Generation Interconnection

Feasibility Study Report

for

Queue Project AG1-544

BAKERS POND DP 115 KV

39.048 MW Capacity / 60 MW Energy

January 2021

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1 Introduction

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

The AG1-544 customer will be an interconnection to Prince George Electric Cooperative (PGEC) facilities. The Interconnection Customer (IC) will need to coordinate with PGEC for scope, cost and schedule for this physical interconnection. This PJM report identifies the effects on the transmission system. AG1-544 will interconnect within the Prince George Electric Cooperative (PGEC) system which interconnects with the Dominion transmission system at Bakers Pond DP 115 kV.

2 Preface

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

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

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

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

3 General

The Interconnection Customer (IC), has proposed a Solar and Storage generating facility located in Prince George County, Virginia. The installed facilities will have a total capability of 60 MW with 39.048 MW of this output being recognized by PJM as Capacity. The proposed in-service date for this project is October 01, 2024. This study does not imply a TO commitment to this in-service date.

Final attachment facilities and local upgrades (if required) along with terms and conditions to interconnect AG1-544 will be specified in a separate two party Interconnection Agreement (IA) between PGEC and the Interconnection Customer as this project is considered FERC non-jurisdictional per the PJM Open Access Transmission Tariff (OATT).

From the transmission perspective, the impacts are analyzed and detailed in the "Network Impacts" section below.

Queue Number	**AG1-544**
Project Name	BAKERS POND DP 115 KV
State	Virginia
County	Prince George
Transmission Owner	Dominion
MFO	60
MWE	60
MWC	39.048
Fuel	Solar, Storage
Basecase Study Year	2024

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

AG1-544 will interconnect within the Prince George Electric Cooperative (PGEC) system which interconnects with the Dominion transmission system at Bakers Pond DP 115 kV.

Attachment 1 shows a one-line diagram of the proposed interconnection facilities.

5 Cost Summary

The AG1-544 project will be responsible for the following costs:

Description	Total Cost
Total Physical Interconnection Costs	$ 7,600,000 + Costs from PGEC to be provided in the Interconnection Agreement
Total System Network Upgrade Costs	$ 96,734,000[1]
Total Costs	**$ 104,334,000**

In addition, the costs assoicated with interconnecting AG1-544 to the Prince George Electric Cooperative (PGEC) system will be documented in the two-party Interconnection Agreement between the IC and Prince George Electric Cooperative (PGEC).

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 2016-36, 2016-25 I.R.B. (6/20/2016). If at a future date it is determined that the Federal Income Tax Gross charge is required, the Transmission Owner shall be reimbursed by the Interconnection Customer for such taxes.

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

[1] This project currently causes and/or contributes to overloads of the Transmission System (see Summer Peak Load Flow Analysis section below) and therefore has potential to have cost allocation for the system reinforcements listed in the report. This will be re-evaluated in the System Impact phase. The results may vary with queue customers withdrawing from the queue and other generators deactivating over time. If a customer is the first to cause the need for a project (causes loading to exceed 100% of rating), then the customer is responsible. If a customer contributes to a facility that is already overloaded by a prior queue, then they may receive cost allocation.

6 Transmission Owner Scope of Work

AG1-544 will interconnect within the Prince George Electric Cooperative (PGEC) system which interconnects with the Dominion transmission system at Bakers Pond DP 115 kV.

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.

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

Description	Total Cost
Attachment Facilities	$ 500,000
115 kV Three Breaker Ring-Bus Substation	$ 5,500,000
Re-arrange line and tie-in new substation	$ 1,600,000
Total Physical Interconnection Costs	**$ 7,600,000 + Costs from PGEC to be determined**

7 Schedule

This schedule will be more cleary identified in future study phases.

If the customer is ultimately responsible for network upgrades, then the schedule for those upgrades will be refined in future study phases. The customer would need to wait for those upgrades to be completed prior to commercial operation unless determined deliverable by an interim deliverability study. The elapsed time to complete any network upgrades is provided in the System Reinforcements table of this report.

8 Transmission Owner Analysis

Dominion assessed the impact of the proposed project for compliance with NERC Reliability Criteria on the Dominion Transmission System. The system was assessed using the summer 2024 AG1 case provided to Dominion by PJM.

When performing a generation analysis, Dominion's main analysis includes load flow study results following a single contingency event for 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.

8.1 Power Flow Analysis

PJM performed a power flow analysis of the transmission system using a 2024 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 section 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 Meteorological Data Reporting Requirements

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

- Back Panel temperature (Fahrenheit) - (Required for plants with Maximum Facility Output of 3 MW or higher)
- Irradiance (Watts/meter2) - (Required for plants with Maximum Facility Output of 3 MW or higher)
- Ambient air temperature (Fahrenheit) - (Accepted, not required)
- Wind speed (meters/second) - (Accepted, not required)
- Wind direction (decimal degrees from true north) - (Accepted, not required)

10.3 Interconnected Transmission Owner Requirements

The IC will be required to comply with all Interconnected Transmission Owner's revenue metering requirements for generation interconnection customers located at the following link:

http://www.pjm.com/planning/design-engineering/to-tech-standards/

11 Summer Peak - Load Flow Analysis

The Queue Project AG1-544 was evaluated as a 60.0 MW (Capacity 39.0 MW) injection at the Bakers Pond 115 kV substation in the Dominion area. Project AG1-544 was evaluated for compliance with applicable reliability planning criteria (PJM, NERC, NERC Regional Reliability Councils, and Transmission Owners). Project AG1-544 was studied with a commercial probability of 53.0 %. 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
168581108	313879	3BELL AVE 2	115.0	DVP	314528	3IVOR10 6	115.0	DVP	1	DVP_P1-2: LN 106	single	110.919998169	94.66	129.87	DC	39.05
168887419	314528	3IVOR10 6	115.0	DVP	932590	AC2-079 TAP	115.0	DVP	1	DVP_P1-2: LN 106	single	110.919998169	80.33	115.53	DC	39.05
168887365	314532	3OAKRI2 3	115.0	DVP	314536	3SUFFOLK	115.0	DVP	1	DVP_P1-2: LN 106	single	110.919998169	89.97	125.18	DC	39.05

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
167010795	314329	3POE	115.0	DVP	314291	3PRGEORG	115.0	DVP	1	DVP_P7-1: LN 205-2003	tower	301.0	94.04	101.52	DC	22.49

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
168887346	314273	3BAKRS P	115.0	DVP	314280	3NEWBOHE	115.0	DVP	1	DVP_P1-2: LN 23-B	single	110.919998169	154.44	189.64	DC	39.05
168887347	314273	3BAKRS P	115.0	DVP	314280	3NEWBOHE	115.0	DVP	1	DVP_P1-2: LN 23-A	single	110.919998169	139.74	174.95	DC	39.05
168887348	314273	3BAKRS P	115.0	DVP	314280	3NEWBOHE	115.0	DVP	1	Base Case	single	110.919998169	113.35	139.99	DC	29.55
168887352	314280	3NEWBOHE	115.0	DVP	314329	3POE	115.0	DVP	1	DVP_P1-2: LN 23-B	single	110.919998169	144.07	179.27	DC	39.05
168887353	314280	3NEWBOHE	115.0	DVP	314329	3POE	115.0	DVP	1	DVP_P1-2: LN 23-A	single	110.919998169	129.28	164.49	DC	39.05
168887354	314280	3NEWBOHE	115.0	DVP	314329	3POE	115.0	DVP	1	Base Case	single	110.919998169	102.89	129.53	DC	29.55
168887514	314299	6HARROWG	230.0	DVP	314263	6TYLER1	230.0	DVP	1	DVP_P1-2: LN 563	single	441.799987793	152.48	154.16	DC	7.69
168887516	314299	6HARROWG	230.0	DVP	314263	6TYLER1	230.0	DVP	1	DVP_P1-2: LN 249	single	441.799987793	120.5	122.11	DC	7.12
163416270	314303	6HOPEWLL	230.0	DVP	314286	6CHESTF A	230.0	DVP	1	DVP_P2-2: BASIN B7	bus	549.0	183.46	184.16	DC	8.82

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
163416545	314303	6HOPEWLL	230.0	DVP	314286	6CHESTF A	230.0	DVP	1	DVP_P7-1: LN 212-240-D	tower	549.0	206.89	208.43	DC	8.44
163416546	314303	6HOPEWLL	230.0	DVP	314286	6CHESTF A	230.0	DVP	1	DVP_P7-1: LN 212-240-C	tower	549.0	199.62	201.16	DC	8.44
168887423	314303	6HOPEWLL	230.0	DVP	314286	6CHESTF A	230.0	DVP	1	DVP_P1-2: LN 211	single	449.320007324	185.79	186.81	DC	4.71
168887425	314303	6HOPEWLL	230.0	DVP	314286	6CHESTF A	230.0	DVP	1	DVP_P1-2: LN 240-D	single	449.320007324	168.71	169.81	DC	4.95
168887426	314303	6HOPEWLL	230.0	DVP	314286	6CHESTF A	230.0	DVP	1	Base Case	single	449.320007324	155.1	156.14	DC	4.7
167010733	314314	3LOCKS	115.0	DVP	940430	AE2-027 TAP	115.0	DVP	1	DVP_P7-1: LN 205-2003	tower	169.0	153.69	155.15	DC	5.47
168887586	314314	3LOCKS	115.0	DVP	940430	AE2-027 TAP	115.0	DVP	1	DVP_P1-2: LN 563	single	138.179992676	116.2	117.86	DC	2.29
168887587	314314	3LOCKS	115.0	DVP	940430	AE2-027 TAP	115.0	DVP	1	DVP_P1-2: LN 205	single	138.179992676	109.57	111.44	DC	2.59
167010794	314329	3POE	115.0	DVP	314291	3PRGEORG	115.0	DVP	1	DVP_P7-1: LN 2002-2003	tower	301.0	105.98	117.51	DC	34.71
168887510	314331	6POE	230.0	DVP	314299	6HARROWG	230.0	DVP	1	DVP_P1-2: LN 563	single	441.799987793	152.5	154.19	DC	7.69
168887512	314331	6POE	230.0	DVP	314299	6HARROWG	230.0	DVP	1	DVP_P1-2: LN 249	single	441.799987793	120.52	122.13	DC	7.12
167010757	316079	AB2-161 TAP	115.0	DVP	313879	3BELL AVE 2	115.0	DVP	1	DVP_P7-1: LN 97-121	tower	136.0	121.9	134.42	DC	17.02
168887362	932590	AC2-079 TAP	115.0	DVP	314532	3OAKRI23	115.0	DVP	1	DVP_P1-2: LN 106	single	110.919998169	109.36	144.56	DC	39.05
167010702	940430	AE2-027 TAP	115.0	DVP	314298	3HARROWG	115.0	DVP	1	DVP_P7-1: LN 205-2003	tower	169.0	193.65	195.11	DC	5.47
169810925	940430	AE2-027 TAP	115.0	DVP	314298	3HARROWG	115.0	DVP	1	DVP_P1-2: LN 563	single	138.179992676	142.11	143.77	DC	2.29
169810926	940430	AE2-027 TAP	115.0	DVP	314298	3HARROWG	115.0	DVP	1	DVP_P1-2: LN 228	single	138.179992676	135.96	137.77	DC	2.51
169810927	940430	AE2-027 TAP	115.0	DVP	314298	3HARROWG	115.0	DVP	1	Base Case	single	138.179992676	121.96	123.5	DC	2.13

