Generation Interconnection

Feasibility Study Report

for

Queue Project AG1-488

MARION IP 161 KV

42 MW Capacity / 70 MW Energy

January 2021

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1 Introduction

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

2 Preface

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

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

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

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

3 General

The Interconnection Customer (IC), has proposed a Solar generating facility located in Marion County, Ohio. The installed facilities will have a total capability of 70 MW with 42 MW of this output being recognized by PJM as Capacity.

The proposed in-service date for this project is September 30, 2022. This study does not imply a TO commitment to this in-service date.

Queue Number	**AG1-488**
Project Name	MARION IP 161 KV
State	Ohio
County	Marion
Transmission Owner	EKPC
MFO	70
MWE	70
MWC	42
Fuel	Solar
Basecase Study Year	2024

Any new service customers who can feasibly be commercially operable prior to June 1st of the basecase study year are required to request interim deliverability analysis.

4 Point of Interconnection

AG1-488 will interconnect with the EKPC transmission system along one of the following Points of Interconnection:

Primary POI: Marion IP 161 kV substation.

Secondary POI: Marion Co 161 kV substation.

5 Cost Summary

The AG1-488 project will be responsible for the following costs:

Description	Total Cost
Total Physical Interconnection Costs	$9,370,000
Total System Network Upgrade Costs	$10,790,000
Total Costs	**$20,160,000**

This cost excludes a Federal Income Tax Gross Up charges. This tax may or may not be charged based on whether this project meets the eligibility requirements of IRS Notice 2016-36, 2016-25 I.R.B. (6/20/2016). If at a future date it is determined that the Federal Income Tax Gross charge is required, the Transmission Owner shall be reimbursed by the Interconnection Customer for such taxes.

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

6 Transmission Owner Scope of Work

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

6.1 Attachment Facilities

The total preliminary cost estimate for the Attachment work is given in the table below. These costs do not include CIAC Tax Gross-up.

Description	Total Cost
Install necessary equipment (a 161 kV isolation switch structure and associated switch, plus interconnection metering, fiber-optic connection and telecommunications equipment, circuit breaker and associated switches, and relay panel) at the Marion County Industrial switching station, to accept the IC generator lead line/bus (Estimated time to implement is 18 months)	$1,260,000
Total Attachment Facility Costs	**$1,260,000**

6.2 Direct Connection Cost Estimate

The total preliminary cost estimate for the Direct Connection work is given in the table below. These costs do not include CIAC Tax Gross-up.

Description	Total Cost
Construct a 161 kV switching station near the Marion County Industrial distribution substation site to facilitate connection of the IC solar generation project to the existing Marion County Industrial distribution substation 161 kV radial tap line (Estimated time to implement is 18 months)	$3,785,000
Total Direct Connection Facility Costs	**$3,785,000**

6.3 Non-Direct Connection Cost Estimate

The total preliminary cost estimate for the Non-Direct Connection work is given in the table below. These costs do not include CIAC Tax Gross-up.

Description	Total Cost
Construct approximately 2.3 miles of new 161 kV line to loop the existing Marion County Industrial 161 kV radial tap line into the new Marion County Industrial switching station (Estimated time to implement is 30 months).	$3,200,000
Construct facilities to loop the existing Marion County Industrial 161 kV radial tap line into the new Marion County Industrial switching station (Estimated time to implement is 18 months)	$170,000
Modify relays and/or settings at the Marion County substation for the line to the Marion County Industrial Tap switching station (Estimated time to implement is 9 months)	$85,000
Modify relays and/or settings at the Green County substation for the line to the South Hart switching station (Estimated time to implement is 9 months)	$85,000
Install OPGW on the Marion County-Marion County Industrial Tap 161 kV line (4 miles) (Estimated time to implement is 18 months)	$785,000
Total Non-Direct Connection Facility Costs	**$4,325,000**

7 Interconnection Customer Requirements

It is understood that the Interconnection Customer (IC) is responsible for all costs associated with this interconnection. The costs above are reimbursable to the Transmission Owner. The cost of the IC's generating plant and the costs for the line connecting the generating plant to the Point of Interconnection are not included in this report; these are assumed to be the IC's responsibility.

The Generation Interconnection Agreement does not in or by itself establish a requirement for the Transmission Owner to provide power for consumption at the developer's facilities. A separate agreement may be reached with the local utility that provides service in the area to ensure that infrastructure is in place to meet this demand and proper metering equipment is installed. It is the responsibility of the developer to contact the local service provider to determine if a local service agreement is required.

1. An Interconnection Customer entering the New Services Queue on or after October 1, 2012 with a proposed new Customer Facility that has a Maximum Facility Output equal to or greater than 100 MW shall install and maintain, at its expense, phasor measurement units (PMUs). See Section 8.5.3 of Appendix 2 to the Interconnection Service Agreement as well as section 4.3 of PJM Manual 14D for additional information.

2. The Interconnection Customer may be required to install and/or pay for metering as necessary to properly track real time output of the facility as well as installing metering which shall be used for billing purposes. See Section 8 of Appendix 2 to the Interconnection Service Agreement as well as Section 4 of PJM Manual 14D for additional information.

8 Revenue Metering and SCADA Requirements

8.1 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.

8.2 Meteorological Data Reporting Requirements

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

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

8.3 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/

9 Summer Peak - Load Flow Analysis - Primary POI

The Queue Project AG1-488 was evaluated as a 70.0 MW (Capacity 42.0 MW) injection at the Marion IP 161 kV substation in the EKPC area. Project AG1-488 was evaluated for compliance with applicable reliability planning criteria (PJM, NERC, NERC Regional Reliability Councils, and Transmission Owners). Project AG1-488 was studied with a commercial probability of 53.0 %. Potential network impacts were as follows:

9.1 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
169483772	324736	2SPRINGFL KU	69.0	LGEE	341935	2N SPRINGFLD	69.0	EKPC	1	EXT_B-138-111-A	single	50.0	95.61	105.64	DC	5.02
169483773	324736	2SPRINGFL KU	69.0	LGEE	341935	2N SPRINGFLD	69.0	EKPC	1	EXT_324239 4DANVILE N T 138 324271 4LEBANON 138 1-A	single	50.0	95.41	105.44	DC	5.02
169483750	342718	5COOPER 2	161.0	EKPC	324141	5ELIHU	161.0	LGEE	1	EKPC_P2-1_5COOPER 2 161.00 TO 5LAUREL DAM 161.00	single	277.0	98.58	100.88	DC	6.37
169483617	342775	5MARION IP T	161.0	EKPC	342769	5MARION CO	161.0	EKPC	1	EKPC_P2-1_5TAYLOR CO 161.00 TO 5TAYLOR CO J161.00	single	131.0	85.65	107.7	DC	28.88

9.2 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
166839048	341854	2MCKINNY T	69.0	EKPC	341728	2KNOB LICK	69.0	EKPC	1	EKPC_P2-2_SUMMSHADE 161 #2	bus	46.0	97.58	101.93	DC	4.44

9.3 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
166839029	341563	2GREENCO	69.0	EKPC	341575	2GREENSBURG	69.0	EKPC	1	EKPC_P2-2_SUMMSHADE 161 #2	bus	54.0	101.27	104.98	DC	4.44
166839169	342286	2SOMERSET	69.0	EKPC	342287	2SOMERSET KU	69.0	EKPC	1	EKPC_P7-1_COOP 161 DBL 2	tower	115.0	134.77	137.33	DC	6.52
165430223	342287	2SOMERSET KU	69.0	EKPC	324531	2FERGUSONSO	69.0	LGEE	1	EKPC_P7-1_COOP 161 DBL 2	tower	105.0	154.22	157.14	DC	6.79
165429972	342718	5COOPER 2	161.0	EKPC	324141	5ELIHU	161.0	LGEE	1	EKPC_P2-2_LAUREL CO 161	bus	277.0	136.49	140.31	DC	10.59
165430238	342718	5COOPER 2	161.0	EKPC	324141	5ELIHU	161.0	LGEE	1	EKPC_P7-1_LAURL 161 DBL	tower	277.0	136.71	140.53	DC	10.57

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
169483749	342718	5COOPER 2	161.0	EKPC	324141	5ELIHU	161.0	LGEE	1	EKPC_P2-1_5LAUREL CO 161.00 TO 5LAUREL DAM 161.00	single	277.0	113.13	115.42	DC	6.36
169483863	342757	5LAUREL DAM	161.0	EKPC	342754	5LAUREL CO	161.0	EKPC	1	EXT_B-69-25	single	200.0	108.12	109.72	DC	3.2
169483864	342757	5LAUREL DAM	161.0	EKPC	342754	5LAUREL CO	161.0	EKPC	1	EXT_324130 5ALCALDE 161 324141 5ELIHU 161 1	single	200.0	104.26	105.84	DC	3.16
169483616	342775	5MARION IP T	161.0	EKPC	342769	5MARION CO	161.0	EKPC	1	Base Case	single	84.0	105.78	139.06	DC	27.96

9.4 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
169483770	324736	2SPRINGFLKU	69.0	LGEE	341935	2N SPRINGFLD	69.0	EKPC	1	EXT_B-138-111-A	operation	50.0	119.35	136.08	DC	8.36
169483767	341563	2GREEN CO	69.0	EKPC	342325	2SUMMERSVIL	69.0	EKPC	1	EKPC_P2-1_5GREEN CO 161.00 TO 5SUMM SHADE 161.00-C	operation	39.0	130.88	136.34	DC	4.73
169483889	342287	2SOMERSETKU	69.0	EKPC	324531	2FERGUSONSO	69.0	LGEE	1	EKPC_P2-1_5ELIHU 161.00 TO 5COOPER 2 161.00	operation	105.0	108.55	110.91	DC	5.48
169483888	342325	2SUMMERSVIL	69.0	EKPC	341800	2MAGNOLIA	69.0	EKPC	1	EKPC_P2-1_5GREEN CO 161.00 TO 5SUMM SHADE 161.00-C	operation	42.0	106.29	111.37	DC	4.73
169483873	342703	5CASEY CO	161.0	EKPC	342760	5LIBERTY J	161.0	EKPC	1	EXT_B-69-18-B	operation	153.0	95.72	113.72	DC	27.28

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
169483746	342718	5COOPER2	161.0	EKPC	324141	5ELIHU	161.0	LGEE	1	EKPC_P2-1_5LAUREL CO 161.00 TO 5LAUREL DAM 161.00	operation	277.0	136.47	140.3	DC	10.6
169483748	342718	5COOPER2	161.0	EKPC	324141	5ELIHU	161.0	LGEE	1	Base Case	operation	219.0	112.23	116.4	DC	9.1
169483861	342757	5LAUREL DAM	161.0	EKPC	342754	5LAUREL CO	161.0	EKPC	1	EXT_B-69-25	operation	200.0	113.42	114.63	DC	5.34
169483752	342769	5MARION CO	161.0	EKPC	342703	5CASEY CO	161.0	EKPC	1	EXT_B-69-18-B	operation	153.0	118.87	139.19	DC	30.82
169483759	342769	5MARION CO	161.0	EKPC	342770	4MARION CO	138.0	EKPC	1	EKPC_P2-1_5CASEY CO 161.00 TO 5MARION CO 161.00	operation	220.0	120.35	138.4	DC	39.71
169483760	342769	5MARION CO	161.0	EKPC	342770	4MARION CO	138.0	EKPC	1	Base Case	operation	192.0	108.25	123.3	DC	28.91
169483763	342770	4MARION CO	138.0	EKPC	324271	4LEBANON	138.0	LGEE	1	EKPC_P2-1_5CASEY CO 161.00 TO 5MARION CO 161.00	operation	220.0	120.35	138.4	DC	39.71
169483764	342770	4MARION CO	138.0	EKPC	324271	4LEBANON	138.0	LGEE	1	Base Case	operation	187.0	111.09	126.55	DC	28.91
169483614	342775	5MARION IPT	161.0	EKPC	342769	5MARION CO	161.0	EKPC	1	Base Case	operation	84.0	155.92	211.4	DC	46.6
169483615	342775	5MARION IPT	161.0	EKPC	342769	5MARION CO	161.0	EKPC	1	EKPC_P2-1_5TAYLOR CO 161.00 TO 5TAYLOR CO J161.00	operation	131.0	120.21	156.96	DC	48.14
169483778	342814	5SUMM SHADE	161.0	EKPC	360334	5SUMMER SHAD	161.0	TVA	1	EKPC_P2-1_5SUMM SHADE 161.00 TO 5SUM SHAD TP161.00	operation	289.0	129.33	135.61	DC	18.16
169483885	342814	5SUMM SHADE	161.0	EKPC	361788	5SUM SHAD TP	161.0	TVA	1	EKPC_P2-1_5SUMM SHADE 161.00 TO 5SUMMER SHAD161.00	operation	350.0	106.57	111.74	DC	18.12

9.5 System Reinforcements - Summer Peak Load Flow - Primary POI

ID	Idx	Facility	Upgrade Description	Cost
166839169	6	2SOMERSET 69.0 kV - 2SOMERSET KU 69.0 kV Ckt 1	**EKPC** **r0080 (1881) : Replace the 500 MCM copper jumpers at the Somerset substation using 750 MCM copper or equivalent** **Project Type : FAC** **Cost : $10,000** **Time Estimate : 6.0 Months** **EKPC-r0123a (1981) : Replace the 1200A interconnection metering CTs with 2000A equipment.** **Project Type : FAC** **Cost : $70,000** **Time Estimate : 9.0 Months**	$80,000
166839029	5	2GREEN CO 69.0 kV - 2GREENSBURG 69.0 kV Ckt 1	**EKPC** **EKPC-r0112a (1969) : Rebuild the Green County-Greensburg 69 kV line section using 556 MCM ACSR conductor (0.69 miles)** **Project Type : FAC** **Cost : $525,000** **Time Estimate : 12.0 Months**	$525,000
166839048	4	2MCKINNY T 69.0 kV - 2KNOB LICK 69.0 kV Ckt 1	**EKPC** **EKPC-r0114a (1971) : Increase the maximum operating temperature of the 266 MCM ACSR conductor in the McKinney Corner Tap-Knob Lick 69 kV line section to 212 degrees F (12.53 miles)** **Project Type : FAC** **Cost : $720,000** **Time Estimate : 24.0 Months**	$720,000
169483617,169483616	3	5MARION IP T 161.0 kV - 5MARION CO 161.0 kV Ckt 1	**EKPC** **r0036 (1837) : Increase the maximum operating temperature of the Marion County-Marion County Industrial 161 kV line section 795 MCM conductor to 176 degrees F (4.0 miles)** **Project Type : FAC** **Cost : $390,000** **Time Estimate : 7.0 Months**	$390,000

