1.3850	Adder	1.63
926271	AC1-105 C O1 (Suspended)	3.7802	Adder	4.45
926661	AC1-147 C	1.4649	Adder	1.72
926751	AC1-161 C O1	23.4017	80/20	23.4017
927021	AC1-189 C	5.7064	Adder	6.71
927141	AC1-208 C	6.0788	Adder	7.15
927261	AC1-222 C	2.4139	Adder	2.84
932041	AC2-012 C	6.6270	Adder	7.8
932511	AC2-071 C	1.5513	Adder	1.83
932581	AC2-078 C O1	2.4504	Adder	2.88
932591	AC2-079 C O1	3.6496	Adder	4.29
932631	AC2-084 C	5.8918	Adder	6.93
933291	AC2-141 C	23.4017	80/20	23.4017
933501	AC2-165 C	9.6153	80/20	9.6153
933731	AC2-196 C	1.3811	80/20	1.3811
933991	AD1-023 C	8.7543	Adder	10.3
934061	AD1-033 C	5.7968	80/20	5.7968
934311	AD1-055 C	1.6760	Adder	1.97
934331	AD1-057 C O1	6.7007	Adder	7.88
934521	AD1-076 C	36.1843	Adder	42.57
934571	AD1-082 C	4.8181	Adder	5.67
934611	AD1-087 C O1	7.2856	80/20	7.2856
934621	AD1-088 C	10.6208	80/20	10.6208
935111	AD1-144 C	1.0858	Adder	1.28
935171	AD1-152 C O1	7.2403	80/20	7.2403
935221	AD1-157 C	1.0509	Adder	1.24
936261	AD2-033 C	8.9014	Adder	10.47
936361	AD2-046 C O1	6.0354	Adder	7.1
936401	AD2-051 C O1	5.8820	Adder	6.92
936481	AD2-063 C O1	10.1936	Adder	11.99
936661	AD2-085 C	2.1883	Adder	2.57
937221	AD2-160 C O1	4.5192	80/20	4.5192
937481	AD2-202 C O1	1.9308	80/20	1.9308
937541	AD2-215 C	1.0970	Adder	1.29
938171	AE1-026 C O1	21.3778	Adder	25.15
938221	AE1-035 C	1.5036	Adder	1.77

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
938371	AE1-056 C	4.5305	Adder	5.33
938491	AE1-068 C O1	61.9527	80/20	61.9527
938501	AE1-069 C O1	48.4695	80/20	48.4695
938531	AE1-072 C O1	13.5575	80/20	13.5575
938551	AE1-074 C	2.0378	80/20	2.0378
938561	AE1-075 C	2.1352	80/20	2.1352
938631	AE1-085 C O1	5.4013	Adder	6.35
938771	AE1-103 C O1	2.4003	Adder	2.82
939181	AE1-148 C O1	5.9537	Adder	7.0
939191	AE1-149 C O1	6.4071	Adder	7.54
939221	AE1-153 C O1	9.1370	Adder	10.75
939231	AE1-154 C	4.0810	80/20	4.0810
939311	AE1-162 C	1.2827	Adder	1.51
939411	AE1-173 C	85.6272	80/20	85.6272
940061	AE2-000B C	6.6764	Adder	7.85
940241	AE2-006	0.3320	Adder	0.39
940251	AE2-007 O1	112.7839	Adder	132.69
940471	AE2-031 C	33.8500	80/20	33.8500
940481	AE2-033 C	12.9993	80/20	12.9993
940491	AE2-034 C	4.7734	Adder	5.62
940541	AE2-040 O1	2.3070	80/20	2.3070
940571	AE2-044 C	2.9617	Adder	3.48
940641	AE2-051 C O1	17.2566	80/20	17.2566
940651	AE2-052	2.1357	Adder	2.51
940661	AE2-053 O1	2.2051	Adder	2.59
941031	AE2-094 C	40.5843	80/20	40.5843
941101	AE2-104 C O1	2.1801	Adder	2.56
941281	AE2-122 C O1	21.8535	80/20	21.8535
941291	AE2-123 C O1	22.4586	80/20	22.4586
941301	AE2-124 C O1	20.4351	80/20	20.4351
941501	AE2-147 C	10.4178	Adder	12.26
941541	AE2-151 C	0.7290	Adder	0.86
941591	AE2-156 O1	11.6382	Adder	13.69
941791	AE2-182 C	1.7255	80/20	1.7255
942131	AE2-225 C	1.3955	Adder	1.64
942171	AE2-229 C	1.3955	Adder	1.64
942341	AE2-247 C	0.9482	Adder	1.12
942401	AE2-253 C	4.7534	80/20	4.7534
942451	AE2-258	1.5862	Adder	1.87
942461	AE2-259 C O1	8.3580	80/20	8.3580
942471	AE2-260 C O1	11.6599	80/20	11.6599
942851	AE2-304 C	0.4155	Adder	0.49
942931	AE2-313 C	36.6513	80/20	36.6513
943171	AE2-346 C	0.9439	Adder	1.11
943461	AF1-017 C	0.8579	Adder	1.01
943611	AF1-032 C	1.1396	Adder	1.34
943901	AF1-058 C	1.3275	Adder	1.56
943911	AF1-059	11.4589	Adder	13.48
944011	AF1-069 C	13.2604	80/20	13.2604
944111	AF1-079 C	7.7539	80/20	7.7539
944141	AF1-082	1.9039	Adder	2.24
944581	AF1-123 C O1	37.3697	80/20	37.3697

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
944591	AF1-124 C O1	37.3697	80/20	37.3697
944601	AF1-125 C O1	37.3697	80/20	37.3697
944871	AF1-152 C	3.4726	Adder	4.09
945711	AF1-236 C O1	52.2579	Adder	61.48
945811	AF1-246 C O1	7.2311	80/20	7.2311
946011	AF1-266	10.8815	80/20	10.8815
946281	AF1-292 C	1.2267	80/20	1.2267
946301	AF1-294 C	2.8582	Adder	3.36
946371	AF1-301 C	31.4883	80/20	31.4883
WEC	WEC	0.5585	Confirmed LTF	0.5585
LGEE	LGEE	1.1016	Confirmed LTF	1.1016
CPLE	CPLE	6.9431	Confirmed LTF	6.9431
CBM-W2	CBM-W2	25.2662	Confirmed LTF	25.2662
NY	NY	2.2927	Confirmed LTF	2.2927
TVA	TVA	5.5370	Confirmed LTF	5.5370
CBM-S2	CBM-S2	47.7023	Confirmed LTF	47.7023
CBM-S1	CBM-S1	30.4931	Confirmed LTF	30.4931
MADISON	MADISON	1.7176	Confirmed LTF	1.7176
MEC	MEC	3.5880	Confirmed LTF	3.5880
AA2-074	AA2-074	4.7309	LTF	4.7309
CBM-W1	CBM-W1	20.0035	Confirmed LTF	20.0035

11.7.21 Index 21

ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC|DC	MW IMPACT
42881980	314918	8NO ANNA	DVP	314934	8SPOTSYL	DVP	1	DVP_P1-2: LN 581	single	3218.56	117.61	118.16	AC	56.62

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
314236	6NRTHEST	0.2323	80/20	0.2323
314250	6ROCKVILLE	0.4268	80/20	0.4268
314309	6IRON208	0.5603	80/20	0.5603
314314	3LOCKS	0.3743	80/20	0.3743
315065	**1CHESTF6 (Deactivation : 31/05/2023)**	**25.4504**	**80/20**	**25.4504**
315069	1DARBY 3	3.2121	80/20	3.2121
315070	1DARBY 4	3.2159	80/20	3.2159
315074	**1HOPCGN1 (Deactivation : 25/06/2019)**	**8.3082**	**Adder**	**9.77**
315075	**1HOPCGN2 (Deactivation : 25/06/2019)**	**8.2006**	**Adder**	**9.65**
315083	**1SPRUNCA (Deactivation : 12/01/2021)**	**12.6034**	**80/20**	**12.6034**
315084	**1SPRUNCB (Deactivation : 12/01/2021)**	**12.6034**	**80/20**	**12.6034**
315098	1CHESPKA	0.5572	80/20	0.5572
315099	**1CHESPKB (Deactivation : 31/05/2019)**	**3.5418**	**80/20**	**3.5418**
315108	1ELIZAR1	4.0932	80/20	4.0932
315109	1ELIZAR2	4.0221	80/20	4.0221
315110	1ELIZAR3	4.1456	80/20	4.1456
315225	1N ANNA1	62.5432	80/20	62.5432
315226	1N ANNA2	62.5696	80/20	62.5696
315233	1SURRY 2	31.7045	80/20	31.7045
315611	6Z1-036WIND	6.6701	Adder	7.85
923801	AB2-015 C OP	8.3538	Adder	9.83
923831	AB2-022 C	2.2851	Adder	2.69
924241	AB2-068 OP	188.4892	Adder	221.75
925051	**AB2-160 C O1 (Suspended)**	**6.4253**	**80/20**	**6.4253**
925061	**AB2-161 C O1 (Suspended)**	**3.3721**	**Adder**	**3.97**
925331	AB2-190 C	20.0672	Adder	23.61
925861	AC1-065 C	3.2570	Adder	3.83
926291	**AC1-107 O1 (Suspended)**	**284.5120**	**Adder**	**334.72**
926661	AC1-147 C	2.6604	80/20	2.6604
926751	AC1-161 C O1	35.9359	80/20	35.9359
926781	AC1-164 C	39.1069	Adder	46.01
927041	AC1-191 C O1	9.1697	Adder	10.79
932041	AC2-012 C	12.0350	80/20	12.0350
932501	AC2-070 C	1.6335	Adder	1.92

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
932581	AC2-078 C O1	4.0752	Adder	4.79
932591	AC2-079 C O1	5.7142	Adder	6.72
932831	AC2-110 C	1.3028	Adder	1.53
933011	AC2-125	2.4684	Adder	2.9
933021	AC2-126	2.4850	Adder	2.92
933261	AC2-137 C	2.0293	Adder	2.39
933291	AC2-141 C	35.9359	80/20	35.9359
933731	AC2-196 C	1.7902	Adder	2.11
934011	AD1-025 C	16.8756	Adder	19.85
934061	AD1-033 C	7.5198	Adder	8.85
934141	AD1-041 C	5.1184	Adder	6.02
934571	AD1-082 C	7.6849	Adder	9.04
935111	AD1-144 C	1.7222	Adder	2.03
935161	AD1-151 C O1	16.1254	Adder	18.97
936041	AD2-007 C	0.8062	Adder	0.95
936051	AD2-008 C	2.9380	Adder	3.46
936151	AD2-021	0.2314	Adder	0.27
936301	AD2-039 C	1.3028	Adder	1.53
936661	AD2-085 C	3.4290	Adder	4.03
936761	AD2-097 C	0.4234	80/20	0.4234
937221	AD2-160 C O1	5.8425	Adder	6.87
937251	**AD2-164 (Withdrawn : 06/30/2020)**	**4.7564**	**Adder**	**5.6**
937541	AD2-215 C	1.7400	Adder	2.05
938031	AE1-004 C	1.3028	Adder	1.53
938491	AE1-068 C O1	57.4018	Adder	67.53
938501	AE1-069 C O1	44.9696	Adder	52.91
938531	AE1-072 C O1	17.4903	Adder	20.58
938551	AE1-074 C	2.9670	80/20	2.9670
938561	AE1-075 C	2.0049	Adder	2.36
938631	AE1-085 C O1	8.9276	Adder	10.5
938771	AE1-103 C O1	3.5338	Adder	4.16
939191	AE1-149 C O1	10.7381	Adder	12.63
939261	AE1-157 C O1	13.0984	Adder	15.41
939271	AE1-158 C O1	13.3677	Adder	15.73
939311	AE1-162 C	2.1501	Adder	2.53
939411	AE1-173 C	104.1504	80/20	104.1504
939421	**AE1-174 C (Withdrawn : 06/16/2020)**	**0.3560**	**Adder**	**0.42**
939431	AE1-175 C	2.3674	Adder	2.79
939611	AE1-191 C	10.2367	Adder	12.04
939751	AE1-206 C O1	30.0555	Adder	35.36
940061	AE2-000B C	10.6488	Adder	12.53
940231	AE2-005 C	1.3028	Adder	1.53
940251	AE2-007 O1	204.3861	80/20	204.3861
940431	AE2-027 C O1	15.2064	80/20	15.2064
940471	AE2-031 C	36.8341	80/20	36.8341
940481	AE2-033 C	15.3312	Adder	18.04
940541	AE2-040 O1	2.7252	Adder	3.21
940551	AE2-041 O1	6.8782	Adder	8.09
940641	AE2-051 C O1	19.7190	80/20	19.7190
940651	AE2-052	3.5793	Adder	4.21
940891	AE2-078 C	2.3605	Adder	2.78

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
940901	AE2-079 C	2.3605	Adder	2.78
940911	**AE2-080 C (Withdrawn : 04/28/2020)**	**2.3605**	**Adder**	**2.78**
941031	AE2-094 C	44.1315	80/20	44.1315
941101	AE2-104 C O1	3.3330	Adder	3.92
941281	AE2-122 C O1	28.4717	Adder	33.5
941291	AE2-123 C O1	29.2601	Adder	34.42
941301	AE2-124 C O1	26.6032	Adder	31.3
941501	AE2-147 C	15.6626	Adder	18.43
941581	AE2-155 C	0.6214	Adder	0.73
941591	AE2-156 O1	21.1200	80/20	21.1200
942001	AE2-212 C	2.5412	80/20	2.5412
942131	AE2-225 C	2.1267	Adder	2.5
942151	AE2-227 C	2.5480	80/20	2.5480
942161	AE2-228 C	2.5426	80/20	2.5426
942171	AE2-229 C	2.1267	Adder	2.5
942191	AE2-231 C O1	4.4860	Adder	5.28
942341	AE2-247 C	1.4863	Adder	1.75
942371	AE2-250 C O1	11.4134	80/20	11.4134
942401	AE2-253 C	6.1453	Adder	7.23
942551	AE2-270	26.8757	Adder	31.62
942851	AE2-304 C	0.6211	Adder	0.73
942931	AE2-313 C	39.8824	80/20	39.8824
943431	AF1-014 C	1.2342	Adder	1.45
943461	AF1-017 C	1.3448	Adder	1.58
943471	AF1-018	6.8782	Adder	8.09
943611	AF1-032 C	1.7368	Adder	2.04
943621	AF1-033 C	2.3605	Adder	2.78
944011	AF1-069 C	14.4194	80/20	14.4194
944501	AF1-115 C O1	7.1887	Adder	8.46
944581	AF1-123 C O1	56.6217	80/20	56.6217
944591	AF1-124 C O1	56.6217	80/20	56.6217
944601	AF1-125 C O1	56.6217	80/20	56.6217
944631	AF1-128 O1	46.9297	Adder	55.21
944871	AF1-152 C	5.2209	Adder	6.14
945361	AF1-201 C O1	15.7904	Adder	18.58
945711	AF1-236 C O1	62.9149	Adder	74.02
946001	AF1-265	26.3645	Adder	31.02
946011	AF1-266	12.8334	Adder	15.1
946261	AF1-291 C	2.5424	80/20	2.5424
946371	AF1-301 C	12.6274	Adder	14.86
WEC	WEC	0.6984	Confirmed LTF	0.6984
LGEE	LGEE	1.4074	Confirmed LTF	1.4074
CPLE	CPLE	8.4229	Confirmed LTF	8.4229
CBM-W2	CBM-W2	31.7608	Confirmed LTF	31.7608
NY	NY	2.8032	Confirmed LTF	2.8032
TVA	TVA	6.9958	Confirmed LTF	6.9958
CBM-S2	CBM-S2	58.4416	Confirmed LTF	58.4416
CBM-S1	CBM-S1	38.5700	Confirmed LTF	38.5700
MADISON	MADISON	2.1228	Confirmed LTF	2.1228
MEC	MEC	4.5032	Confirmed LTF	4.5032
AA2-074	AA2-074	5.7393	LTF	5.7393