11.4 Potential Congestion due to Local Energy Deliverability

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

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

ID	FROM BUS#	FROM BUS	kV	FROM BUS AREA	TO BUS#	TO BUS	kV	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC|DC	MW IMPACT
168581107	313879	3BELL AVE 2	115.0	DVP	314528	3IVOR106	115.0	DVP	1	DVP_P1-2: LN 106	operation	110.919998169	180.94	235.03	DC	60.0
168581109	313879	3BELL AVE 2	115.0	DVP	314528	3IVOR106	115.0	DVP	1	Base Case	operation	110.919998169	100.9	114.06	DC	14.6
168581421	313879	3BELL AVE 2	115.0	DVP	316079	AB2-161 TAP	115.0	DVP	1	DVP_P1-3: 8CARSON-TX#2	operation	110.919998169	121.73	125.15	DC	3.79
168581422	313879	3BELL AVE 2	115.0	DVP	316079	AB2-161 TAP	115.0	DVP	1	Base Case	operation	110.919998169	105.91	109.2	DC	3.65
168887821	314269	6PRGEORG	230.0	DVP	314291	3PRGEORG	115.0	DVP	1	DVP_P1-2: LN 211	operation	190.537994385	108.83	110.16	DC	2.53
168887343	314273	3BAKRS P	115.0	DVP	314280	3NEWBOHE	115.0	DVP	1	DVP_P1-2: LN 23-B	operation	110.919998169	310.76	364.86	DC	60.0
168887345	314273	3BAKRS P	115.0	DVP	314280	3NEWBOHE	115.0	DVP	1	Base Case	operation	110.919998169	212.22	253.15	DC	45.4
169504116	314273	3BAKRS P	115.0	DVP	316079	AB2-161 TAP	115.0	DVP	1	DVP_P1-2: LN 44-A	operation	110.919998169	118.65	132.29	DC	15.13
169504118	314273	3BAKRS P	115.0	DVP	316079	AB2-161 TAP	115.0	DVP	1	Base Case	operation	110.919998169	104.52	117.67	DC	14.6
168887349	314280	3NEWBOHE	115.0	DVP	314329	3POE	115.0	DVP	1	DVP_P1-2: LN 23-B	operation	110.919998169	300.4	354.49	DC	60.0
168887351	314280	3NEWBOHE	115.0	DVP	314329	3POE	115.0	DVP	1	Base Case	operation	110.919998169	201.76	242.7	DC	45.4
168887743	314280	3NEWBOHE	115.0	DVP	314273	3BAKRS P	115.0	DVP	1	DVP_P1-2: LN 544-A	operation	110.919998169	119.79	130.05	DC	11.37
168887745	314280	3NEWBOHE	115.0	DVP	314273	3BAKRS P	115.0	DVP	1	Base Case	operation	110.919998169	105.05	114.7	DC	11.35
168887427	314287	6CHESTFB	230.0	DVP	314276	6BASIN	230.0	DVP	1	DVP_P1-2: LN 563	operation	663.640014648	207.12	208.31	DC	7.85
168887431	314287	6CHESTFB	230.0	DVP	314276	6BASIN	230.0	DVP	1	Base Case	operation	663.640014648	110.68	111.7	DC	6.79
168887513	314299	6HARROWG	230.0	DVP	314263	6TYLER1	230.0	DVP	1	DVP_P1-2: LN 563	operation	441.799987793	172.58	175.26	DC	11.82
168887421	314303	6HOPEWLL	230.0	DVP	314286	6CHESTFA	230.0	DVP	1	DVP_P1-2: LN 211	operation	449.320007324	208.43	209.14	DC	7.24
168887424	314303	6HOPEWLL	230.0	DVP	314286	6CHESTFA	230.0	DVP	1	Base Case	operation	449.320007324	173.74	174.45	DC	7.22
168887583	314314	3LOCKS	115.0	DVP	940430	AE2-027 TAP	115.0	DVP	1	DVP_P1-2: LN 205	operation	138.179992676	152.79	154.09	DC	3.98
168887585	314314	3LOCKS	115.0	DVP	940430	AE2-027 TAP	115.0	DVP	1	Base Case	operation	138.179992676	128.74	129.81	DC	3.28
168887681	314329	3POE	115.0	DVP	314280	3NEWBOHE	115.0	DVP	1	DVP_P1-2: LN 544-A	operation	110.919998169	130.16	140.41	DC	11.37
168887683	314329	3POE	115.0	DVP	314280	3NEWBOHE	115.0	DVP	1	Base Case	operation	110.919998169	115.51	125.16	DC	11.35

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
168887792	314329	3POE	115.0	DVP	314291	3PRGEORG	115.0	DVP	1	DVP_P1-2: LN 2003	operation	246.279998779	106.44	115.57	DC	22.48
168887509	314331	6POE	230.0	DVP	314299	6HARROWG	230.0	DVP	1	DVP_P1-2: LN 563	operation	441.799987793	172.61	175.28	DC	11.82
168887418	314528	3IVOR106	115.0	DVP	932590	AC2-079 TAP	115.0	DVP	1	DVP_P1-2: LN 106	operation	110.919998169	166.61	220.7	DC	60.0
168887364	314532	3OAKRI23	115.0	DVP	314536	3SUFFOLK	115.0	DVP	1	DVP_P1-2: LN 106	operation	110.919998169	223.76	277.86	DC	60.0
168887366	314532	3OAKRI23	115.0	DVP	314536	3SUFFOLK	115.0	DVP	1	Base Case	operation	110.919998169	111.3	124.46	DC	14.6
168887810	314536	3SUFFOLK	115.0	DVP	314537	6SUFFOLK	230.0	DVP	1	DVP_P1-3: 6SUFFOLK-TX#5	operation	248.441986084	111.06	114.12	DC	7.6
168887853	314536	3SUFFOLK	115.0	DVP	314537	6SUFFOLK	230.0	DVP	2	DVP_P1-3: 6SUFFOLK-TX#2	operation	262.730010986	102.66	105.49	DC	7.42
168581236	316079	AB2-161 TAP	115.0	DVP	313879	3BELL AVE 2	115.0	DVP	1	DVP_P1-2: LN 121	operation	110.919998169	149.09	164.43	DC	17.02
168581238	316079	AB2-161 TAP	115.0	DVP	313879	3BELL AVE 2	115.0	DVP	1	Base Case	operation	110.919998169	134.22	147.38	DC	14.6
169503961	316079	AB2-161 TAP	115.0	DVP	314273	3BAKRS P	115.0	DVP	1	DVP_P1-3: 8CARSON-TX#2	operation	110.919998169	197.08	200.5	DC	3.79
169503962	316079	AB2-161 TAP	115.0	DVP	314273	3BAKRS P	115.0	DVP	1	Base Case	operation	110.919998169	182.22	185.51	DC	3.65
168887361	932590	AC2-079 TAP	115.0	DVP	314532	3OAKRI23	115.0	DVP	1	DVP_P1-2: LN 106	operation	110.919998169	243.15	297.24	DC	60.0
168887363	932590	AC2-079 TAP	115.0	DVP	314532	3OAKRI23	115.0	DVP	1	Base Case	operation	110.919998169	130.68	143.84	DC	14.6
168887826	932590	AC2-079 TAP	115.0	DVP	314528	3IVOR106	115.0	DVP	1	DVP_P1-2: LN 2002	operation	110.919998169	104.92	108.65	DC	4.14
169810922	940430	AE2-027 TAP	115.0	DVP	314298	3HARROWG	115.0	DVP	1	DVP_P1-2: LN 563	operation	138.179992676	193.24	194.39	DC	3.52
169810924	940430	AE2-027 TAP	115.0	DVP	314298	3HARROWG	115.0	DVP	1	Base Case	operation	138.179992676	171.72	172.79	DC	3.28

11.5 System Reinforcements - Summer Peak Load Flow

ID	Idx	Facility	Upgrade Description	Cost
168887510,168887512	10	6POE 230.0 kV - 6HARROWG 230.0 kV Ckt 1	DVP n6179 (1585) : Rebuild 12.3 miles of 230 kV Line 2003 from Poe to Harrowgate with 2-636 ACSR. Project Type : FAC Cost : $30,750,000 Time Estimate : 30-36 Months	$30,750,000
168887362	12	AC2-079 TAP 115.0 kV - 3OAKRI23 115.0 kV Ckt 1	DVP n6176 (1583) : Rebuild 10.5 miles of 115 kV Line 23 from Oak Ridge to AC2-079 with 636 ACSR. Project Type : FAC Cost : $13,650,000 Time Estimate : 30-36 Months	$13,650,000
167010733,168887586,168887587	9	3LOCKS 115.0 kV - AE2-027 TAP 115.0 kV Ckt 1	DVP n6404 (1461) : Rebuild 4.4 miles of 115 kV Line 100 from Locks to AE2-027 Tap with 768 ACSS. Project Type : FAC Cost : $5,720,000 Time Estimate : 30-36 Months	$5,720,000
167010757	11	AB2-161 TAP 115.0 kV - 3BELL AVE 2 115.0 kV Ckt 1	DVP dom-381 (1779) : Reconductor 13.5 miles of 115 kV Line 106 from AB2-161 Tap to Bell Avenue with 636 ACSR 150 C. Project Type : FAC Cost : $8,100,000 Time Estimate : 36-40 Months	$8,100,000
168887348,168887346,168887347	5	3BAKRS P 115.0 kV - 3NEWBOHE 115.0 kV Ckt 1	DVP n6205 (1589) : Rebuild 2.45 miles of Line 106 from Bakers Pond DP to New Bohemia DP with 636 ACSR. Project Type : FAC Cost : $3,185,000 Time Estimate : 30-36 Months	$3,185,000
168887365	3	3OAKRI23 115.0 kV - 3SUFFOLK 115.0 kV Ckt 1	DVP dom-171 (1521) : Reconductor 2.5 miles of 115 kV Line 23 from Oakridge to Suffolk with 636 ACSR Project Type : FAC Cost : $1,500,000 Time Estimate : 30-36 Months	$1,500,000

ID	Idx	Facility	Upgrade Description	Cost
168887425,168887426,168887423,163416546,163416545,163416270	8	6HOPEWLL 230.0 kV - 6CHESTF A 230.0 kV Ckt 1	DVP b2922 (1330) : PJM Baseline Upgrade b2922. Rebuild 8 of 11 miles of 230kV Lines #211 and #228 to current standard with a summer emergency rating of 1046 MVA for rebuilt section. Proposed conductor is 2-636 ACSR. The baseline project has an projected in-service date of 12/01/2020. Project Type : FAC Cost : $0 Time Estimate : N/A Months n6155 (1569) : Rebuild 3 miles of 230 kV Line 211 from Hopewell to Chesterfield with 2-636 ACSR. Project Type : FAC Cost : $7,500,000 Time Estimate : 30-36 Months	$7,500,000
168887354,168887353,168887352	6	3NEWBOHE 115.0 kV - 3POE 115.0 kV Ckt 1	DVP n6209 (1412) : Rebuild 2.68 miles of Line 106 from New Bohemia DP to Poe with 636 ACSR. Project Type : FAC Cost : $3,484,000 Time Estimate : 30-36 Months	$3,484,000
168581108	1	3BELL AVE 2 115.0 kV - 3IVOR106 115.0 kV Ckt 1	DVP dom-278 (1676) : Reconductor 0.9 miles of 115 kV Line 23 from Bell Ave to Ivor with 636 ACSR 150 C. Project Type : FAC Cost : $540,000 Time Estimate : 30-36 Months	$540,000
167010794,167010795	4	3POE 115.0 kV - 3PRGEORG 115.0 kV Ckt 1	DVP dom-043 (1392) : Rebuild 3.45 miles of 115 kV Line 121 from Poe to Prince George with 768 ACSS. Project Type : FAC Cost : $4,485,000 Time Estimate : 30-36 Months	$4,485,000
169810925,167010702,169810927,169810926	13	AE2-027 TAP 115.0 kV - 3HARROWG 115.0 kV Ckt 1	DVP n6387 (1459) : Rebuild 0.90 miles of 115 kV Line 100 from AE2-027 Tap to Harrowgate with 768 ACSS. Project Type : FAC Cost : $1,170,000 Time Estimate : 30-36 Months	$1,170,000
168887419	2	3IVOR106 115.0 kV - AC2-079 TAP 115.0 kV Ckt 1	DVP dom-146 (1496) : Reconductor 9 miles of 115 kV Line 23 from Ivor to AC2-079 Tap with 636 ACSR Project Type : FAC Cost : $5,400,000 Time Estimate : 30-36 Months	$5,400,000

ID	Idx	Facility	Upgrade Description	Cost
168887514,168887516	7	6HARROWG 230.0 kV - 6TYLER1 230.0 kV Ckt 1	**DVP** **n6178 (1584) : Rebuild 4.5 miles of 230 kV Line 2003 from Harrowgate to Tyler with 2-636 ACSR.** **Project Type : FAC** **Cost : $11,250,000** **Time Estimate : 30-36 Months**	$11,250,000
			TOTAL COST	**$96,734,000**

11.6 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".

