



**Generation Interconnection
Feasibility Study Report
for
Queue Project AG1-465
NORTH HANOVER-GITTS RUN 115 KV
40 MW Capacity / 100 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 ME.

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.

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

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 Storage generating facility located in York County, Pennsylvania. The installed facilities will have a total capability of 100 MW with 40 MW of this output being recognized by PJM as Capacity. The proposed in-service date for this project is March 05, 2025. This study does not imply a TO commitment to this in-service date.

Queue Number	AG1-465
Project Name	NORTH HANOVER-GITTS RUN 115 KV
State	Pennsylvania
County	York
Transmission Owner	ME
MFO	100
MWE	100
MWC	40
Fuel	Storage
Basecase Study Year	2024

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

4 Point of Interconnection

4.1 Primary POI

The interconnection of the project with the ME transmission system at the Primary POI will be accomplished by constructing a new 115 kV three (3) breaker ring bus substation and looping the North Hanover–Gitts Run 115 kV line into the new station. The new substation will be located approximately 1.2 miles from North Hanover Substation. The IC will be responsible for acquiring all easements, properties, and permits that may be required to construct both the new interconnection switching station and the associated facilities. The IC will also be responsible for the rough grade of the property and an access road to the proposed three-breaker ring bus site. The project will also require Non-Direct Connection upgrades at North Hanover Substation and PH Glatfelter Substation.

Attachment 1 shows a one-line diagram of the proposed primary Direct Connection facilities for the AG1-465 generation project to connect to the FirstEnergy (“FE”) Transmission System. The IC will be responsible for constructing the facilities on its side of the POI, including the Attachment Facilities which connect the generator to the FE Transmission System’s Direct Connection facilities.

4.2 Secondary POI

The interconnection of the project with the ME transmission system at a Secondary POI can be accomplished by constructing a new 115 kV three (3) breaker ring bus substation and looping the North Hanover–Jackson 115 kV line into the new station. The new substation would be located approximately 1.2 miles from North Hanover Substation. A full scope of work or estimated cost is not provided for the proposed Secondary POI.

5 Cost Summary

The AG1-465 project will be responsible for the following costs:

Description	Total Cost
Total Physical Interconnection Costs	\$10,700,000
Total System Network Upgrade Costs¹	\$150,167,120 ²
Total Costs	\$160,867,120

¹ The conduct of light load analysis as required under the PJM planning process is not performed during the Generation Interconnection Feasibility Study phase of the PJM study process. Additional reinforcement requirements for this Interconnection Request may be defined during the conduct of the light load analysis which shall be performed following execution of the System Impact Study agreement.

² This project currently causes and/or contributes to overloads of the Transmission System (see Summer Peak Load Flow Analysis section below) and therefore has potential to have cost allocation for the system reinforcements listed in the report. This will be re-evaluated in the System Impact phase. The results may vary with queue customers withdrawing from the queue and other generators deactivating over time. If a customer is the first to cause the need for a project (causes loading to exceed 100% of rating), then the customer is responsible. If a customer contributes to a facility that is already overloaded by a prior queue, then they may receive cost allocation.

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 interconnection of the project at the Primary POI will be accomplished by constructing a new 115 kV three (3) breaker ring bus substation and looping the North Hanover–Gitts Run 115 kV line into the new station. The new substation will be located approximately 1.2 miles from North Hanover Substation. The IC will be responsible for acquiring all easements, properties, and permits that may be required to construct both the new interconnection switching station and the associated facilities. The IC will also be responsible for the rough grade of the property and an access road to the proposed three-breaker ring bus site. The project will also require Non-Direct Connection upgrades at North Hanover Substation and PH Glatfelter Substation.

Attachment 1 shows a one-line diagram of the proposed primary Direct Connection facilities for the AG1-465 generation project to connect to the FirstEnergy (“FE”) Transmission System. The IC will be responsible for constructing the facilities on its side of the POI, including the Attachment Facilities which connect the generator to the FE Transmission System’s Direct Connection facilities.

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

Description	Total Cost
Install disconnect switch, dead-end structure, and associated facilities for generator lead line exit at interconnection substation.	\$310,000
Construct 115 kV three breaker ring bus interconnection substation.	\$5,760,000
Loop the North Hanover-Gitts Run 115 kV 996 line into the new substation.	\$790,000
Upgrade relaying at North Hanover.	\$730,000
Upgrade relaying at PH Glatfelter.	\$730,000
Install OPGW (2.8 miles)	\$2,380,000
Total Physical Interconnection Costs	\$10,700,000

7 Schedule

Based on the scope of work for the interconnection facilities, it is expected to take a minimum of **24 months** after the signing of an Interconnection Construction Service Agreement and construction kickoff call to complete the installation. This assumes that there will be no environmental issues with any of the new properties associated with this project, that there will be no delays in acquiring the necessary permits for implementing the defined Direct Connection and network upgrades, and that all transmission system outages will be allowed when requested.

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 report¹.

8 Transmission Owner Analysis

FE performed an analysis of its underlying transmission <100 kV system. The AG1-465 project did not contribute to any overloads on the FE transmission <100 kV system.

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 FE's "Requirements for Transmission Connected Facilities" document located at:

<http://www.pjm.com/planning/design-engineering/to-tech-standards/private-firstenergy.aspx>.

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 FE's "Requirements for Transmission Connected Facilities" document located at: <http://www.pjm.com/planning/design-engineering/to-tech-standards/private-firstenergy.aspx>. In particular, the IC is responsible for the following:

1. The purchase and installation of a fully rated 115 kV circuit breaker to protect the AG1-465 generator lead line. A single circuit breaker must be used to protect this line; if the project has several GSU transformers, the individual GSU transformer breakers cannot be used to protect this line.
2. The purchase and installation of the minimum required FE generation interconnection relaying and control facilities. 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 FE Transmission System Control Center.
4. Compliance with the FE and PJM generator power factor and voltage control requirements.
5. The execution of a back-up service agreement to serve the customer load supplied from the AG1-465 generation project metering point when the units are out-of-service. This assumes the intent of the IC is to net the generation with the load.

The IC will also be required to meet all PJM, ReliabilityFirst, 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 ReliabilityFirst 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 FE Transmission 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 FE Transmission System.

10 Revenue Metering and SCADA Requirements

10.1 PJM Requirements

The Interconnection Customer will be required to install equipment necessary to provide Revenue Metering (KWH, KVARH) and real time data (KW, KVAR) for IC's generating Resource. See PJM Manuals M-01 and M-14D, and PJM Tariff Section 8 of Attachment O.