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
CBM-W1	CBM-W1	24.7448	Confirmed LTF	24.7448

11.7.22 Index 22

ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC|DC	MW IMPACT
42882018	314919	8OX	DVP	314904	8CLIFTON	DVP	1	DVP_P1-2: LN 569	single	2442.12	101.55	102.19	AC	30.69

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
314131	6ARNOLDS	0.2183	80/20	0.2183
314134	6CRANES	0.0486	80/20	0.0486
315007	**1POSSM 5 (Deactivation : 31/05/2021)**	**87.0052**	**Adder**	**102.36**
315008	1POSSM6A	3.7735	80/20	3.7735
315009	1POSSM6B	3.7735	80/20	3.7735
315010	1POSSM6S	5.8802	80/20	5.8802
315018	1POSSMC2	0.8288	80/20	0.8288
315033	1BIRCHWDA	5.7577	80/20	5.7577
315037	1LDYSMT1	3.9364	80/20	3.9364
315038	1LDYSMT2	3.9338	80/20	3.9338
315039	1LDYSMT3	4.1630	80/20	4.1630
315040	1LDYSMT4	4.1708	80/20	4.1708
315041	1LDYSMT5	4.1839	80/20	4.1839
315043	1FOUR RIVERA	2.2609	80/20	2.2609
315044	1FOUR RIVERB	2.2609	80/20	2.2609
315045	1FOUR RIVERC	2.7737	80/20	2.7737
315046	1FOUR RIVERD	2.2609	80/20	2.2609
315047	1FOUR RIVERE	2.2609	80/20	2.2609
315048	1FOUR RIVERF	2.7737	80/20	2.7737
315074	**1HOPCGN1 (Deactivation : 25/06/2019)**	**4.7167**	**Adder**	**5.55**
315075	**1HOPCGN2 (Deactivation : 25/06/2019)**	**4.6556**	**Adder**	**5.48**
315083	**1SPRUNCA (Deactivation : 12/01/2021)**	**6.0033**	**Adder**	**7.06**
315084	**1SPRUNCB (Deactivation : 12/01/2021)**	**6.0033**	**Adder**	**7.06**
315225	1N ANNA1	24.6276	80/20	24.6276
315226	1N ANNA2	24.6379	80/20	24.6379
315610	6AA1-145GAS	7.9247	80/20	7.9247
315611	6Z1-036WIND	3.6054	Adder	4.24
923831	AB2-022 C	1.2385	Adder	1.46
924061	AB2-050	0.4662	80/20	0.4662
924241	AB2-068 OP	111.6880	Adder	131.4
925051	**AB2-160 C O1 (Suspended)**	**3.0587**	**Adder**	**3.6**
925061	**AB2-161 C O1 (Suspended)**	**1.8464**	**Adder**	**2.17**
925331	AB2-190 C	11.2726	Adder	13.26
925671	**AC1-043 C (Suspended)**	**3.5633**	**Adder**	**4.19**
925861	AC1-065 C	1.9798	Adder	2.33

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
926001	AC1-076 C (Suspended)	2.6230	Adder	3.09
926291	AC1-107 O1 (Suspended)	168.5856	Adder	198.34
926481	AC1-120 C O1	3.8561	Adder	4.54
926501	AC1-121 C O1	1.3243	Adder	1.56
926551	AC1-134	1.1654	80/20	1.1654
926661	AC1-147 C	1.2298	Adder	1.45
926731	AC1-158 C	8.9384	80/20	8.9384
926751	AC1-161 C O1	16.5717	Adder	19.5
926781	AC1-164 C	23.0584	Adder	27.13
927041	AC1-191 C O1	5.7350	Adder	6.75
932041	AC2-012 C	5.5635	Adder	6.55
932501	AC2-070 C	0.9750	Adder	1.15
932581	AC2-078 C O1	2.2475	Adder	2.64
932591	AC2-079 C O1	3.1186	Adder	3.67
932831	AC2-110 C	0.7919	Adder	0.93
933011	AC2-125	2.1916	80/20	2.1916
933021	AC2-126	2.2064	80/20	2.2064
933261	AC2-137 C	1.1931	Adder	1.4
933271	AC2-138 C	0.5204	Adder	0.61
933291	AC2-141 C	16.5717	Adder	19.5
933731	AC2-196 C	0.9716	Adder	1.14
934011	AD1-025 C	9.4699	Adder	11.14
934061	AD1-033 C	4.0816	Adder	4.8
934141	AD1-041 C	3.1268	Adder	3.68
934191	AD1-046 C	4.0331	80/20	4.0331
934571	AD1-082 C	4.2079	Adder	4.95
934781	AD1-105 C	4.9737	Adder	5.85
934861	AD1-115 C	1.7817	Adder	2.1
935111	AD1-144 C	0.9413	Adder	1.11
935161	AD1-151 C O1	9.0584	Adder	10.66
936041	AD2-007 C	0.4524	Adder	0.53
936051	AD2-008 C	1.6487	Adder	1.94
936151	AD2-021	0.1361	Adder	0.16
936301	AD2-039 C	0.7919	Adder	0.93
936341	AD2-044 C	0.1626	Adder	0.19
936581	AD2-073 C	1.4599	Adder	1.72
936591	AD2-074 C	3.4909	Adder	4.11
936661	AD2-085 C	1.8718	Adder	2.2
937221	AD2-160 C O1	3.1697	Adder	3.73
937251	AD2-164 (Withdrawn : 06/30/2020)	2.6721	Adder	3.14
937541	AD2-215 C	0.9510	Adder	1.12
938031	AE1-004 C	0.7919	Adder	0.93
938491	AE1-068 C O1	2.9068	Adder	3.42
938531	AE1-072 C O1	9.4856	Adder	11.16
938551	AE1-074 C	1.3763	Adder	1.62
938631	AE1-085 C O1	4.9190	Adder	5.79
938961	AE1-124 C	1.7472	80/20	1.7472
939191	AE1-149 C O1	5.9298	Adder	6.98
939231	AE1-154 C	1.0118	Adder	1.19
939241	AE1-155 C	9.5823	Adder	11.27
939261	AE1-157 C O1	11.0943	80/20	11.0943

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
939271	AE1-158 C O1	11.3224	80/20	11.3224
939311	AE1-162 C	1.1851	Adder	1.39
939411	AE1-173 C	46.2754	Adder	54.44
939421	AE1-174 C (Withdrawn : 06/16/2020)	0.2040	Adder	0.24
939431	AE1-175 C	1.3567	Adder	1.6
939611	AE1-191 C	6.2536	Adder	7.36
939751	AE1-206 C O1	18.9333	Adder	22.27
940061	AE2-000B C	5.8308	Adder	6.86
940231	AE2-005 C	0.7919	Adder	0.93
940251	AE2-007 O1	94.4513	Adder	111.12
940431	AE2-027 C O1	7.3305	Adder	8.62
940471	AE2-031 C	16.0220	Adder	18.85
940481	AE2-033 C	8.2262	Adder	9.68
940541	AE2-040 O1	1.4626	Adder	1.72
940551	AE2-041 O1	4.1687	Adder	4.9
940641	AE2-051 C O1	8.6544	Adder	10.18
940651	AE2-052	1.9766	Adder	2.33
940891	AE2-078 C	1.3144	Adder	1.55
940901	AE2-079 C	1.3144	Adder	1.55
940911	AE2-080 C (Withdrawn : 04/28/2020)	1.3144	Adder	1.55
941031	AE2-094 C	19.1759	Adder	22.56
941101	AE2-104 C O1	1.8112	Adder	2.13
941281	AE2-122 C O1	15.4663	Adder	18.2
941291	AE2-123 C O1	15.8946	Adder	18.7
941301	AE2-124 C O1	14.4490	Adder	17.0
941381	AE2-134 (Suspended)	1.8075	Adder	2.13
941501	AE2-147 C	8.4831	Adder	9.98
941581	AE2-155 C	0.3709	Adder	0.44
941591	AE2-156 O1	9.7622	Adder	11.48
942001	AE2-212 C	1.2070	Adder	1.42
942131	AE2-225 C	1.1546	Adder	1.36
942151	AE2-227 C	1.2497	Adder	1.47
942161	AE2-228 C	1.2190	Adder	1.43
942171	AE2-229 C	1.1546	Adder	1.36
942191	AE2-231 C O1	3.6957	80/20	3.6957
942341	AE2-247 C	0.8114	Adder	0.95
942371	AE2-250 C O1	5.4332	Adder	6.39
942401	AE2-253 C	3.3340	Adder	3.92
942551	AE2-270	15.0973	Adder	17.76
942851	AE2-304 C	0.3360	Adder	0.4
942931	AE2-313 C	17.3480	Adder	20.41
943431	AF1-014 C	0.7503	Adder	0.88
943461	AF1-017 C	0.7341	Adder	0.86
943471	AF1-018	4.1687	Adder	4.9
943601	AF1-031 C	6.6443	Adder	7.82
943611	AF1-032 C	0.9430	Adder	1.11
943621	AF1-033 C	1.3144	Adder	1.55
943741	AF1-042 C	1.8266	Adder	2.15
943991	AF1-067 C	3.2844	Adder	3.86
944011	AF1-069 C	6.2655	Adder	7.37
944111	AF1-079 C	1.9225	Adder	2.26

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
944491	AF1-114 C	5.5532	80/20	5.5532
944501	AF1-115 C O1	4.0030	Adder	4.71
944581	AF1-123 C O1	26.0890	Adder	30.69
944591	AF1-124 C O1	26.0890	Adder	30.69
944601	AF1-125 C O1	26.0890	Adder	30.69
944631	AF1-128 O1	27.1486	Adder	31.94
944871	AF1-152 C	2.8277	Adder	3.33
945361	AF1-201 C O1	9.1593	Adder	10.78
945831	AF1-248	0.2277	Adder	0.27
946001	AF1-265	16.6082	Adder	19.54
946011	AF1-266	6.8860	Adder	8.1
946261	AF1-291 C	1.2191	Adder	1.43
946371	AF1-301 C	7.7294	Adder	9.09
WEC	WEC	0.1814	Confirmed LTF	0.1814
LGEE	LGEE	0.4222	Confirmed LTF	0.4222
CPLE	CPLE	4.3169	Confirmed LTF	4.3169
CBM-W2	CBM-W2	12.6699	Confirmed LTF	12.6699
NY	NY	1.9963	Confirmed LTF	1.9963
TVA	TVA	3.0898	Confirmed LTF	3.0898
CBM-S2	CBM-S2	29.3855	Confirmed LTF	29.3855
CBM-S1	CBM-S1	16.4777	Confirmed LTF	16.4777
MADISON	MADISON	1.2197	Confirmed LTF	1.2197
MEC	MEC	1.4905	Confirmed LTF	1.4905
AA2-074	AA2-074	2.9385	LTF	2.9385
CBM-W1	CBM-W1	5.3418	Confirmed LTF	5.3418

11.7.23 Index 23

ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC|DC	MW IMPACT
42881678	314924	8SURRY	DVP	314903	8CHCKAHM	DVP	1	DVP_P4-2: 56372	breaker	3144.0	117.31	124.24	AC	283.96

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
314295	6BIRDNECK	0.0818	50/50	0.0818
314491	3PENDLTN	0.6101	50/50	0.6101
315099	**1CHESPKB (Deactivation : 31/05/2019)**	**5.1235**	**50/50**	**5.1235**
315108	1ELIZAR1	5.9655	50/50	5.9655
315109	1ELIZAR2	5.8619	50/50	5.8619
315110	1ELIZAR3	6.0419	50/50	6.0419
315233	1SURRY 2	59.0856	50/50	59.0856
315611	6Z1-036WIND	9.0553	Adder	10.65
901082	W1-029 E	43.7565	Adder	51.48
913392	Y1-086 E	3.1031	Adder	3.65
916042	**Z1-036 E (Suspended)**	**60.6702**	**Adder**	**71.38**
916192	Z1-068 E	3.2337	50/50	3.2337
917122	Z2-027 E	1.4815	Adder	1.74
919152	AA1-139 E	9.3156	Adder	10.96
923831	AB2-022 C	3.2532	Adder	3.83
923832	AB2-022 E	1.7517	Adder	2.06
925522	AC1-027 E	1.9684	50/50	1.9684
926661	AC1-147 C	3.2712	Adder	3.85
926662	AC1-147 E	1.9212	Adder	2.26
926751	AC1-161 C O1	61.2618	50/50	61.2618
926752	AC1-161 E O1	26.1510	50/50	26.1510
932041	AC2-012 C	14.7981	Adder	17.41
932042	AC2-012 E	24.1442	Adder	28.4
933291	AC2-141 C	61.2618	50/50	61.2618
933292	AC2-141 E	26.1510	50/50	26.1510
933731	AC2-196 C	3.1079	50/50	3.1079
933732	AC2-196 E	2.0699	50/50	2.0699
934061	AD1-033 C	13.0360	50/50	13.0360
934062	AD1-033 E	8.6906	50/50	8.6906
935111	AD1-144 C	2.2821	Adder	2.68
935112	AD1-144 E	1.2469	Adder	1.47
937221	AD2-160 C O1	10.0453	50/50	10.0453
937222	AD2-160 E O1	5.2677	50/50	5.2677
937541	AD2-215 C	2.3057	Adder	2.71
937542	AD2-215 E	1.2234	Adder	1.44
938491	AE1-068 C O1	77.0705	Adder	90.67
938492	AE1-068 E O1	42.5670	Adder	50.08
938501	AE1-069 C O1	60.1686	Adder	70.79
938502	AE1-069 E O1	34.3990	Adder	40.47
938531	AE1-072 C O1	25.3542	Adder	29.83
938532	AE1-072 E O1	13.2171	Adder	15.55

