



# **Generation Interconnection**

## **Feasibility Study Report**

**for**

## **Queue Project AG1-550**

**MOUNT EAGLE-FORK UNION 230 KV**

**35 MW Capacity / 35 MW Energy**

January 2021

# Table of Contents

1	Introduction.....	5
2	Preface.....	5
3	General.....	6
4	Point of Interconnection.....	7
4.1	Primary Point of Interconnection .....	7
4.2	Secondary Point of Interconnection.....	7
5	Cost Summary .....	7
6	Transmission Owner Scope of Work.....	9
7	Schedule.....	10
8	Transmission Owner Analysis.....	10
8.1	Power Flow Analysis .....	10
8.2	Short Circuit Analysis.....	11
8.3	Stability Analysis.....	11
9	Interconnection Customer Requirements.....	11
9.1	System Protection.....	11
9.2	Compliance Issues and Interconnection Customer Requirements .....	11
9.3	Power Factor Requirements.....	12
10	Revenue Metering and SCADA Requirements .....	12
10.1	PJM Requirements .....	12
10.2	Meteorological Data Reporting Requirements .....	12
10.3	Interconnected Transmission Owner Requirements.....	12
11	Summer Peak - Load Flow Analysis - Primary POI.....	13
11.1	Generation Deliverability .....	14
11.2	Multiple Facility Contingency .....	14
11.3	Contribution to Previously Identified Overloads.....	14
11.4	Potential Congestion due to Local Energy Deliverability.....	16
11.5	System Reinforcements - Summer Peak Load Flow - Primary POI.....	19
11.6	Flow Gate Details - Primary POI .....	22
11.6.1	Index 1 .....	23
11.6.2	Index 2 .....	25
11.6.3	Index 3 .....	28

11.6.4	Index 4 .....	31
11.6.5	Index 5 .....	34
11.6.6	Index 6 .....	35
11.6.7	Index 7 .....	38
11.6.8	Index 8 .....	40
11.6.9	Index 9 .....	42
11.6.10	Index 10.....	45
11.6.11	Index 11.....	48
11.6.12	Index 12.....	49
11.6.13	Index 13.....	51
11.6.14	Index 14.....	52
11.7	Queue Dependencies .....	55
11.8	Contingency Descriptions - Primary POI.....	58
12	Short Circuit Analysis - Primary POI.....	61
12.1	System Reinforcements - Short Circuit.....	61
13	Summer Peak - Load Flow Analysis - Secondary POI .....	62
13.1	Generation Deliverability .....	63
13.2	Multiple Facility Contingency .....	63
13.3	Contribution to Previously Identified Overloads.....	63
13.4	Potential Congestion due to Local Energy Deliverability.....	65
13.5	Flow Gate Details - Secondary POI.....	67
13.5.1	Index 1 .....	68
13.5.2	Index 2 .....	70
13.5.3	Index 3 .....	71
13.5.4	Index 4 .....	72
13.5.5	Index 5 .....	73
13.5.6	Index 6 .....	74
13.5.7	Index 7 .....	75
13.5.8	Index 8 .....	76
13.5.9	Index 9 .....	77
13.5.10	Index 10.....	78
13.5.11	Index 11.....	81
13.5.12	Index 12.....	84

13.5.13	Index 13.....	87
13.5.14	Index 14.....	90
13.5.15	Index 15.....	91
13.5.16	Index 16.....	94
13.5.17	Index 17.....	97
13.5.18	Index 18.....	100
13.5.19	Index 19.....	101
13.5.20	Index 20.....	102
13.5.21	Index 21.....	104
13.5.22	Index 22.....	105
13.5.23	Index 23.....	106
13.6	Contingency Descriptions - Secondary POI.....	109
14	Affected Systems.....	117
14.1	TVA.....	117
14.2	Duke Energy Progress.....	117
15	Attachment 1: One Line Diagram.....	118

## 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; Storage generating facility located in Fluvanna County, Virginia. The installed facilities will have a total capability of 35 MW with 35 MW of this output being recognized by PJM as Capacity. The proposed in-service date for this project is September 01, 2023. This study does not imply a TO commitment to this in-service date.

<b>Queue Number</b>	<b>AG1-550</b>
<b>Project Name</b>	MOUNT EAGLE-FORK UNION 230 KV
<b>State</b>	Virginia
<b>County</b>	Fluvanna
<b>Transmission Owner</b>	Dominion
<b>MFO</b>	35
<b>MWE</b>	35
<b>MWC</b>	35
<b>Fuel</b>	Solar; Storage
<b>Basecase Study Year</b>	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

AG1-550 "Mount Eagle-Fork Union 230 kV" will interconnect with the Dominion transmission system. The primary POI will be a newly constructed 230 kV three breaker ring bus located on the line between the Mount Eagle substation and Fork Union substation.

The IC is responsible for securing right-of-way, permits, and constructing the proposed attachment line from the generating facility site to the Point of Interconnection. The IC may not install any facilities on Dominion's right-of-way without first obtaining the necessary approval from Dominion Energy.

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

### 4.2 Secondary Point of Interconnection

The IC requested that a secondary POI be reviewed for network impacts.

The secondary POI for AG1-550 is a new tap on the Cunningham DP–Bremo 115 kV line.

This report does not provide costs for the interconnection of the secondary POI. The secondary POI was analyzed for network impacts. Network impact results are shown in the Summer Peak - Load Flow Analysis – Secondary Point of Interconnection section of this report.

## 5 Cost Summary

The AG1-550 project will be responsible for the following costs:

Description	Total Cost
<b>Total Physical Interconnection Costs</b>	\$ 10,400,000
<b>Total System Network Upgrade Costs</b>	\$229,804,600 <sup>1</sup>
<b>Total Costs</b>	<b>\$240,204,600</b>

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.

<sup>1</sup> This project currently causes and 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.

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

## 6 Transmission Owner Scope of Work

The required Attachment Facilities, Direct Connection and Non-Direct Connection work for the interconnection of AG1-550 to the Dominion Transmission System is detailed in the following sections. The associated one-line showing the generation project attachment facilities and primary direct and non-direct connection is shown in Attachment 1.

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

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

Description	Total Cost
<b><i>Attachment Facilities</i></b>	\$2,100,000
<b><i>230 kV Three Breaker Ring-Bus Substation</i></b>	\$6,500,000
<b><i>Re-arrange line and tie-in new substation</i></b>	\$1,800,000
<b>Total Physical Interconnection Costs</b>	\$10,400,000

AG1-550 "Mount Eagle-Fork Union 230 kV" will interconnect with the Dominion transmission system. The primary POI will be a newly constructed 230 kV three breaker ring bus located on the line between the Mount Eagle substation and Fork Union substation.

It is estimated to take **18-30 months** to complete this work upon execution of an Interconnection Construction Service Agreement (ICSA). These preliminary cost estimates are based on typical engineering costs. A more detailed engineering cost estimates are normally done when the IC provides an exact site plan location for the generation substation during the Facility Study phase.

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

## 7 Schedule

The estimated schedule for the Attachment Facilities, Direct Connection and Non-Direct Connection work is identified in the “Transmission Owner Scope of Work” section of this report.

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<sup>1</sup>.

## 8 Transmission Owner Analysis

Dominion assessed the impact of the proposed AG1-550 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.

## 8.2 Short Circuit Analysis

No impacts.

## 8.3 Stability Analysis

To be performed in the Facilities Study phase.

# 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/meter<sup>2</sup>) - (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 - Primary POI**

The Queue Project AG1-550 was evaluated as a 35.0 MW (Capacity 35.0 MW) injection tapping the Fork Union to Mt. Eagle 230 kV line in the Dominion area. Project AG1-550 was evaluated for compliance with applicable reliability planning criteria (PJM, NERC, NERC Regional Reliability Councils, and Transmission Owners). Project AG1-550 was studied with a commercial probability of 53.0 %. Potential network impacts were as follows:

### 11.1 Generation Deliverability

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

ID	FROM BUS#	FROM BUS	kV	FROM BUS AREA	TO BUS#	TO BUS	kV	TO BUS AREA	CK T ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADIN G %	POST PROJECT LOADIN G %	AC D C	MW IMPACT
169292491	314734	6CASHSCORNER	230.0	DVP	314758	6GORDNVL	230.0	DVP	1	DVP_P1-2: LN 550	single	550.840026855	98.81	100.03	DC	6.71

### 11.2 Multiple Facility Contingency

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

None

### 11.3 Contribution to Previously Identified Overloads

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

ID	FROM BUS#	FROM BUS	kV	FROM BUS AREA	TO BUS#	TO BUS	kV	TO BUS AREA	CK T ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADIN G %	POST PROJECT LOADIN G %	AC D C	MW IMPACT
163421067	313868	6CARTERV	230.0	DVP	933500	AC2-165 TAP	230.0	DVP	1	DVP_P7-1: LN 5-2028-C	tower	980.0	117.04	118.72	DC	16.45
168584804	313868	6CARTERV	230.0	DVP	933500	AC2-165 TAP	230.0	DVP	1	DVP_P1-2: LN 2028-B	single	800.880004883	118.96	121.02	DC	16.45
168584805	313868	6CARTERV	230.0	DVP	933500	AC2-165 TAP	230.0	DVP	1	314765 6MTEAGLE 230 966790 AG1-550 TAP 230 1	single	800.880004883	118.95	121.0	DC	16.45
163421021	314310	6JUDES F	230.0	DVP	314322	6MDLTHAN	230.0	DVP	1	DVP_P7-1: LN 5-2028-C	tower	980.0	125.48	127.15	DC	16.44
168891144	314310	6JUDES F	230.0	DVP	314322	6MDLTHAN	230.0	DVP	1	DVP_P1-2: LN 2028-B	single	800.880004883	124.73	126.79	DC	16.44
168891145	314310	6JUDES F	230.0	DVP	314322	6MDLTHAN	230.0	DVP	1	314765 6MTEAGLE 230 966790 AG1-550 TAP 230 1	single	800.880004883	124.72	126.77	DC	16.44
163421016	314333	6POWHATN	230.0	DVP	314310	6JUDES F	230.0	DVP	1	DVP_P7-1: LN 5-2028-C	tower	980.0	125.59	127.27	DC	16.44
168891139	314333	6POWHATN	230.0	DVP	314310	6JUDES F	230.0	DVP	1	314765 6MTEAGLE 230 966790 AG1-550 TAP 230 1	single	800.880004883	124.86	126.91	DC	16.44
168891140	314333	6POWHATN	230.0	DVP	314310	6JUDES F	230.0	DVP	1	DVP_P1-2: LN 2028-B	single	800.880004883	124.86	126.91	DC	16.44
169292489	314734	6CASHSCORNER	230.0	DVP	314758	6GORDNVL	230.0	DVP	1	DVP_P1-2: LN 553	single	550.840026855	102.06	103.19	DC	6.24

ID	FROM BUS#	FROM BUS	kV	FROM BUS AREA	TO BUS#	TO BUS	kV	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC/DC	MW IMPACT
164143349	314746	4BREMO	138.0	DVP	314744	3BREMO	115.0	DVP	1	DVP_P2-2: BREMO B1	bus	228.0	113.96	114.52	DC	2.41
163421053	314747	6BREMO	230.0	DVP	313868	6CARTERV	230.0	DVP	1	DVP_P7-1: LN 5-2028-C	tower	980.0	118.19	119.87	DC	16.45
168584782	314747	6BREMO	230.0	DVP	313868	6CARTERV	230.0	DVP	1	DVP_P1-2: LN 2028-B	single	800.880004883	120.37	122.43	DC	16.45
168584783	314747	6BREMO	230.0	DVP	313868	6CARTERV	230.0	DVP	1	314765 6MTEAGLE 230 966790 AG1-550 TAP 230 1	single	800.880004883	120.36	122.42	DC	16.45
169506663	314749	6CHARLVL	230.0	DVP	314772	6PROFFIT	230.0	DVP	1	DVP_P1-2: LN 553	single	550.840026855	116.73	117.86	DC	6.24
169506665	314749	6CHARLVL	230.0	DVP	314772	6PROFFIT	230.0	DVP	1	DVP_P1-2: LN 550	single	550.840026855	113.48	114.69	DC	6.71
169292507	314759	6HOLLYMD	230.0	DVP	314734	6CASHSCORNER	230.0	DVP	1	DVP_P1-2: LN 553	single	550.840026855	100.36	101.49	DC	6.24
169506447	314765	6MTEAGLE	230.0	DVP	314749	6CHARLVL	230.0	DVP	1	314333 6POWHATN 230 933500 AC2-165 TAP 230 1	single	661.760009766	169.66	173.34	DC	24.37
169506448	314765	6MTEAGLE	230.0	DVP	314749	6CHARLVL	230.0	DVP	1	DVP_P1-2: LN 2027	single	661.760009766	165.87	169.55	DC	24.37
169506450	314765	6MTEAGLE	230.0	DVP	314749	6CHARLVL	230.0	DVP	1	Base Case	single	661.760009766	115.4	118.48	DC	20.63
163421031	933500	AC2-165 TAP	230.0	DVP	314333	6POWHATN	230.0	DVP	1	DVP_P7-1: LN 5-2028-C	tower	980.0	123.99	125.67	DC	16.45
169814644	933500	AC2-165 TAP	230.0	DVP	314333	6POWHATN	230.0	DVP	1	DVP_P1-2: LN 2028-B	single	800.880004883	123.79	125.84	DC	16.45
169814645	933500	AC2-165 TAP	230.0	DVP	314333	6POWHATN	230.0	DVP	1	314765 6MTEAGLE 230 966790 AG1-550 TAP 230 1	single	800.880004883	123.78	125.83	DC	16.45
164143259	938820	AE1-108 TAP	138.0	DVP	314746	4BREMO	138.0	DVP	1	DVP_P2-2: BREMO B1	bus	173.0	150.19	150.93	DC	2.41
167012534	941010	AE2-092 TAP	115.0	DVP	314774	3SHERWOD	115.0	DVP	1	DVP_P7-1: LN 5-2028-C	tower	208.0	109.72	111.44	DC	3.56
169814769	941010	AE2-092 TAP	115.0	DVP	314774	3SHERWOD	115.0	DVP	1	314765 6MTEAGLE 230 966790 AG1-550 TAP 230 1	single	169.199996948	108.54	110.65	DC	3.56
169814770	941010	AE2-092 TAP	115.0	DVP	314774	3SHERWOD	115.0	DVP	1	DVP_P1-2: LN 2028-B	single	169.199996948	108.25	110.35	DC	3.56
161959970	946590	AF1-323 TAP	138.0	AEP	242792	05SCOTSV	138.0	AEP	1	DVP_P2-2: BREMO B1	bus	167.0	109.45	110.22	DC	2.41
170089533	966790	AG1-550 TAP	230.0	DVP	314765	6MTEAGLE	230.0	DVP	1	314333 6POWHATN 230 933500 AC2-165 TAP 230 1	single	661.760009766	173.2	176.88	DC	24.37

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 LOADING %	POST PROJECT LOADING %	AC DC	MW IMPACT
170089534	966790	AG1-550 TAP	230.0	DVP	314765	6MTEAGLE	230.0	DVP	1	DVP_P1-2: LN 2027	single	661.760009766	169.41	173.09	DC	24.37
170089536	966790	AG1-550 TAP	230.0	DVP	314765	6MTEAGLE	230.0	DVP	1	Base Case	single	661.760009766	118.95	122.02	DC	20.63

## 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 LOADING %	POST PROJECT LOADING %	AC DC	MW IMPACT
168584637	313707	6FORK UNION	230.0	DVP	961060	AF2-397 TAP	230.0	DVP	1	314333 6POWHA TN 230 933500 AC2-165 TAP 230 1	operation	661.760009766	198.74	200.35	DC	10.63
168584641	313707	6FORK UNION	230.0	DVP	961060	AF2-397 TAP	230.0	DVP	1	Base Case	operation	661.760009766	136.1	138.27	DC	14.37
168584885	313708	3FORK UNION	115.0	DVP	313707	6FORK UNION	230.0	DVP	1	DVP_P1-2: LN 2193	operation	269.779998779	127.25	129.93	DC	7.21
168584659	313867	6BREMODIS T	230.0	DVP	313707	6FORK UNION	230.0	DVP	1	314333 6POWHA TN 230 933500 AC2-165 TAP 230 1	operation	661.760009766	195.87	197.19	DC	8.77
168584663	313867	6BREMODIS T	230.0	DVP	313707	6FORK UNION	230.0	DVP	1	Base Case	operation	661.760009766	137.25	139.2	DC	12.87
168584802	313868	6CARTERV	230.0	DVP	933500	AC2-165 TAP	230.0	DVP	1	DVP_P1-2: LN 2028-B	operation	800.880004883	142.13	144.18	DC	16.45
168891142	314310	6JUDES F	230.0	DVP	314322	6MDLTHAN	230.0	DVP	1	DVP_P1-2: LN 2028-B	operation	800.880004883	152.45	154.51	DC	16.44
168891137	314333	6POWHATN	230.0	DVP	314310	6JUDES F	230.0	DVP	1	314765 6MTEAGLE 230 966790 AG1-550 TAP 230 1	operation	800.880004883	152.58	154.63	DC	16.44
168891138	314333	6POWHATN	230.0	DVP	314310	6JUDES F	230.0	DVP	1	DVP_P1-2: LN 2028-B	operation	800.880004883	152.58	154.63	DC	16.44

ID	FROM BUS#	FROM BUS	kV	FROM BUS AREA	TO BUS#	TO BUS	kV	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC/D C	MW IMPACT
169292488	314734	6CASHSCORNER	230.0	DVP	314758	6GORDNVL	230.0	DVP	1	DVP_P1-2: LN 553	operation	550.840026855	106.25	107.38	DC	6.24
169506706	314744	3BREMO	115.0	DVP	313708	3FORK UNION	115.0	DVP	1	DVP_P1-2: LN 2193	operation	414.540008545	110.19	111.7	DC	6.22
168584780	314747	6BREMO	230.0	DVP	313868	6CARTERV	230.0	DVP	1	DVP_P1-2: LN 2028-B	operation	800.880004883	143.54	145.59	DC	16.45
169506455	314747	6BREMO	230.0	DVP	313867	6BREMODIS T	230.0	DVP	1	314333 6POWHA TN 230 933500 AC2-165 TAP 230 1	operation	661.760009766	198.03	199.35	DC	8.77
169506459	314747	6BREMO	230.0	DVP	313867	6BREMODIS T	230.0	DVP	1	Base Case	operation	661.760009766	139.41	141.36	DC	12.87
169506473	314747	6BREMO	230.0	DVP	314744	3BREMO	115.0	DVP	1	DVP_P1-2: LN 2193	operation	269.779998779	191.36	193.15	DC	4.82
169506662	314749	6CHARLV	230.0	DVP	314772	6PROFFIT	230.0	DVP	1	DVP_P1-2: LN 553	operation	550.840026855	119.99	121.12	DC	6.24
169292506	314759	6HOLLYMD	230.0	DVP	314734	6CASHSCORNER	230.0	DVP	1	DVP_P1-2: LN 553	operation	550.840026855	103.61	104.75	DC	6.24
169506744	314763	3KIDDSTO	115.0	DVP	941010	AE2-092 TAP	115.0	DVP	1	314765 6MTEAGL E 230 966790 AG1-550 TAP 230 1	operation	169.199996948	103.26	105.37	DC	3.56
169506445	314765	6MTEAGLE	230.0	DVP	314749	6CHARLV	230.0	DVP	1	314333 6POWHA TN 230 933500 AC2-165 TAP 230 1	operation	661.760009766	196.32	200.0	DC	24.37
169506449	314765	6MTEAGLE	230.0	DVP	314749	6CHARLV	230.0	DVP	1	Base Case	operation	661.760009766	137.9	141.02	DC	20.63
169814642	933500	AC2-165 TAP	230.0	DVP	314333	6POWHATN	230.0	DVP	1	DVP_P1-2: LN 2028-B	operation	800.880004883	150.64	152.69	DC	16.45
169814767	941010	AE2-092 TAP	115.0	DVP	314774	3SHERWOD	115.0	DVP	1	314765 6MTEAGL E 230 966790 AG1-550 TAP 230 1	operation	169.199996948	133.23	135.34	DC	3.56
170089521	961060	AF2-397 TAP	230.0	DVP	966790	AG1-550 TAP	230.0	DVP	1	314333 6POWHA TN 230 933500 AC2-165 TAP 230 1	operation	661.760009766	207.92	209.53	DC	10.63
170089525	961060	AF2-397 TAP	230.0	DVP	966790	AG1-550 TAP	230.0	DVP	1	Base Case	operation	661.760009766	142.05	144.22	DC	14.37
170089531	966790	AG1-550 TAP	230.0	DVP	314765	6MTEAGLE	230.0	DVP	1	314333 6POWHA TN 230 933500 AC2-165 TAP 230 1	operation	661.760009766	204.14	207.83	DC	24.37
170089535	966790	AG1-550 TAP	230.0	DVP	314765	6MTEAGLE	230.0	DVP	1	Base Case	operation	661.760009766	140.84	143.96	DC	20.63



## 11.5 System Reinforcements - Summer Peak Load Flow - Primary POI

ID	Idx	Facility	Upgrade Description	Cost
164143349	5	4BREMO 138.0 kV - 3BREMO 115.0 kV Ckt 1	<u>DVP</u> dom-362 (1893) : Add an additional 138/115 kV transformer at BreMO Project Type : CON Cost : \$7,000,000 Time Estimate : 16-18 Months	\$7,000,000
169814770,169814769,167012534	12	AE2-092 TAP 115.0 kV - 3SHERWOD 115.0 kV Ckt 1	<u>DVP</u> n6378 (1590) : Rebuild 6.42 miles of 115 kV Line 91 from AE2-092 Tap to Sherwood with 2-636 ACSR. Project Type : FAC Cost : \$16,050,000 Time Estimate : 30-36 Months	\$16,050,000
168891139,163421016,168891140	4	6POWHATN 230.0 kV - 6JUDES F 230.0 kV Ckt 1	<u>DVP</u> dom-303 (1834) : Rebuild 7.09 miles of 230 kV Line 2027 from Judes to Powhatan with 2-795 ACSR 150 C Project Type : FAC Cost : \$17,725,000 Time Estimate : 36-40 Months	\$17,725,000
168584782,168584783,163421053	6	6BREMO 230.0 kV - 6CARTERV 230.0 kV Ckt 1	<u>DVP</u> dom-364 (1895) : Rebuild 9.46 miles of 230 kV Line 2027 from BreMO to Cartersville with 2-795 ACSR 150 C. Replace breaker lead at BreMO terminal. Project Type : FAC Cost : \$23,650,000 Time Estimate : 36-40 Months	\$23,650,000
164143259	11	AE1-108 TAP 138.0 kV - 4BREMO 138.0 kV Ckt 1	<u>DVP</u> dom-397 (1928) : Reconnector 8.502 miles of 138 kV line 8 from AE1-108 Tap to BreMO with 636 ACSR 150 C Project Type : FAC Cost : \$5,101,200 Time Estimate : 30-36 Months	\$5,101,200
170089536,170089534,170089533	14	AG1-550 TAP 230.0 kV - 6MTEAGLE 230.0 kV Ckt 1	<u>DVP</u> dom-421 (1952) : Rebuild 6.5 miles of 230 kV Line 2028 from AG1-550 Tap to Mt Eagle with 2-768.2 ACSS 250 C Project Type : FAC Cost : \$16,250,000 Time Estimate : 30-36 Months	\$16,250,000

ID	Idx	Facility	Upgrade Description	Cost
169506450,169506448,169506447	9	6MTEAGLE 230.0 kV - 6CHARLVL 230.0 kV Ckt 1	<p><u>DVP</u> n6184 (1720) : Rebuild 6.47 miles of 230 kV Line 2028 from Mt Eagle to Charlottesville with 2-636 ACSR. Project Type : FAC Cost : \$16,175,000 Time Estimate : 30-36 Months</p> <p>dom-369 (1900) : Rebuild 6.47 miles of 230 kV Line 2028 from Mt Eagle to Charlottesville with 2-768.2 ACSS 250 C. Replace Wave Trap at Charlottesville terminal Project Type : FAC Cost : \$16,375,000 Time Estimate : 36-40 Months</p>	\$32,550,000
168584805,168584804,163421067	2	6CARTERV 230.0 kV - AC2- 165 TAP 230.0 kV Ckt 1	<p><u>DVP</u> dom-277 (1808) : Rebuild 7.67 miles of 230 kV Line 2027 from Carterville to AC2-165 Tap with 2-636 ACSR (24/7) 150 C Project Type : FAC Cost : \$19,175,000 Time Estimate : 36-40 Months</p>	\$19,175,000
168891145,168891144,163421021	3	6JUDES F 230.0 kV - 6MDLTHAN 230.0 kV Ckt 1	<p><u>DVP</u> dom-302 (1833) : Rebuild 7.09 miles of 230 kV Line 2027 from Judes to Midlothian with 2-795 ACSR 150 C. Project Type : FAC Cost : \$17,725,000 Time Estimate : 36-40 Months</p>	\$17,725,000
169506663,169506665	7	6CHARLVL 230.0 kV - 6PROFFIT 230.0 kV Ckt 1	<p><u>DVP</u> dom-365 (1896) : Rebuild 8.72 miles of 230 kV Line 2054 from Charlottesville to Profit D.P. with 2-636 ACSR 150 C Project Type : FAC Cost : \$21,800,000 Time Estimate : 36-40 Months</p>	\$21,800,000
161959970	13	AF1-323 TAP 138.0 kV - 05SCOTSV 138.0 kV Ckt 1	<p><u>AEP</u> AEPA0034a (437) : A sag study will be required on the 0.85 miles of ACSR ~ 397.5 ~ 30/7 ~ LARK - Conductor to determine what mitigation would be required (if any) to operate at the conductor's MOT. Depending on the sag study results, the cost for this upgrade is expected to be between \$3,400 (no remediation required, just sag study) and \$1.275 million (complete line reconductor/rebuild). Time Estimate: a) Sag Study: 6-12 months b) Rebuild: The standard tiem required for construction differs from state to state. An approximate construction time would be 24 to 36 months after signing an interconnection agreement Project Type : FAC Cost : \$3,400 Time Estimate : 6 - 12 Months</p>	\$3,400

ID	Idx	Facility	Upgrade Description	Cost
169814644,163 421031,169814 645	10	AC2-165 TAP 230.0 kV - 6POWHATN 230.0 kV Ckt 1	<u>DVP</u> dom-389 (1920) : Rebuild 4.01 miles of 230 kV Line 2027 from Powhatan to AC2-165 Tap with 2-795 ACSR (26/7) 150 C Project Type : FAC Cost : \$10,025,000 Time Estimate : 30-36 Months	\$10,025,000
169292507	8	6HOLLYMD 230.0 kV - 6CASHSCORNER 230.0 kV Ckt 1	<u>DVP</u> dom-366 (1897) : Rebuild 4.27 miles of 230 kV Line 2135 from Hollymead to Cashs Corner D.P. with 2-636 ACSR 150 C Project Type : FAC Cost : \$10,675,000 Time Estimate : 30-36 Months	\$10,675,000
169292491,169 292489	1	6CASHSCORNER 230.0 kV - 6GORDNVL 230.0 kV Ckt 1	<u>DVP</u> dom-358 (1889) : Rebuild 12.83 miles of 230 kV Line 2135 from Cashs Corner D.P. to Gordonsville with 2-636 ACSR 150 C. Project Type : FAC Cost : \$32,075,000 Time Estimate : 36-40 Months	\$32,075,000
			<b>TOTAL COST</b>	<b>\$229,804,600<sup>1</sup></b>

## 11.6 Flow Gate Details - Primary POI

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

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### 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
169292489	314734	6CASHSCORNER	DVP	314758	6GORDNVL	DVP	1	DVP_P1-2: LN 553	single	550.84	102.06	103.19	DC	6.24

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
235034	01SHY_Z2-039	0.0089	80/20	0.0089
235035	01NHY_Z2-039	0.0145	80/20	0.0145
237092	AD1-085_C	0.1375	80/20	0.1375
313738	3CUSHAW	0.0822	80/20	0.0822
314677	6BUCKING	0.1994	80/20	0.1994
314859	4WSTVACO	3.8378	80/20	3.8378
315186	1LOWMORA	0.3753	80/20	0.3753
315188	1LOWMORC	0.3767	80/20	0.3767
315191	1BEARGRDN G1	3.5688	80/20	3.5688
315192	1BEARGRDN G2	3.5688	80/20	3.5688
315193	1BEARGRDN S1	4.6151	80/20	4.6151
315201	1BATH 1A	6.3455	80/20	6.3455
315202	1BATH 2B	6.3455	80/20	6.3455
315203	1BATH 3C	6.3493	80/20	6.3493
315204	1BATH 4D	6.3480	80/20	6.3480
315205	1BATH 5E	6.3556	80/20	6.3556
315206	1BATH 6F	6.3683	80/20	6.3683
315216	1CUNINGA	2.6813	80/20	2.6813
315217	1CUNINGB	2.6813	80/20	2.6813
315218	1CUNINGC	2.6813	80/20	2.6813
315219	1CUNINGD	5.9974	80/20	5.9974
315616	AA1-038 C	7.2579	80/20	7.2579
316152	AE1-098 C	0.1342	80/20	0.1342
316154	AE1-099 C	0.1342	80/20	0.1342
926001	AC1-076 C	-2.4492	Adder	-2.88
926451	AC1-116 C	0.1552	80/20	0.1552
926481	AC1-120 C O1	-5.1375	Adder	-6.04
926501	AC1-121 C O1	-1.7644	Adder	-2.08
926611	AC1-143 C O1	-3.6922	Adder	-4.34
932511	AC2-071 C (Withdrawn : 01/22/2021)	0.1965	80/20	0.1965
932541	AC2-074 C (Withdrawn : 01/22/2021)	0.1044	80/20	0.1044
932854	AC2-112 C	13.4979	80/20	13.4979
933501	AC2-165 C	3.1316	80/20	3.1316
935221	AD1-157 C	0.0718	80/20	0.0718
938371	AE1-056 C	1.9617	80/20	1.9617
938625	AE1-084 C	6.5460	80/20	6.5460
938821	AE1-108 C O1	9.1873	80/20	9.1873
939231	AE1-154 C	-1.7982	Adder	-2.12
940451	AE2-029 C	3.0342	80/20	3.0342
941011	AE2-092 C	10.1248	80/20	10.1248