11.6.1 Index 1

ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC|DC	MW IMPACT
168581108	313879	3BELL AVE 2	DVP	314528	3IVOR106	DVP	1	DVP_P1-2: LN 106	single	110.92	94.66	129.87	DC	39.05

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
316083	AB2-161 C	19.0000	80/20	19.0000
934575	AD1-082 C	43.3000	80/20	43.3000
940061	AE2-000BC O1	60.0000	80/20	60.0000
966731	AG1-544 C	39.0500	80/20	39.0500

11.6.2 Index 2

ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC|DC	MW IMPACT
168887419	314528	3IVOR106	DVP	932590	AC2-079 TAP	DVP	1	DVP_P1-2: LN 106	single	110.92	80.33	115.53	DC	39.05

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
316083	AB2-161 C	19.0000	80/20	19.0000
934575	AD1-082 C	43.3000	80/20	43.3000
940061	AE2-000BC O1	60.0000	80/20	60.0000
966731	AG1-544 C	39.0500	80/20	39.0500

11.6.3 Index 3

ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC|DC	MW IMPACT
168887365	314532	3OAKRI23	DVP	314536	3SUFFOLK	DVP	1	DVP_P1-2: LN 106	single	110.92	89.97	125.18	DC	39.05

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
316083	AB2-161 C	19.0000	80/20	19.0000
932591	AC2-079 C O1	32.3000	80/20	32.3000
934575	AD1-082 C	43.3000	80/20	43.3000
940061	AE2-000BC O1	60.0000	80/20	60.0000
966731	AG1-544 C	39.0500	80/20	39.0500

11.6.4 Index 4

ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC|DC	MW IMPACT
167010794	314329	3POE	DVP	314291	3PRGEORG	DVP	1	DVP_P7-1: LN 2002-2003	tower	301.0	105.98	117.51	DC	34.71

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
314539	3UNCAMP	2.1973	Adder	2.59
316083	AB2-161 C	10.4872	50/50	10.4872
316084	AB2-161 E	17.1108	50/50	17.1108
316103	AB2-015 C	2.9401	Adder	3.46
316104	AB2-015 E	2.4109	Adder	2.84
932581	AC2-078 C O1	12.9110	50/50	12.9110
932582	AC2-078 E O1	21.0652	50/50	21.0652
932591	AC2-079 C O1	11.1293	50/50	11.1293
932592	AC2-079 E O1	18.1583	50/50	18.1583
934575	AD1-082 C	23.8999	50/50	23.8999
934576	AD1-082 E	13.6334	50/50	13.6334
936661	AD2-085 C	4.7041	50/50	4.7041
936662	AD2-085 E	7.6751	50/50	7.6751
938634	AE1-085 C	28.9230	50/50	28.9230
938635	AE1-085 E	14.4615	50/50	14.4615
938771	AE1-103 C	1.4130	Adder	1.66
938772	AE1-103 E	1.9513	Adder	2.3
939195	AE1-149 C	38.3790	50/50	38.3790
939196	AE1-149 E	25.5860	50/50	25.5860
940061	AE2-000BC O1	31.6722	50/50	31.6722
940062	AE2-000BE O1	21.1148	50/50	21.1148
940651	AE2-052	12.7930	50/50	12.7930
941101	AE2-104 C O1	1.9813	50/50	1.9813
941102	AE2-104 E O1	3.1500	50/50	3.1500
942341	AE2-247 C	2.0556	50/50	2.0556
942342	AE2-247 E	2.8386	50/50	2.8386
943461	AF1-017 C	1.8598	50/50	1.8598
943462	AF1-017 E	3.0344	50/50	3.0344
958161	AF2-110 C	0.8168	50/50	0.8168
958162	AF2-110 E	1.2776	50/50	1.2776
961091	AF2-400 C	0.1588	Adder	0.19
961092	AF2-400 E	0.2605	Adder	0.31
961851	AG1-027 C	4.1212	Adder	9.15
961852	AG1-027 E	2.2782	Adder	5.06
966731	AG1-544 C	22.5889	50/50	22.5889
966732	AG1-544 E	12.1187	50/50	12.1187
966741	AG1-545 C	7.4567	50/50	7.4567
966742	AG1-545 E	3.9975	50/50	3.9975
WEC	WEC	0.0318	Confirmed LTF	0.0318
LGEE	LGEE	0.0653	Confirmed LTF	0.0653
CPLE	CPLE	0.3795	Confirmed LTF	0.3795

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
CBM-W2	CBM-W2	1.4426	Confirmed LTF	1.4426
NY	NY	0.0465	Confirmed LTF	0.0465
TVA	TVA	0.2744	Confirmed LTF	0.2744
O-066	O-066	0.6528	Confirmed LTF	0.6528
SIGE	SIGE	0.0219	Confirmed LTF	0.0219
CBM-S2	CBM-S2	4.3013	Confirmed LTF	4.3013
CBM-S1	CBM-S1	0.0680	Confirmed LTF	0.0680
G-007	G-007	0.1029	Confirmed LTF	0.1029
MEC	MEC	0.1939	Confirmed LTF	0.1939
LAGN	LAGN	0.3412	Confirmed LTF	0.3412
CBM-W1	CBM-W1	1.3319	Confirmed LTF	1.3319

11.6.5 Index 5

ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC|DC	MW IMPACT
168887346	314273	3BAKRSP	DVP	314280	3NEWBOHE	DVP	1	DVP_P1-2: LN 23-B	single	110.92	154.44	189.64	DC	39.05

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
316083	AB2-161 C	19.0000	80/20	19.0000
932591	AC2-079 C O1	32.3000	80/20	32.3000
934575	AD1-082 C	43.3000	80/20	43.3000
938634	AE1-085 C	50.0000	80/20	50.0000
940061	AE2-000BC O1	60.0000	80/20	60.0000
966731	AG1-544 C	39.0500	80/20	39.0500

11.6.6 Index 6

ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC|DC	MW IMPACT
168887352	314280	3NEWBOHE	DVP	314329	3POE	DVP	1	DVP_P1-2: LN 23-B	single	110.92	144.07	179.27	DC	39.05

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
316083	AB2-161 C	19.0000	80/20	19.0000
932591	AC2-079 C O1	32.3000	80/20	32.3000
934575	AD1-082 C	43.3000	80/20	43.3000
938634	AE1-085 C	50.0000	80/20	50.0000
940061	AE2-000BC O1	60.0000	80/20	60.0000
966731	AG1-544 C	39.0500	80/20	39.0500

11.6.7 Index 7

ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC|DC	MW IMPACT
168887514	314299	6HARROWG	DVP	314263	6TYLER1	DVP	1	DVP_P1-2: LN 563	single	441.8	152.48	154.16	DC	7.69

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
313506	AB1-173 C OP	3.3710	80/20	3.3710
313719	3CHESTNUT	0.4186	80/20	0.4186
314435	6SAPONY	0.3020	80/20	0.3020
314572	3EMPORIA	0.2256	80/20	0.2256
314582	3KELFORD	0.1281	80/20	0.1281
314589	3MURPHYS	0.0323	80/20	0.0323
314623	3WITAKRS	0.0765	80/20	0.0765
314704	3LAWRENC	0.1387	80/20	0.1387
315102	1BRUNSWICKG1	2.4537	80/20	2.4537
315103	1BRUNSWICKG2	2.4537	80/20	2.4537
315104	1BRUNSWICKG3	2.4537	80/20	2.4537
315105	1BRUNSWICKS1	5.0976	80/20	5.0976
315115	1S HAMPT1	0.5403	80/20	0.5403
315126	1ROARAP2	0.5660	80/20	0.5660
315128	1ROARAP4	0.5401	80/20	0.5401
315131	**1EDGECMA (Deactivation : 22/04/2019)**	**3.2550**	**80/20**	**3.2550**
315132	**1EDGECMB (Deactivation : 22/04/2019)**	**3.2550**	**80/20**	**3.2550**
315136	1ROSEMG1	0.9338	80/20	0.9338
315137	1ROSEMS1	0.5791	80/20	0.5791
315138	1ROSEMG2	0.4377	80/20	0.4377
315139	1GASTONA	1.3920	80/20	1.3920
315141	1GASTONB	1.3920	80/20	1.3920
315159	1KERR 2	0.3447	80/20	0.3447
315160	1KERR 3	0.3447	80/20	0.3447
315161	1KERR 4	0.3447	80/20	0.3447
315162	1KERR 5	0.3447	80/20	0.3447
315163	1KERR 6	0.3447	80/20	0.3447
315164	1KERR 7	0.3447	80/20	0.3447
315241	1Z1-086 GT1	3.1549	80/20	3.1549
315242	1Z1-086 GT2	3.1549	80/20	3.1549
315243	1Z1-086 GT3	3.1549	80/20	3.1549
315244	1Z1-086 ST	5.4843	80/20	5.4843
315293	1DOMTR9	1.7503	Adder	2.06
315294	1DOMTR10	2.1450	Adder	2.52
315601	1CONETOE2SOL	0.4539	80/20	0.4539
315602	1HOLLOMANSOL	0.4740	80/20	0.4740
315606	3AA2-053SOLA	0.5973	80/20	0.5973
315607	3AA1-063SOLA	0.5544	80/20	0.5544
315608	3AA2-088SOLA	0.3920	80/20	0.3920
316020	AB2-059 C OP	0.5832	80/20	0.5832