10.2 Interconnected Transmission Owner Requirements

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 AG1-465 was evaluated as a 100.0 MW (Capacity 40.0 MW) injection tapping the North Hanover to Gritts Run 115 kV line in the ME area. Project AG1-465 was evaluated for compliance with applicable reliability planning criteria (PJM, NERC, NERC Regional Reliability Councils, and Transmission Owners). Project AG1-465 was studied with a commercial probability of 53.0 %. Potential network impacts were as follows:

11.1 Generation Deliverability

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

None

11.2 Multiple Facility Contingency

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

ID	FROM BUS#	FROM BUS	kV	FROM BUS AREA	TO BUS#	TO BUS	kV	TO BUS AREA	CK T ID	CONT NAME	Type	Rating MVA	PRE PROJE T LOADIN G %	POST PROJE T LOADIN G %	AC D C	MW IMPAC T
166620237	204551	27OXFOR D	115.0	METE D	204548	27N.HANOV R	115.0	METE D	1	ME-P7-1-ME-230-003	tower	282.0	94.82	108.03	DC	37.28
166620238	204551	27OXFOR D	115.0	METE D	204548	27N.HANOV R	115.0	METE D	1	ME-P7-1-ME-230-004	tower	282.0	94.51	107.73	DC	37.28
166055125	204571	27ZIONS VW	115.0	METE D	959220	AF2-213 TAP	115.0	METE D	1	ME-P2-3-ME-115-033E	break er	156.0	99.52	101.41	DC	5.57

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 PROJE T LOADIN G %	POST PROJE T LOADIN G %	AC D C	MW IMPAC T
165124742	200504	26CARLISL E	115.0	PENEL EC	204528	27GARDNE RS	115.0	METE D	1	PL:10:P24:100548	bus	160.0	101.23	103.06	DC	5.55
165818247	200520	26ROXBUR Y	115.0	PENEL EC	961480	AF2-439 TAP	115.0	PENEL EC	1	PL:10:P24:100548	bus	159.0	110.59	112.4	DC	5.41
166054970	200520	26ROXBUR Y	115.0	PENEL EC	961480	AF2-439 TAP	115.0	PENEL EC	1	ME-P2-3-ME-230-005A	break er	159.0	112.31	114.78	DC	7.41
166054971	200520	26ROXBUR Y	115.0	PENEL EC	961480	AF2-439 TAP	115.0	PENEL EC	1	PL:10:P45:102437	break er	159.0	110.59	112.4	DC	5.41
166054972	200520	26ROXBUR Y	115.0	PENEL EC	961480	AF2-439 TAP	115.0	PENEL EC	1	ME-P2-3-ME-230-005C	break er	159.0	109.52	111.67	DC	6.46
166620227	204539	27HUNTRS TN	115.0	METE D	204551	27OXFORD	115.0	METE D	1	ME-P7-1-ME-230-003	tower	282.0	101.38	114.59	DC	37.28
166620228	204539	27HUNTRS TN	115.0	METE D	204551	27OXFORD	115.0	METE D	1	ME-P7-1-ME-230-004	tower	282.0	101.07	114.28	DC	37.28
166054891	204559	27TAXVILL E	115.0	METE D	204563	27WESTG ATE	115.0	METE D	1	ME-P2-3-ME-115-032AT	break er	282.0	138.05	139.44	DC	8.71
166054943	204563	27WESTGA TE	115.0	METE D	204558	27SMITH TP	115.0	METE D	1	ME-P2-3-ME-115-032AT	break er	282.0	125.61	127.0	DC	8.71
166054986	204598	27MIDD JCT	115.0	METE D	939000	AE1-129 TAP	115.0	METE D	1	ME-P2-3-ME-115-033E	break er	156.0	110.96	112.85	DC	5.57
166054987	204598	27MIDD JCT	115.0	METE D	939000	AE1-129 TAP	115.0	METE D	1	ME-P2-3-ME-230-019CT	break er	156.0	104.68	106.45	DC	5.2
165124665	204701	27YORKAN AB	115.0	METE D	208720	RED FRONT	115.0	PPL	1	ME-P2-2-ME-115-030	bus	208.0	123.28	124.73	DC	5.67
165124687	208720	RED FRONT	115.0	PPL	204567	27YOE	115.0	METE D	1	ME-P2-2-ME-115-030	bus	208.0	120.73	122.18	DC	5.67

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 PROJECTIONS LOADING %	POST PROJECTIONS LOADING %	AC/D C	MW IMPACT
166054909	939000	AE1-129 TAP	115.0	METE D	204571	27ZIONS VW	115.0	METE D	1	ME-P2-3-ME-115-033E	breaker	156.0	136.89	138.78	DC	5.57
166054913	939000	AE1-129 TAP	115.0	METE D	204571	27ZIONS VW	115.0	METE D	1	ME-P2-3-ME-230-019CT	breaker	156.0	123.82	125.59	DC	5.2
166055033	959220	AF2-213 TAP	115.0	METE D	204557	27SMITH ST	115.0	METE D	1	ME-P2-3-ME-115-033E	breaker	156.0	108.82	110.72	DC	5.57
165818231	961480	AF2-439 TAP	115.0	PENEL EC	200504	26CARLISL E	115.0	PENEL EC	1	PL:10:P24:100548	bus	159.0	119.98	121.79	DC	5.41
166054944	961480	AF2-439 TAP	115.0	PENEL EC	200504	26CARLISL E	115.0	PENEL EC	1	ME-P2-3-ME-230-005A	breaker	159.0	121.08	123.55	DC	7.41
166054945	961480	AF2-439 TAP	115.0	PENEL EC	200504	26CARLISL E	115.0	PENEL EC	1	PL:10:P45:102437	breaker	159.0	119.98	121.79	DC	5.41
166054946	961480	AF2-439 TAP	115.0	PENEL EC	200504	26CARLISL E	115.0	PENEL EC	1	ME-P2-3-ME-230-005C	breaker	159.0	118.47	120.62	DC	6.46

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 PROJECTIONS LOADING %	POST PROJECTIONS LOADING %	AC/D C	MW IMPACT
167738147	200504	26CARLISLE	115.0	PENEL EC	204528	27GARDNERS	115.0	METE D	1	Base Case	operation	133.0	100.71	102.76	DC	5.13
167738148	200504	26CARLISLE	115.0	PENEL EC	204528	27GARDNERS	115.0	METE D	1	ME-P1-3-ME-500-003T	operation	160.0	99.34	101.47	DC	6.42
166278751	200520	26ROXBURY	115.0	PENEL EC	961480	AF2-439 TAP	115.0	PENEL EC	1	Base Case	operation	133.0	111.72	113.72	DC	5.0
166278752	200520	26ROXBURY	115.0	PENEL EC	961480	AF2-439 TAP	115.0	PENEL EC	1	ME-P1-3-ME-500-003T	operation	159.0	108.93	111.02	DC	6.26
166278753	200520	26ROXBURY	115.0	PENEL EC	961480	AF2-439 TAP	115.0	PENEL EC	1	ME-P1-2-ME-230-019	operation	159.0	108.93	111.02	DC	6.26
166278731	204524	27CLY 978	115.0	METE D	204682	27ES3	115.0	METE D	1	ME-P1-2-ME-115-025-B	operation	130.0	116.67	118.83	DC	5.3
166278745	204682	27ES3	115.0	METE D	204572	27RAINTR EE	115.0	METE D	1	ME-P1-2-ME-115-025-B	operation	130.0	113.82	115.99	DC	5.3
167738153	208004	JUNI BU1	230.0	PPL	207950	CUMB TR2	230.0	PPL	1	PL:10:P13:001633	operation	618.0	103.88	104.62	DC	8.6
167738029	208005	JUNI BU2	230.0	PPL	207955	DAUP TR2	230.0	PPL	1	PL:10:P13:001616	operation	531.0	118.19	118.92	DC	7.27
166278692	961480	AF2-439 TAP	115.0	PENEL EC	200504	26CARLISL E	115.0	PENEL EC	1	Base Case	operation	133.0	122.62	124.62	DC	5.0
166278693	961480	AF2-439 TAP	115.0	PENEL EC	200504	26CARLISL E	115.0	PENEL EC	1	ME-P1-2-ME-230-019	operation	159.0	117.92	120.01	DC	6.26
166278694	961480	AF2-439 TAP	115.0	PENEL EC	200504	26CARLISL E	115.0	PENEL EC	1	ME-P1-3-ME-500-003T	operation	159.0	117.92	120.01	DC	6.26

