



**Generation Interconnection
Feasibility Study Report
for
Queue Project AG1-393
FORT PICKETT DP 34.5 KV
12 MW Capacity / 20 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.

2 Preface

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

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

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

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

3 General

The Interconnection Customer (IC), has proposed a Solar generating facility located in Dinwiddie County, Virginia. The installed facilities will have a total capability of 20 MW with 12 MW of this output being recognized by PJM as Capacity. The proposed in-service date for this project is March 01, 2022. This study does not imply a TO commitment to this in-service date.

Queue Number	AG1-393
Project Name	FORT PICKETT DP 34.5 KV
State	Virginia
County	Dinwiddie
Transmission Owner	Dominion
MFO	20
MWE	20
MWC	12
Fuel	Solar
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

4.1 Primary Point of Interconnection

AG1-393 “Fort Pickett 34.5 kV” will interconnect within the Southside Electric Cooperative (SSEC) system which interconnects with the Dominion transmission system at the Fort Pickett 115 kV substation.

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

4.2 Secondary Point of Interconnection

There is no secondary point of interconnection specified for AG1-393.

5 Cost Summary

The AG1-393 project will be responsible for the following costs:

Description	Total Cost
Total Physical Interconnection Costs	\$ To be provided in IA
Total System Network Upgrade Costs	\$ 197,698,500 ¹
Total Costs	\$ To be provided in IA

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

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

These schedules will be more clearly 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 AG1-393 was evaluated as a 20.0 MW (Capacity 12.0 MW) injection at the Ft. Pickett 115 kV substation in the Dominion area. Project AG1-393 was evaluated for compliance with applicable reliability planning criteria (PJM, NERC, NERC Regional Reliability Councils, and Transmission Owners). Project AG1-393 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)

None

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	CK T ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADIN G %	POST PROJECT LOADIN G %	AC D C	MW IMPACT
166971465	314681	3CHASCTY	115.0	DVP	314781	3BLACKB R	115.0	DVP	1	DVP_P7-1: LN 171-1009	tower	301.0	99.52	100.43	DC	2.74
166971463	314683	3CLRKVILL E	115.0	DVP	314869	3BURLIN G	115.0	DVP	1	DVP_P7-1: LN 171-1009	tower	301.0	99.9	100.81	DC	2.74
163316312	964840	AG1-347 TAP	230.0	DVP	963270	AG1-176 TAP	230.0	DVP	1	DVP_P2-2: BREMO B1	bus	699.0	99.77	101.08	DC	9.2

11.3 Contribution to Previously Identified Overloads

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

ID	FROM BUS#	FROM BUS	kV	FROM BUS AREA	TO BUS#	TO BUS	kV	TO BUS AREA	CK T ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADIN G %	POST PROJECT LOADIN G %	AC D C	MW IMPACT
168500189	313755	3FLAT CREEK	115.0	DVP	314707	3MORAN	115.0	DVP	1	DVP_P1-2: LN 1045	single	203.979995728	180.92	186.8	DC	12.0
168500190	313755	3FLAT CREEK	115.0	DVP	314707	3MORAN	115.0	DVP	1	Base Case	single	203.979995728	117.26	120.52	DC	6.64
168500206	313898	3BUTCHE R CRK	115.0	DVP	314267	3CHASCTY 2	115.0	DVP	1	DVP_P1-2: LN 158	single	269.779998779	136.79	141.24	DC	12.0
168500207	313898	3BUTCHE R CRK	115.0	DVP	314267	3CHASCTY 2	115.0	DVP	1	DVP_P1-2: LN 298	single	269.779998779	104.9	107.21	DC	6.23
166971536	314267	3CHASCTY 2	115.0	DVP	314681	3CHASCTY	115.0	DVP	Z1	DVP_P7-1: LN 158-235	tower	582.0	102.21	104.21	DC	11.63
169230200	314691	3FARMVIL	115.0	DVP	314692	6FARMVIL	230.0	DVP	2	DVP_P1-2: LN 235-A	single	182.641998291	257.56	260.58	DC	5.52
169230202	314691	3FARMVIL	115.0	DVP	314692	6FARMVIL	230.0	DVP	2	DVP_P1-2: LN 1045	single	182.641998291	172.03	175.18	DC	5.76
169230203	314691	3FARMVIL	115.0	DVP	314692	6FARMVIL	230.0	DVP	2	Base Case	single	176.81401062	153.44	155.48	DC	3.6
169230211	314691	3FARMVIL	115.0	DVP	314692	6FARMVIL	230.0	DVP	1	DVP_P1-2: LN 298	single	198.057998657	169.18	171.68	DC	4.95
169230213	314691	3FARMVIL	115.0	DVP	314692	6FARMVIL	230.0	DVP	1	DVP_P1-2: LN 1045	single	198.057998657	122.96	125.3	DC	4.64

ID	FROM BUS#	FROM BUS	kV	FROM BUS AREA	TO BUS#	TO BUS	kV	TO BUS AREA	CK T ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADIN G %	POST PROJECT LOADIN G %	AC/D C	MW IMPAC T
169230214	314691	3FARMVIL	115.0	DVP	314692	6FARMVIL	230.0	DVP	1	Base Case	single	193.734008789	109.02	110.52	DC	2.9
168500184	314701	3LONEPN	115.0	DVP	313755	3FLAT CREEK	115.0	DVP	1	DVP_P1-2: LN 1045	single	203.979995728	180.92	186.8	DC	12.0
168500185	314701	3LONEPN	115.0	DVP	313755	3FLAT CREEK	115.0	DVP	1	Base Case	single	203.979995728	117.26	120.52	DC	6.64
163794151	314702	3KERR	115.0	DVP	304102	3GW KING TAP	115.0	CPL	1	DVP_P4-6: CAROLIN T122	breaker	199.0	183.52	184.05	DC	2.39
163794152	314702	3KERR	115.0	DVP	304102	3GW KING TAP	115.0	CPL	1	DVP_P4-2: 13002	breaker	199.0	149.68	150.15	DC	2.09
163794153	314702	3KERR	115.0	DVP	304102	3GW KING TAP	115.0	CPL	1	DVP_P4-2: 102802	breaker	199.0	149.68	150.15	DC	2.09
163795026	314702	3KERR	115.0	DVP	304102	3GW KING TAP	115.0	CPL	1	DVP_P7-1: LN 22-90	tower	199.0	180.22	180.74	DC	2.36
169230238	314707	3MORAN	115.0	DVP	314691	3FARMVIL	115.0	DVP	1	DVP_P1-2: LN 1045	single	203.979995728	177.54	183.42	DC	12.0
169230239	314707	3MORAN	115.0	DVP	314691	3FARMVIL	115.0	DVP	1	Base Case	single	203.979995728	113.83	117.08	DC	6.64
166971402	316115	AC1-105 TAP	115.0	DVP	314696	3SEEDGE HILL	115.0	DVP	1	DVP_P7-1: LN 158-235	tower	406.0	125.99	127.25	DC	5.14
163316255	934620	AD1-088 TAP	230.0	DVP	962490	AG1-098 TAP	230.0	DVP	1	DVP_P2-2: BREMO B1	bus	699.0	131.93	133.25	DC	9.2
168500240	936260	AD2-033 TAP	115.0	DVP	313898	3BUTCHER CRK	115.0	DVP	1	DVP_P1-2: LN 158	single	269.779998779	116.57	121.01	DC	12.0
163316200	962490	AG1-098 TAP	230.0	DVP	314686	6CLOVER	230.0	DVP	1	DVP_P2-2: BREMO B1	bus	699.0	148.31	149.62	DC	9.2
163316276	963270	AG1-176 TAP	230.0	DVP	934620	AD1-088 TAP	230.0	DVP	1	DVP_P2-2: BREMO B1	bus	699.0	118.44	119.75	DC	9.2

11.4 Potential Congestion due to Local Energy Deliverability

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

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

ID	FROM BUS#	FROM BUS	kV	FROM BUS AREA	TO BUS#	TO BUS	kV	TO BUS AREA	CK T ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADIN G %	POST PROJECT LOADIN G %	AC/D C	MW IMPAC T
168500186	313755	3FLAT CREEK	115.0	DVP	314707	3MORAN	115.0	DVP	1	DVP_P 1-2: LN 1045	operati on	203.979995728	317.4	327.2	DC	19.99
168500188	313755	3FLAT CREEK	115.0	DVP	314707	3MORAN	115.0	DVP	1	Base Case	operati on	203.979995728	173.92	179.35	DC	11.07
168500401	313825	3PLYWOOD	115.0	DVP	314696	3SEEDGE HILL	115.0	DVP	1	DVP_P 1-2: LN 33	operati on	141.0	116.84	117.42	DC	1.81
168500203	313898	3BUTCHER CRK	115.0	DVP	314267	3CHASCTY2	115.0	DVP	1	DVP_P 1-2: LN 158	operati on	269.779998779	239.98	247.39	DC	19.99
168500205	313898	3BUTCHER CRK	115.0	DVP	314267	3CHASCTY2	115.0	DVP	1	Base Case	operati on	247.220001221	158.78	162.38	DC	8.92
168805169	314267	3CHASCTY2	115.0	DVP	314681	3CHASCTY	115.0	DVP	Z1	DVP_P 1-2: LN 158	operati on	449.320007324	128.95	131.56	DC	11.71
168804959	314427	3LUNENBURG	115.0	DVP	936260	AD2-033 TAP	115.0	DVP	1	DVP_P 1-2: LN 158	operati on	269.779998779	162.07	169.48	DC	20.0
169230240	314677	6BUCKING	230.0	DVP	314747	6BREMO	230.0	DVP	1	DVP_P 1-2: LN 556-C	operati on	571.520019531	290.3	291.7	DC	7.98
169230244	314677	6BUCKING	230.0	DVP	314747	6BREMO	230.0	DVP	1	Base Case	operati on	571.520019531	171.4	172.58	DC	6.74
169230541	314687	3CREWE	115.0	DVP	314706	3MARTIN TAP	115.0	DVP	1	DVP_P 1-2: LN 1012-E	operati on	326.179992676	99.67	102.43	DC	9.0
169230198	314691	3FARMVIL	115.0	DVP	314692	6FARMVIL	230.0	DVP	2	DVP_P 1-2: LN 235-A	operati on	182.641998291	381.21	386.24	DC	9.2
169230201	314691	3FARMVIL	115.0	DVP	314692	6FARMVIL	230.0	DVP	2	Base Case	operati on	176.81401062	238.63	242.02	DC	6.01
169230209	314691	3FARMVIL	115.0	DVP	314692	6FARMVIL	230.0	DVP	1	DVP_P 1-2: LN 298	operati on	198.057998657	278.06	282.22	DC	8.25
169230212	314691	3FARMVIL	115.0	DVP	314692	6FARMVIL	230.0	DVP	1	Base Case	operati on	193.734008789	175.39	177.88	DC	4.84
169230219	314692	6FARMVIL	230.0	DVP	314677	6BUCKING	230.0	DVP	1	DVP_P 1-2: LN 556-C	operati on	559.299987793	294.34	295.76	DC	7.99
169230223	314692	6FARMVIL	230.0	DVP	314677	6BUCKING	230.0	DVP	1	Base Case	operati on	559.299987793	170.43	171.63	DC	6.74
169230268	314696	3SEEDGE HILL	115.0	DVP	314697	6SEEDGE HILL	230.0	DVP	1	DVP_P 1-3: 6SEEDGE HILL-TX#2	operati on	226.727996826	231.47	231.94	DC	2.36
168500181	314701	3LONEPN	115.0	DVP	313755	3FLAT CREEK	115.0	DVP	1	DVP_P 1-2: LN 1045	operati on	203.979995728	317.4	327.2	DC	19.99
168500183	314701	3LONEPN	115.0	DVP	313755	3FLAT CREEK	115.0	DVP	1	Base Case	operati on	203.979995728	173.92	179.35	DC	11.07
169230539	314706	3MARTIN TAP	115.0	DVP	961890	AG1-030 TAP	115.0	DVP	1	DVP_P 1-2: LN 158	operati on	269.779998779	113.81	121.22	DC	20.0
169230235	314707	3MORAN	115.0	DVP	314691	3FARMVIL	115.0	DVP	1	DVP_P 1-2: LN 1045	operati on	203.979995728	314.01	323.81	DC	19.99
169230237	314707	3MORAN	115.0	DVP	314691	3FARMVIL	115.0	DVP	1	Base Case	operati on	203.979995728	170.49	175.92	DC	11.07
168805090	314723	3VICTRIA	115.0	DVP	314427	3LUNENBURG	115.0	DVP	1	DVP_P 1-2: LN 158	operati on	326.179992676	137.6	143.73	DC	20.0
169230365	314725	3VICT DP	115.0	DVP	314723	3VICTRIA	115.0	DVP	1	DVP_P 1-2: LN 158	operati on	269.779998779	168.15	175.56	DC	20.0

ID	FROM BUS#	FROM BUS	kV	FROM BUS AREA	TO BUS#	TO BUS	kV	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADIN G %	POST PROJECT LOADIN G %	AC/D C	MW IMPACT
169230367	314725	3VICT DP	115.0	DVP	314723	3VICTRIA	115.0	DVP	1	Base Case	operation	247.220001221	99.97	103.58	DC	8.92
169727280	934620	AD1-088 TAP	230.0	DVP	962490	AG1-098 TAP	230.0	DVP	1	DVP_P 1-2: LN 298	operation	571.520019531	146.61	148.05	DC	8.25
168500237	936260	AD2-033 TAP	115.0	DVP	313898	3BUTCHER CRK	115.0	DVP	1	DVP_P 1-2: LN 158	operation	269.779998779	210.21	217.63	DC	20.0
168500239	936260	AD2-033 TAP	115.0	DVP	313898	3BUTCHER CRK	115.0	DVP	1	Base Case	operation	247.220001221	129.21	132.82	DC	8.92
169230360	961890	AG1-030 TAP	115.0	DVP	314725	3VICT DP	115.0	DVP	1	DVP_P 1-2: LN 158	operation	269.779998779	169.41	176.82	DC	20.0
169230362	961890	AG1-030 TAP	115.0	DVP	314725	3VICT DP	115.0	DVP	1	Base Case	operation	247.220001221	101.34	104.95	DC	8.92
169230341	962490	AG1-098 TAP	230.0	DVP	314686	6CLOVER	230.0	DVP	1	DVP_P 1-2: LN 298	operation	571.520019531	166.84	168.29	DC	8.25
169727328	963270	AG1-176 TAP	230.0	DVP	934620	AD1-088 TAP	230.0	DVP	1	DVP_P 1-2: LN 298	operation	571.520019531	129.88	131.32	DC	8.25
170012878	964240	AG1-285 TAP	115.0	DVP	965590	AG1-427 TAP	115.0	DVP	1	DVP_P 1-2: LN 158	operation	269.779998779	99.98	101.02	DC	2.79
170012746	964840	AG1-347 TAP	230.0	DVP	963270	AG1-176 TAP	230.0	DVP	1	DVP_P 1-2: LN 298	operation	571.520019531	106.69	108.13	DC	8.25
169727615	965590	AG1-427 TAP	115.0	DVP	936480	AD2-063 TAP	115.0	DVP	1	DVP_P 1-2: LN 158	operation	269.779998779	99.98	101.02	DC	2.79