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
939411	AE1-173 C	150.3216	50/50	150.3216
939412	AE1-173 E	100.2144	50/50	100.2144
940251	AE2-007 O1	297.6047	50/50	297.6047
940471	AE2-031 C	42.0421	Adder	49.46
940472	AE2-031 E	28.0280	Adder	32.97
940641	AE2-051 C O1	28.1844	50/50	28.1844
940642	AE2-051 E O1	18.7896	50/50	18.7896
941031	AE2-094 C	50.6856	Adder	59.63
941032	AE2-094 E	22.7009	Adder	26.71
941101	AE2-104 C O1	4.3190	Adder	5.08
941102	AE2-104 E O1	6.8665	Adder	8.08
941281	AE2-122 C O1	48.9634	50/50	48.9634
941282	AE2-122 E O1	197.5794	50/50	197.5794
941291	AE2-123 C O1	50.3193	50/50	50.3193
941292	AE2-123 E O1	196.2236	50/50	196.2236
941301	AE2-124 C O1	45.7974	50/50	45.7974
941302	AE2-124 E O1	200.9534	50/50	200.9534
941501	AE2-147 C	21.7574	Adder	25.6
941502	AE2-147 E	14.5049	Adder	17.06
941591	AE2-156 O1	30.6390	50/50	30.6390
942131	AE2-225 C	2.9816	Adder	3.51
942132	AE2-225 E	1.9877	Adder	2.34
942171	AE2-229 C	2.9816	Adder	3.51
942172	AE2-229 E	1.9877	Adder	2.34
942401	AE2-253 C	10.5660	50/50	10.5660
942402	AE2-253 E	4.7470	50/50	4.7470
942851	AE2-304 C	0.8540	Adder	1.0
942852	AE2-304 E	0.3321	Adder	0.39
942931	AE2-313 C	45.5214	Adder	53.55
942932	AE2-313 E	30.3476	Adder	35.7
943611	AF1-032 C	2.4349	Adder	2.86
943612	AF1-032 E	1.2920	Adder	1.52
944011	AF1-069 C	16.5609	Adder	19.48
944012	AF1-069 E	6.4335	Adder	7.57
944581	AF1-123 C O1	86.3169	50/50	86.3169
944582	AF1-123 E O1	197.6415	50/50	197.6415
944591	AF1-124 C O1	86.3169	50/50	86.3169
944592	AF1-124 E O1	197.6415	50/50	197.6415
944601	AF1-125 C O1	86.3169	50/50	86.3169
944602	AF1-125 E O1	197.6415	50/50	197.6415
944871	AF1-152 C	7.2525	Adder	8.53
944872	AF1-152 E	4.8350	Adder	5.69
945711	AF1-236 C O1	28.4681	Adder	33.49
945712	AF1-236 E O1	46.4479	Adder	54.64
WEC	WEC	0.6911	Confirmed LTF	0.6911
LGEE	LGEE	1.3207	Confirmed LTF	1.3207
CPLE	CPLE	9.4045	Confirmed LTF	9.4045
CBM-W2	CBM-W2	31.5970	Confirmed LTF	31.5970
NY	NY	1.7049	Confirmed LTF	1.7049
TVA	TVA	6.9132	Confirmed LTF	6.9132
O-066	O-066	23.1370	Confirmed LTF	23.1370
CBM-S2	CBM-S2	63.0540	Confirmed LTF	63.0540

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
CBM-S1	CBM-S1	37.9140	Confirmed LTF	37.9140
G-007	G-007	3.6067	Confirmed LTF	3.6067
MADISON	MADISON	2.2740	Confirmed LTF	2.2740
MEC	MEC	4.4587	Confirmed LTF	4.4587
AA2-074	AA2-074	6.4062	LTF	6.4062
CBM-W1	CBM-W1	25.2077	Confirmed LTF	25.2077

11.7.24 Index 24

ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC|DC	MW IMPACT
42881914	314934	8SPOTSYL	DVP	314916	8MORRSVL	DVP	1	DVP_P1-2: LN 552	single	3218.56	122.48	122.86	AC	55.44

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
314236	6NRTHEST	0.2276	80/20	0.2276
314250	6ROCKVILLE	0.4185	80/20	0.4185
314309	6IRON208	0.5490	80/20	0.5490
314314	3LOCKS	0.3667	80/20	0.3667
315065	**1CHESTF6 (Deactivation : 31/05/2023)**	**24.9316**	**80/20**	**24.9316**
315067	1DARBY 1	3.1321	80/20	3.1321
315068	1DARBY 2	3.1357	80/20	3.1357
315069	1DARBY 3	3.1467	80/20	3.1467
315070	1DARBY 4	3.1504	80/20	3.1504
315074	**1HOPCGN1 (Deactivation : 25/06/2019)**	**8.1378**	**Adder**	**9.57**
315075	**1HOPCGN2 (Deactivation : 25/06/2019)**	**8.0324**	**Adder**	**9.45**
315077	1HOPHCF1	3.0397	80/20	3.0397
315078	1HOPHCF2	3.0397	80/20	3.0397
315079	1HOPHCF3	3.0397	80/20	3.0397
315080	1HOPHCF4	4.6145	80/20	4.6145
315083	**1SPRUNCA (Deactivation : 12/01/2021)**	**12.3534**	**80/20**	**12.3534**
315084	**1SPRUNCB (Deactivation : 12/01/2021)**	**12.3534**	**80/20**	**12.3534**
315108	1ELIZAR1	4.0080	80/20	4.0080
315109	1ELIZAR2	3.9383	80/20	3.9383
315110	1ELIZAR3	4.0592	80/20	4.0592
315225	1N ANNA1	60.9305	80/20	60.9305
315226	1N ANNA2	60.9562	80/20	60.9562
315233	1SURRY 2	31.0442	80/20	31.0442
315611	6Z1-036WIND	6.5315	Adder	7.68
923801	AB2-015 C OP	8.1834	Adder	9.63
923831	AB2-022 C	2.2376	Adder	2.63
924241	AB2-068 OP	184.6419	Adder	217.23
925021	AB2-158 C	2.2597	80/20	2.2597
925051	**AB2-160 C O1 (Suspended)**	**6.2934**	**80/20**	**6.2934**
925061	**AB2-161 C O1 (Suspended)**	**3.3024**	**Adder**	**3.89**
925331	AB2-190 C	19.6540	Adder	23.12
925861	AC1-065 C	3.1877	Adder	3.75
926001	**AC1-076 C (Suspended)**	**6.0854**	**80/20**	**6.0854**
926291	**AC1-107 O1 (Suspended)**	**278.7048**	**Adder**	**327.89**
926661	AC1-147 C	2.2142	Adder	2.6

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
926731	AC1-158 C	32.6598	80/20	32.6598
926751	AC1-161 C O1	35.1858	80/20	35.1858
926781	AC1-164 C	38.2999	Adder	45.06
927041	AC1-191 C O1	8.9768	Adder	10.56
932041	AC2-012 C	10.0166	Adder	11.78
932501	AC2-070 C	1.6000	Adder	1.88
932581	AC2-078 C O1	3.9911	Adder	4.7
932591	AC2-079 C O1	5.5959	Adder	6.58
932831	AC2-110 C	1.2751	Adder	1.5
933261	AC2-137 C	1.9876	Adder	2.34
933291	AC2-141 C	35.1858	80/20	35.1858
933731	AC2-196 C	1.7529	Adder	2.06
934011	AD1-025 C	16.5272	Adder	19.44
934061	AD1-033 C	7.3631	Adder	8.66
934141	AD1-041 C	5.0090	Adder	5.89
934571	AD1-082 C	7.5259	Adder	8.85
935111	AD1-144 C	1.6864	Adder	1.98
935161	AD1-151 C O1	15.7934	Adder	18.58
936041	AD2-007 C	0.7895	Adder	0.93
936051	AD2-008 C	2.8774	Adder	3.39
936151	AD2-021	0.2267	Adder	0.27
936301	AD2-039 C	1.2751	Adder	1.5
936661	AD2-085 C	3.3580	Adder	3.95
936761	AD2-097 C	0.4150	80/20	0.4150
937221	AD2-160 C O1	5.7207	Adder	6.73
937251	**AD2-164 (Withdrawn : 06/30/2020)**	**4.6572**	**Adder**	**5.48**
937541	AD2-215 C	1.7038	Adder	2.0
938031	AE1-004 C	1.2751	Adder	1.5
938491	AE1-068 C O1	56.2026	Adder	66.12
938501	AE1-069 C O1	44.0330	Adder	51.8
938531	AE1-072 C O1	17.1257	Adder	20.15
938551	AE1-074 C	2.9098	80/20	2.9098
938561	AE1-075 C	1.9905	Adder	2.34
938631	AE1-085 C O1	8.7435	Adder	10.29
938771	AE1-103 C O1	3.4615	Adder	4.07
939191	AE1-149 C O1	10.5167	Adder	12.37
939231	AE1-154 C	2.0916	80/20	2.0916
939261	AE1-157 C O1	12.7895	Adder	15.05
939271	AE1-158 C O1	13.0526	Adder	15.36
939311	AE1-162 C	2.1055	Adder	2.48
939411	AE1-173 C	101.9568	80/20	101.9568
939421	**AE1-174 C (Withdrawn : 06/16/2020)**	**0.3486**	**Adder**	**0.41**
939431	AE1-175 C	2.3182	Adder	2.73
939611	AE1-191 C	10.0179	Adder	11.79
939751	AE1-206 C O1	29.4203	Adder	34.61
940061	AE2-000B C	10.4285	Adder	12.27
940231	AE2-005 C	1.2751	Adder	1.5
940251	AE2-007 O1	200.1287	80/20	200.1287
940431	AE2-027 C O1	14.8946	80/20	14.8946
940471	AE2-031 C	36.0702	80/20	36.0702
940481	AE2-033 C	15.0173	Adder	17.67

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
940541	AE2-040 O1	2.6693	Adder	3.14
940551	AE2-041 O1	6.7320	Adder	7.92
940641	AE2-051 C O1	19.3023	80/20	19.3023
940651	AE2-052	3.5056	Adder	4.12
940891	AE2-078 C	2.3115	Adder	2.72
940901	AE2-079 C	2.3115	Adder	2.72
940911	**AE2-080 C (Withdrawn : 04/28/2020)**	**2.3115**	**Adder**	**2.72**
941031	AE2-094 C	43.2053	80/20	43.2053
941101	AE2-104 C O1	3.2640	Adder	3.84
941281	AE2-122 C O1	27.8788	Adder	32.8
941291	AE2-123 C O1	28.6507	Adder	33.71
941301	AE2-124 C O1	26.0491	Adder	30.65
941381	**AE2-134 (Suspended)**	**4.1933**	**80/20**	**4.1933**
941501	AE2-147 C	15.3375	Adder	18.04
941581	AE2-155 C	0.6087	Adder	0.72
941591	AE2-156 O1	20.6800	80/20	20.6800
942001	AE2-212 C	2.4892	80/20	2.4892
942131	AE2-225 C	2.0824	Adder	2.45
942151	AE2-227 C	2.4962	80/20	2.4962
942161	AE2-228 C	2.4906	80/20	2.4906
942171	AE2-229 C	2.0824	Adder	2.45
942191	AE2-231 C O1	4.3828	Adder	5.16
942341	AE2-247 C	1.4556	Adder	1.71
942371	AE2-250 C O1	11.1791	80/20	11.1791
942401	AE2-253 C	6.0172	Adder	7.08
942551	AE2-270	26.3224	Adder	30.97
942851	AE2-304 C	0.6082	Adder	0.72
942931	AE2-313 C	39.0553	80/20	39.0553
943431	AF1-014 C	1.2080	Adder	1.42
943461	AF1-017 C	1.3169	Adder	1.55
943471	AF1-018	6.7320	Adder	7.92
943611	AF1-032 C	1.7007	Adder	2.0
943621	AF1-033 C	2.3115	Adder	2.72
944011	AF1-069 C	14.1168	80/20	14.1168
944111	AF1-079 C	3.9740	80/20	3.9740
944501	AF1-115 C O1	7.0397	Adder	8.28
944581	AF1-123 C O1	55.4420	80/20	55.4420
944591	AF1-124 C O1	55.4420	80/20	55.4420
944601	AF1-125 C O1	55.4420	80/20	55.4420
944631	AF1-128 O1	45.9695	Adder	54.08
944871	AF1-152 C	5.1125	Adder	6.01
945361	AF1-201 C O1	15.4584	Adder	18.19
945711	AF1-236 C O1	14.6801	Adder	17.27
946001	AF1-265	25.8073	Adder	30.36
946011	AF1-266	12.5706	Adder	14.79
946261	AF1-291 C	2.4905	80/20	2.4905
946371	AF1-301 C	16.1530	80/20	16.1530
WEC	WEC	0.6473	Confirmed LTF	0.6473
LGEE	LGEE	1.3161	Confirmed LTF	1.3161
CPLE	CPLE	8.2423	Confirmed LTF	8.2423
CBM-W2	CBM-W2	30.3440	Confirmed LTF	30.3440

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
NY	NY	2.9121	Confirmed LTF	2.9121
TVA	TVA	6.7466	Confirmed LTF	6.7466
CBM-S2	CBM-S2	57.0833	Confirmed LTF	57.0833
CBM-S1	CBM-S1	37.0790	Confirmed LTF	37.0790
MADISON	MADISON	2.1047	Confirmed LTF	2.1047
MEC	MEC	4.2395	Confirmed LTF	4.2395
AA2-074	AA2-074	5.6155	LTF	5.6155
CBM-W1	CBM-W1	22.7056	Confirmed LTF	22.7056

11.7.25 Index 25

ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC|DC	MW IMPACT
42881815	927250	AC1-221 TAP	DVP	304070	6PERSON230 T	CPLE	1	DVP_P1-2: LN 570	single	718.0	104.44	106.76	AC	17.18

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
313853	3PONTONDP	0.0726	80/20	0.0726
314333	6POWHATN	0.1597	80/20	0.1597
314429	3JTRSVLE	0.2903	80/20	0.2903
314677	6BUCKING	0.2459	80/20	0.2459
314704	3LAWRENC	0.1296	80/20	0.1296
314947	8GREENSVILLE	29.3573	80/20	29.3573
315102	1BRUNSWICKG1	5.0143	80/20	5.0143
315103	1BRUNSWICKG2	5.0143	80/20	5.0143
315104	1BRUNSWICKG3	5.0143	80/20	5.0143
315105	1BRUNSWICKS1	10.4172	80/20	10.4172
315108	1ELIZAR1	1.2217	80/20	1.2217
315109	1ELIZAR2	1.2004	80/20	1.2004
315110	1ELIZAR3	1.2373	80/20	1.2373
315153	1CLOVER1	18.3055	80/20	18.3055
315154	1CLOVER2	18.1231	80/20	18.1231
315191	1BEARGRDN G1	1.9941	80/20	1.9941
315192	1BEARGRDN G2	1.9941	80/20	1.9941
315193	1BEARGRDN S1	4.1041	80/20	4.1041
315233	1SURRY 2	9.7196	80/20	9.7196
315266	1PLYWOOD A	2.2188	80/20	2.2188
920291	AA2-127	0.4143	80/20	0.4143
924021	AB2-043 C O1	0.4294	80/20	0.4294
924161	AB2-060 C OP	1.2365	80/20	1.2365
924301	**AB2-077 C O1 (Suspended)**	**1.5619**	**80/20**	**1.5619**
924311	**AB2-078 C O1 (Suspended)**	**1.5619**	**80/20**	**1.5619**
924321	**AB2-079 C O1 (Suspended)**	**1.5619**	**80/20**	**1.5619**
925611	AC1-036 C	0.7303	80/20	0.7303
925831	AC1-062	0.0431	80/20	0.0431
925991	AC1-075 C	7.3605	80/20	7.3605
926021	AC1-080 C	2.4599	80/20	2.4599
926271	**AC1-105 C O1 (Suspended)**	**9.4152**	**80/20**	**9.4152**
926751	AC1-161 C O1	11.6142	80/20	11.6142
927251	AC1-221 C	9.8823	80/20	9.8823
927261	AC1-222 C	6.6002	80/20	6.6002
932511	AC2-071 C	1.3679	80/20	1.3679
932761	AC2-100 C	22.7428	80/20	22.7428
933291	AC2-141 C	11.6142	80/20	11.6142
933501	AC2-165 C	3.7973	80/20	3.7973