11.5 System Reinforcements - Summer Peak Load Flow - Primary POI

ID	Idx	Facility	Upgrade Description	Cost
165124665	9	27YORKANAB 115.0 kV - RED FRONT 115.0 kV Ckt 1	<u>METED</u> ME-AG1-F-0001A (2152) : Reconductor line with larger conductor (0.3 miles). Project Type : FAC Cost : \$726,840 Time Estimate : 18.0 Months <u>PPL</u> Not a PPL Violation	\$726,840
166620238,166 620237	1	27OXFORD 115.0 kV - 27N.HANOV 115.0 kV Ckt 1	<u>METED</u> ME-AG1-F-0002A (2153) : Reconductor line with larger conductor (5.1 miles). Project Type : FAC Cost : \$12,356,280 Time Estimate : 36.0 Months	\$12,356,280
165818231,166 054944,166054 946,166054945	13	AF2-439 TAP 115.0 kV - 26CARLISLE 115.0 kV Ckt 1	<u>PENELEC</u> PN-AG1-F-0020A (2277) : Upgrade relaying at Carlisle Pike Project Type : FAC Cost : \$800,000 Time Estimate : 12.0 Months PN-AG1-F-0020B (2278) : Reconductor 6.82 miles of line. Please line drops at Carlisle Pike substation. Project Type : FAC Cost : \$16,840,000 Time Estimate : 42.0 Months	\$17,640,000
166054891	6	27TAXVILLE 115.0 kV - 27WESTGATE 115.0 kV Ckt 1	<u>METED</u> s1818.3 (2150) : PJM RTEP Supplemental Project: Terminal Upgrades at Jackson and Westgate. Replace switches at JE Baker Tap. Project Type : FAC Cost : \$0 Time Estimate : Projected in-service date: 05/29/2022 Months ME-AG1-F-0003A (2155) : Reconductor line with larger conductor (3.5 miles). At Taxville: Upgrade limiting terminal equipment. At Westgate: Upgrade limiting terminal equipment. Project Type : FAC Cost : \$10,418,040 Time Estimate : 34.0 Months	\$10,418,040

ID	Idx	Facility	Upgrade Description	Cost
165124742	3	26CARLISLE 115.0 kV - 27GARDNERS 115.0 kV Ckt 1	METED ME-AG1-F-0005A (2158) : Reconductor line with larger conductor (13.1 miles). Project Type : FAC Cost : \$31,738,680 Time Estimate : 50.0 Months PENELEC PN-AG1-F-0035C (2332) : Reconductor 7.54 miles of line. Project Type : FAC Cost : \$18,480,000 Time Estimate : 44.0 Months	\$50,218,680
166620227,166 620228	5	27HUNTRSTN 115.0 kV - 27OXFORD 115.0 kV Ckt 1	METED ME-AG1-F-0004A (2156) : Reconductor line with larger conductor (3.4 miles). Project Type : FAC Cost : \$8,237,520 Time Estimate : 34.0 Months ME-AG1-F-0004B (2157) : At Hunterstown: Upgrade limiting terminal equipment Project Type : FAC Cost : \$121,140 Time Estimate : 12.0 Months	\$8,358,660
166055125	2	27ZIONS VW 115.0 kV - AF2- 213 TAP 115.0 kV Ckt 1	METED ME-0009 (2147) : Reconductor line with larger conductor (0.1 miles). Project Type : FAC Cost : \$242,280 Time Estimate : 12.0 Months	\$242,280
166054909,166 054913	11	AE1-129 TAP 115.0 kV - 27ZIONS VW 115.0 kV Ckt 1	METED ME-0007a (2144) : Reconductor line with larger conductor (2.9 miles). Project Type : FAC Cost : \$7,100,000 Time Estimate : 30.0 Months ME-0007b (2145) : At Zions View, replace substation conductor. Project Type : FAC Cost : \$121,140 Time Estimate : 12.0 Months	\$7,221,140

ID	Idx	Facility	Upgrade Description	Cost
166055033	12	AF2-213 TAP 115.0 kV - 27SMITH ST 115.0 kV Ckt 1	<u>METED</u> ME-0008 (2146) : Reconductor line with larger conductor (6.5 miles). At Smith St., replace limiting meter. Project Type : FAC Cost : \$16,232,760 Time Estimate : 42.0 Months s1899 (2151) : PJM RTEP Supplemental Project: Middletown Jct - Smith St 115 kV 977 Line Rehab/Rebuild Project Type : FAC Cost : \$0 Time Estimate : Projected in-service date: 12/31/2022 Months	\$16,232,760
166054986,166054987	8	27MIDD JCT 115.0 kV - AE1-129 TAP 115.0 kV Ckt 1	<u>METED</u> ME-0006 (2143) : Reconductor line with larger conductor (5.8 miles). At Midd. Jct., replace thermal relays. Project Type : FAC Cost : \$14,800,000 Time Estimate : 42.0 Months	\$14,800,000
165818247,166054971,166054970,166054972	4	26ROXBURY 115.0 kV - AF2-439 TAP 115.0 kV Ckt 1	<u>PENELEC</u> PN-AG1-F-0026A (2292) : Reconductor 2.59 miles of line. Project Type : FAC Cost : \$6,380,000 Time Estimate : 30.0 Months	\$6,380,000
166054943	7	27WESTGATE 115.0 kV - 27SMITH TP 115.0 kV Ckt 1	<u>METED</u> s1813.5 (2149) : PJM RTEP Supplemental Project: Smith St. - Westgate - York Solid Waste 115 kV Line Rebuild and Terminal Upgrades. Project Type : FAC Cost : \$0 Time Estimate : Projected in-service date: 12/31/2019 Months ME-AG1-F-0007A (2160) : Reconductor line with larger conductor (1.3 miles). At Westgate: Upgrade limiting terminal equipment. Project Type : FAC Cost : \$4,724,460 Time Estimate : 28.0 Months	\$4,724,460
165124687	10	RED FRONT 115.0 kV - 27YOE 115.0 kV Ckt 1	<u>METED</u> ME-AG1-F-0006A (2159) : Reconductor line with larger conductor (0.3 miles). At Yoe: Upgrade limiting terminal equipment. Project Type : FAC Cost : \$847,980 Time Estimate : 18.0 Months <u>PPL</u> Not a PPL Violation	\$847,980
			TOTAL COST	\$150,167,120

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".