ID	Idx	Facility	Upgrade Description	Cost
169483749,165430238,165429972,169483750	2	5COOPER2 161.0 kV - 5ELIHU 161.0 kV Ckt 1	**EKPC** **r0076 (1877) : Increase the maximum operating temperature of the 795 MCM ACSR conductor in the Cooper-Elihu 161 kV line section to 275 degrees F (6.7 miles)** **Project Type : FAC** **Cost : $660,000** **Time Estimate : 9.0 Months** **EKPC-r0117a (1974) : Rebuild the Cooper-Elihu 161 kV line section using 954 MCM ACSS conductor (6.7 miles)** **Project Type : FAC** **Cost : $8,275,000** **Time Estimate : 30.0 Months** **EKPC-r0117b (1975) : Change the Zone 3 relay setting at Elihu substation associated with the line protection to at least 392 MVA LTE rating.** **Project Type : FAC** **Cost : $0** **Time Estimate : 6.0 Months** **LGEE** **NonPJMArea (1886) : The external (i.e. Non-PJM) Transmission Owner, LGEE, will not evaluate this violation until the impact study phase.** **Project Type : FAC** **Cost : $0** **Time Estimate : 0.0 Months**	$8,935,000
169483863,169483864	8	5LAUREL DAM 161.0 kV - 5LAUREL CO 161.0 kV Ckt 1	**EKPC** **r0013a (1813) : Increase the maximum operating temperature of the Laurel County-Laurel Dam 161 kV line section 795 MCM conductor to 167 degrees F (~0.2 miles)** **Project Type : FAC** **Cost : $35,000** **Time Estimate : 6.0 Months** **r0013b (1814) : Increase the maximum operating temperature of the Laurel County-Laurel Dam 161 kV line section 795 MCM conductor to 212 degrees F (~0.2 miles)** **Project Type : FAC** **Cost : $40,000** **Time Estimate : 6.0 Months**	$75,000

ID	Idx	Facility	Upgrade Description	Cost
169483772,169483773	1	2SPRINGFL KU 69.0 kV - 2N SPRINGFLD 69.0 kV Ckt 1	**EKPC** **EKPC-r0118b (1976) : LGEE violation (non PJM area). EKPC emergency rating at 54 MVA** **Project Type : FAC** **Cost : $0** **Time Estimate : 0.0 Months** **LGEE** **NonPJMArea (1886) : The external (i.e. Non-PJM) Transmission Owner, LGEE, will not evaluate this violation until the impact study phase.** **Project Type : FAC** **Cost : $0** **Time Estimate : 0.0 Months**	$0
165430223	7	2SOMERSET KU 69.0 kV - 2FERGUSON SO 69.0 kV Ckt 1	**EKPC** **r0078 (1879) : Replace the 1200A current transformer at Somerset with a 2000A current transformer.** **Project Type : FAC** **Cost : $35,000** **Time Estimate : 6.0 Months** **EKPC-r0122a (1980) : Replace the 795 MCM ACSR jumpers at the Somerset substation using bundled 500 MCM copper or equivalent** **Project Type : FAC** **Cost : $30,000** **Time Estimate : 6.0 Months** **LGEE** **NonPJMArea (1886) : The external (i.e. Non-PJM) Transmission Owner, LGEE, will not evaluate this violation until the impact study phase.** **Project Type : FAC** **Cost : $0** **Time Estimate : 0.0 Months**	$65,000
			TOTAL COST	**$10,790,000**

9.6 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".

9.6.1 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
169483773	324736	2SPRINGFLKU	LGEE	341935	2N SPRINGFLD	EKPC	1	EXT_3242394DANVILE N T 138 3242714LEBANON 138 1-A	single	50.0	95.41	105.44	DC	5.02

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
936570	AD2-072_C	-6.8704	Adder	-8.08
939131	AE1-143 C	8.0154	80/20	8.0154
943821	AF1-050 C	2.4163	80/20	2.4163
944151	AF1-083 C O1	3.4175	80/20	3.4175
944511	AF1-116 C	8.9892	80/20	8.9892
964891	AG1-353 C	5.5149	80/20	5.5149
966191	AG1-488 C O1	5.0173	80/20	5.0173
WEC	WEC	0.0082	Confirmed LTF	0.0082
CPLE	CPLE	0.1044	Confirmed LTF	0.1044
G-007A	G-007A	0.0264	Confirmed LTF	0.0264
VFT	VFT	0.0710	Confirmed LTF	0.0710
LGE-0012019	LGE-0012019	17.9949	LTF	17.9949
CBM-W2	CBM-W2	2.0339	Confirmed LTF	2.0339
TVA	TVA	0.6440	Confirmed LTF	0.6440
CBM-S2	CBM-S2	2.0984	Confirmed LTF	2.0984
CBM-S1	CBM-S1	0.1140	Confirmed LTF	0.1140
CBM-N	CBM-N	0.0132	Confirmed LTF	0.0132
MEC	MEC	0.1780	Confirmed LTF	0.1780
GIBSON	GIBSON	0.0273	Confirmed LTF	0.0273
BLUEG	BLUEG	0.5694	Confirmed LTF	0.5694
TRIMBLE	TRIMBLE	0.1759	Confirmed LTF	0.1759
LAGN	LAGN	0.6108	Confirmed LTF	0.6108
CBM-W1	CBM-W1	0.3505	Confirmed LTF	0.3505

9.6.2 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
165430238	342718	5COOPER2	EKPC	324141	5ELIHU	LGEE	1	EKPC_P7-1_LAURL 161 DBL	tower	277.0	136.71	140.53	DC	10.57

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
342442	2W GLASGOW	0.0165	50/50	0.0165
342900	1COOPER1 G	10.1486	50/50	10.1486
342903	1COOPER2 G	19.7433	50/50	19.7433
342945	1LAUREL 1G	6.1423	50/50	6.1423
939131	AE1-143 C	9.9773	50/50	9.9773
939132	AE1-143 E	4.9420	50/50	4.9420
940045	AE1-246 C	9.3685	50/50	9.3685
940046	AE1-246 E	4.5107	50/50	4.5107
940831	AE2-071 C	2.5509	50/50	2.5509
940832	AE2-071 E	1.7006	50/50	1.7006
942411	AE2-254 C O1	1.3451	Adder	1.58
942412	AE2-254 E O1	0.8967	Adder	1.05
943701	AF1-038 C	6.6586	50/50	6.6586
943702	AF1-038 E	4.4390	50/50	4.4390
943821	AF1-050 C	4.5025	50/50	4.5025
943822	AF1-050 E	3.0017	50/50	3.0017
944151	AF1-083 C O1	4.5583	50/50	4.5583
944152	AF1-083 E O1	3.0389	50/50	3.0389
944511	AF1-116 C	11.1895	50/50	11.1895
944512	AF1-116 E	7.4597	50/50	7.4597
945381	AF1-203 C	1.4576	50/50	1.4576
945382	AF1-203 E	0.9718	50/50	0.9718
960741	AF2-365 C O1	2.2040	Adder	2.59
960742	AF2-365 E O1	1.4693	Adder	1.73
962221	AG1-067 C O1	2.8138	50/50	2.8138
962222	AG1-067 E O1	1.4977	50/50	1.4977
962241	AG1-070 C O1	3.8850	50/50	3.8850
962242	AG1-070 E O1	0.7770	50/50	0.7770
962251	AG1-071 C O1	4.6620	50/50	4.6620
962252	AG1-071 E O1	1.0360	50/50	1.0360
964781	AG1-341 C O1	7.3763	50/50	7.3763
964782	AG1-341 E O1	4.9176	50/50	4.9176
964891	AG1-353 C	7.8586	50/50	7.8586
964892	AG1-353 E	5.2391	50/50	5.2391
964901	AG1-354 C	10.7820	50/50	10.7820
964902	AG1-354 E	7.1880	50/50	7.1880
965401	AG1-405 C	3.9234	50/50	3.9234
965402	AG1-405 E	2.6156	50/50	2.6156
965411	AG1-406	2.5238	50/50	2.5238
966021	AG1-471 C O1	7.2990	50/50	7.2990
966022	AG1-471 E O1	4.8660	50/50	4.8660

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
966031	AG1-472 C	4.8624	50/50	4.8624
966032	AG1-472 E	3.2416	50/50	3.2416
966191	AG1-488 C O1	6.3433	50/50	6.3433
966192	AG1-488 E O1	4.2288	50/50	4.2288
WEC	WEC	0.0787	Confirmed LTF	0.0787
CPLE	CPLE	0.0874	Confirmed LTF	0.0874
LGE-0012019	LGE-0012019	7.7561	LTF	7.7561
CBM-W2	CBM-W2	7.4368	Confirmed LTF	7.4368
NY	NY	0.0868	Confirmed LTF	0.0868
TVA	TVA	2.0090	Confirmed LTF	2.0090
O-066	O-066	1.0364	Confirmed LTF	1.0364
SIGE	SIGE	0.0700	Confirmed LTF	0.0700
CBM-S2	CBM-S2	2.6726	Confirmed LTF	2.6726
CBM-S1	CBM-S1	0.4378	Confirmed LTF	0.4378
G-007	G-007	0.1617	Confirmed LTF	0.1617
MEC	MEC	0.7945	Confirmed LTF	0.7945
LAGN	LAGN	1.8725	Confirmed LTF	1.8725
CBM-W1	CBM-W1	3.0283	Confirmed LTF	3.0283

9.6.3 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
169483616	342775	5MARION IP T	EKPC	342769	5MARION CO	EKPC	1	Base Case	single	84.0	105.78	139.06	DC	27.96

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
342442	2W GLASGOW	0.0116	80/20	0.0116
939131	AE1-143 C	-14.9293	Adder	-17.56
940045	AE1-246 C	7.3864	80/20	7.3864
940831	AE2-071 C	1.9102	80/20	1.9102
943821	AF1-050 C	10.1628	80/20	10.1628
944151	AF1-083 C O1	16.0588	80/20	16.0588
945381	AF1-203 C	1.0915	80/20	1.0915
962221	AG1-067 C O1	2.0609	80/20	2.0609
962241	AG1-070 C O1	2.6216	80/20	2.6216
962251	AG1-071 C O1	3.1459	80/20	3.1459
964781	AG1-341 C O1	5.8398	80/20	5.8398
964891	AG1-353 C	24.9500	80/20	24.9500
964901	AG1-354 C	15.4773	80/20	15.4773
966031	AG1-472 C	3.0206	80/20	3.0206
966191	AG1-488 C O1	27.9611	80/20	27.9611
WEC	WEC	0.0476	Confirmed LTF	0.0476
CPLE	CPLE	0.1454	Confirmed LTF	0.1454
G-007A	G-007A	0.0264	Confirmed LTF	0.0264
VFT	VFT	0.0710	Confirmed LTF	0.0710
CBM-W2	CBM-W2	4.3994	Confirmed LTF	4.3994
TVA	TVA	1.2110	Confirmed LTF	1.2110
SIGE	SIGE	0.0113	Confirmed LTF	0.0113
CBM-S2	CBM-S2	3.0172	Confirmed LTF	3.0172
CBM-S1	CBM-S1	0.2451	Confirmed LTF	0.2451
CBM-N	CBM-N	0.0120	Confirmed LTF	0.0120
MEC	MEC	0.4767	Confirmed LTF	0.4767
BLUEG	BLUEG	0.0122	Confirmed LTF	0.0122
TRIMBLE	TRIMBLE	0.0345	Confirmed LTF	0.0345
LAGN	LAGN	1.1847	Confirmed LTF	1.1847
CBM-W1	CBM-W1	1.9488	Confirmed LTF	1.9488

9.6.4 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
166839048	341854	2MCKINNY T	EKPC	341728	2KNOB LICK	EKPC	1	EKPC_P2-2_SUMMSHADE 161 #2	bus	46.0	97.58	101.93	DC	4.44

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
939131	AE1-143 C	2.9768	Adder	3.5
939132	AE1-143 E	1.4745	Adder	1.73
943821	AF1-050 C	4.0928	50/50	4.0928
943822	AF1-050 E	2.7286	50/50	2.7286
944151	AF1-083 C O1	2.5175	Adder	2.96
944152	AF1-083 E O1	1.6783	Adder	1.97
944511	AF1-116 C	3.3385	Adder	3.93
944512	AF1-116 E	2.2256	Adder	2.62
964891	AG1-353 C	5.9029	50/50	5.9029
964892	AG1-353 E	3.9353	50/50	3.9353
964901	AG1-354 C	10.2321	50/50	10.2321
964902	AG1-354 E	6.8214	50/50	6.8214
966191	AG1-488 C O1	1.2007	Adder	2.67
966192	AG1-488 E O1	0.8005	Adder	1.78
LGEE	LGEE	0.1326	Confirmed LTF	0.1326
CALDERWOOD	CALDERWOOD	0.1292	Confirmed LTF	0.1292
LGE-0012019	LGE-0012019	3.0580	LTF	3.0580
NY	NY	0.0028	Confirmed LTF	0.0028
PRAIRIE	PRAIRIE	0.3358	Confirmed LTF	0.3358
O-066	O-066	0.0538	Confirmed LTF	0.0538
SIGE	SIGE	0.0075	Confirmed LTF	0.0075
CHEOAH	CHEOAH	0.1276	Confirmed LTF	0.1276
COTTONWOOD	COTTONWOOD	0.5019	Confirmed LTF	0.5019
G-007	G-007	0.0084	Confirmed LTF	0.0084
HAMLET	HAMLET	0.0629	Confirmed LTF	0.0629
CATAWBA	CATAWBA	0.0431	Confirmed LTF	0.0431

9.6.5 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
166839029	341563	2GREEN CO	EKPC	341575	2GREENSBURG	EKPC	1	EKPC_P2-2_SUMMSHADE 161 #2	bus	54.0	101.27	104.98	DC	4.44