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
316083	AB2-161 C	3.6003	80/20	3.6003
316087	AB2-174 C	0.5694	80/20	0.5694
316096	AB2-100 C1	0.5685	80/20	0.5685
316098	AB2-100 C2	0.5685	80/20	0.5685
316103	AB2-015 C	3.2120	80/20	3.2120
316129	AC1-054 C	2.6954	80/20	2.6954
316140	**AB2-099 C (Suspended)**	**0.2101**	**80/20**	**0.2101**
920591	AA2-165 C	0.0562	80/20	0.0562
922922	AB1-081 C OP	0.4949	80/20	0.4949
923991	AB2-040 C O1	3.6714	80/20	3.6714
925591	AC1-034 C	2.3944	80/20	2.3944
926070	AC1-086 C	9.9220	80/20	9.9220
926201	AC1-098 C	2.2985	80/20	2.2985
926211	AC1-099 C	0.7702	80/20	0.7702
927024	AC1-189 C	2.8660	80/20	2.8660
927145	AC1-208 C	3.4775	80/20	3.4775
932581	AC2-078 C O1	4.4132	80/20	4.4132
932591	AC2-079 C O1	4.2148	80/20	4.2148
932631	AC2-084 C	3.2766	80/20	3.2766
933991	AD1-023 C	3.4020	Adder	4.0
934331	AD1-057 C O1	4.0899	80/20	4.0899
934575	AD1-082 C	8.2049	80/20	8.2049
936361	AD2-046 C O1	2.3961	Adder	2.82
936401	AD2-051 C O1	2.9711	80/20	2.9711
936661	AD2-085 C	1.9675	80/20	1.9675
936761	AD2-097 C	-0.5795	Adder	-0.68
938221	AE1-035 C	0.1185	80/20	0.1185
938494	AE1-068_C1	9.4459	80/20	9.4459
938497	AE1-068_C2	9.4459	80/20	9.4459
938504	AE1-069_C1	7.1988	80/20	7.1988
938507	AE1-069_C2	7.7620	80/20	7.7620
938634	AE1-085 C	9.8510	80/20	9.8510
938771	AE1-103 C	1.3373	80/20	1.3373
939181	AE1-148 C	2.3556	Adder	2.77
939195	AE1-149 C	12.8658	80/20	12.8658
939414	AE1-173_C1	7.3956	Adder	8.7
939415	AE1-173_C2	6.3391	Adder	7.46
939416	AE1-173_C3	7.3956	Adder	8.7
940061	AE2-000BC O1	10.9578	80/20	10.9578
940471	AE2-031 C	10.2695	80/20	10.2695
940481	AE2-033 C	11.9803	80/20	11.9803
940541	AE2-040	2.1774	80/20	2.1774
940571	AE2-044 C	1.5683	80/20	1.5683
940641	AE2-051 C O1	5.1129	80/20	5.1129
940651	AE2-052	4.2886	80/20	4.2886
940661	AE2-053 O1	0.8724	Adder	1.03
941031	AE2-094 C	12.3678	80/20	12.3678
941101	AE2-104 C O1	1.1780	80/20	1.1780
941541	**AE2-151 C (Withdrawn : 01/08/2021)**	**0.0604**	**80/20**	**0.0604**
942161	AE2-228 C	-1.0844	Adder	-1.28
942341	AE2-247 C	0.8575	80/20	0.8575
942471	AE2-260 C O1	9.1780	80/20	9.1780

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
942931	AE2-313 C	11.1024	80/20	11.1024
943171	AE2-346 C	0.5043	80/20	0.5043
943461	AF1-017 C	0.7758	80/20	0.7758
943911	AF1-059	6.7853	80/20	6.7853
944011	AF1-069 C	4.0410	80/20	4.0410
944141	AF1-082	1.0082	80/20	1.0082
946011	AF1-266	10.0284	80/20	10.0284
946261	AF1-291 C	-1.8452	Adder	-2.17
946281	AF1-292 C	0.8273	80/20	0.8273
957521	AF2-046 C	6.2694	80/20	6.2694
957861	AF2-080 C	2.6030	80/20	2.6030
958161	AF2-110 C	0.4856	80/20	0.4856
959511	AF2-242 C	1.9726	Adder	2.32
959651	AF2-256 C	-0.2711	Adder	-0.32
960081	AF2-299 C	1.3944	80/20	1.3944
961091	AF2-400 C	0.1734	80/20	0.1734
961671	AG1-007 C	0.4216	80/20	0.4216
961681	AG1-008 C	6.2820	80/20	6.2820
961851	AG1-027 C	6.0684	80/20	6.0684
961931	AG1-036 C	0.4969	80/20	0.4969
961941	AG1-037 C	0.1801	80/20	0.1801
962331	AG1-082 C	0.7204	80/20	0.7204
962341	AG1-083 C	0.7204	80/20	0.7204
962351	AG1-084 C	0.6183	80/20	0.6183
962361	AG1-085 C	0.6183	80/20	0.6183
962571	AG1-106 C	2.7592	80/20	2.7592
963041	AG1-153 C	1.7217	80/20	1.7217
963111	AG1-160 C	1.7439	80/20	1.7439
963291	AG1-178 C O1	17.8262	80/20	17.8262
963301	AG1-179 C	2.5632	80/20	2.5632
963311	AG1-180	1.2489	80/20	1.2489
963351	AG1-184 O1	9.6038	80/20	9.6038
964491	AG1-312 C O1	6.2093	80/20	6.2093
964501	AG1-313 C O1	1.8373	80/20	1.8373
964801	AG1-343 C	2.2813	80/20	2.2813
964931	AG1-357 C	6.3144	80/20	6.3144
965291	AG1-394 C	0.7865	80/20	0.7865
965451	AG1-413 C O1	2.8523	80/20	2.8523
965601	AG1-428 C O1	2.1398	80/20	2.1398
965691	AG1-437 C O1	3.1668	80/20	3.1668
965701	AG1-438 C O1	3.1668	80/20	3.1668
965711	AG1-439 C O1	8.1420	80/20	8.1420
965721	AG1-440 C	2.4817	80/20	2.4817
965731	AG1-441 C	2.4817	80/20	2.4817
965741	AG1-442 O1	1.8473	80/20	1.8473
965751	AG1-443 O1	1.8473	80/20	1.8473
965761	AG1-444 O1	4.3424	80/20	4.3424
965771	AG1-445	1.4339	80/20	1.4339
965781	AG1-446	1.4339	80/20	1.4339
965811	AG1-449	7.2004	80/20	7.2004
966361	AG1-505 C	5.0148	80/20	5.0148
966371	AG1-506 C	5.0148	80/20	5.0148

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
966621	AG1-532 C	0.7530	80/20	0.7530
966731	AG1-544 C	7.6936	80/20	7.6936
966741	AG1-545 C	2.5440	80/20	2.5440
966751	AG1-546 C	6.0232	80/20	6.0232
966801	AG1-551 C	0.3278	Adder	0.73
966811	AG1-552 C	0.8986	80/20	0.8986
WEC	WEC	0.2255	Confirmed LTF	0.2255
LGEE	LGEE	0.4643	Confirmed LTF	0.4643
CPLE	CPLE	2.4734	Confirmed LTF	2.4734
CBM-W2	CBM-W2	10.0890	Confirmed LTF	10.0890
NY	NY	0.3512	Confirmed LTF	0.3512
TVA	TVA	1.9138	Confirmed LTF	1.9138
SIGE	SIGE	0.1599	Confirmed LTF	0.1599
CBM-S2	CBM-S2	29.1902	Confirmed LTF	29.1902
CBM-S1	CBM-S1	0.4761	Confirmed LTF	0.4761
MEC	MEC	1.3634	Confirmed LTF	1.3634
LAGN	LAGN	2.3800	Confirmed LTF	2.3800
AA2-074	AA2-074	1.6339	LTF	1.6339
CBM-W1	CBM-W1	9.4074	Confirmed LTF	9.4074

11.6.8 Index 8

ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC|DC	MW IMPACT
163416545	314303	6HOPEWLL	DVP	314286	6CHESTFA	DVP	1	DVP_P7-1: LN 212-240-D	tower	549.0	206.89	208.43	DC	8.44

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
314314	3LOCKS	0.1627	50/50	0.1627
314331	6POE	1.6284	50/50	1.6284
315065	**1CHESTF6 (Deactivation : 31/05/2023)**	**121.9427**	**50/50**	**121.9427**
315073	1STONECA	17.2239	50/50	17.2239
315074	**1HOPCGN1 (Deactivation : 25/06/2019)**	**0.0449**	**50/50**	**0.0449**
315075	**1HOPCGN2 (Deactivation : 25/06/2019)**	**0.0449**	**50/50**	**0.0449**
315076	1HOPPOLC	3.7577	50/50	3.7577
315077	1HOPHCF1	5.8736	50/50	5.8736
315078	1HOPHCF2	5.8736	50/50	5.8736
315079	1HOPHCF3	5.8736	50/50	5.8736
315080	1HOPHCF4	8.9165	50/50	8.9165
316033	AB2-134 C	5.0810	50/50	5.0810
316083	AB2-161 C	2.5509	50/50	2.5509
316084	AB2-161 E	4.1621	50/50	4.1621
316108	AB2-160 C	3.1345	50/50	3.1345
316109	AB2-160 E	5.1143	50/50	5.1143
316132	AB2-190 C	50.2365	50/50	50.2365
924814	AB2-134 E	31.6669	50/50	31.6669
925332	AB2-190 E	21.5299	50/50	21.5299
927225	AC1-216 C	3.8784	50/50	3.8784
927226	AC1-216 E	19.3321	50/50	19.3321
932581	AC2-078 C O1	3.1396	50/50	3.1396
932582	AC2-078 E O1	5.1224	50/50	5.1224
934014	AD1-025 C	42.2525	50/50	42.2525
934015	AD1-025 E	25.0285	50/50	25.0285
934575	AD1-082 C	5.8135	50/50	5.8135
934576	AD1-082 E	3.3162	50/50	3.3162
935164	AD1-151 C	40.3686	50/50	40.3686
935165	AD1-151 E	26.9124	50/50	26.9124
936041	AD2-007 C	2.0184	50/50	2.0184
936042	AD2-007 E	1.3905	50/50	1.3905
936051	AD2-008 C	7.3561	50/50	7.3561
936052	AD2-008 E	16.0129	50/50	16.0129
938634	AE1-085 C	7.0310	50/50	7.0310
938635	AE1-085 E	3.5155	50/50	3.5155
939195	AE1-149 C	9.3186	50/50	9.3186
939196	AE1-149 E	6.2124	50/50	6.2124
940061	AE2-000BC O1	7.7088	50/50	7.7088