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
934311	AD1-055 C	4.5827	80/20	4.5827
934341	AD1-058 C	24.7734	80/20	24.7734
934611	AD1-087 C O1	15.4256	80/20	15.4256
934621	AD1-088 C	11.6703	80/20	11.6703
934991	AD1-131 C	8.1224	80/20	8.1224
935171	AD1-152 C O1	15.3298	80/20	15.3298
935221	AD1-157 C	1.1517	80/20	1.1517
936261	AD2-033 C	10.0012	80/20	10.0012
936361	AD2-046 C O1	3.9429	80/20	3.9429
936481	AD2-063 C O1	11.5398	80/20	11.5398
937481	AD2-202 C O1	4.0879	80/20	4.0879
938371	AE1-056 C	4.9652	80/20	4.9652
938491	AE1-068 C O1	32.0747	80/20	32.0747
938501	AE1-069 C O1	25.8801	80/20	25.8801
938561	AE1-075 C	0.7906	80/20	0.7906
939181	AE1-148 C O1	4.0408	80/20	4.0408
939411	AE1-173 C	37.5216	80/20	37.5216
940241	AE2-006	0.3716	80/20	0.3716
940251	AE2-007 O1	60.9685	80/20	60.9685
940471	AE2-031 C	18.1586	80/20	18.1586
940641	AE2-051 C O1	7.5267	80/20	7.5267
940661	AE2-053 O1	1.4966	80/20	1.4966
941031	AE2-094 C	19.8145	80/20	19.8145
941591	AE2-156 O1	6.2920	80/20	6.2920
941791	AE2-182 C	1.8960	80/20	1.8960
942451	AE2-258	1.8086	80/20	1.8086
942461	AE2-259 C O1	7.6710	80/20	7.6710
942751	AE2-291 C O1	9.2290	80/20	9.2290
942761	AE2-292 C O1	11.4910	80/20	11.4910
942931	AE2-313 C	19.6614	80/20	19.6614
943901	AF1-058 C	3.7817	80/20	3.7817
943911	AF1-059	8.9160	80/20	8.9160
944011	AF1-069 C	6.4742	80/20	6.4742
944581	AF1-123 C O1	17.1788	80/20	17.1788
944591	AF1-124 C O1	17.1788	80/20	17.1788
944601	AF1-125 C O1	17.1788	80/20	17.1788
945811	AF1-246 C O1	8.1551	80/20	8.1551
946301	AF1-294 C	3.1498	80/20	3.1498
NEWTON	NEWTON	4.1916	Confirmed LTF	4.1916
FARMERCITY	FARMERCITY	0.2422	Confirmed LTF	0.2422
G-007A	G-007A	3.0808	Confirmed LTF	3.0808
VFT	VFT	8.1980	Confirmed LTF	8.1980
PRAIRIE	PRAIRIE	11.4143	Confirmed LTF	11.4143
AC1-131	AC1-131	10.9298	LTF	10.9298
COFFEEN	COFFEEN	0.7836	Confirmed LTF	0.7836
CHEOAH	CHEOAH	3.5530	Confirmed LTF	3.5530
EDWARDS	EDWARDS	1.2576	Confirmed LTF	1.2576
TILTON	TILTON	2.2208	Confirmed LTF	2.2208
GIBSON	GIBSON	2.0164	Confirmed LTF	2.0164
CALDERWOOD	CALDERWOOD	3.4596	Confirmed LTF	3.4596
BLUEG	BLUEG	6.2062	Confirmed LTF	6.2062
TRIMBLE	TRIMBLE	1.9678	Confirmed LTF	1.9678

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
CATAWBA	CATAWBA	3.8521	Confirmed LTF	3.8521

11.7.26 Index 26

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
89978922	934610	AD1-087 TAP	DVP	314697	6SEDGE HILL	DVP	1	DVP_P1-2: LN 570	single	814.98	103.71	106.15	AC	20.18

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
314295	6BIRDNECK	0.0193	80/20	0.0193
314421	6WINCHST	0.0562	80/20	0.0562
314491	3PENDLTN	0.1441	80/20	0.1441
314507	3THOMPSN	0.1462	80/20	0.1462
314677	6BUCKING	0.2249	80/20	0.2249
314947	8GREENSVILLE	36.1618	80/20	36.1618
315092	1YORKTN3	9.8659	80/20	9.8659
315098	1CHESPKA	0.1939	80/20	0.1939
315099	**1CHESPKB (Deactivation : 31/05/2019)**	**1.2324**	**80/20**	**1.2324**
315102	1BRUNSWICKG1	6.1931	80/20	6.1931
315103	1BRUNSWICKG2	6.1931	80/20	6.1931
315104	1BRUNSWICKG3	6.1931	80/20	6.1931
315105	1BRUNSWICKS1	12.8662	80/20	12.8662
315108	1ELIZAR1	1.4307	80/20	1.4307
315109	1ELIZAR2	1.4059	80/20	1.4059
315110	1ELIZAR3	1.4490	80/20	1.4490
315116	1SURRY 1	10.3456	80/20	10.3456
315120	1GRAVEL4	1.0644	80/20	1.0644
315153	1CLOVER1	23.8378	80/20	23.8378
315154	1CLOVER2	23.6003	80/20	23.6003
315233	1SURRY 2	11.4257	80/20	11.4257
315260	1GOSPORTA	0.1545	80/20	0.1545
315261	1GOSPORTB	0.1974	80/20	0.1974
315262	1GOSPORTC	0.1675	80/20	0.1675
925781	AC1-054 C O1	-3.8589	Adder	-4.54
925991	AC1-075 C	-8.3468	Adder	-9.82
926021	AC1-080 C	-2.7895	Adder	-3.28
926271	**AC1-105 C O1 (Suspended)**	**-8.9982**	**Adder**	**-10.59**
926641	AC1-145 C	-2.0399	Adder	-2.4
926661	AC1-147 C	0.9257	80/20	0.9257
926751	AC1-161 C O1	13.7453	80/20	13.7453
927251	AC1-221 C	-3.2203	Adder	-3.79
927261	AC1-222 C	-6.5498	Adder	-7.71
932041	AC2-012 C	4.1878	80/20	4.1878
932511	AC2-071 C	1.2509	80/20	1.2509
933291	AC2-141 C	13.7453	80/20	13.7453
933731	AC2-196 C	0.7208	80/20	0.7208
934061	AD1-033 C	3.0299	80/20	3.0299
934311	AD1-055 C	-4.5477	Adder	-5.35
934341	AD1-058 C	-8.0727	Adder	-9.5

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
934611	AD1-087 C O1	20.6367	80/20	20.6367
934621	AD1-088 C	12.8106	80/20	12.8106
935171	AD1-152 C O1	20.5085	80/20	20.5085
937251	AD2-164 (Withdrawn : 06/30/2020)	1.8687	80/20	1.8687
937481	AD2-202 C O1	5.4689	80/20	5.4689
938491	AE1-068 C O1	39.4218	80/20	39.4218
938501	AE1-069 C O1	31.8787	80/20	31.8787
939311	AE1-162 C	0.8519	80/20	0.8519
939411	AE1-173 C	44.9760	80/20	44.9760
940251	AE2-007 O1	71.4089	80/20	71.4089
940471	AE2-031 C	22.4216	80/20	22.4216
940641	AE2-051 C O1	9.0792	80/20	9.0792
940891	AE2-078 C	0.9156	80/20	0.9156
940901	AE2-079 C	0.9156	80/20	0.9156
940911	AE2-080 C (Withdrawn : 04/28/2020)	0.9156	80/20	0.9156
941031	AE2-094 C	24.2486	80/20	24.2486
941281	AE2-122 C O1	11.5282	80/20	11.5282
941291	AE2-123 C O1	11.8474	80/20	11.8474
941301	AE2-124 C O1	10.7588	80/20	10.7588
941591	AE2-156 O1	7.3680	80/20	7.3680
941791	AE2-182 C	2.0813	80/20	2.0813
942931	AE2-313 C	24.2772	80/20	24.2772
943621	AF1-033 C	0.9156	80/20	0.9156
944011	AF1-069 C	7.9229	80/20	7.9229
944501	AF1-115 C O1	2.7883	80/20	2.7883
944581	AF1-123 C O1	20.1802	80/20	20.1802
944591	AF1-124 C O1	20.1802	80/20	20.1802
944601	AF1-125 C O1	20.1802	80/20	20.1802
945811	AF1-246 C O1	10.5290	80/20	10.5290
NEWTON	NEWTON	4.2969	Confirmed LTF	4.2969
FARMERCITY	FARMERCITY	0.2443	Confirmed LTF	0.2443
G-007A	G-007A	3.4212	Confirmed LTF	3.4212
VFT	VFT	9.1009	Confirmed LTF	9.1009
PRAIRIE	PRAIRIE	11.5047	Confirmed LTF	11.5047
AC1-131	AC1-131	9.7222	LTF	9.7222
COFFEEN	COFFEEN	0.8016	Confirmed LTF	0.8016
CHEOAH	CHEOAH	3.4189	Confirmed LTF	3.4189
EDWARDS	EDWARDS	1.2989	Confirmed LTF	1.2989
TILTON	TILTON	2.3071	Confirmed LTF	2.3071
GIBSON	GIBSON	2.0874	Confirmed LTF	2.0874
CALDERWOOD	CALDERWOOD	3.3379	Confirmed LTF	3.3379
BLUEG	BLUEG	6.4805	Confirmed LTF	6.4805
TRIMBLE	TRIMBLE	2.0585	Confirmed LTF	2.0585
CATAWBA	CATAWBA	3.5325	Confirmed LTF	3.5325

11.8 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
AA1-139	Hickory-Shawboro 230kV	In Service
AA1-145	Four Rivers 230kV	In Service
AA2-074	CPLE-PJM	Confirmed
AA2-127	Bear Garden 230kV	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
AB2-015	Franklin 115kV	Engineering and Procurement
AB2-022	Elizabeth City 34.5kV	Engineering and Procurement
AB2-031	Brink-Trego 115kV	Engineering and Procurement
AB2-040	Brink 115kV	Suspended
AB2-043	Chase City 115kV	Under Construction
AB2-050	Four Rivers 230kV	In Service
AB2-060	Chase City-Lunenburg 115kV	Under Construction
AB2-068	Chickahominy 500kV	Engineering and Procurement
AB2-077	Buggs Island-Chase City 115kV	Suspended
AB2-078	Buggs Island-Chase City 115kV	Suspended
AB2-079	Buggs Island-Chase City 115kV	Suspended
AB2-099	Ahoskie 34.5kV	Suspended
AB2-100	Clubhouse-Lakeview 230kV	Under Construction
AB2-134	Hopewell-Surry 230kV	In Service
AB2-158	Louisa-South Anna 230kV	Under Construction
AB2-160	Reams 115kV	Suspended
AB2-161	Waverly #2 DP 115kV	Suspended
AB2-174	Emporia-Trego 115kV	Under Construction
AB2-190	Hopewell-Surry 230kV	Engineering and Procurement
AC1-027	Pendleton 34.5kV	In Service
AC1-034	Heartsease DP - Mayo Dunbar 115kV	Active
AC1-036	Twittys Creek 34.5kV	Engineering and Procurement
AC1-043	Mountain Run-Mitchell 115 kV	Suspended
AC1-054	Kerr Dam–Eatons Ferry 115 kV	Engineering and Procurement
AC1-062	Jetersville 34.5kV	In Service
AC1-065	Harmony Village-Shackleford 115kV	Engineering and Procurement
AC1-075	Perth-Hickory Grove 115kV	Engineering and Procurement
AC1-076	Locust Grove-Paytes 115kV	Suspended
AC1-080	Perth-Hickory Grove 115kV	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
AC1-105	Halifax-Mt. Laurel 115kV	Suspended
AC1-107	Chickahominy 500kV	Suspended

Queue Number	Project Name	Status
AC1-120	Mitchell-Mountain Run 115kV	Engineering and Procurement
AC1-121	Mitchell-Mountain Run 115kV	Engineering and Procurement
AC1-131	PJM-CPLE	Confirmed
AC1-134	Four Rivers 230kV	In Service
AC1-143	Brandy-Remington 115kV	Active
AC1-145	Gretna DP 69 kV	Engineering and Procurement
AC1-147	Grassfield 34.5kV	Engineering and Procurement
AC1-158	Spotsylvania 500kV	Under Construction
AC1-161	Septa 500kV	Active
AC1-164	Chickahominy 230kV	Engineering and Procurement
AC1-189	Chinquapin-Everetts 230kV	Active
AC1-191	Elmont 115kV	Active
AC1-208	Cox-Whitakers 115kV	Active
AC1-216	Hopewell-Surry 230kV	Under Construction
AC1-221	Halifax-Person 230kV	Engineering and Procurement
AC1-222	Crystal Hill-Halifax 115kV	Engineering and Procurement
AC2-012	Grassfield-Great Bridge 115kV	Active
AC2-070	Old Church 34.5kV	Engineering and Procurement
AC2-071	Buckingham 35kV	Engineering and Procurement
AC2-078	Disputanta-Waverly 115kV	Active
AC2-079	Ivor-Oakridge 115kV	Active
AC2-084	Dawson-South Justice 115kV	Active
AC2-100	Halifax-Person 230kV	Active
AC2-110	Harmony Village-Shackleford 115kV	Engineering and Procurement
AC2-125	Ladysmith 230 kV I	Engineering and Procurement
AC2-126	Ladysmith 230 kV II	Engineering and Procurement
AC2-130	Chesterfield 230kV 5	In Service
AC2-133	Warren County 500kV	In Service
AC2-137	Elko 34.5kV	Under Construction
AC2-138	Northern Neck 34.5kV	Under Construction
AC2-141	Septa 500kV	Active
AC2-165	Bremo-Powhatan 230kV	Active
AC2-196	Fentress 34.5kV	Engineering and Procurement
AD1-023	Cashie-Trowbridge 230 kV	Active
AD1-025	Hopewell-Surry 230 kV	Active
AD1-033	Fentress-Landstown 230 kV	Active
AD1-041	Harmony Village-Shackleford 115 kV	Active
AD1-046	Oak Grove 34.5 kV III	Engineering and Procurement
AD1-055	Crystal Hill-Halifax 115 kV	Engineering and Procurement
AD1-057	Hornertown-Hathaway 230 kV	Active
AD1-058	Halifax-Person 230 kV	Engineering and Procurement
AD1-076	Trowbridge 230 kV	Active
AD1-082	Bakers Pond-Ivor 115kV	Active
AD1-087	Clover-Sedge Hill 230 kV	Active
AD1-088	Briery-Clover 230 kV	Active
AD1-105	Kings Dominion DP 115 kV	Active
AD1-115	Mountain Run-Mitchell 115 kV	Active
AD1-131	Sedge Hill-Person 230 kV	Active
AD1-144	Kings Fork 34.5 kV	Engineering and Procurement
AD1-151	Hopewell-Surry 230 kV	Active
AD1-152	Clover-Sedge Hill 230 kV	Active
AD1-157	South Creek 34.5 kV	Engineering and Procurement