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
942461	AE2-259 C O1	3.6732	80/20	3.6732
943571	AF1-028 O1	16.3520	80/20	16.3520
944071	AF1-075 C O1	4.3944	80/20	4.3944
946291	AF1-293 C O1	13.0557	80/20	13.0557
946591	AF1-323 C	3.0769	80/20	3.0769
958131	AF2-107 C	2.0472	80/20	2.0472
960111	AF2-302 C	1.1189	80/20	1.1189
961061	AF2-397 C	11.8318	80/20	11.8318
961101	AF2-401 C	-0.3764	Adder	-0.44
961801	AG1-022 C	1.1189	80/20	1.1189
962741	AG1-123 C O1	2.2471	80/20	2.2471
962881	AG1-137 C	3.9340	80/20	3.9340
963021	AG1-151 O1	8.1760	80/20	8.1760
963461	AG1-195	14.1540	80/20	14.1540
963471	AG1-196 O1	17.9835	80/20	17.9835
963631	AG1-214 C	0.8133	80/20	0.8133
964231	AG1-284 C O1	5.0064	80/20	5.0064
964621	AG1-325 C O1	3.4039	80/20	3.4039
964831	AG1-346 C	0.7638	80/20	0.7638
965531	AG1-421 C	12.9156	80/20	12.9156
965541	AG1-422	5.3815	80/20	5.3815
965581	AG1-426	2.0016	80/20	2.0016
965641	AG1-432 C O1	7.3464	80/20	7.3464
965831	AG1-451	1.2244	80/20	1.2244
966251	AG1-494 C	1.0572	80/20	1.0572
966501	AG1-519 C	7.7580	80/20	7.7580
966671	AG1-537 C	4.1894	80/20	4.1894
966791	AG1-550 O1	6.2366	80/20	6.2366
966851	AG1-556	9.4770	80/20	9.4770
966861	AG1-557 C O1 (Withdrawn : 12/14/2020)	0.7346	80/20	0.7346
WEC	WEC	0.5582	Confirmed LTF	0.5582
LGEE	LGEE	1.1806	Confirmed LTF	1.1806
CPL	CPL	0.7262	Confirmed LTF	0.7262
CBM-W2	CBM-W2	16.5222	Confirmed LTF	16.5222
NY	NY	0.6299	Confirmed LTF	0.6299
TVA	TVA	2.6782	Confirmed LTF	2.6782
SIGE	SIGE	0.3493	Confirmed LTF	0.3493
CBM-S2	CBM-S2	15.7435	Confirmed LTF	15.7435
CBM-S1	CBM-S1	0.7247	Confirmed LTF	0.7247
MEC	MEC	2.8618	Confirmed LTF	2.8618
LAGN	LAGN	3.2428	Confirmed LTF	3.2428
CBM-W1	CBM-W1	24.0163	Confirmed LTF	24.0163

## 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
168584805	313868	6CARTERV	DVP	933500	AC2-165 TAP	DVP	1	314765 6MTEAGLE 230 966790 AG1-550 TAP 230 1	single	800.88	118.95	121.0	DC	16.45

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
313527	AB2-043 C	0.2811	80/20	0.2811
314429	3JTRSVLE	0.4835	80/20	0.4835
314677	6BUCKING	0.8051	80/20	0.8051
315153	1CLOVER1	4.3284	80/20	4.3284
315154	1CLOVER2	4.2852	80/20	4.2852
315158	1KERR 1	0.1411	80/20	0.1411
315159	1KERR 2	0.3952	80/20	0.3952
315160	1KERR 3	0.3952	80/20	0.3952
315161	1KERR 4	0.3952	80/20	0.3952
315162	1KERR 5	0.3952	80/20	0.3952
315163	1KERR 6	0.3952	80/20	0.3952
315164	1KERR 7	0.3952	80/20	0.3952
315191	1BEARGRDN G1	14.2615	80/20	14.2615
315192	1BEARGRDN G2	14.2615	80/20	14.2615
315193	1BEARGRDN S1	18.4429	80/20	18.4429
315266	1PLYWOOD A	0.4253	80/20	0.4253
316118	AC1-105 C	2.1876	80/20	2.1876
316131	AB2-060 C	0.8407	80/20	0.8407
924301	AB2-077 C O1 (Suspended)	1.0994	80/20	1.0994
924311	AB2-078 C O1 (Suspended)	1.0994	80/20	1.0994
924321	AB2-079 C O1 (Suspended)	1.0994	80/20	1.0994
925611	AC1-036 C	0.1990	80/20	0.1990
927261	AC1-222 C	1.2313	80/20	1.2313
932511	AC2-071 C (Withdrawn : 01/22/2021)	0.7932	80/20	0.7932
934311	AD1-055 C	0.8549	80/20	0.8549
934615	AD1-087 C	2.7103	80/20	2.7103
934625	AD1-088 C	10.6986	80/20	10.6986
935171	AD1-152 C O1	2.9770	80/20	2.9770
935221	AD1-157 C	0.2946	80/20	0.2946
936265	AD2-033 C	10.6548	80/20	10.6548
936361	AD2-046 C O1	3.5828	80/20	3.5828
936485	AD2-063 C	10.3014	80/20	10.3014
937481	AD2-202 C O1	0.7939	80/20	0.7939
938371	AE1-056 C	8.0514	80/20	8.0514
938821	AE1-108 C O1	29.3769	80/20	29.3769
939181	AE1-148 C	3.5932	80/20	3.5932

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
940661	AE2-053 O1	1.3308	80/20	1.3308
941011	AE2-092 C	25.2830	80/20	25.2830
941791	AE2-182 C	1.7381	80/20	1.7381
942451	AE2-258	1.3292	80/20	1.3292
942461	AE2-259 C O1	15.0522	80/20	15.0522
943901	AF1-058 C	0.6646	80/20	0.6646
943911	AF1-059	5.9093	80/20	5.9093
946291	AF1-293 C O1	39.5443	80/20	39.5443
946301	AF1-294 C	4.8845	80/20	4.8845
946591	AF1-323 C	9.4261	80/20	9.4261
958131	AF2-107 C	4.3750	80/20	4.3750
958211	AF2-115 C	2.8733	80/20	2.8733
958801	AF2-171 C	17.1603	80/20	17.1603
959311	AF2-222 C	15.3100	80/20	15.3100
959751	AF2-266	3.1070	80/20	3.1070
960061	AF2-297 C	2.6582	80/20	2.6582
960111	AF2-302 C	3.4277	80/20	3.4277
961061	AF2-397 C	36.6545	80/20	36.6545
961791	AG1-021 C	2.2986	80/20	2.2986
961801	AG1-022 C	3.4277	80/20	3.4277
961891	AG1-030 C	15.8319	80/20	15.8319
962041	AG1-048 C	14.3663	80/20	14.3663
962441	AG1-093 C O1	5.8337	80/20	5.8337
962491	AG1-098 C O1	8.1622	80/20	8.1622
962561	AG1-105 C O1	3.5664	80/20	3.5664
962741	AG1-123 C O1	3.1842	80/20	3.1842
962751	AG1-124 C O1	3.5741	80/20	3.5741
963171	AG1-166 C	2.2986	80/20	2.2986
963181	AG1-167 C	2.2986	80/20	2.2986
963191	AG1-168 C	2.2986	80/20	2.2986
963201	AG1-169 C	2.2986	80/20	2.2986
963211	AG1-170 C	2.2986	80/20	2.2986
963271	AG1-176 C O1	14.5637	80/20	14.5637
963321	AG1-181 C O1	14.0576	80/20	14.0576
963361	AG1-185 O1	6.8014	80/20	6.8014
963641	AG1-215 C	1.0727	80/20	1.0727
964111	AG1-272 C	2.2621	80/20	2.2621
964121	AG1-273 C	2.2621	80/20	2.2621
964131	AG1-274 C	2.2621	80/20	2.2621
964231	AG1-284 C O1	17.0012	80/20	17.0012
964241	AG1-285 C O1	8.1450	80/20	8.1450
964261	AG1-287 C	0.4984	80/20	0.4984
964471	AG1-310 C	0.7118	80/20	0.7118
964791	AG1-342 C	1.8023	80/20	1.8023
964821	AG1-345 C	0.9169	80/20	0.9169
964841	AG1-347 C	9.1358	80/20	9.1358
965191	AG1-384 C	2.2621	80/20	2.2621
965281	AG1-393 C	2.2986	80/20	2.2986
965451	AG1-413 C O1	2.4841	80/20	2.4841
965581	AG1-426	6.4002	80/20	6.4002
965591	AG1-427 C	7.7911	80/20	7.7911
965641	AG1-432 C O1	30.1044	80/20	30.1044

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
965721	AG1-440 C	2.3620	80/20	2.3620
965731	AG1-441 C	2.3620	80/20	2.3620
965771	AG1-445	1.3647	80/20	1.3647
965781	AG1-446	1.3647	80/20	1.3647
965831	AG1-451	5.0174	80/20	5.0174
966251	AG1-494 C	1.6494	80/20	1.6494
966791	AG1-550 O1	16.4475	80/20	16.4475
966861	AG1-557 C O1 (Withdrawn : 12/14/2020)	3.0104	80/20	3.0104
WEC	WEC	0.1988	Confirmed LTF	0.1988
LGEE	LGEE	0.4247	Confirmed LTF	0.4247
CPL	CPL	1.0859	Confirmed LTF	1.0859
CBM-W2	CBM-W2	7.3114	Confirmed LTF	7.3114
NY	NY	0.3512	Confirmed LTF	0.3512
TVA	TVA	1.3104	Confirmed LTF	1.3104
SIGE	SIGE	0.1503	Confirmed LTF	0.1503
CBM-S2	CBM-S2	14.4907	Confirmed LTF	14.4907
CBM-S1	CBM-S1	0.3374	Confirmed LTF	0.3374
MEC	MEC	1.1075	Confirmed LTF	1.1075
LAGN	LAGN	1.5942	Confirmed LTF	1.5942
CBM-W1	CBM-W1	8.3419	Confirmed LTF	8.3419

### 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
163421021	314310	6JUDES F	DVP	314322	6MDLTHAN	DVP	1	DVP_P7-1: LN 5-2028-C	tower	980.0	125.48	127.15	DC	16.44

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
313853	3PONTONDP	0.7657	50/50	0.7657
314333	6POWHATN	1.5975	50/50	1.5975
314429	3JTRSVLE	0.4832	50/50	0.4832
314677	6BUCKING	0.8048	50/50	0.8048
314713	3PAMPLIN	2.0181	50/50	2.0181
315191	1BEARGRDN G1	14.2573	50/50	14.2573
315192	1BEARGRDN G2	14.2573	50/50	14.2573
315193	1BEARGRDN S1	18.4374	50/50	18.4374
923862	AB2-026 E	4.5491	50/50	4.5491
924022	AB2-043 E O1	1.3522	Adder	1.59
924032	AB2-045 E	2.3806	50/50	2.3806
924162	AB2-060 E OP	2.1283	Adder	2.5
925611	AC1-036 C	0.1989	50/50	0.1989
925612	AC1-036 E	0.7548	50/50	0.7548
932511	AC2-071 C (Withdrawn : 01/22/2021)	0.7929	50/50	0.7929
932512	AC2-071 E (Withdrawn : 01/22/2021)	2.5317	50/50	2.5317
933501	AC2-165 C	39.2365	50/50	39.2365
933502	AC2-165 E	29.5306	50/50	29.5306
934625	AD1-088 C	10.6886	50/50	10.6886
934626	AD1-088 E	2.7994	50/50	2.7994
935221	AD1-157 C	0.2944	50/50	0.2944
935222	AD1-157 E	1.2442	50/50	1.2442
936265	AD2-033 C	10.6447	50/50	10.6447
936266	AD2-033 E	7.0964	50/50	7.0964
936485	AD2-063 C	10.2897	50/50	10.2897
936486	AD2-063 E	6.8598	50/50	6.8598
938371	AE1-056 C	8.0460	50/50	8.0460
938372	AE1-056 E	4.3962	50/50	4.3962
938561	AE1-075 C	1.3891	50/50	1.3891
938562	AE1-075 E	4.3290	50/50	4.3290
938821	AE1-108 C O1	29.3641	50/50	29.3641
938822	AE1-108 E O1	13.1786	50/50	13.1786
941011	AE2-092 C	25.2714	50/50	25.2714
941012	AE2-092 E	16.8476	50/50	16.8476
941791	AE2-182 C	1.7365	50/50	1.7365
941792	AE2-182 E	0.8084	50/50	0.8084
942451	AE2-258	1.1281	Adder	1.33
942461	AE2-259 C O1	15.0438	50/50	15.0438
942462	AE2-259 E O1	10.0292	50/50	10.0292
946291	AF1-293 C O1	39.5291	50/50	39.5291

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
946292	AF1-293 E O1	7.1109	50/50	7.1109
946301	AF1-294 C	4.8812	50/50	4.8812
946302	AF1-294 E	3.2541	50/50	3.2541
946591	AF1-323 C	9.4218	50/50	9.4218
946592	AF1-323 E	6.2812	50/50	6.2812
958131	AF2-107 C	4.3708	50/50	4.3708
958132	AF2-107 E	2.3952	50/50	2.3952
958211	AF2-115 C	2.8713	50/50	2.8713
958212	AF2-115 E	1.9142	50/50	1.9142
958501	AF2-144 C	7.4840	50/50	7.4840
958502	AF2-144 E	4.9894	50/50	4.9894
958801	AF2-171 C	17.1486	50/50	17.1486
958802	AF2-171 E	11.4324	50/50	11.4324
959311	AF2-222 C	15.2960	50/50	15.2960
959312	AF2-222 E	10.2483	50/50	10.2483
959531	AF2-244 C (Withdrawn : 01/06/2021)	6.8971	50/50	6.8971
959532	AF2-244 E (Withdrawn : 01/06/2021)	4.1089	50/50	4.1089
960111	AF2-302 C	3.4261	50/50	3.4261
960112	AF2-302 E	2.2841	50/50	2.2841
961061	AF2-397 C	36.6436	50/50	36.6436
961062	AF2-397 E	24.4291	50/50	24.4291
961791	AG1-021 C	2.2970	50/50	2.2970
961792	AG1-021 E	1.5314	50/50	1.5314
961801	AG1-022 C	3.4261	50/50	3.4261
961802	AG1-022 E	2.2841	50/50	2.2841
961891	AG1-030 C	15.8193	50/50	15.8193
961892	AG1-030 E	10.5462	50/50	10.5462
962041	AG1-048 C	14.3565	50/50	14.3565
962042	AG1-048 E	9.5710	50/50	9.5710
962491	AG1-098 C O1	8.1525	50/50	8.1525
962492	AG1-098 E O1	5.4350	50/50	5.4350
963171	AG1-166 C	2.2970	50/50	2.2970
963172	AG1-166 E	1.5314	50/50	1.5314
963181	AG1-167 C	2.2970	50/50	2.2970
963182	AG1-167 E	1.5314	50/50	1.5314
963191	AG1-168 C	2.2970	50/50	2.2970
963192	AG1-168 E	1.5314	50/50	1.5314
963201	AG1-169 C	2.2970	50/50	2.2970
963202	AG1-169 E	1.5314	50/50	1.5314
963211	AG1-170 C	2.2970	50/50	2.2970
963212	AG1-170 E	1.5314	50/50	1.5314
963271	AG1-176 C O1	14.5511	50/50	14.5511
963272	AG1-176 E O1	9.7008	50/50	9.7008
963321	AG1-181 C O1	14.0444	50/50	14.0444
963361	AG1-185 O1	6.7951	50/50	6.7951
963641	AG1-215 C	1.0720	50/50	1.0720
963642	AG1-215 E	1.6079	50/50	1.6079
964111	AG1-272 C	2.2600	50/50	2.2600
964112	AG1-272 E	0.6712	50/50	0.6712
964121	AG1-273 C	2.2600	50/50	2.2600
964122	AG1-273 E	0.6712	50/50	0.6712

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
964131	AG1-274 C	2.2600	50/50	2.2600
964132	AG1-274 E	0.6712	50/50	0.6712
964231	AG1-284 C O1	16.9953	50/50	16.9953
964232	AG1-284 E O1	11.3302	50/50	11.3302
964241	AG1-285 C O1	8.1345	50/50	8.1345
964242	AG1-285 E O1	5.4230	50/50	5.4230
964821	AG1-345 C	0.9162	50/50	0.9162
964822	AG1-345 E	0.6108	50/50	0.6108
964841	AG1-347 C	9.1280	50/50	9.1280
964842	AG1-347 E	7.1720	50/50	7.1720
965191	AG1-384 C	2.2600	50/50	2.2600
965192	AG1-384 E	0.6712	50/50	0.6712
965281	AG1-393 C	2.2970	50/50	2.2970
965282	AG1-393 E	1.5314	50/50	1.5314
965581	AG1-426	6.3974	50/50	6.3974
965591	AG1-427 C	7.7812	50/50	7.7812
965592	AG1-427 E	5.1984	50/50	5.1984
965641	AG1-432 C O1	30.0876	50/50	30.0876
965642	AG1-432 E O1	20.0584	50/50	20.0584
965831	AG1-451	5.0146	50/50	5.0146
966791	AG1-550 O1	16.4427	50/50	16.4427
966861	AG1-557 C O1 (Withdrawn : 12/14/2020)	3.0088	50/50	3.0088
966862	AG1-557 E O1 (Withdrawn : 12/14/2020)	2.0058	50/50	2.0058
WEC	WEC	0.1947	Confirmed LTF	0.1947
LGEE	LGEE	0.4166	Confirmed LTF	0.4166
CPL	CPL	1.0770	Confirmed LTF	1.0770
CBM-W2	CBM-W2	7.1949	Confirmed LTF	7.1949
NY	NY	0.3583	Confirmed LTF	0.3583
TVA	TVA	1.2922	Confirmed LTF	1.2922
O-066	O-066	5.0812	Confirmed LTF	5.0812
SIGE	SIGE	0.1503	Confirmed LTF	0.1503
CBM-S2	CBM-S2	14.3550	Confirmed LTF	14.3550
CBM-S1	CBM-S1	0.3325	Confirmed LTF	0.3325
G-007	G-007	0.8001	Confirmed LTF	0.8001
MEC	MEC	1.0869	Confirmed LTF	1.0869
LAGN	LAGN	1.5715	Confirmed LTF	1.5715
CBM-W1	CBM-W1	8.1596	Confirmed LTF	8.1596

#### 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
163421016	314333	6POWHATN	DVP	314310	6JUDES	DVP	1	DVP_P7-1: LN 5-2028-C	tower	980.0	125.59	127.27	DC	16.44

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
313853	3PONTONDP	0.7657	50/50	0.7657
314333	6POWHATN	1.5975	50/50	1.5975
314429	3JTRSVLE	0.4832	50/50	0.4832
314677	6BUCKING	0.8048	50/50	0.8048
314713	3PAMPLIN	2.0181	50/50	2.0181
315191	1BEARGRDN G1	14.2573	50/50	14.2573
315192	1BEARGRDN G2	14.2573	50/50	14.2573
315193	1BEARGRDN S1	18.4374	50/50	18.4374
923862	AB2-026 E	4.5491	50/50	4.5491
924022	AB2-043 E O1	1.3522	Adder	1.59
924032	AB2-045 E	2.3806	50/50	2.3806
924162	AB2-060 E OP	2.1283	Adder	2.5
925611	AC1-036 C	0.1989	50/50	0.1989
925612	AC1-036 E	0.7548	50/50	0.7548
932511	AC2-071 C (Withdrawn : 01/22/2021)	0.7929	50/50	0.7929
932512	AC2-071 E (Withdrawn : 01/22/2021)	2.5317	50/50	2.5317
933501	AC2-165 C	39.2365	50/50	39.2365
933502	AC2-165 E	29.5306	50/50	29.5306
934625	AD1-088 C	10.6886	50/50	10.6886
934626	AD1-088 E	2.7994	50/50	2.7994
935221	AD1-157 C	0.2944	50/50	0.2944
935222	AD1-157 E	1.2442	50/50	1.2442
936265	AD2-033 C	10.6447	50/50	10.6447
936266	AD2-033 E	7.0964	50/50	7.0964
936485	AD2-063 C	10.2897	50/50	10.2897
936486	AD2-063 E	6.8598	50/50	6.8598
938371	AE1-056 C	8.0460	50/50	8.0460
938372	AE1-056 E	4.3962	50/50	4.3962
938561	AE1-075 C	1.3891	50/50	1.3891
938562	AE1-075 E	4.3290	50/50	4.3290
938821	AE1-108 C O1	29.3641	50/50	29.3641
938822	AE1-108 E O1	13.1786	50/50	13.1786
941011	AE2-092 C	25.2714	50/50	25.2714
941012	AE2-092 E	16.8476	50/50	16.8476
941791	AE2-182 C	1.7365	50/50	1.7365
941792	AE2-182 E	0.8084	50/50	0.8084
942451	AE2-258	1.1281	Adder	1.33
942461	AE2-259 C O1	15.0438	50/50	15.0438
942462	AE2-259 E O1	10.0292	50/50	10.0292
946291	AF1-293 C O1	39.5291	50/50	39.5291

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
946292	AF1-293 E O1	7.1109	50/50	7.1109
946301	AF1-294 C	4.8812	50/50	4.8812
946302	AF1-294 E	3.2541	50/50	3.2541
946591	AF1-323 C	9.4218	50/50	9.4218
946592	AF1-323 E	6.2812	50/50	6.2812
958131	AF2-107 C	4.3708	50/50	4.3708
958132	AF2-107 E	2.3952	50/50	2.3952
958211	AF2-115 C	2.8713	50/50	2.8713
958212	AF2-115 E	1.9142	50/50	1.9142
958501	AF2-144 C	7.4840	50/50	7.4840
958502	AF2-144 E	4.9894	50/50	4.9894
958801	AF2-171 C	17.1486	50/50	17.1486
958802	AF2-171 E	11.4324	50/50	11.4324
959311	AF2-222 C	15.2960	50/50	15.2960
959312	AF2-222 E	10.2483	50/50	10.2483
959531	AF2-244 C (Withdrawn : 01/06/2021)	6.8971	50/50	6.8971
959532	AF2-244 E (Withdrawn : 01/06/2021)	4.1089	50/50	4.1089
960111	AF2-302 C	3.4261	50/50	3.4261
960112	AF2-302 E	2.2841	50/50	2.2841
961061	AF2-397 C	36.6436	50/50	36.6436
961062	AF2-397 E	24.4291	50/50	24.4291
961791	AG1-021 C	2.2970	50/50	2.2970
961792	AG1-021 E	1.5314	50/50	1.5314
961801	AG1-022 C	3.4261	50/50	3.4261
961802	AG1-022 E	2.2841	50/50	2.2841
961891	AG1-030 C	15.8193	50/50	15.8193
961892	AG1-030 E	10.5462	50/50	10.5462
962041	AG1-048 C	14.3565	50/50	14.3565
962042	AG1-048 E	9.5710	50/50	9.5710
962491	AG1-098 C O1	8.1525	50/50	8.1525
962492	AG1-098 E O1	5.4350	50/50	5.4350
963171	AG1-166 C	2.2970	50/50	2.2970
963172	AG1-166 E	1.5314	50/50	1.5314
963181	AG1-167 C	2.2970	50/50	2.2970
963182	AG1-167 E	1.5314	50/50	1.5314
963191	AG1-168 C	2.2970	50/50	2.2970
963192	AG1-168 E	1.5314	50/50	1.5314
963201	AG1-169 C	2.2970	50/50	2.2970
963202	AG1-169 E	1.5314	50/50	1.5314
963211	AG1-170 C	2.2970	50/50	2.2970
963212	AG1-170 E	1.5314	50/50	1.5314
963271	AG1-176 C O1	14.5511	50/50	14.5511
963272	AG1-176 E O1	9.7008	50/50	9.7008
963321	AG1-181 C O1	14.0444	50/50	14.0444
963361	AG1-185 O1	6.7951	50/50	6.7951
963641	AG1-215 C	1.0720	50/50	1.0720
963642	AG1-215 E	1.6079	50/50	1.6079
964111	AG1-272 C	2.2600	50/50	2.2600
964112	AG1-272 E	0.6712	50/50	0.6712
964121	AG1-273 C	2.2600	50/50	2.2600
964122	AG1-273 E	0.6712	50/50	0.6712

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
964131	AG1-274 C	2.2600	50/50	2.2600
964132	AG1-274 E	0.6712	50/50	0.6712
964231	AG1-284 C O1	16.9953	50/50	16.9953
964232	AG1-284 E O1	11.3302	50/50	11.3302
964241	AG1-285 C O1	8.1345	50/50	8.1345
964242	AG1-285 E O1	5.4230	50/50	5.4230
964821	AG1-345 C	0.9162	50/50	0.9162
964822	AG1-345 E	0.6108	50/50	0.6108
964841	AG1-347 C	9.1280	50/50	9.1280
964842	AG1-347 E	7.1720	50/50	7.1720
965191	AG1-384 C	2.2600	50/50	2.2600
965192	AG1-384 E	0.6712	50/50	0.6712
965281	AG1-393 C	2.2970	50/50	2.2970
965282	AG1-393 E	1.5314	50/50	1.5314
965581	AG1-426	6.3974	50/50	6.3974
965591	AG1-427 C	7.7812	50/50	7.7812
965592	AG1-427 E	5.1984	50/50	5.1984
965641	AG1-432 C O1	30.0876	50/50	30.0876
965642	AG1-432 E O1	20.0584	50/50	20.0584
965831	AG1-451	5.0146	50/50	5.0146
966791	AG1-550 O1	16.4427	50/50	16.4427
966861	AG1-557 C O1 (Withdrawn : 12/14/2020)	3.0088	50/50	3.0088
966862	AG1-557 E O1 (Withdrawn : 12/14/2020)	2.0058	50/50	2.0058
WEC	WEC	0.1947	Confirmed LTF	0.1947
LGEE	LGEE	0.4166	Confirmed LTF	0.4166
CPL	CPL	1.0770	Confirmed LTF	1.0770
CBM-W2	CBM-W2	7.1949	Confirmed LTF	7.1949
NY	NY	0.3583	Confirmed LTF	0.3583
TVA	TVA	1.2922	Confirmed LTF	1.2922
O-066	O-066	5.0812	Confirmed LTF	5.0812
SIGE	SIGE	0.1503	Confirmed LTF	0.1503
CBM-S2	CBM-S2	14.3550	Confirmed LTF	14.3550
CBM-S1	CBM-S1	0.3325	Confirmed LTF	0.3325
G-007	G-007	0.8001	Confirmed LTF	0.8001
MEC	MEC	1.0869	Confirmed LTF	1.0869
LAGN	LAGN	1.5715	Confirmed LTF	1.5715
CBM-W1	CBM-W1	8.1596	Confirmed LTF	8.1596

## 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
164143349	314746	4BREMO	DVP	314744	3BREMO	DVP	1	DVP_P2-2: BREMO B1	bus	228.0	113.96	114.52	DC	2.41

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
935241	AD1-161 C	1.4796	Adder	1.74
935242	AD1-161 E	1.2151	Adder	1.43
938821	AE1-108 C O1	56.8031	50/50	56.8031
938822	AE1-108 E O1	25.4933	50/50	25.4933
946293	AF1-293 BAT	13.6367	50/50	13.6367
946591	AF1-323 C	18.1464	50/50	18.1464
946592	AF1-323 E	12.0976	50/50	12.0976
958131	AF2-107 C	8.0379	50/50	8.0379
958132	AF2-107 E	4.4046	50/50	4.4046
960111	AF2-302 C	6.5987	50/50	6.5987
960112	AF2-302 E	4.3991	50/50	4.3991
961063	AF2-397 BAT	4.2883	Merchant Transmission	4.2883
961801	AG1-022 C	6.5987	50/50	6.5987
961802	AG1-022 E	4.3991	50/50	4.3991
962741	AG1-123 C O1	5.3884	50/50	5.3884
962742	AG1-123 E O1	3.7548	50/50	3.7548
962751	AG1-124 C O1	2.6383	Adder	5.86
962752	AG1-124 E O1	1.8410	Adder	4.09
964531	AG1-316 C O1	1.4964	Adder	3.32
964532	AG1-316 E O1	0.3741	Adder	0.83
965581	AG1-426	12.3754	50/50	12.3754
966251	AG1-494 C	2.8536	50/50	2.8536
966252	AG1-494 E	4.2804	50/50	4.2804
966792	AG1-550 BAT	1.2748	Merchant Transmission	1.2748
WEC	WEC	0.1405	Confirmed LTF	0.1405
LGEE	LGEE	0.3041	Confirmed LTF	0.3041
CPL	CPL	0.3269	Confirmed LTF	0.3269
CBM-W2	CBM-W2	4.5786	Confirmed LTF	4.5786
NY	NY	0.1377	Confirmed LTF	0.1377
TVA	TVA	0.7826	Confirmed LTF	0.7826
O-066	O-066	2.0123	Confirmed LTF	2.0123
SIGE	SIGE	0.0819	Confirmed LTF	0.0819
CBM-S2	CBM-S2	5.8151	Confirmed LTF	5.8151
CBM-S1	CBM-S1	0.2071	Confirmed LTF	0.2071
G-007	G-007	0.3171	Confirmed LTF	0.3171
MEC	MEC	0.7468	Confirmed LTF	0.7468
LAGN	LAGN	0.9397	Confirmed LTF	0.9397
CBM-W1	CBM-W1	5.9445	Confirmed LTF	5.9445

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
168584783	314747	6BREMO	DVP	313868	6CARTERV	DVP	1	314765 6MTEAGLE 230 966790 AG1-550 TAP 230 1	single	800.88	120.36	122.42	DC	16.45

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
313527	AB2-043 C	0.2811	80/20	0.2811
314429	3JTRSVLE	0.4835	80/20	0.4835
314677	6BUCKING	0.8051	80/20	0.8051
315153	1CLOVER1	4.3284	80/20	4.3284
315154	1CLOVER2	4.2852	80/20	4.2852
315158	1KERR 1	0.1411	80/20	0.1411
315159	1KERR 2	0.3952	80/20	0.3952
315160	1KERR 3	0.3952	80/20	0.3952
315161	1KERR 4	0.3952	80/20	0.3952
315162	1KERR 5	0.3952	80/20	0.3952
315163	1KERR 6	0.3952	80/20	0.3952
315164	1KERR 7	0.3952	80/20	0.3952
315191	1BEARGRDN G1	14.2615	80/20	14.2615
315192	1BEARGRDN G2	14.2615	80/20	14.2615
315193	1BEARGRDN S1	18.4429	80/20	18.4429
315266	1PLYWOOD A	0.4253	80/20	0.4253
316118	AC1-105 C	2.1876	80/20	2.1876
316131	AB2-060 C	0.8407	80/20	0.8407
924301	AB2-077 C O1 (Suspended)	1.0994	80/20	1.0994
924311	AB2-078 C O1 (Suspended)	1.0994	80/20	1.0994
924321	AB2-079 C O1 (Suspended)	1.0994	80/20	1.0994
925611	AC1-036 C	0.1990	80/20	0.1990
927261	AC1-222 C	1.2313	80/20	1.2313
932511	AC2-071 C (Withdrawn : 01/22/2021)	0.7932	80/20	0.7932
934311	AD1-055 C	0.8549	80/20	0.8549
934615	AD1-087 C	2.7103	80/20	2.7103
934625	AD1-088 C	10.6986	80/20	10.6986
935171	AD1-152 C O1	2.9770	80/20	2.9770
935221	AD1-157 C	0.2946	80/20	0.2946
936265	AD2-033 C	10.6548	80/20	10.6548
936361	AD2-046 C O1	3.5828	80/20	3.5828
936485	AD2-063 C	10.3014	80/20	10.3014
937481	AD2-202 C O1	0.7939	80/20	0.7939
938371	AE1-056 C	8.0514	80/20	8.0514
938821	AE1-108 C O1	29.3769	80/20	29.3769
939181	AE1-148 C	3.5932	80/20	3.5932