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
940062	AE2-000BE O1	5.1392	50/50	5.1392
940651	AE2-052	3.1062	50/50	3.1062
942001	AE2-212 C	1.8040	50/50	1.8040
942002	AE2-212 E	1.2026	50/50	1.2026
942151	AE2-227 C	-1.6043	Adder	-1.89
942161	AE2-228 C	2.0668	50/50	2.0668
942162	AE2-228 E	1.3778	50/50	1.3778
942371	AE2-250 C O1	5.5679	50/50	5.5679
942372	AE2-250 E O1	2.9386	50/50	2.9386
942551	AE2-270	67.2810	50/50	67.2810
944641	AF1-129	102.3233	50/50	102.3233
946261	AF1-291 C	2.0962	50/50	2.0962
946262	AF1-291 E	1.3974	50/50	1.3974
957711	AF2-065 C	34.3133	50/50	34.3133
957712	AF2-065 E	32.9677	50/50	32.9677
958141	AF2-108	1.2553	50/50	1.2553
959641	AF2-255 C	-0.4011	Adder	-0.47
959651	AF2-256 C	0.5167	50/50	0.5167
959652	AF2-256 E	0.3445	50/50	0.3445
959661	AF2-257 C	0.5240	50/50	0.5240
959662	AF2-257 E	0.3494	50/50	0.3494
959671	AF2-258 C	0.4510	50/50	0.4510
959672	AF2-258 E	0.3007	50/50	0.3007
959681	AF2-259 C	1.8830	50/50	1.8830
959682	AF2-259 E	1.2553	50/50	1.2553
961611	AG1-000B C	39.9201	50/50	39.9201
961711	AG1-011	71.7664	50/50	71.7664
962271	AG1-075 C O1	9.6099	50/50	9.6099
962272	AG1-075 E O1	5.8566	50/50	5.8566
963221	AG1-171 C	5.3825	50/50	5.3825
963222	AG1-171 E	3.5883	50/50	3.5883
963231	AG1-172 C	5.3825	50/50	5.3825
963232	AG1-172 E	3.5883	50/50	3.5883
963241	AG1-173 C	5.3825	50/50	5.3825
963242	AG1-173 E	3.5883	50/50	3.5883
963251	AG1-174 C	5.3825	50/50	5.3825
963252	AG1-174 E	3.5883	50/50	3.5883
963261	AG1-175 C	5.3825	50/50	5.3825
963262	AG1-175 E	3.5883	50/50	3.5883
966731	AG1-544 C	5.4912	50/50	5.4912
966732	AG1-544 E	2.9460	50/50	2.9460
966741	AG1-545 C	1.8129	50/50	1.8129
966742	AG1-545 E	0.9719	50/50	0.9719
WEC	WEC	0.0554	Confirmed LTF	0.0554
LGEE	LGEE	0.1156	Confirmed LTF	0.1156
CPLE	CPLE	0.8463	Confirmed LTF	0.8463
CBM-W2	CBM-W2	2.8851	Confirmed LTF	2.8851
NY	NY	0.1587	Confirmed LTF	0.1587
TVA	TVA	0.5712	Confirmed LTF	0.5712
O-066	O-066	2.1536	Confirmed LTF	2.1536
SIGE	SIGE	0.0549	Confirmed LTF	0.0549
CBM-S2	CBM-S2	9.6674	Confirmed LTF	9.6674

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
CBM-S1	CBM-S1	0.1395	Confirmed LTF	0.1395
G-007	G-007	0.3370	Confirmed LTF	0.3370
MEC	MEC	0.3607	Confirmed LTF	0.3607
LAGN	LAGN	0.7105	Confirmed LTF	0.7105
CBM-W1	CBM-W1	2.2572	Confirmed LTF	2.2572

11.6.9 Index 9

ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC|DC	MW IMPACT
167010733	314314	3LOCKS	DVP	940430	AE2-027 TAP	DVP	1	DVP_P7-1: LN 205-2003	tower	169.0	153.69	155.15	DC	5.47

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
314314	3LOCKS	0.5884	50/50	0.5884
314331	6POE	0.8296	Adder	0.98
316083	AB2-161 C	1.4110	Adder	1.66
316084	AB2-161 E	2.3022	Adder	2.71
316108	AB2-160 C	11.3380	50/50	11.3380
316109	AB2-160 E	18.4988	50/50	18.4988
923852	AB2-025 E	0.3367	Adder	0.4
932581	AC2-078 C O1	1.7322	Adder	2.04
932582	AC2-078 E O1	2.8262	Adder	3.32
932591	AC2-079 C O1	1.6004	Adder	1.88
932592	AC2-079 E O1	2.6111	Adder	3.07
934575	AD1-082 C	3.2157	Adder	3.78
934576	AD1-082 E	1.8343	Adder	2.16
938634	AE1-085 C	3.8713	Adder	4.55
938635	AE1-085 E	1.9357	Adder	2.28
939195	AE1-149 C	5.0832	Adder	5.98
939196	AE1-149 E	3.3888	Adder	3.99
940061	AE2-000BC O1	4.2835	Adder	5.04
940062	AE2-000BE O1	2.8557	Adder	3.36
940481	AE2-033 C	4.6767	Adder	5.5
940482	AE2-033 E	3.1528	Adder	3.71
940541	AE2-040	0.8526	Adder	1.0
940651	AE2-052	1.6944	Adder	1.99
942371	AE2-250 C O1	20.1398	50/50	20.1398
942372	AE2-250 E O1	10.6294	50/50	10.6294
946011	AF1-266	3.9148	Adder	4.61
958141	AF2-108	1.3323	50/50	1.3323
959681	AF2-259 C	1.9985	50/50	1.9985
959682	AF2-259 E	1.3323	50/50	1.3323
962271	AG1-075 C O1	34.7599	50/50	34.7599
962272	AG1-075 E O1	21.1841	50/50	21.1841
966731	AG1-544 C	1.6025	Adder	3.56
966732	AG1-544 E	0.8597	Adder	1.91
966741	AG1-545 C	0.5295	Adder	1.18
966742	AG1-545 E	0.2839	Adder	0.63
WEC	WEC	0.0756	Confirmed LTF	0.0756
LGEE	LGEE	0.1552	Confirmed LTF	0.1552
CPLE	CPLE	0.8552	Confirmed LTF	0.8552
CBM-W2	CBM-W2	3.3958	Confirmed LTF	3.3958
NY	NY	0.1095	Confirmed LTF	0.1095
TVA	TVA	0.6454	Confirmed LTF	0.6454

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
O-066	O-066	1.5344	Confirmed LTF	1.5344
SIGE	SIGE	0.0519	Confirmed LTF	0.0519
CBM-S2	CBM-S2	9.9806	Confirmed LTF	9.9806
CBM-S1	CBM-S1	0.1604	Confirmed LTF	0.1604
G-007	G-007	0.2404	Confirmed LTF	0.2404
MEC	MEC	0.4576	Confirmed LTF	0.4576
LAGN	LAGN	0.8033	Confirmed LTF	0.8033
CBM-W1	CBM-W1	3.1545	Confirmed LTF	3.1545

11.6.10 Index 10

ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC|DC	MW IMPACT
168887510	314331	6POE	DVP	314299	6HARROWG	DVP	1	DVP_P1-2: LN 563	single	441.8	152.5	154.19	DC	7.69

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
313506	AB1-173 C OP	3.3710	80/20	3.3710
313719	3CHESTNUT	0.4186	80/20	0.4186
314435	6SAPONY	0.3020	80/20	0.3020
314572	3EMPORIA	0.2256	80/20	0.2256
314582	3KELFORD	0.1281	80/20	0.1281
314589	3MURPHYS	0.0323	80/20	0.0323
314623	3WITAKRS	0.0765	80/20	0.0765
314704	3LAWRENC	0.1387	80/20	0.1387
315102	1BRUNSWICKG1	2.4537	80/20	2.4537
315103	1BRUNSWICKG2	2.4537	80/20	2.4537
315104	1BRUNSWICKG3	2.4537	80/20	2.4537
315105	1BRUNSWICKS1	5.0976	80/20	5.0976
315115	1S HAMPT1	0.5403	80/20	0.5403
315126	1ROARAP2	0.5660	80/20	0.5660
315128	1ROARAP4	0.5401	80/20	0.5401
315131	**1EDGECMA (Deactivation : 22/04/2019)**	**3.2550**	**80/20**	**3.2550**
315132	**1EDGECMB (Deactivation : 22/04/2019)**	**3.2550**	**80/20**	**3.2550**
315136	1ROSEMG1	0.9338	80/20	0.9338
315137	1ROSEMS1	0.5791	80/20	0.5791
315138	1ROSEMG2	0.4377	80/20	0.4377
315139	1GASTONA	1.3920	80/20	1.3920
315141	1GASTONB	1.3920	80/20	1.3920
315159	1KERR 2	0.3447	80/20	0.3447
315160	1KERR 3	0.3447	80/20	0.3447
315161	1KERR 4	0.3447	80/20	0.3447
315162	1KERR 5	0.3447	80/20	0.3447
315163	1KERR 6	0.3447	80/20	0.3447
315164	1KERR 7	0.3447	80/20	0.3447
315241	1Z1-086 GT1	3.1549	80/20	3.1549
315242	1Z1-086 GT2	3.1549	80/20	3.1549
315243	1Z1-086 GT3	3.1549	80/20	3.1549
315244	1Z1-086 ST	5.4843	80/20	5.4843
315293	1DOMTR9	1.7503	Adder	2.06
315294	1DOMTR10	2.1450	Adder	2.52
315601	1CONETOE2SOL	0.4539	80/20	0.4539
315602	1HOLLOMANSOL	0.4740	80/20	0.4740
315606	3AA2-053SOLA	0.5973	80/20	0.5973
315607	3AA1-063SOLA	0.5544	80/20	0.5544
315608	3AA2-088SOLA	0.3920	80/20	0.3920
316020	AB2-059 C OP	0.5832	80/20	0.5832

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
316083	AB2-161 C	3.6003	80/20	3.6003
316087	AB2-174 C	0.5694	80/20	0.5694
316096	AB2-100 C1	0.5685	80/20	0.5685
316098	AB2-100 C2	0.5685	80/20	0.5685
316103	AB2-015 C	3.2120	80/20	3.2120
316129	AC1-054 C	2.6954	80/20	2.6954
316140	**AB2-099 C (Suspended)**	**0.2101**	**80/20**	**0.2101**
920591	AA2-165 C	0.0562	80/20	0.0562
922922	AB1-081 C OP	0.4949	80/20	0.4949
923991	AB2-040 C O1	3.6714	80/20	3.6714
925591	AC1-034 C	2.3944	80/20	2.3944
926070	AC1-086 C	9.9220	80/20	9.9220
926201	AC1-098 C	2.2985	80/20	2.2985
926211	AC1-099 C	0.7702	80/20	0.7702
927024	AC1-189 C	2.8660	80/20	2.8660
927145	AC1-208 C	3.4775	80/20	3.4775
932581	AC2-078 C O1	4.4132	80/20	4.4132
932591	AC2-079 C O1	4.2148	80/20	4.2148
932631	AC2-084 C	3.2766	80/20	3.2766
933991	AD1-023 C	3.4020	Adder	4.0
934331	AD1-057 C O1	4.0899	80/20	4.0899
934575	AD1-082 C	8.2049	80/20	8.2049
936361	AD2-046 C O1	2.3961	Adder	2.82
936401	AD2-051 C O1	2.9711	80/20	2.9711
936661	AD2-085 C	1.9675	80/20	1.9675
936761	AD2-097 C	-0.5795	Adder	-0.68
938221	AE1-035 C	0.1185	80/20	0.1185
938494	AE1-068_C1	9.4459	80/20	9.4459
938497	AE1-068_C2	9.4459	80/20	9.4459
938504	AE1-069_C1	7.1988	80/20	7.1988
938507	AE1-069_C2	7.7620	80/20	7.7620
938634	AE1-085 C	9.8510	80/20	9.8510
938771	AE1-103 C	1.3373	80/20	1.3373
939181	AE1-148 C	2.3556	Adder	2.77
939195	AE1-149 C	12.8658	80/20	12.8658
939414	AE1-173_C1	7.3956	Adder	8.7
939415	AE1-173_C2	6.3391	Adder	7.46
939416	AE1-173_C3	7.3956	Adder	8.7
940061	AE2-000BC O1	10.9578	80/20	10.9578
940471	AE2-031 C	10.2695	80/20	10.2695
940481	AE2-033 C	11.9803	80/20	11.9803
940541	AE2-040	2.1774	80/20	2.1774
940571	AE2-044 C	1.5683	80/20	1.5683
940641	AE2-051 C O1	5.1129	80/20	5.1129
940651	AE2-052	4.2886	80/20	4.2886
940661	AE2-053 O1	0.8724	Adder	1.03
941031	AE2-094 C	12.3678	80/20	12.3678
941101	AE2-104 C O1	1.1780	80/20	1.1780
941541	**AE2-151 C (Withdrawn : 01/08/2021)**	**0.0604**	**80/20**	**0.0604**
942161	AE2-228 C	-1.0844	Adder	-1.28
942341	AE2-247 C	0.8575	80/20	0.8575
942471	AE2-260 C O1	9.1780	80/20	9.1780