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
939131	AE1-143 C	2.9768	Adder	3.5
939132	AE1-143 E	1.4745	Adder	1.73
943821	AF1-050 C	4.0928	50/50	4.0928
943822	AF1-050 E	2.7286	50/50	2.7286
944151	AF1-083 C O1	2.5175	Adder	2.96
944152	AF1-083 E O1	1.6783	Adder	1.97
944511	AF1-116 C	3.3385	Adder	3.93
944512	AF1-116 E	2.2256	Adder	2.62
964891	AG1-353 C	5.9029	50/50	5.9029
964892	AG1-353 E	3.9353	50/50	3.9353
964901	AG1-354 C	10.2321	50/50	10.2321
964902	AG1-354 E	6.8214	50/50	6.8214
966191	AG1-488 C O1	1.2007	Adder	2.67
966192	AG1-488 E O1	0.8005	Adder	1.78
LGEE	LGEE	0.1326	Confirmed LTF	0.1326
CALDERWOOD	CALDERWOOD	0.1292	Confirmed LTF	0.1292
LGE-0012019	LGE-0012019	3.0580	LTF	3.0580
NY	NY	0.0028	Confirmed LTF	0.0028
PRAIRIE	PRAIRIE	0.3358	Confirmed LTF	0.3358
O-066	O-066	0.0538	Confirmed LTF	0.0538
SIGE	SIGE	0.0075	Confirmed LTF	0.0075
CHEOAH	CHEOAH	0.1276	Confirmed LTF	0.1276
COTTONWOOD	COTTONWOOD	0.5019	Confirmed LTF	0.5019
G-007	G-007	0.0084	Confirmed LTF	0.0084
HAMLET	HAMLET	0.0629	Confirmed LTF	0.0629
CATAWBA	CATAWBA	0.0431	Confirmed LTF	0.0431

9.6.6 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
166839169	342286	2SOMERSET	EKPC	342287	2SOMERSET KU	EKPC	1	EKPC_P7-1_COOP 161 DBL 2	tower	115.0	134.77	137.33	DC	6.52

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
342900	1COOPER1 G	5.0281	50/50	5.0281
342903	1COOPER2 G	9.7520	50/50	9.7520
939131	AE1-143 C	5.2595	Adder	6.19
939132	AE1-143 E	2.6052	Adder	3.06
940045	AE1-246 C	4.3059	Adder	5.07
940046	AE1-246 E	2.0732	Adder	2.44
940831	AE2-071 C	1.2797	Adder	1.51
940832	AE2-071 E	0.8531	Adder	1.0
943701	AF1-038 C	6.1070	50/50	6.1070
943702	AF1-038 E	4.0714	50/50	4.0714
943821	AF1-050 C	2.2112	Adder	2.6
943822	AF1-050 E	1.4741	Adder	1.73
944151	AF1-083 C O1	2.3430	Adder	2.76
944152	AF1-083 E O1	1.5620	Adder	1.84
944511	AF1-116 C	5.8985	Adder	6.94
944512	AF1-116 E	3.9323	Adder	4.63
945381	AF1-203 C	0.7312	Adder	0.86
945382	AF1-203 E	0.4875	Adder	0.57
962221	AG1-067 C O1	0.7327	Adder	1.63
962222	AG1-067 E O1	0.3900	Adder	0.87
962241	AG1-070 C O1	0.9836	Adder	2.18
962242	AG1-070 E O1	0.1967	Adder	0.44
962251	AG1-071 C O1	1.1803	Adder	2.62
962252	AG1-071 E O1	0.2623	Adder	0.58
964781	AG1-341 C O1	1.7956	Adder	3.99
964782	AG1-341 E O1	1.1971	Adder	2.66
964891	AG1-353 C	2.1186	Adder	4.7
964892	AG1-353 E	1.4124	Adder	3.14
964901	AG1-354 C	2.7048	Adder	6.0
964902	AG1-354 E	1.8032	Adder	4.0
965401	AG1-405 C	11.8058	50/50	11.8058
965402	AG1-405 E	7.8706	50/50	7.8706
965411	AG1-406	7.5944	50/50	7.5944
966021	AG1-471 C O1	4.5385	50/50	4.5385
966022	AG1-471 E O1	3.0257	50/50	3.0257
966031	AG1-472 C	1.2254	Adder	2.72
966032	AG1-472 E	0.8170	Adder	1.81
966191	AG1-488 C O1	1.7621	Adder	3.91
966192	AG1-488 E O1	1.1747	Adder	2.61
WEC	WEC	0.0507	Confirmed LTF	0.0507
LGEE	LGEE	0.0145	Confirmed LTF	0.0145

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
CPLE	CPLE	0.0293	Confirmed LTF	0.0293
LGE-0012019	LGE-0012019	4.9049	LTF	4.9049
CBM-W2	CBM-W2	4.0051	Confirmed LTF	4.0051
NY	NY	0.0415	Confirmed LTF	0.0415
TVA	TVA	1.0206	Confirmed LTF	1.0206
O-066	O-066	0.5048	Confirmed LTF	0.5048
SIGE	SIGE	0.0423	Confirmed LTF	0.0423
CBM-S2	CBM-S2	1.0753	Confirmed LTF	1.0753
CBM-S1	CBM-S1	0.2284	Confirmed LTF	0.2284
G-007	G-007	0.0788	Confirmed LTF	0.0788
MEC	MEC	0.4529	Confirmed LTF	0.4529
LAGN	LAGN	0.9660	Confirmed LTF	0.9660
CBM-W1	CBM-W1	1.9908	Confirmed LTF	1.9908

9.6.7 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
165430223	342287	2SOMERSET KU	EKPC	324531	2FERGUSON SO	LGEE	1	EKPC_P7-1_COOP 161 DBL 2	tower	105.0	154.22	157.14	DC	6.79

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
342900	1COOPER1 G	4.9218	50/50	4.9218
342903	1COOPER2 G	9.5458	50/50	9.5458
939131	AE1-143 C	5.4221	Adder	6.38
939132	AE1-143 E	2.6857	Adder	3.16
940045	AE1-246 C	5.4632	Adder	6.43
940046	AE1-246 E	2.6305	Adder	3.09
940831	AE2-071 C	1.6233	Adder	1.91
940832	AE2-071 E	1.0822	Adder	1.27
943701	AF1-038 C	8.3977	50/50	8.3977
943702	AF1-038 E	5.5985	50/50	5.5985
943821	AF1-050 C	2.5575	Adder	3.01
943822	AF1-050 E	1.7050	Adder	2.01
944151	AF1-083 C O1	2.5256	Adder	2.97
944152	AF1-083 E O1	1.6837	Adder	1.98
944511	AF1-116 C	6.0808	Adder	7.15
944512	AF1-116 E	4.0539	Adder	4.77
945381	AF1-203 C	0.9276	Adder	1.09
945382	AF1-203 E	0.6184	Adder	0.73
960741	AF2-365 C O1	1.5231	Adder	1.79
960742	AF2-365 E O1	1.0154	Adder	1.19
962221	AG1-067 C O1	0.9274	Adder	2.06
962222	AG1-067 E O1	0.4936	Adder	1.1
962241	AG1-070 C O1	1.2361	Adder	2.74
962242	AG1-070 E O1	0.2472	Adder	0.55
962251	AG1-071 C O1	1.4833	Adder	3.29
962252	AG1-071 E O1	0.3296	Adder	0.73
964781	AG1-341 C O1	2.2790	Adder	5.06
964782	AG1-341 E O1	1.5193	Adder	3.37
964891	AG1-353 C	2.3239	Adder	5.16
964892	AG1-353 E	1.5493	Adder	3.44
964901	AG1-354 C	3.2939	Adder	7.31
964902	AG1-354 E	2.1959	Adder	4.87
965401	AG1-405 C	10.6088	50/50	10.6088
965402	AG1-405 E	7.0726	50/50	7.0726
965411	AG1-406	6.8244	50/50	6.8244
966021	AG1-471 C O1	5.1635	50/50	5.1635
966022	AG1-471 E O1	3.4423	50/50	3.4423
966031	AG1-472 C	1.5310	Adder	3.4
966032	AG1-472 E	1.0207	Adder	2.27
966191	AG1-488 C O1	1.8353	Adder	4.07
966192	AG1-488 E O1	1.2236	Adder	2.72

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
WEC	WEC	0.0652	Confirmed LTF	0.0652
CPLE	CPLE	0.0628	Confirmed LTF	0.0628
LGE-0012019	LGE-0012019	5.0017	LTF	5.0017
CBM-W2	CBM-W2	5.1878	Confirmed LTF	5.1878
NY	NY	0.0426	Confirmed LTF	0.0426
TVA	TVA	1.3454	Confirmed LTF	1.3454
O-066	O-066	0.5048	Confirmed LTF	0.5048
SIGE	SIGE	0.0489	Confirmed LTF	0.0489
CBM-S2	CBM-S2	1.7957	Confirmed LTF	1.7957
CBM-S1	CBM-S1	0.2983	Confirmed LTF	0.2983
G-007	G-007	0.0788	Confirmed LTF	0.0788
MEC	MEC	0.5848	Confirmed LTF	0.5848
LAGN	LAGN	1.2705	Confirmed LTF	1.2705
CBM-W1	CBM-W1	2.5797	Confirmed LTF	2.5797

9.6.8 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
169483863	342757	5LAUREL DAM	EKPC	342754	5LAUREL CO	EKPC	1	EXT_B-69-25	single	200.0	108.12	109.72	DC	3.2

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
342442	2W GLASGOW	0.0089	80/20	0.0089
342900	1COOPER1 G	4.6906	80/20	4.6906
342903	1COOPER2 G	9.1166	80/20	9.1166
342945	1LAUREL 1G	5.5642	80/20	5.5642
939131	AE1-143 C	5.0204	80/20	5.0204
940045	AE1-246 C	4.9451	80/20	4.9451
940831	AE2-071 C	1.3906	80/20	1.3906
943701	AF1-038 C	4.5860	80/20	4.5860
943821	AF1-050 C	2.3328	80/20	2.3328
944151	AF1-083 C O1	2.3222	80/20	2.3222
944511	AF1-116 C	5.6304	80/20	5.6304
945381	AF1-203 C	0.7946	80/20	0.7946
962221	AG1-067 C O1	1.5225	80/20	1.5225
962241	AG1-070 C O1	2.0779	80/20	2.0779
962251	AG1-071 C O1	2.4935	80/20	2.4935
964781	AG1-341 C O1	3.8923	80/20	3.8923
964891	AG1-353 C	4.0225	80/20	4.0225
964901	AG1-354 C	5.6448	80/20	5.6448
965401	AG1-405 C	3.9224	80/20	3.9224
965411	AG1-406	2.5232	80/20	2.5232
966021	AG1-471 C O1	3.8786	80/20	3.8786
966031	AG1-472 C	2.5915	80/20	2.5915
966191	AG1-488 C O1	3.2012	80/20	3.2012
WEC	WEC	0.0551	Confirmed LTF	0.0551
LGEE	LGEE	0.0603	Confirmed LTF	0.0603
CPLE	CPLE	0.0723	Confirmed LTF	0.0723
LGE-0012019	LGE-0012019	3.6993	LTF	3.6993
CBM-W2	CBM-W2	4.6771	Confirmed LTF	4.6771
NY	NY	0.0465	Confirmed LTF	0.0465
TVA	TVA	1.2012	Confirmed LTF	1.2012
SIGE	SIGE	0.0506	Confirmed LTF	0.0506
CBM-S2	CBM-S2	1.9627	Confirmed LTF	1.9627
CBM-S1	CBM-S1	0.2732	Confirmed LTF	0.2732
MEC	MEC	0.5101	Confirmed LTF	0.5101
LAGN	LAGN	1.1410	Confirmed LTF	1.1410
CBM-W1	CBM-W1	2.1170	Confirmed LTF	2.1170

9.7 Queue Dependencies – Primary POI

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
AD2-072	Van Arsdell-Mercer Industrial 69kV	Engineering and Procurement
AE1-143	Marion County 161 kV	Engineering and Procurement
AE1-246	Barren County-Summer Shade 161 kV	Active
AE2-071	Patton Rd-Summer Shade 69 kV	Active
AE2-254	Garrard County-Tommy-Gooch 69 kV	Active
AF1-038	Sewellton Jct-Webbs Crossroads 69 kV	Active
AF1-050	Summer Shade - Green County 161 kV	Active
AF1-083	Green County-Saloma 161 kV	Active
AF1-116	Marion County 161 kV	Active
AF1-203	Patton Rd-Summer Shade 69 kV	Active
AF2-365	Munfordville KU Tap-Horse Cave Jct. 69 kV	Active
AG1-067	Temple Hill 69 kV	Active
AG1-070	Bon Ayr 69 kV	Active
AG1-071	Bon Ayr 69 kV	Active
AG1-341	Summer Shade 161 kV	Active
AG1-353	Greene County-Marion County 161 kV	Active
AG1-354	Summershade-Green County 161 kV	Active
AG1-405	Walnut Grove-Asahi 69 kV	Active
AG1-406	Walnut Grove-Asahi 69 kV	Active
AG1-471	Up Church-Wayne County 69 kV	Active
AG1-472	Seymour-Cave City 69 kV	Active
AG1-488	Marion IP 161 kV	Active