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
940661	AE2-053 O1	1.3308	80/20	1.3308
941011	AE2-092 C	25.2830	80/20	25.2830
941791	AE2-182 C	1.7381	80/20	1.7381
942451	AE2-258	1.3292	80/20	1.3292
942461	AE2-259 C O1	15.0522	80/20	15.0522
943901	AF1-058 C	0.6646	80/20	0.6646
943911	AF1-059	5.9093	80/20	5.9093
946291	AF1-293 C O1	39.5443	80/20	39.5443
946301	AF1-294 C	4.8845	80/20	4.8845
946591	AF1-323 C	9.4261	80/20	9.4261
958131	AF2-107 C	4.3750	80/20	4.3750
958211	AF2-115 C	2.8733	80/20	2.8733
958801	AF2-171 C	17.1603	80/20	17.1603
959311	AF2-222 C	15.3100	80/20	15.3100
959751	AF2-266	3.1070	80/20	3.1070
960061	AF2-297 C	2.6582	80/20	2.6582
960111	AF2-302 C	3.4277	80/20	3.4277
961061	AF2-397 C	36.6545	80/20	36.6545
961791	AG1-021 C	2.2986	80/20	2.2986
961801	AG1-022 C	3.4277	80/20	3.4277
961891	AG1-030 C	15.8319	80/20	15.8319
962041	AG1-048 C	14.3663	80/20	14.3663
962441	AG1-093 C O1	5.8337	80/20	5.8337
962491	AG1-098 C O1	8.1622	80/20	8.1622
962561	AG1-105 C O1	3.5664	80/20	3.5664
962741	AG1-123 C O1	3.1842	80/20	3.1842
962751	AG1-124 C O1	3.5741	80/20	3.5741
963171	AG1-166 C	2.2986	80/20	2.2986
963181	AG1-167 C	2.2986	80/20	2.2986
963191	AG1-168 C	2.2986	80/20	2.2986
963201	AG1-169 C	2.2986	80/20	2.2986
963211	AG1-170 C	2.2986	80/20	2.2986
963271	AG1-176 C O1	14.5637	80/20	14.5637
963321	AG1-181 C O1	14.0576	80/20	14.0576
963361	AG1-185 O1	6.8014	80/20	6.8014
963641	AG1-215 C	1.0727	80/20	1.0727
964111	AG1-272 C	2.2621	80/20	2.2621
964121	AG1-273 C	2.2621	80/20	2.2621
964131	AG1-274 C	2.2621	80/20	2.2621
964231	AG1-284 C O1	17.0012	80/20	17.0012
964241	AG1-285 C O1	8.1450	80/20	8.1450
964261	AG1-287 C	0.4984	80/20	0.4984
964471	AG1-310 C	0.7118	80/20	0.7118
964791	AG1-342 C	1.8023	80/20	1.8023
964821	AG1-345 C	0.9169	80/20	0.9169
964841	AG1-347 C	9.1358	80/20	9.1358
965191	AG1-384 C	2.2621	80/20	2.2621
965281	AG1-393 C	2.2986	80/20	2.2986
965451	AG1-413 C O1	2.4841	80/20	2.4841
965581	AG1-426	6.4002	80/20	6.4002
965591	AG1-427 C	7.7911	80/20	7.7911
965641	AG1-432 C O1	30.1044	80/20	30.1044

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
965721	AG1-440 C	2.3620	80/20	2.3620
965731	AG1-441 C	2.3620	80/20	2.3620
965771	AG1-445	1.3647	80/20	1.3647
965781	AG1-446	1.3647	80/20	1.3647
965831	AG1-451	5.0174	80/20	5.0174
966251	AG1-494 C	1.6494	80/20	1.6494
966791	AG1-550 O1	16.4475	80/20	16.4475
966861	AG1-557 C O1 (Withdrawn : 12/14/2020)	3.0104	80/20	3.0104
WEC	WEC	0.1988	Confirmed LTF	0.1988
LGEE	LGEE	0.4247	Confirmed LTF	0.4247
CPL	CPL	1.0859	Confirmed LTF	1.0859
CBM-W2	CBM-W2	7.3114	Confirmed LTF	7.3114
NY	NY	0.3512	Confirmed LTF	0.3512
TVA	TVA	1.3104	Confirmed LTF	1.3104
SIGE	SIGE	0.1503	Confirmed LTF	0.1503
CBM-S2	CBM-S2	14.4907	Confirmed LTF	14.4907
CBM-S1	CBM-S1	0.3374	Confirmed LTF	0.3374
MEC	MEC	1.1075	Confirmed LTF	1.1075
LAGN	LAGN	1.5942	Confirmed LTF	1.5942
CBM-W1	CBM-W1	8.3419	Confirmed LTF	8.3419

### 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
169506663	314749	6CHARLVL	DVP	314772	6PROFFIT	DVP	1	DVP_P1-2: LN 553	single	550.84	116.73	117.86	DC	6.24

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
235034	01SHY_Z2-039	0.0089	80/20	0.0089
235035	01NHY_Z2-039	0.0145	80/20	0.0145
237092	AD1-085_C	0.1375	80/20	0.1375
313738	3CUSHAW	0.0822	80/20	0.0822
314677	6BUCKING	0.1994	80/20	0.1994
314859	4WSTVACO	3.8378	80/20	3.8378
315186	1LOWMORA	0.3753	80/20	0.3753
315188	1LOWMORC	0.3767	80/20	0.3767
315191	1BEARGRDN G1	3.5688	80/20	3.5688
315192	1BEARGRDN G2	3.5688	80/20	3.5688
315193	1BEARGRDN S1	4.6151	80/20	4.6151
315201	1BATH 1A	6.3455	80/20	6.3455
315202	1BATH 2B	6.3455	80/20	6.3455
315203	1BATH 3C	6.3493	80/20	6.3493
315204	1BATH 4D	6.3480	80/20	6.3480
315205	1BATH 5E	6.3556	80/20	6.3556
315206	1BATH 6F	6.3683	80/20	6.3683
315216	1CUNINGA	2.6813	80/20	2.6813
315217	1CUNINGB	2.6813	80/20	2.6813
315218	1CUNINGC	2.6813	80/20	2.6813
315219	1CUNINGD	5.9974	80/20	5.9974
315616	AA1-038 C	7.2579	80/20	7.2579
316152	AE1-098 C	0.1342	80/20	0.1342
316154	AE1-099 C	0.1342	80/20	0.1342
926001	AC1-076 C	-2.4492	Adder	-2.88
926451	AC1-116 C	0.1552	80/20	0.1552
926481	AC1-120 C O1	-5.1375	Adder	-6.04
926501	AC1-121 C O1	-1.7644	Adder	-2.08
926611	AC1-143 C O1	-3.6922	Adder	-4.34
932511	AC2-071 C (Withdrawn : 01/22/2021)	0.1965	80/20	0.1965
932541	AC2-074 C (Withdrawn : 01/22/2021)	0.1044	80/20	0.1044
932854	AC2-112 C	13.4979	80/20	13.4979
933501	AC2-165 C	3.1316	80/20	3.1316
935221	AD1-157 C	0.0718	80/20	0.0718
938371	AE1-056 C	1.9617	80/20	1.9617
938625	AE1-084 C	6.5460	80/20	6.5460
938821	AE1-108 C O1	9.1873	80/20	9.1873
939231	AE1-154 C	-1.7982	Adder	-2.12
940451	AE2-029 C	3.0342	80/20	3.0342
941011	AE2-092 C	10.1248	80/20	10.1248

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
942461	AE2-259 C O1	3.6732	80/20	3.6732
943571	AF1-028 O1	16.3520	80/20	16.3520
944071	AF1-075 C O1	4.3944	80/20	4.3944
946291	AF1-293 C O1	13.0557	80/20	13.0557
946591	AF1-323 C	3.0769	80/20	3.0769
958131	AF2-107 C	2.0472	80/20	2.0472
960111	AF2-302 C	1.1189	80/20	1.1189
961061	AF2-397 C	11.8318	80/20	11.8318
961101	AF2-401 C	-0.3764	Adder	-0.44
961801	AG1-022 C	1.1189	80/20	1.1189
962741	AG1-123 C O1	2.2471	80/20	2.2471
962881	AG1-137 C	3.9340	80/20	3.9340
963021	AG1-151 O1	8.1760	80/20	8.1760
963461	AG1-195	14.1540	80/20	14.1540
963471	AG1-196 O1	17.9835	80/20	17.9835
963631	AG1-214 C	0.8133	80/20	0.8133
964231	AG1-284 C O1	5.0064	80/20	5.0064
964621	AG1-325 C O1	3.4039	80/20	3.4039
964831	AG1-346 C	0.7638	80/20	0.7638
965531	AG1-421 C	12.9156	80/20	12.9156
965541	AG1-422	5.3815	80/20	5.3815
965581	AG1-426	2.0016	80/20	2.0016
965641	AG1-432 C O1	7.3464	80/20	7.3464
965831	AG1-451	1.2244	80/20	1.2244
966251	AG1-494 C	1.0572	80/20	1.0572
966671	AG1-537 C	4.1894	80/20	4.1894
966791	AG1-550 O1	6.2366	80/20	6.2366
966851	AG1-556	9.4770	80/20	9.4770
966861	AG1-557 C O1 (Withdrawn : 12/14/2020)	0.7346	80/20	0.7346
WEC	WEC	0.5582	Confirmed LTF	0.5582
LGEE	LGEE	1.1806	Confirmed LTF	1.1806
CPL	CPL	0.7262	Confirmed LTF	0.7262
CBM-W2	CBM-W2	16.5222	Confirmed LTF	16.5222
NY	NY	0.6299	Confirmed LTF	0.6299
TVA	TVA	2.6782	Confirmed LTF	2.6782
SIGE	SIGE	0.3493	Confirmed LTF	0.3493
CBM-S2	CBM-S2	15.7435	Confirmed LTF	15.7435
CBM-S1	CBM-S1	0.7247	Confirmed LTF	0.7247
MEC	MEC	2.8618	Confirmed LTF	2.8618
LAGN	LAGN	3.2428	Confirmed LTF	3.2428
CBM-W1	CBM-W1	24.0163	Confirmed LTF	24.0163

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
169292507	314759	6HOLLYMD	DVP	314734	6CASHSCORNER	DVP	1	DVP_P1-2: LN 553	single	550.84	100.36	101.49	DC	6.24

Bus #	Bus	Gendliv MW Impact	Type	Full MW Impact
235034	01SHY_Z2-039	0.0089	80/20	0.0089
235035	01NHY_Z2-039	0.0145	80/20	0.0145
237092	AD1-085_C	0.1375	80/20	0.1375
313738	3CUSHAW	0.0822	80/20	0.0822
314677	6BUCKING	0.1994	80/20	0.1994
314859	4WSTVACO	3.8378	80/20	3.8378
315186	1LOWMORA	0.3753	80/20	0.3753
315188	1LOWMORC	0.3767	80/20	0.3767
315191	1BEARGRDN G1	3.5688	80/20	3.5688
315192	1BEARGRDN G2	3.5688	80/20	3.5688
315193	1BEARGRDN S1	4.6151	80/20	4.6151
315201	1BATH 1A	6.3455	80/20	6.3455
315202	1BATH 2B	6.3455	80/20	6.3455
315203	1BATH 3C	6.3493	80/20	6.3493
315204	1BATH 4D	6.3480	80/20	6.3480
315205	1BATH 5E	6.3556	80/20	6.3556
315206	1BATH 6F	6.3683	80/20	6.3683
315216	1CUNINGA	2.6813	80/20	2.6813
315217	1CUNINGB	2.6813	80/20	2.6813
315218	1CUNINGC	2.6813	80/20	2.6813
315219	1CUNINGD	5.9974	80/20	5.9974
315616	AA1-038 C	7.2579	80/20	7.2579
316152	AE1-098 C	0.1342	80/20	0.1342
316154	AE1-099 C	0.1342	80/20	0.1342
926001	AC1-076 C	-2.4492	Adder	-2.88
926451	AC1-116 C	0.1552	80/20	0.1552
926481	AC1-120 C O1	-5.1375	Adder	-6.04
926501	AC1-121 C O1	-1.7644	Adder	-2.08
926611	AC1-143 C O1	-3.6922	Adder	-4.34
932511	AC2-071 C (Withdrawn : 01/22/2021)	0.1965	80/20	0.1965
932541	AC2-074 C (Withdrawn : 01/22/2021)	0.1044	80/20	0.1044
932854	AC2-112 C	13.4979	80/20	13.4979
933501	AC2-165 C	3.1316	80/20	3.1316
935221	AD1-157 C	0.0718	80/20	0.0718
938371	AE1-056 C	1.9617	80/20	1.9617
938625	AE1-084 C	6.5460	80/20	6.5460
938821	AE1-108 C O1	9.1873	80/20	9.1873
939231	AE1-154 C	-1.7982	Adder	-2.12
940451	AE2-029 C	3.0342	80/20	3.0342
941011	AE2-092 C	10.1248	80/20	10.1248

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
942461	AE2-259 C O1	3.6732	80/20	3.6732
943571	AF1-028 O1	16.3520	80/20	16.3520
944071	AF1-075 C O1	4.3944	80/20	4.3944
946291	AF1-293 C O1	13.0557	80/20	13.0557
946591	AF1-323 C	3.0769	80/20	3.0769
958131	AF2-107 C	2.0472	80/20	2.0472
960111	AF2-302 C	1.1189	80/20	1.1189
961061	AF2-397 C	11.8318	80/20	11.8318
961101	AF2-401 C	-0.3764	Adder	-0.44
961801	AG1-022 C	1.1189	80/20	1.1189
962741	AG1-123 C O1	2.2471	80/20	2.2471
962881	AG1-137 C	3.9340	80/20	3.9340
963021	AG1-151 O1	8.1760	80/20	8.1760
963461	AG1-195	14.1540	80/20	14.1540
963471	AG1-196 O1	17.9835	80/20	17.9835
963631	AG1-214 C	0.8133	80/20	0.8133
964231	AG1-284 C O1	5.0064	80/20	5.0064
964621	AG1-325 C O1	3.4039	80/20	3.4039
964831	AG1-346 C	0.7638	80/20	0.7638
965531	AG1-421 C	12.9156	80/20	12.9156
965541	AG1-422	5.3815	80/20	5.3815
965581	AG1-426	2.0016	80/20	2.0016
965641	AG1-432 C O1	7.3464	80/20	7.3464
965831	AG1-451	1.2244	80/20	1.2244
966251	AG1-494 C	1.0572	80/20	1.0572
966671	AG1-537 C	4.1894	80/20	4.1894
966791	AG1-550 O1	6.2366	80/20	6.2366
966851	AG1-556	9.4770	80/20	9.4770
966861	AG1-557 C O1 (Withdrawn : 12/14/2020)	0.7346	80/20	0.7346
WEC	WEC	0.5582	Confirmed LTF	0.5582
LGEE	LGEE	1.1806	Confirmed LTF	1.1806
CPL	CPL	0.7262	Confirmed LTF	0.7262
CBM-W2	CBM-W2	16.5222	Confirmed LTF	16.5222
NY	NY	0.6299	Confirmed LTF	0.6299
TVA	TVA	2.6782	Confirmed LTF	2.6782
SIGE	SIGE	0.3493	Confirmed LTF	0.3493
CBM-S2	CBM-S2	15.7435	Confirmed LTF	15.7435
CBM-S1	CBM-S1	0.7247	Confirmed LTF	0.7247
MEC	MEC	2.8618	Confirmed LTF	2.8618
LAGN	LAGN	3.2428	Confirmed LTF	3.2428
CBM-W1	CBM-W1	24.0163	Confirmed LTF	24.0163

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
169506447	314765	6MTEAGLE	DVP	314749	6CHARLVL	DVP	1	314333 6POWHATN 230 933500 AC2-165 TAP 230 1	single	661.76	169.66	173.34	DC	24.37

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
313527	AB2-043 C	0.3899	80/20	0.3899
314429	3JTRSVLE	0.6081	80/20	0.6081
314572	3EMPORIA	0.1253	80/20	0.1253
314677	6BUCKING	0.9605	80/20	0.9605
314704	3LAWRENC	0.1286	80/20	0.1286
315153	1CLOVER1	6.8555	80/20	6.8555
315154	1CLOVER2	6.7871	80/20	6.7871
315158	1KERR 1	0.2163	80/20	0.2163
315159	1KERR 2	0.6056	80/20	0.6056
315160	1KERR 3	0.6056	80/20	0.6056
315161	1KERR 4	0.6056	80/20	0.6056
315162	1KERR 5	0.6056	80/20	0.6056
315163	1KERR 6	0.6056	80/20	0.6056
315164	1KERR 7	0.6056	80/20	0.6056
315191	1BEARGRDN G1	16.8015	80/20	16.8015
315192	1BEARGRDN G2	16.8015	80/20	16.8015
315193	1BEARGRDN S1	21.7276	80/20	21.7276
315266	1PLYWOOD A	0.6337	80/20	0.6337
316118	AC1-105 C	3.2095	80/20	3.2095
316123	AC1-075 C	0.3995	80/20	0.3995
316129	AC1-054 C	3.1893	80/20	3.1893
316131	AB2-060 C	1.1579	80/20	1.1579
924301	AB2-077 C O1 (Suspended)	1.5318	80/20	1.5318
924311	AB2-078 C O1 (Suspended)	1.5318	80/20	1.5318
924321	AB2-079 C O1 (Suspended)	1.5318	80/20	1.5318
925611	AC1-036 C	0.2579	80/20	0.2579
926023	AC1-080 C	0.1335	80/20	0.1335
926451	AC1-116 C	0.5713	80/20	0.5713
927251	AC1-221 C	0.7553	80/20	0.7553
927261	AC1-222 C	1.8201	80/20	1.8201
932511	AC2-071 C (Withdrawn : 01/22/2021)	0.9462	80/20	0.9462
932761	AC2-100 C	1.7381	80/20	1.7381
933501	AC2-165 C	31.7798	80/20	31.7798
934311	AD1-055 C	1.2637	80/20	1.2637
934341	AD1-058 C	1.8933	80/20	1.8933
934615	AD1-087 C	4.2927	80/20	4.2927

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
934625	AD1-088 C	14.0087	80/20	14.0087
934991	AD1-131 C	0.6208	80/20	0.6208
935171	AD1-152 C O1	4.7150	80/20	4.7150
935221	AD1-157 C	0.3677	80/20	0.3677
936265	AD2-033 C	13.9363	80/20	13.9363
936361	AD2-046 C O1	5.3660	80/20	5.3660
936485	AD2-063 C	13.8249	80/20	13.8249
937481	AD2-202 C O1	1.2573	80/20	1.2573
938371	AE1-056 C	10.0469	80/20	10.0469
938821	AE1-108 C O1	34.7022	80/20	34.7022
939181	AE1-148 C	5.3595	80/20	5.3595
940661	AE2-053 O1	1.9850	80/20	1.9850
941011	AE2-092 C	28.7092	80/20	28.7092
941791	AE2-182 C	2.2759	80/20	2.2759
942451	AE2-258	1.8436	80/20	1.8436
942461	AE2-259 C O1	18.4818	80/20	18.4818
942751	AE2-291 C	3.6916	80/20	3.6916
942761	AE2-292 C O1	4.5964	80/20	4.5964
943901	AF1-058 C	0.9986	80/20	0.9986
943911	AF1-059	9.4111	80/20	9.4111
945811	AF1-246 C O1	3.3281	80/20	3.3281
946281	AF1-292 C	0.4501	80/20	0.4501
946291	AF1-293 C O1	46.3226	80/20	46.3226
946301	AF1-294 C	6.1424	80/20	6.1424
946591	AF1-323 C	11.1045	80/20	11.1045
957481	AF2-042 C	23.7720	80/20	23.7720
958131	AF2-107 C	5.0062	80/20	5.0062
958211	AF2-115 C	3.6132	80/20	3.6132
958801	AF2-171 C	21.5901	80/20	21.5901
959311	AF2-222 C	19.7350	80/20	19.7350
959751	AF2-266	4.9210	80/20	4.9210
960061	AF2-297 C	3.9946	80/20	3.9946
960081	AF2-299 C	0.7586	80/20	0.7586
960111	AF2-302 C	4.0380	80/20	4.0380
961061	AF2-397 C	49.3795	80/20	49.3795
961791	AG1-021 C	2.8906	80/20	2.8906
961801	AG1-022 C	4.0380	80/20	4.0380
961891	AG1-030 C	20.0853	80/20	20.0853
962041	AG1-048 C	18.0660	80/20	18.0660
962441	AG1-093 C O1	8.5588	80/20	8.5588
962491	AG1-098 C O1	11.2860	80/20	11.2860
962561	AG1-105 C O1	5.6484	80/20	5.6484
962741	AG1-123 C O1	3.4609	80/20	3.4609
962751	AG1-124 C O1	3.7955	80/20	3.7955
963171	AG1-166 C	2.8906	80/20	2.8906
963181	AG1-167 C	2.8906	80/20	2.8906
963191	AG1-168 C	2.8906	80/20	2.8906
963201	AG1-169 C	2.8906	80/20	2.8906
963211	AG1-170 C	2.8906	80/20	2.8906
963271	AG1-176 C O1	18.8522	80/20	18.8522
963301	AG1-179 C	2.7231	80/20	2.7231
963311	AG1-180	1.3268	80/20	1.3268

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
963321	AG1-181 C O1	18.3438	80/20	18.3438
963361	AG1-185 O1	8.8752	80/20	8.8752
963641	AG1-215 C	1.3489	80/20	1.3489
964111	AG1-272 C	2.9313	80/20	2.9313
964121	AG1-273 C	2.9313	80/20	2.9313
964131	AG1-274 C	2.9313	80/20	2.9313
964231	AG1-284 C O1	20.2247	80/20	20.2247
964241	AG1-285 C O1	11.0228	80/20	11.0228
964261	AG1-287 C	0.7490	80/20	0.7490
964471	AG1-310 C	1.0445	80/20	1.0445
964791	AG1-342 C	2.5943	80/20	2.5943
964821	AG1-345 C	1.1533	80/20	1.1533
964841	AG1-347 C	11.8182	80/20	11.8182
964931	AG1-357 C	7.8312	80/20	7.8312
965191	AG1-384 C	2.9313	80/20	2.9313
965281	AG1-393 C	2.8906	80/20	2.8906
965451	AG1-413 C O1	3.9561	80/20	3.9561
965581	AG1-426	7.5604	80/20	7.5604
965591	AG1-427 C	10.5285	80/20	10.5285
965601	AG1-428 C O1	2.2733	80/20	2.2733
965641	AG1-432 C O1	36.9636	80/20	36.9636
965721	AG1-440 C	3.7881	80/20	3.7881
965731	AG1-441 C	3.7881	80/20	3.7881
965771	AG1-445	2.1887	80/20	2.1887
965781	AG1-446	2.1887	80/20	2.1887
965831	AG1-451	6.1606	80/20	6.1606
966251	AG1-494 C	1.8190	80/20	1.8190
966621	AG1-532 C	0.4096	80/20	0.4096
966691	AG1-539 C	1.9302	80/20	1.9302
966751	AG1-546 C	6.7407	80/20	6.7407
966791	AG1-550 O1	24.3684	80/20	24.3684
966861	AG1-557 C O1 (Withdrawn : 12/14/2020)	3.6964	80/20	3.6964
WEC	WEC	0.1332	Confirmed LTF	0.1332
LGEE	LGEE	0.2859	Confirmed LTF	0.2859
CPL	CPL	2.2666	Confirmed LTF	2.2666
CBM-W2	CBM-W2	7.4995	Confirmed LTF	7.4995
NY	NY	0.4413	Confirmed LTF	0.4413
TVA	TVA	1.5190	Confirmed LTF	1.5190
SIGE	SIGE	0.1431	Confirmed LTF	0.1431
CBM-S2	CBM-S2	26.1835	Confirmed LTF	26.1835
CBM-S1	CBM-S1	0.3690	Confirmed LTF	0.3690
MEC	MEC	0.9010	Confirmed LTF	0.9010
LAGN	LAGN	1.8743	Confirmed LTF	1.8743
AA2-074	AA2-074	1.4958	LTF	1.4958
CBM-W1	CBM-W1	5.2575	Confirmed LTF	5.2575

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
169814645	933500	AC2-165 TAP	DVP	314333	6POWHATN	DVP	1	314765 6MTEAGLE 230 966790 AG1-550 TAP 230 1	single	800.88	123.78	125.83	DC	16.45

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
313527	AB2-043 C	0.2811	80/20	0.2811
314429	3JTRSVLE	0.4835	80/20	0.4835
314677	6BUCKING	0.8051	80/20	0.8051
315153	1CLOVER1	4.3284	80/20	4.3284
315154	1CLOVER2	4.2852	80/20	4.2852
315158	1KERR 1	0.1411	80/20	0.1411
315159	1KERR 2	0.3952	80/20	0.3952
315160	1KERR 3	0.3952	80/20	0.3952
315161	1KERR 4	0.3952	80/20	0.3952
315162	1KERR 5	0.3952	80/20	0.3952
315163	1KERR 6	0.3952	80/20	0.3952
315164	1KERR 7	0.3952	80/20	0.3952
315191	1BEARGRDN G1	14.2615	80/20	14.2615
315192	1BEARGRDN G2	14.2615	80/20	14.2615
315193	1BEARGRDN S1	18.4429	80/20	18.4429
315266	1PLYWOOD A	0.4253	80/20	0.4253
316118	AC1-105 C	2.1876	80/20	2.1876
316131	AB2-060 C	0.8407	80/20	0.8407
924301	AB2-077 C O1 (Suspended)	1.0994	80/20	1.0994
924311	AB2-078 C O1 (Suspended)	1.0994	80/20	1.0994
924321	AB2-079 C O1 (Suspended)	1.0994	80/20	1.0994
925611	AC1-036 C	0.1990	80/20	0.1990
927261	AC1-222 C	1.2313	80/20	1.2313
932511	AC2-071 C (Withdrawn : 01/22/2021)	0.7932	80/20	0.7932
933501	AC2-165 C	39.2445	80/20	39.2445
934311	AD1-055 C	0.8549	80/20	0.8549
934615	AD1-087 C	2.7103	80/20	2.7103
934625	AD1-088 C	10.6986	80/20	10.6986
935171	AD1-152 C O1	2.9770	80/20	2.9770
935221	AD1-157 C	0.2946	80/20	0.2946
936265	AD2-033 C	10.6548	80/20	10.6548
936361	AD2-046 C O1	3.5828	80/20	3.5828
936485	AD2-063 C	10.3014	80/20	10.3014
937481	AD2-202 C O1	0.7939	80/20	0.7939
938371	AE1-056 C	8.0514	80/20	8.0514
938821	AE1-108 C O1	29.3769	80/20	29.3769

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
939181	AE1-148 C	3.5932	80/20	3.5932
940661	AE2-053 O1	1.3308	80/20	1.3308
941011	AE2-092 C	25.2830	80/20	25.2830
941791	AE2-182 C	1.7381	80/20	1.7381
942451	AE2-258	1.3292	80/20	1.3292
942461	AE2-259 C O1	15.0522	80/20	15.0522
943901	AF1-058 C	0.6646	80/20	0.6646
943911	AF1-059	5.9093	80/20	5.9093
946291	AF1-293 C O1	39.5443	80/20	39.5443
946301	AF1-294 C	4.8845	80/20	4.8845
946591	AF1-323 C	9.4261	80/20	9.4261
958131	AF2-107 C	4.3750	80/20	4.3750
958211	AF2-115 C	2.8733	80/20	2.8733
958801	AF2-171 C	17.1603	80/20	17.1603
959311	AF2-222 C	15.3100	80/20	15.3100
959751	AF2-266	3.1070	80/20	3.1070
960061	AF2-297 C	2.6582	80/20	2.6582
960111	AF2-302 C	3.4277	80/20	3.4277
961061	AF2-397 C	36.6545	80/20	36.6545
961791	AG1-021 C	2.2986	80/20	2.2986
961801	AG1-022 C	3.4277	80/20	3.4277
961891	AG1-030 C	15.8319	80/20	15.8319
962041	AG1-048 C	14.3663	80/20	14.3663
962441	AG1-093 C O1	5.8337	80/20	5.8337
962491	AG1-098 C O1	8.1622	80/20	8.1622
962561	AG1-105 C O1	3.5664	80/20	3.5664
962741	AG1-123 C O1	3.1842	80/20	3.1842
962751	AG1-124 C O1	3.5741	80/20	3.5741
963171	AG1-166 C	2.2986	80/20	2.2986
963181	AG1-167 C	2.2986	80/20	2.2986
963191	AG1-168 C	2.2986	80/20	2.2986
963201	AG1-169 C	2.2986	80/20	2.2986
963211	AG1-170 C	2.2986	80/20	2.2986
963271	AG1-176 C O1	14.5637	80/20	14.5637
963321	AG1-181 C O1	14.0576	80/20	14.0576
963361	AG1-185 O1	6.8014	80/20	6.8014
963641	AG1-215 C	1.0727	80/20	1.0727
964111	AG1-272 C	2.2621	80/20	2.2621
964121	AG1-273 C	2.2621	80/20	2.2621
964131	AG1-274 C	2.2621	80/20	2.2621
964231	AG1-284 C O1	17.0012	80/20	17.0012
964241	AG1-285 C O1	8.1450	80/20	8.1450
964261	AG1-287 C	0.4984	80/20	0.4984
964471	AG1-310 C	0.7118	80/20	0.7118
964791	AG1-342 C	1.8023	80/20	1.8023
964821	AG1-345 C	0.9169	80/20	0.9169
964841	AG1-347 C	9.1358	80/20	9.1358
965191	AG1-384 C	2.2621	80/20	2.2621
965281	AG1-393 C	2.2986	80/20	2.2986
965451	AG1-413 C O1	2.4841	80/20	2.4841
965581	AG1-426	6.4002	80/20	6.4002
965591	AG1-427 C	7.7911	80/20	7.7911

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
965641	AG1-432 C O1	30.1044	80/20	30.1044
965721	AG1-440 C	2.3620	80/20	2.3620
965731	AG1-441 C	2.3620	80/20	2.3620
965771	AG1-445	1.3647	80/20	1.3647
965781	AG1-446	1.3647	80/20	1.3647
965831	AG1-451	5.0174	80/20	5.0174
966251	AG1-494 C	1.6494	80/20	1.6494
966791	AG1-550 O1	16.4475	80/20	16.4475
966861	AG1-557 C O1 (Withdrawn : 12/14/2020)	3.0104	80/20	3.0104
WEC	WEC	0.1988	Confirmed LTF	0.1988
LGEE	LGEE	0.4247	Confirmed LTF	0.4247
CPL	CPL	1.0859	Confirmed LTF	1.0859
CBM-W2	CBM-W2	7.3114	Confirmed LTF	7.3114
NY	NY	0.3512	Confirmed LTF	0.3512
TVA	TVA	1.3104	Confirmed LTF	1.3104
SIGE	SIGE	0.1503	Confirmed LTF	0.1503
CBM-S2	CBM-S2	14.4907	Confirmed LTF	14.4907
CBM-S1	CBM-S1	0.3374	Confirmed LTF	0.3374
MEC	MEC	1.1075	Confirmed LTF	1.1075
LAGN	LAGN	1.5942	Confirmed LTF	1.5942
CBM-W1	CBM-W1	8.3419	Confirmed LTF	8.3419