11.5 System Reinforcements - Summer Peak Load Flow - Primary POI

ID	Idx	Facility	Upgrade Description	Cost
169230214,169 230213,169230 211	8	3FARMVIL 115.0 kV - 6FARMVIL 230.0 kV Ckt 1	<u>DVP</u> dom-089 (1606) : Add additional 230/115 kV transformer at Farmville substation Project Type : CON Cost : \$6,000,000 Time Estimate : 16-18 Months	\$6,000,000
169230200,169 230202,169230 203	7	3FARMVIL 115.0 kV - 6FARMVIL 230.0 kV Ckt 2		
163316200	15	AG1-098 TAP 230.0 kV - 6CLOVER 230.0 kV Ckt 1	<u>DVP</u> dom-343 (1901) : Rebuild 6.534 miles of 230 kV Line 235 from Clover to AG1-098 with 2-795 ACSR 150 C. Replace Relay (Secondary CT) at Clover terminal Project Type : FAC Cost : \$16,455,000 Time Estimate : 36-40 Months	\$16,455,000
163316276	16	AG1-176 TAP 230.0 kV - AD1- 088 TAP 230.0 kV Ckt 1	<u>DVP</u> dom-392 (1950) : Rebuild 2.729 miles of 230 kV line 235 from AD1-088 Tap to AG1-176 Tap with 2-636 ACSR 150 C. Project Type : FAC Cost : \$6,822,500 Time Estimate : 30-36 Months	\$6,822,500
163316312	3	AG1-347 TAP 230.0 kV - AG1- 176 TAP 230.0 kV Ckt 1	<u>DVP</u> dom-415 (1973) : Rebuild 0.17 mi miles of 230 kV Line 235 from AG1-347 Tap to AG1-176 Tap with 2-636 ACSR 150 C Project Type : FAC Cost : \$255,000 Time Estimate : 30-36 Months	\$255,000
166971463	2	3CLRKVILLE 115.0 kV - 3BURLING 115.0 kV Ckt 1	<u>DVP</u> dom-340 (1898) : Reconductor 2.58 miles of 115 kV Line 36 from Clarksville to Burlington DP with 768.2 ACSS 250 Project Type : FAC Cost : \$1,548,000 Time Estimate : 30-36 Months	\$1,548,000
166971465	1	3CHASCTY 115.0 kV - 3BLACKBR 115.0 kV Ckt 1	<u>DVP</u> dom-339 (1897) : Reconductor 2.47 miles of 115 kV Line 36 from Chase City to Black Branch with 768.2 ACSS 250 Project Type : FAC Cost : \$1,482,000 Time Estimate : 30-36 Months	\$1,482,000

ID	Idx	Facility	Upgrade Description	Cost
169230239,169 230238	11	3MORAN 115.0 kV - 3FARMVIL 115.0 kV Ckt 1	<u>DVP</u> dom-271 (1829) : Rebuild 70 miles of 115 kV lines (158, 84, 154, 1012) from Chase City to Lone Pine with 2-636 ACSR 150 C. Line 84: - Willis Mountain terminal: Replace Line Switch - Farmville terminal: Replace Breaker Switch, Breaker Lead, Line Lead, Wave Trap - Pamplin terminal: Replace Wave Trap, Line Lead and Relay (Secondary CT) Line 154: - Twittys Creek terminal: Replace Wave Trap and Line Lead - Madisonville terminal: Replace Line Switch - Pamplin terminal: Replace Wave Trap and Line Lead Line 158: - Farmville terminal: Replace Breaker Switch, Breaker Lead - Moran DP terminal: Replace Line Switch - Lone Pine terminal: Replace Wave Trap Line 1012: - Chase City terminal: Replace Breaker, Breaker switch, Breaker Lead and Wave Trap - Central terminal: Replace Line Switch - Twitty's Creek terminal: Replace Wave Trap Project Type : FAC Cost : \$109,470,000 Time Estimate : 60-72 Months	\$109,470,000
168500184,168 500185	9	3LONEPN 115.0 kV - 3FLAT CREEK 115.0 kV Ckt 1		
168500189,168 500190	4	3FLAT CREEK 115.0 kV - 3MORAN 115.0 kV Ckt 1		
163795026,163 794153,163794 152,163794151	10	3KERR 115.0 kV - 3GW KING TAP 115.0 kV Ckt 1	<u>DVP</u> n6115 (1503) : For DEV portion, rebuild 4.7 miles of 115 kV Line 45 from Kerr Dam to GW King Tap with 768 ACSS. Project Type : FAC Cost : \$6,123,000 Time Estimate : 30-36 Months <u>CPL</u> The external (i.e. Non-PJM) Transmission Owner, CPLE, will not evaluate this violation until the impact study phase.	\$6,123,000
166971402	12	AC1-105 TAP 115.0 kV - 3SEGE HILL 115.0 kV Ckt 1	<u>DVP</u> dom-341 (1899) : Rebuild 10.76 mi miles of 115 kV Line 33 from Mt. Laurel to AC1-105 Tap to Sedge Hill with 2-636 ACSR 150 C. Replace Wave Trap, Line Lead at sedge Hill terminal. Replace Line Switch at Mt. Laurel terminal Project Type : FAC Cost : \$16,590,000 Time Estimate : 30-36 Months	\$16,590,000

ID	Idx	Facility	Upgrade Description	Cost
168500207,168500206	5	3BUTCHER CRK 115.0 kV - 3CHASCTY2 115.0 kV Ckt 1	<u>DVP</u> dom-279 (1837) : Rebuild 1.17 miles of 115 kV line 1045 from Butcher Creek to Chase City with 2-636 ACSR 150 C. Replace Breaker Switch at Chase City terminal Project Type : FAC Cost : \$2,005,000 Time Estimate : 30-36 Months	\$2,005,000
168500240	14	AD2-033 TAP 115.0 kV - 3BUTCHER CRK 115.0 kV Ckt 1	<u>DVP</u> dom-393 (1951) : Reconnector 12.68 miles of 115 kV Line 98 from AD2-033 Tap to Butcher Creek with 768.2 ACSS 250 C. Project Type : FAC Cost : \$7,608,000 Time Estimate : 36-40 Months	\$7,608,000
166971536	6	3CHASCTY2 115.0 kV - 3CHASCTY 115.0 kV Ckt Z1	<u>DVP</u> dom-296 (1854) : Replace circuit breaker T342 at Chase City 115 kV with a 2000 A breaker Project Type : FAC Cost : \$1,000,000 Time Estimate : 12-18 Months	\$1,000,000
163316255	13	AD1-088 TAP 230.0 kV - AG1-098 TAP 230.0 kV Ckt 1	<u>DVP</u> dom-391 (1949) : Rebuild 8.936 miles of 230 kV line 235 from AD1-088 Tap to AG1-098 Tap with 2-636 ACSR 150 C Project Type : FAC Cost : \$22,340,000 Time Estimate : 36-40 Months	\$22,340,000
			TOTAL COST	\$197,698,500

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
166971465	314681	3CHASCTY	DVP	314781	3BLACKBR	DVP	1	DVP_P7-1: LN 171-1009	tower	301.0	99.52	100.43	DC	2.74

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
313527	AB2-043 C	0.6786	50/50	0.6786
313853	3PONTONDP	0.5479	50/50	0.5479
314429	3JTRSVLE	0.3458	50/50	0.3458
314713	3PAMPLIN	1.1895	50/50	1.1895
316129	AC1-054 C	-3.5586	Adder	-4.19
316131	AB2-060 C	1.9221	50/50	1.9221
924022	AB2-043 E O1	3.8463	50/50	3.8463
924162	AB2-060 E OP	5.7331	50/50	5.7331
925611	AC1-036 C	0.2426	50/50	0.2426
925612	AC1-036 E	0.9209	50/50	0.9209
935221	AD1-157 C	0.1736	50/50	0.1736
935222	AD1-157 E	0.7334	50/50	0.7334
936265	AD2-033 C	14.6671	50/50	14.6671
936266	AD2-033 E	9.7781	50/50	9.7781
936485	AD2-063 C	18.7920	50/50	18.7920
936486	AD2-063 E	12.5280	50/50	12.5280
938371	AE1-056 C	4.7425	50/50	4.7425
938372	AE1-056 E	2.5913	50/50	2.5913
940662	AE2-053 BAT	2.9720	50/50	2.9720
942451	AE2-258	3.2090	50/50	3.2090
942461	AE2-259 C O1	4.1764	Adder	4.91
942462	AE2-259 E O1	2.7843	Adder	3.28
943911	AF1-059	13.6212	50/50	13.6212
946301	AF1-294 C	3.4930	50/50	3.4930
946302	AF1-294 E	2.3287	50/50	2.3287
958211	AF2-115 C	2.0547	50/50	2.0547
958212	AF2-115 E	1.3698	50/50	1.3698
958801	AF2-171 C	12.4101	50/50	12.4101
958802	AF2-171 E	8.2734	50/50	8.2734
959311	AF2-222 C	17.2850	50/50	17.2850
959312	AF2-222 E	11.5809	50/50	11.5809
961791	AG1-021 C	1.6438	50/50	1.6438
961792	AG1-021 E	1.0958	50/50	1.0958
961891	AG1-030 C	13.6368	50/50	13.6368
961892	AG1-030 E	9.0912	50/50	9.0912
962041	AG1-048 C	10.2735	50/50	10.2735
962042	AG1-048 E	6.8490	50/50	6.8490
963171	AG1-166 C	1.6438	50/50	1.6438
963172	AG1-166 E	1.0958	50/50	1.0958
963181	AG1-167 C	1.6438	50/50	1.6438
963182	AG1-167 E	1.0958	50/50	1.0958

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
963191	AG1-168 C	1.6438	50/50	1.6438
963192	AG1-168 E	1.0958	50/50	1.0958
963201	AG1-169 C	1.6438	50/50	1.6438
963202	AG1-169 E	1.0958	50/50	1.0958
963211	AG1-170 C	1.6438	50/50	1.6438
963212	AG1-170 E	1.0958	50/50	1.0958
963301	AG1-179 C	3.4390	50/50	3.4390
963311	AG1-180	1.6756	50/50	1.6756
963321	AG1-181 C O1	18.7936	50/50	18.7936
963361	AG1-185 O1	9.0929	50/50	9.0929
963641	AG1-215 C	0.7671	50/50	0.7671
963642	AG1-215 E	1.1506	50/50	1.1506
964111	AG1-272 C	2.7573	50/50	2.7573
964112	AG1-272 E	0.8189	50/50	0.8189
964121	AG1-273 C	2.7573	50/50	2.7573
964122	AG1-273 E	0.8189	50/50	0.8189
964131	AG1-274 C	2.7573	50/50	2.7573
964132	AG1-274 E	0.8189	50/50	0.8189
964241	AG1-285 C O1	16.0687	50/50	16.0687
964242	AG1-285 E O1	10.7125	50/50	10.7125
964791	AG1-342 C	1.0172	Adder	2.26
964792	AG1-342 E	0.7992	Adder	1.77
964821	AG1-345 C	0.6599	50/50	0.6599
964822	AG1-345 E	0.4399	50/50	0.4399
965191	AG1-384 C	2.7573	50/50	2.7573
965192	AG1-384 E	0.8189	50/50	0.8189
965281	AG1-393 C	1.6438	50/50	1.6438
965282	AG1-393 E	1.0958	50/50	1.0958
965451	AG1-413 C O1	5.7258	50/50	5.7258
965452	AG1-413 E O1	3.8172	50/50	3.8172
965591	AG1-427 C	15.1685	50/50	15.1685
965592	AG1-427 E	10.1336	50/50	10.1336
965601	AG1-428 C O1	2.8710	50/50	2.8710
965602	AG1-428 E O1	1.9106	50/50	1.9106
965641	AG1-432 C O1	4.4270	Adder	9.83
965642	AG1-432 E O1	2.9513	Adder	6.55
965772	AG1-445 BAT	3.3454	50/50	3.3454
965782	AG1-446 BAT	3.3454	50/50	3.3454
965831	AG1-451	0.7378	Adder	1.64
966753	AG1-546 BAT	1.7033	Merchant Transmission	1.7033
966861	AG1-557 C O1 (Withdrawn : 12/14/2020)	0.4427	Adder	0.98
966862	AG1-557 E O1 (Withdrawn : 12/14/2020)	0.2951	Adder	0.66
G-007A	G-007A	0.2062	Confirmed LTF	0.2062
VFT	VFT	0.5483	Confirmed LTF	0.5483
CALDERWOOD	CALDERWOOD	0.1387	Confirmed LTF	0.1387
PRAIRIE	PRAIRIE	0.4314	Confirmed LTF	0.4314
CHEOAH	CHEOAH	0.1426	Confirmed LTF	0.1426
CBM-N	CBM-N	0.1008	Confirmed LTF	0.1008
COTTONWOOD	COTTONWOOD	0.4977	Confirmed LTF	0.4977

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
HAMLET	HAMLET	0.3182	Confirmed LTF	0.3182
GIBSON	GIBSON	0.0710	Confirmed LTF	0.0710
BLUEG	BLUEG	0.2153	Confirmed LTF	0.2153
TRIMBLE	TRIMBLE	0.0684	Confirmed LTF	0.0684
CATAWBA	CATAWBA	0.1614	Confirmed LTF	0.1614

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
166971463	314683	3CLRKVILLE	DVP	314869	3BURLING	DVP	1	DVP_P7-1: LN 171-1009	tower	301.0	99.9	100.81	DC	2.74

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
313527	AB2-043 C	0.6786	50/50	0.6786
313853	3PONTONDP	0.5479	50/50	0.5479
314429	3JTRSVLE	0.3458	50/50	0.3458
314713	3PAMPLIN	1.1895	50/50	1.1895
316129	AC1-054 C	-3.5586	Adder	-4.19
316131	AB2-060 C	1.9221	50/50	1.9221
924022	AB2-043 E O1	3.8463	50/50	3.8463
924162	AB2-060 E OP	5.7331	50/50	5.7331
924301	AB2-077 C O1 (Suspended)	3.3240	50/50	3.3240
924302	AB2-077 E O1 (Suspended)	2.2160	50/50	2.2160
924311	AB2-078 C O1 (Suspended)	3.3240	50/50	3.3240
924312	AB2-078 E O1 (Suspended)	2.2160	50/50	2.2160
924321	AB2-079 C O1 (Suspended)	3.3240	50/50	3.3240
924322	AB2-079 E O1 (Suspended)	2.2160	50/50	2.2160
925611	AC1-036 C	0.2426	50/50	0.2426
925612	AC1-036 E	0.9209	50/50	0.9209
935221	AD1-157 C	0.1736	50/50	0.1736
935222	AD1-157 E	0.7334	50/50	0.7334
936265	AD2-033 C	14.6671	50/50	14.6671
936266	AD2-033 E	9.7781	50/50	9.7781
936485	AD2-063 C	18.7920	50/50	18.7920
936486	AD2-063 E	12.5280	50/50	12.5280
938371	AE1-056 C	4.7425	50/50	4.7425
938372	AE1-056 E	2.5913	50/50	2.5913
940662	AE2-053 BAT	2.9720	50/50	2.9720
942451	AE2-258	3.2090	50/50	3.2090
942461	AE2-259 C O1	4.1764	Adder	4.91
942462	AE2-259 E O1	2.7843	Adder	3.28
943911	AF1-059	13.6212	50/50	13.6212
946301	AF1-294 C	3.4930	50/50	3.4930
946302	AF1-294 E	2.3287	50/50	2.3287
958211	AF2-115 C	2.0547	50/50	2.0547
958212	AF2-115 E	1.3698	50/50	1.3698
958801	AF2-171 C	12.4101	50/50	12.4101
958802	AF2-171 E	8.2734	50/50	8.2734