9.8 Contingency Descriptions - Primary POI

Contingency Name	Contingency Definition
EKPC_P2-1_5COOPER2 161.00 TO 5LAUREL DAM 161.00	CONTINGENCY 'EKPC_P2-1_5COOPER2 161.00 TO 5LAUREL DAM 161.00' OPEN BRANCH FROM BUS 342718 TO BUS 342757 CKT 1 /*5COOPER2 161.005LAUREL DAM 161.00 END
EKPC_P2-1_5SUMM SHADE 161.00 TO 5SUM SHAD TP161.00	CONTINGENCY 'EKPC_P2-1_5SUMM SHADE 161.00 TO 5SUM SHAD TP161.00' OPEN BRANCH FROM BUS 342814 TO BUS 361788 CKT 1 /*5SUMM SHADE 161.005SUM SHAD TP161.00 END
Base Case	
EKPC_P2-1_5ELIHU 161.00 TO 5COOPER2 161.00	CONTINGENCY 'EKPC_P2-1_5ELIHU 161.00 TO 5COOPER2 161.00' OPEN BRANCH FROM BUS 324141 TO BUS 342718 CKT 1 /*5ELIHU 161.005COOPER2 161.00 END
EKPC_P2-2_LAUREL CO 161	CONTINGENCY 'EKPC_P2-2_LAUREL CO 161' /* LAUREL 161 BUS OPEN BUS 342754 /* 5LAUREL CO END
EKPC_P2-1_5TAYLOR CO 161.00 TO 5TAYLOR CO J161.00	CONTINGENCY 'EKPC_P2-1_5TAYLOR CO 161.00 TO 5TAYLOR CO J161.00' OPEN BRANCH FROM BUS 325921 TO BUS 342817 CKT 1 /*5TAYLOR CO 161.005TAYLOR CO J161.00 END
EXT_324130 5ALCALDE 161 324141 5ELIHU 161 1	CONTINGENCY 'EXT_324130 5ALCALDE 161 324141 5ELIHU 161 1' OPEN BRANCH FROM BUS 324130 TO BUS 324141 CKT 1 END
EXT_B-69-18-B	CONTINGENCY 'EXT_B-69-18-B' / 2394 OPEN BRANCH FROM BUS 950000 TO BUS 324271 CKT 1 / 950000 LGE-0012019 138 324271 4LEBANON 138 1 OPEN BRANCH FROM BUS 324270 TO BUS 324271 CKT 1 / 324270 4LEBANON WES 138 324271 4LEBANON 138 1 OPEN BRANCH FROM BUS 324271 TO BUS 342770 CKT 1 / 324271 4LEBANON 138 342770 4MARION CO 138 1 OPEN BRANCH FROM BUS 324271 TO BUS 324606 CKT 1 / 324271 4LEBANON 138 324606 2LEBANON 69.0 1 OPEN BRANCH FROM BUS 324271 TO BUS 324606 CKT 2 / 324271 4LEBANON 138 324606 2LEBANON 69.0 2 END

Contingency Name	Contingency Definition
EKPC_P7-1_COOP 161 DBL 2	CONTINGENCY 'EKPC_P7-1_COOP 161 DBL 2' /* COOPER - ELIHU 161 & COOPER - LAUREL DAM 161 OPEN BRANCH FROM BUS 324141 TO BUS 342718 CKT 1 /* 324141 5ELIHU 161.00 342718 5COOPER2 161.00 OPEN BRANCH FROM BUS 342718 TO BUS 342757 CKT 1 /* 342718 5COOPER2 161.00 342757 5LAUREL DAM 161.00 END
EKPC_P2-2_SUMMSHADE 161 #2	CONTINGENCY 'EKPC_P2-2_SUMMSHADE 161 #2' /* SUMMERSHADE 161 BUS OPEN BRANCH FROM BUS 964900 TO BUS 342814 CKT 1 /* 964900 AG1-354 TAP 161.00 342814 5SUMM SHADE 161.00 OPEN BRANCH FROM BUS 940040 TO BUS 342814 CKT 1 OPEN BUS 342814 END
EKPC_P2-1_5SUMM SHADE 161.00 TO 5SUMMER SHAD161.00	CONTINGENCY 'EKPC_P2-1_5SUMM SHADE 161.00 TO 5SUMMER SHAD161.00' OPEN BRANCH FROM BUS 342814 TO BUS 360334 CKT 1 /*5SUMM SHADE 161.005SUMMER SHAD161.00 END
EKPC_P7-1_LAURL 161 DBL	CONTINGENCY 'EKPC_P7-1_LAURL 161 DBL' /* LAUREL CO - LAUREL DAM 161 & LAUREL CO - TYNER 161 OPEN BRANCH FROM BUS 342754 TO BUS 342757 CKT 1 /* 342754 5LAUREL CO 161.00 342757 5LAUREL DAM 161.00 OPEN BRANCH FROM BUS 342754 TO BUS 342781 CKT 1 /* 342754 5LAUREL CO 161.00 342781 5PITTSBURG 161.00 OPEN BRANCH FROM BUS 342781 TO BUS 342820 CKT 1 /* 342781 5PITTSBURG 161.00 342820 5TYNER 161.00 END
EKPC_P2-1_5GREEN CO 161.00 TO 5SUMM SHADE 161.00-C	CONTINGENCY 'EKPC_P2-1_5GREEN CO 161.00 TO 5SUMM SHADE 161.00-C' OPEN BRANCH FROM BUS 964900 TO BUS 342814 CKT 1 /*5 AG1-354 TAP 161.005SUMM SHADE 161.00 END
EXT_B-69-25	CONTINGENCY 'EXT_B-69-25' / 2360 OPEN BRANCH FROM BUS 324130 TO BUS 324141 CKT 1 / 324130 5ALCALDE 161 324141 5ELIHU 161 1 OPEN BRANCH FROM BUS 324141 TO BUS 342718 CKT 1 / 324141 5ELIHU 161 342718 5COOPER2 161 1 OPEN BRANCH FROM BUS 324141 TO BUS 324514 CKT 1 / 324141 5ELIHU 161 324514 2ELIHU 69.0 1 OPEN BRANCH FROM BUS 324141 TO BUS 324514 CKT 2 / 324141 5ELIHU 161 324514 2ELIHU 69.0 2 END

Contingency Name	Contingency Definition
EXT_B-138-111-A	CONTINGENCY 'EXT_B-138-111-A' / 2375 OPEN BRANCH FROM BUS 324217 TO BUS 324239 CKT 1 / 324217 4BROWN PLANT 138 324239 4DANVILE N T 138 1 OPEN BRANCH FROM BUS 324238 TO BUS 324239 CKT 1 / 324238 4DANVILLE N 138 324239 4DANVILE N T 138 1 OPEN BRANCH FROM BUS 324239 TO BUS 950000 CKT 1 / 324239 4DANVILE N T 138 324271 4LEBANON 138 1 END
EXT_324239 4DANVILE N T 138 324271 4LEBANON 138 1-A	CONTINGENCY 'EXT_324239 4DANVILE N T 138 324271 4LEBANON 138 1-A' OPEN BRANCH FROM BUS 324239 TO BUS 950000 CKT 1 END
EKPC_P2-1_5LAUREL CO 161.00 TO 5LAUREL DAM 161.00	CONTINGENCY 'EKPC_P2-1_5LAUREL CO 161.00 TO 5LAUREL DAM 161.00' OPEN BRANCH FROM BUS 342754 TO BUS 342757 CKT 1 /*5LAUREL CO 161.005LAUREL DAM 161.00 END
EKPC_P2-1_5CASEY CO 161.00 TO 5MARION CO 161.00	CONTINGENCY 'EKPC_P2-1_5CASEY CO 161.00 TO 5MARION CO 161.00' OPEN BRANCH FROM BUS 342703 TO BUS 342769 CKT 1 /*5CASEY CO 161.005MARION CO 161.00 END

10 Short Circuit Analysis - Primary POI

The following Breakers are overdutied:

None.

11 Summer Peak - Load Flow Analysis - Secondary POI

The Queue Project AG1-488 was evaluated as a 70.0 MW (Capacity 42.0 MW) injection at the Marion Co 161 kV substation in the EKPC area. Project AG1-488 was evaluated for compliance with applicable reliability planning criteria (PJM, NERC, NERC Regional Reliability Councils, and Transmission Owners). Project AG1-488 was studied with a commercial probability of 53.0 %. Potential network impacts were as follows:

11.1 Generation Deliverability

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

ID	FROM BUS#	FROM BUS	kV	FROM BUS AREA	TO BUS#	TO BUS	kV	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC|DC	MW IMPACT
1694837772	324736	2SPRINGFL KU	69.0	LGEE	341935	2N SPRINGFLD	69.0	EKPC	1	EXT_B-138-111-A	single	50.0	95.61	106.09	DC	5.24

11.2 Multiple Facility Contingency

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

ID	FROM BUS#	FROM BUS	kV	FROM BUS AREA	TO BUS#	TO BUS	kV	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC|DC	MW IMPACT
166839048	341854	2MCKINNY T	69.0	EKPC	341728	2KNOBLICK	69.0	EKPC	1	EKPC_P2-2_SUMMSHADE 161 #2	bus	46.0	97.58	101.32	DC	3.82
173923332	341854	2MCKINNY T	69.0	EKPC	341728	2KNOBLICK	69.0	EKPC	1	EKPC_P4-5_SSHAD S11-1004	breaker	46.0	97.98	101.7	DC	3.8
173923267	342064	2PEYTONS ST	69.0	EKPC	341767	2LIBERTYKU T	69.0	EKPC	1	EKPC_P2-3_MAR W38-1004	breaker	34.0	87.75	111.58	DC	8.1
173923158	342775	5MARIONIP T	161.0	EKPC	342805	5SALOMAT	161.0	EKPC	1	EKPC_P2-3_MAR W38-1014	breaker	210.0	99.52	132.86	DC	70.0
173923294	944150	AF1-083 TAP	161.0	EKPC	342817	5TAYLORCO J	161.0	EKPC	1	EKPC_P2-3_MAR W38-1014	breaker	298.0	84.4	107.89	DC	70.0

11.3 Contribution to Previously Identified Overloads

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

ID	FROM BUS#	FROM BUS	kV	FROM BUS AREA	TO BUS#	TO BUS	kV	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC|DC	MW IMPACT
166839029	341563	2GREEN CO	69.0	EKPC	341575	2GREENSBURG	69.0	EKPC	1	EKPC_P2-2_SUMMSHADE 161 #2	bus	54.0	101.27	104.46	DC	3.82
173923096	341563	2GREEN CO	69.0	EKPC	342325	2SUMMERSVIL	69.0	EKPC	1	EKPC_P2-3_MAR W38-1014	breaker	39.0	143.08	161.93	DC	7.35
174113502	341563	2GREEN CO	69.0	EKPC	341575	2GREENSBURG	69.0	EKPC	1	EKPC_P4-5_SSHAD S11-1004	breaker	54.0	101.43	104.6	DC	3.8
166839169	342286	2SOMERSET	69.0	EKPC	342287	2SOMERSET KU	69.0	EKPC	1	EKPC_P7-1_COOP 161 DBL 2	tower	115.0	135.16	137.81	DC	6.75
165430043	342287	2SOMERSET KU	69.0	EKPC	324531	2FERGUSONSO	69.0	LGEE	1	EKPC_P2-2_COOPER 2 161	bus	105.0	107.46	114.2	DC	7.07
165430223	342287	2SOMERSET KU	69.0	EKPC	324531	2FERGUSONSO	69.0	LGEE	1	EKPC_P7-1_COOP 161 DBL 2	tower	105.0	154.71	157.7	DC	6.96
173923252	342287	2SOMERSET KU	69.0	EKPC	324531	2FERGUSONSO	69.0	LGEE	1	EKPC_P2-3_COOP S42-210G	breaker	105.0	107.46	114.2	DC	7.07

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
174113357	342325	2SUMMERSVIL	69.0	EKPC	341800	2MAGNOLIA	69.0	EKPC	1	EKPC_P2-3_MAR W38-1014	breaker	42.0	117.63	135.13	DC	7.35
173923102	342703	5CASEY CO	161.0	EKPC	342760	5LIBERTY J	161.0	EKPC	1	EKPC_P2-3_MAR W38-1004	breaker	153.0	115.87	156.33	DC	61.9
165429972	342718	5COOPER2	161.0	EKPC	324141	5ELIHU	161.0	LGEE	1	EKPC_P2-2_LAUREL CO 161	bus	277.0	135.11	139.05	DC	10.89
165430238	342718	5COOPER2	161.0	EKPC	324141	5ELIHU	161.0	LGEE	1	EKPC_P7-1_LAURL 161 DBL	tower	277.0	135.34	139.27	DC	10.88
169483749	342718	5COOPER2	161.0	EKPC	324141	5ELIHU	161.0	LGEE	1	EKPC_P2-1_5LAUREL CO 161.00 TO 5LAUREL DAM 161.00	single	277.0	113.19	115.55	DC	6.54
174113341	342718	5COOPER2	161.0	EKPC	324141	5ELIHU	161.0	LGEE	1	EKPC_P4-5_LAURL S50-1024	breaker	277.0	135.34	139.27	DC	10.88
169483863	342757	5LAUREL DAM	161.0	EKPC	342754	5LAUREL CO	161.0	EKPC	1	EXT_B-69-25	single	200.0	108.23	109.87	DC	3.28
173923045	342769	5MARION CO	161.0	EKPC	342775	5MARION IP T	161.0	EKPC	1	EKPC_P2-3_MAR W38-1014	breaker	131.0	164.89	218.32	DC	70.0
173923065	342769	5MARION CO	161.0	EKPC	342703	5CASEY CO	161.0	EKPC	1	EKPC_P2-3_MAR W38-1004	breaker	153.0	141.18	186.93	DC	70.0
165429982	342770	4MARION CO	138.0	EKPC	324271	4LEBANON	138.0	LGEE	1	EKPC_P2-2_CASEY CO 161	bus	220.0	119.54	139.28	DC	43.43
165429983	342770	4MARION CO	138.0	EKPC	324271	4LEBANON	138.0	LGEE	1	EKPC_P2-2_SUMMSHADE 161 #2	bus	220.0	114.14	130.93	DC	36.92
165430263	342770	4MARION CO	138.0	EKPC	324271	4LEBANON	138.0	LGEE	1	EKPC_P7-1_COOP 161 DBL 2	tower	220.0	116.08	131.2	DC	33.27
165430264	342770	4MARION CO	138.0	EKPC	324271	4LEBANON	138.0	LGEE	1	EKPC_P7-1_COOP 161 DBL 1	tower	220.0	102.89	120.17	DC	38.01
173923140	342817	5TAYLOR CO J	161.0	EKPC	325921	5TAYLOR CO	161.0	LGEE	1	EKPC_P2-3_MAR W38-1014	breaker	112.0	124.28	139.26	DC	16.78
173923225	942410	AE2-254 TAP	69.0	EKPC	341515	2GARRARD CO	69.0	EKPC	1	EKPC_P2-3_MAR W38-1004	breaker	63.0	105.87	118.79	DC	8.14
174113410	964900	AG1-354 TAP	161.0	EKPC	342814	5SUMMSHADE	161.0	EKPC	1	EKPC_P2-3_MAR W38-1014	breaker	298.0	106.92	121.47	DC	43.36

11.4 Potential Congestion due to Local Energy Deliverability

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

Note: Only the most severely overloaded conditions are listed below. There is no guarantee of full delivery of energy for this project by fixing only the conditions listed in this section. With a Transmission Interconnection

Request, a subsequent analysis will be performed which shall study all overload conditions associated with the overloaded element(s) identified.