Queue Number	Project Name	Status
AD2-007	Hopewell-Surry 230 kV	Active
AD2-008	Hopewell-Surry 230 kV	Active
AD2-021	Elko 34.5 kV	Under Construction
AD2-033	Chase City-Lunenburg 115 kV	Active
AD2-039	Harmony Village-Shackleford 115 kV	Engineering and Procurement
AD2-044	Northern Neck 34.5 kV	Under Construction
AD2-046	Boydton DP-Kerr Dam 115 kV	Active
AD2-051	Earleys – Northampton 230kV	Active
AD2-063	Central-Chase City 115kV	Active
AD2-073	Sanders DP 230 kV	Active
AD2-074	Garner DP-Lancaster 115 kV	Active
AD2-085	Myrtle-Windsor DP 115kV	Active
AD2-097	Spruance NUG 230kV	In Service
AD2-160	Hickory-Moyock 230kV	Active
AD2-164	Peninsula 34.5kV	Withdrawn
AD2-202	Clover-Sedge Hill 230kV	Active
AD2-215	Kings Fork 34.5 kV	Engineering and Procurement
AE1-004	Harmony Village-Shackleford 115 kV	Engineering and Procurement
AE1-026	Cashie 230 kV	Active
AE1-035	Earleys 230 kV	Engineering and Procurement
AE1-044	Morrisville 230 kV	Active
AE1-056	Red House-South Creek 115 kV	Active
AE1-068	Carson-Rogers Rd 500 kV	Active
AE1-069	Carson-Rogers Road 500 kV	Active
AE1-072	Shawboro-Sligo 230 kV	Active
AE1-074	Winterpock 34.5 kV	Engineering and Procurement
AE1-075	Powhatan 34.5 kV	Engineering and Procurement
AE1-085	Bakers Pond-Bell Ave 115 kV	Active
AE1-103	Holland-Union Camp 115 kV	Active
AE1-124	Oak Grove 34.5 kV	Engineering and Procurement
AE1-148	Kerr Dam-Ridge Rd 115 kV	Active
AE1-149	Disputanta-Poe 115 kV	Active
AE1-153	Remington-Gordonsville 230 kV	Active
AE1-154	Louisa-South Anna 230 kV	Engineering and Procurement
AE1-155	Garner-Northern Neck 115 kV	Active
AE1-157	Ladysmith CT-St. Johns 230 kV	Active
AE1-158	Ladysmith CT-St. Johns 230 kV	Active
AE1-162	Smithfield 34.5 kV	Engineering and Procurement
AE1-173	Carson-Suffolk 500 kV	Active
AE1-174	Light Foot 34.5 kV	Withdrawn
AE1-175	Light Foot 34.5 kV	Engineering and Procurement
AE1-191	Harmony Village-Shackleford 115 kV	Active
AE1-206	Four Rivers-Hanover 230 kV	Active
AE2-000B	N/A	N/A
AE2-005	Harmony Village-Shackleford 115 kV	Engineering and Procurement
AE2-006	Twittys Creek 34.5 kV	Engineering and Procurement
AE2-007	Chesapeake 230 kV	Active
AE2-027	Harrowgate-Locks 115kV	Active
AE2-031	Carson-Rawlings 500 kV	Active
AE2-033	Clubhouse-Sappony 230 kV	Active
AE2-034	Mackeys 230 kV	Active
AE2-040	Sapony 34.5 kV	Active

Queue Number	Project Name	Status
AE2-041	Harmony Village 230 kV	Active
AE2-044	Anaconda-Dunbar 115 kV	Active
AE2-051	Carson-Septa 500 kV	Active
AE2-052	Disputanta-Poe 115 kV	Active
AE2-053	Kerr Dam-Ridge Road 115 kV	Active
AE2-078	Poolesville 34.5 kV	Engineering and Procurement
AE2-079	Poolesville 34.5 kV	Engineering and Procurement
AE2-080	Poolesville 34.5 kV	Withdrawn
AE2-094	Carson-Rogers Road 500 kV	Active
AE2-104	Suffolk 115 kV	Active
AE2-122	Birdneck-Landstown 230 kV	Active
AE2-123	Birdneck-Landstown 230 kV	Active
AE2-124	Landstown 230 kV	Active
AE2-132	Remington CT 230 kV	In Service
AE2-134	Locust Grove-Paytes 115 kV	Suspended
AE2-147	Swamp 230 kV	Active
AE2-151	Earleys 34.5kV	Engineering and Procurement
AE2-155	Old Church 34.5 kV	Engineering and Procurement
AE2-156	Yadkin 115 kV	Active
AE2-182	Briery-Clover 230 kV	Active
AE2-190	Elk Run D.P.-Gainesville 230 kV	Active
AE2-212	Harrowgate 34 kV	Active
AE2-225	Suffolk 34 kV	Engineering and Procurement
AE2-227	Iron Bridge 34 kV	Active
AE2-228	Tyler 34 kv	Active
AE2-229	Suffolk 34 kV	Engineering and Procurement
AE2-231	St. Johns 115 kV	Active
AE2-247	Myrtle-Windsor 115 kV	Active
AE2-250	Purdy Sw.-Reams 115 kV	Active
AE2-253	Hickory-Moyock 230 kV	Active
AE2-258	Chase City 115 kV	Active
AE2-259	Curdsville-Willis Mtn 115 kV	Active
AE2-260	Clubhouse 230 kV	Active
AE2-270	Hopewell-Surry 230 kV	Active
AE2-291	Grit DP-Perth 115 kV	Active
AE2-292	Grit DP-Perth 115 kV	Active
AE2-304	South Hertford 34 kV	Engineering and Procurement
AE2-313	Carson-Rawlings 500 kV	Active
AE2-346	Ahoskie 34.5 kV	Active
AF1-014	Harmony Village-Shackleford 115 kV	Active
AF1-017	Myrtle-Windsor 115 kV	Active
AF1-018	Harmony Village 230 kV	Active
AF1-031	Kings Dominion DP 115 kV	Active
AF1-032	Suffolk 34.5 kV	Engineering and Procurement
AF1-033	Poolesville 34 kV	Engineering and Procurement
AF1-042	Garner DP-Lancaster 115 kV	Active
AF1-058	Welco 34.5 kV	Engineering and Procurement
AF1-059	Brodnax-South Hill 115 kV	Active
AF1-067	Kings Dominion DP 115 kV	Active
AF1-069	Carson-Rogers Rd 500 kV	Active
AF1-079	Louisa-South Anna 230 kV	Active
AF1-082	Heartsease-Mayo Dunbar DP	Active

Queue Number	Project Name	Status
AF1-114	Oak Grove-Dahlgren 230 kV	Active
AF1-115	Poolesville 230 kV	Active
AF1-123	Fentress 500 kV	Active
AF1-124	Fentress 500 kV	Active
AF1-125	Fentress 500 kV	Active
AF1-128	Chesterfield 230 kV	Active
AF1-152	Swamp 230 kV	Active
AF1-201	Hayes-Whitemarsh 115 kV	Active
AF1-236	Mackeys 230 kV	Active
AF1-246	Clover-Rawlings 500 kV	Active
AF1-248	Northern Neck 34.5 kV	Engineering and Procurement
AF1-265	Four Rivers-Hanover 230 kV	Active
AF1-266	Clubhouse-Sapony 230 kV	Active
AF1-291	Tyler 34.5 kV	Engineering and Procurement
AF1-292	Fields Crossroads 34.5 kV	Active
AF1-294	Jetersville-Ponton 115 kV	Active
AF1-301	Louisa-South Anna 230 kV	Active
W1-029	Winfall 230kV	In Service
Y1-086	Morgans Corner	In Service
Z1-036	WinFall-Chowan 230kV	Suspended
Z1-068	Birdneck 34.5kV	Under Construction
Z2-027	Pasquotank 34.5kV	In Service

11.9 Contingency Descriptions

Contingency Name	Contingency Definition
DVP_P1-2: LN 567	CONTINGENCY 'DVP_P1-2: LN 567' OPEN BRANCH FROM BUS 314903 TO BUS 314924 CKT 1 /* 8CHCKAHM 500.00 - 8SURRY 500.00 END
DVP_P1-2: LN 565	CONTINGENCY 'DVP_P1-2: LN 565' OPEN BRANCH FROM BUS 314927 TO BUS 314928 CKT 1 /* 8YADKIN 500.00 - 8SUFFOLK 500.00 END
DVP_P1-2: LN 563	CONTINGENCY 'DVP_P1-2: LN 563' OPEN BRANCH FROM BUS 314902 TO BUS 314914 CKT 1 /* 8CARSON 500.00 - 8MDLTHAN 500.00 END
DVP_P1-2: LN 561	CONTINGENCY 'DVP_P1-2: LN 561' OPEN BRANCH FROM BUS 314022 TO BUS 314904 CKT 2 /* 6CLIFTON 230.00 - 8CLIFTON 500.00 OPEN BRANCH FROM BUS 314904 TO BUS 314919 CKT 1 /* 8CLIFTON 500.00 - 8OX 500.00 END

Contingency Name	Contingency Definition
DVP_P4-2: 57302	CONTINGENCY 'DVP_P4-2: 57302' /* NORTH ANNA 500 KV OPEN BRANCH FROM BUS 314918 TO BUS 314934 CKT 1 /* 8NO ANNA 500.00 - 8SPOTSYL 500.00 OPEN BRANCH FROM BUS 314232 TO BUS 314918 CKT 1 /* 6NO ANNA 230.00 - 8NO ANNA 500.00 END
DVP_P1-2: LN 568	CONTINGENCY 'DVP_P1-2: LN 568' OPEN BRANCH FROM BUS 314911 TO BUS 314922 CKT 1 /* 8LADYSMITH 500.00 - 8POSSUM 500.00 END
DVP_P1-2: LN 569	CONTINGENCY 'DVP_P1-2: LN 569' OPEN BRANCH FROM BUS 314913 TO BUS 314916 CKT 1 /* 8LOUDOUN 500.00 - 8MORRSVL 500.00 END
DVP_P4-2: 568T575	CONTINGENCY 'DVP_P4-2: 568T575' /* LADYSMITH 500 KV OPEN BRANCH FROM BUS 314911 TO BUS 314922 CKT 1 /* 8LADYSMITH 500.00 - 8POSSUM 500.00 OPEN BRANCH FROM BUS 314911 TO BUS 314918 CKT 1 /* 8LADYSMITH 500.00 - 8NO ANNA 500.00 END
DVP_P4-2: 539T552	CONTINGENCY 'DVP_P4-2: 539T552' /* BRISTERS 500 KV OPEN BRANCH FROM BUS 314900 TO BUS 314919 CKT 1 /* 8BRISTER 500.00 - 8OX 500.00 OPEN BRANCH FROM BUS 314135 TO BUS 314905 CKT 1 /* 3CHANCE 115.00 - 8CHANCE 500.00 OPEN BRANCH FROM BUS 314900 TO BUS 314905 CKT 1 /* 8BRISTER 500.00 - 8CHANCE 500.00 END
DVP_P4-2: 545T552	CONTINGENCY 'DVP_P4-2: 545T552' /* BRISTERS 500 KV OPEN BRANCH FROM BUS 314900 TO BUS 314916 CKT 1 /* 8BRISTER 500.00 - 8MORRSVL 500.00 OPEN BRANCH FROM BUS 314135 TO BUS 314905 CKT 1 /* 3CHANCE 115.00 - 8CHANCE 500.00 OPEN BRANCH FROM BUS 314900 TO BUS 314905 CKT 1 /* 8BRISTER 500.00 - 8CHANCE 500.00 END
DVP_P4-2: H1T575	CONTINGENCY 'DVP_P4-2: H1T575' /* LADYSMITH 500 KV OPEN BRANCH FROM BUS 314911 TO BUS 314918 CKT 1 /* 8LADYSMITH 500.00 - 8NO ANNA 500.00 OPEN BRANCH FROM BUS 314196 TO BUS 314911 CKT 1 /* 6LADYSMITH 230.00 - 8LADYSMITH 500.00 END

Contingency Name	Contingency Definition
DVP_P4-2: 57502	CONTINGENCY 'DVP_P4-2: 57502' /* NORTH ANNA 500 KV OPEN BRANCH FROM BUS 314911 TO BUS 314918 CKT 1 /* 8LADYSMITH 500.00 - 8NO ANNA 500.00 OPEN BRANCH FROM BUS 314232 TO BUS 314918 CKT 1 /* 6NO ANNA 230.00 - 8NO ANNA 500.00 END
DVP_P4-2: WT576	CONTINGENCY 'DVP_P4-2: WT576' /* NORTH ANNA 500 KV OPEN BRANCH FROM BUS 314914 TO BUS 314918 CKT 1 /* 8MDLTHAN 500.00 - 8NO ANNA 500.00 OPEN BRANCH FROM BUS 314232 TO BUS 314918 CKT 2 /* 6NO ANNA 230.00 - 8NO ANNA 500.00 END
DVP_P1-2: LN 594	CONTINGENCY 'DVP_P1-2: LN 594' OPEN BRANCH FROM BUS 314916 TO BUS 314934 CKT 1 /* 8MORRSVL 500.00 - 8SPOTSYL 500.00 END
DVP_P4-2: 56372	CONTINGENCY 'DVP_P4-2: 56372' /* CARSON 500 KV OPEN BRANCH FROM BUS 314902 TO BUS 314914 CKT 1 /* 8CARSON 500.00 - 8MDLTHAN 500.00 OPEN BRANCH FROM BUS 314282 TO BUS 314902 CKT 1 /* 6CARSON 230.00 - 8CARSON 500.00 END
DVP_P4-2: 2110T2128	CONTINGENCY 'DVP_P4-2: 2110T2128' /* THRASHER 230 KV OPEN BRANCH FROM BUS 314480 TO BUS 314508 CKT 1 /* 6HUNTSMN 230.00 - 6THRASHER 230.00 OPEN BRANCH FROM BUS 314480 TO BUS 314537 CKT 1 /* 6HUNTSMN 230.00 - 6SUFFOLK 230.00 OPEN BUS 314480 /* ISLAND: 6HUNTSMN 230.00 OPEN BRANCH FROM BUS 314466 TO BUS 314508 CKT 1 /* 6FENTRES 230.00 - 6THRASHER 230.00 END
DVP_P4-2: 231T2128	CONTINGENCY 'DVP_P4-2: 231T2128' /* THRASHER 230 KV OPEN BRANCH FROM BUS 314481 TO BUS 314502 CKT 1 /* 6LANDSTN 230.00 - 6STUMPY 230.00 OPEN BRANCH FROM BUS 314502 TO BUS 314508 CKT 1 /* 6STUMPY 230.00 - 6THRASHER 230.00 OPEN BUS 314502 /* ISLAND: 6STUMPY 230.00 OPEN BRANCH FROM BUS 314466 TO BUS 314508 CKT 1 /* 6FENTRES 230.00 - 6THRASHER 230.00 END

Contingency Name	Contingency Definition
DVP_P1-2: LN 271-B	CONTINGENCY 'DVP_P1-2: LN 271-B' OPEN BRANCH FROM BUS 934060 TO BUS 314481 CKT 1 /* AD1-033 TAP 230.00 - 6LANDSTN 230.00 END
DVP_P4-2: 231T2026	CONTINGENCY 'DVP_P4-2: 231T2026' /* LANDSTOWN 230 KV OPEN BRANCH FROM BUS 314481 TO BUS 314502 CKT 1 /* 6LANDSTN 230.00 - 6STUMPY 230.00 OPEN BRANCH FROM BUS 314502 TO BUS 314508 CKT 1 /* 6STUMPY 230.00 - 6THRASHER 230.00 OPEN BUS 314502 /* ISLAND: 6STUMPY 230.00 OPEN BRANCH FROM BUS 314481 TO BUS 314486 CKT 1 /* 6LANDSTN 230.00 - 6LYNHAVN 230.00 END
DVP_P1-2: LN 552	CONTINGENCY 'DVP_P1-2: LN 552' OPEN BRANCH FROM BUS 314135 TO BUS 314905 CKT 1 /* 3CHANCE 115.00 - 8CHANCE 500.00 OPEN BRANCH FROM BUS 314900 TO BUS 314905 CKT 1 /* 8BRISTER 500.00 - 8CHANCE 500.00 END
DVP_P4-2: 573T594	CONTINGENCY 'DVP_P4-2: 573T594' /* SPOTSYLVANIA 500 KV OPEN BRANCH FROM BUS 314918 TO BUS 314934 CKT 1 /* 8NO ANNA 500.00 - 8SPOTSYL 500.00 OPEN BRANCH FROM BUS 314916 TO BUS 314934 CKT 1 /* 8MORRSVL 500.00 - 8SPOTSYL 500.00 END
DVP_P1-2: LN 557	CONTINGENCY 'DVP_P1-2: LN 557' OPEN BRANCH FROM BUS 314214 TO BUS 314903 CKT 1 /* 6CHCKAHM 230.00 - 8CHCKAHM 500.00 OPEN BRANCH FROM BUS 314903 TO BUS 314908 CKT 1 /* 8CHCKAHM 500.00 - 8ELMONT 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_P1-2: LN 573	CONTINGENCY 'DVP_P1-2: LN 573' OPEN BRANCH FROM BUS 314918 TO BUS 314934 CKT 1 /* 8NO ANNA 500.00 - 8SPOTSYL 500.00 END