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
959311	AF2-222 C	17.2850	50/50	17.2850
959312	AF2-222 E	11.5809	50/50	11.5809
961791	AG1-021 C	1.6438	50/50	1.6438
961792	AG1-021 E	1.0958	50/50	1.0958
961891	AG1-030 C	13.6368	50/50	13.6368
961892	AG1-030 E	9.0912	50/50	9.0912
962041	AG1-048 C	10.2735	50/50	10.2735
962042	AG1-048 E	6.8490	50/50	6.8490
963171	AG1-166 C	1.6438	50/50	1.6438
963172	AG1-166 E	1.0958	50/50	1.0958
963181	AG1-167 C	1.6438	50/50	1.6438
963182	AG1-167 E	1.0958	50/50	1.0958
963191	AG1-168 C	1.6438	50/50	1.6438
963192	AG1-168 E	1.0958	50/50	1.0958
963201	AG1-169 C	1.6438	50/50	1.6438
963202	AG1-169 E	1.0958	50/50	1.0958
963211	AG1-170 C	1.6438	50/50	1.6438
963212	AG1-170 E	1.0958	50/50	1.0958
963301	AG1-179 C	3.4390	50/50	3.4390
963311	AG1-180	1.6756	50/50	1.6756
963321	AG1-181 C O1	18.7936	50/50	18.7936
963361	AG1-185 O1	9.0929	50/50	9.0929
963641	AG1-215 C	0.7671	50/50	0.7671
963642	AG1-215 E	1.1506	50/50	1.1506
964111	AG1-272 C	2.7573	50/50	2.7573
964112	AG1-272 E	0.8189	50/50	0.8189
964121	AG1-273 C	2.7573	50/50	2.7573
964122	AG1-273 E	0.8189	50/50	0.8189
964131	AG1-274 C	2.7573	50/50	2.7573
964132	AG1-274 E	0.8189	50/50	0.8189
964241	AG1-285 C O1	16.0687	50/50	16.0687
964242	AG1-285 E O1	10.7125	50/50	10.7125
964791	AG1-342 C	1.0172	Adder	2.26
964792	AG1-342 E	0.7992	Adder	1.77
964821	AG1-345 C	0.6599	50/50	0.6599
964822	AG1-345 E	0.4399	50/50	0.4399
965191	AG1-384 C	2.7573	50/50	2.7573
965192	AG1-384 E	0.8189	50/50	0.8189
965281	AG1-393 C	1.6438	50/50	1.6438
965282	AG1-393 E	1.0958	50/50	1.0958
965451	AG1-413 C O1	5.7258	50/50	5.7258
965452	AG1-413 E O1	3.8172	50/50	3.8172
965591	AG1-427 C	15.1685	50/50	15.1685
965592	AG1-427 E	10.1336	50/50	10.1336
965601	AG1-428 C O1	2.8710	50/50	2.8710
965602	AG1-428 E O1	1.9106	50/50	1.9106
965641	AG1-432 C O1	4.4270	Adder	9.83
965642	AG1-432 E O1	2.9513	Adder	6.55
965772	AG1-445 BAT	3.3454	50/50	3.3454
965782	AG1-446 BAT	3.3454	50/50	3.3454
965831	AG1-451	0.7378	Adder	1.64
966753	AG1-546 BAT	1.7033	Merchant Transmission	1.7033

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
966861	AG1-557 C O1 (Withdrawn : 12/14/2020)	0.4427	Adder	0.98
966862	AG1-557 E O1 (Withdrawn : 12/14/2020)	0.2951	Adder	0.66
G-007A	G-007A	0.2062	Confirmed LTF	0.2062
VFT	VFT	0.5483	Confirmed LTF	0.5483
CALDERWOOD	CALDERWOOD	0.1387	Confirmed LTF	0.1387
PRAIRIE	PRAIRIE	0.4314	Confirmed LTF	0.4314
CHEOAH	CHEOAH	0.1426	Confirmed LTF	0.1426
CBM-N	CBM-N	0.1008	Confirmed LTF	0.1008
COTTONWOOD	COTTONWOOD	0.4977	Confirmed LTF	0.4977
HAMLET	HAMLET	0.3182	Confirmed LTF	0.3182
GIBSON	GIBSON	0.0710	Confirmed LTF	0.0710
BLUEG	BLUEG	0.2153	Confirmed LTF	0.2153
TRIMBLE	TRIMBLE	0.0684	Confirmed LTF	0.0684
CATAWBA	CATAWBA	0.1614	Confirmed LTF	0.1614

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
163316312	964840	AG1-347 TAP	DVP	963270	AG1-176 TAP	DVP	1	DVP_P2-2: BREMO B1	bus	699.0	99.77	101.08	DC	9.2

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
313527	AB2-043 C	0.5789	50/50	0.5789
313853	3PONTONDP	1.8407	50/50	1.8407
314429	3JTRSVLE	1.1616	50/50	1.1616
314677	6BUCKING	1.6095	50/50	1.6095
314713	3PAMPLIN	4.9032	50/50	4.9032
315161	1KERR 4	0.7452	50/50	0.7452
315162	1KERR 5	0.7452	50/50	0.7452
315163	1KERR 6	0.7452	50/50	0.7452
315164	1KERR 7	0.7452	50/50	0.7452
316131	AB2-060 C	1.7524	50/50	1.7524
924022	AB2-043 E O1	3.2808	50/50	3.2808
924032	AB2-045 E	4.7608	50/50	4.7608
924162	AB2-060 E OP	5.2270	50/50	5.2270
924301	AB2-077 C O1 (Suspended)	2.2313	50/50	2.2313
924302	AB2-077 E O1 (Suspended)	1.4875	50/50	1.4875
924311	AB2-078 C O1 (Suspended)	2.2313	50/50	2.2313
924312	AB2-078 E O1 (Suspended)	1.4875	50/50	1.4875
924321	AB2-079 C O1 (Suspended)	2.2313	50/50	2.2313
924322	AB2-079 E O1 (Suspended)	1.4875	50/50	1.4875
925611	AC1-036 C	0.4580	50/50	0.4580
925612	AC1-036 E	1.7382	50/50	1.7382
932511	AC2-071 C (Withdrawn : 01/22/2021)	1.5857	50/50	1.5857
932512	AC2-071 E (Withdrawn : 01/22/2021)	5.0631	50/50	5.0631
935221	AD1-157 C	0.7154	50/50	0.7154
935222	AD1-157 E	3.0229	50/50	3.0229
936265	AD2-033 C	24.1714	50/50	24.1714
936266	AD2-033 E	16.1143	50/50	16.1143
936361	AD2-046 C O1	6.9048	50/50	6.9048
936362	AD2-046 E O1	3.1752	50/50	3.1752
936485	AD2-063 C	22.4433	50/50	22.4433
936486	AD2-063 E	14.9622	50/50	14.9622
938371	AE1-056 C	19.5482	50/50	19.5482
938372	AE1-056 E	10.6810	50/50	10.6810

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
939181	AE1-148 C	6.9525	50/50	6.9525
939182	AE1-148 E	4.6350	50/50	4.6350
940661	AE2-053 O1	2.5750	50/50	2.5750
942451	AE2-258	2.7372	50/50	2.7372
942461	AE2-259 C O1	37.3440	50/50	37.3440
942462	AE2-259 E O1	24.8960	50/50	24.8960
943911	AF1-059	12.7036	50/50	12.7036
946301	AF1-294 C	11.7343	50/50	11.7343
946302	AF1-294 E	7.8229	50/50	7.8229
958211	AF2-115 C	6.9026	50/50	6.9026
958212	AF2-115 E	4.6017	50/50	4.6017
958801	AF2-171 C	41.2002	50/50	41.2002
958802	AF2-171 E	27.4668	50/50	27.4668
959311	AF2-222 C	35.5030	50/50	35.5030
959312	AF2-222 E	23.7870	50/50	23.7870
961791	AG1-021 C	5.5220	50/50	5.5220
961792	AG1-021 E	3.6814	50/50	3.6814
961891	AG1-030 C	37.5642	50/50	37.5642
961892	AG1-030 E	25.0428	50/50	25.0428
962041	AG1-048 C	34.5128	50/50	34.5128
962042	AG1-048 E	23.0085	50/50	23.0085
963171	AG1-166 C	5.5220	50/50	5.5220
963172	AG1-166 E	3.6814	50/50	3.6814
963181	AG1-167 C	5.5220	50/50	5.5220
963182	AG1-167 E	3.6814	50/50	3.6814
963191	AG1-168 C	5.5220	50/50	5.5220
963192	AG1-168 E	3.6814	50/50	3.6814
963201	AG1-169 C	5.5220	50/50	5.5220
963202	AG1-169 E	3.6814	50/50	3.6814
963211	AG1-170 C	5.5220	50/50	5.5220
963212	AG1-170 E	3.6814	50/50	3.6814
963321	AG1-181 C O1	32.0091	50/50	32.0091
963361	AG1-185 O1	15.4869	50/50	15.4869
963641	AG1-215 C	2.5770	50/50	2.5770
963642	AG1-215 E	3.8654	50/50	3.8654
964111	AG1-272 C	5.2046	50/50	5.2046
964112	AG1-272 E	1.5458	50/50	1.5458
964121	AG1-273 C	5.2046	50/50	5.2046
964122	AG1-273 E	1.5458	50/50	1.5458
964131	AG1-274 C	5.2046	50/50	5.2046
964132	AG1-274 E	1.5458	50/50	1.5458
964241	AG1-285 C O1	17.4997	50/50	17.4997
964242	AG1-285 E O1	11.6665	50/50	11.6665
964821	AG1-345 C	2.2018	50/50	2.2018
964822	AG1-345 E	1.4679	50/50	1.4679
964841	AG1-347 C	48.8992	50/50	48.8992
964842	AG1-347 E	38.4208	50/50	38.4208
965191	AG1-384 C	5.2046	50/50	5.2046
965192	AG1-384 E	1.5458	50/50	1.5458
965281	AG1-393 C	5.5220	50/50	5.5220
965282	AG1-393 E	3.6814	50/50	3.6814
965451	AG1-413 C O1	5.3401	50/50	5.3401

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
965452	AG1-413 E O1	3.5601	50/50	3.5601
965591	AG1-427 C	16.7803	50/50	16.7803
965592	AG1-427 E	11.2105	50/50	11.2105
965641	AG1-432 C O1	74.6880	50/50	74.6880
965642	AG1-432 E O1	49.7920	50/50	49.7920
965831	AG1-451	12.4480	50/50	12.4480
966861	AG1-557 C O1 (Withdrawn : 12/14/2020)	7.4688	50/50	7.4688
966862	AG1-557 E O1 (Withdrawn : 12/14/2020)	4.9792	50/50	4.9792
WEC	WEC	0.0233	Confirmed LTF	0.0233
LGEE	LGEE	0.0496	Confirmed LTF	0.0496
CPL	CPL	0.2539	Confirmed LTF	0.2539
CBM-W2	CBM-W2	0.9677	Confirmed LTF	0.9677
NY	NY	0.0420	Confirmed LTF	0.0420
TVA	TVA	0.1806	Confirmed LTF	0.1806
O-066	O-066	0.5855	Confirmed LTF	0.5855
SIGE	SIGE	0.0177	Confirmed LTF	0.0177
CBM-S2	CBM-S2	2.6726	Confirmed LTF	2.6726
CBM-S1	CBM-S1	0.0456	Confirmed LTF	0.0456
G-007	G-007	0.0924	Confirmed LTF	0.0924
MEC	MEC	0.1367	Confirmed LTF	0.1367
LAGN	LAGN	0.2223	Confirmed LTF	0.2223
CBM-W1	CBM-W1	0.9814	Confirmed LTF	0.9814

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
168500189	313755	3FLAT CREEK	DVP	314707	3MORAN	DVP	1	DVP_P1-2: LN 1045	single	203.98	180.92	186.8	DC	12.0

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
314429	3JTRSVLE	2.5234	80/20	2.5234
316131	AB2-060 C	8.5795	80/20	8.5795
936265	AD2-033 C	77.9711	80/20	77.9711
946301	AF1-294 C	25.4906	80/20	25.4906
958211	AF2-115 C	14.9945	80/20	14.9945
961791	AG1-021 C	11.9956	80/20	11.9956
961891	AG1-030 C	89.9667	80/20	89.9667
962041	AG1-048 C	74.9722	80/20	74.9722
963171	AG1-166 C	11.9956	80/20	11.9956
963181	AG1-167 C	11.9956	80/20	11.9956
963191	AG1-168 C	11.9956	80/20	11.9956
963201	AG1-169 C	11.9956	80/20	11.9956
963211	AG1-170 C	11.9956	80/20	11.9956
963641	AG1-215 C	5.5979	80/20	5.5979
964821	AG1-345 C	4.7982	80/20	4.7982
965281	AG1-393 C	11.9956	80/20	11.9956
CALDERWOOD	CALDERWOOD	0.0184	Confirmed LTF	0.0184
NY	NY	0.0205	Confirmed LTF	0.0205
PRAIRIE	PRAIRIE	0.0956	Confirmed LTF	0.0956
CHEOAH	CHEOAH	0.0185	Confirmed LTF	0.0185
COTTONWOOD	COTTONWOOD	0.0777	Confirmed LTF	0.0777
HAMLET	HAMLET	0.0214	Confirmed LTF	0.0214
GIBSON	GIBSON	0.0202	Confirmed LTF	0.0202
BLUEG	BLUEG	0.0642	Confirmed LTF	0.0642
TRIMBLE	TRIMBLE	0.0206	Confirmed LTF	0.0206
CATAWBA	CATAWBA	0.0129	Confirmed LTF	0.0129

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
168500206	313898	3BUTCHER CRK	DVP	314267	3CHASCTY2	DVP	1	DVP_P1-2: LN 158	single	269.78	136.79	141.24	DC	12.0

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
314429	3JTRSVLE	2.5234	80/20	2.5234
316131	AB2-060 C	8.5795	80/20	8.5795
936265	AD2-033 C	77.9711	80/20	77.9711
946301	AF1-294 C	25.4906	80/20	25.4906
958211	AF2-115 C	14.9945	80/20	14.9945
961791	AG1-021 C	11.9956	80/20	11.9956
961891	AG1-030 C	89.9667	80/20	89.9667
962041	AG1-048 C	74.9722	80/20	74.9722
963171	AG1-166 C	11.9956	80/20	11.9956
963181	AG1-167 C	11.9956	80/20	11.9956
963191	AG1-168 C	11.9956	80/20	11.9956
963201	AG1-169 C	11.9956	80/20	11.9956
963211	AG1-170 C	11.9956	80/20	11.9956
963641	AG1-215 C	5.5979	80/20	5.5979
964821	AG1-345 C	4.7982	80/20	4.7982
965281	AG1-393 C	11.9956	80/20	11.9956
CALDERWOOD	CALDERWOOD	0.0184	Confirmed LTF	0.0184
NY	NY	0.0205	Confirmed LTF	0.0205
PRAIRIE	PRAIRIE	0.0956	Confirmed LTF	0.0956
CHEOAH	CHEOAH	0.0185	Confirmed LTF	0.0185
COTTONWOOD	COTTONWOOD	0.0777	Confirmed LTF	0.0777
HAMLET	HAMLET	0.0214	Confirmed LTF	0.0214
GIBSON	GIBSON	0.0202	Confirmed LTF	0.0202
BLUEG	BLUEG	0.0642	Confirmed LTF	0.0642
TRIMBLE	TRIMBLE	0.0206	Confirmed LTF	0.0206
CATAWBA	CATAWBA	0.0129	Confirmed LTF	0.0129

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
166971536	314267	3CHASCTY2	DVP	314681	3CHASCTY	DVP	Z1	DVP_P7-1: LN 158-235	tower	582.0	102.21	104.21	DC	11.63