ID	FROM BUS#	FROM BUS	kV	FROM BUS AREA	TO BUS#	TO BUS	kV	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC|DC	MW IMPACT
169483770	324736	2SPRINGFLKU	69.0	LGEE	341935	2N SPRINGFLD	69.0	EKPC	1	EXT_B-138-111-A	operation	50.0	119.35	136.83	DC	8.74
169483767	341563	2GREEN CO	69.0	EKPC	342325	2SUMMERSVIL	69.0	EKPC	1	EKPC_P2-1_5GREENCO 161.00 TO 5SUMMSHADE 161.00-C	operation	39.0	130.88	135.56	DC	4.05
169483889	342287	2SOMERSETKU	69.0	EKPC	324531	2FERGUSONSO	69.0	LGEE	1	EKPC_P2-1_5ELIHU 161.00 TO 5COOPER2 161.00	operation	105.0	109.0	111.41	DC	5.61
169483888	342325	2SUMMERSVIL	69.0	EKPC	341800	2MAGNOLIA	69.0	EKPC	1	EKPC_P2-1_5GREENCO 161.00 TO 5SUMMSHADE 161.00-C	operation	42.0	106.29	110.64	DC	4.05
169483873	342703	5CASEY CO	161.0	EKPC	342760	5LIBERTY J	161.0	EKPC	1	EXT_B-69-18-B	operation	153.0	95.74	115.21	DC	29.52
169483746	342718	5COOPER2	161.0	EKPC	324141	5ELIHU	161.0	LGEE	1	EKPC_P2-1_5LAURELCO 161.00 TO 5LAURELDAM 161.00	operation	277.0	135.1	139.04	DC	10.9
169483748	342718	5COOPER2	161.0	EKPC	324141	5ELIHU	161.0	LGEE	1	Base Case	operation	219.0	115.06	119.35	DC	9.37
169483861	342757	5LAUREL DAM	161.0	EKPC	342754	5LAUREL CO	161.0	EKPC	1	EXT_B-69-25	operation	200.0	113.53	114.77	DC	5.47
169483752	342769	5MARION CO	161.0	EKPC	342703	5CASEY CO	161.0	EKPC	1	EXT_B-69-18-B	operation	153.0	118.84	140.82	DC	33.35
169483760	342769	5MARION CO	161.0	EKPC	342770	4MARION CO	138.0	EKPC	1	Base Case	operation	192.0	108.31	124.87	DC	31.8
169483928	342769	5MARION CO	161.0	EKPC	342775	5MARION IPT	161.0	EKPC	1	EXT_B-69-18-B	operation	131.0	105.44	133.42	DC	36.65
174738183	342769	5MARION CO	161.0	EKPC	342775	5MARION IPT	161.0	EKPC	1	Base Case	operation	84.0	92.82	115.61	DC	19.15
169483764	342770	4MARION CO	138.0	EKPC	324271	4LEBANON	138.0	LGEE	1	Base Case	operation	187.0	111.16	128.16	DC	31.8
169483778	342814	5SUMM SHADE	161.0	EKPC	360334	5SUMMERSHAD	161.0	TVA	1	EKPC_P2-1_5SUMMSHADE 161.00 TO 5SUMSHADTP161.00	operation	289.0	119.95	125.46	DC	15.91
169483885	342814	5SUMM SHADE	161.0	EKPC	361788	5SUM SHADTP	161.0	TVA	1	EKPC_P2-1_5SUMMSHADE 161.00 TO 5SUMMERSHAD161.00	operation	350.0	98.84	103.38	DC	15.88

11.5 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".

11.5.1 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
169483772	324736	2SPRINGFLKU	LGEE	341935	2N SPRINGFLD	EKPC	1	EXT_B-138-111-A	single	50.0	95.61	106.09	DC	5.24

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
936570	AD2-072_C	-6.8710	Adder	-8.08
939131	AE1-143 C	8.0154	80/20	8.0154
943821	AF1-050 C	2.4163	80/20	2.4163
944151	AF1-083 C O1	3.4172	80/20	3.4172
944511	AF1-116 C	8.9892	80/20	8.9892
964891	AG1-353 C	5.5149	80/20	5.5149
966191	AG1-488 C O2	5.2437	80/20	5.2437
WEC	WEC	0.0082	Confirmed LTF	0.0082
CPLE	CPLE	0.1044	Confirmed LTF	0.1044
G-007A	G-007A	0.0288	Confirmed LTF	0.0288
VFT	VFT	0.0710	Confirmed LTF	0.0710
LGE-0012019	LGE-0012019	17.9938	LTF	17.9938
CBM-W2	CBM-W2	2.0339	Confirmed LTF	2.0339
TVA	TVA	0.6440	Confirmed LTF	0.6440
CBM-S2	CBM-S2	2.0984	Confirmed LTF	2.0984
CBM-S1	CBM-S1	0.1140	Confirmed LTF	0.1140
CBM-N	CBM-N	0.0132	Confirmed LTF	0.0132
MEC	MEC	0.1780	Confirmed LTF	0.1780
GIBSON	GIBSON	0.0273	Confirmed LTF	0.0273
BLUEG	BLUEG	0.5694	Confirmed LTF	0.5694
TRIMBLE	TRIMBLE	0.1759	Confirmed LTF	0.1759
LAGN	LAGN	0.6108	Confirmed LTF	0.6108
CBM-W1	CBM-W1	0.3505	Confirmed LTF	0.3505

11.5.2 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
173923332	341854	2MCKINNY T	EKPC	341728	2KNOB LICK	EKPC	1	EKPC_P4-5_SSHADS11-1004	breaker	46.0	97.98	101.7	DC	3.8

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
939131	AE1-143 C	2.9637	Adder	3.49
939132	AE1-143 E	1.4680	Adder	1.73
943821	AF1-050 C	4.0828	50/50	4.0828
943822	AF1-050 E	2.7218	50/50	2.7218
944151	AF1-083 C O1	2.5099	Adder	2.95
944152	AF1-083 E O1	1.6733	Adder	1.97
944511	AF1-116 C	3.3238	Adder	3.91
944512	AF1-116 E	2.2158	Adder	2.61
964891	AG1-353 C	5.8865	50/50	5.8865
964892	AG1-353 E	3.9243	50/50	3.9243
964901	AG1-354 C	10.2069	50/50	10.2069
964902	AG1-354 E	6.8046	50/50	6.8046
966191	AG1-488 C O2	1.0276	Adder	2.28
966192	AG1-488 E O2	0.6851	Adder	1.52
LGEE	LGEE	0.1558	Confirmed LTF	0.1558
CALDERWOOD	CALDERWOOD	0.1456	Confirmed LTF	0.1456
LGE-0012019	LGE-0012019	3.0107	LTF	3.0107
NY	NY	0.0039	Confirmed LTF	0.0039
PRAIRIE	PRAIRIE	0.3694	Confirmed LTF	0.3694
O-066	O-066	0.0606	Confirmed LTF	0.0606
SIGE	SIGE	0.0088	Confirmed LTF	0.0088
CHEOAH	CHEOAH	0.1441	Confirmed LTF	0.1441
COTTONWOOD	COTTONWOOD	0.5607	Confirmed LTF	0.5607
G-007	G-007	0.0105	Confirmed LTF	0.0105
HAMLET	HAMLET	0.0710	Confirmed LTF	0.0710
CATAWBA	CATAWBA	0.0490	Confirmed LTF	0.0490

11.5.3 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
173923267	342064	2PEYTONS ST	EKPC	341767	2LIBERTYKU T	EKPC	1	EKPC_P2-3_MAR W38-1004	breaker	34.0	87.75	111.58	DC	8.1

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
939131	AE1-143 C	7.4292	50/50	7.4292
939132	AE1-143 E	3.6799	50/50	3.6799
944511	AF1-116 C	8.3318	50/50	8.3318
944512	AF1-116 E	5.5546	50/50	5.5546
966191	AG1-488 C O2	4.8602	50/50	4.8602
966192	AG1-488 E O2	3.2402	50/50	3.2402
CPLE	CPLE	0.0061	Confirmed LTF	0.0061
G-007A	G-007A	0.0024	Confirmed LTF	0.0024
VFT	VFT	0.0064	Confirmed LTF	0.0064
PRAIRIE	PRAIRIE	0.0103	Confirmed LTF	0.0103
TVA	TVA	0.0154	Confirmed LTF	0.0154
CBM-S2	CBM-S2	0.1253	Confirmed LTF	0.1253
CBM-S1	CBM-S1	0.0008	Confirmed LTF	0.0008
CBM-N	CBM-N	0.0012	Confirmed LTF	0.0012
GIBSON	GIBSON	0.0082	Confirmed LTF	0.0082
BLUEG	BLUEG	0.0399	Confirmed LTF	0.0399
TRIMBLE	TRIMBLE	0.0128	Confirmed LTF	0.0128
LAGN	LAGN	0.0123	Confirmed LTF	0.0123

11.5.4 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
173923158	342775	5MARION IP T	EKPC	342805	5SALOMA T	EKPC	1	EKPC_P2-3_MAR W38-1014	breaker	210.0	99.52	132.86	DC	70.0

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
939131	AE1-143 C	64.2000	50/50	64.2000
939132	AE1-143 E	31.8000	50/50	31.8000
944511	AF1-116 C	72.0000	50/50	72.0000
944512	AF1-116 E	48.0000	50/50	48.0000
966191	AG1-488 C O2	42.0000	50/50	42.0000
966192	AG1-488 E O2	28.0000	50/50	28.0000

11.5.5 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
173923294	944150	AF1-083 TAP	EKPC	342817	5TAYLOR CO J	EKPC	1	EKPC_P2-3_MAR W38-1014	breaker	298.0	84.4	107.89	DC	70.0

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
939131	AE1-143 C	64.2000	50/50	64.2000
939132	AE1-143 E	31.8000	50/50	31.8000
944151	AF1-083 C O1	33.0000	50/50	33.0000
944152	AF1-083 E O1	22.0000	50/50	22.0000
944511	AF1-116 C	72.0000	50/50	72.0000
944512	AF1-116 E	48.0000	50/50	48.0000
966191	AG1-488 C O2	42.0000	50/50	42.0000
966192	AG1-488 E O2	28.0000	50/50	28.0000

11.5.6 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
174113502	341563	2GREEN CO	EKPC	341575	2GREENSBURG	EKPC	1	EKPC_P4-5_SSHADS11-1004	breaker	54.0	101.43	104.6	DC	3.8

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
939131	AE1-143 C	2.9637	Adder	3.49
939132	AE1-143 E	1.4680	Adder	1.73
943821	AF1-050 C	4.0828	50/50	4.0828
943822	AF1-050 E	2.7218	50/50	2.7218
944151	AF1-083 C O1	2.5099	Adder	2.95
944152	AF1-083 E O1	1.6733	Adder	1.97
944511	AF1-116 C	3.3238	Adder	3.91
944512	AF1-116 E	2.2158	Adder	2.61
964891	AG1-353 C	5.8865	50/50	5.8865
964892	AG1-353 E	3.9243	50/50	3.9243
964901	AG1-354 C	10.2069	50/50	10.2069
964902	AG1-354 E	6.8046	50/50	6.8046
966191	AG1-488 C O2	1.0276	Adder	2.28
966192	AG1-488 E O2	0.6851	Adder	1.52
LGEE	LGEE	0.1558	Confirmed LTF	0.1558
CALDERWOOD	CALDERWOOD	0.1456	Confirmed LTF	0.1456
LGE-0012019	LGE-0012019	3.0107	LTF	3.0107
NY	NY	0.0039	Confirmed LTF	0.0039
PRAIRIE	PRAIRIE	0.3694	Confirmed LTF	0.3694
O-066	O-066	0.0606	Confirmed LTF	0.0606
SIGE	SIGE	0.0088	Confirmed LTF	0.0088
CHEOAH	CHEOAH	0.1441	Confirmed LTF	0.1441
COTTONWOOD	COTTONWOOD	0.5607	Confirmed LTF	0.5607
G-007	G-007	0.0105	Confirmed LTF	0.0105
HAMLET	HAMLET	0.0710	Confirmed LTF	0.0710
CATAWBA	CATAWBA	0.0490	Confirmed LTF	0.0490

11.5.7 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
173923096	341563	2GREEN CO	EKPC	342325	2SUMMERSVIL	EKPC	1	EKPC_P2-3_MAR W38-1014	breaker	39.0	143.08	161.93	DC	7.35

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
939131	AE1-143 C	6.7410	50/50	6.7410
939132	AE1-143 E	3.3390	50/50	3.3390
943821	AF1-050 C	2.6368	Adder	3.1
943822	AF1-050 E	1.7579	Adder	2.07
944151	AF1-083 C O1	3.4650	50/50	3.4650
944152	AF1-083 E O1	2.3100	50/50	2.3100
944511	AF1-116 C	7.5600	50/50	7.5600
944512	AF1-116 E	5.0400	50/50	5.0400
964891	AG1-353 C	6.1740	50/50	6.1740
964892	AG1-353 E	4.1160	50/50	4.1160
964901	AG1-354 C	2.2409	Adder	4.97
964902	AG1-354 E	1.4939	Adder	3.32
966191	AG1-488 C O2	4.4100	50/50	4.4100
966192	AG1-488 E O2	2.9400	50/50	2.9400
CPLE	CPLE	0.0785	Confirmed LTF	0.0785
G-007A	G-007A	0.0312	Confirmed LTF	0.0312
VFT	VFT	0.0839	Confirmed LTF	0.0839
CBM-W2	CBM-W2	1.0752	Confirmed LTF	1.0752
TVA	TVA	0.4676	Confirmed LTF	0.4676
CBM-S2	CBM-S2	1.5556	Confirmed LTF	1.5556
CBM-S1	CBM-S1	0.0851	Confirmed LTF	0.0851
CBM-N	CBM-N	0.0156	Confirmed LTF	0.0156
MEC	MEC	0.0810	Confirmed LTF	0.0810
GIBSON	GIBSON	0.0999	Confirmed LTF	0.0999
BLUEG	BLUEG	0.4896	Confirmed LTF	0.4896
TRIMBLE	TRIMBLE	0.1419	Confirmed LTF	0.1419
LAGN	LAGN	0.4235	Confirmed LTF	0.4235