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
166620237	204551	27OXFORD	METED	204548	27N.HANOV	METED	1	ME-P7-1-ME-230-003	tower	282.0	94.82	108.03	DC	37.28

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
204646	27HAM CT	0.7646	50/50	0.7646
204647	27HUNTR CT	2.3413	50/50	2.3413
204648	27MOUNT CT	0.6773	50/50	0.6773
204649	27ORTAN CT	0.7369	50/50	0.7369
205907	AC1-048 C (Suspended)	2.3810	50/50	2.3810
205908	AC1-048 E (Suspended)	3.8847	50/50	3.8847
205909	AC2-053 C (Suspended)	1.3606	50/50	1.3606
205910	AC2-053 E (Suspended)	2.2198	50/50	2.2198
901242	W1-045 E OP1	0.1957	Adder	0.23
923202	AB1-124 C (Suspended)	0.3431	Adder	0.4
923203	AB1-124 E (Suspended)	0.5598	Adder	0.66
923212	AB1-125 C OP (Suspended)	0.2573	Adder	0.3
923213	AB1-125 E OP (Suspended)	0.4198	Adder	0.49
930522	AB1-096 E	0.2745	Adder	0.32
933974	AD1-020 C (Suspended)	12.9305	50/50	12.9305
933975	AD1-020 BAT (Suspended)	4.8248	50/50	4.8248
933976	AD1-020 E (Suspended)	6.3687	50/50	6.3687
938041	AE1-006 C (Suspended)	1.3606	50/50	1.3606
938042	AE1-006 E (Suspended)	2.2198	50/50	2.2198
939021	AE1-131 C O1	7.4935	50/50	7.4935
939022	AE1-131 E O1	4.9956	50/50	4.9956
939091	AE1-138 C	3.2640	50/50	3.2640
939092	AE1-138 E	2.1760	50/50	2.1760
939101	AE1-139 C O1	9.1642	50/50	9.1642
939102	AE1-139 E O1	6.1095	50/50	6.1095
941871	AE2-192 C	9.3409	50/50	9.3409
941872	AE2-192 E	6.2273	50/50	6.2273
943161	AE2-345 C	12.1306	50/50	12.1306
943162	AE2-345 E	8.0870	50/50	8.0870
945231	AF1-188	0.0378	50/50	0.0378
945271	AF1-192	0.0172	50/50	0.0172
945281	AF1-193	0.1561	50/50	0.1561
945291	AF1-194	0.0390	50/50	0.0390
958071	AF2-101 C	0.1336	Adder	0.16
958072	AF2-101 E	0.0891	Adder	0.1
958081	AF2-102 C	0.3222	50/50	0.3222
958082	AF2-102 E	0.2148	50/50	0.2148
958601	AF2-151 C	0.1293	Adder	0.15

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
958602	AF2-151 E	0.0862	Adder	0.1
958841	AF2-175 C	0.3942	50/50	0.3942
958842	AF2-175 E	0.2628	50/50	0.2628
958871	AF2-178	0.1708	Adder	0.2
959223	AF2-213 BAT	5.3421	Merchant Transmission	5.3421
959381	AF2-229 C	0.4772	Adder	0.56
959382	AF2-229 E	0.3984	Adder	0.47
959772	AF2-268 E	0.4790	50/50	0.4790
960922	AF2-383 BAT	2.1612	50/50	2.1612
961481	AF2-439 C	1.1857	Adder	1.39
961482	AF2-439 E	1.0945	Adder	1.29
962082	AG1-052 BAT	0.6130	Merchant Transmission	0.6130
962092	AG1-053 BAT	0.8149	Merchant Transmission	0.8149
963953	AG1-248 BAT	8.4493	Merchant Transmission	8.4493
964691	AG1-332 C	1.6589	50/50	1.6589
964692	AG1-332 E	0.5829	50/50	0.5829
965963	AG1-465 BAT	37.2790	50/50	37.2790
966151	AG1-484	2.1738	50/50	2.1738
966171	AG1-486	3.5927	50/50	3.5927
WEC	WEC	0.1399	Confirmed LTF	0.1399
LGEE	LGEE	0.2827	Confirmed LTF	0.2827
CPL	CPL	0.3604	Confirmed LTF	0.3604
CBM-W2	CBM-W2	4.1306	Confirmed LTF	4.1306
NY	NY	0.5010	Confirmed LTF	0.5010
TVA	TVA	0.6608	Confirmed LTF	0.6608
O-066	O-066	8.1029	Confirmed LTF	8.1029
SIGE	SIGE	0.1737	Confirmed LTF	0.1737
CBM-S2	CBM-S2	5.3348	Confirmed LTF	5.3348
CBM-S1	CBM-S1	0.1778	Confirmed LTF	0.1778
G-007	G-007	1.2285	Confirmed LTF	1.2285
MEC	MEC	0.7150	Confirmed LTF	0.7150
LAGN	LAGN	0.8225	Confirmed LTF	0.8225
CBM-W1	CBM-W1	6.1408	Confirmed LTF	6.1408

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
166055125	204571	27ZIONS VW	METED	959220	AF2-213 TAP	METED	1	ME-P2-3-ME-115-033E	breaker	156.0	99.52	101.41	DC	5.57

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
204660	27YK H STA	0.8165	50/50	0.8165
939001	AE1-129 C	23.9531	50/50	23.9531
939002	AE1-129 E	16.6143	50/50	16.6143
959223	AF2-213 BAT	32.8673	50/50	32.8673
960922	AF2-383 BAT	1.2358	Merchant Transmission	1.2358
962081	AG1-052	10.1928	50/50	10.1928
963953	AG1-248 BAT	22.7120	50/50	22.7120
965963	AG1-465 BAT	2.9516	Merchant Transmission	2.9516
G-007A	G-007A	0.7336	Confirmed LTF	0.7336
VFT	VFT	2.0511	Confirmed LTF	2.0511
CALDERWOOD	CALDERWOOD	0.0557	Confirmed LTF	0.0557
PRAIRIE	PRAIRIE	0.2583	Confirmed LTF	0.2583
CHEOAH	CHEOAH	0.0566	Confirmed LTF	0.0566
CBM-N	CBM-N	0.3888	Confirmed LTF	0.3888
COTTONWOOD	COTTONWOOD	0.2247	Confirmed LTF	0.2247
HAMLET	HAMLET	0.0757	Confirmed LTF	0.0757
GIBSON	GIBSON	0.0530	Confirmed LTF	0.0530
BLUEG	BLUEG	0.1684	Confirmed LTF	0.1684
TRIMBLE	TRIMBLE	0.0540	Confirmed LTF	0.0540
CATAWBA	CATAWBA	0.0437	Confirmed LTF	0.0437

11.6.3 Index 3

ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CK T ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADIN G %	POST PROJECT LOADIN G %	AC D C	MW IMPAC T
16512474 2	20050 4	26CARLISL E	PENELE C	20452 8	27GARDNER S	METE D	1	PL:10:P24:10054 8	bus	160.0	101.23	103.06	DC	5.55

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
200870	26C_T85_W218	0.3757	50/50	0.3757
203905	26W1-045 C	0.2399	50/50	0.2399
237329	01CHBRG_I12	0.5202	50/50	0.5202
901242	W1-045 E OP1	1.3251	50/50	1.3251
930822	AB1-127 E	0.3881	Adder	0.46
930832	AB1-128 E	0.3881	Adder	0.46
933977	AD1-020 EBAT (Suspended)	1.3794	Merchant Transmission	1.3794
934371	AD1-061 C	0.3669	Adder	0.43
934372	AD1-061 E	0.3186	Adder	0.37
936061	AD2-009 C	2.4854	Adder	2.92
936062	AD2-009 E	1.1316	Adder	1.33
936471	AD2-062 C O1	10.9654	50/50	10.9654
936472	AD2-062 E O1	5.4929	50/50	5.4929
938384	AE1-071-C	14.1867	50/50	14.1867
938385	AE1-071-E	8.6811	50/50	8.6811
938753	AE1-101 C1	1.9142	Adder	2.25
938754	AE1-101 C2	0.9571	Adder	1.13
938756	AE1-101 E1	3.9517	Adder	4.65
938757	AE1-101 E2	1.9729	Adder	2.32
939033	AE1-132 C	2.6352	Adder	3.1
939034	AE1-132 E	1.7568	Adder	2.07
939591	AE1-188 C	0.6808	Adder	0.8
939592	AE1-188 E	0.3999	Adder	0.47
940671	AE2-054 C (Suspended)	0.5756	Adder	0.68
940672	AE2-054 E (Suspended)	0.3837	Adder	0.45
945011	AF1-166 C	0.5644	Adder	0.66
945012	AF1-166 E	0.3763	Adder	0.44
945441	AF1-209 C O1	0.5609	Adder	0.66
945442	AF1-209 E O1	0.3739	Adder	0.44
945591	AF1-224 C	0.4269	Adder	0.5
945592	AF1-224 E	0.2161	Adder	0.25
958071	AF2-101 C	-0.2674	Adder	-0.31
958221	AF2-116 C	0.6872	Adder	0.81
958222	AF2-116 E	0.3462	Adder	0.41
958231	AF2-117 C	2.1961	Adder	2.58
958232	AF2-117 E	1.0978	Adder	1.29
958551	AF2-146 C	1.8602	50/50	1.8602
958552	AF2-146 E	1.2402	50/50	1.2402
958571	AF2-148 C	1.5119	50/50	1.5119
958572	AF2-148 E	1.0080	50/50	1.0080
958601	AF2-151 C	-0.2638	Adder	-0.31