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
313853	3PONTONDP	2.3263	50/50	2.3263
314429	3JTRSVLE	1.4681	50/50	1.4681
316118	AC1-105 C	6.3960	50/50	6.3960
316131	AB2-060 C	4.9915	50/50	4.9915
924162	AB2-060 E OP	14.8884	50/50	14.8884
926274	AC1-105 E	3.1424	50/50	3.1424
936265	AD2-033 C	45.3632	50/50	45.3632
936266	AD2-033 E	30.2422	50/50	30.2422
939181	AE1-148 C	6.7937	50/50	6.7937
939182	AE1-148 E	4.5292	50/50	4.5292
940661	AE2-053 O1	2.5162	50/50	2.5162
943912	AF1-059 BAT	26.2612	50/50	26.2612
946301	AF1-294 C	14.8303	50/50	14.8303
946302	AF1-294 E	9.8869	50/50	9.8869
958211	AF2-115 C	8.7237	50/50	8.7237
958212	AF2-115 E	5.8158	50/50	5.8158
961791	AG1-021 C	6.9790	50/50	6.9790
961792	AG1-021 E	4.6526	50/50	4.6526
961891	AG1-030 C	52.3422	50/50	52.3422
961892	AG1-030 E	34.8948	50/50	34.8948
962041	AG1-048 C	43.6185	50/50	43.6185
962042	AG1-048 E	29.0790	50/50	29.0790
962441	AG1-093 C O1	17.0559	50/50	17.0559
962442	AG1-093 E O1	5.1909	50/50	5.1909
963171	AG1-166 C	6.9790	50/50	6.9790
963172	AG1-166 E	4.6526	50/50	4.6526
963181	AG1-167 C	6.9790	50/50	6.9790
963182	AG1-167 E	4.6526	50/50	4.6526
963191	AG1-168 C	6.9790	50/50	6.9790
963192	AG1-168 E	4.6526	50/50	4.6526
963201	AG1-169 C	6.9790	50/50	6.9790
963202	AG1-169 E	4.6526	50/50	4.6526
963211	AG1-170 C	6.9790	50/50	6.9790
963212	AG1-170 E	4.6526	50/50	4.6526
963312	AG1-180 BAT	6.1563	50/50	6.1563
963362	AG1-185 BAT	30.2643	50/50	30.2643
963641	AG1-215 C	3.2568	50/50	3.2568
963642	AG1-215 E	4.8853	50/50	4.8853
964113	AG1-272 BAT	6.4480	50/50	6.4480
964123	AG1-273 BAT	6.4480	50/50	6.4480
964133	AG1-274 BAT	6.4480	50/50	6.4480

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
964791	AG1-342 C	7.2967	50/50	7.2967
964792	AG1-342 E	5.7331	50/50	5.7331
964821	AG1-345 C	2.7916	50/50	2.7916
964822	AG1-345 E	1.8611	50/50	1.8611
965193	AG1-384 BAT	2.7630	50/50	2.7630
965281	AG1-393 C	6.9790	50/50	6.9790
965282	AG1-393 E	4.6526	50/50	4.6526
965832	AG1-451 BAT	2.6648	50/50	2.6648
WEC	WEC	0.0608	Confirmed LTF	0.0608
LGEE	LGEE	0.1263	Confirmed LTF	0.1263
CPL	CPL	0.4914	Confirmed LTF	0.4914
CBM-W2	CBM-W2	2.4371	Confirmed LTF	2.4371
NY	NY	0.0625	Confirmed LTF	0.0625
TVA	TVA	0.4480	Confirmed LTF	0.4480
O-066	O-066	0.9018	Confirmed LTF	0.9018
SIG	SIG	0.0361	Confirmed LTF	0.0361
CBM-S2	CBM-S2	6.1178	Confirmed LTF	6.1178
CBM-S1	CBM-S1	0.1136	Confirmed LTF	0.1136
G-007	G-007	0.1418	Confirmed LTF	0.1418
MEC	MEC	0.3496	Confirmed LTF	0.3496
LAGN	LAGN	0.5513	Confirmed LTF	0.5513
CBM-W1	CBM-W1	2.5516	Confirmed LTF	2.5516

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
169230200	314691	3FARMVIL	DVP	314692	6FARMVIL	DVP	2	DVP_P1-2: LN 235-A	single	182.64	257.56	260.58	DC	5.52

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
313506	AB1-173 C OP	2.1970	80/20	2.1970
313527	AB2-043 C	0.6200	80/20	0.6200
314429	3JTRSVLE	1.1615	80/20	1.1615
314572	3EMPORIA	0.1428	80/20	0.1428
314704	3LAWRENC	0.1773	80/20	0.1773
315158	1KERR 1	0.3023	80/20	0.3023
315159	1KERR 2	0.8464	80/20	0.8464
315160	1KERR 3	0.8464	80/20	0.8464
315161	1KERR 4	0.8464	80/20	0.8464
315162	1KERR 5	0.8464	80/20	0.8464
315163	1KERR 6	0.8464	80/20	0.8464
315164	1KERR 7	0.8464	80/20	0.8464
315266	1PLYWOOD A	0.5826	80/20	0.5826
316087	AB2-174 C	0.3670	80/20	0.3670
316118	AC1-105 C	3.1833	80/20	3.1833
316129	AC1-054 C	4.1416	80/20	4.1416
316131	AB2-060 C	1.8663	80/20	1.8663
923991	AB2-040 C O1	2.3927	80/20	2.3927
924301	AB2-077 C O1 (Suspended)	2.4036	80/20	2.4036
924311	AB2-078 C O1 (Suspended)	2.4036	80/20	2.4036
924321	AB2-079 C O1 (Suspended)	2.4036	80/20	2.4036
925611	AC1-036 C	0.4665	80/20	0.4665
927261	AC1-222 C	1.3197	80/20	1.3197
934311	AD1-055 C	0.9163	80/20	0.9163
935221	AD1-157 C	0.7121	80/20	0.7121
936265	AD2-033 C	24.7775	80/20	24.7775
936361	AD2-046 C O1	7.7284	80/20	7.7284
936485	AD2-063 C	23.4252	80/20	23.4252
938371	AE1-056 C	19.4582	80/20	19.4582
939181	AE1-148 C	7.7609	80/20	7.7609
940661	AE2-053 O1	2.8744	80/20	2.8744
942451	AE2-258	2.9317	80/20	2.9317
942461	AE2-259 C O1	36.8346	80/20	36.8346
943901	AF1-058 C	0.7463	80/20	0.7463
943911	AF1-059	13.9793	80/20	13.9793
946281	AF1-292 C	0.5181	80/20	0.5181
946301	AF1-294 C	11.7333	80/20	11.7333
958211	AF2-115 C	6.9020	80/20	6.9020
958801	AF2-171 C	41.2074	80/20	41.2074

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
959311	AF2-222 C	36.0450	80/20	36.0450
960061	AF2-297 C	2.9851	80/20	2.9851
960081	AF2-299 C	0.8732	80/20	0.8732
961791	AG1-021 C	5.5216	80/20	5.5216
961891	AG1-030 C	37.7604	80/20	37.7604
962041	AG1-048 C	34.5098	80/20	34.5098
962441	AG1-093 C O1	8.4888	80/20	8.4888
963171	AG1-166 C	5.5216	80/20	5.5216
963181	AG1-167 C	5.5216	80/20	5.5216
963191	AG1-168 C	5.5216	80/20	5.5216
963201	AG1-169 C	5.5216	80/20	5.5216
963211	AG1-170 C	5.5216	80/20	5.5216
963301	AG1-179 C	3.8659	80/20	3.8659
963311	AG1-180	1.8835	80/20	1.8835
963321	AG1-181 C O1	32.7592	80/20	32.7592
963361	AG1-185 O1	15.8498	80/20	15.8498
963641	AG1-215 C	2.5767	80/20	2.5767
964111	AG1-272 C	5.3022	80/20	5.3022
964121	AG1-273 C	5.3022	80/20	5.3022
964131	AG1-274 C	5.3022	80/20	5.3022
964241	AG1-285 C O1	18.3810	80/20	18.3810
964261	AG1-287 C	0.5597	80/20	0.5597
964471	AG1-310 C	0.7473	80/20	0.7473
964791	AG1-342 C	3.0915	80/20	3.0915
964821	AG1-345 C	2.2020	80/20	2.2020
965191	AG1-384 C	5.3022	80/20	5.3022
965281	AG1-393 C	5.5216	80/20	5.5216
965451	AG1-413 C O1	5.8764	80/20	5.8764
965591	AG1-427 C	17.6058	80/20	17.6058
965601	AG1-428 C O1	3.2273	80/20	3.2273
965641	AG1-432 C O1	73.6692	80/20	73.6692
965721	AG1-440 C	5.1777	80/20	5.1777
965731	AG1-441 C	5.1777	80/20	5.1777
965771	AG1-445	2.9916	80/20	2.9916
965781	AG1-446	2.9916	80/20	2.9916
965831	AG1-451	12.2782	80/20	12.2782
966621	AG1-532 C	0.4715	80/20	0.4715
966751	AG1-546 C	8.6364	80/20	8.6364
966861	AG1-557 C O1 (Withdrawn : 12/14/2020)	7.3669	80/20	7.3669
WEC	WEC	0.0813	Confirmed LTF	0.0813
LGEE	LGEE	0.1659	Confirmed LTF	0.1659
CPL	CPL	1.2422	Confirmed LTF	1.2422
CBM-W2	CBM-W2	4.0768	Confirmed LTF	4.0768
NY	NY	0.1233	Confirmed LTF	0.1233
TVA	TVA	0.7980	Confirmed LTF	0.7980
SIGE	SIGE	0.0565	Confirmed LTF	0.0565
CBM-S2	CBM-S2	13.8748	Confirmed LTF	13.8748
CBM-S1	CBM-S1	0.1953	Confirmed LTF	0.1953
MEC	MEC	0.5180	Confirmed LTF	0.5180
LAGN	LAGN	0.9958	Confirmed LTF	0.9958
CBM-W1	CBM-W1	3.3508	Confirmed LTF	3.3508

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
169230211	314691	3FARMVIL	DVP	314692	6FARMVIL	DVP	1	DVP_P1-2: LN 298	single	198.06	169.18	171.68	DC	4.95

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
313527	AB2-043 C	0.5190	80/20	0.5190
314429	3JTRSVLE	1.0409	80/20	1.0409
314704	3LAWRENC	0.1400	80/20	0.1400
315158	1KERR 1	0.2388	80/20	0.2388
315159	1KERR 2	0.6685	80/20	0.6685
315160	1KERR 3	0.6685	80/20	0.6685
315161	1KERR 4	0.6685	80/20	0.6685
315162	1KERR 5	0.6685	80/20	0.6685
315163	1KERR 6	0.6685	80/20	0.6685
315164	1KERR 7	0.6685	80/20	0.6685
316118	AC1-105 C	1.9644	80/20	1.9644
316129	AC1-054 C	3.1577	80/20	3.1577
316131	AB2-060 C	1.5710	80/20	1.5710
924301	AB2-077 C O1 (Suspended)	2.0004	80/20	2.0004
924311	AB2-078 C O1 (Suspended)	2.0004	80/20	2.0004
924321	AB2-079 C O1 (Suspended)	2.0004	80/20	2.0004
925611	AC1-036 C	0.4104	80/20	0.4104
935221	AD1-157 C	0.6410	80/20	0.6410
936265	AD2-033 C	21.6637	80/20	21.6637
936361	AD2-046 C O1	6.1935	80/20	6.1935
936485	AD2-063 C	20.1177	80/20	20.1177
938371	AE1-056 C	17.5166	80/20	17.5166
939181	AE1-148 C	6.2354	80/20	6.2354
940661	AE2-053 O1	2.3094	80/20	2.3094
942451	AE2-258	2.4541	80/20	2.4541
942461	AE2-259 C O1	33.4608	80/20	33.4608
943911	AF1-059	11.3951	80/20	11.3951
946301	AF1-294 C	10.5152	80/20	10.5152
958211	AF2-115 C	6.1854	80/20	6.1854
958801	AF2-171 C	36.9198	80/20	36.9198
959311	AF2-222 C	31.8180	80/20	31.8180
961791	AG1-021 C	4.9483	80/20	4.9483
961891	AG1-030 C	33.6627	80/20	33.6627
962041	AG1-048 C	30.9270	80/20	30.9270
962441	AG1-093 C O1	5.2385	80/20	5.2385
963171	AG1-166 C	4.9483	80/20	4.9483
963181	AG1-167 C	4.9483	80/20	4.9483
963191	AG1-168 C	4.9483	80/20	4.9483
963201	AG1-169 C	4.9483	80/20	4.9483

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
963211	AG1-170 C	4.9483	80/20	4.9483
963301	AG1-179 C	3.0910	80/20	3.0910
963311	AG1-180	1.5060	80/20	1.5060
963321	AG1-181 C O1	28.6883	80/20	28.6883
963361	AG1-185 O1	13.8802	80/20	13.8802
963641	AG1-215 C	2.3092	80/20	2.3092
964111	AG1-272 C	4.6644	80/20	4.6644
964121	AG1-273 C	4.6644	80/20	4.6644
964131	AG1-274 C	4.6644	80/20	4.6644
964241	AG1-285 C O1	15.6870	80/20	15.6870
964791	AG1-342 C	2.2108	80/20	2.2108
964821	AG1-345 C	1.9730	80/20	1.9730
965191	AG1-384 C	4.6644	80/20	4.6644
965281	AG1-393 C	4.9483	80/20	4.9483
965451	AG1-413 C O1	4.7901	80/20	4.7901
965591	AG1-427 C	15.0419	80/20	15.0419
965601	AG1-428 C O1	2.5804	80/20	2.5804
965641	AG1-432 C O1	66.9216	80/20	66.9216
965721	AG1-440 C	4.0478	80/20	4.0478
965731	AG1-441 C	4.0478	80/20	4.0478
965771	AG1-445	2.3387	80/20	2.3387
965781	AG1-446	2.3387	80/20	2.3387
965831	AG1-451	11.1536	80/20	11.1536
966751	AG1-546 C	6.5405	80/20	6.5405
966861	AG1-557 C O1 (Withdrawn : 12/14/2020)	6.6922	80/20	6.6922
WEC	WEC	0.0236	Confirmed LTF	0.0236
LGEE	LGEE	0.0496	Confirmed LTF	0.0496
CPL	CPL	0.2361	Confirmed LTF	0.2361
CBM-W2	CBM-W2	0.9498	Confirmed LTF	0.9498
NY	NY	0.0321	Confirmed LTF	0.0321
TVA	TVA	0.1736	Confirmed LTF	0.1736
SIGE	SIGE	0.0158	Confirmed LTF	0.0158
CBM-S2	CBM-S2	2.5056	Confirmed LTF	2.5056
CBM-S1	CBM-S1	0.0441	Confirmed LTF	0.0441
MEC	MEC	0.1367	Confirmed LTF	0.1367
LAGN	LAGN	0.2135	Confirmed LTF	0.2135
CBM-W1	CBM-W1	0.9954	Confirmed LTF	0.9954

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
168500184	314701	3LONEPN	DVP	313755	3FLAT CREEK	DVP	1	DVP_P1-2: LN 1045	single	203.98	180.92	186.8	DC	12.0

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
314429	3JTRSVLE	2.5234	80/20	2.5234
316131	AB2-060 C	8.5795	80/20	8.5795
936265	AD2-033 C	77.9711	80/20	77.9711
946301	AF1-294 C	25.4906	80/20	25.4906
958211	AF2-115 C	14.9945	80/20	14.9945
961791	AG1-021 C	11.9956	80/20	11.9956
961891	AG1-030 C	89.9667	80/20	89.9667
962041	AG1-048 C	74.9722	80/20	74.9722
963171	AG1-166 C	11.9956	80/20	11.9956
963181	AG1-167 C	11.9956	80/20	11.9956
963191	AG1-168 C	11.9956	80/20	11.9956
963201	AG1-169 C	11.9956	80/20	11.9956
963211	AG1-170 C	11.9956	80/20	11.9956
963641	AG1-215 C	5.5979	80/20	5.5979
964821	AG1-345 C	4.7982	80/20	4.7982
965281	AG1-393 C	11.9956	80/20	11.9956
CALDERWOOD	CALDERWOOD	0.0184	Confirmed LTF	0.0184
NY	NY	0.0205	Confirmed LTF	0.0205
PRAIRIE	PRAIRIE	0.0956	Confirmed LTF	0.0956
CHEOAH	CHEOAH	0.0185	Confirmed LTF	0.0185
COTTONWOOD	COTTONWOOD	0.0777	Confirmed LTF	0.0777
HAMLET	HAMLET	0.0214	Confirmed LTF	0.0214
GIBSON	GIBSON	0.0202	Confirmed LTF	0.0202
BLUEG	BLUEG	0.0642	Confirmed LTF	0.0642
TRIMBLE	TRIMBLE	0.0206	Confirmed LTF	0.0206
CATAWBA	CATAWBA	0.0129	Confirmed LTF	0.0129