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
164143259	938820	AE1-108 TAP	DVP	314746	4BREMO	DVP	1	DVP_P2-2: BREMO B1	bus	173.0	150.19	150.93	DC	2.41

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
935241	AD1-161 C	1.4796	Adder	1.74
935242	AD1-161 E	1.2151	Adder	1.43
938821	AE1-108 C O1	56.8031	50/50	56.8031
938822	AE1-108 E O1	25.4933	50/50	25.4933
946293	AF1-293 BAT	13.6367	50/50	13.6367
946591	AF1-323 C	18.1464	50/50	18.1464
946592	AF1-323 E	12.0976	50/50	12.0976
958131	AF2-107 C	8.0379	50/50	8.0379
958132	AF2-107 E	4.4046	50/50	4.4046
960111	AF2-302 C	6.5987	50/50	6.5987
960112	AF2-302 E	4.3991	50/50	4.3991
961063	AF2-397 BAT	4.2883	Merchant Transmission	4.2883
961801	AG1-022 C	6.5987	50/50	6.5987
961802	AG1-022 E	4.3991	50/50	4.3991
962741	AG1-123 C O1	5.3884	50/50	5.3884
962742	AG1-123 E O1	3.7548	50/50	3.7548
962751	AG1-124 C O1	2.6383	Adder	5.86
962752	AG1-124 E O1	1.8410	Adder	4.09
964531	AG1-316 C O1	1.4964	Adder	3.32
964532	AG1-316 E O1	0.3741	Adder	0.83
965581	AG1-426	12.3754	50/50	12.3754
966251	AG1-494 C	2.8536	50/50	2.8536
966252	AG1-494 E	4.2804	50/50	4.2804
966792	AG1-550 BAT	1.2748	Merchant Transmission	1.2748
WEC	WEC	0.1405	Confirmed LTF	0.1405
LGEE	LGEE	0.3041	Confirmed LTF	0.3041
CPL	CPL	0.3269	Confirmed LTF	0.3269
CBM-W2	CBM-W2	4.5786	Confirmed LTF	4.5786
NY	NY	0.1377	Confirmed LTF	0.1377
TVA	TVA	0.7826	Confirmed LTF	0.7826
O-066	O-066	2.0123	Confirmed LTF	2.0123
SIGE	SIGE	0.0819	Confirmed LTF	0.0819
CBM-S2	CBM-S2	5.8151	Confirmed LTF	5.8151
CBM-S1	CBM-S1	0.2071	Confirmed LTF	0.2071
G-007	G-007	0.3171	Confirmed LTF	0.3171
MEC	MEC	0.7468	Confirmed LTF	0.7468
LAGN	LAGN	0.9397	Confirmed LTF	0.9397
CBM-W1	CBM-W1	5.9445	Confirmed LTF	5.9445

## 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
167012534	941010	AE2-092 TAP	DVP	314774	3SHERWOD	DVP	1	DVP_P7-1: LN 5-2028-C	tower	208.0	109.72	111.44	DC	3.56

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
923862	AB2-026 E	0.2706	Adder	0.32
924032	AB2-045 E	0.4315	Adder	0.51
932512	AC2-071 E (Withdrawn : 01/22/2021)	0.4589	Adder	0.54
932854	AC2-112 C	-5.8435	Adder	-6.87
933501	AC2-165 C	2.8847	Adder	3.39
933502	AC2-165 E	2.1711	Adder	2.55
938562	AE1-075 E	0.2575	Adder	0.3
938821	AE1-108 C O1	10.9435	50/50	10.9435
938822	AE1-108 E O1	4.9115	50/50	4.9115
941011	AE2-092 C	30.5466	50/50	30.5466
941012	AE2-092 E	20.3644	50/50	20.3644
942461	AE2-259 C O1	2.8835	Adder	3.39
942462	AE2-259 E O1	1.9224	Adder	2.26
946291	AF1-293 C O1	26.9341	50/50	26.9341
946292	AF1-293 E O1	4.8452	50/50	4.8452
946591	AF1-323 C	3.4901	50/50	3.4901
946592	AF1-323 E	2.3267	50/50	2.3267
958501	AF2-144 C	0.4451	Adder	0.52
958502	AF2-144 E	0.2967	Adder	0.35
959531	AF2-244 C (Withdrawn : 01/06/2021)	0.4102	Adder	0.48
959532	AF2-244 E (Withdrawn : 01/06/2021)	0.2444	Adder	0.29
960111	AF2-302 C	1.2691	50/50	1.2691
960112	AF2-302 E	0.8461	50/50	0.8461
961061	AF2-397 C	7.9412	50/50	7.9412
961062	AF2-397 E	5.2941	50/50	5.2941
961801	AG1-022 C	1.2691	50/50	1.2691
961802	AG1-022 E	0.8461	50/50	0.8461
964231	AG1-284 C O1	7.0333	50/50	7.0333
964232	AG1-284 E O1	4.6889	50/50	4.6889
964623	AG1-325 BAT	1.7670	Merchant Transmission	1.7670
965581	AG1-426	2.3842	50/50	2.3842
965641	AG1-432 C O1	3.0566	Adder	6.78
965642	AG1-432 E O1	2.0377	Adder	4.52
965831	AG1-451	0.5094	Adder	1.13
966673	AG1-537 BAT	2.6505	Merchant Transmission	2.6505
966791	AG1-550 O1	3.5634	50/50	3.5634
966861	AG1-557 C O1 (Withdrawn : 12/14/2020)	0.3057	Adder	0.68

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
966862	AG1-557 E O1 (Withdrawn : 12/14/2020)	0.2038	Adder	0.45
WEC	WEC	0.0019	Confirmed LTF	0.0019
LGEE	LGEE	0.0057	Confirmed LTF	0.0057
CPL	CPL	0.5678	Confirmed LTF	0.5678
CBM-W2	CBM-W2	1.0304	Confirmed LTF	1.0304
NY	NY	0.0758	Confirmed LTF	0.0758
TVA	TVA	0.2506	Confirmed LTF	0.2506
O-066	O-066	0.8749	Confirmed LTF	0.8749
SIGE	SIGE	0.0162	Confirmed LTF	0.0162
CBM-S2	CBM-S2	6.1387	Confirmed LTF	6.1387
CBM-S1	CBM-S1	0.0562	Confirmed LTF	0.0562
G-007	G-007	0.1355	Confirmed LTF	0.1355
MEC	MEC	0.0699	Confirmed LTF	0.0699
LAGN	LAGN	0.3133	Confirmed LTF	0.3133

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
161959970	946590	AF1-323 TAP	AEP	242792	05SCOTSV	AEP	1	DVP_P2-2: BREMO B1	bus	167.0	109.45	110.22	DC	2.41

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
935241	AD1-161 C	1.4796	Adder	1.74
935242	AD1-161 E	1.2151	Adder	1.43
946293	AF1-293 BAT	13.6367	50/50	13.6367
946591	AF1-323 C	18.1464	50/50	18.1464
946592	AF1-323 E	12.0976	50/50	12.0976
958131	AF2-107 C	8.0379	50/50	8.0379
958132	AF2-107 E	4.4046	50/50	4.4046
960111	AF2-302 C	6.5987	50/50	6.5987
960112	AF2-302 E	4.3991	50/50	4.3991
961063	AF2-397 BAT	4.2883	Merchant Transmission	4.2883
961801	AG1-022 C	6.5987	50/50	6.5987
961802	AG1-022 E	4.3991	50/50	4.3991
962741	AG1-123 C O1	5.3884	50/50	5.3884
962742	AG1-123 E O1	3.7548	50/50	3.7548
962751	AG1-124 C O1	2.6383	Adder	5.86
962752	AG1-124 E O1	1.8410	Adder	4.09
964531	AG1-316 C O1	1.4964	Adder	3.32
964532	AG1-316 E O1	0.3741	Adder	0.83
965582	AG1-426 BAT	7.6246	50/50	7.6246
966251	AG1-494 C	2.8536	50/50	2.8536
966252	AG1-494 E	4.2804	50/50	4.2804
966792	AG1-550 BAT	1.2748	Merchant Transmission	1.2748
WEC	WEC	0.1405	Confirmed LTF	0.1405
LGEE	LGEE	0.3041	Confirmed LTF	0.3041
CPL	CPL	0.3269	Confirmed LTF	0.3269
CBM-W2	CBM-W2	4.5786	Confirmed LTF	4.5786
NY	NY	0.1377	Confirmed LTF	0.1377
TVA	TVA	0.7826	Confirmed LTF	0.7826
O-066	O-066	2.0123	Confirmed LTF	2.0123
SIGE	SIGE	0.0819	Confirmed LTF	0.0819
CBM-S2	CBM-S2	5.8151	Confirmed LTF	5.8151
CBM-S1	CBM-S1	0.2071	Confirmed LTF	0.2071
G-007	G-007	0.3171	Confirmed LTF	0.3171
MEC	MEC	0.7468	Confirmed LTF	0.7468
LAGN	LAGN	0.9397	Confirmed LTF	0.9397
CBM-W1	CBM-W1	5.9445	Confirmed LTF	5.9445

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
170089533	966790	AG1-550 TAP	DVP	314765	6MTEAGLE	DVP	1	314333 6POWHATN 230 933500 AC2-165 TAP 230 1	single	661.76	173.2	176.88	DC	24.37

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
313527	AB2-043 C	0.3899	80/20	0.3899
314429	3JTRSVLE	0.6081	80/20	0.6081
314572	3EMPORIA	0.1253	80/20	0.1253
314677	6BUCKING	0.9605	80/20	0.9605
314704	3LAWRENC	0.1287	80/20	0.1287
315153	1CLOVER1	6.8569	80/20	6.8569
315154	1CLOVER2	6.7885	80/20	6.7885
315158	1KERR 1	0.2163	80/20	0.2163
315159	1KERR 2	0.6058	80/20	0.6058
315160	1KERR 3	0.6058	80/20	0.6058
315161	1KERR 4	0.6058	80/20	0.6058
315162	1KERR 5	0.6058	80/20	0.6058
315163	1KERR 6	0.6058	80/20	0.6058
315164	1KERR 7	0.6058	80/20	0.6058
315191	1BEARGRDN G1	16.8024	80/20	16.8024
315192	1BEARGRDN G2	16.8024	80/20	16.8024
315193	1BEARGRDN S1	21.7287	80/20	21.7287
315266	1PLYWOOD A	0.6338	80/20	0.6338
316118	AC1-105 C	3.2102	80/20	3.2102
316123	AC1-075 C	0.3997	80/20	0.3997
316129	AC1-054 C	3.1902	80/20	3.1902
316131	AB2-060 C	1.1581	80/20	1.1581
924301	AB2-077 C O1 (Suspended)	1.5320	80/20	1.5320
924311	AB2-078 C O1 (Suspended)	1.5320	80/20	1.5320
924321	AB2-079 C O1 (Suspended)	1.5320	80/20	1.5320
925611	AC1-036 C	0.2580	80/20	0.2580
926023	AC1-080 C	0.1336	80/20	0.1336
927251	AC1-221 C	0.7557	80/20	0.7557
927261	AC1-222 C	1.8205	80/20	1.8205
932511	AC2-071 C (Withdrawn : 01/22/2021)	0.9463	80/20	0.9463
932761	AC2-100 C	1.7391	80/20	1.7391
933501	AC2-165 C	31.7815	80/20	31.7815
934311	AD1-055 C	1.2640	80/20	1.2640
934341	AD1-058 C	1.8944	80/20	1.8944
934615	AD1-087 C	4.2935	80/20	4.2935
934625	AD1-088 C	14.0108	80/20	14.0108

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
934991	AD1-131 C	0.6211	80/20	0.6211
935171	AD1-152 C O1	4.7160	80/20	4.7160
935221	AD1-157 C	0.3677	80/20	0.3677
936265	AD2-033 C	13.9386	80/20	13.9386
936361	AD2-046 C O1	5.3677	80/20	5.3677
936485	AD2-063 C	13.8276	80/20	13.8276
937481	AD2-202 C O1	1.2576	80/20	1.2576
938371	AE1-056 C	10.0480	80/20	10.0480
938821	AE1-108 C O1	34.7050	80/20	34.7050
939181	AE1-148 C	5.3606	80/20	5.3606
940661	AE2-053 O1	1.9854	80/20	1.9854
941011	AE2-092 C	28.7117	80/20	28.7117
941791	AE2-182 C	2.2763	80/20	2.2763
942451	AE2-258	1.8439	80/20	1.8439
942461	AE2-259 C O1	18.4836	80/20	18.4836
942751	AE2-291 C	3.6928	80/20	3.6928
942761	AE2-292 C O1	4.5979	80/20	4.5979
943901	AF1-058 C	0.9989	80/20	0.9989
943911	AF1-059	9.4131	80/20	9.4131
945811	AF1-246 C O1	3.3289	80/20	3.3289
946281	AF1-292 C	0.4503	80/20	0.4503
946291	AF1-293 C O1	46.3247	80/20	46.3247
946301	AF1-294 C	6.1432	80/20	6.1432
946591	AF1-323 C	11.1052	80/20	11.1052
957481	AF2-042 C	23.7780	80/20	23.7780
958131	AF2-107 C	5.0071	80/20	5.0071
958211	AF2-115 C	3.6137	80/20	3.6137
958801	AF2-171 C	21.5919	80/20	21.5919
959311	AF2-222 C	19.7380	80/20	19.7380
959751	AF2-266	4.9220	80/20	4.9220
960061	AF2-297 C	3.9955	80/20	3.9955
960081	AF2-299 C	0.7590	80/20	0.7590
960111	AF2-302 C	4.0382	80/20	4.0382
961061	AF2-397 C	49.3810	80/20	49.3810
961791	AG1-021 C	2.8909	80/20	2.8909
961801	AG1-022 C	4.0382	80/20	4.0382
961891	AG1-030 C	20.0871	80/20	20.0871
962041	AG1-048 C	18.0682	80/20	18.0682
962441	AG1-093 C O1	8.5606	80/20	8.5606
962491	AG1-098 C O1	11.2875	80/20	11.2875
962561	AG1-105 C O1	5.6502	80/20	5.6502
962741	AG1-123 C O1	3.4622	80/20	3.4622
962751	AG1-124 C O1	3.7973	80/20	3.7973
963171	AG1-166 C	2.8909	80/20	2.8909
963181	AG1-167 C	2.8909	80/20	2.8909
963191	AG1-168 C	2.8909	80/20	2.8909
963201	AG1-169 C	2.8909	80/20	2.8909
963211	AG1-170 C	2.8909	80/20	2.8909
963271	AG1-176 C O1	18.8540	80/20	18.8540
963301	AG1-179 C	2.7241	80/20	2.7241
963311	AG1-180	1.3273	80/20	1.3273
963321	AG1-181 C O1	18.3458	80/20	18.3458

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
963361	AG1-185 O1	8.8762	80/20	8.8762
963641	AG1-215 C	1.3491	80/20	1.3491
964111	AG1-272 C	2.9318	80/20	2.9318
964121	AG1-273 C	2.9318	80/20	2.9318
964131	AG1-274 C	2.9318	80/20	2.9318
964231	AG1-284 C O1	20.2255	80/20	20.2255
964241	AG1-285 C O1	11.0250	80/20	11.0250
964261	AG1-287 C	0.7492	80/20	0.7492
964471	AG1-310 C	1.0449	80/20	1.0449
964791	AG1-342 C	2.5948	80/20	2.5948
964821	AG1-345 C	1.1534	80/20	1.1534
964841	AG1-347 C	11.8194	80/20	11.8194
964931	AG1-357 C	7.8348	80/20	7.8348
965191	AG1-384 C	2.9318	80/20	2.9318
965281	AG1-393 C	2.8909	80/20	2.8909
965451	AG1-413 C O1	3.9569	80/20	3.9569
965581	AG1-426	7.5610	80/20	7.5610
965591	AG1-427 C	10.5299	80/20	10.5299
965601	AG1-428 C O1	2.2741	80/20	2.2741
965641	AG1-432 C O1	36.9672	80/20	36.9672
965721	AG1-440 C	3.7895	80/20	3.7895
965731	AG1-441 C	3.7895	80/20	3.7895
965771	AG1-445	2.1895	80/20	2.1895
965781	AG1-446	2.1895	80/20	2.1895
965831	AG1-451	6.1612	80/20	6.1612
966251	AG1-494 C	1.8194	80/20	1.8194
966621	AG1-532 C	0.4099	80/20	0.4099
966691	AG1-539 C	1.9309	80/20	1.9309
966751	AG1-546 C	6.7436	80/20	6.7436
966791	AG1-550 O1	24.3694	80/20	24.3694
966861	AG1-557 C O1 (Withdrawn : 12/14/2020)	3.6967	80/20	3.6967
WEC	WEC	0.1342	Confirmed LTF	0.1342
LGEE	LGEE	0.2878	Confirmed LTF	0.2878
CPL	CPL	2.2686	Confirmed LTF	2.2686
CBM-W2	CBM-W2	7.5264	Confirmed LTF	7.5264
NY	NY	0.4396	Confirmed LTF	0.4396
TVA	TVA	1.5232	Confirmed LTF	1.5232
SIGE	SIGE	0.1431	Confirmed LTF	0.1431
CBM-S2	CBM-S2	26.2148	Confirmed LTF	26.2148
CBM-S1	CBM-S1	0.3701	Confirmed LTF	0.3701
MEC	MEC	0.9057	Confirmed LTF	0.9057
LAGN	LAGN	1.8795	Confirmed LTF	1.8795
AA2-074	AA2-074	1.4972	LTF	1.4972
CBM-W1	CBM-W1	5.2996	Confirmed LTF	5.2996

## 11.7 Queue Dependencies

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

Queue Number	Project Name	Status
AA1-038	Lexington-Low Moor 230kV	Engineering and Procurement
AA2-074	CPLP-PJM	Confirmed
AB2-026	Powhatan 34.5kV	In Service
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
AC1-036	Twittys Creek 34.5kV	Partially in Service - Under Construction
AC1-054	Kerr Dam-Eatons Ferry 115 kV	Engineering and Procurement
AC1-075	Perth-Hickory Grove 115kV	Engineering and Procurement
AC1-076	Locust Grove-Paytes 115kV	Engineering and Procurement
AC1-080	Perth-Hickory Grove 115kV	Engineering and Procurement
AC1-105	Halifax-Mt. Laurel 115kV	Engineering and Procurement
AC1-116	Mount Eagle 34.5kV	Engineering and Procurement
AC1-120	Mitchell-Mountain Run 115kV	Engineering and Procurement
AC1-121	Mitchell-Mountain Run 115kV	Engineering and Procurement
AC1-143	Brandy-Remington 115kV	Engineering and Procurement
AC1-221	Halifax-Person 230kV	Engineering and Procurement
AC1-222	Crystal Hill-Halifax 115kV	Engineering and Procurement
AC2-071	Buckingham 35kV	Withdrawn
AC2-074	Mt. Jackson 35kV	Withdrawn
AC2-100	Halifax-Person 230kV	Engineering and Procurement
AC2-112	Stuarts Draft-Waynesboro 115kV	Engineering and Procurement
AC2-165	Bremo-Powhatan 230kV	Engineering and Procurement
AD1-055	Crystal Hill-Halifax 115 kV	Engineering and Procurement
AD1-058	Halifax-Person 230 kV	Engineering and Procurement
AD1-085	North Shenandoah-Stanley 34.5 kV	Engineering and Procurement
AD1-087	Clover-Sedge Hill 230 kV	Active
AD1-088	Briery-Clover 230 kV	Active
AD1-131	Sedge Hill-Person 230 kV	Engineering and Procurement
AD1-152	Clover-Sedge Hill 230 kV	Active
AD1-157	South Creek 34.5 kV	Engineering and Procurement
AD1-161	Stonewall-Long Mountain 69 kV	Active
AD2-033	Chase City-Lunenburg 115 kV	Active
AD2-046	Boydton DP-Kerr Dam 115 kV	Active
AD2-063	Central-Chase City 115kV	Active
AD2-202	Clover-Sedge Hill 230kV	Active

Queue Number	Project Name	Status
AE1-056	Red House-South Creek 115 kV	Active
AE1-075	Powhatan 34.5 kV	Engineering and Procurement
AE1-084	Barterbrook-Stuarts Draft 115 kV	Active
AE1-098	Endless Caverns 34.5 kV	Engineering and Procurement
AE1-099	Endless Caverns 34.kV	Engineering and Procurement
AE1-108	Bremo-Scottsville 138 kV	Active
AE1-148	Kerr Dam-Ridge Rd 115 kV	Active
AE1-154	Louisa-South Anna 230 kV	Engineering and Procurement
AE2-029	Grottoes-Merck 115kV	Active
AE2-053	Kerr Dam-Ridge Road 115 kV	Active
AE2-092	Kidds Store-Sherwood 115 kV	Active
AE2-182	Briery-Clover 230 kV	Active
AE2-258	Chase City 115 kV	Active
AE2-259	Curdsville-Willis Mtn 115 kV	Active
AE2-291	Grit DP-Perth 115 kV	Active
AE2-292	Grit DP-Perth 115 kV	Active
AF1-028	Endless Caverns 115 kV	Active
AF1-058	Welco 34.5 kV	Engineering and Procurement
AF1-059	Brodnax-South Hill 115 kV	Active
AF1-075	Harrisburg-Endless Caverns 230 kV	Active
AF1-246	Clover-Rawlings 500 kV	Active
AF1-292	Fields 34.5kV	Active
AF1-293	Kidds Store-Fort Union 115 kV	Active
AF1-294	Jetersville-Ponton 115 kV	Active
AF1-323	Scottsville-Colleen 138 kV	Active
AF2-042	Clover-Rawlings 500 kV	Active
AF2-107	Clifford 138 kV	Active
AF2-115	Jetersville-Ponton 115 kV	Active
AF2-144	Powhatan 34.5 kV	Active
AF2-171	Madisonville 115 kV	Active
AF2-222	Madisonville DP-Twitty's Creek 115 kV	Active
AF2-244	Powhatan 34.5 kV	Withdrawn
AF2-266	Clover 230 kV	Active
AF2-297	Sedge Hill 115 kV	Active
AF2-299	Fields 34.5 kV	Active
AF2-302	Scottsville-Colleen 138 kV	Active
AF2-397	Fork Union-Mt. Eagle 230 kV	Active
AF2-401	Culpeper 34.5 kV	Engineering and Procurement
AG1-021	Jetersville-Ponton 115 kV	Active
AG1-022	Scottsville-Colleen 138 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
AG1-098	Briery-Clover 230 kV	Active
AG1-105	Clover-Sedge Hill 230 kV	Active
AG1-123	Amherst-Riverville138 kV	Active
AG1-124	Gladstone 138 kV	Active
AG1-137	Harrisonburg 230 kV	Active
AG1-151	Endless Caverns 115 kV	Active
AG1-166	Lone Pine 115 kV	Active
AG1-167	Lone Pine 115 kV	Active
AG1-168	Lone Pine 115 kV	Active

Queue Number	Project Name	Status
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
AG1-195	Valley 230 kV	Active
AG1-196	Grottoes-Dooms 230 kV	Active
AG1-214	Grottoes 12.5 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
AG1-284	Bremo-Cunningham DP 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
AG1-316	Rustburg 138 kV	Active
AG1-325	Barterbrook-Stuarts Draft 115 kV	Active
AG1-342	Dryburg 115 kV	Active
AG1-345	Crewe 12.5 kV	Active
AG1-346	Mount Jackson DP 115 kV	Active
AG1-347	Briery DP-Clover 230 kV	Active
AG1-357	Clover-Rawlings 500 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
AG1-421	Lexington-Dooms 230 kV	Active
AG1-422	Lexington-Dooms 230 kV	Active
AG1-426	Bremo-Scottsville 138 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
AG1-494	Boxwood-Riverville 138 kV	Active
AG1-519	Cash's Corner 230 kV	Active
AG1-532	Fields 34.5 kV	Active
AG1-537	Barterbrook-Stuarts Draft 115 kV	Active
AG1-539	Grit DP-Perth 115 kV	Active
AG1-546	Ebony-Elams Road 115 kV	Active
AG1-550	Mount Eagle-Fork Union 230 kV	Active
AG1-556	Lexington 115 kV	Active
AG1-557	Curdsville DP 115 kV	Withdrawn
Z2-039	PF Hydro	In Service

## 11.8 Contingency Descriptions - Primary POI

Contingency Name	Contingency Definition
<b>DVP_P1-2: LN 553</b>	CONTINGENCY 'DVP_P1-2: LN 553' OPEN BRANCH FROM BUS 314908 TO BUS 314910 CKT 1 /* 8ELMONT 500.00 - 8CUNINGHAM 500.00 END
<b>DVP_P1-2: LN 2027</b>	CONTINGENCY 'DVP_P1-2: LN 2027' OPEN BRANCH FROM BUS 313868 TO BUS 314747 CKT 1 /* 6CARTERV 230.00 - 6BREMO 230.00 OPEN BRANCH FROM BUS 313868 TO BUS 933500 CKT 1 /* 6CARTERV 230.00 - AC2- 165 TAP 230.00 OPEN BRANCH FROM BUS 314310 TO BUS 314322 CKT 1 /* 6JUDES F 230.00 - 6MDLTHAN 230.00 OPEN BRANCH FROM BUS 314310 TO BUS 314333 CKT 1 /* 6JUDES F 230.00 - 6POWHATN 230.00 OPEN BRANCH FROM BUS 314333 TO BUS 933500 CKT 1 /* 6POWHATN 230.00 - AC2-165 TAP 230.00 OPEN BUS 313868 /* ISLAND: 6CARTERV 230.00 OPEN BUS 314310 /* ISLAND: 6JUDES F 230.00 OPEN BUS 314333 /* ISLAND: 6POWHATN 230.00 OPEN BUS 923862 /* ISLAND: AB2-026 E 230.00 OPEN BUS 938561 /* ISLAND: AE1-075 C 230.00 OPEN BUS 938562 /* ISLAND: AE1-075 E 230.00 OPEN BUS 933500 /* ISLAND: AC2-165 TAP 230.00 OPEN BUS 933501 /* ISLAND: AC2-165 C 230.00 OPEN BUS 933502 /* ISLAND: AC2-165 E 230.00 END
<b>DVP_P1-2: LN 550</b>	CONTINGENCY 'DVP_P1-2: LN 550' OPEN BRANCH FROM BUS 314917 TO BUS 314926 CKT 1 /* 8MT STM 500.00 - 8VALLEY 500.00 END
<b>DVP_P1-2: LN 2193</b>	CONTINGENCY 'DVP_P1-2: LN 2193' OPEN BRANCH FROM BUS 313707 TO BUS 313867 CKT 1 /* 6FORK UNION 230.00 - 6BREMODIST 230.00 OPEN BRANCH FROM BUS 313867 TO BUS 314747 CKT 1 /* 6BREMODIST 230.00 - 6BREMO 230.00 OPEN BUS 313867 /* ISLAND: 6BREMODIST 230.00 END

Contingency Name	Contingency Definition
<b>DVP_P2-2: BREMO B1</b>	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
<b>DVP_P1-2: LN 2028-B</b>	CONTINGENCY 'DVP_P1-2: LN 2028-B' OPEN BRANCH FROM BUS 966790 TO BUS 314765 CKT 1 /* AF2-397 TAP 230.00 - 6MTEAGLE 230.00 OPEN BRANCH FROM BUS 314749 TO BUS 314765 CKT 1 /* 6CHARLVL 230.00 - 6MTEAGLE 230.00 OPEN BUS 314765 /* ISLAND: 6MTEAGLE 230.00 OPEN BUS 926451 /* ISLAND: AC1-116 C 230.00 OPEN BUS 926452 /* ISLAND: AC1-116 E 230.00 END
<b>Base Case</b>	
<b>DVP_P7-1: LN 5-2028-C</b>	CONTINGENCY 'DVP_P7-1: LN 5-2028-C' /* . OPEN BRANCH FROM BUS 314744 TO BUS 314754 CKT 1 /* 3BREMO 115.00 - 3CUNNING 115.00 OPEN BUS 314754 /* ISLAND: 3CUNNING 115.00 OPEN BRANCH FROM BUS 966790 TO BUS 314765 CKT 1 /* AG1-550 TAP 230.00 - 6MTEAGLE 230.00 OPEN BRANCH FROM BUS 314749 TO BUS 314765 CKT 1 /* 6CHARLVL 230.00 - 6MTEAGLE 230.00 OPEN BUS 314765 /* ISLAND: 6MTEAGLE 230.00 OPEN BUS 926451 /* ISLAND: AC1-116 C 230.00 OPEN BUS 926452 /* ISLAND: AC1-116 E 230.00 END

Contingency Name	Contingency Definition
<b>314765 6MTEAGLE 230 966790 AG1-550 TAP 230 1</b>	CONTINGENCY '314765 6MTEAGLE 230 966790 AG1-550 TAP 230 1' OPEN BRANCH FROM BUS 314765 TO BUS 966790 CKT 1 END
<b>314333 6POWHATN 230 933500 AC2-165 TAP 230 1</b>	CONTINGENCY '314333 6POWHATN 230 933500 AC2-165 TAP 230 1' OPEN BRANCH FROM BUS 314333 TO BUS 933500 CKT 1 END

## 12 Short Circuit Analysis - Primary POI

The following Breakers are overdutied:

None

### 12.1 System Reinforcements - Short Circuit

None

### **13 Summer Peak - Load Flow Analysis - Secondary POI**

The Queue Project AG1-550 was evaluated as a 35.0 MW (Capacity 35.0 MW) injection at the Cunningham 115 kV substation in the Dominion area. Project AG1-550 was evaluated for compliance with applicable reliability planning criteria (PJM, NERC, NERC Regional Reliability Councils, and Transmission Owners). Project AG1-550 was studied with a commercial probability of 53.0 %. Potential network impacts were as follows:

### 13.1 Generation Deliverability

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

ID	FROM BUS#	FROM BUS	kV	FROM BUS AREA	TO BUS#	TO BUS	kV	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC DC	MW IMPACT
168584886	313708	3FORK UNION	115.0	DVP	313707	6FORK UNION	230.0	DVP	1	DVP_P1-2: LN 2193	single	269.779998779	99.18	103.66	DC	12.08