Contingency Name	Contingency Definition
DVP_P1-2: LN 575	CONTINGENCY 'DVP_P1-2: LN 575' OPEN BRANCH FROM BUS 314911 TO BUS 314918 CKT 1 /* 8LADYSMITH 500.00 - 8NO ANNA 500.00 END
DVP_P1-2: LN 574	CONTINGENCY 'DVP_P1-2: LN 574' OPEN BRANCH FROM BUS 314908 TO BUS 314911 CKT 1 /* 8ELMONT 500.00 - 8LADYSMITH 500.00 END
DVP_P1-2: LN 576	CONTINGENCY 'DVP_P1-2: LN 576' OPEN BRANCH FROM BUS 314914 TO BUS 314918 CKT 1 /* 8MDLTHAN 500.00 - 8NO ANNA 500.00 END
DVP_P4-2: 557T574	CONTINGENCY 'DVP_P4-2: 557T574' /* ELMONT 500 KV OPEN BRANCH FROM BUS 314214 TO BUS 314903 CKT 1 /* 6CHCKAHM 230.00 - 8CHCKAHM 500.00 OPEN BRANCH FROM BUS 314903 TO BUS 314908 CKT 1 /* 8CHCKAHM 500.00 - 8ELMONT 500.00 OPEN BRANCH FROM BUS 314908 TO BUS 314911 CKT 1 /* 8ELMONT 500.00 - 8LADYSMITH 500.00 END
DVP_P4-2: 57602	CONTINGENCY 'DVP_P4-2: 57602' /* NORTH ANNA 500 KV OPEN BRANCH FROM BUS 314914 TO BUS 314918 CKT 1 /* 8MDLTHAN 500.00 - 8NO ANNA 500.00 OPEN BRANCH FROM BUS 314232 TO BUS 314918 CKT 1 /* 6NO ANNA 230.00 - 8NO ANNA 500.00 END
Base Case	
DVP_P4-2: 563T576	CONTINGENCY 'DVP_P4-2: 563T576' /* MIDLOTHIAN 500 500 KV OPEN BRANCH FROM BUS 314902 TO BUS 314914 CKT 1 /* 8CARSON 500.00 - 8MDLTHAN 500.00 OPEN BRANCH FROM BUS 314914 TO BUS 314918 CKT 1 /* 8MDLTHAN 500.00 - 8NO ANNA 500.00 END
DVP_P1-2: LN 2128	CONTINGENCY 'DVP_P1-2: LN 2128' OPEN BRANCH FROM BUS 314466 TO BUS 314508 CKT 1 /* 6FENTRES 230.00 - 6THRASHER 230.00 END

Contingency Name	Contingency Definition
DVP_P4-2: H2T557	CONTINGENCY 'DVP_P4-2: H2T557' /* ELMONT 500 KV OPEN BRANCH FROM BUS 314214 TO BUS 314903 CKT 1 /* 6CHCKAHM 230.00 - 8CHCKAHM 500.00 OPEN BRANCH FROM BUS 314903 TO BUS 314908 CKT 1 /* 8CHCKAHM 500.00 - 8ELMONT 500.00 OPEN BRANCH FROM BUS 314218 TO BUS 314908 CKT 2 /* 6ELMONT 230.00 - 8ELMONT 500.00 END
DVP_P1-2: LN 580	CONTINGENCY 'DVP_P1-2: LN 580' OPEN BRANCH FROM BUS 235110 TO BUS 314929 CKT 1 /* 01MDWBRK 500.00 - 8FRONT ROYAL500.00 END
DVP_P1-2: LN 581	CONTINGENCY 'DVP_P1-2: LN 581' OPEN BRANCH FROM BUS 314135 TO BUS 314905 CKT 2 /* 3CHANCE 115.00 - 8CHANCE 500.00 OPEN BRANCH FROM BUS 314905 TO BUS 314911 CKT 1 /* 8CHANCE 500.00 - 8LADYSMITH 500.00 END
DVP_P1-2: LN 2197	CONTINGENCY 'DVP_P1-2: LN 2197' OPEN BRANCH FROM BUS 313896 TO BUS 314303 CKT 1 /* 6COLONIAL TR230.00 - 6HOPEWLL 230.00 END
DVP_P4-2: H1T594	CONTINGENCY 'DVP_P4-2: H1T594' /* MORRISVILLE 500 KV OPEN BRANCH FROM BUS 314916 TO BUS 314934 CKT 1 /* 8MORRSVL 500.00 - 8SPOTSYL 500.00 OPEN BRANCH FROM BUS 314063 TO BUS 314916 CKT 1 /* 6MORRSVL 230.00 - 8MORRSVL 500.00 OPEN BUS 314897 /* 8MORRS_1 500.00 KV END
DVP_P4-2: SPOTS H1T594	CONTINGENCY 'DVP_P4-2: SPOTS H1T594' /* SPOTSYLVANIA 500 KV OPEN BRANCH FROM BUS 314916 TO BUS 314934 CKT 1 /* 8MORRSVL 500.00 - 8SPOTSYL 500.00 OPEN BRANCH FROM BUS 314755 TO BUS 314934 CKT 1 /* 3SPOTSYL 115.00 - 8SPOTSYL 500.00 END
DVP_P1-2: LN 579	CONTINGENCY 'DVP_P1-2: LN 579' OPEN BRANCH FROM BUS 314923 TO BUS 314927 CKT 1 /* 8SEPTA 500.00 - 8YADKIN 500.00 END

12 Light Load Analysis

The Queue Project AF1-125 was evaluated as a 880.0 MW injection at the Fentress 500 kV substation in the Dominion area. Project AF1-125 was evaluated for compliance with applicable reliability planning criteria (PJM, NERC, NERC Regional Reliability Councils, and Transmission Owners). Project AF1-125 was studied with a commercial probability of 100.0 %. Potential network impacts were as follows:

12.1 Generation Deliverability

(Single or N-1 contingencies)

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|DC	MW IMPACT
71716337	314209	6SKIFF CREEK	230.0	DVP	314386	6KINGS M	230.0	DVP	1	DVP_P1-2: LN 567	single	441.799987793	99.83	112.59	AC	59.84
71716338	314209	6SKIFF CREEK	230.0	DVP	314386	6KINGS M	230.0	DVP	1	DVP_P1-2: LN 557	single	441.799987793	89.59	100.88	AC	52.99
71716423	314296	6PENNIMAN	230.0	DVP	314415	6WALR209	230.0	DVP	1	DVP_P1-2: LN 567	single	441.799987793	94.46	107.21	AC	59.84
71716383	314386	6KINGS M	230.0	DVP	314296	6PENNIMAN	230.0	DVP	1	DVP_P1-2: LN 567	single	441.799987793	96.16	108.92	AC	59.84
71716564	314415	6WALR209	230.0	DVP	314391	6LIGH209	230.0	DVP	1	DVP_P1-2: LN 567	single	441.799987793	87.3	100.04	AC	59.84
150639043	314536	3SUFFOLK	115.0	DVP	314532	3OAKRI23	115.0	DVP	1	DVP_P1-3: 6CHESTF B-GSU-6	single	110.919998169	98.11	106.84	AC	5.64

12.2 Multiple Facility Contingency

(Double Circuit Tower Line, Fault with a Stuck Breaker, and Bus Fault contingencies)

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|DC	MW IMPACT
71716151	314303	6HOPEWLL	230.0	DVP	314286	6CHESTF A	230.0	DVP	1	DVP_P4-2: 211T2124	breaker	549.0	99.34	107.24	AC	51.03

12.3 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|DC	MW IMPACT
71716529	314269	6PRGEORG	230.0	DVP	314291	3PRGEORG	115.0	DVP	1	DVP_P7-1: LN 211-228	tower	219.800003052	101.02	116.57	AC	18.92

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|DC	MW IMPACT
71716147	314303	6HOPEWLL	230.0	DVP	314286	6CHESTF A	230.0	DVP	1	DVP_P1-2: LN 211	single	449.320007324	118.19	127.87	AC	47.76
71716149	314303	6HOPEWLL	230.0	DVP	314286	6CHESTF A	230.0	DVP	1	DVP_P1-2: LN 259	single	449.320007324	104.99	112.27	AC	35.91
71716192	314303	6HOPEWLL	230.0	DVP	314287	6CHESTF B	230.0	DVP	1	DVP_P1-2: LN 228	single	449.320007324	113.28	123.4	AC	49.29
150639041	314536	3SUFFOLK	115.0	DVP	314532	3OAKRI23	115.0	DVP	1	DVP_P1-3: 8CARSON-TX#2	single	110.919998169	100.74	110.14	AC	6.18
42882036	314554	3BTLEBRO	115.0	DVP	304223	3ROCKYMT115T	115.0	CPLE	1	DVP_P7-1: LN 2058-2181	tower	93.0	124.62	147.18	AC	14.1

12.4 Steady-State Voltage Requirements

To be determined

12.5 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 LOADING %	POST PROJECT LOADING %	AC|DC	MW IMPACT
71716148	314303	6HOPEWLL	230.0	DVP	314286	6CHESTF A	230.0	DVP	1	DVP_P1-2: LN 211	operation	449.320007324	109.54	118.58	AC	47.76
71716193	314303	6HOPEWLL	230.0	DVP	314287	6CHESTF B	230.0	DVP	1	DVP_P1-2: LN 228	operation	449.320007324	104.92	114.25	AC	49.29
46126011	314536	3SUFFOLK	115.0	DVP	314532	3OAKRI23	115.0	DVP	1	DVP_P1-3: 8CARSON-TX#2	operation	110.919998169	99.73	109.14	AC	6.18
71716658	314747	6BREMO	230.0	DVP	314744	3BREMO	115.0	DVP	1	DVP_P1-2: LN 2193	operation	269.779998779	84.94	93.86	AC	18.45

12.6 System Reinforcements

<table>
<tr><th>ID</th><th>Idx</th><th>Facility</th><th>Upgrade Description</th><th>Cost</th><th>Cost Allocated to AF1-125</th><th>Upgrade Number</th></tr>
<tr><td>71716564</td><td>4</td><td>6WALR209 230.0 kV - 6LIGH209 230.0 kV Ckt 1</td><td>Refer to AF1-125 summer peak load flow report for reinforcement.

PJM Baseline Upgrade b3056: Partial Rebuild 230 kV Line #2113 Waller to Lightfoot. The baseline project has a projected in-service date of 12/30/2024.</td><td>-</td><td>-</td><td>b3056</td></tr>
<tr><td>71716192</td><td>9</td><td>6HOPEWLL 230.0 kV - 6CHESTF B 230.0 kV Ckt 1</td><td>Description : Rebuild 3 miles of 230 kV Line 211 from Hopewell to Chesterfield with 2-636 ACSR.

Type : FAC

Total Cost : $7,500,000

Time Estimate : 30-36 Months

Ratings : 1047.0/1047.0/1204.0

The cost allocation table is as follows:

<table>
<tr><th>Queue</th><th>MW contribution</th><th>Percentage of Cost</th><th>Cost ($7,500,000)</th></tr>
<tr><td>AE2-007</td><td>62.53</td><td>14.30%</td><td>$1,072,360</td></tr>
<tr><td>AE2-122</td><td>56.77</td><td>12.98%</td><td>$973,578</td></tr>
<tr><td>AE2-123</td><td>56.77</td><td>12.98%</td><td>$973,578</td></tr>
<tr><td>AE2-124</td><td>56.36</td><td>12.89%</td><td>$966,547</td></tr>
<tr><td>AE2-156</td><td>7.57</td><td>1.73%</td><td>$129,822</td></tr>
<tr><td>AE2-270</td><td>36.26</td><td>8.29%</td><td>$621,842</td></tr>
<tr><td>AF1-115</td><td>13.2</td><td>3.02%</td><td>$226,374</td></tr>
<tr><td>AF1-123</td><td>49.29</td><td>11.27%</td><td>$845,300</td></tr>
<tr><td>AF1-124</td><td>49.29</td><td>11.27%</td><td>$845,300</td></tr>
<tr><td>AF1-125</td><td>49.29</td><td>11.27%</td><td>$845,300</td></tr>
</table>
</td><td>$7,500,000</td><td>$845,300</td><td>n6500</td></tr>
<tr><td>71716383</td><td>3</td><td>6KINGS M 230.0 kV - 6PENNIMAN 230.0 kV Ckt 1</td><td>Refer to AF1-125 summer peak load flow report for reinforcement.

PJM Baseline Upgrade b3057. Rebuild 6.1 miles of Waller-Skiffess Creek 230 kV Line (#2154) between Waller and Kings Mill to current standards with a minimum summer emergency rating of 1047 MVA utilizing single circuit steel structures. Remove this 6.1 mile section of Line #58 between Waller and Kings Mill. Rebuild the 1.6 miles of Line #2154 and #19 between Kings Mill and Skiffes Creek to current standards with a minimum summer emergency rating of 1047 MVA at 230 kV for Line #2154 and 261 MVA at 115 kV for Line #19, utilizing double circuit steel structures. The baseline project has a projected in-service date of 12/30/2024.</td><td>-</td><td>-</td><td>b3057</td></tr>
</table>

ID	Idx	Facility	Upgrade Description	Cost	Cost Allocated to AF1-125	Upgrade Number
71716423	2	**6PENNIMAN 230.0 kV - 6WALR209 230.0 kV Ckt 1**	**Refer to AF1-125 summer peak load flow report for reinforcement.** **PJM Baseline Upgrade b3057. Rebuild 6.1 miles of Waller-Skiffess Creek 230 kV Line (#2154) between Waller and Kings Mill to current standards with a minimum summer emergency rating of 1047 MVA utilizing single circuit steel structures. Remove this 6.1 mile section of Line #58 between Waller and Kings Mill. Rebuild the 1.6 miles of Line #2154 and #19 between Kings Mill and Skiffes Creek to current standards with a minimum summer emergency rating of 1047 MVA at 230 kV for Line #2154 and 261 MVA at 115 kV for Line #19, utilizing double circuit steel structures. The baseline project has a projected in-service date of 12/30/2024.**	-	--	b3057

<table>
<tr><th>ID</th><th>Idx</th><th>Facility</th><th>Upgrade Description</th><th>Cost</th><th>Cost Allocated to AF1-125</th><th>Upgrade Number</th></tr>
<tr><td>71716147,71716151,71716149</td><td>7</td><td>6HOPEWLL 230.0 kV - 6CHESTF A 230.0 kV Ckt 1</td><td>n6155: Rebuild 3 miles of 230 kV Line 228 from Hopewell to Chesterfield with 2-636 ACSR.