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
163794151	314702	3KERR	DVP	304102	3GW KING TAP	CPL	1	DVP_P4-6: CAROLIN T122	breaker	199.0	183.52	184.05	DC	2.39

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
313527	AB2-043 C	0.5797	50/50	0.5797
313853	3PONTONDP	0.4064	Adder	0.48
314713	3PAMPLIN	0.8873	Adder	1.04
315158	1KERR 1	0.8424	50/50	0.8424
315159	1KERR 2	2.3588	50/50	2.3588
315160	1KERR 3	2.3588	50/50	2.3588
315161	1KERR 4	2.3588	50/50	2.3588
315162	1KERR 5	2.3588	50/50	2.3588
315163	1KERR 6	2.3588	50/50	2.3588
315164	1KERR 7	2.3588	50/50	2.3588
316118	AC1-105 C	2.4862	Adder	2.92
316129	AC1-054 C	15.8416	50/50	15.8416
316131	AB2-060 C	1.6441	50/50	1.6441
924022	AB2-043 E O1	3.2854	50/50	3.2854
924162	AB2-060 E OP	4.9039	50/50	4.9039
924301	AB2-077 C O1 (Suspended)	2.3786	50/50	2.3786
924302	AB2-077 E O1 (Suspended)	1.5858	50/50	1.5858
924311	AB2-078 C O1 (Suspended)	2.3786	50/50	2.3786
924312	AB2-078 E O1 (Suspended)	1.5858	50/50	1.5858
924321	AB2-079 C O1 (Suspended)	2.3786	50/50	2.3786
924322	AB2-079 E O1 (Suspended)	1.5858	50/50	1.5858
925611	AC1-036 C	0.2090	50/50	0.2090
925612	AC1-036 E	0.7934	50/50	0.7934
925785	AC1-054 E	7.2978	50/50	7.2978
926274	AC1-105 E	1.2215	Adder	1.44
935222	AD1-157 E	0.5470	Adder	0.64
936265	AD2-033 C	12.6220	50/50	12.6220
936266	AD2-033 E	8.4146	50/50	8.4146
936361	AD2-046 C O1	18.0396	50/50	18.0396
936362	AD2-046 E O1	8.2956	50/50	8.2956
936485	AD2-063 C	16.0974	50/50	16.0974
936486	AD2-063 E	10.7316	50/50	10.7316
938371	AE1-056 C	3.5374	Adder	4.16
938372	AE1-056 E	1.9328	Adder	2.27
939181	AE1-148 C	17.4836	50/50	17.4836

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
939182	AE1-148 E	11.6557	50/50	11.6557
940661	AE2-053 O1	6.4754	50/50	6.4754
942451	AE2-258	2.7410	50/50	2.7410
942461	AE2-259 C O1	3.7689	Adder	4.43
942462	AE2-259 E O1	2.5126	Adder	2.96
943911	AF1-059	10.7887	Adder	12.69
946301	AF1-294 C	2.5908	Adder	3.05
946302	AF1-294 E	1.7272	Adder	2.03
958211	AF2-115 C	1.5240	Adder	1.79
958212	AF2-115 E	1.0160	Adder	1.2
958801	AF2-171 C	9.1968	Adder	10.82
958802	AF2-171 E	6.1312	Adder	7.21
959311	AF2-222 C	14.9130	50/50	14.9130
959312	AF2-222 E	9.9917	50/50	9.9917
961791	AG1-021 C	0.6462	Adder	1.43
961792	AG1-021 E	0.4308	Adder	0.96
961891	AG1-030 C	11.8413	50/50	11.8413
961892	AG1-030 E	7.8942	50/50	7.8942
962041	AG1-048 C	4.0386	Adder	8.96
962042	AG1-048 E	2.6924	Adder	5.98
962441	AG1-093 C O1	3.5138	Adder	7.8
962442	AG1-093 E O1	1.0694	Adder	2.37
963171	AG1-166 C	0.6462	Adder	1.43
963172	AG1-166 E	0.4308	Adder	0.96
963181	AG1-167 C	0.6462	Adder	1.43
963182	AG1-167 E	0.4308	Adder	0.96
963191	AG1-168 C	0.6462	Adder	1.43
963192	AG1-168 E	0.4308	Adder	0.96
963201	AG1-169 C	0.6462	Adder	1.43
963202	AG1-169 E	0.4308	Adder	0.96
963211	AG1-170 C	0.6462	Adder	1.43
963212	AG1-170 E	0.4308	Adder	0.96
963301	AG1-179 C	1.5479	Adder	3.44
963311	AG1-180	0.7542	Adder	1.67
963321	AG1-181 C O1	16.1673	50/50	16.1673
963361	AG1-185 O1	7.8222	50/50	7.8222
963641	AG1-215 C	0.3016	Adder	0.67
963642	AG1-215 E	0.4523	Adder	1.0
964111	AG1-272 C	2.3755	50/50	2.3755
964112	AG1-272 E	0.7055	50/50	0.7055
964121	AG1-273 C	2.3755	50/50	2.3755
964122	AG1-273 E	0.7055	50/50	0.7055
964131	AG1-274 C	2.3755	50/50	2.3755
964132	AG1-274 E	0.7055	50/50	0.7055
964241	AG1-285 C O1	13.7527	50/50	13.7527
964242	AG1-285 E O1	9.1685	50/50	9.1685
964791	AG1-342 C	1.2895	Adder	2.86
964792	AG1-342 E	1.0132	Adder	2.25
964821	AG1-345 C	0.2594	Adder	0.58
964822	AG1-345 E	0.1729	Adder	0.38
965191	AG1-384 C	2.3755	50/50	2.3755
965192	AG1-384 E	0.7055	50/50	0.7055

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
965281	AG1-393 C	0.6462	Adder	1.43
965282	AG1-393 E	0.4308	Adder	0.96
965451	AG1-413 C O1	2.4036	Adder	5.34
965452	AG1-413 E O1	1.6024	Adder	3.56
965591	AG1-427 C	12.9843	50/50	12.9843
965592	AG1-427 E	8.6745	50/50	8.6745
965601	AG1-428 C O1	1.2922	Adder	2.87
965602	AG1-428 E O1	0.8600	Adder	1.91
965641	AG1-432 C O1	3.9950	Adder	8.87
965642	AG1-432 E O1	2.6634	Adder	5.91
965721	AG1-440 C	16.0191	50/50	16.0191
965722	AG1-440 E	10.6794	50/50	10.6794
965731	AG1-441 C	16.0191	50/50	16.0191
965732	AG1-441 E	10.6794	50/50	10.6794
965771	AG1-445	9.2555	50/50	9.2555
965781	AG1-446	9.2555	50/50	9.2555
965831	AG1-451	0.6658	Adder	1.48
966751	AG1-546 C	34.7517	50/50	34.7517
966752	AG1-546 E	18.6468	50/50	18.6468
966861	AG1-557 C O1 (Withdrawn : 12/14/2020)	0.3995	Adder	0.89
966862	AG1-557 E O1 (Withdrawn : 12/14/2020)	0.2663	Adder	0.59
G-007A	G-007A	0.1654	Confirmed LTF	0.1654
VFT	VFT	0.4386	Confirmed LTF	0.4386
CALDERWOOD	CALDERWOOD	0.3713	Confirmed LTF	0.3713
PRAIRIE	PRAIRIE	1.2528	Confirmed LTF	1.2528
CHEOAH	CHEOAH	0.3809	Confirmed LTF	0.3809
CBM-N	CBM-N	0.0792	Confirmed LTF	0.0792
COTTONWOOD	COTTONWOOD	1.3629	Confirmed LTF	1.3629
HAMLET	HAMLET	0.8062	Confirmed LTF	0.8062
GIBSON	GIBSON	0.2184	Confirmed LTF	0.2184
BLUEG	BLUEG	0.6701	Confirmed LTF	0.6701
TRIMBLE	TRIMBLE	0.2126	Confirmed LTF	0.2126
CATAWBA	CATAWBA	0.4161	Confirmed LTF	0.4161

11.6.11 Index 11

ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC DC	MW IMPACT
169230238	314707	3MORAN	DVP	314691	3FARMVIL	DVP	1	DVP_P1-2: LN 1045	single	203.98	177.54	183.42	DC	12.0

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
314429	3JTRSVLE	2.5234	80/20	2.5234
316131	AB2-060 C	8.5795	80/20	8.5795
936265	AD2-033 C	77.9711	80/20	77.9711
946301	AF1-294 C	25.4906	80/20	25.4906
958211	AF2-115 C	14.9945	80/20	14.9945
961791	AG1-021 C	11.9956	80/20	11.9956
961891	AG1-030 C	89.9667	80/20	89.9667
962041	AG1-048 C	74.9722	80/20	74.9722
963171	AG1-166 C	11.9956	80/20	11.9956
963181	AG1-167 C	11.9956	80/20	11.9956
963191	AG1-168 C	11.9956	80/20	11.9956
963201	AG1-169 C	11.9956	80/20	11.9956
963211	AG1-170 C	11.9956	80/20	11.9956
963641	AG1-215 C	5.5979	80/20	5.5979
964821	AG1-345 C	4.7982	80/20	4.7982
965281	AG1-393 C	11.9956	80/20	11.9956
CALDERWOOD	CALDERWOOD	0.0184	Confirmed LTF	0.0184
NY	NY	0.0205	Confirmed LTF	0.0205
PRAIRIE	PRAIRIE	0.0956	Confirmed LTF	0.0956
CHEOAH	CHEOAH	0.0185	Confirmed LTF	0.0185
COTTONWOOD	COTTONWOOD	0.0777	Confirmed LTF	0.0777
HAMLET	HAMLET	0.0214	Confirmed LTF	0.0214
GIBSON	GIBSON	0.0202	Confirmed LTF	0.0202
BLUEG	BLUEG	0.0642	Confirmed LTF	0.0642
TRIMBLE	TRIMBLE	0.0206	Confirmed LTF	0.0206
CATAWBA	CATAWBA	0.0129	Confirmed LTF	0.0129

11.6.12 Index 12

ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC DC	MW IMPACT
166971402	316115	AC1-105 TAP	DVP	314696	3SEEDGE HILL	DVP	1	DVP_P7-1: LN 158-235	tower	406.0	125.99	127.25	DC	5.14

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
313527	AB2-043 C	0.7646	50/50	0.7646
313853	3PONTONDP	1.0270	50/50	1.0270
314429	3JTRSVLE	0.6481	50/50	0.6481
314713	3PAMPLIN	1.0747	Adder	1.26
315161	1KERR 4	0.9067	50/50	0.9067
315162	1KERR 5	0.9067	50/50	0.9067
315163	1KERR 6	0.9067	50/50	0.9067
315164	1KERR 7	0.9067	50/50	0.9067
316118	AC1-105 C	26.2631	50/50	26.2631
316129	AC1-054 C	3.6751	Adder	4.32
316131	AB2-060 C	2.2037	50/50	2.2037
924022	AB2-043 E O1	4.3333	50/50	4.3333
924162	AB2-060 E OP	6.5731	50/50	6.5731
924301	AB2-077 C O1 (Suspended)	2.8934	50/50	2.8934
924302	AB2-077 E O1 (Suspended)	1.9290	50/50	1.9290
924311	AB2-078 C O1 (Suspended)	2.8934	50/50	2.8934
924312	AB2-078 E O1 (Suspended)	1.9290	50/50	1.9290
924321	AB2-079 C O1 (Suspended)	2.8934	50/50	2.8934
924322	AB2-079 E O1 (Suspended)	1.9290	50/50	1.9290
925611	AC1-036 C	0.2684	50/50	0.2684
925612	AC1-036 E	1.0189	50/50	1.0189
925785	AC1-054 E	1.6930	Adder	1.99
926274	AC1-105 E	12.9032	50/50	12.9032
927261	AC1-222 C	-1.9440	Adder	-2.29
934311	AD1-055 C	-1.3497	Adder	-1.59
935222	AD1-157 E	0.6626	Adder	0.78
936265	AD2-033 C	20.0273	50/50	20.0273
936266	AD2-033 E	13.3515	50/50	13.3515
936361	AD2-046 C O1	8.5850	50/50	8.5850
936362	AD2-046 E O1	3.9478	50/50	3.9478
936485	AD2-063 C	21.0465	50/50	21.0465
936486	AD2-063 E	14.0310	50/50	14.0310
938371	AE1-056 C	4.2848	Adder	5.04
938372	AE1-056 E	2.3412	Adder	2.75
939181	AE1-148 C	8.6800	50/50	8.6800
939182	AE1-148 E	5.7866	50/50	5.7866

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
940661	AE2-053 O1	3.2148	50/50	3.2148
942451	AE2-258	3.6154	50/50	3.6154
942461	AE2-259 C O1	4.1560	Adder	4.89
942462	AE2-259 E O1	2.7707	Adder	3.26
943901	AF1-058 C	-1.0975	Adder	-1.29
943911	AF1-059	16.8253	50/50	16.8253
946301	AF1-294 C	6.5474	50/50	6.5474
946302	AF1-294 E	4.3649	50/50	4.3649
958211	AF2-115 C	3.8514	50/50	3.8514
958212	AF2-115 E	2.5676	50/50	2.5676
958801	AF2-171 C	13.3857	50/50	13.3857
958802	AF2-171 E	8.9238	50/50	8.9238
959311	AF2-222 C	19.0690	50/50	19.0690
959312	AF2-222 E	12.7762	50/50	12.7762
961791	AG1-021 C	3.0811	50/50	3.0811
961792	AG1-021 E	2.0541	50/50	2.0541
961891	AG1-030 C	23.1084	50/50	23.1084
961892	AG1-030 E	15.4056	50/50	15.4056
962041	AG1-048 C	19.2570	50/50	19.2570
962042	AG1-048 E	12.8380	50/50	12.8380
962441	AG1-093 C O1	70.0350	50/50	70.0350
962442	AG1-093 E O1	21.3150	50/50	21.3150
963171	AG1-166 C	3.0811	50/50	3.0811
963172	AG1-166 E	2.0541	50/50	2.0541
963181	AG1-167 C	3.0811	50/50	3.0811
963182	AG1-167 E	2.0541	50/50	2.0541
963191	AG1-168 C	3.0811	50/50	3.0811
963192	AG1-168 E	2.0541	50/50	2.0541
963201	AG1-169 C	3.0811	50/50	3.0811
963202	AG1-169 E	2.0541	50/50	2.0541
963211	AG1-170 C	3.0811	50/50	3.0811
963212	AG1-170 E	2.0541	50/50	2.0541
963301	AG1-179 C	2.0596	Adder	4.57
963311	AG1-180	1.0035	Adder	2.23
963321	AG1-181 C O1	20.8619	50/50	20.8619
963361	AG1-185 O1	10.0936	50/50	10.0936
963641	AG1-215 C	1.4379	50/50	1.4379
963642	AG1-215 E	2.1568	50/50	2.1568
964111	AG1-272 C	3.0507	50/50	3.0507
964112	AG1-272 E	0.9061	50/50	0.9061
964121	AG1-273 C	3.0507	50/50	3.0507
964122	AG1-273 E	0.9061	50/50	0.9061
964131	AG1-274 C	3.0507	50/50	3.0507
964132	AG1-274 E	0.9061	50/50	0.9061
964241	AG1-285 C O1	18.0293	50/50	18.0293
964242	AG1-285 E O1	12.0195	50/50	12.0195
964791	AG1-342 C	15.8415	50/50	15.8415
964792	AG1-342 E	12.4469	50/50	12.4469
964821	AG1-345 C	1.2324	50/50	1.2324
964822	AG1-345 E	0.8216	50/50	0.8216
965191	AG1-384 C	3.0507	50/50	3.0507
965192	AG1-384 E	0.9061	50/50	0.9061