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
958871	AF2-178	1.1561	50/50	1.1561
958881	AF2-179	0.3411	Adder	0.4
958891	AF2-180	0.3411	Adder	0.4
958931	AF2-184	0.2800	Adder	0.33
959223	AF2-213 BAT	4.6893	Merchant Transmission	4.6893
959241	AF2-215 C	0.1578	Adder	0.19
959242	AF2-215 E	0.1052	Adder	0.12
959381	AF2-229 C	3.2312	50/50	3.2312
959382	AF2-229 E	2.6976	50/50	2.6976
959773	AF2-268 BAT	0.1026	Merchant Transmission	0.1026
959842	AF2-275 E	0.1764	Adder	0.21
959852	AF2-276 E	0.1764	Adder	0.21
961481	AF2-439 C	8.0462	50/50	8.0462
961482	AF2-439 E	7.4273	50/50	7.4273
962082	AG1-052 BAT	0.6306	Merchant Transmission	0.6306
963901	AG1-243 C	0.2010	Adder	0.45
963902	AG1-243 E	0.1082	Adder	0.24
964641	AG1-327 C O1	0.6309	Adder	1.4
964642	AG1-327 E O1	0.3250	Adder	0.72
964693	AG1-332 BAT	0.1049	Merchant Transmission	0.1049
965963	AG1-465 BAT	2.9426	Merchant Transmission	2.9426
966041	AG1-473 C	0.7851	Adder	1.74
966042	AG1-473 E	0.5234	Adder	1.16
966152	AG1-484 BAT	3.8508	50/50	3.8508
966172	AG1-486 BAT	0.5437	Merchant Transmission	0.5437
966461	AG1-515 C	0.1450	Adder	0.32
966462	AG1-515 E	0.2176	Adder	0.48
WEC	WEC	0.1304	Confirmed LTF	0.1304
LGEE	LGEE	0.2576	Confirmed LTF	0.2576
CPL	CPL	0.2355	Confirmed LTF	0.2355
CBM-W2	CBM-W2	3.5930	Confirmed LTF	3.5930
NY	NY	0.2030	Confirmed LTF	0.2030
TVA	TVA	0.5502	Confirmed LTF	0.5502
O-066	O-066	6.4608	Confirmed LTF	6.4608
SIGE	SIGE	0.1437	Confirmed LTF	0.1437
CBM-S2	CBM-S2	3.7584	Confirmed LTF	3.7584
CBM-S1	CBM-S1	0.1505	Confirmed LTF	0.1505
G-007	G-007	1.0133	Confirmed LTF	1.0133
MEC	MEC	0.6499	Confirmed LTF	0.6499
LAGN	LAGN	0.6895	Confirmed LTF	0.6895
CBM-W1	CBM-W1	5.8744	Confirmed LTF	5.8744

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
166054970	200520	26ROXBURY	PENELEC	961480	AF2-439 TAP	PENELEC	1	ME-P2-3-ME-230-005A	breaker	159.0	112.31	114.78	DC	7.41

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
237329	01CHBRG_I12	0.4706	50/50	0.4706
901242	W1-045 E OP1	0.3063	Adder	0.36
930822	AB1-127 E	0.3508	Adder	0.41
930832	AB1-128 E	0.3508	Adder	0.41
933977	AD1-020 EBAT (Suspended)	2.1736	50/50	2.1736
934371	AD1-061 C	0.3320	Adder	0.39
934372	AD1-061 E	0.2883	Adder	0.34
936061	AD2-009 C	2.2487	Adder	2.65
936062	AD2-009 E	1.0238	Adder	1.2
936471	AD2-062 C O1	9.9066	50/50	9.9066
936472	AD2-062 E O1	4.9626	50/50	4.9626
938384	AE1-071-C	12.4256	50/50	12.4256
938385	AE1-071-E	7.6034	50/50	7.6034
938753	AE1-101 C1	1.7324	Adder	2.04
938754	AE1-101 C2	0.8662	Adder	1.02
938756	AE1-101 E1	3.5765	Adder	4.21
938757	AE1-101 E2	1.7856	Adder	2.1
939033	AE1-132 C	2.3842	Adder	2.8
939034	AE1-132 E	1.5895	Adder	1.87
939591	AE1-188 C	0.6143	Adder	0.72
939592	AE1-188 E	0.3608	Adder	0.42
940671	AE2-054 C (Suspended)	0.5208	Adder	0.61
940672	AE2-054 E (Suspended)	0.3472	Adder	0.41
945011	AF1-166 C	0.5102	Adder	0.6
945012	AF1-166 E	0.3401	Adder	0.4
945441	AF1-209 C O1	0.5070	Adder	0.6
945442	AF1-209 E O1	0.3380	Adder	0.4
945591	AF1-224 C	0.3852	Adder	0.45
945592	AF1-224 E	0.1950	Adder	0.23
958071	AF2-101 C	-0.2947	Adder	-0.35
958221	AF2-116 C	0.6218	Adder	0.73
958222	AF2-116 E	0.3132	Adder	0.37
958231	AF2-117 C	1.9863	Adder	2.34
958232	AF2-117 E	0.9929	Adder	1.17
958551	AF2-146 C	1.4569	50/50	1.4569
958552	AF2-146 E	0.9713	50/50	0.9713
958571	AF2-148 C	1.2580	50/50	1.2580
958572	AF2-148 E	0.8387	50/50	0.8387
958601	AF2-151 C	-0.2906	Adder	-0.34
958871	AF2-178	0.2673	Adder	0.31