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
942931	AE2-313 C	11.1024	80/20	11.1024
943171	AE2-346 C	0.5043	80/20	0.5043
943461	AF1-017 C	0.7758	80/20	0.7758
943911	AF1-059	6.7853	80/20	6.7853
944011	AF1-069 C	4.0410	80/20	4.0410
944141	AF1-082	1.0082	80/20	1.0082
946011	AF1-266	10.0284	80/20	10.0284
946261	AF1-291 C	-1.8452	Adder	-2.17
946281	AF1-292 C	0.8273	80/20	0.8273
957521	AF2-046 C	6.2694	80/20	6.2694
957861	AF2-080 C	2.6030	80/20	2.6030
958161	AF2-110 C	0.4856	80/20	0.4856
959511	AF2-242 C	1.9726	Adder	2.32
959651	AF2-256 C	-0.2711	Adder	-0.32
960081	AF2-299 C	1.3944	80/20	1.3944
961091	AF2-400 C	0.1734	80/20	0.1734
961671	AG1-007 C	0.4216	80/20	0.4216
961681	AG1-008 C	6.2820	80/20	6.2820
961851	AG1-027 C	6.0684	80/20	6.0684
961931	AG1-036 C	0.4969	80/20	0.4969
961941	AG1-037 C	0.1801	80/20	0.1801
962331	AG1-082 C	0.7204	80/20	0.7204
962341	AG1-083 C	0.7204	80/20	0.7204
962351	AG1-084 C	0.6183	80/20	0.6183
962361	AG1-085 C	0.6183	80/20	0.6183
962571	AG1-106 C	2.7592	80/20	2.7592
963041	AG1-153 C	1.7217	80/20	1.7217
963111	AG1-160 C	1.7439	80/20	1.7439
963291	AG1-178 C O1	17.8262	80/20	17.8262
963301	AG1-179 C	2.5632	80/20	2.5632
963311	AG1-180	1.2489	80/20	1.2489
963351	AG1-184 O1	9.6038	80/20	9.6038
964491	AG1-312 C O1	6.2093	80/20	6.2093
964501	AG1-313 C O1	1.8373	80/20	1.8373
964801	AG1-343 C	2.2813	80/20	2.2813
964931	AG1-357 C	6.3144	80/20	6.3144
965291	AG1-394 C	0.7865	80/20	0.7865
965451	AG1-413 C O1	2.8523	80/20	2.8523
965601	AG1-428 C O1	2.1398	80/20	2.1398
965691	AG1-437 C O1	3.1668	80/20	3.1668
965701	AG1-438 C O1	3.1668	80/20	3.1668
965711	AG1-439 C O1	8.1420	80/20	8.1420
965721	AG1-440 C	2.4817	80/20	2.4817
965731	AG1-441 C	2.4817	80/20	2.4817
965741	AG1-442 O1	1.8473	80/20	1.8473
965751	AG1-443 O1	1.8473	80/20	1.8473
965761	AG1-444 O1	4.3424	80/20	4.3424
965771	AG1-445	1.4339	80/20	1.4339
965781	AG1-446	1.4339	80/20	1.4339
965811	AG1-449	7.2004	80/20	7.2004
966361	AG1-505 C	5.0148	80/20	5.0148
966371	AG1-506 C	5.0148	80/20	5.0148

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
966621	AG1-532 C	0.7530	80/20	0.7530
966731	AG1-544 C	7.6936	80/20	7.6936
966741	AG1-545 C	2.5440	80/20	2.5440
966751	AG1-546 C	6.0232	80/20	6.0232
966801	AG1-551 C	0.3278	Adder	0.73
966811	AG1-552 C	0.8986	80/20	0.8986
WEC	WEC	0.2255	Confirmed LTF	0.2255
LGEE	LGEE	0.4643	Confirmed LTF	0.4643
CPLE	CPLE	2.4734	Confirmed LTF	2.4734
CBM-W2	CBM-W2	10.0890	Confirmed LTF	10.0890
NY	NY	0.3512	Confirmed LTF	0.3512
TVA	TVA	1.9138	Confirmed LTF	1.9138
SIGE	SIGE	0.1599	Confirmed LTF	0.1599
CBM-S2	CBM-S2	29.1902	Confirmed LTF	29.1902
CBM-S1	CBM-S1	0.4761	Confirmed LTF	0.4761
MEC	MEC	1.3634	Confirmed LTF	1.3634
LAGN	LAGN	2.3800	Confirmed LTF	2.3800
AA2-074	AA2-074	1.6339	LTF	1.6339
CBM-W1	CBM-W1	9.4074	Confirmed LTF	9.4074

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ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC|DC	MW IMPACT
167010757	316079	AB2-161 TAP	DVP	313879	3BELL AVE 2	DVP	1	DVP_P7-1: LN 97-121	tower	136.0	121.9	134.42	DC	17.02

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
314539	3UNCAMP	-1.5535	Adder	-1.83
316083	AB2-161 C	6.0715	50/50	6.0715
316084	AB2-161 E	9.9061	50/50	9.9061
932581	AC2-078 C O1	2.5258	50/50	2.5258
932582	AC2-078 E O1	4.1210	50/50	4.1210
934575	AD1-082 C	13.8365	50/50	13.8365
934576	AD1-082 E	7.8929	50/50	7.8929
938634	AE1-085 C	14.1870	50/50	14.1870
938635	AE1-085 E	7.0935	50/50	7.0935
939195	AE1-149 C	8.4300	50/50	8.4300
939196	AE1-149 E	5.6200	50/50	5.6200
940063	AE2-000B BAT	64.7910	50/50	64.7910
940651	AE2-052	2.8100	50/50	2.8100
961853	AG1-028 BAT	4.3483	Merchant Transmission	4.3483
966731	AG1-544 C	11.0800	50/50	11.0800
966732	AG1-544 E	5.9444	50/50	5.9444
966741	AG1-545 C	1.4763	50/50	1.4763
966742	AG1-545 E	0.7915	50/50	0.7915
G-007A	G-007A	0.1151	Confirmed LTF	0.1151
VFT	VFT	0.3096	Confirmed LTF	0.3096
CALDERWOOD	CALDERWOOD	0.0368	Confirmed LTF	0.0368
PRAIRIE	PRAIRIE	0.1033	Confirmed LTF	0.1033
CHEOAH	CHEOAH	0.0380	Confirmed LTF	0.0380
CBM-N	CBM-N	0.0564	Confirmed LTF	0.0564
COTTONWOOD	COTTONWOOD	0.1302	Confirmed LTF	0.1302
HAMLET	HAMLET	0.0959	Confirmed LTF	0.0959
GIBSON	GIBSON	0.0153	Confirmed LTF	0.0153
BLUEG	BLUEG	0.0451	Confirmed LTF	0.0451
TRIMBLE	TRIMBLE	0.0145	Confirmed LTF	0.0145
CATAWBA	CATAWBA	0.0445	Confirmed LTF	0.0445

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ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC|DC	MW IMPACT
168887362	932590	AC2-079 TAP	DVP	314532	3OAKRI23	DVP	1	DVP_P1-2: LN 106	single	110.92	109.36	144.56	DC	39.05

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
316083	AB2-161 C	19.0000	80/20	19.0000
932591	AC2-079 C O1	32.3000	80/20	32.3000
934575	AD1-082 C	43.3000	80/20	43.3000
940061	AE2-000BC O1	60.0000	80/20	60.0000
966731	AG1-544 C	39.0500	80/20	39.0500

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ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC|DC	MW IMPACT
167010702	940430	AE2-027 TAP	DVP	314298	3HARROWG	DVP	1	DVP_P7-1: LN 205-2003	tower	169.0	193.65	195.11	DC	5.47

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
314314	3LOCKS	0.5884	50/50	0.5884
314331	6POE	0.8296	Adder	0.98
316083	AB2-161 C	1.4110	Adder	1.66
316084	AB2-161 E	2.3022	Adder	2.71
316108	AB2-160 C	11.3380	50/50	11.3380
316109	AB2-160 E	18.4988	50/50	18.4988
923852	AB2-025 E	0.3367	Adder	0.4
932581	AC2-078 C O1	1.7322	Adder	2.04
932582	AC2-078 E O1	2.8262	Adder	3.32
932591	AC2-079 C O1	1.6004	Adder	1.88
932592	AC2-079 E O1	2.6111	Adder	3.07
934575	AD1-082 C	3.2157	Adder	3.78
934576	AD1-082 E	1.8343	Adder	2.16
938634	AE1-085 C	3.8713	Adder	4.55
938635	AE1-085 E	1.9357	Adder	2.28
939195	AE1-149 C	5.0832	Adder	5.98
939196	AE1-149 E	3.3888	Adder	3.99
940061	AE2-000BC O1	4.2835	Adder	5.04
940062	AE2-000BE O1	2.8557	Adder	3.36
940431	AE2-027 C O1	40.5173	50/50	40.5173
940432	AE2-027 E O1	27.0115	50/50	27.0115
940481	AE2-033 C	4.6767	Adder	5.5
940482	AE2-033 E	3.1528	Adder	3.71
940541	AE2-040	0.8526	Adder	1.0
940651	AE2-052	1.6944	Adder	1.99
942371	AE2-250 C O1	20.1398	50/50	20.1398
942372	AE2-250 E O1	10.6294	50/50	10.6294
946011	AF1-266	3.9148	Adder	4.61
958141	AF2-108	1.3323	50/50	1.3323
959681	AF2-259 C	1.9985	50/50	1.9985
959682	AF2-259 E	1.3323	50/50	1.3323
962271	AG1-075 C O1	34.7599	50/50	34.7599
962272	AG1-075 E O1	21.1841	50/50	21.1841
966731	AG1-544 C	1.6025	Adder	3.56
966732	AG1-544 E	0.8597	Adder	1.91
966741	AG1-545 C	0.5295	Adder	1.18
966742	AG1-545 E	0.2839	Adder	0.63
WEC	WEC	0.0756	Confirmed LTF	0.0756
LGEE	LGEE	0.1552	Confirmed LTF	0.1552
CPLE	CPLE	0.8552	Confirmed LTF	0.8552
CBM-W2	CBM-W2	3.3958	Confirmed LTF	3.3958

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
NY	NY	0.1095	Confirmed LTF	0.1095
TVA	TVA	0.6454	Confirmed LTF	0.6454
O-066	O-066	1.5344	Confirmed LTF	1.5344
SIGE	SIGE	0.0519	Confirmed LTF	0.0519
CBM-S2	CBM-S2	9.9806	Confirmed LTF	9.9806
CBM-S1	CBM-S1	0.1604	Confirmed LTF	0.1604
G-007	G-007	0.2404	Confirmed LTF	0.2404
MEC	MEC	0.4576	Confirmed LTF	0.4576
LAGN	LAGN	0.8033	Confirmed LTF	0.8033
CBM-W1	CBM-W1	3.1545	Confirmed LTF	3.1545