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
965281	AG1-393 C	3.0811	50/50	3.0811
965282	AG1-393 E	2.0541	50/50	2.0541
965451	AG1-413 C O1	7.0727	50/50	7.0727
965452	AG1-413 E O1	4.7152	50/50	4.7152
965591	AG1-427 C	17.0142	50/50	17.0142
965592	AG1-427 E	11.3667	50/50	11.3667
965601	AG1-428 C O1	1.7194	Adder	3.82
965602	AG1-428 E O1	1.1442	Adder	2.54
965641	AG1-432 C O1	4.4053	Adder	9.78
965642	AG1-432 E O1	2.9369	Adder	6.52
965721	AG1-440 C	2.4799	Adder	5.5
965722	AG1-440 E	1.6533	Adder	3.67
965731	AG1-441 C	2.4799	Adder	5.5
965732	AG1-441 E	1.6533	Adder	3.67
965771	AG1-445	1.4329	Adder	3.18
965781	AG1-446	1.4329	Adder	3.18
965831	AG1-451	0.7342	Adder	1.63
966751	AG1-546 C	4.0416	Adder	8.97
966752	AG1-546 E	2.1686	Adder	4.81
966861	AG1-557 C O1 (Withdrawn : 12/14/2020)	0.4405	Adder	0.98
966862	AG1-557 E O1 (Withdrawn : 12/14/2020)	0.2937	Adder	0.65
G-007A	G-007A	0.1175	Confirmed LTF	0.1175
VFT	VFT	0.3096	Confirmed LTF	0.3096
CALDERWOOD	CALDERWOOD	0.1218	Confirmed LTF	0.1218
PRAIRIE	PRAIRIE	0.5011	Confirmed LTF	0.5011
CHEOAH	CHEOAH	0.1231	Confirmed LTF	0.1231
CBM-N	CBM-N	0.0564	Confirmed LTF	0.0564
COTTONWOOD	COTTONWOOD	0.4599	Confirmed LTF	0.4599
HAMLET	HAMLET	0.1438	Confirmed LTF	0.1438
GIBSON	GIBSON	0.0994	Confirmed LTF	0.0994
BLUEG	BLUEG	0.3177	Confirmed LTF	0.3177
TRIMBLE	TRIMBLE	0.1013	Confirmed LTF	0.1013
CATAWBA	CATAWBA	0.1033	Confirmed LTF	0.1033

11.6.13 Index 13

ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC DC	MW IMPACT
163316255	934620	AD1-088 TAP	DVP	962490	AG1-098 TAP	DVP	1	DVP_P2-2: BREMO B1	bus	699.0	131.93	133.25	DC	9.2

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
313527	AB2-043 C	0.5789	50/50	0.5789
313853	3PONTONDP	1.8407	50/50	1.8407
314429	3JTRSVLE	1.1616	50/50	1.1616
314677	6BUCKING	1.6095	50/50	1.6095
314713	3PAMPLIN	4.9032	50/50	4.9032
315161	1KERR 4	0.7452	50/50	0.7452
315162	1KERR 5	0.7452	50/50	0.7452
315163	1KERR 6	0.7452	50/50	0.7452
315164	1KERR 7	0.7452	50/50	0.7452
316131	AB2-060 C	1.7524	50/50	1.7524
924022	AB2-043 E O1	3.2808	50/50	3.2808
924032	AB2-045 E	4.7608	50/50	4.7608
924162	AB2-060 E OP	5.2270	50/50	5.2270
924301	AB2-077 C O1 (Suspended)	2.2313	50/50	2.2313
924302	AB2-077 E O1 (Suspended)	1.4875	50/50	1.4875
924311	AB2-078 C O1 (Suspended)	2.2313	50/50	2.2313
924312	AB2-078 E O1 (Suspended)	1.4875	50/50	1.4875
924321	AB2-079 C O1 (Suspended)	2.2313	50/50	2.2313
924322	AB2-079 E O1 (Suspended)	1.4875	50/50	1.4875
925611	AC1-036 C	0.4580	50/50	0.4580
925612	AC1-036 E	1.7382	50/50	1.7382
932511	AC2-071 C (Withdrawn : 01/22/2021)	1.5857	50/50	1.5857
932512	AC2-071 E (Withdrawn : 01/22/2021)	5.0631	50/50	5.0631
934625	AD1-088 C	63.1640	50/50	63.1640
934626	AD1-088 E	16.5430	50/50	16.5430
935221	AD1-157 C	0.7154	50/50	0.7154
935222	AD1-157 E	3.0229	50/50	3.0229
936265	AD2-033 C	24.1714	50/50	24.1714
936266	AD2-033 E	16.1143	50/50	16.1143
936361	AD2-046 C O1	6.9048	50/50	6.9048
936362	AD2-046 E O1	3.1752	50/50	3.1752
936485	AD2-063 C	22.4433	50/50	22.4433
936486	AD2-063 E	14.9622	50/50	14.9622

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
938371	AE1-056 C	19.5482	50/50	19.5482
938372	AE1-056 E	10.6810	50/50	10.6810
939181	AE1-148 C	6.9525	50/50	6.9525
939182	AE1-148 E	4.6350	50/50	4.6350
940661	AE2-053 O1	2.5750	50/50	2.5750
941791	AE2-182 C	10.2619	50/50	10.2619
941792	AE2-182 E	4.7771	50/50	4.7771
942451	AE2-258	2.7372	50/50	2.7372
942461	AE2-259 C O1	37.3440	50/50	37.3440
942462	AE2-259 E O1	24.8960	50/50	24.8960
943911	AF1-059	12.7036	50/50	12.7036
946301	AF1-294 C	11.7343	50/50	11.7343
946302	AF1-294 E	7.8229	50/50	7.8229
958211	AF2-115 C	6.9026	50/50	6.9026
958212	AF2-115 E	4.6017	50/50	4.6017
958801	AF2-171 C	41.2002	50/50	41.2002
958802	AF2-171 E	27.4668	50/50	27.4668
959311	AF2-222 C	35.5030	50/50	35.5030
959312	AF2-222 E	23.7870	50/50	23.7870
961791	AG1-021 C	5.5220	50/50	5.5220
961792	AG1-021 E	3.6814	50/50	3.6814
961891	AG1-030 C	37.5642	50/50	37.5642
961892	AG1-030 E	25.0428	50/50	25.0428
962041	AG1-048 C	34.5128	50/50	34.5128
962042	AG1-048 E	23.0085	50/50	23.0085
963171	AG1-166 C	5.5220	50/50	5.5220
963172	AG1-166 E	3.6814	50/50	3.6814
963181	AG1-167 C	5.5220	50/50	5.5220
963182	AG1-167 E	3.6814	50/50	3.6814
963191	AG1-168 C	5.5220	50/50	5.5220
963192	AG1-168 E	3.6814	50/50	3.6814
963201	AG1-169 C	5.5220	50/50	5.5220
963202	AG1-169 E	3.6814	50/50	3.6814
963211	AG1-170 C	5.5220	50/50	5.5220
963212	AG1-170 E	3.6814	50/50	3.6814
963271	AG1-176 C O1	78.3861	50/50	78.3861
963272	AG1-176 E O1	52.2574	50/50	52.2574
963321	AG1-181 C O1	32.0091	50/50	32.0091
963361	AG1-185 O1	15.4869	50/50	15.4869
963641	AG1-215 C	2.5770	50/50	2.5770
963642	AG1-215 E	3.8654	50/50	3.8654
964111	AG1-272 C	5.2046	50/50	5.2046
964112	AG1-272 E	1.5458	50/50	1.5458
964121	AG1-273 C	5.2046	50/50	5.2046
964122	AG1-273 E	1.5458	50/50	1.5458
964131	AG1-274 C	5.2046	50/50	5.2046
964132	AG1-274 E	1.5458	50/50	1.5458
964241	AG1-285 C O1	17.4997	50/50	17.4997
964242	AG1-285 E O1	11.6665	50/50	11.6665
964821	AG1-345 C	2.2018	50/50	2.2018
964822	AG1-345 E	1.4679	50/50	1.4679
964841	AG1-347 C	48.8992	50/50	48.8992

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
964842	AG1-347 E	38.4208	50/50	38.4208
965191	AG1-384 C	5.2046	50/50	5.2046
965192	AG1-384 E	1.5458	50/50	1.5458
965281	AG1-393 C	5.5220	50/50	5.5220
965282	AG1-393 E	3.6814	50/50	3.6814
965451	AG1-413 C O1	5.3401	50/50	5.3401
965452	AG1-413 E O1	3.5601	50/50	3.5601
965591	AG1-427 C	16.7803	50/50	16.7803
965592	AG1-427 E	11.2105	50/50	11.2105
965641	AG1-432 C O1	74.6880	50/50	74.6880
965642	AG1-432 E O1	49.7920	50/50	49.7920
965831	AG1-451	12.4480	50/50	12.4480
966861	AG1-557 C O1 (Withdrawn : 12/14/2020)	7.4688	50/50	7.4688
966862	AG1-557 E O1 (Withdrawn : 12/14/2020)	4.9792	50/50	4.9792
WEC	WEC	0.0233	Confirmed LTF	0.0233
LGEE	LGEE	0.0496	Confirmed LTF	0.0496
CPL	CPL	0.2539	Confirmed LTF	0.2539
CBM-W2	CBM-W2	0.9677	Confirmed LTF	0.9677
NY	NY	0.0420	Confirmed LTF	0.0420
TVA	TVA	0.1806	Confirmed LTF	0.1806
O-066	O-066	0.5855	Confirmed LTF	0.5855
SIGE	SIGE	0.0177	Confirmed LTF	0.0177
CBM-S2	CBM-S2	2.6726	Confirmed LTF	2.6726
CBM-S1	CBM-S1	0.0456	Confirmed LTF	0.0456
G-007	G-007	0.0924	Confirmed LTF	0.0924
MEC	MEC	0.1367	Confirmed LTF	0.1367
LAGN	LAGN	0.2223	Confirmed LTF	0.2223
CBM-W1	CBM-W1	0.9814	Confirmed LTF	0.9814

11.6.14 Index 14

ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC DC	MW IMPACT
168500240	936260	AD2-033 TAP	DVP	313898	3BUTCHER CRK	DVP	1	DVP_P1-2: LN 158	single	269.78	116.57	121.01	DC	12.0

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
314429	3JTRSVLE	2.5241	80/20	2.5241
936265	AD2-033 C	77.9938	80/20	77.9938
946301	AF1-294 C	25.4980	80/20	25.4980
958211	AF2-115 C	14.9988	80/20	14.9988
961791	AG1-021 C	11.9990	80/20	11.9990
961891	AG1-030 C	89.9928	80/20	89.9928
962041	AG1-048 C	74.9940	80/20	74.9940
963171	AG1-166 C	11.9990	80/20	11.9990
963181	AG1-167 C	11.9990	80/20	11.9990
963191	AG1-168 C	11.9990	80/20	11.9990
963201	AG1-169 C	11.9990	80/20	11.9990
963211	AG1-170 C	11.9990	80/20	11.9990
963641	AG1-215 C	5.5996	80/20	5.5996
964821	AG1-345 C	4.7996	80/20	4.7996
965281	AG1-393 C	11.9990	80/20	11.9990
CALDERWOOD	CALDERWOOD	0.0040	Confirmed LTF	0.0040
NY	NY	0.0044	Confirmed LTF	0.0044
PRAIRIE	PRAIRIE	0.0207	Confirmed LTF	0.0207
CHEOAH	CHEOAH	0.0040	Confirmed LTF	0.0040
COTTONWOOD	COTTONWOOD	0.0168	Confirmed LTF	0.0168
HAMLET	HAMLET	0.0046	Confirmed LTF	0.0046
GIBSON	GIBSON	0.0044	Confirmed LTF	0.0044
BLUEG	BLUEG	0.0139	Confirmed LTF	0.0139
TRIMBLE	TRIMBLE	0.0045	Confirmed LTF	0.0045
CATAWBA	CATAWBA	0.0028	Confirmed LTF	0.0028

11.6.15 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
163316200	962490	AG1-098 TAP	DVP	314686	6CLOVER	DVP	1	DVP_P2-2: BREMO B1	bus	699.0	148.31	149.62	DC	9.2

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
313527	AB2-043 C	0.5789	50/50	0.5789
313853	3PONTONDP	1.8407	50/50	1.8407
314429	3JTRSVLE	1.1616	50/50	1.1616
314677	6BUCKING	1.6095	50/50	1.6095
314713	3PAMPLIN	4.9032	50/50	4.9032
315161	1KERR 4	0.7452	50/50	0.7452
315162	1KERR 5	0.7452	50/50	0.7452
315163	1KERR 6	0.7452	50/50	0.7452
315164	1KERR 7	0.7452	50/50	0.7452
316131	AB2-060 C	1.7524	50/50	1.7524
924022	AB2-043 E O1	3.2808	50/50	3.2808
924032	AB2-045 E	4.7608	50/50	4.7608
924162	AB2-060 E OP	5.2270	50/50	5.2270
924301	AB2-077 C O1 (Suspended)	2.2313	50/50	2.2313
924302	AB2-077 E O1 (Suspended)	1.4875	50/50	1.4875
924311	AB2-078 C O1 (Suspended)	2.2313	50/50	2.2313
924312	AB2-078 E O1 (Suspended)	1.4875	50/50	1.4875
924321	AB2-079 C O1 (Suspended)	2.2313	50/50	2.2313
924322	AB2-079 E O1 (Suspended)	1.4875	50/50	1.4875
925611	AC1-036 C	0.4580	50/50	0.4580
925612	AC1-036 E	1.7382	50/50	1.7382
932511	AC2-071 C (Withdrawn : 01/22/2021)	1.5857	50/50	1.5857
932512	AC2-071 E (Withdrawn : 01/22/2021)	5.0631	50/50	5.0631
934625	AD1-088 C	63.1640	50/50	63.1640
934626	AD1-088 E	16.5430	50/50	16.5430
935221	AD1-157 C	0.7154	50/50	0.7154
935222	AD1-157 E	3.0229	50/50	3.0229
936265	AD2-033 C	24.1714	50/50	24.1714
936266	AD2-033 E	16.1143	50/50	16.1143
936361	AD2-046 C O1	6.9048	50/50	6.9048
936362	AD2-046 E O1	3.1752	50/50	3.1752
936485	AD2-063 C	22.4433	50/50	22.4433
936486	AD2-063 E	14.9622	50/50	14.9622

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
938371	AE1-056 C	19.5482	50/50	19.5482
938372	AE1-056 E	10.6810	50/50	10.6810
939181	AE1-148 C	6.9525	50/50	6.9525
939182	AE1-148 E	4.6350	50/50	4.6350
940661	AE2-053 O1	2.5750	50/50	2.5750
941791	AE2-182 C	10.2619	50/50	10.2619
941792	AE2-182 E	4.7771	50/50	4.7771
942451	AE2-258	2.7372	50/50	2.7372
942461	AE2-259 C O1	37.3440	50/50	37.3440
942462	AE2-259 E O1	24.8960	50/50	24.8960
943911	AF1-059	12.7036	50/50	12.7036
946301	AF1-294 C	11.7343	50/50	11.7343
946302	AF1-294 E	7.8229	50/50	7.8229
958211	AF2-115 C	6.9026	50/50	6.9026
958212	AF2-115 E	4.6017	50/50	4.6017
958801	AF2-171 C	41.2002	50/50	41.2002
958802	AF2-171 E	27.4668	50/50	27.4668
959311	AF2-222 C	35.5030	50/50	35.5030
959312	AF2-222 E	23.7870	50/50	23.7870
961791	AG1-021 C	5.5220	50/50	5.5220
961792	AG1-021 E	3.6814	50/50	3.6814
961891	AG1-030 C	37.5642	50/50	37.5642
961892	AG1-030 E	25.0428	50/50	25.0428
962041	AG1-048 C	34.5128	50/50	34.5128
962042	AG1-048 E	23.0085	50/50	23.0085
962491	AG1-098 C O1	68.9970	50/50	68.9970
962492	AG1-098 E O1	45.9980	50/50	45.9980
963171	AG1-166 C	5.5220	50/50	5.5220
963172	AG1-166 E	3.6814	50/50	3.6814
963181	AG1-167 C	5.5220	50/50	5.5220
963182	AG1-167 E	3.6814	50/50	3.6814
963191	AG1-168 C	5.5220	50/50	5.5220
963192	AG1-168 E	3.6814	50/50	3.6814
963201	AG1-169 C	5.5220	50/50	5.5220
963202	AG1-169 E	3.6814	50/50	3.6814
963211	AG1-170 C	5.5220	50/50	5.5220
963212	AG1-170 E	3.6814	50/50	3.6814
963271	AG1-176 C O1	78.3861	50/50	78.3861
963272	AG1-176 E O1	52.2574	50/50	52.2574
963321	AG1-181 C O1	32.0091	50/50	32.0091
963361	AG1-185 O1	15.4869	50/50	15.4869
963641	AG1-215 C	2.5770	50/50	2.5770
963642	AG1-215 E	3.8654	50/50	3.8654
964111	AG1-272 C	5.2046	50/50	5.2046
964112	AG1-272 E	1.5458	50/50	1.5458
964121	AG1-273 C	5.2046	50/50	5.2046
964122	AG1-273 E	1.5458	50/50	1.5458
964131	AG1-274 C	5.2046	50/50	5.2046
964132	AG1-274 E	1.5458	50/50	1.5458
964241	AG1-285 C O1	17.4997	50/50	17.4997
964242	AG1-285 E O1	11.6665	50/50	11.6665
964821	AG1-345 C	2.2018	50/50	2.2018