11.5.8 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
166839169	342286	2SOMERSET	EKPC	342287	2SOMERSET KU	EKPC	1	EKPC_P7-1_COOP 161 DBL 2	tower	115.0	135.16	137.81	DC	6.75

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
342900	1COOPER1 G	5.0281	50/50	5.0281
342903	1COOPER2 G	9.7520	50/50	9.7520
939131	AE1-143 C	5.2595	Adder	6.19
939132	AE1-143 E	2.6052	Adder	3.06
940045	AE1-246 C	4.3059	Adder	5.07
940046	AE1-246 E	2.0732	Adder	2.44
940831	AE2-071 C	1.2797	Adder	1.51
940832	AE2-071 E	0.8531	Adder	1.0
943701	AF1-038 C	6.1070	50/50	6.1070
943702	AF1-038 E	4.0714	50/50	4.0714
943821	AF1-050 C	2.2112	Adder	2.6
943822	AF1-050 E	1.4741	Adder	1.73
944151	AF1-083 C O1	2.3430	Adder	2.76
944152	AF1-083 E O1	1.5620	Adder	1.84
944511	AF1-116 C	5.8985	Adder	6.94
944512	AF1-116 E	3.9323	Adder	4.63
945381	AF1-203 C	0.7312	Adder	0.86
945382	AF1-203 E	0.4875	Adder	0.57
962221	AG1-067 C O2	0.7336	Adder	1.63
962222	AG1-067 E O2	0.3905	Adder	0.87
962241	AG1-070 C O2	0.9810	Adder	2.18
962242	AG1-070 E O2	0.1962	Adder	0.44
962251	AG1-071 C O2	1.1772	Adder	2.61
962252	AG1-071 E O2	0.2616	Adder	0.58
964781	AG1-341 C O2	2.0847	Adder	4.63
964782	AG1-341 E O2	1.3898	Adder	3.09
964891	AG1-353 C	2.1186	Adder	4.7
964892	AG1-353 E	1.4124	Adder	3.14
964901	AG1-354 C	2.7048	Adder	6.0
964902	AG1-354 E	1.8032	Adder	4.0
965401	AG1-405 C	11.8058	50/50	11.8058
965402	AG1-405 E	7.8706	50/50	7.8706
965411	AG1-406	7.5944	50/50	7.5944
966021	AG1-471 C O2	4.6062	50/50	4.6062
966022	AG1-471 E O2	3.0708	50/50	3.0708
966031	AG1-472 C O2	1.1461	Adder	2.54
966032	AG1-472 E O2	0.7640	Adder	1.7
966191	AG1-488 C O2	1.8236	Adder	4.05
966192	AG1-488 E O2	1.2157	Adder	2.7
WEC	WEC	0.0507	Confirmed LTF	0.0507
LGEE	LGEE	0.0145	Confirmed LTF	0.0145

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
CPLE	CPLE	0.0293	Confirmed LTF	0.0293
LGE-0012019	LGE-0012019	4.9049	LTF	4.9049
CBM-W2	CBM-W2	4.0051	Confirmed LTF	4.0051
NY	NY	0.0415	Confirmed LTF	0.0415
TVA	TVA	1.0206	Confirmed LTF	1.0206
O-066	O-066	0.5048	Confirmed LTF	0.5048
SIGE	SIGE	0.0423	Confirmed LTF	0.0423
CBM-S2	CBM-S2	1.0753	Confirmed LTF	1.0753
CBM-S1	CBM-S1	0.2284	Confirmed LTF	0.2284
G-007	G-007	0.0788	Confirmed LTF	0.0788
MEC	MEC	0.4529	Confirmed LTF	0.4529
LAGN	LAGN	0.9660	Confirmed LTF	0.9660
CBM-W1	CBM-W1	1.9908	Confirmed LTF	1.9908

11.5.9 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
165430223	342287	2SOMERSET KU	EKPC	324531	2FERGUSON SO	LGEE	1	EKPC_P7-1_COOP 161 DBL 2	tower	105.0	154.71	157.7	DC	6.96

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
342900	1COOPER1 G	4.9218	50/50	4.9218
342903	1COOPER2 G	9.5458	50/50	9.5458
939131	AE1-143 C	5.4221	Adder	6.38
939132	AE1-143 E	2.6857	Adder	3.16
940045	AE1-246 C	5.4632	Adder	6.43
940046	AE1-246 E	2.6305	Adder	3.09
940831	AE2-071 C	1.6233	Adder	1.91
940832	AE2-071 E	1.0822	Adder	1.27
943701	AF1-038 C	8.3977	50/50	8.3977
943702	AF1-038 E	5.5985	50/50	5.5985
943821	AF1-050 C	2.5575	Adder	3.01
943822	AF1-050 E	1.7050	Adder	2.01
944151	AF1-083 C O1	2.5256	Adder	2.97
944152	AF1-083 E O1	1.6837	Adder	1.98
944511	AF1-116 C	6.0808	Adder	7.15
944512	AF1-116 E	4.0539	Adder	4.77
945381	AF1-203 C	0.9276	Adder	1.09
945382	AF1-203 E	0.6184	Adder	0.73
960741	AF2-365 C O1	1.5231	Adder	1.79
960742	AF2-365 E O1	1.0154	Adder	1.19
962221	AG1-067 C O2	0.9285	Adder	2.06
962222	AG1-067 E O2	0.4942	Adder	1.1
962241	AG1-070 C O2	1.2324	Adder	2.74
962242	AG1-070 E O2	0.2465	Adder	0.55
962251	AG1-071 C O2	1.4789	Adder	3.28
962252	AG1-071 E O2	0.3286	Adder	0.73
964781	AG1-341 C O2	2.6451	Adder	5.87
964782	AG1-341 E O2	1.7634	Adder	3.91
964891	AG1-353 C	2.3239	Adder	5.16
964892	AG1-353 E	1.5493	Adder	3.44
964901	AG1-354 C	3.2939	Adder	7.31
964902	AG1-354 E	2.1959	Adder	4.87
965401	AG1-405 C	10.6088	50/50	10.6088
965402	AG1-405 E	7.0726	50/50	7.0726
965411	AG1-406	6.8244	50/50	6.8244
966021	AG1-471 C O2	5.2283	50/50	5.2283
966022	AG1-471 E O2	3.4855	50/50	3.4855
966031	AG1-472 C O2	1.4123	Adder	3.13
966032	AG1-472 E O2	0.9415	Adder	2.09
966191	AG1-488 C O2	1.8800	Adder	4.17
966192	AG1-488 E O2	1.2533	Adder	2.78

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
WEC	WEC	0.0652	Confirmed LTF	0.0652
CPLE	CPLE	0.0628	Confirmed LTF	0.0628
LGE-0012019	LGE-0012019	5.0017	LTF	5.0017
CBM-W2	CBM-W2	5.1878	Confirmed LTF	5.1878
NY	NY	0.0426	Confirmed LTF	0.0426
TVA	TVA	1.3454	Confirmed LTF	1.3454
O-066	O-066	0.5048	Confirmed LTF	0.5048
SIGE	SIGE	0.0489	Confirmed LTF	0.0489
CBM-S2	CBM-S2	1.7957	Confirmed LTF	1.7957
CBM-S1	CBM-S1	0.2983	Confirmed LTF	0.2983
G-007	G-007	0.0788	Confirmed LTF	0.0788
MEC	MEC	0.5848	Confirmed LTF	0.5848
LAGN	LAGN	1.2705	Confirmed LTF	1.2705
CBM-W1	CBM-W1	2.5797	Confirmed LTF	2.5797

11.5.10 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
174113357	342325	2SUMMERSVIL	EKPC	341800	2MAGNOLIA	EKPC	1	EKPC_P2-3_MAR W38-1014	breaker	42.0	117.63	135.13	DC	7.35

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
939131	AE1-143 C	6.7410	50/50	6.7410
939132	AE1-143 E	3.3390	50/50	3.3390
943821	AF1-050 C	2.6368	Adder	3.1
943822	AF1-050 E	1.7579	Adder	2.07
944151	AF1-083 C O1	3.4650	50/50	3.4650
944152	AF1-083 E O1	2.3100	50/50	2.3100
944511	AF1-116 C	7.5600	50/50	7.5600
944512	AF1-116 E	5.0400	50/50	5.0400
964891	AG1-353 C	6.1740	50/50	6.1740
964892	AG1-353 E	4.1160	50/50	4.1160
964901	AG1-354 C	2.2409	Adder	4.97
964902	AG1-354 E	1.4939	Adder	3.32
966191	AG1-488 C O2	4.4100	50/50	4.4100
966192	AG1-488 E O2	2.9400	50/50	2.9400
CPLE	CPLE	0.0785	Confirmed LTF	0.0785
G-007A	G-007A	0.0312	Confirmed LTF	0.0312
VFT	VFT	0.0839	Confirmed LTF	0.0839
CBM-W2	CBM-W2	1.0752	Confirmed LTF	1.0752
TVA	TVA	0.4676	Confirmed LTF	0.4676
CBM-S2	CBM-S2	1.5556	Confirmed LTF	1.5556
CBM-S1	CBM-S1	0.0851	Confirmed LTF	0.0851
CBM-N	CBM-N	0.0156	Confirmed LTF	0.0156
MEC	MEC	0.0810	Confirmed LTF	0.0810
GIBSON	GIBSON	0.0999	Confirmed LTF	0.0999
BLUEG	BLUEG	0.4896	Confirmed LTF	0.4896
TRIMBLE	TRIMBLE	0.1419	Confirmed LTF	0.1419
LAGN	LAGN	0.4235	Confirmed LTF	0.4235

11.5.11 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
173923102	342703	5CASEY CO	EKPC	342760	5LIBERTY J	EKPC	1	EKPC_P2-3_MAR W38-1004	breaker	153.0	115.87	156.33	DC	61.9

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
939131	AE1-143 C	56.7708	50/50	56.7708
939132	AE1-143 E	28.1201	50/50	28.1201
944511	AF1-116 C	63.6682	50/50	63.6682
944512	AF1-116 E	42.4454	50/50	42.4454
966191	AG1-488 C O2	37.1398	50/50	37.1398
966192	AG1-488 E O2	24.7598	50/50	24.7598
WEC	WEC	0.0022	Confirmed LTF	0.0022
LGEE	LGEE	0.0239	Confirmed LTF	0.0239
CALDERWOOD	CALDERWOOD	0.0129	Confirmed LTF	0.0129
O-066	O-066	0.0067	Confirmed LTF	0.0067
SIGE	SIGE	0.0019	Confirmed LTF	0.0019
CHEOAH	CHEOAH	0.0125	Confirmed LTF	0.0125
COTTONWOOD	COTTONWOOD	0.0147	Confirmed LTF	0.0147
G-007	G-007	0.0010	Confirmed LTF	0.0010
HAMLET	HAMLET	0.0058	Confirmed LTF	0.0058
MEC	MEC	0.0064	Confirmed LTF	0.0064
CATAWBA	CATAWBA	0.0042	Confirmed LTF	0.0042
CBM-W1	CBM-W1	0.0841	Confirmed LTF	0.0841

11.5.12 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
174113341	342718	5COOPER2	EKPC	324141	5ELIHU	LGEE	1	EKPC_P4-5_LAURLS50-1024	breaker	277.0	135.34	139.27	DC	10.88

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
342442	2W GLASGOW	0.0165	50/50	0.0165
342900	1COOPER1 G	10.1486	50/50	10.1486
342903	1COOPER2 G	19.7433	50/50	19.7433
342945	1LAUREL 1G	6.1423	50/50	6.1423
939131	AE1-143 C	9.9773	50/50	9.9773
939132	AE1-143 E	4.9420	50/50	4.9420
940045	AE1-246 C	9.3685	50/50	9.3685
940046	AE1-246 E	4.5107	50/50	4.5107
940831	AE2-071 C	2.5509	50/50	2.5509
940832	AE2-071 E	1.7006	50/50	1.7006
942411	AE2-254 C O1	1.3451	Adder	1.58
942412	AE2-254 E O1	0.8967	Adder	1.05
943701	AF1-038 C	6.6586	50/50	6.6586
943702	AF1-038 E	4.4390	50/50	4.4390
943821	AF1-050 C	4.5025	50/50	4.5025
943822	AF1-050 E	3.0017	50/50	3.0017
944151	AF1-083 C O1	4.5583	50/50	4.5583
944152	AF1-083 E O1	3.0389	50/50	3.0389
944511	AF1-116 C	11.1895	50/50	11.1895
944512	AF1-116 E	7.4597	50/50	7.4597
945381	AF1-203 C	1.4576	50/50	1.4576
945382	AF1-203 E	0.9718	50/50	0.9718
960741	AF2-365 C O1	2.2040	Adder	2.59
960742	AF2-365 E O1	1.4693	Adder	1.73
962221	AG1-067 C O2	2.8165	50/50	2.8165
962222	AG1-067 E O2	1.4991	50/50	1.4991
962241	AG1-070 C O2	3.8768	50/50	3.8768
962242	AG1-070 E O2	0.7754	50/50	0.7754
962251	AG1-071 C O2	4.6521	50/50	4.6521
962252	AG1-071 E O2	1.0338	50/50	1.0338
964781	AG1-341 C O2	7.8139	50/50	7.8139
964782	AG1-341 E O2	5.2093	50/50	5.2093
964891	AG1-353 C	7.8586	50/50	7.8586
964892	AG1-353 E	5.2391	50/50	5.2391
964901	AG1-354 C	10.7820	50/50	10.7820
964902	AG1-354 E	7.1880	50/50	7.1880
965401	AG1-405 C	3.9234	50/50	3.9234
965402	AG1-405 E	2.6156	50/50	2.6156
965411	AG1-406	2.5238	50/50	2.5238
966021	AG1-471 C O2	7.4002	50/50	7.4002
966022	AG1-471 E O2	4.9334	50/50	4.9334