11.7 Queue Dependencies

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

Queue Number	Project Name	Status
AA1-063	Huntsville (Cabin Creek) 69kV	Withdrawn
AA2-053	Carolina-Jackson 115kV	In Service
AA2-074	CPLE-PJM	Confirmed
AA2-088	Boykins-Handsome 115kV	In Service
AA2-165	Hornertown-Whitakers 115kV	In Service
AB1-081	Anaconda-Mayo Dunbar 115kV	In Service
AB1-173	Brink-Trego 115kV	Engineering and Procurement
AB2-015	Franklin 115kV	Engineering and Procurement
AB2-025	Sapony 34.5kV	In Service
AB2-040	Brink 115kV	Engineering and Procurement
AB2-059	Benson-Dunbar 115kV	Partially in Service - Under Construction
AB2-099	Ahoskie 34.5kV	Suspended
AB2-100	Clubhouse-Lakeview 230kV	Partially in Service - Under Construction
AB2-134	Hopewell-Surry 230kV	In Service
AB2-160	Reams 115kV	Engineering and Procurement
AB2-161	Waverly #2 DP 115kV	Engineering and Procurement
AB2-174	Emporia-Trego 115kV	In Service
AB2-190	Hopewell-Surry 230kV	Engineering and Procurement
AC1-034	Heartsease DP - Mayo Dunbar 115kV	Engineering and Procurement
AC1-054	Kerr Dam–Eatons Ferry 115 kV	Engineering and Procurement
AC1-086	Thelma 230kV	Active
AC1-098	Dawson-South Justice 115kV	Engineering and Procurement
AC1-099	Dawson-South Justice 115kV	Engineering and Procurement
AC1-189	Chinquapin-Everetts 230kV	Active
AC1-208	Cox-Whitakers 115kV	Engineering and Procurement
AC1-216	Hopewell-Surry 230kV	Partially in Service - Under Construction
AC2-078	Disputanta-Waverly 115kV	Engineering and Procurement
AC2-079	Ivor-Oak Ridge 115kV	Engineering and Procurement
AC2-084	Dawson-South Justice 115kV	Active
AD1-023	Cashie-Trowbridge 230 kV	Active
AD1-025	Hopewell-Surry 230 kV	Active
AD1-057	Hornertown-Hathaway 230 kV	Active
AD1-082	Bakers Pond-Ivor 115kV	Engineering and Procurement
AD1-151	Hopewell-Surry 230 kV	Active
AD2-007	Hopewell-Surry 230 kV	Active
AD2-008	Hopewell-Surry 230 kV	Active
AD2-046	Boydton DP-Kerr Dam 115 kV	Active
AD2-051	Earleys – Northampton 230kV	Active
AD2-085	Myrtle-Windsor DP 115kV	Active

Queue Number	Project Name	Status
AD2-097	Spruance NUG 230kV	In Service
AE1-035	Earleys 230 kV	Partially in Service - Under Construction
AE1-068	Carson-Rogers Rd 500 kV	Active
AE1-069	Carson-Rogers Road 500 kV	Active
AE1-085	Bakers Pond-Bell Ave 115 kV	Active
AE1-103	Holland-Union Camp 115 kV	Active
AE1-148	Kerr Dam-Ridge Rd 115 kV	Active
AE1-149	Disputanta-Poe 115 kV	Active
AE1-173	Carson-Suffolk 500 kV	Active
AE2-000B	N/A	N/A
AE2-027	Harrowgate-Locks 115kV	Active
AE2-031	Carson-Rawlings 500 kV	Active
AE2-033	Clubhouse-Sappony 230 kV	Active
AE2-040	Sapony 34.5 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
AE2-094	Carson-Rogers Road 500 kV	Active
AE2-104	Suffolk 115 kV	Active
AE2-151	Earleys 34.5kV	Withdrawn
AE2-212	Harrowgate 34 kV	Active
AE2-227	Iron Bridge 34 kV	Engineering and Procurement
AE2-228	Tyler 34 kv	Engineering and Procurement
AE2-247	Myrtle-Windsor 115 kV	Active
AE2-250	Purdy Sw.-Reams 115 kV	Active
AE2-260	Clubhouse 230 kV	Active
AE2-270	Hopewell-Surry 230 kV	Active
AE2-313	Carson-Rawlings 500 kV	Active
AE2-346	Ahoskie 34.5 kV	Active
AF1-017	Myrtle-Windsor 115 kV	Active
AF1-059	Brodnax-South Hill 115 kV	Active
AF1-069	Carson-Rogers Rd 500 kV	Active
AF1-082	Heartsease-Mayo Dunbar DP	Active
AF1-129	Chesterfield 230 kV	Active
AF1-266	Clubhouse-Sapony 230 kV	Active
AF1-291	Tyler 34.5 kV	Engineering and Procurement
AF1-292	Fields 34.5kV	Active
AF2-046	Tunis-Mapleton 115 kV	Active
AF2-065	Surry-Hopewell 230 kV	Active
AF2-080	Chinquapin-Everetts 230 kV	Active
AF2-108	Locks 34.5 kV	Active
AF2-110	Suffolk 115 kV	Active
AF2-242	Wharton 115 kV	Active
AF2-255	Iron Bridge 34.5 kV	Engineering and Procurement
AF2-256	Tyler 34.5 kV	Engineering and Procurement
AF2-257	Tyler 34.5 kV	Active
AF2-258	Harrowgate 34.5 kV	Active
AF2-259	Locks 34.5 kV	Active
AF2-299	Fields 34.5 kV	Active
AF2-400	Franklin 13.2 kV	Engineering and Procurement
AG1-000B	N/A	N/A

Queue Number	Project Name	Status
AG1-007	Tar River 12.5 kV	Active
AG1-008	Tunis-Mapleton 115 kV	Active
AG1-011	Colonial Trial 230 kV	Active
AG1-027	Suffolk-Holland 115 kV	Active
AG1-028	Suffolk-Holland 115 kV	Active
AG1-036	Tunis 34.5 kV	Active
AG1-037	Ahoskie 34.5 kV	Active
AG1-075	Purdy-Sapony 115 kV	Active
AG1-082	Ahoskie 34.5 kV	Active
AG1-083	Ahoskie 34.5 kV	Active
AG1-084	Earlys 34.5 kV	Active
AG1-085	Earlys 34.5	Active
AG1-106	Thelma 230 kV	Active
AG1-153	Heritage 500 kV	Active
AG1-160	Rogers Road 500 kV	Active
AG1-171	Hopewell-Surry 230kV	Active
AG1-172	Hopewell-Surry 230 kV	Active
AG1-173	Hopewell-Surry 230 kV	Active
AG1-174	Hopewell-Surry 230 kV	Active
AG1-175	Hopewell-Surry 230 kV	Active
AG1-178	Carson-Septa 500 kV	Active
AG1-179	Brunswick 69 kV	Active
AG1-180	Brunswick 69 kV	Active
AG1-184	Carson-Septa 500 kV	Active
AG1-312	Earleys-Cashie 230 kV	Active
AG1-313	Jackson DP-Occoneechee 115 kV	Active
AG1-343	Boykins-Murphy 115 kV	Active
AG1-357	Clover-Rawlings 500 kV	Active
AG1-394	Boykins 34.5 kV	Active
AG1-413	South Hill-Bordnax 115 kV	Active
AG1-428	Danieltown 69 kV	Active
AG1-437	Cashie-Earleys 230 kV	Active
AG1-438	Cashie-Earleys 230 kV	Active
AG1-439	Chinquapin 230 kV	Active
AG1-440	Palmer Springs 115 kV	Active
AG1-441	Palmer Springs 115 kV	Active
AG1-442	Cashie-Earleys 230 kV	Active
AG1-443	Cashie-Earleys 230 kV	Active
AG1-444	Chinquapin 230 kV	Active
AG1-445	Palmer Spring 115 kV	Active
AG1-446	Palmer Springs 115 kV	Active
AG1-449	Rawlings-Carson 500 kV	Active
AG1-505	Rawlings-Clover 500 kV	Active
AG1-506	Rawlings-Clover 500 kV	Active
AG1-532	Fields 34.5 kV	Active
AG1-544	Bakers Pond DP 115 kV	Active
AG1-545	W. Quaker Rd-Disputanta 34.5 kV	Active
AG1-546	Ebony-Elams Road 115 kV	Active
AG1-551	Parmele 12.5 kV	Active
AG1-552	Carolina 13.2 kV	Active
Z1-086	Heritage-Carson	In Service

11.8 Contingency Descriptions

Contingency Name	Contingency Definition
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_P7-1: LN 97-121	CONTINGENCY 'DVP_P7-1: LN 97-121' /* . OPEN BRANCH FROM BUS 314291 TO BUS 314297 CKT 1 /* 3PRGEORG 115.00 - 3F LEE97 115.00 OPEN BRANCH FROM BUS 314297 TO BUS 314340 CKT 1 /* 3F LEE97 115.00 - 3SISISKY 115.00 OPEN BRANCH FROM BUS 314302 TO BUS 314342 CKT 1 /* 3HARVELL 115.00 - 3TEMPLE 115.00 OPEN BRANCH FROM BUS 314340 TO BUS 314342 CKT 1 /* 3SISISKY 115.00 - 3TEMPLE 115.00 OPEN BUS 314297 /* ISLAND: 3F LEE97 115.00 OPEN BUS 314340 /* ISLAND: 3SISISKY 115.00 OPEN BUS 314342 /* ISLAND: 3TEMPLE 115.00 OPEN BRANCH FROM BUS 314291 TO BUS 314329 CKT 1 /* 3PRGEORG 115.00 - 3POE 115.00 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 249	CONTINGENCY 'DVP_P1-2: LN 249' OPEN BRANCH FROM BUS 314282 TO BUS 314285 CKT 1 /* 6CARSON 230.00 - 6CHRL249 230.00 OPEN BRANCH FROM BUS 314285 TO BUS 314316 CKT 1 /* 6CHRL249 230.00 - 6LOCKS 230.00 OPEN BRANCH FROM BUS 314314 TO BUS 314316 CKT 2 /* 3LOCKS 115.00 - 6LOCKS 230.00 OPEN BUS 314285 /* ISLAND: 6CHRL249 230.00 END
DVP_P2-2: BASIN B7	CONTINGENCY 'DVP_P2-2: BASIN B7' /* BASIN 230 KV OPEN BRANCH FROM BUS 314276 TO BUS 314287 CKT 1 /* 6BASIN 230.00 - 6CHESTF B 230.00 OPEN BRANCH FROM BUS 314276 TO BUS 314339 CKT 1 /* 6BASIN 230.00 - 6SPRUNCE 230.00 OPEN BRANCH FROM BUS 314274 TO BUS 314276 CKT 2 /* 3BASIN 115.00 - 6BASIN 230.00 END