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
964822	AG1-345 E	1.4679	50/50	1.4679
964841	AG1-347 C	48.8992	50/50	48.8992
964842	AG1-347 E	38.4208	50/50	38.4208
965191	AG1-384 C	5.2046	50/50	5.2046
965192	AG1-384 E	1.5458	50/50	1.5458
965281	AG1-393 C	5.5220	50/50	5.5220
965282	AG1-393 E	3.6814	50/50	3.6814
965451	AG1-413 C O1	5.3401	50/50	5.3401
965452	AG1-413 E O1	3.5601	50/50	3.5601
965591	AG1-427 C	16.7803	50/50	16.7803
965592	AG1-427 E	11.2105	50/50	11.2105
965641	AG1-432 C O1	74.6880	50/50	74.6880
965642	AG1-432 E O1	49.7920	50/50	49.7920
965831	AG1-451	12.4480	50/50	12.4480
966861	AG1-557 C O1 (Withdrawn : 12/14/2020)	7.4688	50/50	7.4688
966862	AG1-557 E O1 (Withdrawn : 12/14/2020)	4.9792	50/50	4.9792
WEC	WEC	0.0233	Confirmed LTF	0.0233
LGEE	LGEE	0.0496	Confirmed LTF	0.0496
CPL	CPL	0.2539	Confirmed LTF	0.2539
CBM-W2	CBM-W2	0.9677	Confirmed LTF	0.9677
NY	NY	0.0420	Confirmed LTF	0.0420
TVA	TVA	0.1806	Confirmed LTF	0.1806
O-066	O-066	0.5855	Confirmed LTF	0.5855
SIGE	SIGE	0.0177	Confirmed LTF	0.0177
CBM-S2	CBM-S2	2.6726	Confirmed LTF	2.6726
CBM-S1	CBM-S1	0.0456	Confirmed LTF	0.0456
G-007	G-007	0.0924	Confirmed LTF	0.0924
MEC	MEC	0.1367	Confirmed LTF	0.1367
LAGN	LAGN	0.2223	Confirmed LTF	0.2223
CBM-W1	CBM-W1	0.9814	Confirmed LTF	0.9814

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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
163316276	963270	AG1-176 TAP	DVP	934620	AD1-088 TAP	DVP	1	DVP_P2-2: BREMO B1	bus	699.0	118.44	119.75	DC	9.2

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
313527	AB2-043 C	0.5789	50/50	0.5789
313853	3PONTONDP	1.8407	50/50	1.8407
314429	3JTRSVLE	1.1616	50/50	1.1616
314677	6BUCKING	1.6095	50/50	1.6095
314713	3PAMPLIN	4.9032	50/50	4.9032
315161	1KERR 4	0.7452	50/50	0.7452
315162	1KERR 5	0.7452	50/50	0.7452
315163	1KERR 6	0.7452	50/50	0.7452
315164	1KERR 7	0.7452	50/50	0.7452
316131	AB2-060 C	1.7524	50/50	1.7524
924022	AB2-043 E O1	3.2808	50/50	3.2808
924032	AB2-045 E	4.7608	50/50	4.7608
924162	AB2-060 E OP	5.2270	50/50	5.2270
924301	AB2-077 C O1 (Suspended)	2.2313	50/50	2.2313
924302	AB2-077 E O1 (Suspended)	1.4875	50/50	1.4875
924311	AB2-078 C O1 (Suspended)	2.2313	50/50	2.2313
924312	AB2-078 E O1 (Suspended)	1.4875	50/50	1.4875
924321	AB2-079 C O1 (Suspended)	2.2313	50/50	2.2313
924322	AB2-079 E O1 (Suspended)	1.4875	50/50	1.4875
925611	AC1-036 C	0.4580	50/50	0.4580
925612	AC1-036 E	1.7382	50/50	1.7382
932511	AC2-071 C (Withdrawn : 01/22/2021)	1.5857	50/50	1.5857
932512	AC2-071 E (Withdrawn : 01/22/2021)	5.0631	50/50	5.0631
935221	AD1-157 C	0.7154	50/50	0.7154
935222	AD1-157 E	3.0229	50/50	3.0229
936265	AD2-033 C	24.1714	50/50	24.1714
936266	AD2-033 E	16.1143	50/50	16.1143
936361	AD2-046 C O1	6.9048	50/50	6.9048
936362	AD2-046 E O1	3.1752	50/50	3.1752
936485	AD2-063 C	22.4433	50/50	22.4433
936486	AD2-063 E	14.9622	50/50	14.9622
938371	AE1-056 C	19.5482	50/50	19.5482
938372	AE1-056 E	10.6810	50/50	10.6810

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
939181	AE1-148 C	6.9525	50/50	6.9525
939182	AE1-148 E	4.6350	50/50	4.6350
940661	AE2-053 O1	2.5750	50/50	2.5750
942451	AE2-258	2.7372	50/50	2.7372
942461	AE2-259 C O1	37.3440	50/50	37.3440
942462	AE2-259 E O1	24.8960	50/50	24.8960
943911	AF1-059	12.7036	50/50	12.7036
946301	AF1-294 C	11.7343	50/50	11.7343
946302	AF1-294 E	7.8229	50/50	7.8229
958211	AF2-115 C	6.9026	50/50	6.9026
958212	AF2-115 E	4.6017	50/50	4.6017
958801	AF2-171 C	41.2002	50/50	41.2002
958802	AF2-171 E	27.4668	50/50	27.4668
959311	AF2-222 C	35.5030	50/50	35.5030
959312	AF2-222 E	23.7870	50/50	23.7870
961791	AG1-021 C	5.5220	50/50	5.5220
961792	AG1-021 E	3.6814	50/50	3.6814
961891	AG1-030 C	37.5642	50/50	37.5642
961892	AG1-030 E	25.0428	50/50	25.0428
962041	AG1-048 C	34.5128	50/50	34.5128
962042	AG1-048 E	23.0085	50/50	23.0085
963171	AG1-166 C	5.5220	50/50	5.5220
963172	AG1-166 E	3.6814	50/50	3.6814
963181	AG1-167 C	5.5220	50/50	5.5220
963182	AG1-167 E	3.6814	50/50	3.6814
963191	AG1-168 C	5.5220	50/50	5.5220
963192	AG1-168 E	3.6814	50/50	3.6814
963201	AG1-169 C	5.5220	50/50	5.5220
963202	AG1-169 E	3.6814	50/50	3.6814
963211	AG1-170 C	5.5220	50/50	5.5220
963212	AG1-170 E	3.6814	50/50	3.6814
963271	AG1-176 C O1	78.3861	50/50	78.3861
963272	AG1-176 E O1	52.2574	50/50	52.2574
963321	AG1-181 C O1	32.0091	50/50	32.0091
963361	AG1-185 O1	15.4869	50/50	15.4869
963641	AG1-215 C	2.5770	50/50	2.5770
963642	AG1-215 E	3.8654	50/50	3.8654
964111	AG1-272 C	5.2046	50/50	5.2046
964112	AG1-272 E	1.5458	50/50	1.5458
964121	AG1-273 C	5.2046	50/50	5.2046
964122	AG1-273 E	1.5458	50/50	1.5458
964131	AG1-274 C	5.2046	50/50	5.2046
964132	AG1-274 E	1.5458	50/50	1.5458
964241	AG1-285 C O1	17.4997	50/50	17.4997
964242	AG1-285 E O1	11.6665	50/50	11.6665
964821	AG1-345 C	2.2018	50/50	2.2018
964822	AG1-345 E	1.4679	50/50	1.4679
964841	AG1-347 C	48.8992	50/50	48.8992
964842	AG1-347 E	38.4208	50/50	38.4208
965191	AG1-384 C	5.2046	50/50	5.2046
965192	AG1-384 E	1.5458	50/50	1.5458
965281	AG1-393 C	5.5220	50/50	5.5220

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
965282	AG1-393 E	3.6814	50/50	3.6814
965451	AG1-413 C O1	5.3401	50/50	5.3401
965452	AG1-413 E O1	3.5601	50/50	3.5601
965591	AG1-427 C	16.7803	50/50	16.7803
965592	AG1-427 E	11.2105	50/50	11.2105
965641	AG1-432 C O1	74.6880	50/50	74.6880
965642	AG1-432 E O1	49.7920	50/50	49.7920
965831	AG1-451	12.4480	50/50	12.4480
966861	AG1-557 C O1 (Withdrawn : 12/14/2020)	7.4688	50/50	7.4688
966862	AG1-557 E O1 (Withdrawn : 12/14/2020)	4.9792	50/50	4.9792
WEC	WEC	0.0233	Confirmed LTF	0.0233
LGEE	LGEE	0.0496	Confirmed LTF	0.0496
CPL	CPL	0.2539	Confirmed LTF	0.2539
CBM-W2	CBM-W2	0.9677	Confirmed LTF	0.9677
NY	NY	0.0420	Confirmed LTF	0.0420
TVA	TVA	0.1806	Confirmed LTF	0.1806
O-066	O-066	0.5855	Confirmed LTF	0.5855
SIGE	SIGE	0.0177	Confirmed LTF	0.0177
CBM-S2	CBM-S2	2.6726	Confirmed LTF	2.6726
CBM-S1	CBM-S1	0.0456	Confirmed LTF	0.0456
G-007	G-007	0.0924	Confirmed LTF	0.0924
MEC	MEC	0.1367	Confirmed LTF	0.1367
LAGN	LAGN	0.2223	Confirmed LTF	0.2223
CBM-W1	CBM-W1	0.9814	Confirmed LTF	0.9814

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
AB1-173	Brink-Trego 115kV	Engineering and Procurement
AB2-040	Brink 115kV	Engineering and Procurement
AB2-043	Chase City 115kV	Under Construction
AB2-045	Buckingham 34.5kV	In Service
AB2-060	Chase City-Lunenburg 115kV	In Service
AB2-077	Buggs Island-Chase City 115kV	Suspended
AB2-078	Buggs Island-Chase City 115kV	Suspended
AB2-079	Buggs Island-Chase City 115kV	Suspended
AB2-174	Emporia-Trego 115kV	In Service
AC1-036	Twittys Creek 34.5kV	Partially in Service - Under Construction
AC1-054	Kerr Dam-Eatons Ferry 115 kV	Engineering and Procurement
AC1-105	Halifax-Mt. Laurel 115kV	Engineering and Procurement
AC1-222	Crystal Hill-Halifax 115kV	Engineering and Procurement
AC2-071	Buckingham 35kV	Withdrawn
AD1-055	Crystal Hill-Halifax 115 kV	Engineering and Procurement
AD1-088	Briery-Clover 230 kV	Active
AD1-157	South Creek 34.5 kV	Engineering and Procurement
AD2-033	Chase City-Lunenburg 115 kV	Active
AD2-046	Boynton DP-Kerr Dam 115 kV	Active
AD2-063	Central-Chase City 115kV	Active
AE1-056	Red House-South Creek 115 kV	Active
AE1-148	Kerr Dam-Ridge Rd 115 kV	Active
AE2-053	Kerr Dam-Ridge Road 115 kV	Active
AE2-182	Briery-Clover 230 kV	Active
AE2-258	Chase City 115 kV	Active
AE2-259	Curdsville-Willis Mtn 115 kV	Active
AF1-058	Welco 34.5 kV	Engineering and Procurement
AF1-059	Brodnax-South Hill 115 kV	Active
AF1-292	Fields 34.5kV	Active
AF1-294	Jetersville-Ponton 115 kV	Active
AF2-115	Jetersville-Ponton 115 kV	Active
AF2-171	Madisonville 115 kV	Active
AF2-222	Madisonville DP-Twitty's Creek 115 kV	Active
AF2-297	Sedge Hill 115 kV	Active
AF2-299	Fields 34.5 kV	Active
AG1-021	Jetersville-Ponton 115 kV	Active
AG1-030	Victoria DP-Martin DP 115 kV	Active
AG1-048	Jetersville-Ponton 115 kV	Active
AG1-093	Halifax-Chase City 115 kV	Active

Queue Number	Project Name	Status
AG1-098	Briery-Clover 230 kV	Active
AG1-166	Lone Pine 115 kV	Active
AG1-167	Lone Pine 115 kV	Active
AG1-168	Lone Pine 115 kV	Active
AG1-169	Lone Pine 115 kV	Active
AG1-170	Lone Pine 115 kV	Active
AG1-176	Briery-Clover 230 kV	Active
AG1-179	Brunswick 69 kV	Active
AG1-180	Brunswick 69 kV	Active
AG1-181	Pamplin-Chase City 115 kV	Active
AG1-185	Pamplin-Chase City 115 kV	Active
AG1-215	Fort Pickett 13.2 kV	Active
AG1-272	Twitty's Creek 115 kV	Active
AG1-273	Twitty's Creek 115 kV	Active
AG1-274	Twitty's Creek 115 kV	Active
AG1-285	Chase City-Central 115 kV	Active
AG1-287	South Boston 12.5 kV	Active
AG1-310	Crystal Hill-Perth 115 kV	Active
AG1-342	Dryburg 115 kV	Active
AG1-345	Crewe 12.5 kV	Active
AG1-347	Briery DP-Clover 230 kV	Active
AG1-384	Twitty's Creek 115 kV	Active
AG1-393	Fort Pickett DP 34.5 kV	Active
AG1-413	South Hill-Bordnax 115 kV	Active
AG1-427	Chase City-Drakes Branch 115 kV	Active
AG1-428	Danieltown 69 kV	Active
AG1-432	Curdsville DP-Willis Mt. 115 kV	Active
AG1-440	Palmer Springs 115 kV	Active
AG1-441	Palmer Springs 115 kV	Active
AG1-445	Palmer Spring 115 kV	Active
AG1-446	Palmer Springs 115 kV	Active
AG1-451	Curdsville DP-Willis Mt. 115 kV	Active
AG1-532	Fields 34.5 kV	Active
AG1-546	Ebony-Elams Road 115 kV	Active
AG1-557	Curdsville DP 115 kV	Withdrawn