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
966031	AG1-472 C O2	2.0318	Adder	4.51
966032	AG1-472 E O2	1.3545	Adder	3.01
966191	AG1-488 C O2	6.5272	50/50	6.5272
966192	AG1-488 E O2	4.3515	50/50	4.3515
WEC	WEC	0.0787	Confirmed LTF	0.0787
CPLE	CPLE	0.0874	Confirmed LTF	0.0874
LGE-0012019	LGE-0012019	7.7561	LTF	7.7561
CBM-W2	CBM-W2	7.4368	Confirmed LTF	7.4368
NY	NY	0.0868	Confirmed LTF	0.0868
TVA	TVA	2.0090	Confirmed LTF	2.0090
O-066	O-066	1.0364	Confirmed LTF	1.0364
SIGE	SIGE	0.0700	Confirmed LTF	0.0700
CBM-S2	CBM-S2	2.6726	Confirmed LTF	2.6726
CBM-S1	CBM-S1	0.4378	Confirmed LTF	0.4378
G-007	G-007	0.1617	Confirmed LTF	0.1617
MEC	MEC	0.7945	Confirmed LTF	0.7945
LAGN	LAGN	1.8725	Confirmed LTF	1.8725
CBM-W1	CBM-W1	3.0283	Confirmed LTF	3.0283

11.5.13 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
169483863	342757	5LAUREL DAM	EKPC	342754	5LAUREL CO	EKPC	1	EXT_B-69-25	single	200.0	108.23	109.87	DC	3.28

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
342442	2W GLASGOW	0.0089	80/20	0.0089
342900	1COOPER1 G	4.6906	80/20	4.6906
342903	1COOPER2 G	9.1166	80/20	9.1166
342945	1LAUREL 1G	5.5642	80/20	5.5642
939131	AE1-143 C	5.0204	80/20	5.0204
940045	AE1-246 C	4.9451	80/20	4.9451
940831	AE2-071 C	1.3906	80/20	1.3906
943701	AF1-038 C	4.5860	80/20	4.5860
943821	AF1-050 C	2.3328	80/20	2.3328
944151	AF1-083 C O1	2.3222	80/20	2.3222
944511	AF1-116 C	5.6304	80/20	5.6304
945381	AF1-203 C	0.7946	80/20	0.7946
962221	AG1-067 C O2	1.5240	80/20	1.5240
962241	AG1-070 C O2	2.0730	80/20	2.0730
962251	AG1-071 C O2	2.4876	80/20	2.4876
964781	AG1-341 C O2	4.2650	80/20	4.2650
964891	AG1-353 C	4.0225	80/20	4.0225
964901	AG1-354 C	5.6448	80/20	5.6448
965401	AG1-405 C	3.9224	80/20	3.9224
965411	AG1-406	2.5232	80/20	2.5232
966021	AG1-471 C O2	3.9301	80/20	3.9301
966031	AG1-472 C O2	2.4029	80/20	2.4029
966191	AG1-488 C O2	3.2844	80/20	3.2844
WEC	WEC	0.0551	Confirmed LTF	0.0551
LGEE	LGEE	0.0603	Confirmed LTF	0.0603
CPLE	CPLE	0.0723	Confirmed LTF	0.0723
LGE-0012019	LGE-0012019	3.6993	LTF	3.6993
CBM-W2	CBM-W2	4.6771	Confirmed LTF	4.6771
NY	NY	0.0465	Confirmed LTF	0.0465
TVA	TVA	1.2012	Confirmed LTF	1.2012
SIGE	SIGE	0.0506	Confirmed LTF	0.0506
CBM-S2	CBM-S2	1.9627	Confirmed LTF	1.9627
CBM-S1	CBM-S1	0.2732	Confirmed LTF	0.2732
MEC	MEC	0.5101	Confirmed LTF	0.5101
LAGN	LAGN	1.1410	Confirmed LTF	1.1410
CBM-W1	CBM-W1	2.1170	Confirmed LTF	2.1170

11.5.14 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
173923045	342769	5MARION CO	EKPC	342775	5MARION IP T	EKPC	1	EKPC_P2-3_MAR W38-1014	breaker	131.0	164.89	218.32	DC	70.0

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
939131	AE1-143 C	64.2000	50/50	64.2000
939132	AE1-143 E	31.8000	50/50	31.8000
944511	AF1-116 C	72.0000	50/50	72.0000
944512	AF1-116 E	48.0000	50/50	48.0000
966191	AG1-488 C O2	42.0000	50/50	42.0000
966192	AG1-488 E O2	28.0000	50/50	28.0000

11.5.15 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
173923065	342769	5MARION CO	EKPC	342703	5CASEY CO	EKPC	1	EKPC_P2-3_MAR W38-1004	breaker	153.0	141.18	186.93	DC	70.0

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
939131	AE1-143 C	64.2000	50/50	64.2000
939132	AE1-143 E	31.8000	50/50	31.8000
944511	AF1-116 C	72.0000	50/50	72.0000
944512	AF1-116 E	48.0000	50/50	48.0000
966191	AG1-488 C O2	42.0000	50/50	42.0000
966192	AG1-488 E O2	28.0000	50/50	28.0000

11.5.16 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
165429982	342770	4MARION CO	EKPC	324271	4LEBANON	LGEE	1	EKPC_P2-2_CASEY CO 161	bus	220.0	119.54	139.28	DC	43.43

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
939131	AE1-143 C	39.8278	50/50	39.8278
939132	AE1-143 E	19.7278	50/50	19.7278
940045	AE1-246 C	5.5975	Adder	6.59
940046	AE1-246 E	2.6951	Adder	3.17
940831	AE2-071 C	1.4630	Adder	1.72
940832	AE2-071 E	0.9753	Adder	1.15
943821	AF1-050 C	8.6018	50/50	8.6018
943822	AF1-050 E	5.7346	50/50	5.7346
944151	AF1-083 C O1	13.5462	50/50	13.5462
944152	AF1-083 E O1	9.0308	50/50	9.0308
944511	AF1-116 C	44.6666	50/50	44.6666
944512	AF1-116 E	29.7778	50/50	29.7778
945381	AF1-203 C	0.8360	Adder	0.98
945382	AF1-203 E	0.5573	Adder	0.66
962221	AG1-067 C O2	0.8233	Adder	1.83
962222	AG1-067 E O2	0.4382	Adder	0.97
962241	AG1-070 C O2	0.9770	Adder	2.17
962242	AG1-070 E O2	0.1954	Adder	0.43
962251	AG1-071 C O2	1.1724	Adder	2.6
962252	AG1-071 E O2	0.2605	Adder	0.58
964781	AG1-341 C O2	2.3901	Adder	5.31
964782	AG1-341 E O2	1.5934	Adder	3.54
964891	AG1-353 C	21.0181	50/50	21.0181
964892	AG1-353 E	14.0120	50/50	14.0120
964901	AG1-354 C	13.3227	50/50	13.3227
964902	AG1-354 E	8.8818	50/50	8.8818
966191	AG1-488 C O2	26.0555	50/50	26.0555
966192	AG1-488 E O2	17.3704	50/50	17.3704
WEC	WEC	0.0236	Confirmed LTF	0.0236
CPLE	CPLE	0.1747	Confirmed LTF	0.1747
G-007A	G-007A	0.0456	Confirmed LTF	0.0456
VFT	VFT	0.1226	Confirmed LTF	0.1226
CBM-W2	CBM-W2	3.6826	Confirmed LTF	3.6826
TVA	TVA	1.1844	Confirmed LTF	1.1844
CBM-S2	CBM-S2	3.5392	Confirmed LTF	3.5392
CBM-S1	CBM-S1	0.2242	Confirmed LTF	0.2242
CBM-N	CBM-N	0.0216	Confirmed LTF	0.0216
MEC	MEC	0.3512	Confirmed LTF	0.3512
GIBSON	GIBSON	0.0546	Confirmed LTF	0.0546
BLUEG	BLUEG	0.3784	Confirmed LTF	0.3784
TRIMBLE	TRIMBLE	0.1402	Confirmed LTF	0.1402

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
LAGN	LAGN	1.1200	Confirmed LTF	1.1200
CBM-W1	CBM-W1	1.0094	Confirmed LTF	1.0094

11.5.17 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
173923140	342817	5TAYLOR CO J	EKPC	325921	5TAYLOR CO	LGEE	1	EKPC_P2-3_MAR W38-1014	breaker	112.0	124.28	139.26	DC	16.78

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
939131	AE1-143 C	15.3862	50/50	15.3862
939132	AE1-143 E	7.6212	50/50	7.6212
943821	AF1-050 C	4.0781	50/50	4.0781
943822	AF1-050 E	2.7187	50/50	2.7187
944151	AF1-083 C O1	7.9088	50/50	7.9088
944152	AF1-083 E O1	5.2725	50/50	5.2725
944511	AF1-116 C	17.2555	50/50	17.2555
944512	AF1-116 E	11.5037	50/50	11.5037
964891	AG1-353 C	11.8247	50/50	11.8247
964892	AG1-353 E	7.8831	50/50	7.8831
964901	AG1-354 C	2.7587	Adder	6.12
964902	AG1-354 E	1.8391	Adder	4.08
966191	AG1-488 C O2	10.0657	50/50	10.0657
966192	AG1-488 E O2	6.7105	50/50	6.7105
WEC	WEC	0.0085	Confirmed LTF	0.0085
CPLE	CPLE	0.0758	Confirmed LTF	0.0758
G-007A	G-007A	0.0216	Confirmed LTF	0.0216
VFT	VFT	0.0581	Confirmed LTF	0.0581
CBM-W2	CBM-W2	1.5232	Confirmed LTF	1.5232
TVA	TVA	0.5040	Confirmed LTF	0.5040
CBM-S2	CBM-S2	1.5242	Confirmed LTF	1.5242
CBM-S1	CBM-S1	0.0950	Confirmed LTF	0.0950
CBM-N	CBM-N	0.0108	Confirmed LTF	0.0108
MEC	MEC	0.1430	Confirmed LTF	0.1430
GIBSON	GIBSON	0.0328	Confirmed LTF	0.0328
BLUEG	BLUEG	0.2205	Confirmed LTF	0.2205
TRIMBLE	TRIMBLE	0.0746	Confirmed LTF	0.0746
LAGN	LAGN	0.4760	Confirmed LTF	0.4760
CBM-W1	CBM-W1	0.3785	Confirmed LTF	0.3785

11.5.18 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
173923225	942410	AE2-254 TAP	EKPC	341515	2GARRARD CO	EKPC	1	EKPC_P2-3_MAR W38-1004	breaker	63.0	105.87	118.79	DC	8.14

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
939131	AE1-143 C	7.4632	50/50	7.4632
939132	AE1-143 E	3.6967	50/50	3.6967
942411	AE2-254 C O1	24.0483	50/50	24.0483
942412	AE2-254 E O1	16.0322	50/50	16.0322
943701	AF1-038 C	1.9471	Adder	2.29
943702	AF1-038 E	1.2981	Adder	1.53
944511	AF1-116 C	8.3700	50/50	8.3700
944512	AF1-116 E	5.5800	50/50	5.5800
966191	AG1-488 C O2	4.8825	50/50	4.8825
966192	AG1-488 E O2	3.2550	50/50	3.2550
CPLE	CPLE	0.0689	Confirmed LTF	0.0689
G-007A	G-007A	0.0192	Confirmed LTF	0.0192
VFT	VFT	0.0452	Confirmed LTF	0.0452
CBM-W2	CBM-W2	0.9318	Confirmed LTF	0.9318
TVA	TVA	0.3444	Confirmed LTF	0.3444
CBM-S2	CBM-S2	1.3676	Confirmed LTF	1.3676
CBM-S1	CBM-S1	0.0581	Confirmed LTF	0.0581
CBM-N	CBM-N	0.0084	Confirmed LTF	0.0084
MEC	MEC	0.0651	Confirmed LTF	0.0651
GIBSON	GIBSON	0.0295	Confirmed LTF	0.0295
BLUEG	BLUEG	0.2326	Confirmed LTF	0.2326
TRIMBLE	TRIMBLE	0.0779	Confirmed LTF	0.0779
LAGN	LAGN	0.3133	Confirmed LTF	0.3133

11.5.19 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
174113410	964900	AG1-354 TAP	EKPC	342814	5SUMM SHADE	EKPC	1	EKPC_P2-3_MAR W38-1014	breaker	298.0	106.92	121.47	DC	43.36

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
939131	AE1-143 C	39.7706	50/50	39.7706
939132	AE1-143 E	19.6995	50/50	19.6995
943821	AF1-050 C	26.2742	50/50	26.2742
943822	AF1-050 E	17.5162	50/50	17.5162
944151	AF1-083 C O1	20.4428	50/50	20.4428
944152	AF1-083 E O1	13.6286	50/50	13.6286
944511	AF1-116 C	44.6026	50/50	44.6026
944512	AF1-116 E	29.7350	50/50	29.7350
964571	AG1-320 C O2	1.7526	Adder	3.89
964572	AG1-320 E O2	0.8699	Adder	1.93
964891	AG1-353 C	37.3321	50/50	37.3321
964892	AG1-353 E	24.8881	50/50	24.8881
964901	AG1-354 C	76.1499	50/50	76.1499
964902	AG1-354 E	50.7666	50/50	50.7666
966191	AG1-488 C O2	26.0182	50/50	26.0182
966192	AG1-488 E O2	17.3454	50/50	17.3454
LGEE	LGEE	0.2953	Confirmed LTF	0.2953
CALDERWOOD	CALDERWOOD	0.2823	Confirmed LTF	0.2823
LGE-0012019	LGE-0012019	6.6198	LTF	6.6198
NY	NY	0.0072	Confirmed LTF	0.0072
PRAIRIE	PRAIRIE	0.6354	Confirmed LTF	0.6354
O-066	O-066	0.1279	Confirmed LTF	0.1279
SIGE	SIGE	0.0280	Confirmed LTF	0.0280
CHEOAH	CHEOAH	0.2788	Confirmed LTF	0.2788
COTTONWOOD	COTTONWOOD	1.0563	Confirmed LTF	1.0563
G-007	G-007	0.0200	Confirmed LTF	0.0200
HAMLET	HAMLET	0.1392	Confirmed LTF	0.1392
CATAWBA	CATAWBA	0.0956	Confirmed LTF	0.0956