### 13.2 Multiple Facility Contingency

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

ID	FROM BUS#	FROM BUS	kV	FROM BUS AREA	TO BUS#	TO BUS	kV	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC DC	MW IMPACT
172742860	962750	AG1-124 TAP	138.0	AEP	242772	05RIVERV	138.0	AEP	1	DVP_P2-2: BREMO B4	bus	251.0	96.65	103.09	DC	16.15
174133929	962750	AG1-124 TAP	138.0	AEP	242772	05RIVERV	138.0	AEP	1	DVP_P4-2: 422	breaker	251.0	96.65	103.09	DC	16.15

### 13.3 Contribution to Previously Identified Overloads

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

ID	FROM BUS#	FROM BUS	kV	FROM BUS AREA	TO BUS#	TO BUS	kV	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC DC	MW IMPACT
161959997	242563	05BOXWD	138.0	AEP	246229	05REUSEN S2	138.0	AEP	1	DVP_P2-2: BREMO B4	bus	167.0	122.21	131.7	DC	15.84
174133780	242563	05BOXWD	138.0	AEP	246229	05REUSEN S2	138.0	AEP	1	DVP_P4-2: 422	breaker	167.0	122.21	131.7	DC	15.84
161959824	242603	05CLIFFR	138.0	AEP	242563	05BOXWD	138.0	AEP	1	DVP_P2-2: BREMO B4	bus	167.0	187.49	208.44	DC	35.0
173942462	242603	05CLIFFR	138.0	AEP	242563	05BOXWD	138.0	AEP	1	DVP_P4-2: 422	breaker	167.0	187.49	208.44	DC	35.0
161959872	242613	05COLLEEN SS	138.0	AEP	242603	05CLIFFR	138.0	AEP	1	DVP_P2-2: BREMO B4	bus	167.0	163.29	184.25	DC	35.0
173942483	242613	05COLLEEN SS	138.0	AEP	242603	05CLIFFR	138.0	AEP	1	DVP_P4-2: 422	breaker	167.0	163.29	184.25	DC	35.0
161959399	242792	05SCOTSV	138.0	AEP	938820	AE1-108 TAP	138.0	DVP	1	DVP_P2-2: BREMO B1	bus	167.0	107.08	111.46	DC	7.32
163941879	242792	05SCOTSV	138.0	AEP	938820	AE1-108 TAP	138.0	DVP	1	AEP_P4_#15069_05J OSHUA 138_F1	breaker	167.0	109.21	111.51	DC	3.85
163941883	242792	05SCOTSV	138.0	AEP	938820	AE1-108 TAP	138.0	DVP	1	DVP_P4-2: 202722	breaker	167.0	107.12	111.5	DC	7.32
172742684	242792	05SCOTSV	138.0	AEP	946590	AF1-323 TAP	138.0	AEP	1	DVP_P2-2: BREMO B4	bus	167.0	114.55	135.51	DC	35.0
173750580	242792	05SCOTSV	138.0	AEP	938820	AE1-108 TAP	138.0	DVP	1	DVP_P4-2: 210622	breaker	167.0	107.08	111.46	DC	7.32
173750581	242792	05SCOTSV	138.0	AEP	938820	AE1-108 TAP	138.0	DVP	1	DVP_P4-2: 29822	breaker	167.0	107.02	111.4	DC	7.32
173750582	242792	05SCOTSV	138.0	AEP	938820	AE1-108 TAP	138.0	DVP	1	DVP_P4-2: 219322	breaker	167.0	106.24	110.63	DC	7.32
173942565	242792	05SCOTSV	138.0	AEP	946590	AF1-323 TAP	138.0	AEP	1	DVP_P4-2: 422	breaker	167.0	114.55	135.51	DC	35.0

ID	FRO M BUS#	FROM BUS	kV	FRO M BUS ARE A	TO BUS#	TO BUS	kV	TO BUS ARE A	CK T ID	CONT NAME	Type	Rating MVA	PRE PROJE CT LOADI NG %	POST PROJE CT LOADI NG %	AC  DC	MW IMPA CT
161959 864	2444 23	05JAMES RIVR	138 .0	AEP	2426 13	05COLLEE N SS	138 .0	AEP	1	DVP_P2-2: BREMO B4	bus	167.0	165.51	186.47	DC	35.0
173942 481	2444 23	05JAMES RIVR	138 .0	AEP	2426 13	05COLLEE N SS	138 .0	AEP	1	DVP_P4-2: 422	break er	167.0	165.51	186.47	DC	35.0
161959 854	2444 46	05SOAPST ONE	138 .0	AEP	2444 23	05JAMES RIVR	138 .0	AEP	1	DVP_P2-2: BREMO B4	bus	167.0	168.44	189.4	DC	35.0
173942 477	2444 46	05SOAPST ONE	138 .0	AEP	2444 23	05JAMES RIVR	138 .0	AEP	1	DVP_P4-2: 422	break er	167.0	168.44	189.4	DC	35.0
168584 639	3137 07	6FORK UNION	230 .0	DVP	9610 60	AF2-397 TAP	230 .0	DVP	1	314333 6POWHATN 230 933500 AC2-165 TAP 230 1	single	661.760009 766	167.82	170.37	DC	16.86
168584 642	3137 07	6FORK UNION	230 .0	DVP	9610 60	AF2-397 TAP	230 .0	DVP	1	Base Case	single	661.760009 766	114.0	115.82	DC	12.19
174346 885	3138 68	6CARTERV	230 .0	DVP	9335 00	AC2-165 TAP	230 .0	DVP	1	DVP_P4-2: 2028T2054	break er	980.0	118.77	120.23	DC	14.22
175605 020	3138 68	6CARTERV	230 .0	DVP	9335 00	AC2-165 TAP	230 .0	DVP	1	DVP_P1-2: LN 2028- B-1	single	800.880004 883	120.59	122.37	DC	14.21
174346 830	3143 10	6JUDES F	230 .0	DVP	3143 22	6MDLTHA N	230 .0	DVP	1	DVP_P4-2: 2028T2054	break er	980.0	126.95	128.4	DC	14.22
175342 144	3143 10	6JUDES F	230 .0	DVP	3143 22	6MDLTHA N	230 .0	DVP	1	DVP_P1-2: LN 2028- B-1	single	800.880004 883	126.36	128.14	DC	14.2
174133 784	3143 33	6POWHAT N	230 .0	DVP	3143 10	6JUDES F	230 .0	DVP	1	DVP_P4-2: 2028T2054	break er	980.0	127.05	128.5	DC	14.22
175342 141	3143 33	6POWHAT N	230 .0	DVP	3143 10	6JUDES F	230 .0	DVP	1	DVP_P1-2: LN 2028- B-1	single	800.880004 883	126.5	128.27	DC	14.2
164143 349	3147 46	4BREMO	138 .0	DVP	3147 44	3BREMO	115 .0	DVP	1	DVP_P2-2: BREMO B1	bus	228.0	116.61	119.82	DC	7.32
174511 268	3147 46	4BREMO	138 .0	DVP	3147 44	3BREMO	115 .0	DVP	1	DVP_P4-2: 210622	break er	228.0	116.61	119.82	DC	7.32
174511 269	3147 46	4BREMO	138 .0	DVP	3147 44	3BREMO	115 .0	DVP	1	DVP_P4-2: 29822	break er	228.0	116.57	119.78	DC	7.32
174346 878	3147 47	6BREMO	230 .0	DVP	3138 68	6CARTERV	230 .0	DVP	1	DVP_P4-2: 2028T2054	break er	980.0	119.92	121.37	DC	14.22
175605 008	3147 47	6BREMO	230 .0	DVP	3138 68	6CARTERV	230 .0	DVP	1	DVP_P1-2: LN 2028- B-1	single	800.880004 883	122.0	123.78	DC	14.21
169506 447	3147 65	6MTEAGLE	230 .0	DVP	3147 49	6CHARLVL	230 .0	DVP	1	314333 6POWHATN 230 933500 AC2-165 TAP 230 1	single	661.760009 766	171.69	174.24	DC	16.86
169506 450	3147 65	6MTEAGLE	230 .0	DVP	3147 49	6CHARLVL	230 .0	DVP	1	Base Case	single	661.760009 766	116.36	118.17	DC	12.19
174346 843	9335 00	AC2-165 TAP	230 .0	DVP	3143 33	6POWHAT N	230 .0	DVP	1	DVP_P4-2: 2028T2054	break er	980.0	125.73	127.18	DC	14.22
175342 152	9335 00	AC2-165 TAP	230 .0	DVP	3143 33	6POWHAT N	230 .0	DVP	1	DVP_P1-2: LN 2028- B-1	single	800.880004 883	125.42	127.19	DC	14.21
164143 259	9388 20	AE1-108 TAP	138 .0	DVP	3147 46	4BREMO	138 .0	DVP	1	DVP_P2-2: BREMO B1	bus	173.0	153.68	157.91	DC	7.32
164143 260	9388 20	AE1-108 TAP	138 .0	DVP	3147 46	4BREMO	138 .0	DVP	1	DVP_P2-2: DOOMS B2	bus	173.0	142.75	145.45	DC	4.67
167012 435	9388 20	AE1-108 TAP	138 .0	DVP	3147 46	4BREMO	138 .0	DVP	1	DVP_P7-1: LN 2106- 2111	towe r	173.0	154.9	157.35	DC	4.24
167012 436	9388 20	AE1-108 TAP	138 .0	DVP	3147 46	4BREMO	138 .0	DVP	1	DVP_P7-1: LN 555- 2168-A	towe r	173.0	146.56	149.04	DC	4.28
170808 227	9388 20	AE1-108 TAP	138 .0	DVP	2427 92	05SCOTSV	138 .0	AEP	1	DVP_P2-2: BREMO B4	bus	167.0	120.54	141.5	DC	35.0
173206 148	9388 20	AE1-108 TAP	138 .0	DVP	3147 46	4BREMO	138 .0	DVP	1	DVP_P7-1: LN 555- 2168-B	towe r	173.0	146.56	149.04	DC	4.28
173750 496	9388 20	AE1-108 TAP	138 .0	DVP	2427 92	05SCOTSV	138 .0	AEP	1	DVP_P4-2: 422	break er	167.0	120.54	141.5	DC	35.0
174346 740	9388 20	AE1-108 TAP	138 .0	DVP	3147 46	4BREMO	138 .0	DVP	1	DVP_P4-2: 2106T2111	break er	173.0	154.9	157.35	DC	4.24
174959 175	9410 10	AE2-092 TAP	115 .0	DVP	3147 74	3SHERWO D	115 .0	DVP	1	DVP_P1-2: LN 2028- B-1	single	169.199996 948	110.79	113.95	DC	5.35
161959 846	9465 90	AF1-323 TAP	138 .0	AEP	2444 46	05SOAPST ONE	138 .0	AEP	1	DVP_P2-2: BREMO B4	bus	167.0	171.44	192.4	DC	35.0
161959 970	9465 90	AF1-323 TAP	138 .0	AEP	2427 92	05SCOTSV	138 .0	AEP	1	DVP_P2-2: BREMO B1	bus	167.0	113.07	117.45	DC	7.32

ID	FROM BUS#	FROM BUS	kV	FROM BUS AREA	TO BUS#	TO BUS	kV	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC/DC	MW IMPACT
173942475	946590	AF1-323 TAP	138.0	AEP	244446	05SOAPSTONE	138.0	AEP	1	DVP_P4-2: 422	breaker	167.0	171.44	192.4	DC	35.0
173942653	946590	AF1-323 TAP	138.0	AEP	242792	05SCOTSV	138.0	AEP	1	DVP_P4-2: 29822	breaker	167.0	113.01	117.39	DC	7.32
175165295	961060	AF2-397 TAP	230.0	DVP	314765	6MTEAGLE	230.0	DVP	1	314333 6POWHATN 230 933500 AC2-165 TAP 230 1	single	661.760009766	175.22	177.77	DC	16.86
175165297	961060	AF2-397 TAP	230.0	DVP	314765	6MTEAGLE	230.0	DVP	1	Base Case	single	661.760009766	119.89	121.7	DC	12.19

### 13.4 Potential Congestion due to Local Energy Deliverability

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

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

ID	FROM BUS#	FROM BUS	kV	FROM BUS AREA	TO BUS#	TO BUS	kV	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC/DC	MW IMPACT
163942202	242792	05SCOTSV	138.0	AEP	938820	AE1-108 TAP	138.0	DVP	1	AEP_P2-1_242515 05JOSHUA 765 247669 05JOSHUA 1EQ 999 1	operation	167.0	106.71	109.01	DC	3.85
163942203	242792	05SCOTSV	138.0	AEP	938820	AE1-108 TAP	138.0	DVP	1	AEP_P2-1_247670 05JOSHUA_XFL 138 247669 05JOSHUA 1EQ 999 1	operation	167.0	106.71	109.01	DC	3.85
163942204	242792	05SCOTSV	138.0	AEP	938820	AE1-108 TAP	138.0	DVP	1	AEP_P2-1_242688 05JOSHUA 138 247670 05JOSHUA_XFL 138 1	operation	167.0	106.71	109.01	DC	3.85
163942205	242792	05SCOTSV	138.0	AEP	938820	AE1-108 TAP	138.0	DVP	1	AEP_P1-3_#1372_05JOSHUA 765_1	operation	167.0	106.71	109.01	DC	3.85
168584637	313707	6FORK UNION	230.0	DVP	961060	AF2-397 TAP	230.0	DVP	1	314333 6POWHATN 230 933500 AC2-165 TAP 230 1	operation	661.760009766	202.36	204.91	DC	16.86
168584641	313707	6FORK UNION	230.0	DVP	961060	AF2-397 TAP	230.0	DVP	1	Base Case	operation	661.760009766	138.19	140.03	DC	12.19
168584885	313708	3FORK UNION	115.0	DVP	313707	6FORK UNION	230.0	DVP	1	DVP_P1-2: LN 2193	operation	269.779998779	125.98	130.48	DC	12.08
175605019	313868	6CARTER V	230.0	DVP	933500	AC2-165 TAP	230.0	DVP	1	DVP_P1-2: LN 2028-B-1	operation	800.880004883	144.71	146.48	DC	14.21
175342143	314310	6JUDES F	230.0	DVP	314322	6MDLTH AN	230.0	DVP	1	DVP_P1-2: LN 2028-B-1	operation	800.880004883	155.04	156.81	DC	14.2

ID	FROM BUS#	FROM BUS	kV	FROM BUS AREA	TO BUS#	TO BUS	kV	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC/D C	MW IMPACT
175342140	314333	6POWHA TN	230.0	DVP	314310	6JUDES F	230.0	DVP	1	DVP_P1-2: LN 2028-B-1	operation	800.880004883	155.17	156.95	DC	14.2
169292159	314677	6BUCKIN G	230.0	DVP	314747	6BREMO	230.0	DVP	1	Base Case	operation	571.520019531	203.9	204.97	DC	6.11
175165236	314692	6FARMVI L	230.0	DVP	966860	AG1-557 TAP	230.0	DVP	1	Base Case	operation	559.299987793	205.83	206.93	DC	6.11
169506706	314744	3BREMO	115.0	DVP	313708	3FORK UNION	115.0	DVP	1	DVP_P1-2: LN 2193	operation	414.540008545	120.12	123.97	DC	15.92
169506631	314746	4BREMO	138.0	DVP	314744	3BREMO	115.0	DVP	1	Base Case	operation	186.119995117	128.76	131.04	DC	4.23
174759139	314746	4BREMO	138.0	DVP	314744	3BREMO	115.0	DVP	1	PJM_PLANT BEAR GARDEN	operation	205.86000061	130.5	132.56	DC	4.23
169506473	314747	6BREMO	230.0	DVP	314744	3BREMO	115.0	DVP	1	DVP_P1-2: LN 2193	operation	269.779998779	190.32	195.83	DC	14.85
175605007	314747	6BREMO	230.0	DVP	313868	6CARTER V	230.0	DVP	1	DVP_P1-2: LN 2028-B-1	operation	800.880004883	146.12	147.9	DC	14.21
175342289	314763	3KIDDST O	115.0	DVP	941010	AE2-092 TAP	115.0	DVP	1	DVP_P1-2: LN 2028-B-1	operation	169.199996948	104.48	107.65	DC	5.35
169506445	314765	6MTEAGL E	230.0	DVP	314749	6CHARLV L	230.0	DVP	1	314333 6POWHA TN 230 933500 AC2-165 TAP 230 1	operation	661.760009766	203.1	205.65	DC	16.86
169506449	314765	6MTEAGL E	230.0	DVP	314749	6CHARLV L	230.0	DVP	1	Base Case	operation	661.760009766	140.65	142.49	DC	12.19
175342151	933500	AC2-165 TAP	230.0	DVP	314333	6POWHA TN	230.0	DVP	1	DVP_P1-2: LN 2028-B-1	operation	800.880004883	153.22	155.0	DC	14.21
169506520	938820	AE1-108 TAP	138.0	DVP	314746	4BREMO	138.0	DVP	1	Base Case	operation	156.979995728	152.66	155.36	DC	4.23
174959174	941010	AE2-092 TAP	115.0	DVP	314774	3SHERW OD	115.0	DVP	1	DVP_P1-2: LN 2028-B-1	operation	169.199996948	134.51	137.68	DC	5.35
175165535	946590	AF1-323 TAP	138.0	AEP	242792	05SCOTS V	138.0	AEP	1	AEP_P1-3_#1372_05JOS HUA 765_1	operation	167.0	112.69	115.0	DC	3.85
175165294	961060	AF2-397 TAP	230.0	DVP	314765	6MTEAGL E	230.0	DVP	1	314333 6POWHA TN 230 933500 AC2-165 TAP 230 1	operation	661.760009766	211.19	213.73	DC	16.86
175165296	961060	AF2-397 TAP	230.0	DVP	314765	6MTEAGL E	230.0	DVP	1	Base Case	operation	661.760009766	144.1	145.94	DC	12.19
175165244	966860	AG1-557 TAP	230.0	DVP	314677	6BUCKIN G	230.0	DVP	1	Base Case	operation	559.299987793	204.74	205.83	DC	6.11

### 13.5 Flow Gate Details - Secondary POI

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

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### 13.5.1 Index 1

ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC DC	MW IMPACT
168584886	313708	3FORK UNION	DVP	313707	6FORK UNION	DVP	1	DVP_P1-2: LN 2193	single	269.78	99.18	103.66	DC	12.08

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
314333	6POWHATN	0.1733	80/20	0.1733
314429	3JTRSVLE	0.1796	80/20	0.1796
314677	6BUCKING	0.2697	80/20	0.2697
315191	1BEARGRDN G1	4.6623	80/20	4.6623
315192	1BEARGRDN G2	4.6623	80/20	4.6623
315193	1BEARGRDN S1	6.0293	80/20	6.0293
925611	AC1-036 C	0.0783	80/20	0.0783
932511	AC2-071 C (Withdrawn : 01/22/2021)	0.2657	80/20	0.2657
933501	AC2-165 C	5.2816	80/20	5.2816
934625	AD1-088 C	4.2512	80/20	4.2512
935221	AD1-157 C	0.1078	80/20	0.1078
936265	AD2-033 C	4.2674	80/20	4.2674
938371	AE1-056 C	2.9461	80/20	2.9461
938561	AE1-075 C	0.1507	80/20	0.1507
938821	AE1-108 C O1	24.7842	80/20	24.7842
941011	AE2-092 C	23.5202	80/20	23.5202
941791	AE2-182 C	0.6907	80/20	0.6907
942461	AE2-259 C O1	5.3346	80/20	5.3346
946291	AF1-293 C O1	37.6994	80/20	37.6994
946301	AF1-294 C	1.8146	80/20	1.8146
946591	AF1-323 C	7.9167	80/20	7.9167
958131	AF2-107 C	3.5026	80/20	3.5026
958211	AF2-115 C	1.0674	80/20	1.0674
958501	AF2-144 C	0.8117	80/20	0.8117
958801	AF2-171 C	6.3810	80/20	6.3810
959311	AF2-222 C	5.9650	80/20	5.9650
959531	AF2-244 C (Withdrawn : 01/06/2021)	0.7481	80/20	0.7481
960111	AF2-302 C	2.8788	80/20	2.8788
961791	AG1-021 C	0.8539	80/20	0.8539
961801	AG1-022 C	2.8788	80/20	2.8788
961891	AG1-030 C	5.9832	80/20	5.9832
962041	AG1-048 C	5.3370	80/20	5.3370
963171	AG1-166 C	0.8539	80/20	0.8539
963181	AG1-167 C	0.8539	80/20	0.8539
963191	AG1-168 C	0.8539	80/20	0.8539
963201	AG1-169 C	0.8539	80/20	0.8539
963211	AG1-170 C	0.8539	80/20	0.8539
963271	AG1-176 C O2	7.7223	80/20	7.7223
963321	AG1-181 C O2	5.6944	80/20	5.6944
963361	AG1-185 O2	2.7551	80/20	2.7551

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
963641	AG1-215 C	0.3985	80/20	0.3985
964111	AG1-272 C	0.8902	80/20	0.8902
964121	AG1-273 C	0.8902	80/20	0.8902
964131	AG1-274 C	0.8902	80/20	0.8902
964231	AG1-284 C O2	14.4967	80/20	14.4967
964821	AG1-345 C	0.3408	80/20	0.3408
964841	AG1-347 C	3.5526	80/20	3.5526
965191	AG1-384 C	0.8902	80/20	0.8902
965281	AG1-393 C	0.8539	80/20	0.8539
965581	AG1-426	5.3996	80/20	5.3996
965641	AG1-432 C O2	10.6692	80/20	10.6692
965831	AG1-451	1.7782	80/20	1.7782
966251	AG1-494 C	1.2412	80/20	1.2412
966791	AG1-550 O2	12.0806	80/20	12.0806
966861	AG1-557 C O2 (Withdrawn : 12/14/2020)	1.4184	80/20	1.4184
WEC	WEC	0.0564	Confirmed LTF	0.0564
LGEE	LGEE	0.1213	Confirmed LTF	0.1213
CPL	CPL	0.9596	Confirmed LTF	0.9596
CBM-W2	CBM-W2	3.2077	Confirmed LTF	3.2077
NY	NY	0.1709	Confirmed LTF	0.1709
TVA	TVA	0.6524	Confirmed LTF	0.6524
SIGE	SIGE	0.0568	Confirmed LTF	0.0568
CBM-S2	CBM-S2	11.1604	Confirmed LTF	11.1604
CBM-S1	CBM-S1	0.1581	Confirmed LTF	0.1581
MEC	MEC	0.3829	Confirmed LTF	0.3829
LAGN	LAGN	0.8033	Confirmed LTF	0.8033
CBM-W1	CBM-W1	2.2152	Confirmed LTF	2.2152

### 13.5.2 Index 2

ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC DC	MW IMPACT
174133929	962750	AG1-124 TAP	AEP	242772	05RIVERV	AEP	1	DVP_P4-2: 422	breaker	251.0	96.65	103.09	DC	16.15

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
938821	AE1-108 C O1	42.3547	50/50	42.3547
938822	AE1-108 E O1	19.0089	50/50	19.0089
946591	AF1-323 C	15.2255	50/50	15.2255
946592	AF1-323 E	10.1504	50/50	10.1504
958131	AF2-107 C	14.9026	50/50	14.9026
958132	AF2-107 E	8.1664	50/50	8.1664
960111	AF2-302 C	5.5366	50/50	5.5366
960112	AF2-302 E	3.6910	50/50	3.6910
961801	AG1-022 C	5.5366	50/50	5.5366
961802	AG1-022 E	3.6910	50/50	3.6910
962741	AG1-123 C O2	19.4436	50/50	19.4436
962742	AG1-123 E O2	13.5489	50/50	13.5489
962751	AG1-124 C O2	35.9950	50/50	35.9950
962752	AG1-124 E O2	25.1170	50/50	25.1170
964231	AG1-284 C O2	19.3780	50/50	19.3780
964232	AG1-284 E O2	12.9186	50/50	12.9186
965581	AG1-426	9.2276	50/50	9.2276
966251	AG1-494 C	9.6828	50/50	9.6828
966252	AG1-494 E	14.5242	50/50	14.5242
966791	AG1-550 O2	16.1483	50/50	16.1483
CPL	CPL	0.0785	Confirmed LTF	0.0785
G-007A	G-007A	0.0048	Confirmed LTF	0.0048
VFT	VFT	0.0129	Confirmed LTF	0.0129
CALDERWOOD	CALDERWOOD	0.0045	Confirmed LTF	0.0045
NY	NY	0.0006	Confirmed LTF	0.0006
PRAIRIE	PRAIRIE	0.0620	Confirmed LTF	0.0620
CBM-S2	CBM-S2	0.6160	Confirmed LTF	0.6160
CHEOAH	CHEOAH	0.0035	Confirmed LTF	0.0035
CBM-N	CBM-N	0.0024	Confirmed LTF	0.0024
COTTONWOOD	COTTONWOOD	0.0252	Confirmed LTF	0.0252
GIBSON	GIBSON	0.0169	Confirmed LTF	0.0169
BLUEG	BLUEG	0.0573	Confirmed LTF	0.0573
TRIMBLE	TRIMBLE	0.0184	Confirmed LTF	0.0184

### 13.5.3 Index 3

ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC DC	MW IMPACT
174133780	242563	05BOXWD	AEP	246229	05REUSENS2	AEP	1	DVP_P4-2: 422	breaker	167.0	122.21	131.7	DC	15.84

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
938821	AE1-108 C O1	41.5505	50/50	41.5505
938822	AE1-108 E O1	18.6479	50/50	18.6479
946591	AF1-323 C	14.9365	50/50	14.9365
946592	AF1-323 E	9.9576	50/50	9.9576
958131	AF2-107 C	14.6199	50/50	14.6199
958132	AF2-107 E	8.0116	50/50	8.0116
960111	AF2-302 C	5.4314	50/50	5.4314
960112	AF2-302 E	3.6210	50/50	3.6210
961801	AG1-022 C	5.4314	50/50	5.4314
961802	AG1-022 E	3.6210	50/50	3.6210
962741	AG1-123 C O2	10.5563	50/50	10.5563
962742	AG1-123 E O2	7.3560	50/50	7.3560
962751	AG1-124 C O2	17.1069	50/50	17.1069
962752	AG1-124 E O2	11.9371	50/50	11.9371
964231	AG1-284 C O2	19.0100	50/50	19.0100
964232	AG1-284 E O2	12.6734	50/50	12.6734
965581	AG1-426	9.0524	50/50	9.0524
966251	AG1-494 C	8.4900	50/50	8.4900
966252	AG1-494 E	12.7350	50/50	12.7350
966791	AG1-550 O2	15.8417	50/50	15.8417
WEC	WEC	0.0050	Confirmed LTF	0.0050
LGEE	LGEE	0.0113	Confirmed LTF	0.0113
CBM-W2	CBM-W2	0.1075	Confirmed LTF	0.1075
TVA	TVA	0.0140	Confirmed LTF	0.0140
O-066	O-066	0.0067	Confirmed LTF	0.0067
SIGE	SIGE	0.0019	Confirmed LTF	0.0019
CBM-S1	CBM-S1	0.0046	Confirmed LTF	0.0046
G-007	G-007	0.0010	Confirmed LTF	0.0010
HAMLET	HAMLET	0.0231	Confirmed LTF	0.0231
MEC	MEC	0.0238	Confirmed LTF	0.0238
LAGN	LAGN	0.0140	Confirmed LTF	0.0140
CATAWBA	CATAWBA	0.0070	Confirmed LTF	0.0070
CBM-W1	CBM-W1	0.2243	Confirmed LTF	0.2243

13.5.4 Index 4

ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC DC	MW IMPACT
173942462	242603	05CLIFFR	AEP	242563	05BOXWD	AEP	1	DVP_P4-2: 422	breaker	167.0	187.49	208.44	DC	35.0

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
938821	AE1-108 C O1	91.8000	50/50	91.8000
938822	AE1-108 E O1	41.2000	50/50	41.2000
946591	AF1-323 C	33.0000	50/50	33.0000
946592	AF1-323 E	22.0000	50/50	22.0000
958131	AF2-107 C	32.3000	50/50	32.3000
958132	AF2-107 E	17.7000	50/50	17.7000
960111	AF2-302 C	12.0000	50/50	12.0000
960112	AF2-302 E	8.0000	50/50	8.0000
961801	AG1-022 C	12.0000	50/50	12.0000
961802	AG1-022 E	8.0000	50/50	8.0000
964231	AG1-284 C O2	42.0000	50/50	42.0000
964232	AG1-284 E O2	28.0000	50/50	28.0000
965581	AG1-426	20.0000	50/50	20.0000
966791	AG1-550 O2	35.0000	50/50	35.0000

13.5.5 Index 5

ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC DC	MW IMPACT
173942483	242613	05COLLEEN SS	AEP	242603	05CLIFFR	AEP	1	DVP_P4-2: 422	breaker	167.0	163.29	184.25	DC	35.0

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
938821	AE1-108 C O1	91.8000	50/50	91.8000
938822	AE1-108 E O1	41.2000	50/50	41.2000
946591	AF1-323 C	33.0000	50/50	33.0000
946592	AF1-323 E	22.0000	50/50	22.0000
960111	AF2-302 C	12.0000	50/50	12.0000
960112	AF2-302 E	8.0000	50/50	8.0000
961801	AG1-022 C	12.0000	50/50	12.0000
961802	AG1-022 E	8.0000	50/50	8.0000
964231	AG1-284 C O2	42.0000	50/50	42.0000
964232	AG1-284 E O2	28.0000	50/50	28.0000
965581	AG1-426	20.0000	50/50	20.0000
966791	AG1-550 O2	35.0000	50/50	35.0000

### 13.5.6 Index 6

ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC DC	MW IMPACT
173750581	242792	05SCOTSV	AEP	938820	AE1-108 TAP	DVP	1	DVP_P4-2: 29822	breaker	167.0	107.02	111.4	DC	7.32

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
935241	AD1-161 C	1.4796	Adder	1.74
935242	AD1-161 E	1.2151	Adder	1.43
946293	AF1-293 BAT	13.6367	50/50	13.6367
946591	AF1-323 C	18.1464	50/50	18.1464
946592	AF1-323 E	12.0976	50/50	12.0976
958131	AF2-107 C	8.0379	50/50	8.0379
958132	AF2-107 E	4.4046	50/50	4.4046
960111	AF2-302 C	6.5987	50/50	6.5987
960112	AF2-302 E	4.3991	50/50	4.3991
961063	AF2-397 BAT	4.2883	Merchant Transmission	4.2883
961801	AG1-022 C	6.5987	50/50	6.5987
961802	AG1-022 E	4.3991	50/50	4.3991
962741	AG1-123 C O2	4.7294	50/50	4.7294
962742	AG1-123 E O2	3.2956	50/50	3.2956
962751	AG1-124 C O2	6.7323	50/50	6.7323
962752	AG1-124 E O2	4.6977	50/50	4.6977
964531	AG1-316 C O2	1.6619	Adder	3.69
964532	AG1-316 E O2	0.4155	Adder	0.92
965582	AG1-426 BAT	7.6246	50/50	7.6246
966251	AG1-494 C	2.8536	50/50	2.8536
966252	AG1-494 E	4.2804	50/50	4.2804
966792	AG1-550 BAT	7.3171	50/50	7.3171
WEC	WEC	0.1405	Confirmed LTF	0.1405
LGEE	LGEE	0.3041	Confirmed LTF	0.3041
CPL	CPL	0.3269	Confirmed LTF	0.3269
CBM-W2	CBM-W2	4.5786	Confirmed LTF	4.5786
NY	NY	0.1377	Confirmed LTF	0.1377
TVA	TVA	0.7826	Confirmed LTF	0.7826
O-066	O-066	2.0123	Confirmed LTF	2.0123
SIGE	SIGE	0.0819	Confirmed LTF	0.0819
CBM-S2	CBM-S2	5.8151	Confirmed LTF	5.8151
CBM-S1	CBM-S1	0.2071	Confirmed LTF	0.2071
G-007	G-007	0.3171	Confirmed LTF	0.3171
MEC	MEC	0.7468	Confirmed LTF	0.7468
LAGN	LAGN	0.9397	Confirmed LTF	0.9397
CBM-W1	CBM-W1	5.9445	Confirmed LTF	5.9445