Contingency Name	Contingency Definition
DVP_P1-2: LN 544-A	CONTINGENCY 'DVP_P1-2: LN 544-A' OPEN BRANCH FROM BUS 314902 TO BUS 939410 CKT 1 /* 8CARSON 500.00 - AE1-173_POI 500.00 OPEN BRANCH FROM BUS 314928 TO BUS 939410 CKT 1 /* 8SUFFOLK 500.00 - AE1-173_POI 500.00 OPEN BUS 939410 /* ISLAND: AE1-173_POI 500.00 OPEN BUS 939411 /* ISLAND: AE1-173_MAIN500.00 OPEN BUS 939412 /* ISLAND: AE1-173_SEC 34.500 OPEN BUS 939413 /* ISLAND: AE1-173_COL 34.500 OPEN BUS 939414 /* ISLAND: AE1-173_C1 0.5500 OPEN BUS 939415 /* ISLAND: AE1-173_C2 0.5500 OPEN BUS 939416 /* ISLAND: AE1-173_C3 0.5500 OPEN BUS 939417 /* ISLAND: AE1-173_TER113.800 OPEN BUS 939418 /* ISLAND: AE1-173_TER213.800 OPEN BUS 939419 /* ISLAND: AE1-173_TER313.800 OPEN BUS 939423 /* ISLAND: AE1-173_E1 0.5500 OPEN BUS 939424 /* ISLAND: AE1-173_E2 0.5500 OPEN BUS 939425 /* ISLAND: AE1-173_E3 0.5500 END
DVP_P1-3: 6SUFFOLK-TX#2	CONTINGENCY 'DVP_P1-3: 6SUFFOLK-TX#2' OPEN BRANCH FROM BUS 314536 TO BUS 314537 CKT 1 /* 3SUFFOLK 115.00 - 6SUFFOLK 230.00 END
DVP_P1-2: LN 205	CONTINGENCY 'DVP_P1-2: LN 205' OPEN BRANCH FROM BUS 314287 TO BUS 314346 CKT 1 /* 6CHESTF B 230.00 - 6TYLER 230.00 OPEN BRANCH FROM BUS 314301 TO BUS 314316 CKT 1 /* 6HARR205 230.00 - 6LOCKS 230.00 OPEN BRANCH FROM BUS 314301 TO BUS 314346 CKT 1 /* 6HARR205 230.00 - 6TYLER 230.00 OPEN BRANCH FROM BUS 314314 TO BUS 314316 CKT 1 /* 3LOCKS 115.00 - 6LOCKS 230.00 OPEN BUS 314301 /* ISLAND: 6HARR205 230.00 OPEN BUS 314346 /* ISLAND: 6TYLER 230.00 END
DVP_P1-3: 6SUFFOLK-TX#5	CONTINGENCY 'DVP_P1-3: 6SUFFOLK-TX#5' OPEN BRANCH FROM BUS 314536 TO BUS 314537 CKT 2 /* 3SUFFOLK 115.00 - 6SUFFOLK 230.00 END

Contingency Name	Contingency Definition
DVP_P7-1: LN 205-2003	CONTINGENCY 'DVP_P7-1: LN 205-2003' /* . OPEN BRANCH FROM BUS 314287 TO BUS 314346 CKT 1 /* 6CHESTF B 230.00 - 6TYLER 230.00 OPEN BRANCH FROM BUS 314301 TO BUS 314316 CKT 1 /* 6HARR205 230.00 - 6LOCKS 230.00 OPEN BRANCH FROM BUS 314301 TO BUS 314346 CKT 1 /* 6HARR205 230.00 - 6TYLER 230.00 OPEN BRANCH FROM BUS 314314 TO BUS 314316 CKT 1 /* 3LOCKS 115.00 - 6LOCKS 230.00 OPEN BUS 314301 /* ISLAND: 6HARR205 230.00 OPEN BUS 314346 /* ISLAND: 6TYLER 230.00 OPEN BRANCH FROM BUS 314263 TO BUS 314287 CKT 1 /* 6TYLER1 230.00 - 6CHESTF B 230.00 OPEN BRANCH FROM BUS 314263 TO BUS 314299 CKT 1 /* 6TYLER1 230.00 - 6HARROWG 230.00 OPEN BRANCH FROM BUS 314299 TO BUS 314331 CKT 1 /* 6HARROWG 230.00 - 6POE 230.00 OPEN BRANCH FROM BUS 314329 TO BUS 314331 CKT 2 /* 3POE 115.00 - 6POE 230.00 OPEN BUS 314263 /* ISLAND: 6TYLER1 230.00 OPEN BUS 314299 /* ISLAND: 6HARROWG 230.00 END
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_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 240-D	CONTINGENCY 'DVP_P1-2: LN 240-D' OPEN BRANCH FROM BUS 314538 TO BUS 961610 CKT 2 /* 6SURRY 230.00 - AG1-000B TAP 230.00 END

Contingency Name	Contingency Definition
DVP_P1-2: LN 106	CONTINGENCY 'DVP_P1-2: LN 106' OPEN BRANCH FROM BUS 314262 TO BUS 314280 CKT 1 /* 3NEWBO_1 115.00 - 3NEWBOHE 115.00 OPEN BRANCH FROM BUS 314273 TO BUS 314280 CKT 1 /* 3BAKRS P 115.00 - 3NEWBOHE 115.00 OPEN BRANCH FROM BUS 314273 TO BUS 938630 CKT 1 /* 3BAKRS P 115.00 - AE1-085 TAP 115.00 OPEN BRANCH FROM BUS 314280 TO BUS 314329 CKT 1 /* 3NEWBOHE 115.00 - 3POE 115.00 OPEN BUS 314262 /* ISLAND: 3NEWBO_1 115.00 OPEN BUS 314280 /* ISLAND: 3NEWBOHE 115.00 OPEN BUS 938630 /* ISLAND: AE1-085 TAP 115.00 OPEN BUS 938631 /* ISLAND: AE1-085 MAIN115.00 OPEN BUS 938632 /* ISLAND: AE1-085 COL134.500 OPEN BUS 938633 /* ISLAND: AE1-085 TER 13.800 OPEN BUS 938634 /* ISLAND: AE1-085 C 0.6000 OPEN BUS 938635 /* ISLAND: AE1-085 E 0.6000 END
DVP_P1-2: LN 121	CONTINGENCY 'DVP_P1-2: LN 121' OPEN BRANCH FROM BUS 314291 TO BUS 314329 CKT 1 /* 3PRGEORG 115.00 - 3POE 115.00 END
Base Case	
DVP_P1-2: LN 2002	CONTINGENCY 'DVP_P1-2: LN 2002' OPEN BRANCH FROM BUS 314282 TO BUS 314331 CKT 1 /* 6CARSON 230.00 - 6POE 230.00 OPEN BRANCH FROM BUS 314329 TO BUS 314331 CKT 1 /* 3POE 115.00 - 6POE 230.00 END
DVP_P1-2: LN 2003	CONTINGENCY 'DVP_P1-2: LN 2003' OPEN BRANCH FROM BUS 314263 TO BUS 314287 CKT 1 /* 6TYLER1 230.00 - 6CHESTF B 230.00 OPEN BRANCH FROM BUS 314263 TO BUS 314299 CKT 1 /* 6TYLER1 230.00 - 6HARROWG 230.00 OPEN BRANCH FROM BUS 314299 TO BUS 314331 CKT 1 /* 6HARROWG 230.00 - 6POE 230.00 OPEN BRANCH FROM BUS 314329 TO BUS 314331 CKT 2 /* 3POE 115.00 - 6POE 230.00 OPEN BUS 314263 /* ISLAND: 6TYLER1 230.00 OPEN BUS 314299 /* ISLAND: 6HARROWG 230.00 END

Contingency Name	Contingency Definition
DVP_P1-2: LN 44-A	CONTINGENCY 'DVP_P1-2: LN 44-A' OPEN BRANCH FROM BUS 313803 TO BUS 314531 CKT 1 /* 3OAKRI44 115.00 - 3MYRTLE 115.00 OPEN BRANCH FROM BUS 313803 TO BUS 314536 CKT 1 /* 3OAKRI44 115.00 - 3SUFFOLK 115.00 OPEN BRANCH FROM BUS 314531 TO BUS 936660 CKT 1 /* 3MYRTLE 115.00 - AD2-085 TAP 115.00 OPEN BRANCH FROM BUS 314536 TO BUS 314823 CKT 1 /* 3SUFFOLK 115.00 - 3SUFFO_1 115.00 OPEN BUS 313803 /* ISLAND: 3OAKRI44 115.00 OPEN BUS 314531 /* ISLAND: 3MYRTLE 115.00 OPEN BUS 314823 /* ISLAND: 3SUFFO_1 115.00 END
DVP_P7-1: LN 2002-2003	CONTINGENCY 'DVP_P7-1: LN 2002-2003' /* . OPEN BRANCH FROM BUS 314282 TO BUS 314331 CKT 1 /* 6CARSON 230.00 - 6POE 230.00 OPEN BRANCH FROM BUS 314329 TO BUS 314331 CKT 1 /* 3POE 115.00 - 6POE 230.00 OPEN BRANCH FROM BUS 314263 TO BUS 314287 CKT 1 /* 6TYLER1 230.00 - 6CHESTF B 230.00 OPEN BRANCH FROM BUS 314263 TO BUS 314299 CKT 1 /* 6TYLER1 230.00 - 6HARROWG 230.00 OPEN BRANCH FROM BUS 314299 TO BUS 314331 CKT 1 /* 6HARROWG 230.00 - 6POE 230.00 OPEN BRANCH FROM BUS 314329 TO BUS 314331 CKT 2 /* 3POE 115.00 - 6POE 230.00 OPEN BUS 314263 /* ISLAND: 6TYLER1 230.00 OPEN BUS 314299 /* ISLAND: 6HARROWG 230.00 END
DVP_P1-2: LN 23-A	CONTINGENCY 'DVP_P1-2: LN 23-A' OPEN BRANCH FROM BUS 313879 TO BUS 314528 CKT 1 /* 3BELL AVE 2 115.00 - 3IVOR106 115.00 OPEN BRANCH FROM BUS 314528 TO BUS 932590 CKT 1 /* 3IVOR106 115.00 - AC2-079 TAP 115.00 OPEN BUS 314528 /* ISLAND: 3IVOR106 115.00 END

Contingency Name	Contingency Definition
DVP_P1-2: LN 23-B	CONTINGENCY 'DVP_P1-2: LN 23-B' OPEN BRANCH FROM BUS 314206 TO BUS 314529 CKT 1 /* 3OAKRIDG 115.00 - 3KINGFORK 115.00 OPEN BRANCH FROM BUS 314206 TO BUS 314532 CKT Z1 /* 3OAKRIDG 115.00 - 3OAKRI23 115.00 OPEN BRANCH FROM BUS 932590 TO BUS 314532 CKT 1 /* AC2-079 TAP 115.00 - 3OAKRI23 115.00 OPEN BRANCH FROM BUS 314532 TO BUS 314536 CKT 1 /* 3OAKRI23 115.00 - 3SUFFOLK 115.00 OPEN BUS 314206 /* ISLAND: 3OAKRIDG 115.00 OPEN BUS 314261 /* ISLAND: 3OAKRI_1 115.00 OPEN BUS 314529 /* ISLAND: 3KINGFORK 115.00 OPEN BUS 314532 /* ISLAND: 3OAKRI23 115.00 END
DVP_P7-1: LN 212-240-D	CONTINGENCY 'DVP_P7-1: LN 212-240-D' /* . OPEN BRANCH FROM BUS 313896 TO BUS 314538 CKT 1 /* 6COLONIAL TR230.00 - 6SURRY 230.00 OPEN BRANCH FROM BUS 961610 TO BUS 314538 CKT 2 /* AG1-000B TAP 230.00 - 6SURRY 230.00 END
DVP_P7-1: LN 212-240-C	CONTINGENCY 'DVP_P7-1: LN 212-240-C' /* . OPEN BRANCH FROM BUS 313896 TO BUS 314538 CKT 1 /* 6COLONIAL TR230.00 - 6SURRY 230.00 OPEN BRANCH FROM BUS 961610 TO BUS 942550 CKT 2 /* AG1-000B TAP 230.00 - AE2-270 TAP 230.00 END

12 Short Circuit Analysis

The following Breakers are overdutied:

None

12.1 System Reinforcements - Short Circuit

None

13 Affected Systems

13.1 TVA

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

13.2 Duke Energy Progress

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