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
958881	AF2-179	0.3083	Adder	0.36
958891	AF2-180	0.3083	Adder	0.36
958931	AF2-184	0.2534	Adder	0.3
959223	AF2-213 BAT	4.9280	Merchant Transmission	4.9280
959241	AF2-215 C	0.1427	Adder	0.17
959242	AF2-215 E	0.0951	Adder	0.11
959381	AF2-229 C	0.7469	Adder	0.88
959382	AF2-229 E	0.6236	Adder	0.73
959773	AF2-268 BAT	0.1617	50/50	0.1617
959842	AF2-275 E	0.1595	Adder	0.19
959852	AF2-276 E	0.1595	Adder	0.19
962082	AG1-052 BAT	0.6605	Merchant Transmission	0.6605
963901	AG1-243 C	0.1817	Adder	0.4
963902	AG1-243 E	0.0978	Adder	0.22
964641	AG1-327 C O1	0.5731	Adder	1.27
964642	AG1-327 E O1	0.2952	Adder	0.66
964693	AG1-332 BAT	0.1533	Merchant Transmission	0.1533
965963	AG1-465 BAT	3.9252	Merchant Transmission	3.9252
966152	AG1-484 BAT	4.2560	50/50	4.2560
966172	AG1-486 BAT	1.6170	50/50	1.6170
966461	AG1-515 C	0.1313	Adder	0.29
966462	AG1-515 E	0.1969	Adder	0.44
WEC	WEC	0.0936	Confirmed LTF	0.0936
LGEE	LGEE	0.1860	Confirmed LTF	0.1860
CPLE	CPLE	0.1870	Confirmed LTF	0.1870
CBM-W2	CBM-W2	2.6253	Confirmed LTF	2.6253
NY	NY	0.1924	Confirmed LTF	0.1924
TVA	TVA	0.4074	Confirmed LTF	0.4074
O-066	O-066	4.4485	Confirmed LTF	4.4485
SIGE	SIGE	0.1005	Confirmed LTF	0.1005
CBM-S2	CBM-S2	2.9232	Confirmed LTF	2.9232
CBM-S1	CBM-S1	0.1110	Confirmed LTF	0.1110
G-007	G-007	0.6919	Confirmed LTF	0.6919
MEC	MEC	0.4688	Confirmed LTF	0.4688
LAGN	LAGN	0.5093	Confirmed LTF	0.5093
CBM-W1	CBM-W1	4.1639	Confirmed LTF	4.1639

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
166620228	204539	27HUNTRSTN	METED	204551	27OXFORD	METED	1	ME-P7-1-ME-230-004	tower	282.0	101.07	114.28	DC	37.28

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
204647	27HUNTR CT	2.3416	50/50	2.3416
204648	27MOUNT CT	0.6777	50/50	0.6777
204649	27ORTAN CT	0.7370	50/50	0.7370
205907	AC1-048 C (Suspended)	2.3815	50/50	2.3815
205908	AC1-048 E (Suspended)	3.8856	50/50	3.8856
205909	AC2-053 C (Suspended)	1.3609	50/50	1.3609
205910	AC2-053 E (Suspended)	2.2203	50/50	2.2203
901242	W1-045 E OP1	0.1959	Adder	0.23
923202	AB1-124 C (Suspended)	0.3433	Adder	0.4
923203	AB1-124 E (Suspended)	0.5602	Adder	0.66
923212	AB1-125 C OP (Suspended)	0.2575	Adder	0.3
923213	AB1-125 E OP (Suspended)	0.4202	Adder	0.49
930522	AB1-096 E	0.2747	Adder	0.32
933974	AD1-020 C (Suspended)	12.9331	50/50	12.9331
933975	AD1-020 BAT (Suspended)	4.8258	50/50	4.8258
933976	AD1-020 E (Suspended)	6.3701	50/50	6.3701
938041	AE1-006 C (Suspended)	1.3609	50/50	1.3609
938042	AE1-006 E (Suspended)	2.2203	50/50	2.2203
939021	AE1-131 C O1	7.4950	50/50	7.4950
939022	AE1-131 E O1	4.9967	50/50	4.9967
939101	AE1-139 C O1	9.1662	50/50	9.1662
939102	AE1-139 E O1	6.1108	50/50	6.1108
941871	AE2-192 C	9.3424	50/50	9.3424
941872	AE2-192 E	6.2283	50/50	6.2283
943161	AE2-345 C	12.1335	50/50	12.1335
943162	AE2-345 E	8.0890	50/50	8.0890
945231	AF1-188	0.0378	50/50	0.0378
945271	AF1-192	0.0172	50/50	0.0172
945281	AF1-193	0.1561	50/50	0.1561
958071	AF2-101 C	0.1337	Adder	0.16
958072	AF2-101 E	0.0891	Adder	0.1
958081	AF2-102 C	0.3223	50/50	0.3223
958082	AF2-102 E	0.2149	50/50	0.2149
958601	AF2-151 C	0.1293	Adder	0.15
958602	AF2-151 E	0.0862	Adder	0.1
958841	AF2-175 C	0.3943	50/50	0.3943
958842	AF2-175 E	0.2629	50/50	0.2629
958871	AF2-178	0.1709	Adder	0.2

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
959223	AF2-213 BAT	5.3389	Merchant Transmission	5.3389
959381	AF2-229 C	0.4776	Adder	0.56
959382	AF2-229 E	0.3987	Adder	0.47
959772	AF2-268 E	0.4791	50/50	0.4791
960922	AF2-383 BAT	2.1604	50/50	2.1604
961481	AF2-439 C	1.1865	Adder	1.4
961482	AF2-439 E	1.0953	Adder	1.29
962082	AG1-052 BAT	0.6126	Merchant Transmission	0.6126
962092	AG1-053 BAT	0.8145	Merchant Transmission	0.8145
963953	AG1-248 BAT	8.4450	Merchant Transmission	8.4450
964693	AG1-332 BAT	1.7375	50/50	1.7375
965963	AG1-465 BAT	37.2750	50/50	37.2750
966151	AG1-484	2.1748	50/50	2.1748
966171	AG1-486	3.5933	50/50	3.5933
WEC	WEC	0.1414	Confirmed LTF	0.1414
LGEE	LGEE	0.2859	Confirmed LTF	0.2859
CPL	CPL	0.3638	Confirmed LTF	0.3638
CBM-W2	CBM-W2	4.1754	Confirmed LTF	4.1754
NY	NY	0.4983	Confirmed LTF	0.4983
TVA	TVA	0.6678	Confirmed LTF	0.6678
O-066	O-066	8.0693	Confirmed LTF	8.0693
SIGE	SIGE	0.1737	Confirmed LTF	0.1737
CBM-S2	CBM-S2	5.3870	Confirmed LTF	5.3870
CBM-S1	CBM-S1	0.1797	Confirmed LTF	0.1797
G-007	G-007	1.2232	Confirmed LTF	1.2232
MEC	MEC	0.7230	Confirmed LTF	0.7230
LAGN	LAGN	0.8312	Confirmed LTF	0.8312
CBM-W1	CBM-W1	6.2109	Confirmed LTF	6.2109

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
166054891	204559	27TAXVILLE	METED	204563	27WESTGATE	METED	1	ME-P2-3-ME-115-032AT	breaker	282.0	138.05	139.44	DC	8.71