13.5.7 Index 7

ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC DC	MW IMPACT
173942565	242792	05SCOTSV	AEP	946590	AF1-323 TAP	AEP	1	DVP_P4-2: 422	breaker	167.0	114.55	135.51	DC	35.0

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
938821	AE1-108 C O1	91.8000	50/50	91.8000
938822	AE1-108 E O1	41.2000	50/50	41.2000
964231	AG1-284 C O2	42.0000	50/50	42.0000
964232	AG1-284 E O2	28.0000	50/50	28.0000
965581	AG1-426	20.0000	50/50	20.0000
966791	AG1-550 O2	35.0000	50/50	35.0000

13.5.8 Index 8

ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC DC	MW IMPACT
173942481	244423	05JAMES RIVR	AEP	242613	05COLLEEN SS	AEP	1	DVP_P4-2: 422	breaker	167.0	165.51	186.47	DC	35.0

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
938821	AE1-108 C O1	91.8000	50/50	91.8000
938822	AE1-108 E O1	41.2000	50/50	41.2000
946591	AF1-323 C	33.0000	50/50	33.0000
946592	AF1-323 E	22.0000	50/50	22.0000
960111	AF2-302 C	12.0000	50/50	12.0000
960112	AF2-302 E	8.0000	50/50	8.0000
961801	AG1-022 C	12.0000	50/50	12.0000
961802	AG1-022 E	8.0000	50/50	8.0000
964231	AG1-284 C O2	42.0000	50/50	42.0000
964232	AG1-284 E O2	28.0000	50/50	28.0000
965581	AG1-426	20.0000	50/50	20.0000
966791	AG1-550 O2	35.0000	50/50	35.0000

13.5.9 Index 9

ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC DC	MW IMPACT
173942477	244446	05SOAPSTONE	AEP	244423	05JAMES RIVR	AEP	1	DVP_P4-2: 422	breaker	167.0	168.44	189.4	DC	35.0

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
938821	AE1-108 C O1	91.8000	50/50	91.8000
938822	AE1-108 E O1	41.2000	50/50	41.2000
946591	AF1-323 C	33.0000	50/50	33.0000
946592	AF1-323 E	22.0000	50/50	22.0000
960111	AF2-302 C	12.0000	50/50	12.0000
960112	AF2-302 E	8.0000	50/50	8.0000
961801	AG1-022 C	12.0000	50/50	12.0000
961802	AG1-022 E	8.0000	50/50	8.0000
964231	AG1-284 C O2	42.0000	50/50	42.0000
964232	AG1-284 E O2	28.0000	50/50	28.0000
965581	AG1-426	20.0000	50/50	20.0000
966791	AG1-550 O2	35.0000	50/50	35.0000

13.5.10 Index 10

ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC DC	MW IMPACT
168584639	313707	6FORK UNION	DVP	961060	AF2-397 TAP	DVP	1	314333 6POWHATN 230 933500 AC2-165 TAP 230 1	single	661.76	167.82	170.37	DC	16.86

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
313527	AB2-043 C	0.3899	80/20	0.3899
314429	3JTRSVLE	0.6081	80/20	0.6081
314572	3EMPORIA	0.1253	80/20	0.1253
314677	6BUCKING	0.9605	80/20	0.9605
314704	3LAWRENC	0.1287	80/20	0.1287
315153	1CLOVER1	6.8569	80/20	6.8569
315154	1CLOVER2	6.7885	80/20	6.7885
315158	1KERR 1	0.2163	80/20	0.2163
315159	1KERR 2	0.6058	80/20	0.6058
315160	1KERR 3	0.6058	80/20	0.6058
315161	1KERR 4	0.6058	80/20	0.6058
315162	1KERR 5	0.6058	80/20	0.6058
315163	1KERR 6	0.6058	80/20	0.6058
315164	1KERR 7	0.6058	80/20	0.6058
315191	1BEARGRDN G1	16.8024	80/20	16.8024
315192	1BEARGRDN G2	16.8024	80/20	16.8024
315193	1BEARGRDN S1	21.7287	80/20	21.7287
315266	1PLYWOOD A	0.6338	80/20	0.6338
316118	AC1-105 C	3.2102	80/20	3.2102
316123	AC1-075 C	0.3997	80/20	0.3997
316129	AC1-054 C	3.1902	80/20	3.1902
316131	AB2-060 C	1.1581	80/20	1.1581
924301	AB2-077 C O1 (Suspended)	1.5320	80/20	1.5320
924311	AB2-078 C O1 (Suspended)	1.5320	80/20	1.5320
924321	AB2-079 C O1 (Suspended)	1.5320	80/20	1.5320
925611	AC1-036 C	0.2580	80/20	0.2580
926023	AC1-080 C	0.1336	80/20	0.1336
927251	AC1-221 C	0.7557	80/20	0.7557
927261	AC1-222 C	1.8205	80/20	1.8205
932511	AC2-071 C (Withdrawn : 01/22/2021)	0.9463	80/20	0.9463
932761	AC2-100 C	1.7391	80/20	1.7391
933501	AC2-165 C	31.7815	80/20	31.7815
934311	AD1-055 C	1.2640	80/20	1.2640
934341	AD1-058 C	1.8944	80/20	1.8944
934615	AD1-087 C	4.2935	80/20	4.2935
934625	AD1-088 C	14.0115	80/20	14.0115

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
934991	AD1-131 C	0.6211	80/20	0.6211
935171	AD1-152 C O1	4.7160	80/20	4.7160
935221	AD1-157 C	0.3677	80/20	0.3677
936265	AD2-033 C	13.9378	80/20	13.9378
936361	AD2-046 C O1	5.3677	80/20	5.3677
936485	AD2-063 C	13.8267	80/20	13.8267
937481	AD2-202 C O1	1.2576	80/20	1.2576
938371	AE1-056 C	10.0476	80/20	10.0476
938821	AE1-108 C O1	34.7050	80/20	34.7050
939181	AE1-148 C	5.3606	80/20	5.3606
940661	AE2-053 O1	1.9854	80/20	1.9854
941011	AE2-092 C	28.7117	80/20	28.7117
941791	AE2-182 C	2.2764	80/20	2.2764
942451	AE2-258	1.8439	80/20	1.8439
942461	AE2-259 C O1	18.4830	80/20	18.4830
942751	AE2-291 C	3.6928	80/20	3.6928
942761	AE2-292 C O1	4.5979	80/20	4.5979
943901	AF1-058 C	0.9990	80/20	0.9990
943911	AF1-059	9.4131	80/20	9.4131
945811	AF1-246 C O1	3.3289	80/20	3.3289
946281	AF1-292 C	0.4503	80/20	0.4503
946291	AF1-293 C O1	46.3247	80/20	46.3247
946301	AF1-294 C	6.1429	80/20	6.1429
946591	AF1-323 C	11.1052	80/20	11.1052
957481	AF2-042 C	23.7780	80/20	23.7780
958131	AF2-107 C	5.0071	80/20	5.0071
958211	AF2-115 C	3.6135	80/20	3.6135
958801	AF2-171 C	21.5919	80/20	21.5919
959311	AF2-222 C	19.7370	80/20	19.7370
959751	AF2-266	4.9220	80/20	4.9220
960061	AF2-297 C	3.9960	80/20	3.9960
960081	AF2-299 C	0.7590	80/20	0.7590
960111	AF2-302 C	4.0382	80/20	4.0382
961791	AG1-021 C	2.8908	80/20	2.8908
961801	AG1-022 C	4.0382	80/20	4.0382
961891	AG1-030 C	20.0871	80/20	20.0871
962041	AG1-048 C	18.0675	80/20	18.0675
962441	AG1-093 C O2	8.1291	80/20	8.1291
962491	AG1-098 C O2	10.6807	80/20	10.6807
962561	AG1-105 C O2	6.4428	80/20	6.4428
962741	AG1-123 C O2	3.0883	80/20	3.0883
962751	AG1-124 C O2	4.3368	80/20	4.3368
963171	AG1-166 C	2.8908	80/20	2.8908
963181	AG1-167 C	2.8908	80/20	2.8908
963191	AG1-168 C	2.8908	80/20	2.8908
963201	AG1-169 C	2.8908	80/20	2.8908
963211	AG1-170 C	2.8908	80/20	2.8908
963271	AG1-176 C O2	26.6508	80/20	26.6508
963301	AG1-179 C	2.7241	80/20	2.7241
963311	AG1-180	1.3273	80/20	1.3273
963321	AG1-181 C O2	18.6814	80/20	18.6814
963361	AG1-185 O2	9.0386	80/20	9.0386

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
963641	AG1-215 C	1.3490	80/20	1.3490
964111	AG1-272 C	2.9318	80/20	2.9318
964121	AG1-273 C	2.9318	80/20	2.9318
964131	AG1-274 C	2.9318	80/20	2.9318
964231	AG1-284 C O2	20.2377	80/20	20.2377
964241	AG1-285 C O2	5.6317	80/20	5.6317
964261	AG1-287 C	0.7493	80/20	0.7493
964471	AG1-310 C	1.0449	80/20	1.0449
964791	AG1-342 C	2.5948	80/20	2.5948
964821	AG1-345 C	1.1534	80/20	1.1534
964841	AG1-347 C	11.8188	80/20	11.8188
964931	AG1-357 C O2	18.3312	80/20	18.3312
965191	AG1-384 C	2.9318	80/20	2.9318
965281	AG1-393 C	2.8908	80/20	2.8908
965451	AG1-413 C O2	4.0845	80/20	4.0845
965581	AG1-426	7.5610	80/20	7.5610
965591	AG1-427 C	10.5299	80/20	10.5299
965601	AG1-428 C O2	2.2741	80/20	2.2741
965641	AG1-432 C O2	36.9660	80/20	36.9660
965721	AG1-440 C	3.7895	80/20	3.7895
965731	AG1-441 C	3.7895	80/20	3.7895
965771	AG1-445	2.1895	80/20	2.1895
965781	AG1-446	2.1895	80/20	2.1895
965831	AG1-451	6.1610	80/20	6.1610
966251	AG1-494 C	1.8194	80/20	1.8194
966621	AG1-532 C	0.4099	80/20	0.4099
966691	AG1-539 C	1.9309	80/20	1.9309
966751	AG1-546 C	6.7436	80/20	6.7436
966791	AG1-550 O2	16.8647	80/20	16.8647
966861	AG1-557 C O2 (Withdrawn : 12/14/2020)	5.0279	80/20	5.0279
WEC	WEC	0.1342	Confirmed LTF	0.1342
LGEE	LGEE	0.2878	Confirmed LTF	0.2878
CPL	CPL	2.2686	Confirmed LTF	2.2686
CBM-W2	CBM-W2	7.5264	Confirmed LTF	7.5264
NY	NY	0.4396	Confirmed LTF	0.4396
TVA	TVA	1.5232	Confirmed LTF	1.5232
SIGE	SIGE	0.1431	Confirmed LTF	0.1431
CBM-S2	CBM-S2	26.2148	Confirmed LTF	26.2148
CBM-S1	CBM-S1	0.3701	Confirmed LTF	0.3701
MEC	MEC	0.9057	Confirmed LTF	0.9057
LAGN	LAGN	1.8795	Confirmed LTF	1.8795
AA2-074	AA2-074	1.4972	LTF	1.4972
CBM-W1	CBM-W1	5.2996	Confirmed LTF	5.2996

13.5.11 Index 11

ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC DC	MW IMPACT
175605020	313868	6CARTERV	DVP	933500	AC2-165 TAP	DVP	1	DVP_P1-2: LN 2028-B-1	single	800.88	120.59	122.37	DC	14.21

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
313527	AB2-043 C	0.2811	80/20	0.2811
314429	3JTRSVLE	0.4835	80/20	0.4835
314677	6BUCKING	0.8051	80/20	0.8051
315153	1CLOVER1	4.3284	80/20	4.3284
315154	1CLOVER2	4.2852	80/20	4.2852
315158	1KERR 1	0.1411	80/20	0.1411
315159	1KERR 2	0.3952	80/20	0.3952
315160	1KERR 3	0.3952	80/20	0.3952
315161	1KERR 4	0.3952	80/20	0.3952
315162	1KERR 5	0.3952	80/20	0.3952
315163	1KERR 6	0.3952	80/20	0.3952
315164	1KERR 7	0.3952	80/20	0.3952
315191	1BEARGRDN G1	14.2612	80/20	14.2612
315192	1BEARGRDN G2	14.2612	80/20	14.2612
315193	1BEARGRDN S1	18.4425	80/20	18.4425
315266	1PLYWOOD A	0.4253	80/20	0.4253
316118	AC1-105 C	2.1876	80/20	2.1876
316131	AB2-060 C	0.8407	80/20	0.8407
924301	AB2-077 C O1 (Suspended)	1.0994	80/20	1.0994
924311	AB2-078 C O1 (Suspended)	1.0994	80/20	1.0994
924321	AB2-079 C O1 (Suspended)	1.0994	80/20	1.0994
925611	AC1-036 C	0.1990	80/20	0.1990
927261	AC1-222 C	1.2313	80/20	1.2313
932511	AC2-071 C (Withdrawn : 01/22/2021)	0.7931	80/20	0.7931
934311	AD1-055 C	0.8549	80/20	0.8549
934615	AD1-087 C	2.7103	80/20	2.7103
934625	AD1-088 C	10.6986	80/20	10.6986
935171	AD1-152 C O1	2.9770	80/20	2.9770
935221	AD1-157 C	0.2946	80/20	0.2946
936265	AD2-033 C	10.6548	80/20	10.6548
936361	AD2-046 C O1	3.5828	80/20	3.5828
936485	AD2-063 C	10.3014	80/20	10.3014
937481	AD2-202 C O1	0.7939	80/20	0.7939
938371	AE1-056 C	8.0510	80/20	8.0510
938821	AE1-108 C O1	29.3760	80/20	29.3760
939181	AE1-148 C	3.5932	80/20	3.5932
940661	AE2-053 O1	1.3308	80/20	1.3308

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
941011	AE2-092 C	25.2822	80/20	25.2822
941791	AE2-182 C	1.7381	80/20	1.7381
942451	AE2-258	1.3291	80/20	1.3291
942461	AE2-259 C O1	15.0516	80/20	15.0516
943901	AF1-058 C	0.6646	80/20	0.6646
943911	AF1-059	5.9093	80/20	5.9093
946291	AF1-293 C O1	39.5443	80/20	39.5443
946301	AF1-294 C	4.8845	80/20	4.8845
946591	AF1-323 C	9.4261	80/20	9.4261
958131	AF2-107 C	4.3750	80/20	4.3750
958211	AF2-115 C	2.8733	80/20	2.8733
958801	AF2-171 C	17.1603	80/20	17.1603
959311	AF2-222 C	15.3100	80/20	15.3100
959751	AF2-266	3.1070	80/20	3.1070
960061	AF2-297 C	2.6582	80/20	2.6582
960111	AF2-302 C	3.4277	80/20	3.4277
961061	AF2-397 C	36.6538	80/20	36.6538
961791	AG1-021 C	2.2986	80/20	2.2986
961801	AG1-022 C	3.4277	80/20	3.4277
961891	AG1-030 C	15.8310	80/20	15.8310
962041	AG1-048 C	14.3663	80/20	14.3663
962441	AG1-093 C O2	5.1308	80/20	5.1308
962491	AG1-098 C O2	7.8412	80/20	7.8412
962561	AG1-105 C O2	4.5072	80/20	4.5072
962741	AG1-123 C O2	2.8673	80/20	2.8673
962751	AG1-124 C O2	4.0170	80/20	4.0170
963171	AG1-166 C	2.2986	80/20	2.2986
963181	AG1-167 C	2.2986	80/20	2.2986
963191	AG1-168 C	2.2986	80/20	2.2986
963201	AG1-169 C	2.2986	80/20	2.2986
963211	AG1-170 C	2.2986	80/20	2.2986
963271	AG1-176 C O2	21.5558	80/20	21.5558
963321	AG1-181 C O2	14.3538	80/20	14.3538
963361	AG1-185 O2	6.9447	80/20	6.9447
963641	AG1-215 C	1.0727	80/20	1.0727
964111	AG1-272 C	2.2620	80/20	2.2620
964121	AG1-273 C	2.2620	80/20	2.2620
964131	AG1-274 C	2.2620	80/20	2.2620
964231	AG1-284 C O2	17.0478	80/20	17.0478
964261	AG1-287 C	0.4984	80/20	0.4984
964471	AG1-310 C	0.7118	80/20	0.7118
964791	AG1-342 C	1.8023	80/20	1.8023
964821	AG1-345 C	0.9168	80/20	0.9168
964841	AG1-347 C	9.1353	80/20	9.1353
964931	AG1-357 C O2	13.6428	80/20	13.6428
965191	AG1-384 C	2.2620	80/20	2.2620
965281	AG1-393 C	2.2986	80/20	2.2986
965451	AG1-413 C O2	2.6075	80/20	2.6075
965581	AG1-426	6.4000	80/20	6.4000
965591	AG1-427 C	7.7911	80/20	7.7911
965641	AG1-432 C O2	30.1032	80/20	30.1032
965721	AG1-440 C	2.3620	80/20	2.3620

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
965731	AG1-441 C	2.3620	80/20	2.3620
965771	AG1-445	1.3647	80/20	1.3647
965781	AG1-446	1.3647	80/20	1.3647
965831	AG1-451	5.0172	80/20	5.0172
966251	AG1-494 C	1.6494	80/20	1.6494
966791	AG1-550 O2	14.2065	80/20	14.2065
966861	AG1-557 C O2 (Withdrawn : 12/14/2020)	4.1932	80/20	4.1932
WEC	WEC	0.1988	Confirmed LTF	0.1988
LGEE	LGEE	0.4247	Confirmed LTF	0.4247
CPL	CPL	1.0859	Confirmed LTF	1.0859
CBM-W2	CBM-W2	7.3114	Confirmed LTF	7.3114
NY	NY	0.3512	Confirmed LTF	0.3512
TVA	TVA	1.3104	Confirmed LTF	1.3104
SIGE	SIGE	0.1503	Confirmed LTF	0.1503
CBM-S2	CBM-S2	14.5012	Confirmed LTF	14.5012
CBM-S1	CBM-S1	0.3374	Confirmed LTF	0.3374
MEC	MEC	1.1075	Confirmed LTF	1.1075
LAGN	LAGN	1.5942	Confirmed LTF	1.5942
CBM-W1	CBM-W1	8.3419	Confirmed LTF	8.3419

13.5.12 Index 12

ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC DC	MW IMPACT
175342144	314310	6JUDES F	DVP	314322	6MDLTHAN	DVP	1	DVP_P1-2: LN 2028-B-1	single	800.88	126.36	128.14	DC	14.2

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
313527	AB2-043 C	0.2807	80/20	0.2807
314333	6POWHATN	1.5975	80/20	1.5975
314429	3JTRSVLE	0.4832	80/20	0.4832
314677	6BUCKING	0.8048	80/20	0.8048
315153	1CLOVER1	4.3193	80/20	4.3193
315154	1CLOVER2	4.2763	80/20	4.2763
315158	1KERR 1	0.1408	80/20	0.1408
315159	1KERR 2	0.3943	80/20	0.3943
315160	1KERR 3	0.3943	80/20	0.3943
315161	1KERR 4	0.3943	80/20	0.3943
315162	1KERR 5	0.3943	80/20	0.3943
315163	1KERR 6	0.3943	80/20	0.3943
315164	1KERR 7	0.3943	80/20	0.3943
315191	1BEARGRDN G1	14.2573	80/20	14.2573
315192	1BEARGRDN G2	14.2573	80/20	14.2573
315193	1BEARGRDN S1	18.4374	80/20	18.4374
315266	1PLYWOOD A	0.4243	80/20	0.4243
316118	AC1-105 C	2.1828	80/20	2.1828
316131	AB2-060 C	0.8395	80/20	0.8395
924301	AB2-077 C O1 (Suspended)	1.0978	80/20	1.0978
924311	AB2-078 C O1 (Suspended)	1.0978	80/20	1.0978
924321	AB2-079 C O1 (Suspended)	1.0978	80/20	1.0978
925611	AC1-036 C	0.1989	80/20	0.1989
927261	AC1-222 C	1.2284	80/20	1.2284
932511	AC2-071 C (Withdrawn : 01/22/2021)	0.7929	80/20	0.7929
933501	AC2-165 C	39.2365	80/20	39.2365
934311	AD1-055 C	0.8529	80/20	0.8529
934615	AD1-087 C	2.7046	80/20	2.7046
934625	AD1-088 C	10.6893	80/20	10.6893
935171	AD1-152 C O1	2.9707	80/20	2.9707
935221	AD1-157 C	0.2944	80/20	0.2944
936265	AD2-033 C	10.6439	80/20	10.6439
936361	AD2-046 C O1	3.5752	80/20	3.5752
936485	AD2-063 C	10.2897	80/20	10.2897
937481	AD2-202 C O1	0.7922	80/20	0.7922
938371	AE1-056 C	8.0456	80/20	8.0456
938561	AE1-075 C	1.3891	80/20	1.3891

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
938821	AE1-108 C O1	29.3641	80/20	29.3641
939181	AE1-148 C	3.5861	80/20	3.5861
940661	AE2-053 O1	1.3282	80/20	1.3282
941011	AE2-092 C	25.2714	80/20	25.2714
941791	AE2-182 C	1.7366	80/20	1.7366
942451	AE2-258	1.3272	80/20	1.3272
942461	AE2-259 C O1	15.0438	80/20	15.0438
943901	AF1-058 C	0.6629	80/20	0.6629
943911	AF1-059	5.8955	80/20	5.8955
946291	AF1-293 C O1	39.5291	80/20	39.5291
946301	AF1-294 C	4.8810	80/20	4.8810
946591	AF1-323 C	9.4218	80/20	9.4218
958131	AF2-107 C	4.3708	80/20	4.3708
958211	AF2-115 C	2.8712	80/20	2.8712
958501	AF2-144 C	7.4840	80/20	7.4840
958801	AF2-171 C	17.1477	80/20	17.1477
959311	AF2-222 C	15.2960	80/20	15.2960
959531	AF2-244 C (Withdrawn : 01/06/2021)	6.8971	80/20	6.8971
959751	AF2-266	3.1005	80/20	3.1005
960061	AF2-297 C	2.6515	80/20	2.6515
960111	AF2-302 C	3.4261	80/20	3.4261
961061	AF2-397 C	36.6436	80/20	36.6436
961791	AG1-021 C	2.2969	80/20	2.2969
961801	AG1-022 C	3.4261	80/20	3.4261
961891	AG1-030 C	15.8193	80/20	15.8193
962041	AG1-048 C	14.3558	80/20	14.3558
962441	AG1-093 C O2	5.1180	80/20	5.1180
962491	AG1-098 C O2	7.8308	80/20	7.8308
962561	AG1-105 C O2	4.4994	80/20	4.4994
962741	AG1-123 C O2	2.8615	80/20	2.8615
962751	AG1-124 C O2	4.0087	80/20	4.0087
963171	AG1-166 C	2.2969	80/20	2.2969
963181	AG1-167 C	2.2969	80/20	2.2969
963191	AG1-168 C	2.2969	80/20	2.2969
963201	AG1-169 C	2.2969	80/20	2.2969
963211	AG1-170 C	2.2969	80/20	2.2969
963271	AG1-176 C O2	21.5432	80/20	21.5432
963321	AG1-181 C O2	14.3396	80/20	14.3396
963361	AG1-185 O2	6.9379	80/20	6.9379
963641	AG1-215 C	1.0719	80/20	1.0719
964111	AG1-272 C	2.2600	80/20	2.2600
964121	AG1-273 C	2.2600	80/20	2.2600
964131	AG1-274 C	2.2600	80/20	2.2600
964231	AG1-284 C O2	17.0419	80/20	17.0419
964261	AG1-287 C	0.4972	80/20	0.4972
964471	AG1-310 C	0.7101	80/20	0.7101
964791	AG1-342 C	1.7990	80/20	1.7990
964821	AG1-345 C	0.9162	80/20	0.9162
964841	AG1-347 C	9.1274	80/20	9.1274
964931	AG1-357 C O2	13.6260	80/20	13.6260
965191	AG1-384 C	2.2600	80/20	2.2600

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
965281	AG1-393 C	2.2969	80/20	2.2969
965451	AG1-413 C O2	2.6017	80/20	2.6017
965581	AG1-426	6.3974	80/20	6.3974
965591	AG1-427 C	7.7812	80/20	7.7812
965641	AG1-432 C O2	30.0876	80/20	30.0876
965721	AG1-440 C	2.3557	80/20	2.3557
965731	AG1-441 C	2.3557	80/20	2.3557
965771	AG1-445	1.3611	80/20	1.3611
965781	AG1-446	1.3611	80/20	1.3611
965831	AG1-451	5.0146	80/20	5.0146
966251	AG1-494 C	1.6466	80/20	1.6466
966791	AG1-550 O2	14.2016	80/20	14.2016
966861	AG1-557 C O2 (Withdrawn : 12/14/2020)	4.1915	80/20	4.1915
WEC	WEC	0.1947	Confirmed LTF	0.1947
LGEE	LGEE	0.4166	Confirmed LTF	0.4166
CPL	CPL	1.0770	Confirmed LTF	1.0770
CBM-W2	CBM-W2	7.1949	Confirmed LTF	7.1949
NY	NY	0.3583	Confirmed LTF	0.3583
TVA	TVA	1.2922	Confirmed LTF	1.2922
SIGE	SIGE	0.1503	Confirmed LTF	0.1503
CBM-S2	CBM-S2	14.3654	Confirmed LTF	14.3654
CBM-S1	CBM-S1	0.3325	Confirmed LTF	0.3325
MEC	MEC	1.0869	Confirmed LTF	1.0869
LAGN	LAGN	1.5715	Confirmed LTF	1.5715
CBM-W1	CBM-W1	8.1596	Confirmed LTF	8.1596

13.5.13 Index 13

ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC DC	MW IMPACT
175342141	314333	6POWHATN	DVP	314310	6JUDES	DVP	1	DVP_P1-2: LN 2028-B-1	single	800.88	126.5	128.27	DC	14.2

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
313527	AB2-043 C	0.2807	80/20	0.2807
314333	6POWHATN	1.5975	80/20	1.5975
314429	3JTRSVLE	0.4832	80/20	0.4832
314677	6BUCKING	0.8048	80/20	0.8048
315153	1CLOVER1	4.3193	80/20	4.3193
315154	1CLOVER2	4.2763	80/20	4.2763
315158	1KERR 1	0.1408	80/20	0.1408
315159	1KERR 2	0.3943	80/20	0.3943
315160	1KERR 3	0.3943	80/20	0.3943
315161	1KERR 4	0.3943	80/20	0.3943
315162	1KERR 5	0.3943	80/20	0.3943
315163	1KERR 6	0.3943	80/20	0.3943
315164	1KERR 7	0.3943	80/20	0.3943
315191	1BEARGRDN G1	14.2573	80/20	14.2573
315192	1BEARGRDN G2	14.2573	80/20	14.2573
315193	1BEARGRDN S1	18.4374	80/20	18.4374
315266	1PLYWOOD A	0.4243	80/20	0.4243
316118	AC1-105 C	2.1828	80/20	2.1828
316131	AB2-060 C	0.8395	80/20	0.8395
924301	AB2-077 C O1 (Suspended)	1.0978	80/20	1.0978
924311	AB2-078 C O1 (Suspended)	1.0978	80/20	1.0978
924321	AB2-079 C O1 (Suspended)	1.0978	80/20	1.0978
925611	AC1-036 C	0.1989	80/20	0.1989
927261	AC1-222 C	1.2284	80/20	1.2284
932511	AC2-071 C (Withdrawn : 01/22/2021)	0.7929	80/20	0.7929
933501	AC2-165 C	39.2365	80/20	39.2365
934311	AD1-055 C	0.8529	80/20	0.8529
934615	AD1-087 C	2.7046	80/20	2.7046
934625	AD1-088 C	10.6893	80/20	10.6893
935171	AD1-152 C O1	2.9707	80/20	2.9707
935221	AD1-157 C	0.2944	80/20	0.2944
936265	AD2-033 C	10.6439	80/20	10.6439
936361	AD2-046 C O1	3.5752	80/20	3.5752
936485	AD2-063 C	10.2897	80/20	10.2897
937481	AD2-202 C O1	0.7922	80/20	0.7922
938371	AE1-056 C	8.0456	80/20	8.0456
938561	AE1-075 C	1.3891	80/20	1.3891