11.6 Contingency Descriptions - Secondary POI

Contingency Name	Contingency Definition
EKPC_P2-2_COOPER 2 161	CONTINGENCY 'EKPC_P2-2_COOPER 2 161' /* COOPER 161 BUS 2 OPEN BUS 342718 /* 5COOPER2 END
EKPC_P2-3_MAR W38-1004	CONTINGENCY 'EKPC_P2-3_MAR W38-1004' / 117 OPEN BRANCH FROM BUS 342769 TO BUS 342770 CKT 1 / 342769 5MARION CO 161 342770 4MARION CO 138 1 OPEN BRANCH FROM BUS 342805 TO BUS 944150 CKT 1 / 342805 5SALOMA T 161 944150 AF1-083 TAP 161 1 OPEN BRANCH FROM BUS 342802 TO BUS 342805 CKT 1 / 342802 5SALOMA 161 342805 5SALOMA T 161 1 OPEN BRANCH FROM BUS 342775 TO BUS 342805 CKT 1 / 342775 5MARION IP T 161 342805 5SALOMA T 161 1 OPEN BRANCH FROM BUS 342772 TO BUS 342775 CKT 1 / 342772 5MARION IP 161 342775 5MARION IP T 161 1 OPEN BRANCH FROM BUS 342769 TO BUS 342775 CKT 1 / 342769 5MARION CO 161 342775 5MARION IP T 161 1 END
EKPC_P2-3_MAR W38-1014	CONTINGENCY 'EKPC_P2-3_MAR W38-1014' / 95 OPEN BRANCH FROM BUS 342769 TO BUS 342770 CKT 1 / 342769 5MARION CO 161 342770 4MARION CO 138 1 OPEN BRANCH FROM BUS 342703 TO BUS 342769 CKT 1 / 342703 5CASEY CO 161 342769 5MARION CO 161 1 OPEN BRANCH FROM BUS 342703 TO BUS 341269 CKT 1 / 342703 5CASEY CO 161 341269 2CASEY CO 69.0 1 OPEN BRANCH FROM BUS 342703 TO BUS 342760 CKT 1 / 342703 5CASEY CO 161 342760 5LIBERTY J 161 1 END
EKPC_P4-5_LAURL S50-1024	CONTINGENCY 'EKPC_P4-5_LAURL S50-1024' / 608 OPEN BRANCH FROM BUS 342754 TO BUS 342757 CKT 1 / 342754 5LAUREL CO 161 342757 5LAUREL DAM 161 1 OPEN BRANCH FROM BUS 342754 TO BUS 342781 CKT 1 / 342754 5LAUREL CO 161 342781 5PITTSBURG 161 1 OPEN BRANCH FROM BUS 342754 TO BUS 341740 CKT 1 / 342754 5LAUREL CO 161 341740 2LAUREL CO 69.0 1 OPEN BRANCH FROM BUS 342781 TO BUS 324688 CKT 1 / 342781 5PITTSBURG 161 324688 2PITTSBRG KU 69.0 1 OPEN BRANCH FROM BUS 342781 TO BUS 342820 CKT 1 / 342781 5PITTSBURG 161 342820 5TYNER 161 1 END
EKPC_P2-2_LAUREL CO 161	CONTINGENCY 'EKPC_P2-2_LAUREL CO 161' /* LAUREL 161 BUS OPEN BUS 342754 /* 5LAUREL CO END

Contingency Name	Contingency Definition
EKPC_P4-5_SSHAD S11-1004	CONTINGENCY 'EKPC_P4-5_SSHAD S11-1004' / 69 OPEN BRANCH FROM BUS 342694 TO BUS 341059 CKT 1 / 342694 5BARREN CO 161 341059 2BARREN CO 69.0 1 OPEN BRANCH FROM BUS 342814 TO BUS 940040 CKT 1 / 342814 5SUMM SHADE 161 940040 AE1-246 TAP 161 1 OPEN BRANCH FROM BUS 342814 TO BUS 361788 CKT 1 / 342814 5SUMM SHADE 161 361788 5SUM SHAD TP 161 1 OPEN BRANCH FROM BUS 342814 TO BUS 964900 CKT 1 / 342814 5SUMM SHADE 161 964900 AG1-354 TAP 161 1 OPEN BRANCH FROM BUS 326998 TO BUS 361788 CKT 1 / 326998 5BULLITT TAP 161 361788 5SUM SHAD TP 161 1 OPEN BRANCH FROM BUS 360334 TO BUS 361788 CKT 1 / 360334 5SUMMER SHAD 161 361788 5SUM SHAD TP 161 1 OPEN BRANCH FROM BUS 342814 TO BUS 360334 CKT 1 / 342814 5SUMM SHADE 161 360334 5SUMMER SHAD 161 1 OPEN BRANCH FROM BUS 342814 TO BUS 342322 CKT 1 / 342814 5SUMM SHADE 161 342322 2SUMM SHADE 69.0 1 END
EXT_B-69-25	CONTINGENCY 'EXT_B-69-25' / 536 OPEN BRANCH FROM BUS 324130 TO BUS 324141 CKT 1 / 324130 5ALCALDE 161 324141 5ELIHU 161 1 OPEN BRANCH FROM BUS 324141 TO BUS 342718 CKT 1 / 324141 5ELIHU 161 342718 5COOPER2 161 1 OPEN BRANCH FROM BUS 324141 TO BUS 324514 CKT 1 / 324141 5ELIHU 161 324514 2ELIHU 69.0 1 OPEN BRANCH FROM BUS 324141 TO BUS 324514 CKT 2 / 324141 5ELIHU 161 324514 2ELIHU 69.0 2 END
EKPC_P2-1_5ELIHU 161.00 TO 5COOPER2 161.00	CONTINGENCY 'EKPC_P2-1_5ELIHU 161.00 TO 5COOPER2 161.00' / 803 OPEN BRANCH FROM BUS 324141 TO BUS 342718 CKT 1 / 324141 5ELIHU 161 342718 5COOPER2 161 1 END

Contingency Name	Contingency Definition
EKPC_P7-1_COOP 161 DBL 1	CONTINGENCY 'EKPC_P7-1_COOP 161 DBL 1' /* RUSSELL CO - COOPER 161 & COOPER - PULASKI 161 OPEN BRANCH FROM BUS 342793 TO BUS 342796 CKT 1 /* 342793 5RUSSEL CO 161.00 342796 5RUSSEL CO J161.00 OPEN BRANCH FROM BUS 342796 TO BUS 360448 CKT 1 /* 342796 5RUSSEL CO J161.00 360448 5WOLF CRK HP161.00 OPEN BRANCH FROM BUS 342751 TO BUS 342796 CKT 1 /* 342751 5JAMESTOWN T161.00 342796 5RUSSEL CO J161.00 OPEN BRANCH FROM BUS 342748 TO BUS 342751 CKT 1 /* 342748 5JAMESTOWN 161.00 342751 5JAMESTOWN T161.00 OPEN BRANCH FROM BUS 342745 TO BUS 342751 CKT 1 /* 342745 5JABEZ T 161.00 342751 5JAMESTOWN T161.00 OPEN BRANCH FROM BUS 342742 TO BUS 342745 CKT 1 /* 342742 5JABEZ 161.00 342745 5JABEZ T 161.00 OPEN BRANCH FROM BUS 342745 TO BUS 342799 CKT 1 /* 342745 5JABEZ T 161.00 342799 5S OAKHILL 161.00 OPEN BRANCH FROM BUS 342715 TO BUS 342799 CKT 1 /* 342715 5COOPER1 161.00 342799 5S OAKHILL 161.00 OPEN BRANCH FROM BUS 342715 TO BUS 342790 CKT 1 /* 342715 5COOPER1 161.00 342790 5PULASK CO J161.00 OPEN BRANCH FROM BUS 342787 TO BUS 342790 CKT 1 /* 342787 5PULASK CO 161.00 342790 5PULASK CO J161.00 OPEN BRANCH FROM BUS 342115 TO BUS 342787 CKT 1 /* 342115 2PULASK CO 69.000 342787 5PULASK CO 161.00 OPEN BRANCH FROM BUS 342760 TO BUS 342790 CKT 1 /* 342760 5LIBERTY J 161.00 342790 5PULASK CO J161.00 END
EXT_B-69-18-B	CONTINGENCY 'EXT_B-69-18-B' / 44 OPEN BRANCH FROM BUS 324271 TO BUS 950000 CKT 1 / 324271 4LEBANON 138 950000 LGE-0012019 138 1 OPEN BRANCH FROM BUS 324270 TO BUS 324271 CKT 1 / 324270 4LEBANON WES 138 324271 4LEBANON 138 1 OPEN BRANCH FROM BUS 324271 TO BUS 342770 CKT 1 / 324271 4LEBANON 138 342770 4MARION CO 138 1 OPEN BRANCH FROM BUS 324271 TO BUS 324606 CKT 1 / 324271 4LEBANON 138 324606 2LEBANON 69.0 1 OPEN BRANCH FROM BUS 324271 TO BUS 324606 CKT 2 / 324271 4LEBANON 138 324606 2LEBANON 69.0 2 END
EKPC_P7-1_COOP 161 DBL 2	CONTINGENCY 'EKPC_P7-1_COOP 161 DBL 2' /* COOPER - ELIHU 161 & COOPER - LAUREL DAM 161 OPEN BRANCH FROM BUS 324141 TO BUS 342718 CKT 1 /* 324141 5ELIHU 161.00 342718 5COOPER2 161.00 OPEN BRANCH FROM BUS 342718 TO BUS 342757 CKT 1 /* 342718 5COOPER2 161.00 342757 5LAUREL DAM 161.00 END

Contingency Name	Contingency Definition
EKPC_P2-2_SUMMSHADE 161 #2	CONTINGENCY 'EKPC_P2-2_SUMMSHADE 161 #2' /* SUMMERSHADE 161 BUS OPEN BRANCH FROM BUS 964900 TO BUS 342814 CKT 1 /* 964900 AG1-354 TAP 161.00 342814 5SUMM SHADE 161.00 OPEN BRANCH FROM BUS 940040 TO BUS 342814 CKT 1 OPEN BUS 342814 END
EKPC_P2-1_5SUMM SHADE 161.00 TO 5SUMMER SHAD161.00	CONTINGENCY 'EKPC_P2-1_5SUMM SHADE 161.00 TO 5SUMMER SHAD161.00' / 971 OPEN BRANCH FROM BUS 342814 TO BUS 360334 CKT 1 / 342814 5SUMM SHADE 161 360334 5SUMMER SHAD 161 1 END
EKPC_P7-1_LAURL 161 DBL	CONTINGENCY 'EKPC_P7-1_LAURL 161 DBL' /* LAUREL CO - LAUREL DAM 161 & LAUREL CO - TYNER 161 OPEN BRANCH FROM BUS 342754 TO BUS 342757 CKT 1 /* 342754 5LAUREL CO 161.00 342757 5LAUREL DAM 161.00 OPEN BRANCH FROM BUS 342754 TO BUS 342781 CKT 1 /* 342754 5LAUREL CO 161.00 342781 5PITTSBURG 161.00 OPEN BRANCH FROM BUS 342781 TO BUS 342820 CKT 1 /* 342781 5PITTSBURG 161.00 342820 5TYNER 161.00 END
EKPC_P2-1_5GREEN CO 161.00 TO 5SUMM SHADE 161.00-C	CONTINGENCY 'EKPC_P2-1_5GREEN CO 161.00 TO 5SUMM SHADE 161.00-C' / 45 OPEN BRANCH FROM BUS 342814 TO BUS 964900 CKT 1 / 342814 5SUMM SHADE 161 964900 AG1-354 TAP 161 1 END
EKPC_P2-2_CASEY CO 161	CONTINGENCY 'EKPC_P2-2_CASEY CO 161' /* CASEY 161 BUS OPEN BUS 342703 /* 5CASEY CO END
EXT_B-138-111-A	CONTINGENCY 'EXT_B-138-111-A' / 448 OPEN BRANCH FROM BUS 324217 TO BUS 324239 CKT 1 / 324217 4BROWN PLANT 138 324239 4DANVILE N T 138 1 OPEN BRANCH FROM BUS 324238 TO BUS 324239 CKT 1 / 324238 4DANVILLE N 138 324239 4DANVILE N T 138 1 OPEN BRANCH FROM BUS 324239 TO BUS 950000 CKT 1 / 324239 4DANVILE N T 138 950000 LGE-0012019 138 1 END

Contingency Name	Contingency Definition
EKPC_P2-3_COOP S42-210G	CONTINGENCY 'EKPC_P2-3_COOP S42-210G' / 942 OPEN BRANCH FROM BUS 324141 TO BUS 342718 CKT 1 / 324141 5ELIHU 161 342718 5COOPER2 161 1 OPEN BRANCH FROM BUS 342715 TO BUS 342718 CKT 1 / 342715 5COOPER1 161 342718 5COOPER2 161 1 OPEN BRANCH FROM BUS 342718 TO BUS 342727 CKT 1 / 342718 5COOPER2 161 342727 5DENNY 161 1 OPEN BRANCH FROM BUS 342718 TO BUS 342757 CKT 1 / 342718 5COOPER2 161 342757 5LAUREL DAM 161 1 OPEN BRANCH FROM BUS 342718 TO BUS 342903 CKT 1 / 342718 5COOPER2 161 342903 1COOPER2 G 20.0 1 END
EKPC_P2-1_5SUMM SHADE 161.00 TO 5SUM SHAD TP161.00	CONTINGENCY 'EKPC_P2-1_5SUMM SHADE 161.00 TO 5SUM SHAD TP161.00' / 845 OPEN BRANCH FROM BUS 342814 TO BUS 361788 CKT 1 / 342814 5SUMM SHADE 161 361788 5SUM SHAD TP 161 1 END
EKPC_P2-1_5LAUREL CO 161.00 TO 5LAUREL DAM 161.00	CONTINGENCY 'EKPC_P2-1_5LAUREL CO 161.00 TO 5LAUREL DAM 161.00' / 563 OPEN BRANCH FROM BUS 342754 TO BUS 342757 CKT 1 / 342754 5LAUREL CO 161 342757 5LAUREL DAM 161 1 END
Base Case	

12 Affected Systems

12.1 TVA

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

12.2 Duke Energy Progress

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

12.3 MISO

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

12.4 LG&E

LG&E Impacts to be determined during later study phases (as applicable).