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
204639	27GLATFLTR	0.5688	50/50	0.5688
204650	27TOLNA CT	0.7184	50/50	0.7184
939091	AE1-138 C	0.8993	Adder	1.06
939092	AE1-138 E	0.5995	Adder	0.71
945131	AF1-178	0.0278	50/50	0.0278
945141	AF1-179	0.0186	50/50	0.0186
958051	AF2-099 C	0.4446	50/50	0.4446
958052	AF2-099 E	0.2964	50/50	0.2964
958061	AF2-100 C	0.4446	50/50	0.4446
958062	AF2-100 E	0.2964	50/50	0.2964
958071	AF2-101 C	-0.2061	Adder	-0.24
958601	AF2-151 C	-0.2126	Adder	-0.25
959223	AF2-213 BAT	35.4730	50/50	35.4730
960921	AF2-383	2.3532	50/50	2.3532
962082	AG1-052 BAT	7.8166	50/50	7.8166
963953	AG1-248 BAT	112.4060	50/50	112.4060
964691	AG1-332 C	0.1046	Adder	0.23
964692	AG1-332 E	0.0367	Adder	0.08
965961	AG1-465 C O1	1.5690	Adder	3.48
965962	AG1-465 E O1	2.3535	Adder	5.22
966152	AG1-484 BAT	2.0544	50/50	2.0544
WEC	WEC	0.0192	Confirmed LTF	0.0192
LGEE	LGEE	0.0396	Confirmed LTF	0.0396
CPL	CPL	0.0614	Confirmed LTF	0.0614
CBM-W2	CBM-W2	0.6003	Confirmed LTF	0.6003
NY	NY	0.0818	Confirmed LTF	0.0818
TVA	TVA	0.0980	Confirmed LTF	0.0980
O-066	O-066	1.0903	Confirmed LTF	1.0903
SIGE	SIGE	0.0236	Confirmed LTF	0.0236
CBM-S2	CBM-S2	0.8770	Confirmed LTF	0.8770
CBM-S1	CBM-S1	0.0262	Confirmed LTF	0.0262
G-007	G-007	0.1554	Confirmed LTF	0.1554
MEC	MEC	0.1001	Confirmed LTF	0.1001
LAGN	LAGN	0.1225	Confirmed LTF	0.1225
CBM-W1	CBM-W1	0.8272	Confirmed LTF	0.8272

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
166054943	204563	27WESTGATE	METED	204558	27SMITH TP	METED	1	ME-P2-3-ME-115-032AT	breaker	282.0	125.61	127.0	DC	8.71

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
204639	27GLATFLTR	0.5688	50/50	0.5688
204650	27TOLNA CT	0.7184	50/50	0.7184
939091	AE1-138 C	0.8993	Adder	1.06
939092	AE1-138 E	0.5995	Adder	0.71
945131	AF1-178	0.0278	50/50	0.0278
945141	AF1-179	0.0186	50/50	0.0186
958051	AF2-099 C	0.4446	50/50	0.4446
958052	AF2-099 E	0.2964	50/50	0.2964
958061	AF2-100 C	0.4446	50/50	0.4446
958062	AF2-100 E	0.2964	50/50	0.2964
958071	AF2-101 C	-0.2061	Adder	-0.24
958601	AF2-151 C	-0.2126	Adder	-0.25
959223	AF2-213 BAT	35.4730	50/50	35.4730
960921	AF2-383	2.3532	50/50	2.3532
962082	AG1-052 BAT	7.8166	50/50	7.8166
963953	AG1-248 BAT	112.4060	50/50	112.4060
964691	AG1-332 C	0.1046	Adder	0.23
964692	AG1-332 E	0.0367	Adder	0.08
965961	AG1-465 C O1	1.5690	Adder	3.48
965962	AG1-465 E O1	2.3535	Adder	5.22
966152	AG1-484 BAT	2.0544	50/50	2.0544
WEC	WEC	0.0192	Confirmed LTF	0.0192
LGEE	LGEE	0.0396	Confirmed LTF	0.0396
CPL	CPL	0.0614	Confirmed LTF	0.0614
CBM-W2	CBM-W2	0.6003	Confirmed LTF	0.6003
NY	NY	0.0818	Confirmed LTF	0.0818
TVA	TVA	0.0980	Confirmed LTF	0.0980
O-066	O-066	1.0903	Confirmed LTF	1.0903
SIGE	SIGE	0.0236	Confirmed LTF	0.0236
CBM-S2	CBM-S2	0.8770	Confirmed LTF	0.8770
CBM-S1	CBM-S1	0.0262	Confirmed LTF	0.0262
G-007	G-007	0.1554	Confirmed LTF	0.1554
MEC	MEC	0.1001	Confirmed LTF	0.1001
LAGN	LAGN	0.1225	Confirmed LTF	0.1225
CBM-W1	CBM-W1	0.8272	Confirmed LTF	0.8272

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
166054986	204598	27MIDD JCT	METED	939000	AE1-129 TAP	METED	1	ME-P2-3-ME-115-033E	breaker	156.0	110.96	112.85	DC	5.57

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
204660	27YK H STA	0.8165	50/50	0.8165
959223	AF2-213 BAT	32.8673	50/50	32.8673
960922	AF2-383 BAT	1.2358	Merchant Transmission	1.2358
962082	AG1-052 BAT	9.8072	50/50	9.8072
963953	AG1-248 BAT	22.7120	50/50	22.7120
965963	AG1-465 BAT	2.9516	Merchant Transmission	2.9516
G-007A	G-007A	0.7336	Confirmed LTF	0.7336
VFT	VFT	2.0511	Confirmed LTF	2.0511
CALDERWOOD	CALDERWOOD	0.0557	Confirmed LTF	0.0557
PRAIRIE	PRAIRIE	0.2583	Confirmed LTF	0.2583
CHEOAH	CHEOAH	0.0566	Confirmed LTF	0.0566
CBM-N	CBM-N	0.3888	Confirmed LTF	0.3888
COTTONWOOD	COTTONWOOD	0.2247	Confirmed LTF	0.2247
HAMLET	HAMLET	0.0757	Confirmed LTF	0.0757
GIBSON	GIBSON	0.0530	Confirmed LTF	0.0530
BLUEG	BLUEG	0.1684	Confirmed LTF	0.1684
TRIMBLE	TRIMBLE	0.0540	Confirmed LTF	0.0540
CATAWBA	CATAWBA	0.0437	Confirmed LTF	0.0437

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
165124665	204701	27YORKANAB	METED	208720	RED FRONT	PPL	1	ME-P2-2-ME-115-030	bus	208.0	123.28	124.73	DC	5.67

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
958071	AF2-101 C	-0.1043	Adder	-0.12
958601	AF2-151 C	-0.1058	Adder	-0.12
959223	AF2-213 BAT	11.9169	50/50	11.9169
960922	AF2-383 BAT	1.3524	Merchant Transmission	1.3524
962082	AG1-052 BAT	2.6428	50/50	2.6428
963953	AG1-248 BAT	72.7640	50/50	72.7640
965963	AG1-465 BAT	3.0051	Merchant Transmission	3.0051
966152	AG1-484 BAT	0.6436	Merchant Transmission	0.6436
G-007A	G-007A	0.2493	Confirmed LTF	0.2493
VFT	VFT	0.6450	Confirmed LTF	0.6450
CALDERWOOD	CALDERWOOD	0.0174	Confirmed LTF	0.0174
PRAIRIE	PRAIRIE	0.1007	Confirmed LTF	0.1007
CHEOAH	CHEOAH	0.0175	Confirmed LTF	0.0175
CBM-N	CBM-N	0.1104	Confirmed LTF	0.1104
COTTONWOOD	COTTONWOOD	0.0777	Confirmed LTF	0.0777
HAMLET	HAMLET	0.0156	Confirmed LTF	0.0156
GIBSON	GIBSON	0.0218	Confirmed LTF	0.0218
BLUEG	BLUEG	0.0694	Confirmed LTF	0.0694
TRIMBLE	TRIMBLE	0.0223	Confirmed LTF	0.0223
CATAWBA	CATAWBA	0.0105	Confirmed LTF	0.0105