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
938821	AE1-108 C O1	29.3641	80/20	29.3641
939181	AE1-148 C	3.5861	80/20	3.5861
940661	AE2-053 O1	1.3282	80/20	1.3282
941011	AE2-092 C	25.2714	80/20	25.2714
941791	AE2-182 C	1.7366	80/20	1.7366
942451	AE2-258	1.3272	80/20	1.3272
942461	AE2-259 C O1	15.0438	80/20	15.0438
943901	AF1-058 C	0.6629	80/20	0.6629
943911	AF1-059	5.8955	80/20	5.8955
946291	AF1-293 C O1	39.5291	80/20	39.5291
946301	AF1-294 C	4.8810	80/20	4.8810
946591	AF1-323 C	9.4218	80/20	9.4218
958131	AF2-107 C	4.3708	80/20	4.3708
958211	AF2-115 C	2.8712	80/20	2.8712
958501	AF2-144 C	7.4840	80/20	7.4840
958801	AF2-171 C	17.1477	80/20	17.1477
959311	AF2-222 C	15.2960	80/20	15.2960
959531	AF2-244 C (Withdrawn : 01/06/2021)	6.8971	80/20	6.8971
959751	AF2-266	3.1005	80/20	3.1005
960061	AF2-297 C	2.6515	80/20	2.6515
960111	AF2-302 C	3.4261	80/20	3.4261
961061	AF2-397 C	36.6436	80/20	36.6436
961791	AG1-021 C	2.2969	80/20	2.2969
961801	AG1-022 C	3.4261	80/20	3.4261
961891	AG1-030 C	15.8193	80/20	15.8193
962041	AG1-048 C	14.3558	80/20	14.3558
962441	AG1-093 C O2	5.1180	80/20	5.1180
962491	AG1-098 C O2	7.8308	80/20	7.8308
962561	AG1-105 C O2	4.4994	80/20	4.4994
962741	AG1-123 C O2	2.8615	80/20	2.8615
962751	AG1-124 C O2	4.0087	80/20	4.0087
963171	AG1-166 C	2.2969	80/20	2.2969
963181	AG1-167 C	2.2969	80/20	2.2969
963191	AG1-168 C	2.2969	80/20	2.2969
963201	AG1-169 C	2.2969	80/20	2.2969
963211	AG1-170 C	2.2969	80/20	2.2969
963271	AG1-176 C O2	21.5432	80/20	21.5432
963321	AG1-181 C O2	14.3396	80/20	14.3396
963361	AG1-185 O2	6.9379	80/20	6.9379
963641	AG1-215 C	1.0719	80/20	1.0719
964111	AG1-272 C	2.2600	80/20	2.2600
964121	AG1-273 C	2.2600	80/20	2.2600
964131	AG1-274 C	2.2600	80/20	2.2600
964231	AG1-284 C O2	17.0419	80/20	17.0419
964261	AG1-287 C	0.4972	80/20	0.4972
964471	AG1-310 C	0.7101	80/20	0.7101
964791	AG1-342 C	1.7990	80/20	1.7990
964821	AG1-345 C	0.9162	80/20	0.9162
964841	AG1-347 C	9.1274	80/20	9.1274
964931	AG1-357 C O2	13.6260	80/20	13.6260
965191	AG1-384 C	2.2600	80/20	2.2600

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
965281	AG1-393 C	2.2969	80/20	2.2969
965451	AG1-413 C O2	2.6017	80/20	2.6017
965581	AG1-426	6.3974	80/20	6.3974
965591	AG1-427 C	7.7812	80/20	7.7812
965641	AG1-432 C O2	30.0876	80/20	30.0876
965721	AG1-440 C	2.3557	80/20	2.3557
965731	AG1-441 C	2.3557	80/20	2.3557
965771	AG1-445	1.3611	80/20	1.3611
965781	AG1-446	1.3611	80/20	1.3611
965831	AG1-451	5.0146	80/20	5.0146
966251	AG1-494 C	1.6466	80/20	1.6466
966791	AG1-550 O2	14.2016	80/20	14.2016
966861	AG1-557 C O2 (Withdrawn : 12/14/2020)	4.1915	80/20	4.1915
WEC	WEC	0.1947	Confirmed LTF	0.1947
LGEE	LGEE	0.4166	Confirmed LTF	0.4166
CPL	CPL	1.0770	Confirmed LTF	1.0770
CBM-W2	CBM-W2	7.1949	Confirmed LTF	7.1949
NY	NY	0.3583	Confirmed LTF	0.3583
TVA	TVA	1.2922	Confirmed LTF	1.2922
SIGE	SIGE	0.1503	Confirmed LTF	0.1503
CBM-S2	CBM-S2	14.3654	Confirmed LTF	14.3654
CBM-S1	CBM-S1	0.3325	Confirmed LTF	0.3325
MEC	MEC	1.0869	Confirmed LTF	1.0869
LAGN	LAGN	1.5715	Confirmed LTF	1.5715
CBM-W1	CBM-W1	8.1596	Confirmed LTF	8.1596

13.5.14 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
174511269	314746	4BREMO	DVP	314744	3BREMO	DVP	1	DVP_P4-2: 29822	breaker	228.0	116.57	119.78	DC	7.32

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
935241	AD1-161 C	1.4796	Adder	1.74
935242	AD1-161 E	1.2151	Adder	1.43
938821	AE1-108 C O1	56.8031	50/50	56.8031
938822	AE1-108 E O1	25.4933	50/50	25.4933
946293	AF1-293 BAT	13.6367	50/50	13.6367
946591	AF1-323 C	18.1464	50/50	18.1464
946592	AF1-323 E	12.0976	50/50	12.0976
958131	AF2-107 C	8.0379	50/50	8.0379
958132	AF2-107 E	4.4046	50/50	4.4046
960111	AF2-302 C	6.5987	50/50	6.5987
960112	AF2-302 E	4.3991	50/50	4.3991
961063	AF2-397 BAT	4.2883	Merchant Transmission	4.2883
961801	AG1-022 C	6.5987	50/50	6.5987
961802	AG1-022 E	4.3991	50/50	4.3991
962741	AG1-123 C O2	4.7294	50/50	4.7294
962742	AG1-123 E O2	3.2956	50/50	3.2956
962751	AG1-124 C O2	6.7323	50/50	6.7323
962752	AG1-124 E O2	4.6977	50/50	4.6977
964531	AG1-316 C O2	1.6619	Adder	3.69
964532	AG1-316 E O2	0.4155	Adder	0.92
965581	AG1-426	12.3754	50/50	12.3754
966251	AG1-494 C	2.8536	50/50	2.8536
966252	AG1-494 E	4.2804	50/50	4.2804
966792	AG1-550 BAT	7.3171	50/50	7.3171
WEC	WEC	0.1405	Confirmed LTF	0.1405
LGEE	LGEE	0.3041	Confirmed LTF	0.3041
CPL	CPL	0.3269	Confirmed LTF	0.3269
CBM-W2	CBM-W2	4.5786	Confirmed LTF	4.5786
NY	NY	0.1377	Confirmed LTF	0.1377
TVA	TVA	0.7826	Confirmed LTF	0.7826
O-066	O-066	2.0123	Confirmed LTF	2.0123
SIGE	SIGE	0.0819	Confirmed LTF	0.0819
CBM-S2	CBM-S2	5.8151	Confirmed LTF	5.8151
CBM-S1	CBM-S1	0.2071	Confirmed LTF	0.2071
G-007	G-007	0.3171	Confirmed LTF	0.3171
MEC	MEC	0.7468	Confirmed LTF	0.7468
LAGN	LAGN	0.9397	Confirmed LTF	0.9397
CBM-W1	CBM-W1	5.9445	Confirmed LTF	5.9445

13.5.15 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
175605008	314747	6BREMO	DVP	313868	6CARTERV	DVP	1	DVP_P1-2: LN 2028-B-1	single	800.88	122.0	123.78	DC	14.21

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
313527	AB2-043 C	0.2811	80/20	0.2811
314429	3JTRSVLE	0.4835	80/20	0.4835
314677	6BUCKING	0.8051	80/20	0.8051
315153	1CLOVER1	4.3284	80/20	4.3284
315154	1CLOVER2	4.2852	80/20	4.2852
315158	1KERR 1	0.1411	80/20	0.1411
315159	1KERR 2	0.3952	80/20	0.3952
315160	1KERR 3	0.3952	80/20	0.3952
315161	1KERR 4	0.3952	80/20	0.3952
315162	1KERR 5	0.3952	80/20	0.3952
315163	1KERR 6	0.3952	80/20	0.3952
315164	1KERR 7	0.3952	80/20	0.3952
315191	1BEARGRDN G1	14.2612	80/20	14.2612
315192	1BEARGRDN G2	14.2612	80/20	14.2612
315193	1BEARGRDN S1	18.4425	80/20	18.4425
315266	1PLYWOOD A	0.4253	80/20	0.4253
316118	AC1-105 C	2.1876	80/20	2.1876
316131	AB2-060 C	0.8407	80/20	0.8407
924301	AB2-077 C O1 (Suspended)	1.0994	80/20	1.0994
924311	AB2-078 C O1 (Suspended)	1.0994	80/20	1.0994
924321	AB2-079 C O1 (Suspended)	1.0994	80/20	1.0994
925611	AC1-036 C	0.1990	80/20	0.1990
927261	AC1-222 C	1.2313	80/20	1.2313
932511	AC2-071 C (Withdrawn : 01/22/2021)	0.7931	80/20	0.7931
934311	AD1-055 C	0.8549	80/20	0.8549
934615	AD1-087 C	2.7103	80/20	2.7103
934625	AD1-088 C	10.6986	80/20	10.6986
935171	AD1-152 C O1	2.9770	80/20	2.9770
935221	AD1-157 C	0.2946	80/20	0.2946
936265	AD2-033 C	10.6548	80/20	10.6548
936361	AD2-046 C O1	3.5828	80/20	3.5828
936485	AD2-063 C	10.3014	80/20	10.3014
937481	AD2-202 C O1	0.7939	80/20	0.7939
938371	AE1-056 C	8.0510	80/20	8.0510
938821	AE1-108 C O1	29.3760	80/20	29.3760
939181	AE1-148 C	3.5932	80/20	3.5932
940661	AE2-053 O1	1.3308	80/20	1.3308

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
941011	AE2-092 C	25.2822	80/20	25.2822
941791	AE2-182 C	1.7381	80/20	1.7381
942451	AE2-258	1.3291	80/20	1.3291
942461	AE2-259 C O1	15.0516	80/20	15.0516
943901	AF1-058 C	0.6646	80/20	0.6646
943911	AF1-059	5.9093	80/20	5.9093
946291	AF1-293 C O1	39.5443	80/20	39.5443
946301	AF1-294 C	4.8845	80/20	4.8845
946591	AF1-323 C	9.4261	80/20	9.4261
958131	AF2-107 C	4.3750	80/20	4.3750
958211	AF2-115 C	2.8733	80/20	2.8733
958801	AF2-171 C	17.1603	80/20	17.1603
959311	AF2-222 C	15.3100	80/20	15.3100
959751	AF2-266	3.1070	80/20	3.1070
960061	AF2-297 C	2.6582	80/20	2.6582
960111	AF2-302 C	3.4277	80/20	3.4277
961061	AF2-397 C	36.6538	80/20	36.6538
961791	AG1-021 C	2.2986	80/20	2.2986
961801	AG1-022 C	3.4277	80/20	3.4277
961891	AG1-030 C	15.8310	80/20	15.8310
962041	AG1-048 C	14.3663	80/20	14.3663
962441	AG1-093 C O2	5.1308	80/20	5.1308
962491	AG1-098 C O2	7.8412	80/20	7.8412
962561	AG1-105 C O2	4.5072	80/20	4.5072
962741	AG1-123 C O2	2.8673	80/20	2.8673
962751	AG1-124 C O2	4.0170	80/20	4.0170
963171	AG1-166 C	2.2986	80/20	2.2986
963181	AG1-167 C	2.2986	80/20	2.2986
963191	AG1-168 C	2.2986	80/20	2.2986
963201	AG1-169 C	2.2986	80/20	2.2986
963211	AG1-170 C	2.2986	80/20	2.2986
963271	AG1-176 C O2	21.5558	80/20	21.5558
963321	AG1-181 C O2	14.3538	80/20	14.3538
963361	AG1-185 O2	6.9447	80/20	6.9447
963641	AG1-215 C	1.0727	80/20	1.0727
964111	AG1-272 C	2.2620	80/20	2.2620
964121	AG1-273 C	2.2620	80/20	2.2620
964131	AG1-274 C	2.2620	80/20	2.2620
964231	AG1-284 C O2	17.0478	80/20	17.0478
964261	AG1-287 C	0.4984	80/20	0.4984
964471	AG1-310 C	0.7118	80/20	0.7118
964791	AG1-342 C	1.8023	80/20	1.8023
964821	AG1-345 C	0.9168	80/20	0.9168
964841	AG1-347 C	9.1353	80/20	9.1353
964931	AG1-357 C O2	13.6428	80/20	13.6428
965191	AG1-384 C	2.2620	80/20	2.2620
965281	AG1-393 C	2.2986	80/20	2.2986
965451	AG1-413 C O2	2.6075	80/20	2.6075
965581	AG1-426	6.4000	80/20	6.4000
965591	AG1-427 C	7.7911	80/20	7.7911
965641	AG1-432 C O2	30.1032	80/20	30.1032
965721	AG1-440 C	2.3620	80/20	2.3620

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
965731	AG1-441 C	2.3620	80/20	2.3620
965771	AG1-445	1.3647	80/20	1.3647
965781	AG1-446	1.3647	80/20	1.3647
965831	AG1-451	5.0172	80/20	5.0172
966251	AG1-494 C	1.6494	80/20	1.6494
966791	AG1-550 O2	14.2065	80/20	14.2065
966861	AG1-557 C O2 (Withdrawn : 12/14/2020)	4.1932	80/20	4.1932
WEC	WEC	0.1988	Confirmed LTF	0.1988
LGEE	LGEE	0.4247	Confirmed LTF	0.4247
CPL	CPL	1.0859	Confirmed LTF	1.0859
CBM-W2	CBM-W2	7.3114	Confirmed LTF	7.3114
NY	NY	0.3512	Confirmed LTF	0.3512
TVA	TVA	1.3104	Confirmed LTF	1.3104
SIGE	SIGE	0.1503	Confirmed LTF	0.1503
CBM-S2	CBM-S2	14.5012	Confirmed LTF	14.5012
CBM-S1	CBM-S1	0.3374	Confirmed LTF	0.3374
MEC	MEC	1.1075	Confirmed LTF	1.1075
LAGN	LAGN	1.5942	Confirmed LTF	1.5942
CBM-W1	CBM-W1	8.3419	Confirmed LTF	8.3419

13.5.16 Index 16

ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC DC	MW IMPACT
169506447	314765	6MTEAGLE	DVP	314749	6CHARLVL	DVP	1	314333 6POWHATN 230 933500 AC2-165 TAP 230 1	single	661.76	171.69	174.24	DC	16.86

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
313527	AB2-043 C	0.3898	80/20	0.3898
314429	3JTRSVLE	0.6081	80/20	0.6081
314572	3EMPORIA	0.1253	80/20	0.1253
314677	6BUCKING	0.9605	80/20	0.9605
314704	3LAWRENC	0.1286	80/20	0.1286
315153	1CLOVER1	6.8555	80/20	6.8555
315154	1CLOVER2	6.7871	80/20	6.7871
315158	1KERR 1	0.2163	80/20	0.2163
315159	1KERR 2	0.6056	80/20	0.6056
315160	1KERR 3	0.6056	80/20	0.6056
315161	1KERR 4	0.6056	80/20	0.6056
315162	1KERR 5	0.6056	80/20	0.6056
315163	1KERR 6	0.6056	80/20	0.6056
315164	1KERR 7	0.6056	80/20	0.6056
315191	1BEARGRDN G1	16.8015	80/20	16.8015
315192	1BEARGRDN G2	16.8015	80/20	16.8015
315193	1BEARGRDN S1	21.7276	80/20	21.7276
315266	1PLYWOOD A	0.6337	80/20	0.6337
316118	AC1-105 C	3.2095	80/20	3.2095
316123	AC1-075 C	0.3995	80/20	0.3995
316129	AC1-054 C	3.1893	80/20	3.1893
316131	AB2-060 C	1.1579	80/20	1.1579
924301	AB2-077 C O1 (Suspended)	1.5318	80/20	1.5318
924311	AB2-078 C O1 (Suspended)	1.5318	80/20	1.5318
924321	AB2-079 C O1 (Suspended)	1.5318	80/20	1.5318
925611	AC1-036 C	0.2579	80/20	0.2579
926023	AC1-080 C	0.1335	80/20	0.1335
926451	AC1-116 C	0.5713	80/20	0.5713
927251	AC1-221 C	0.7553	80/20	0.7553
927261	AC1-222 C	1.8201	80/20	1.8201
932511	AC2-071 C (Withdrawn : 01/22/2021)	0.9462	80/20	0.9462
932761	AC2-100 C	1.7381	80/20	1.7381
933501	AC2-165 C	31.7798	80/20	31.7798
934311	AD1-055 C	1.2637	80/20	1.2637
934341	AD1-058 C	1.8933	80/20	1.8933
934615	AD1-087 C	4.2927	80/20	4.2927

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
934625	AD1-088 C	14.0094	80/20	14.0094
934991	AD1-131 C	0.6208	80/20	0.6208
935171	AD1-152 C O1	4.7150	80/20	4.7150
935221	AD1-157 C	0.3677	80/20	0.3677
936265	AD2-033 C	13.9363	80/20	13.9363
936361	AD2-046 C O1	5.3660	80/20	5.3660
936485	AD2-063 C	13.8249	80/20	13.8249
937481	AD2-202 C O1	1.2573	80/20	1.2573
938371	AE1-056 C	10.0469	80/20	10.0469
938821	AE1-108 C O1	34.7022	80/20	34.7022
939181	AE1-148 C	5.3595	80/20	5.3595
940661	AE2-053 O1	1.9850	80/20	1.9850
941011	AE2-092 C	28.7092	80/20	28.7092
941791	AE2-182 C	2.2760	80/20	2.2760
942451	AE2-258	1.8434	80/20	1.8434
942461	AE2-259 C O1	18.4818	80/20	18.4818
942751	AE2-291 C	3.6916	80/20	3.6916
942761	AE2-292 C O1	4.5964	80/20	4.5964
943901	AF1-058 C	0.9986	80/20	0.9986
943911	AF1-059	9.4111	80/20	9.4111
945811	AF1-246 C O1	3.3281	80/20	3.3281
946281	AF1-292 C	0.4501	80/20	0.4501
946291	AF1-293 C O1	46.3226	80/20	46.3226
946301	AF1-294 C	6.1424	80/20	6.1424
946591	AF1-323 C	11.1045	80/20	11.1045
957481	AF2-042 C	23.7720	80/20	23.7720
958131	AF2-107 C	5.0062	80/20	5.0062
958211	AF2-115 C	3.6132	80/20	3.6132
958801	AF2-171 C	21.5892	80/20	21.5892
959311	AF2-222 C	19.7350	80/20	19.7350
959751	AF2-266	4.9210	80/20	4.9210
960061	AF2-297 C	3.9946	80/20	3.9946
960081	AF2-299 C	0.7586	80/20	0.7586
960111	AF2-302 C	4.0380	80/20	4.0380
961061	AF2-397 C	49.3795	80/20	49.3795
961791	AG1-021 C	2.8906	80/20	2.8906
961801	AG1-022 C	4.0380	80/20	4.0380
961891	AG1-030 C	20.0853	80/20	20.0853
962041	AG1-048 C	18.0660	80/20	18.0660
962441	AG1-093 C O2	8.1264	80/20	8.1264
962491	AG1-098 C O2	10.6792	80/20	10.6792
962561	AG1-105 C O2	6.4410	80/20	6.4410
962741	AG1-123 C O2	3.0874	80/20	3.0874
962751	AG1-124 C O2	4.3356	80/20	4.3356
963171	AG1-166 C	2.8906	80/20	2.8906
963181	AG1-167 C	2.8906	80/20	2.8906
963191	AG1-168 C	2.8906	80/20	2.8906
963201	AG1-169 C	2.8906	80/20	2.8906
963211	AG1-170 C	2.8906	80/20	2.8906
963271	AG1-176 C O2	26.6490	80/20	26.6490
963301	AG1-179 C	2.7231	80/20	2.7231
963311	AG1-180	1.3268	80/20	1.3268

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
963321	AG1-181 C O2	18.6784	80/20	18.6784
963361	AG1-185 O2	9.0371	80/20	9.0371
963641	AG1-215 C	1.3489	80/20	1.3489
964111	AG1-272 C	2.9313	80/20	2.9313
964121	AG1-273 C	2.9313	80/20	2.9313
964131	AG1-274 C	2.9313	80/20	2.9313
964231	AG1-284 C O2	20.2364	80/20	20.2364
964241	AG1-285 C O2	5.6295	80/20	5.6295
964261	AG1-287 C	0.7490	80/20	0.7490
964471	AG1-310 C	1.0445	80/20	1.0445
964791	AG1-342 C	2.5943	80/20	2.5943
964821	AG1-345 C	1.1533	80/20	1.1533
964841	AG1-347 C	11.8171	80/20	11.8171
964931	AG1-357 C O2	18.3276	80/20	18.3276
965191	AG1-384 C	2.9313	80/20	2.9313
965281	AG1-393 C	2.8906	80/20	2.8906
965451	AG1-413 C O2	4.0837	80/20	4.0837
965581	AG1-426	7.5604	80/20	7.5604
965591	AG1-427 C	10.5285	80/20	10.5285
965601	AG1-428 C O2	2.2733	80/20	2.2733
965641	AG1-432 C O2	36.9636	80/20	36.9636
965721	AG1-440 C	3.7881	80/20	3.7881
965731	AG1-441 C	3.7881	80/20	3.7881
965771	AG1-445	2.1887	80/20	2.1887
965781	AG1-446	2.1887	80/20	2.1887
965831	AG1-451	6.1606	80/20	6.1606
966251	AG1-494 C	1.8190	80/20	1.8190
966621	AG1-532 C	0.4096	80/20	0.4096
966691	AG1-539 C	1.9302	80/20	1.9302
966751	AG1-546 C	6.7407	80/20	6.7407
966791	AG1-550 O2	16.8637	80/20	16.8637
966861	AG1-557 C O2 (Withdrawn : 12/14/2020)	5.0276	80/20	5.0276
WEC	WEC	0.1332	Confirmed LTF	0.1332
LGEE	LGEE	0.2859	Confirmed LTF	0.2859
CPL	CPL	2.2666	Confirmed LTF	2.2666
CBM-W2	CBM-W2	7.4995	Confirmed LTF	7.4995
NY	NY	0.4413	Confirmed LTF	0.4413
TVA	TVA	1.5190	Confirmed LTF	1.5190
SIGE	SIGE	0.1431	Confirmed LTF	0.1431
CBM-S2	CBM-S2	26.1835	Confirmed LTF	26.1835
CBM-S1	CBM-S1	0.3690	Confirmed LTF	0.3690
MEC	MEC	0.9010	Confirmed LTF	0.9010
LAGN	LAGN	1.8743	Confirmed LTF	1.8743
AA2-074	AA2-074	1.4958	LTF	1.4958
CBM-W1	CBM-W1	5.2575	Confirmed LTF	5.2575

13.5.17 Index 17

ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC DC	MW IMPACT
175342152	933500	AC2-165 TAP	DVP	314333	6POWHATN	DVP	1	DVP_P1-2: LN 2028-B-1	single	800.88	125.42	127.19	DC	14.21

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
313527	AB2-043 C	0.2811	80/20	0.2811
314429	3JTRSVLE	0.4835	80/20	0.4835
314677	6BUCKING	0.8051	80/20	0.8051
315153	1CLOVER1	4.3284	80/20	4.3284
315154	1CLOVER2	4.2852	80/20	4.2852
315158	1KERR 1	0.1411	80/20	0.1411
315159	1KERR 2	0.3952	80/20	0.3952
315160	1KERR 3	0.3952	80/20	0.3952
315161	1KERR 4	0.3952	80/20	0.3952
315162	1KERR 5	0.3952	80/20	0.3952
315163	1KERR 6	0.3952	80/20	0.3952
315164	1KERR 7	0.3952	80/20	0.3952
315191	1BEARGRDN G1	14.2612	80/20	14.2612
315192	1BEARGRDN G2	14.2612	80/20	14.2612
315193	1BEARGRDN S1	18.4425	80/20	18.4425
315266	1PLYWOOD A	0.4253	80/20	0.4253
316118	AC1-105 C	2.1876	80/20	2.1876
316131	AB2-060 C	0.8407	80/20	0.8407
924301	AB2-077 C O1 (Suspended)	1.0994	80/20	1.0994
924311	AB2-078 C O1 (Suspended)	1.0994	80/20	1.0994
924321	AB2-079 C O1 (Suspended)	1.0994	80/20	1.0994
925611	AC1-036 C	0.1990	80/20	0.1990
927261	AC1-222 C	1.2313	80/20	1.2313
932511	AC2-071 C (Withdrawn : 01/22/2021)	0.7931	80/20	0.7931
933501	AC2-165 C	39.2445	80/20	39.2445
934311	AD1-055 C	0.8549	80/20	0.8549
934615	AD1-087 C	2.7103	80/20	2.7103
934625	AD1-088 C	10.6986	80/20	10.6986
935171	AD1-152 C O1	2.9770	80/20	2.9770
935221	AD1-157 C	0.2946	80/20	0.2946
936265	AD2-033 C	10.6548	80/20	10.6548
936361	AD2-046 C O1	3.5828	80/20	3.5828
936485	AD2-063 C	10.3014	80/20	10.3014
937481	AD2-202 C O1	0.7939	80/20	0.7939
938371	AE1-056 C	8.0510	80/20	8.0510
938821	AE1-108 C O1	29.3760	80/20	29.3760
939181	AE1-148 C	3.5932	80/20	3.5932

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
940661	AE2-053 O1	1.3308	80/20	1.3308
941011	AE2-092 C	25.2822	80/20	25.2822
941791	AE2-182 C	1.7381	80/20	1.7381
942451	AE2-258	1.3291	80/20	1.3291
942461	AE2-259 C O1	15.0516	80/20	15.0516
943901	AF1-058 C	0.6646	80/20	0.6646
943911	AF1-059	5.9093	80/20	5.9093
946291	AF1-293 C O1	39.5443	80/20	39.5443
946301	AF1-294 C	4.8845	80/20	4.8845
946591	AF1-323 C	9.4261	80/20	9.4261
958131	AF2-107 C	4.3750	80/20	4.3750
958211	AF2-115 C	2.8733	80/20	2.8733
958801	AF2-171 C	17.1603	80/20	17.1603
959311	AF2-222 C	15.3100	80/20	15.3100
959751	AF2-266	3.1070	80/20	3.1070
960061	AF2-297 C	2.6582	80/20	2.6582
960111	AF2-302 C	3.4277	80/20	3.4277
961061	AF2-397 C	36.6538	80/20	36.6538
961791	AG1-021 C	2.2986	80/20	2.2986
961801	AG1-022 C	3.4277	80/20	3.4277
961891	AG1-030 C	15.8310	80/20	15.8310
962041	AG1-048 C	14.3663	80/20	14.3663
962441	AG1-093 C O2	5.1308	80/20	5.1308
962491	AG1-098 C O2	7.8412	80/20	7.8412
962561	AG1-105 C O2	4.5072	80/20	4.5072
962741	AG1-123 C O2	2.8673	80/20	2.8673
962751	AG1-124 C O2	4.0170	80/20	4.0170
963171	AG1-166 C	2.2986	80/20	2.2986
963181	AG1-167 C	2.2986	80/20	2.2986
963191	AG1-168 C	2.2986	80/20	2.2986
963201	AG1-169 C	2.2986	80/20	2.2986
963211	AG1-170 C	2.2986	80/20	2.2986
963271	AG1-176 C O2	21.5558	80/20	21.5558
963321	AG1-181 C O2	14.3538	80/20	14.3538
963361	AG1-185 O2	6.9447	80/20	6.9447
963641	AG1-215 C	1.0727	80/20	1.0727
964111	AG1-272 C	2.2620	80/20	2.2620
964121	AG1-273 C	2.2620	80/20	2.2620
964131	AG1-274 C	2.2620	80/20	2.2620
964231	AG1-284 C O2	17.0478	80/20	17.0478
964261	AG1-287 C	0.4984	80/20	0.4984
964471	AG1-310 C	0.7118	80/20	0.7118
964791	AG1-342 C	1.8023	80/20	1.8023
964821	AG1-345 C	0.9168	80/20	0.9168
964841	AG1-347 C	9.1353	80/20	9.1353
964931	AG1-357 C O2	13.6428	80/20	13.6428
965191	AG1-384 C	2.2620	80/20	2.2620
965281	AG1-393 C	2.2986	80/20	2.2986
965451	AG1-413 C O2	2.6075	80/20	2.6075
965581	AG1-426	6.4000	80/20	6.4000
965591	AG1-427 C	7.7911	80/20	7.7911
965641	AG1-432 C O2	30.1032	80/20	30.1032

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
965721	AG1-440 C	2.3620	80/20	2.3620
965731	AG1-441 C	2.3620	80/20	2.3620
965771	AG1-445	1.3647	80/20	1.3647
965781	AG1-446	1.3647	80/20	1.3647
965831	AG1-451	5.0172	80/20	5.0172
966251	AG1-494 C	1.6494	80/20	1.6494
966791	AG1-550 O2	14.2065	80/20	14.2065
966861	AG1-557 C O2 (Withdrawn : 12/14/2020)	4.1932	80/20	4.1932
WEC	WEC	0.1988	Confirmed LTF	0.1988
LGEE	LGEE	0.4247	Confirmed LTF	0.4247
CPL	CPL	1.0859	Confirmed LTF	1.0859
CBM-W2	CBM-W2	7.3114	Confirmed LTF	7.3114
NY	NY	0.3512	Confirmed LTF	0.3512
TVA	TVA	1.3104	Confirmed LTF	1.3104
SIGE	SIGE	0.1503	Confirmed LTF	0.1503
CBM-S2	CBM-S2	14.5012	Confirmed LTF	14.5012
CBM-S1	CBM-S1	0.3374	Confirmed LTF	0.3374
MEC	MEC	1.1075	Confirmed LTF	1.1075
LAGN	LAGN	1.5942	Confirmed LTF	1.5942
CBM-W1	CBM-W1	8.3419	Confirmed LTF	8.3419

13.5.18 Index 18

ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC DC	MW IMPACT
174346740	938820	AE1-108 TAP	DVP	314746	4BREMO	DVP	1	DVP_P4-2: 2106T2111	breaker	173.0	154.9	157.35	DC	4.24

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
935241	AD1-161 C	1.6457	Adder	1.94
935242	AD1-161 E	1.3514	Adder	1.59
938821	AE1-108 C O1	63.1217	50/50	63.1217
938822	AE1-108 E O1	28.3291	50/50	28.3291
946293	AF1-293 BAT	7.9115	Merchant Transmission	7.9115
946591	AF1-323 C	20.1656	50/50	20.1656
946592	AF1-323 E	13.4438	50/50	13.4438
958131	AF2-107 C	8.9351	50/50	8.9351
958132	AF2-107 E	4.8964	50/50	4.8964
960111	AF2-302 C	7.3330	50/50	7.3330
960112	AF2-302 E	4.8886	50/50	4.8886
961801	AG1-022 C	7.3330	50/50	7.3330
961802	AG1-022 E	4.8886	50/50	4.8886
962741	AG1-123 C O2	5.2594	50/50	5.2594
962742	AG1-123 E O2	3.6649	50/50	3.6649
962751	AG1-124 C O2	7.4909	50/50	7.4909
962752	AG1-124 E O2	5.2271	50/50	5.2271
964531	AG1-316 C O2	1.8484	Adder	4.1
964532	AG1-316 E O2	0.4621	Adder	1.03
965581	AG1-426	13.7520	50/50	13.7520
966251	AG1-494 C	3.1736	50/50	3.1736
966252	AG1-494 E	4.7604	50/50	4.7604
966792	AG1-550 BAT	4.2395	50/50	4.2395
WEC	WEC	0.1559	Confirmed LTF	0.1559
LGEE	LGEE	0.3387	Confirmed LTF	0.3387
CPL	CPL	0.0607	Confirmed LTF	0.0607
CBM-W2	CBM-W2	4.5965	Confirmed LTF	4.5965
NY	NY	0.1288	Confirmed LTF	0.1288
TVA	TVA	0.7490	Confirmed LTF	0.7490
O-066	O-066	1.9652	Confirmed LTF	1.9652
SIGE	SIGE	0.0860	Confirmed LTF	0.0860
CBM-S2	CBM-S2	3.2677	Confirmed LTF	3.2677
CBM-S1	CBM-S1	0.2037	Confirmed LTF	0.2037
G-007	G-007	0.3098	Confirmed LTF	0.3098
MEC	MEC	0.7993	Confirmed LTF	0.7993
LAGN	LAGN	0.8925	Confirmed LTF	0.8925
CBM-W1	CBM-W1	6.6455	Confirmed LTF	6.6455