Project Type : FAC

Cost : $7,500,000

Time Estimate : 30-36 Months

New Ratings:
Rate A: 1047 MVA
Rate B: 1047 MVA
Rate C: 1204 MVA

The cost allocation table is as follows:
<table>
<tr><th>Queue</th><th>MW contribution</th><th>Percentage of Cost</th><th>Cost ($7,500,000)</th></tr>
<tr><td>AC2-012</td><td>13.98</td><td>2.06%</td><td>$154,348</td></tr>
<tr><td>AD1-025</td><td>63.98</td><td>9.42%</td><td>$706,381</td></tr>
<tr><td>AD1-151</td><td>63.98</td><td>9.42%</td><td>$706,381</td></tr>
<tr><td>AD2-008</td><td>22.22</td><td>3.27%</td><td>$245,323</td></tr>
<tr><td>AE1-085</td><td>6.04</td><td>0.89%</td><td>$66,663</td></tr>
<tr><td>AE1-149</td><td>7.61</td><td>1.12%</td><td>$84,019</td></tr>
<tr><td>AE2-000B</td><td>6.26</td><td>0.92%</td><td>$69,114</td></tr>
<tr><td>AE2-007</td><td>84.62</td><td>12.46%</td><td>$934,260</td></tr>
<tr><td>AE2-033</td><td>8.06</td><td>1.19%</td><td>$88,988</td></tr>
<tr><td>AE2-122</td><td>56.77</td><td>8.36%</td><td>$626,778</td></tr>
<tr><td>AE2-123</td><td>56.77</td><td>8.36%</td><td>$626,778</td></tr>
<tr><td>AE2-124</td><td>56.36</td><td>8.30%</td><td>$622,251</td></tr>
<tr><td>AE2-156</td><td>7.57</td><td>1.11%</td><td>$83,578</td></tr>
<tr><td>AE2-250</td><td>5.18</td><td>0.76%</td><td>$57,191</td></tr>
<tr><td>AE2-260</td><td>6.42</td><td>0.95%</td><td>$70,881</td></tr>
<tr><td>AE2-270</td><td>56.04</td><td>8.25%</td><td>$618,718</td></tr>
<tr><td>AF1-115</td><td>14.17</td><td>2.09%</td><td>$156,446</td></tr>
<tr><td>AF1-123</td><td>47.76</td><td>7.03%</td><td>$527,301</td></tr>
<tr><td>AF1-124</td><td>47.76</td><td>7.03%</td><td>$527,301</td></tr>
<tr><td>AF1-125</td><td>47.76</td><td>7.03%</td><td>$527,301</td></tr>
</table></td><td>$7,500,000</td><td>$527,301</td><td>n6155</td></tr>
</table>

ID	Idx	Facility	Upgrade Description	Cost	Cost Allocated to AF1-125	Upgrade Number
71716338,71716337	1	6SKIFF CREEK 230.0 kV - 6KINGSM 230.0 kV Ckt 1	Refer to AF1-125 summer peak load flow report for reinforcement. PJM Baseline Upgrade b3057. Rebuild 6.1 miles of Waller-Skiffess Creek 230 kV Line (#2154) between Waller and Kings Mill to current standards with a minimum summer emergency rating of 1047 MVA utilizing single circuit steel structures. Remove this 6.1 mile section of Line #58 between Waller and Kings Mill. Rebuild the 1.6 miles of Line #2154 and #19 between Kings Mill and Skiffes Creek to current standards with a minimum summer emergency rating of 1047 MVA at 230 kV for Line #2154 and 261 MVA at 115 kV for Line #19, utilizing double circuit steel structures. The baseline project has a projected in-service date of 12/30/2024.	-	-	b3057
150639041, 150639043	5	3SUFFOLK 115.0 kV - 3OAKRI23 115.0 kV Ckt 1	n6380: Reconductor 2.5 miles of 115 kV Line 23 from Oakridge to Suffolk with 636 ACSR Project Type : FAC Cost : $3.38 million Time Estimate : 30-36 months Ratings after the upgrade: 261/261/301 MVA AF1-125 does not presently receive cost allocation for n6380. Note 1: As changes to the interconnection process occur, such as prior queued projects withdrawing from the queue, reducing in size, etc, Queue Project AF1-125 could receive cost allocation. Note 2: Although Queue Project AF1-125 may not have cost responsibility for this upgrade, Queue Project AF1-125 may need this upgrade in-service to be deliverable to the PJM system. If Queue Project AF1-125 comes into service prior to completion of the upgrade, Queue Project AF1-125 will need an interim study.	$3,380,000	$0	n6380

ID	Idx	Facility	Upgrade Description	Cost	Cost Allocated to AF1-125	Upgrade Number
42882036	10	**3BTLEBRO 115.0 kV - 3ROCKYMT1 15T 115.0 kV Ckt 1**	**DVP** **n6118: PJM Network Upgrade n6118: Upgrading the breaker leads at DVP's terminal will bring the rating to 239/239/239 MVA (Limited by terminal equipment at Rocky Mount)** **Dominion End Ratings: 438/478/581 MVA** **Project Type : FAC** **Cost : $100,000** **Time Estimate : 30-36 Months** **New Ratings:** **Rate A: 239 MVA** **Rate B: 239 MVA** **Rate C: 239 MVA** **Queue Project AF1-125 presently does not receive cost allocation for this upgrade.** **Note 1: As changes to the interconnection process occur, such as prior queued projects withdrawing from the queue, reducing in size, etc, Queue Project AF1-125 could receive cost allocation.** **Note 2: Although Queue Project AF1-125 may not have cost responsibility for this upgrade, Queue Project AF1-125 may need this upgrade in-service to be deliverable to the PJM system. If Queue Project AF1-125 comes into service prior to completion of the upgrade, Queue Project AF1-125 will need an interim study.**	$100,000	$0	n6118
71716529	8	**6PRGEORG 230.0 kV - 3PRGEORG 115.0 kV Ckt 1**	**Description: Replace the existing Prince George 230/115 kV transformer.** **ISD: 12/31/20** **AF1-125 does not presently receive cost allocation for n5807.** **Note 1: As changes to the interconnection process occur, such as prior queued projects withdrawing from the queue, reducing in size, etc, Queue Project AF1-125 could receive cost allocation.** **Note 2: Although Queue Project AF1-125 may not have cost responsibility for this upgrade, Queue Project AF1-125 may need this upgrade in-service to be deliverable to the PJM system. If Queue Project AF1-125 comes into service prior to completion of the upgrade, Queue Project AF1-125 will need an interim study.**	$3,441,235	$0	N5807
			TOTAL COST	**$21,921,235**	**$1,372,601**	

Note : For customers with System Reinforcements listed: If your present cost allocation to a System Reinforcement indicates $0, then please be aware that as changes to the interconnection process occur, such as prior queued projects withdrawing from the queue, reducing in size, etc, the cost responsibilities can change and a cost allocation may be assigned to your project. In addition, although your present cost allocation to a System Reinforcement is presently $0, your project may need this system reinforcement

completed to be deliverable to the PJM system. If your project comes into service prior to completion of the system reinforcement, an interim deliverability study for your project will be required.

12.7 Flow Gate Details

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".

12.7.1 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
71716337	314209	6SKIFF CREEK	DVP	314386	6KINGS M	DVP	1	DVP_P1-2: LN 567	single	441.799987793	99.83	112.59	AC	59.84

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
314295	6BIRDNECK	0.0500	80/20	0.0500
315605	6W1-029WIND	0.8426	80/20	0.8426
315611	6Z1-036WIND	1.1603	80/20	1.1603
901082	W1-029 E	5.6485	80/20	5.6485
916042	**Z1-036 E (Suspended)**	**7.7741**	**80/20**	**7.7741**
916192	Z1-068 E	0.3501	80/20	0.3501
938171	AE1-026 C O1	1.4724	80/20	1.4724
938172	AE1-026 E O1	5.8896	80/20	5.8896
939421	**AE1-174 C (Withdrawn : 06/16/2020)**	**0.1967**	**80/20**	**0.1967**
939422	**AE1-174 E (Withdrawn : 06/16/2020)**	**0.2950**	**80/20**	**0.2950**
940061	AE2-000BC O1	0.0001	80/20	0.0001
940062	AE2-000BE O1	5.0960	80/20	5.0960
940552	AE2-041 BAT	6.8144	80/20	6.8144
941281	AE2-122 C O1	10.5713	80/20	10.5713
941282	AE2-122 E O1	42.6578	80/20	42.6578
941291	AE2-123 C O1	10.8640	80/20	10.8640
941292	AE2-123 E O1	42.3650	80/20	42.3650
941301	AE2-124 C O1	9.8818	80/20	9.8818
941302	AE2-124 E O1	43.3601	80/20	43.3601
941591	AE2-156 O1	8.3040	80/20	8.3040
943472	AF1-018 BAT	6.8144	80/20	6.8144
944581	AF1-123 C O1	18.1900	80/20	18.1900
944582	AF1-123 E O1	41.6500	80/20	41.6500
944591	AF1-124 C O1	18.1900	80/20	18.1900
944592	AF1-124 E O1	41.6500	80/20	41.6500
944601	AF1-125 C O1	18.1900	80/20	18.1900
944602	AF1-125 E O1	41.6500	80/20	41.6500
945361	AF1-201 C O1	0.0001	80/20	0.0001
945362	AF1-201 E O1	1.4632	80/20	1.4632

12.7.2 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
71716423	314296	6PENNIMAN	DVP	314415	6WALR209	DVP	1	DVP_P1-2: LN 567	single	441.799987793	94.46	107.21	AC	59.84

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
314295	6BIRDNECK	0.0500	80/20	0.0500
315605	6W1-029WIND	0.8426	80/20	0.8426
315611	6Z1-036WIND	1.1603	80/20	1.1603
901082	W1-029 E	5.6485	80/20	5.6485
916042	**Z1-036 E (Suspended)**	**7.7741**	**80/20**	**7.7741**
916192	Z1-068 E	0.3501	80/20	0.3501
938171	AE1-026 C O1	1.4724	80/20	1.4724
938172	AE1-026 E O1	5.8896	80/20	5.8896
939421	**AE1-174 C (Withdrawn : 06/16/2020)**	**0.1967**	**80/20**	**0.1967**
939422	**AE1-174 E (Withdrawn : 06/16/2020)**	**0.2950**	**80/20**	**0.2950**
940061	AE2-000BC O1	0.0001	80/20	0.0001
940062	AE2-000BE O1	5.0960	80/20	5.0960
940552	AE2-041 BAT	6.8144	80/20	6.8144
941281	AE2-122 C O1	10.5713	80/20	10.5713
941282	AE2-122 E O1	42.6578	80/20	42.6578
941291	AE2-123 C O1	10.8640	80/20	10.8640
941292	AE2-123 E O1	42.3650	80/20	42.3650
941301	AE2-124 C O1	9.8818	80/20	9.8818
941302	AE2-124 E O1	43.3601	80/20	43.3601
941591	AE2-156 O1	8.3040	80/20	8.3040
943472	AF1-018 BAT	6.8144	80/20	6.8144
944581	AF1-123 C O1	18.1900	80/20	18.1900
944582	AF1-123 E O1	41.6500	80/20	41.6500
944591	AF1-124 C O1	18.1900	80/20	18.1900
944592	AF1-124 E O1	41.6500	80/20	41.6500
944601	AF1-125 C O1	18.1900	80/20	18.1900
944602	AF1-125 E O1	41.6500	80/20	41.6500
945361	AF1-201 C O1	0.0001	80/20	0.0001
945362	AF1-201 E O1	1.4632	80/20	1.4632

12.7.3 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
71716383	314386	6KINGSM	DVP	314296	6PENNIMAN	DVP	1	DVP_P1-2: LN 567	single	441.799987793	96.16	108.92	AC	59.84

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
314295	6BIRDNECK	0.0500	80/20	0.0500
315605	6W1-029WIND	0.8426	80/20	0.8426
315611	6Z1-036WIND	1.1603	80/20	1.1603
901082	W1-029 E	5.6485	80/20	5.6485
916042	**Z1-036 E (Suspended)**	**7.7741**	**80/20**	**7.7741**
916192	Z1-068 E	0.3501	80/20	0.3501
938171	AE1-026 C O1	1.4724	80/20	1.4724
938172	AE1-026 E O1	5.8896	80/20	5.8896
939421	**AE1-174 C (Withdrawn : 06/16/2020)**	**0.1967**	**80/20**	**0.1967**
939422	**AE1-174 E (Withdrawn : 06/16/2020)**	**0.2950**	**80/20**	**0.2950**
940061	AE2-000BC O1	0.0001	80/20	0.0001
940062	AE2-000BE O1	5.0960	80/20	5.0960
940552	AE2-041 BAT	6.8144	80/20	6.8144
941281	AE2-122 C O1	10.5713	80/20	10.5713
941282	AE2-122 E O1	42.6578	80/20	42.6578
941291	AE2-123 C O1	10.8640	80/20	10.8640
941292	AE2-123 E O1	42.3650	80/20	42.3650
941301	AE2-124 C O1	9.8818	80/20	9.8818
941302	AE2-124 E O1	43.3601	80/20	43.3601
941591	AE2-156 O1	8.3040	80/20	8.3040
943472	AF1-018 BAT	6.8144	80/20	6.8144
944581	AF1-123 C O1	18.1900	80/20	18.1900
944582	AF1-123 E O1	41.6500	80/20	41.6500
944591	AF1-124 C O1	18.1900	80/20	18.1900
944592	AF1-124 E O1	41.6500	80/20	41.6500
944601	AF1-125 C O1	18.1900	80/20	18.1900
944602	AF1-125 E O1	41.6500	80/20	41.6500
945361	AF1-201 C O1	0.0001	80/20	0.0001
945362	AF1-201 E O1	1.4632	80/20	1.4632

12.7.4 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
71716564	314415	6WALR209	DVP	314391	6LIGH209	DVP	1	DVP_P1-2: LN 567	single	441.799987793	87.3	100.04	AC	59.84

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
314295	6BIRDNECK	0.0500	80/20	0.0500
315605	6W1-029WIND	0.8426	80/20	0.8426
315611	6Z1-036WIND	1.1603	80/20	1.1603
901082	W1-029 E	5.6485	80/20	5.6485
916042	**Z1-036 E (Suspended)**	**7.7741**	**80/20**	**7.7741**
916192	Z1-068 E	0.3501	80/20	0.3501
938171	AE1-026 C O1	1.4724	80/20	1.4724
938172	AE1-026 E O1	5.8896	80/20	5.8896
939421	**AE1-174 C (Withdrawn : 06/16/2020)**	**0.1967**	**80/20**	**0.1967**
939422	**AE1-174 E (Withdrawn : 06/16/2020)**	**0.2950**	**80/20**	**0.2950**
940061	AE2-000BC O1	0.0001	80/20	0.0001
940062	AE2-000BE O1	5.0960	80/20	5.0960
940552	AE2-041 BAT	6.8144	80/20	6.8144
941281	AE2-122 C O1	10.5713	80/20	10.5713
941282	AE2-122 E O1	42.6578	80/20	42.6578
941291	AE2-123 C O1	10.8640	80/20	10.8640
941292	AE2-123 E O1	42.3650	80/20	42.3650
941301	AE2-124 C O1	9.8818	80/20	9.8818
941302	AE2-124 E O1	43.3601	80/20	43.3601
941591	AE2-156 O1	8.3040	80/20	8.3040
943472	AF1-018 BAT	6.8144	80/20	6.8144
944581	AF1-123 C O1	18.1900	80/20	18.1900
944582	AF1-123 E O1	41.6500	80/20	41.6500
944591	AF1-124 C O1	18.1900	80/20	18.1900
944592	AF1-124 E O1	41.6500	80/20	41.6500
944601	AF1-125 C O1	18.1900	80/20	18.1900
944602	AF1-125 E O1	41.6500	80/20	41.6500
945361	AF1-201 C O1	0.0001	80/20	0.0001
945362	AF1-201 E O1	1.4632	80/20	1.4632

12.7.5 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
150639041	314536	3SUFFOLK	DVP	314532	3OAKRI23	DVP	1	DVP_P1-3: 8CARSON-TX#2	single	110.919998169	100.74	110.14	AC	6.18