11.8 Contingency Descriptions

Contingency Name	Contingency Definition
DVP_P1-2: LN 298	CONTINGENCY 'DVP_P1-2: LN 298' OPEN BRANCH FROM BUS 314677 TO BUS 314692 CKT 1 /* 6BUCKING 230.00 - 6FARMVIL 230.00 OPEN BRANCH FROM BUS 314677 TO BUS 314747 CKT 1 /* 6BUCKING 230.00 - 6BREMO 230.00 OPEN BRANCH FROM BUS 314691 TO BUS 314692 CKT 2 /* 3FARMVIL 115.00 - 6FARMVIL 230.00 OPEN BUS 314677 /* ISLAND: 6BUCKING 230.00 OPEN BUS 924032 /* ISLAND: AB2-045 E 230.00 OPEN BUS 932511 /* ISLAND: AC2-071 C 230.00 OPEN BUS 932512 /* ISLAND: AC2-071 E 230.00 END
DVP_P4-6: CAROLIN T122	CONTINGENCY 'DVP_P4-6: CAROLIN T122' /* CAROLINA 115 KV OPEN BRANCH FROM BUS 314559 TO BUS 315126 CKT 1 /* 3CAROLNA 115.00 - 1ROARAP2 14.400 OPEN BRANCH FROM BUS 314559 TO BUS 315128 CKT 1 /* 3CAROLNA 115.00 - 1ROARAP4 14.400 OPEN BUS 315126 /* ISLAND: 1ROARAP2 14.400 OPEN BUS 315128 /* ISLAND: 1ROARAP4 14.400 OPEN BRANCH FROM BUS 314559 TO BUS 314571 CKT 1 /* 3CAROLNA 115.00 - 3EATON F 115.00 OPEN BRANCH FROM BUS 313722 TO BUS 314559 CKT 1 /* 3OCCONEECHEE115.00 - 3CAROLNA 115.00 OPEN BRANCH FROM BUS 313723 TO BUS 314559 CKT 1 /* 3PECAN 115.00 - 3CAROLNA 115.00 OPEN BRANCH FROM BUS 314559 TO BUS 314835 CKT 1 /* 3CAROLNA 115.00 - 3CAROL_1 115.00 OPEN BRANCH FROM BUS 314559 TO BUS 314578 CKT 1 /* 3CAROLNA 115.00 - 3HORNRTN 115.00 OPEN BRANCH FROM BUS 314559 TO BUS 314585 CKT 1 /* 3CAROLNA 115.00 - 3L GASTN 115.00 OPEN BRANCH FROM BUS 314559 TO BUS 314600 CKT 1 /* 3CAROLNA 115.00 - 3PLHITP 115.00 OPEN BRANCH FROM BUS 314559 TO BUS 314561 CKT 1 /* 3CAROLNA 115.00 - 6CAROLNA 230.00 OPEN BUS 314559 /* 3CAROLNA 115.00 KV OPEN BUS 314835 /* ISLAND: 3CAROL_1 115.00 END
DVP_P1-2: LN 1012-E	CONTINGENCY 'DVP_P1-2: LN 1012-E' OPEN BRANCH FROM BUS 964240 TO BUS 314681 CKT 1 /* AG1-285 TAP 115.00 - 3CHASCTY 115.00 END

Contingency Name	Contingency Definition
DVP_P4-2: 102802	CONTINGENCY 'DVP_P4-2: 102802' /* CAROLINA 115 KV OPEN BRANCH FROM BUS 313722 TO BUS 314559 CKT 1 /* 3OCCONEECHEE115.00 - 3CAROLNA 115.00 OPEN BRANCH FROM BUS 314559 TO BUS 314571 CKT 1 /* 3CAROLNA 115.00 - 3EATON F 115.00 OPEN BRANCH FROM BUS 313723 TO BUS 314559 CKT 1 /* 3PECAN 115.00 - 3CAROLNA 115.00 OPEN BRANCH FROM BUS 314559 TO BUS 314835 CKT 1 /* 3CAROLNA 115.00 - 3CAROL_1 115.00 OPEN BRANCH FROM BUS 314559 TO BUS 314600 CKT 1 /* 3CAROLNA 115.00 - 3PLHITP 115.00 OPEN BRANCH FROM BUS 314559 TO BUS 314561 CKT 1 /* 3CAROLNA 115.00 - 6CAROLNA 230.00 END
DVP_P1-2: LN 556-C	CONTINGENCY 'DVP_P1-2: LN 556-C' OPEN BRANCH FROM BUS 964930 TO BUS 966360 CKT 1 /* AG1-357 TAP 500.00 - AG1-055 TAP 500.00 END
DVP_P7-1: LN 158-235	CONTINGENCY 'DVP_P7-1: LN 158-235' /* . OPEN BRANCH FROM BUS 313755 TO BUS 314701 CKT 1 /* 3FLAT CREEK 115.00 - 3LONEPN 115.00 OPEN BRANCH FROM BUS 313755 TO BUS 314707 CKT 1 /* 3FLAT CREEK 115.00 - 3MORAN 115.00 OPEN BRANCH FROM BUS 314519 TO BUS 314701 CKT 1 /* 3LONEPINE_1 115.00 - 3LONEPN 115.00 OPEN BRANCH FROM BUS 314691 TO BUS 314707 CKT 1 /* 3FARMVIL 115.00 - 3MORAN 115.00 OPEN BUS 313755 /* ISLAND: 3FLAT CREEK 115.00 OPEN BUS 314519 /* ISLAND: 3LONEPINE_1 115.00 OPEN BUS 314707 /* ISLAND: 3MORAN 115.00 OPEN BRANCH FROM BUS 313802 TO BUS 314268 CKT 1 /* 6PRINCE EDW 230.00 - 6BRIERY 230.00 OPEN BRANCH FROM BUS 313802 TO BUS 314692 CKT 1 /* 6PRINCE EDW 230.00 - 6FARMVIL 230.00 OPEN BRANCH FROM BUS 314268 TO BUS 964840 CKT 1 /* 6BRIERY 230.00 - AG1- 347 TAP 230.00 OPEN BRANCH FROM BUS 314686 TO BUS 962490 CKT 1 /* 6CLOVER 230.00 - AG1- 098 TAP 230.00 OPEN BRANCH FROM BUS 314691 TO BUS 314692 CKT 1 /* 3FARMVIL 115.00 - 6FARMVIL 230.00 OPEN BUS 313802 /* ISLAND: 6PRINCE EDW 230.00 OPEN BUS 314268 /* ISLAND: 6BRIERY 230.00 OPEN BUS 934620 /* ISLAND: AD1-088 TAP 230.00 OPEN BUS 934621 /* ISLAND: AD1-088 MAIN230.00 OPEN BUS 934622 /* ISLAND: AD1-088 COL134.500 OPEN BUS 934623 /* ISLAND: AD1-088 TER 13.800 OPEN BUS 934624 /* ISLAND: AD1-088 COL234.500 OPEN BUS 934625 /* ISLAND: AD1-088 C 0.6600 OPEN BUS 934626 /* ISLAND: AD1-088 E 0.6600 END

Contingency Name	Contingency Definition
DVP_P1-2: LN 33	CONTINGENCY 'DVP_P1-2: LN 33' OPEN BRANCH FROM BUS 314267 TO BUS 314669 CKT 1 /* 3CHASCTY2 115.00 - 3BARN J 115.00 OPEN BRANCH FROM BUS 314669 TO BUS 314684 CKT 1 /* 3BARN J 115.00 - 3MT LREL 115.00 OPEN BRANCH FROM BUS 314684 TO BUS 316115 CKT 1 /* 3MT LREL 115.00 - AC1-105 TAP 115.00 OPEN BRANCH FROM BUS 314696 TO BUS 316115 CKT 1 /* 3SEEDGE HILL 115.00 - AC1-105 TAP 115.00 OPEN BUS 314669 /* ISLAND: 3BARN J 115.00 OPEN BUS 314684 /* ISLAND: 3MT LREL 115.00 OPEN BUS 316115 /* ISLAND: AC1-105 TAP 115.00 OPEN BUS 316116 /* ISLAND: AC1-105 MAIN115.00 OPEN BUS 316117 /* ISLAND: AC1-105 COL 34.500 OPEN BUS 316118 /* ISLAND: AC1-105 C 0.5750 OPEN BUS 926274 /* ISLAND: AC1-105 E 0.5750 END
DVP_P1-2: LN 235-A	CONTINGENCY 'DVP_P1-2: LN 235-A' OPEN BRANCH FROM BUS 313802 TO BUS 314268 CKT 1 /* 6PRINCE EDW 230.00 - 6BRIERY 230.00 OPEN BRANCH FROM BUS 313802 TO BUS 314692 CKT 1 /* 6PRINCE EDW 230.00 - 6FARMVIL 230.00 OPEN BRANCH FROM BUS 314268 TO BUS 964840 CKT 1 /* 6BRIERY 230.00 - AG1-347 TAP 230.00 OPEN BRANCH FROM BUS 314691 TO BUS 314692 CKT 1 /* 3FARMVIL 115.00 - 6FARMVIL 230.00 OPEN BUS 313802 /* ISLAND: 6PRINCE EDW 230.00 OPEN BUS 314268 /* ISLAND: 6BRIERY 230.00 END
DVP_P1-2: LN 1045	CONTINGENCY 'DVP_P1-2: LN 1045' OPEN BRANCH FROM BUS 313898 TO BUS 314267 CKT 1 /* 3BUTCHER CRK115.00 - 3CHASCTY2 115.00 END

Contingency Name	Contingency Definition
DVP_P7-1: LN 22-90	CONTINGENCY 'DVP_P7-1: LN 22-90' /* . OPEN BRANCH FROM BUS 314559 TO BUS 314571 CKT 1 /* 3CAROLNA 115.00 - 3EATON F 115.00 OPEN BRANCH FROM BUS 314571 TO BUS 316125 CKT 1 /* 3EATON F 115.00 - AC1-054 TAP 115.00 OPEN BRANCH FROM BUS 314702 TO BUS 316125 CKT 1 /* 3KERR 115.00 - AC1-054 TAP 115.00 OPEN BUS 314571 /* ISLAND: 3EATON F 115.00 OPEN BUS 316125 /* ISLAND: AC1-054 TAP 115.00 OPEN BUS 316126 /* ISLAND: AC1-054 MAIN115.00 OPEN BUS 316127 /* ISLAND: AC1-054 COL222.860 OPEN BUS 316128 /* ISLAND: AC1-054 COL122.860 OPEN BUS 316129 /* ISLAND: AC1-054 C 0.3850 OPEN BUS 925785 /* ISLAND: AC1-054 E 0.3850 OPEN BRANCH FROM BUS 314265 TO BUS 314584 CKT 1 /* 3FIVEFORKSDP115.00 - 3LITTLTN 115.00 OPEN BRANCH FROM BUS 314265 TO BUS 314673 CKT 1 /* 3FIVEFORKSDP115.00 - 3PALMERSPRNG115.00 OPEN BRANCH FROM BUS 314559 TO BUS 314585 CKT 1 /* 3CAROLNA 115.00 - 3L GASTN 115.00 OPEN BRANCH FROM BUS 314584 TO BUS 314585 CKT 1 /* 3LITTLTN 115.00 - 3L GASTN 115.00 OPEN BUS 314265 /* ISLAND: 3FIVEFORKSDP115.00 OPEN BUS 314584 /* ISLAND: 3LITTLTN 115.00 OPEN BUS 314585 /* ISLAND: 3L GASTN 115.00 END
DVP_P2-2: BREMO B1	CONTINGENCY 'DVP_P2-2: BREMO B1' /* BREMO 230 KV OPEN BRANCH FROM BUS 314326 TO BUS 314747 CKT 1 /* 6BEARGRDN 230.00 - 6BREMO 230.00 OPEN BRANCH FROM BUS 314326 TO BUS 315191 CKT 1 /* 6BEARGRDN 230.00 - 1BEARGRDN G118.000 OPEN BUS 315191 /* ISLAND: 1BEARGRDN G118.000 OPEN BRANCH FROM BUS 314326 TO BUS 314747 CKT 2 /* 6BEARGRDN 230.00 - 6BREMO 230.00 OPEN BRANCH FROM BUS 314326 TO BUS 315192 CKT 1 /* 6BEARGRDN 230.00 - 1BEARGRDN G218.000 OPEN BRANCH FROM BUS 314326 TO BUS 315193 CKT 1 /* 6BEARGRDN 230.00 - 1BEARGRDN S122.000 OPEN BUS 315192 /* ISLAND: 1BEARGRDN G218.000 OPEN BUS 315193 /* ISLAND: 1BEARGRDN S122.000 OPEN BRANCH FROM BUS 314677 TO BUS 314747 CKT 1 /* 6BUCKING 230.00 - 6BREMO 230.00 OPEN BRANCH FROM BUS 313868 TO BUS 314747 CKT 1 /* 6CARTERV 230.00 - 6BREMO 230.00 OPEN BRANCH FROM BUS 313867 TO BUS 314747 CKT 1 /* 6BREMODIST 230.00 - 6BREMO 230.00 OPEN BRANCH FROM BUS 314744 TO BUS 314747 CKT 1 /* 3BREMO 115.00 - 6BREMO 230.00 OPEN BUS 314747 /* 6BREMO 230.00 KV OPEN BUS 314326 /* ISLAND: 6BEARGRDN 230.00 END

Contingency Name	Contingency Definition
DVP_P1-3: 6SEEDGE HILL-TX#2	CONTINGENCY 'DVP_P1-3: 6SEEDGE HILL-TX#2' OPEN BRANCH FROM BUS 314696 TO BUS 314697 CKT 2 /* 3SEEDGE HILL 115.00 - 6SEEDGE HILL 230.00 END
Base Case	
DVP_P4-2: 13002	CONTINGENCY 'DVP_P4-2: 13002' /* CAROLINA 115 KV OPEN BRANCH FROM BUS 314559 TO BUS 314600 CKT 1 /* 3CAROLNA 115.00 - 3PLHITP 115.00 OPEN BRANCH FROM BUS 314595 TO BUS 314600 CKT 1 /* 3PL HILL 115.00 - 3PLHITP 115.00 OPEN BRANCH FROM BUS 314600 TO BUS 314615 CKT 1 /* 3PLHITP 115.00 - 3SKIPERS 115.00 OPEN BUS 314595 /* ISLAND: 3PL HILL 115.00 OPEN BUS 314600 /* ISLAND: 3PLHITP 115.00 OPEN BRANCH FROM BUS 314559 TO BUS 314571 CKT 1 /* 3CAROLNA 115.00 - 3EATON F 115.00 OPEN BRANCH FROM BUS 313722 TO BUS 314559 CKT 1 /* 3OCCONEECHEE115.00 - 3CAROLNA 115.00 OPEN BRANCH FROM BUS 313723 TO BUS 314559 CKT 1 /* 3PECAN 115.00 - 3CAROLNA 115.00 OPEN BRANCH FROM BUS 314559 TO BUS 314835 CKT 1 /* 3CAROLNA 115.00 - 3CAROL_1 115.00 OPEN BRANCH FROM BUS 314559 TO BUS 314561 CKT 1 /* 3CAROLNA 115.00 - 6CAROLNA 230.00 END
DVP_P7-1: LN 171-1009	CONTINGENCY 'DVP_P7-1: LN 171-1009' /* . OPEN BRANCH FROM BUS 313806 TO BUS 314681 CKT 1 /* 3HERBERT 115.00 - 3CHASCTY 115.00 OPEN BRANCH FROM BUS 313849 TO BUS 314267 CKT 1 /* 3RIDGERD 115.00 - 3CHASCTY2 115.00 END
DVP_P1-2: LN 158	CONTINGENCY 'DVP_P1-2: LN 158' OPEN BRANCH FROM BUS 313755 TO BUS 314701 CKT 1 /* 3FLAT CREEK 115.00 - 3LONEPN 115.00 OPEN BRANCH FROM BUS 313755 TO BUS 314707 CKT 1 /* 3FLAT CREEK 115.00 - 3MORAN 115.00 OPEN BRANCH FROM BUS 314519 TO BUS 314701 CKT 1 /* 3LONEPINE_1 115.00 - 3LONEPN 115.00 OPEN BRANCH FROM BUS 314691 TO BUS 314707 CKT 1 /* 3FARMVIL 115.00 - 3MORAN 115.00 OPEN BUS 313755 /* ISLAND: 3FLAT CREEK 115.00 OPEN BUS 314519 /* ISLAND: 3LONEPINE_1 115.00 OPEN BUS 314707 /* ISLAND: 3MORAN 115.00 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).

14 Attachment 1: One Line Diagram