13.5.19 Index 19

ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC DC	MW IMPACT
173750496	938820	AE1-108 TAP	DVP	242792	05SCOTSV	AEP	1	DVP_P4-2: 422	breaker	167.0	120.54	141.5	DC	35.0

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
938821	AE1-108 C O1	91.8000	50/50	91.8000
938822	AE1-108 E O1	41.2000	50/50	41.2000
964231	AG1-284 C O2	42.0000	50/50	42.0000
964232	AG1-284 E O2	28.0000	50/50	28.0000
965581	AG1-426	20.0000	50/50	20.0000
966791	AG1-550 O2	35.0000	50/50	35.0000

13.5.20 Index 20

ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC DC	MW IMPACT
174959175	941010	AE2-092 TAP	DVP	314774	3SHERWOD	DVP	1	DVP_P1-2: LN 2028-B-1	single	169.2	110.79	113.95	DC	5.35

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
314333	6POWHATN	0.1118	80/20	0.1118
314677	6BUCKING	0.1716	80/20	0.1716
315191	1BEARGRDN G1	2.9664	80/20	2.9664
315192	1BEARGRDN G2	2.9664	80/20	2.9664
315193	1BEARGRDN S1	3.8361	80/20	3.8361
932511	AC2-071 C (Withdrawn : 01/22/2021)	0.1691	80/20	0.1691
932854	AC2-112 C	-5.8435	Adder	-6.87
933501	AC2-165 C	3.3938	80/20	3.3938
938561	AE1-075 C	0.0972	80/20	0.0972
938821	AE1-108 C O1	10.9435	80/20	10.9435
941011	AE2-092 C	30.5466	80/20	30.5466
942461	AE2-259 C O1	3.3924	80/20	3.3924
946291	AF1-293 C O1	26.9341	80/20	26.9341
946591	AF1-323 C	3.4901	80/20	3.4901
958501	AF2-144 C	0.5237	80/20	0.5237
959531	AF2-244 C (Withdrawn : 01/06/2021)	0.4826	80/20	0.4826
960111	AF2-302 C	1.2691	80/20	1.2691
961061	AF2-397 C	7.9412	80/20	7.9412
961801	AG1-022 C	1.2691	80/20	1.2691
963271	AG1-176 C O2	4.9200	80/20	4.9200
964231	AG1-284 C O2	6.4197	80/20	6.4197
965581	AG1-426	2.3842	80/20	2.3842
965641	AG1-432 C O2	6.7848	80/20	6.7848
965831	AG1-451	1.1308	80/20	1.1308
966791	AG1-550 O2	5.3498	80/20	5.3498
966861	AG1-557 C O2 (Withdrawn : 12/14/2020)	0.9028	80/20	0.9028
WEC	WEC	0.0019	Confirmed LTF	0.0019
LGEE	LGEE	0.0057	Confirmed LTF	0.0057
CPL	CPL	0.5678	Confirmed LTF	0.5678
CBM-W2	CBM-W2	1.0304	Confirmed LTF	1.0304
NY	NY	0.0758	Confirmed LTF	0.0758
TVA	TVA	0.2506	Confirmed LTF	0.2506
SIGE	SIGE	0.0162	Confirmed LTF	0.0162
CBM-S2	CBM-S2	6.1387	Confirmed LTF	6.1387
CBM-S1	CBM-S1	0.0562	Confirmed LTF	0.0562
MEC	MEC	0.0699	Confirmed LTF	0.0699
LAGN	LAGN	0.3133	Confirmed LTF	0.3133



13.5.21 Index 21

ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC DC	MW IMPACT
173942475	946590	AF1-323 TAP	AEP	244446	05SOAPSTONE	AEP	1	DVP_P4-2: 422	breaker	167.0	171.44	192.4	DC	35.0

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
938821	AE1-108 C O1	91.8000	50/50	91.8000
938822	AE1-108 E O1	41.2000	50/50	41.2000
946591	AF1-323 C	33.0000	50/50	33.0000
946592	AF1-323 E	22.0000	50/50	22.0000
960111	AF2-302 C	12.0000	50/50	12.0000
960112	AF2-302 E	8.0000	50/50	8.0000
961801	AG1-022 C	12.0000	50/50	12.0000
961802	AG1-022 E	8.0000	50/50	8.0000
964231	AG1-284 C O2	42.0000	50/50	42.0000
964232	AG1-284 E O2	28.0000	50/50	28.0000
965581	AG1-426	20.0000	50/50	20.0000
966791	AG1-550 O2	35.0000	50/50	35.0000

13.5.22 Index 22

ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC DC	MW IMPACT
173942653	946590	AF1-323 TAP	AEP	242792	O5SCOTSV	AEP	1	DVP_P4-2: 29822	breaker	167.0	113.01	117.39	DC	7.32

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
935241	AD1-161 C	1.4796	Adder	1.74
935242	AD1-161 E	1.2151	Adder	1.43
946293	AF1-293 BAT	13.6367	50/50	13.6367
946591	AF1-323 C	18.1464	50/50	18.1464
946592	AF1-323 E	12.0976	50/50	12.0976
958131	AF2-107 C	8.0379	50/50	8.0379
958132	AF2-107 E	4.4046	50/50	4.4046
960111	AF2-302 C	6.5987	50/50	6.5987
960112	AF2-302 E	4.3991	50/50	4.3991
961063	AF2-397 BAT	4.2883	Merchant Transmission	4.2883
961801	AG1-022 C	6.5987	50/50	6.5987
961802	AG1-022 E	4.3991	50/50	4.3991
962741	AG1-123 C O2	4.7294	50/50	4.7294
962742	AG1-123 E O2	3.2956	50/50	3.2956
962751	AG1-124 C O2	6.7323	50/50	6.7323
962752	AG1-124 E O2	4.6977	50/50	4.6977
964531	AG1-316 C O2	1.6619	Adder	3.69
964532	AG1-316 E O2	0.4155	Adder	0.92
965582	AG1-426 BAT	7.6246	50/50	7.6246
966251	AG1-494 C	2.8536	50/50	2.8536
966252	AG1-494 E	4.2804	50/50	4.2804
966792	AG1-550 BAT	7.3171	50/50	7.3171
WEC	WEC	0.1405	Confirmed LTF	0.1405
LGEE	LGEE	0.3041	Confirmed LTF	0.3041
CPL	CPL	0.3269	Confirmed LTF	0.3269
CBM-W2	CBM-W2	4.5786	Confirmed LTF	4.5786
NY	NY	0.1377	Confirmed LTF	0.1377
TVA	TVA	0.7826	Confirmed LTF	0.7826
O-066	O-066	2.0123	Confirmed LTF	2.0123
SIGE	SIGE	0.0819	Confirmed LTF	0.0819
CBM-S2	CBM-S2	5.8151	Confirmed LTF	5.8151
CBM-S1	CBM-S1	0.2071	Confirmed LTF	0.2071
G-007	G-007	0.3171	Confirmed LTF	0.3171
MEC	MEC	0.7468	Confirmed LTF	0.7468
LAGN	LAGN	0.9397	Confirmed LTF	0.9397
CBM-W1	CBM-W1	5.9445	Confirmed LTF	5.9445

### 13.5.23 Index 23

ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC DC	MW IMPACT
175165295	961060	AF2-397 TAP	DVP	314765	6MTEAGLE	DVP	1	314333 6POWHATN 230 933500 AC2-165 TAP 230 1	single	661.76	175.22	177.77	DC	16.86

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
313527	AB2-043 C	0.3899	80/20	0.3899
314429	3JTRSVLE	0.6081	80/20	0.6081
314572	3EMPORIA	0.1253	80/20	0.1253
314677	6BUCKING	0.9605	80/20	0.9605
314704	3LAWRENC	0.1287	80/20	0.1287
315153	1CLOVER1	6.8569	80/20	6.8569
315154	1CLOVER2	6.7885	80/20	6.7885
315158	1KERR 1	0.2163	80/20	0.2163
315159	1KERR 2	0.6058	80/20	0.6058
315160	1KERR 3	0.6058	80/20	0.6058
315161	1KERR 4	0.6058	80/20	0.6058
315162	1KERR 5	0.6058	80/20	0.6058
315163	1KERR 6	0.6058	80/20	0.6058
315164	1KERR 7	0.6058	80/20	0.6058
315191	1BEARGRDN G1	16.8024	80/20	16.8024
315192	1BEARGRDN G2	16.8024	80/20	16.8024
315193	1BEARGRDN S1	21.7287	80/20	21.7287
315266	1PLYWOOD A	0.6338	80/20	0.6338
316118	AC1-105 C	3.2102	80/20	3.2102
316123	AC1-075 C	0.3997	80/20	0.3997
316129	AC1-054 C	3.1902	80/20	3.1902
316131	AB2-060 C	1.1581	80/20	1.1581
924301	AB2-077 C O1 (Suspended)	1.5320	80/20	1.5320
924311	AB2-078 C O1 (Suspended)	1.5320	80/20	1.5320
924321	AB2-079 C O1 (Suspended)	1.5320	80/20	1.5320
925611	AC1-036 C	0.2580	80/20	0.2580
926023	AC1-080 C	0.1336	80/20	0.1336
927251	AC1-221 C	0.7557	80/20	0.7557
927261	AC1-222 C	1.8205	80/20	1.8205
932511	AC2-071 C (Withdrawn : 01/22/2021)	0.9463	80/20	0.9463
932761	AC2-100 C	1.7391	80/20	1.7391
933501	AC2-165 C	31.7815	80/20	31.7815
934311	AD1-055 C	1.2640	80/20	1.2640
934341	AD1-058 C	1.8944	80/20	1.8944
934615	AD1-087 C	4.2935	80/20	4.2935
934625	AD1-088 C	14.0115	80/20	14.0115

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
934991	AD1-131 C	0.6211	80/20	0.6211
935171	AD1-152 C O1	4.7160	80/20	4.7160
935221	AD1-157 C	0.3677	80/20	0.3677
936265	AD2-033 C	13.9378	80/20	13.9378
936361	AD2-046 C O1	5.3677	80/20	5.3677
936485	AD2-063 C	13.8267	80/20	13.8267
937481	AD2-202 C O1	1.2576	80/20	1.2576
938371	AE1-056 C	10.0476	80/20	10.0476
938821	AE1-108 C O1	34.7050	80/20	34.7050
939181	AE1-148 C	5.3606	80/20	5.3606
940661	AE2-053 O1	1.9854	80/20	1.9854
941011	AE2-092 C	28.7117	80/20	28.7117
941791	AE2-182 C	2.2764	80/20	2.2764
942451	AE2-258	1.8439	80/20	1.8439
942461	AE2-259 C O1	18.4830	80/20	18.4830
942751	AE2-291 C	3.6928	80/20	3.6928
942761	AE2-292 C O1	4.5979	80/20	4.5979
943901	AF1-058 C	0.9990	80/20	0.9990
943911	AF1-059	9.4131	80/20	9.4131
945811	AF1-246 C O1	3.3289	80/20	3.3289
946281	AF1-292 C	0.4503	80/20	0.4503
946291	AF1-293 C O1	46.3247	80/20	46.3247
946301	AF1-294 C	6.1429	80/20	6.1429
946591	AF1-323 C	11.1052	80/20	11.1052
957481	AF2-042 C	23.7780	80/20	23.7780
958131	AF2-107 C	5.0071	80/20	5.0071
958211	AF2-115 C	3.6135	80/20	3.6135
958801	AF2-171 C	21.5919	80/20	21.5919
959311	AF2-222 C	19.7370	80/20	19.7370
959751	AF2-266	4.9220	80/20	4.9220
960061	AF2-297 C	3.9960	80/20	3.9960
960081	AF2-299 C	0.7590	80/20	0.7590
960111	AF2-302 C	4.0382	80/20	4.0382
961061	AF2-397 C	49.3810	80/20	49.3810
961791	AG1-021 C	2.8908	80/20	2.8908
961801	AG1-022 C	4.0382	80/20	4.0382
961891	AG1-030 C	20.0871	80/20	20.0871
962041	AG1-048 C	18.0675	80/20	18.0675
962441	AG1-093 C O2	8.1291	80/20	8.1291
962491	AG1-098 C O2	10.6807	80/20	10.6807
962561	AG1-105 C O2	6.4428	80/20	6.4428
962741	AG1-123 C O2	3.0883	80/20	3.0883
962751	AG1-124 C O2	4.3368	80/20	4.3368
963171	AG1-166 C	2.8908	80/20	2.8908
963181	AG1-167 C	2.8908	80/20	2.8908
963191	AG1-168 C	2.8908	80/20	2.8908
963201	AG1-169 C	2.8908	80/20	2.8908
963211	AG1-170 C	2.8908	80/20	2.8908
963271	AG1-176 C O2	26.6508	80/20	26.6508
963301	AG1-179 C	2.7241	80/20	2.7241
963311	AG1-180	1.3273	80/20	1.3273
963321	AG1-181 C O2	18.6814	80/20	18.6814

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
963361	AG1-185 O2	9.0386	80/20	9.0386
963641	AG1-215 C	1.3490	80/20	1.3490
964111	AG1-272 C	2.9318	80/20	2.9318
964121	AG1-273 C	2.9318	80/20	2.9318
964131	AG1-274 C	2.9318	80/20	2.9318
964231	AG1-284 C O2	20.2377	80/20	20.2377
964241	AG1-285 C O2	5.6317	80/20	5.6317
964261	AG1-287 C	0.7493	80/20	0.7493
964471	AG1-310 C	1.0449	80/20	1.0449
964791	AG1-342 C	2.5948	80/20	2.5948
964821	AG1-345 C	1.1534	80/20	1.1534
964841	AG1-347 C	11.8188	80/20	11.8188
964931	AG1-357 C O2	18.3312	80/20	18.3312
965191	AG1-384 C	2.9318	80/20	2.9318
965281	AG1-393 C	2.8908	80/20	2.8908
965451	AG1-413 C O2	4.0845	80/20	4.0845
965581	AG1-426	7.5610	80/20	7.5610
965591	AG1-427 C	10.5299	80/20	10.5299
965601	AG1-428 C O2	2.2741	80/20	2.2741
965641	AG1-432 C O2	36.9660	80/20	36.9660
965721	AG1-440 C	3.7895	80/20	3.7895
965731	AG1-441 C	3.7895	80/20	3.7895
965771	AG1-445	2.1895	80/20	2.1895
965781	AG1-446	2.1895	80/20	2.1895
965831	AG1-451	6.1610	80/20	6.1610
966251	AG1-494 C	1.8194	80/20	1.8194
966621	AG1-532 C	0.4099	80/20	0.4099
966691	AG1-539 C	1.9309	80/20	1.9309
966751	AG1-546 C	6.7436	80/20	6.7436
966791	AG1-550 O2	16.8647	80/20	16.8647
966861	AG1-557 C O2 (Withdrawn : 12/14/2020)	5.0279	80/20	5.0279
WEC	WEC	0.1342	Confirmed LTF	0.1342
LGEE	LGEE	0.2878	Confirmed LTF	0.2878
CPL	CPL	2.2686	Confirmed LTF	2.2686
CBM-W2	CBM-W2	7.5264	Confirmed LTF	7.5264
NY	NY	0.4396	Confirmed LTF	0.4396
TVA	TVA	1.5232	Confirmed LTF	1.5232
SIGE	SIGE	0.1431	Confirmed LTF	0.1431
CBM-S2	CBM-S2	26.2148	Confirmed LTF	26.2148
CBM-S1	CBM-S1	0.3701	Confirmed LTF	0.3701
MEC	MEC	0.9057	Confirmed LTF	0.9057
LAGN	LAGN	1.8795	Confirmed LTF	1.8795
AA2-074	AA2-074	1.4972	LTF	1.4972
CBM-W1	CBM-W1	5.2996	Confirmed LTF	5.2996

### 13.6 Contingency Descriptions - Secondary POI

Contingency Name	Contingency Definition
<p><b>DVP_P4-2: 219322</b></p>	<pre> CONTINGENCY 'DVP_P4-2: 219322'          /* BREMO 230 KV   OPEN BRANCH FROM BUS 313707 TO BUS 313867 CKT 1      /* 6FORK UNION 230.00 - 6BREMODIST 230.00   OPEN BRANCH FROM BUS 313867 TO BUS 314747 CKT 1      /* 6BREMODIST 230.00 - 6BREMO 230.00   OPEN BUS 313867                                /* ISLAND: 6BREMODIST 230.00   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 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 </pre>
<p><b>DVP_P7-1: LN 555-2168-B</b></p>	<pre> CONTINGENCY 'DVP_P7-1: LN 555-2168-B'          /* .   OPEN BRANCH FROM BUS 314907 TO BUS 314912 CKT 1      /* 8DOOMS 500.00 - 8LEXNGTN 500.00   OPEN BRANCH FROM BUS 965530 TO BUS 314854 CKT 1      /* AG1-421 TAP 230.00 - 6LEXNGT1 230.00 END </pre>

Contingency Name	Contingency Definition
<b>DVP_P2-2: BREMO B1</b>	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
<b>DVP_P2-2: BREMO B4</b>	CONTINGENCY 'DVP_P2-2: BREMO B4' /* BREMO 115 KV OPEN BRANCH FROM BUS 313871 TO BUS 313874 CKT 1 /* 3COBBS CREEK115.00 - 3JAMES RI TP115.00 OPEN BRANCH FROM BUS 313871 TO BUS 314762 CKT 1 /* 3COBBS CREEK115.00 - 3JAMES R 115.00 OPEN BRANCH FROM BUS 313874 TO BUS 313875 CKT 1 /* 3JAMES RI TP115.00 - 3TRICESLK 115.00 OPEN BRANCH FROM BUS 313874 TO BUS 314744 CKT 1 /* 3JAMES RI TP115.00 - 3BREMO 115.00 OPEN BUS 313871 /* ISLAND: 3COBBS CREEK115.00 OPEN BUS 313874 /* ISLAND: 3JAMES RI TP115.00 OPEN BUS 313875 /* ISLAND: 3TRICESLK 115.00 OPEN BUS 314762 /* ISLAND: 3JAMES R 115.00 OPEN BRANCH FROM BUS 313708 TO BUS 314744 CKT 1 /* 3FORK UNION 115.00 - 3BREMO 115.00 OPEN BRANCH FROM BUS 314744 TO BUS 314747 CKT 1 /* 3BREMO 115.00 - 6BREMO 230.00 END

Contingency Name	Contingency Definition
<b>DVP_P4-2: 202722</b>	CONTINGENCY 'DVP_P4-2: 202722' /* BREMO 230 KV OPEN BRANCH FROM BUS 313868 TO BUS 314747 CKT 1 /* 6CARTERV 230.00 - 6BREMO 230.00 OPEN BRANCH FROM BUS 313868 TO BUS 933500 CKT 1 /* 6CARTERV 230.00 - AC2-165 TAP 230.00 OPEN BRANCH FROM BUS 314310 TO BUS 314322 CKT 1 /* 6JUDES F 230.00 - 6MDLTHAN 230.00 OPEN BRANCH FROM BUS 314310 TO BUS 314333 CKT 1 /* 6JUDES F 230.00 - 6POWHATN 230.00 OPEN BRANCH FROM BUS 314333 TO BUS 933500 CKT 1 /* 6POWHATN 230.00 - AC2-165 TAP 230.00 OPEN BUS 313868 /* ISLAND: 6CARTERV 230.00 OPEN BUS 314310 /* ISLAND: 6JUDES F 230.00 OPEN BUS 314333 /* ISLAND: 6POWHATN 230.00 OPEN BUS 923862 /* ISLAND: AB2-026 E 230.00 OPEN BUS 938561 /* ISLAND: AE1-075 C 230.00 OPEN BUS 938562 /* ISLAND: AE1-075 E 230.00 OPEN BUS 933500 /* ISLAND: AC2-165 TAP 230.00 OPEN BUS 933501 /* ISLAND: AC2-165 C 230.00 OPEN BUS 933502 /* ISLAND: AC2-165 E 230.00 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 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
<b>AEP_P2-1_242515 05JOSHUA 765 247669 05JOSHUA 1EQ 999 1</b>	CONTINGENCY 'AEP_P2-1_242515 05JOSHUA 765 247669 05JOSHUA 1EQ 999 1' OPEN BRANCH FROM BUS 242515 TO BUS 247669 CKT 1 END
<b>AEP_P2-1_242688 05JOSHUA 138 247670 05JOSHUA_XFL 138 1</b>	CONTINGENCY 'AEP_P2-1_242688 05JOSHUA 138 247670 05JOSHUA_XFL 138 1' OPEN BRANCH FROM BUS 242688 TO BUS 247670 CKT 1 END

Contingency Name	Contingency Definition
<b>314333 6POWHATN 230 933500 AC2-165 TAP 230 1</b>	CONTINGENCY '314333 6POWHATN 230 933500 AC2-165 TAP 230 1' OPEN BRANCH FROM BUS 314333 TO BUS 933500 CKT 1 END
<b>AEP_P2-1_247670 05JOSHUA_XFL 138 247669 05JOSHUA 1EQ 999 1</b>	CONTINGENCY 'AEP_P2-1_247670 05JOSHUA_XFL 138 247669 05JOSHUA 1EQ 999 1' OPEN BRANCH FROM BUS 247670 TO BUS 247669 CKT 1 END
<b>AEP_P4_#15069_05JOSHUA 138_F1</b>	CONTINGENCY 'AEP_P4_#15069_05JOSHUA 138_F1' OPEN BRANCH FROM BUS 242515 TO BUS 247669 CKT 1 / 242515 05JOSHUA 765 247669 05JOSHUA 1EQ 999 1 OPEN BRANCH FROM BUS 247669 TO BUS 247670 CKT 1 / 247669 05JOSHUA 1EQ 999 247670 05JOSHUA_XFL 138 1 OPEN BRANCH FROM BUS 247669 TO BUS 247671 CKT 1 / 247669 05JOSHUA 1EQ 999 247671 05JOSHUA 13.8 1 OPEN BRANCH FROM BUS 242688 TO BUS 247670 CKT 1 / 242688 05JOSHUA 138 247670 05JOSHUA_XFL 138 1 OPEN BRANCH FROM BUS 242652 TO BUS 242688 CKT 1 / 242652 05GOMING 138 242688 05JOSHUA 138 1 OPEN BRANCH FROM BUS 242652 TO BUS 242719 CKT 1 / 242652 05GOMING 138 242719 05MONEL 138 1 OPEN BRANCH FROM BUS 242719 TO BUS 242765 CKT 1 / 242719 05MONEL 138 242765 05REUSENS1 138 1 END
<b>DVP_P2-2: DOOMS B2</b>	CONTINGENCY 'DVP_P2-2: DOOMS B2' /* DOOMS 115 KV OPEN BRANCH FROM BUS 314767 TO BUS 314793 CKT 1 /* 3MIDWAY 115.00 - 3DOOMS 115.00 OPEN BRANCH FROM BUS 314791 TO BUS 314793 CKT 1 /* 3BRND DP 115.00 - 3DOOMS 115.00 OPEN BRANCH FROM BUS 314793 TO BUS 314819 CKT 1 /* 3DOOMS 115.00 - 3WAYSNSBO 115.00 END
<b>DVP_P4-2: 2106T2111</b>	CONTINGENCY 'DVP_P4-2: 2106T2111' / 634 OPEN BRANCH FROM BUS 314326 TO BUS 314747 CKT 1 / 314326 6BEARGRDN 230 314747 6BREMO 230 1 OPEN BRANCH FROM BUS 314326 TO BUS 315191 CKT 1 / 314326 6BEARGRDN 230 315191 1BEARGRDN G1 18.0 1 OPEN BRANCH FROM BUS 314326 TO BUS 314747 CKT 2 / 314326 6BEARGRDN 230 314747 6BREMO 230 2 OPEN BRANCH FROM BUS 314326 TO BUS 315192 CKT 1 / 314326 6BEARGRDN 230 315192 1BEARGRDN G2 18.0 1 OPEN BRANCH FROM BUS 314326 TO BUS 315193 CKT 1 / 314326 6BEARGRDN 230 315193 1BEARGRDN S1 22.0 1 END

Contingency Name	Contingency Definition
<b>DVP_P1-2: LN 2028-B-1</b>	CONTINGENCY 'DVP_P1-2: LN 2028-B-1' / 729 OPEN BRANCH FROM BUS 314765 TO BUS 961060 CKT 1 / 314765 6MTEAGLE 230 961060 AF2-397 TAP 230 1 OPEN BRANCH FROM BUS 314749 TO BUS 314765 CKT 1 / 314749 6CHARLVL 230 314765 6MTEAGLE 230 1 OPEN BRANCH FROM BUS 314765 TO BUS 926451 CKT 1 / 314765 6MTEAGLE 230 926451 AC1-116 C 230 1 OPEN BRANCH FROM BUS 926451 TO BUS 926452 CKT 1 / 926451 AC1-116 C 230 926452 AC1-116 E 230 1 END
<b>DVP_P7-1: LN 2106-2111</b>	CONTINGENCY 'DVP_P7-1: LN 2106-2111' /* . 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 END
<b>DVP_P7-1: LN 555-2168-A</b>	CONTINGENCY 'DVP_P7-1: LN 555-2168-A' /* . OPEN BRANCH FROM BUS 314907 TO BUS 314912 CKT 1 /* 8DOOMS 500.00 - 8LEXNGTN 500.00 OPEN BRANCH FROM BUS 314794 TO BUS 965530 CKT 1 /* 6DOOMS 230.00 - AG1- 421 TAP 230.00 END
<b>DVP_P4-2: 422</b>	CONTINGENCY 'DVP_P4-2: 422' /* BREMO 115 KV OPEN BRANCH FROM BUS 313871 TO BUS 313874 CKT 1 /* 3COBBS CREEK115.00 - 3JAMES RI TP115.00 OPEN BRANCH FROM BUS 313871 TO BUS 314762 CKT 1 /* 3COBBS CREEK115.00 - 3JAMES R 115.00 OPEN BRANCH FROM BUS 313874 TO BUS 313875 CKT 1 /* 3JAMES RI TP115.00 - 3TRICESLK 115.00 OPEN BRANCH FROM BUS 313874 TO BUS 314744 CKT 1 /* 3JAMES RI TP115.00 - 3BREMO 115.00 OPEN BUS 313871 /* ISLAND: 3COBBS CREEK115.00 OPEN BUS 313874 /* ISLAND: 3JAMES RI TP115.00 OPEN BUS 313875 /* ISLAND: 3TRICESLK 115.00 OPEN BUS 314762 /* ISLAND: 3JAMES R 115.00 OPEN BRANCH FROM BUS 313708 TO BUS 314744 CKT 1 /* 3FORK UNION 115.00 - 3BREMO 115.00 OPEN BRANCH FROM BUS 314744 TO BUS 314747 CKT 1 /* 3BREMO 115.00 - 6BREMO 230.00 END

Contingency Name	Contingency Definition
<b>Base Case</b>	
<b>DVP_P4-2: 210622</b>	CONTINGENCY 'DVP_P4-2: 210622' /* 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
<b>DVP_P1-2: LN 2193</b>	CONTINGENCY 'DVP_P1-2: LN 2193' / 583 OPEN BRANCH FROM BUS 313707 TO BUS 313867 CKT 1 / 313707 6FORK UNION 230 313867 6BREMODIST 230 1 OPEN BRANCH FROM BUS 313867 TO BUS 314747 CKT 1 / 313867 6BREMODIST 230 314747 6BREMO 230 1 END
<b>PJM_PLANT BEAR GARDEN</b>	CONTINGENCY 'PJM_PLANT BEAR GARDEN' / 575 REMOVE MACHINE G1 FROM BUS 315191 /* 315191 1BEARGRDN G1 18.0 DEFAULT DISPATCH REMOVE MACHINE G2 FROM BUS 315192 /* 315192 1BEARGRDN G2 18.0 DEFAULT DISPATCH REMOVE MACHINE S1 FROM BUS 315193 /* 315193 1BEARGRDN S1 22.0 DEFAULT DISPATCH END

Contingency Name	Contingency Definition
<b>DVP_P4-2: 2028T2054</b>	CONTINGENCY 'DVP_P4-2: 2028T2054' / 952 OPEN BRANCH FROM BUS 314765 TO BUS 961060 CKT 1 / 314765 6MTEAGLE 230 961060 AF2-397 TAP 230 1 OPEN BRANCH FROM BUS 314749 TO BUS 314765 CKT 1 / 314749 6CHARLVL 230 314765 6MTEAGLE 230 1 OPEN BRANCH FROM BUS 314765 TO BUS 926451 CKT 1 / 314765 6MTEAGLE 230 926451 AC1-116 C 230 1 OPEN BRANCH FROM BUS 926451 TO BUS 926452 CKT 1 / 926451 AC1-116 C 230 926452 AC1-116 E 230 1 OPEN BRANCH FROM BUS 314749 TO BUS 314772 CKT 1 / 314749 6CHARLVL 230 314772 6PROFFIT 230 1 OPEN BRANCH FROM BUS 314759 TO BUS 314772 CKT 1 / 314759 6HOLLYMD 230 314772 6PROFFIT 230 1 END
<b>DVP_P4-2: 29822</b>	CONTINGENCY 'DVP_P4-2: 29822' /* BREMO 230 KV OPEN BRANCH FROM BUS 314677 TO BUS 966860 CKT 1 /* 6BUCKING 230.00 - AG1- 557 TAP 230.00 OPEN BRANCH FROM BUS 314677 TO BUS 314747 CKT 1 /* 6BUCKING 230.00 - 6BREMO 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 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 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
AEP_P1-3_#1372_05JOSHUA 765_1	CONTINGENCY 'AEP_P1-3_#1372_05JOSHUA 765_1' OPEN BRANCH FROM BUS 242515 TO BUS 247669 CKT 1 / 242515 05JOSHUA 765 247669 05JOSHUA 1EQ 999 1 OPEN BRANCH FROM BUS 247669 TO BUS 247670 CKT 1 / 247669 05JOSHUA 1EQ 999 247670 05JOSHUA_XFL 138 1 OPEN BRANCH FROM BUS 242688 TO BUS 247670 CKT 1 / 242688 05JOSHUA 138 247670 05JOSHUA_XFL 138 1 END

## **14 Affected Systems**

### **14.1 TVA**

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

### **14.2 Duke Energy Progress**

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

## 15 Attachment 1: One Line Diagram