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
940063	AE2-000B BAT	58.7390	80/20	58.7390
940652	AE2-052 BAT	1.1550	80/20	1.1550
941281	AE2-122 C O1	1.0265	Adder	1.21
941282	AE2-122 E O1	4.1422	Adder	4.87
941291	AE2-123 C O1	1.0549	Adder	1.24
941292	AE2-123 E O1	4.1137	Adder	4.84
941301	AE2-124 C O1	0.9664	Adder	1.14
941302	AE2-124 E O1	4.2404	Adder	4.99
941533	AE2-150 BAT	11.5556	80/20	11.5556
944581	AF1-123 C O1	1.5971	Adder	1.88
944582	AF1-123 E O1	3.6569	Adder	4.3
944591	AF1-124 C O1	1.5971	Adder	1.88
944592	AF1-124 E O1	3.6569	Adder	4.3
944601	AF1-125 C O1	1.5971	Adder	1.88
944602	AF1-125 E O1	3.6569	Adder	4.3

12.7.6 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
71716657	314747	6BREMO	DVP	314744	3BREMO	DVP	1	DVP_P1-2: LN 2193	single	269.779998779	85.36	94.24	AC	18.45

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
940661	AE2-053 O1	1.0386	80/20	1.0386
941281	AE2-122 C O1	2.8342	Adder	3.33
941282	AE2-122 E O1	11.4367	Adder	13.45
941291	AE2-123 C O1	2.9127	Adder	3.43
941292	AE2-123 E O1	11.3582	Adder	13.36
941301	AE2-124 C O1	2.6487	Adder	3.12
941302	AE2-124 E O1	11.6222	Adder	13.67
943911	AF1-059	5.2190	80/20	5.2190
944581	AF1-123 C O1	4.7676	Adder	5.61
944582	AF1-123 E O1	10.9165	Adder	12.84
944591	AF1-124 C O1	4.7676	Adder	5.61
944592	AF1-124 E O1	10.9165	Adder	12.84
944601	AF1-125 C O1	4.7676	Adder	5.61
944602	AF1-125 E O1	10.9165	Adder	12.84
946293	AF1-293 BAT	27.7749	80/20	27.7749

12.7.7 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
71716147	314303	6HOPEWLL	DVP	314286	6CHESTFA	DVP	1	DVP_P1-2: LN 211	single	449.320007324	118.19	127.87	AC	47.76

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
314295	6BIRDNECK	0.0495	80/20	0.0495
315074	**1HOPCGN1 (Deactivation : 25/06/2019)**	**11.4586**	**80/20**	**11.4586**
315075	**1HOPCGN2 (Deactivation : 25/06/2019)**	**11.3101**	**80/20**	**11.3101**
315605	6W1-029WIND	0.7781	80/20	0.7781
315611	6Z1-036WIND	1.0673	80/20	1.0673
901082	W1-029 E	5.2159	80/20	5.2159
916042	**Z1-036 E (Suspended)**	**7.1507**	**80/20**	**7.1507**
916192	Z1-068 E	0.3464	80/20	0.3464
938171	AE1-026 C O1	1.3392	80/20	1.3392
938172	AE1-026 E O1	5.3568	80/20	5.3568
940061	AE2-000BC O1	0.0001	80/20	0.0001
940062	AE2-000BE O1	10.0980	80/20	10.0980
940651	AE2-052	2.5158	80/20	2.5158
941281	AE2-122 C O1	10.3997	80/20	10.3997
941282	AE2-122 E O1	41.9653	80/20	41.9653
941291	AE2-123 C O1	10.6877	80/20	10.6877
941292	AE2-123 E O1	41.6773	80/20	41.6773
941301	AE2-124 C O1	9.6323	80/20	9.6323
941302	AE2-124 E O1	42.2654	80/20	42.2654
941591	AE2-156 O1	8.8320	80/20	8.8320
942551	AE2-270 C	23.4378	80/20	23.4378
942552	AE2-270 E	35.1567	80/20	35.1567
944581	AF1-123 C O1	14.5178	80/20	14.5178
944582	AF1-123 E O1	33.2416	80/20	33.2416
944591	AF1-124 C O1	14.5178	80/20	14.5178
944592	AF1-124 E O1	33.2416	80/20	33.2416
944601	AF1-125 C O1	14.5178	80/20	14.5178
944602	AF1-125 E O1	33.2416	80/20	33.2416

12.7.8 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
71716529	314269	6PRGEORG	DVP	314291	3PRGEORG	DVP	1	DVP_P7-1: LN 211-228	tower	219.800003052	101.02	116.57	AC	18.92

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
315074	**1HOPCGN1 (Deactivation : 25/06/2019)**	**5.8563**	**50/50**	**5.8563**
315075	**1HOPCGN2 (Deactivation : 25/06/2019)**	**5.7804**	**50/50**	**5.7804**
940652	AE2-052 BAT	2.9746	50/50	2.9746
941281	AE2-122 C O1	3.6133	Adder	4.25
941282	AE2-122 E O1	14.5804	Adder	17.15
941291	AE2-123 C O1	3.7133	Adder	4.37
941292	AE2-123 E O1	14.4803	Adder	17.04
941301	AE2-124 C O1	3.3323	Adder	3.92
941302	AE2-124 E O1	14.6219	Adder	17.2
941533	AE2-150 BAT	5.0276	50/50	5.0276
942551	AE2-270 C	11.8788	50/50	11.8788
942552	AE2-270 E	17.8182	50/50	17.8182
944581	AF1-123 C O1	4.8877	Adder	5.75
944582	AF1-123 E O1	11.1914	Adder	13.17
944591	AF1-124 C O1	4.8877	Adder	5.75
944592	AF1-124 E O1	11.1914	Adder	13.17
944601	AF1-125 C O1	4.8877	Adder	5.75
944602	AF1-125 E O1	11.1914	Adder	13.17

12.7.9 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
71716192	314303	6HOPEWLL	DVP	314287	6CHESTFB	DVP	1	DVP_P1-2: LN 228	single	449.320007324	113.28	123.4	AC	49.29

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
314295	6BIRDNECK	0.0510	80/20	0.0510
315074	**1HOPCGN1 (Deactivation : 25/06/2019)**	**11.8103**	**80/20**	**11.8103**
315075	**1HOPCGN2 (Deactivation : 25/06/2019)**	**11.6573**	**80/20**	**11.6573**
315605	6W1-029WIND	0.7635	80/20	0.7635
315611	6Z1-036WIND	1.0200	80/20	1.0200
901082	W1-029 E	5.1180	80/20	5.1180
916042	**Z1-036 E (Suspended)**	**6.8343**	**80/20**	**6.8343**
916192	Z1-068 E	0.3567	80/20	0.3567
940061	AE2-000BC O1	0.0001	80/20	0.0001
940062	AE2-000BE O1	7.2130	80/20	7.2130
940651	AE2-052	1.4174	80/20	1.4174
941281	AE2-122 C O1	10.7048	80/20	10.7048
941282	AE2-122 E O1	43.1964	80/20	43.1964
941291	AE2-123 C O1	11.0012	80/20	11.0012
941292	AE2-123 E O1	42.8999	80/20	42.8999
941301	AE2-124 C O1	9.9091	80/20	9.9091
941302	AE2-124 E O1	43.4800	80/20	43.4800
941591	AE2-156 O1	9.1350	80/20	9.1350
942551	AE2-270 C	24.2664	80/20	24.2664
942552	AE2-270 E	36.3996	80/20	36.3996
944581	AF1-123 C O1	14.9843	80/20	14.9843
944582	AF1-123 E O1	34.3098	80/20	34.3098
944591	AF1-124 C O1	14.9843	80/20	14.9843
944592	AF1-124 E O1	34.3098	80/20	34.3098
944601	AF1-125 C O1	14.9843	80/20	14.9843
944602	AF1-125 E O1	34.3098	80/20	34.3098
945361	AF1-201 C O1	0.0001	80/20	0.0001
945362	AF1-201 E O1	1.0684	80/20	1.0684

12.7.10 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
42882036	314554	3BTLEBRO	DVP	304223	3ROCKYMT115T	CPLE	1	DVP_P7-1: LN 2058-2181	tower	93.0	124.62	147.18	AC	14.1

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
315131	**1EDGECMA (Deactivation : 22/04/2019)**	**5.4779**	**50/50**	**5.4779**
315132	**1EDGECMB (Deactivation : 22/04/2019)**	**5.4779**	**50/50**	**5.4779**
938171	AE1-026 C O1	1.2609	Adder	1.48
938172	AE1-026 E O1	5.0437	Adder	5.93
941281	AE2-122 C O1	2.3199	Adder	2.73
941282	AE2-122 E O1	9.3613	Adder	11.01
941291	AE2-123 C O1	2.3841	Adder	2.8
941292	AE2-123 E O1	9.2970	Adder	10.94
941301	AE2-124 C O1	2.1761	Adder	2.56
941302	AE2-124 E O1	9.5485	Adder	11.23
942472	AE2-260 E O1	12.0581	Adder	14.19
943911	AF1-059	4.0078	Adder	4.72
944141	AF1-082	7.3915	50/50	7.3915
944581	AF1-123 C O1	3.6435	Adder	4.29
944582	AF1-123 E O1	8.3425	Adder	9.81
944591	AF1-124 C O1	3.6435	Adder	4.29
944592	AF1-124 E O1	8.3425	Adder	9.81
944601	AF1-125 C O1	3.6435	Adder	4.29
944602	AF1-125 E O1	8.3425	Adder	9.81

12.8 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
AE1-026	Cashie 230 kV	Active
AE1-174	Light Foot 34.5 kV	Withdrawn
AE2-000B	N/A	N/A
AE2-041	Harmony Village 230 kV	Active
AE2-052	Disputanta-Poe 115 kV	Active
AE2-053	Kerr Dam-Ridge Road 115 kV	Active
AE2-122	Birdneck-Landstown 230 kV	Active
AE2-123	Birdneck-Landstown 230 kV	Active
AE2-124	Landstown 230 kV	Active
AE2-150	Bakers Pond-Bell Ave 115 kV	Active
AE2-156	Yadkin 115 kV	Active
AE2-260	Clubhouse 230 kV	Active
AE2-270	Hopewell-Surry 230 kV	Active
AF1-018	Harmony Village 230 kV	Active
AF1-059	Brodnax-South Hill 115 kV	Active
AF1-082	Heartsease-Mayo Dunbar DP	Active
AF1-123	Fentress 500 kV	Active
AF1-124	Fentress 500 kV	Active
AF1-125	Fentress 500 kV	Active
AF1-201	Hayes-Whitemarsh 115 kV	Active
AF1-293	Kidds Store-Fort Union 115 kV	Active
W1-029	Winfall 230kV	In Service
Z1-036	WinFall-Chowan 230kV	Suspended
Z1-068	Birdneck 34.5kV	Under Construction

12.9 Contingency Descriptions

Contingency Name	Contingency Definition
DVP_P1-3: 8CARSON-TX#2	CONTINGENCY 'DVP_P1-3: 8CARSON-TX#2' OPEN BRANCH FROM BUS 314282 TO BUS 314902 CKT 1 /* 6CARSON 230.00 - 8CARSON 500.00 END
DVP_P4-2: 211T2124	CONTINGENCY 'DVP_P4-2: 211T2124' /* HOPEWELL 230 KV OPEN BRANCH FROM BUS 314287 TO BUS 314303 CKT 1 /* 6CHESTF B 230.00 - 6HOPEWLL 230.00 OPEN BRANCH FROM BUS 314269 TO BUS 314291 CKT 1 /* 6PRGEORG 230.00 - 3PRGEORG 115.00 OPEN BRANCH FROM BUS 314269 TO BUS 314303 CKT 1 /* 6PRGEORG 230.00 - 6HOPEWLL 230.00 OPEN BUS 314269 /* ISLAND: 6PRGEORG 230.00 END
DVP_P7-1: LN 211-228	CONTINGENCY 'DVP_P7-1: LN 211-228' /* . OPEN BRANCH FROM BUS 314287 TO BUS 314303 CKT 1 /* 6CHESTF B 230.00 - 6HOPEWLL 230.00 OPEN BRANCH FROM BUS 314286 TO BUS 314303 CKT 1 /* 6CHESTF A 230.00 - 6HOPEWLL 230.00 END
DVP_P1-2: LN 557	CONTINGENCY 'DVP_P1-2: LN 557' OPEN BRANCH FROM BUS 314214 TO BUS 314903 CKT 1 /* 6CHCKAHM 230.00 - 8CHCKAHM 500.00 OPEN BRANCH FROM BUS 314903 TO BUS 314908 CKT 1 /* 8CHCKAHM 500.00 - 8ELMONT 500.00 END
DVP_P1-2: LN 259	CONTINGENCY 'DVP_P1-2: LN 259' OPEN BRANCH FROM BUS 314276 TO BUS 314287 CKT 1 /* 6BASIN 230.00 - 6CHESTF B 230.00 END
DVP_P1-2: LN 567	CONTINGENCY 'DVP_P1-2: LN 567' OPEN BRANCH FROM BUS 314903 TO BUS 314924 CKT 1 /* 8CHCKAHM 500.00 - 8SURRY 500.00 END

Contingency Name	Contingency Definition
DVP_P1-2: LN 2193	CONTINGENCY 'DVP_P1-2: LN 2193' OPEN BRANCH FROM BUS 313707 TO BUS 313867 CKT 1 /* 6FORK UNION 230.00 - 6BREMODIST 230.00 OPEN BRANCH FROM BUS 313867 TO BUS 314747 CKT 1 /* 6BREMODIST 230.00 - 6BREMO 230.00 OPEN BUS 313867 /* ISLAND: 6BREMODIST 230.00 END
DVP_P1-2: LN 211	CONTINGENCY 'DVP_P1-2: LN 211' OPEN BRANCH FROM BUS 314287 TO BUS 314303 CKT 1 /* 6CHESTF B 230.00 - 6HOPEWLL 230.00 END
DVP_P1-2: LN 228	CONTINGENCY 'DVP_P1-2: LN 228' OPEN BRANCH FROM BUS 314286 TO BUS 314303 CKT 1 /* 6CHESTF A 230.00 - 6HOPEWLL 230.00 END
DVP_P1-3: 6CHESTF B-GSU-6	CONTINGENCY 'DVP_P1-3: 6CHESTF B-GSU-6' OPEN BRANCH FROM BUS 314287 TO BUS 315065 CKT 1 /* 6CHESTF B 230.00 - 1CHESTF6 24.000 OPEN BUS 315065 /* ISLAND: 1CHESTF6 24.000 END
DVP_P7-1: LN 2058-2181	CONTINGENCY 'DVP_P7-1: LN 2058-2181' /* . OPEN BRANCH FROM BUS 304222 TO BUS 313845 CKT 1 /* 6ROCKYMT230T230.00 - 6HATHAWAY 230.00 OPEN BRANCH FROM BUS 313844 TO BUS 313845 CKT 2 /* 3HATHAWAY 115.00 - 6HATHAWAY 230.00 OPEN BUS 304226 /* ISLAND: 6PA-RMOUNT#4115.00 OPEN BRANCH FROM BUS 304226 TO BUS 314591 CKT 1 /* 6PA-RMOUNT#4230.00 - 6NASH 230.00 OPEN BRANCH FROM BUS 313845 TO BUS 314591 CKT 1 /* 6HATHAWAY 230.00 - 6NASH 230.00 OPEN BUS 314591 /* ISLAND: 6NASH 230.00 END

13 Short Circuit Analysis

No circuit breakers were identified as overdutied as part of this analysis.

14 Stability and Reactive Power

To be determined in the Facilities Study Phase.

15 Affected Systems

15.1 Duke Energy Progress

Potential constraints were identified by PJM on the following Dominion – Duke Energy/Progress (DEP) tie lines. Enter into an Affected System Facilities Study agreement with (DEP) to determine what, if any, reinforcements are required on their system. The following facilities were identified in this report:

- Person – AC1-221 Tap 230kV line
- Sedge Hill – AC1-221 Tap 230kV line
- Battleboro – Rocky Mt. 138kV line

Attachment 1: One Line Diagram