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
165124687	208720	RED FRONT	PPL	204567	27YOE	METED	1	ME-P2-2-ME-115-030	bus	208.0	120.73	122.18	DC	5.67

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
958071	AF2-101 C	-0.1043	Adder	-0.12
958601	AF2-151 C	-0.1058	Adder	-0.12
959223	AF2-213 BAT	11.9169	50/50	11.9169
960922	AF2-383 BAT	1.3524	Merchant Transmission	1.3524
962082	AG1-052 BAT	2.6428	50/50	2.6428
963953	AG1-248 BAT	72.7640	50/50	72.7640
965963	AG1-465 BAT	3.0051	Merchant Transmission	3.0051
966152	AG1-484 BAT	0.6436	Merchant Transmission	0.6436
G-007A	G-007A	0.2493	Confirmed LTF	0.2493
VFT	VFT	0.6450	Confirmed LTF	0.6450
CALDERWOOD	CALDERWOOD	0.0174	Confirmed LTF	0.0174
PRAIRIE	PRAIRIE	0.1007	Confirmed LTF	0.1007
CHEOAH	CHEOAH	0.0175	Confirmed LTF	0.0175
CBM-N	CBM-N	0.1104	Confirmed LTF	0.1104
COTTONWOOD	COTTONWOOD	0.0777	Confirmed LTF	0.0777
HAMLET	HAMLET	0.0156	Confirmed LTF	0.0156
GIBSON	GIBSON	0.0218	Confirmed LTF	0.0218
BLUEG	BLUEG	0.0694	Confirmed LTF	0.0694
TRIMBLE	TRIMBLE	0.0223	Confirmed LTF	0.0223
CATAWBA	CATAWBA	0.0105	Confirmed LTF	0.0105

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
166054909	939000	AE1-129 TAP	METED	204571	27ZIONS VW	METED	1	ME-P2-3-ME-115-033E	breaker	156.0	136.89	138.78	DC	5.57

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
204660	27YK H STA	0.8165	50/50	0.8165
939001	AE1-129 C	23.9531	50/50	23.9531
939002	AE1-129 E	16.6143	50/50	16.6143
959223	AF2-213 BAT	32.8673	50/50	32.8673
960922	AF2-383 BAT	1.2358	Merchant Transmission	1.2358
962081	AG1-052	10.1928	50/50	10.1928
963953	AG1-248 BAT	22.7120	50/50	22.7120
965963	AG1-465 BAT	2.9516	Merchant Transmission	2.9516
G-007A	G-007A	0.7336	Confirmed LTF	0.7336
VFT	VFT	2.0511	Confirmed LTF	2.0511
CALDERWOOD	CALDERWOOD	0.0557	Confirmed LTF	0.0557
PRAIRIE	PRAIRIE	0.2583	Confirmed LTF	0.2583
CHEOAH	CHEOAH	0.0566	Confirmed LTF	0.0566
CBM-N	CBM-N	0.3888	Confirmed LTF	0.3888
COTTONWOOD	COTTONWOOD	0.2247	Confirmed LTF	0.2247
HAMLET	HAMLET	0.0757	Confirmed LTF	0.0757
GIBSON	GIBSON	0.0530	Confirmed LTF	0.0530
BLUEG	BLUEG	0.1684	Confirmed LTF	0.1684
TRIMBLE	TRIMBLE	0.0540	Confirmed LTF	0.0540
CATAWBA	CATAWBA	0.0437	Confirmed LTF	0.0437

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
166055033	959220	AF2-213 TAP	METED	204557	27SMITH ST	METED	1	ME-P2-3-ME-115-033E	breaker	156.0	108.82	110.72	DC	5.57

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
204660	27YK H STA	0.8165	50/50	0.8165
939001	AE1-129 C	23.9531	50/50	23.9531
939002	AE1-129 E	16.6143	50/50	16.6143
959221	AF2-213 C	18.9521	50/50	18.9521
959222	AF2-213 E	28.4282	50/50	28.4282
960922	AF2-383 BAT	1.2358	Merchant Transmission	1.2358
962081	AG1-052	10.1928	50/50	10.1928
963953	AG1-248 BAT	22.7120	50/50	22.7120
965963	AG1-465 BAT	2.9516	Merchant Transmission	2.9516
G-007A	G-007A	0.7336	Confirmed LTF	0.7336
VFT	VFT	2.0511	Confirmed LTF	2.0511
CALDERWOOD	CALDERWOOD	0.0557	Confirmed LTF	0.0557
PRAIRIE	PRAIRIE	0.2583	Confirmed LTF	0.2583
CHEOAH	CHEOAH	0.0566	Confirmed LTF	0.0566
CBM-N	CBM-N	0.3888	Confirmed LTF	0.3888
COTTONWOOD	COTTONWOOD	0.2247	Confirmed LTF	0.2247
HAMLET	HAMLET	0.0757	Confirmed LTF	0.0757
GIBSON	GIBSON	0.0530	Confirmed LTF	0.0530
BLUEG	BLUEG	0.1684	Confirmed LTF	0.1684
TRIMBLE	TRIMBLE	0.0540	Confirmed LTF	0.0540
CATAWBA	CATAWBA	0.0437	Confirmed LTF	0.0437

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
166054944	961480	AF2-439 TAP	PENELEC	200504	26CARLISLE	PENELEC	1	ME-P2-3-ME-230-005A	breaker	159.0	121.08	123.55	DC	7.41

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
237329	01CHBRG_I12	0.4706	50/50	0.4706
901242	W1-045 E OP1	0.3063	Adder	0.36
930822	AB1-127 E	0.3508	Adder	0.41
930832	AB1-128 E	0.3508	Adder	0.41
933977	AD1-020 EBAT (Suspended)	2.1736	50/50	2.1736
934371	AD1-061 C	0.3320	Adder	0.39
934372	AD1-061 E	0.2883	Adder	0.34
936061	AD2-009 C	2.2487	Adder	2.65
936062	AD2-009 E	1.0238	Adder	1.2
936471	AD2-062 C O1	9.9066	50/50	9.9066
936472	AD2-062 E O1	4.9626	50/50	4.9626
938384	AE1-071-C	12.4256	50/50	12.4256
938385	AE1-071-E	7.6034	50/50	7.6034
938753	AE1-101 C1	1.7324	Adder	2.04
938754	AE1-101 C2	0.8662	Adder	1.02
938756	AE1-101 E1	3.5765	Adder	4.21
938757	AE1-101 E2	1.7856	Adder	2.1
939033	AE1-132 C	2.3842	Adder	2.8
939034	AE1-132 E	1.5895	Adder	1.87
939591	AE1-188 C	0.6143	Adder	0.72
939592	AE1-188 E	0.3608	Adder	0.42
940671	AE2-054 C (Suspended)	0.5208	Adder	0.61
940672	AE2-054 E (Suspended)	0.3472	Adder	0.41
945011	AF1-166 C	0.5102	Adder	0.6
945012	AF1-166 E	0.3401	Adder	0.4
945441	AF1-209 C O1	0.5070	Adder	0.6
945442	AF1-209 E O1	0.3380	Adder	0.4
945591	AF1-224 C	0.3852	Adder	0.45
945592	AF1-224 E	0.1950	Adder	0.23
958071	AF2-101 C	-0.2947	Adder	-0.35
958221	AF2-116 C	0.6218	Adder	0.73
958222	AF2-116 E	0.3132	Adder	0.37
958231	AF2-117 C	1.9863	Adder	2.34
958232	AF2-117 E	0.9929	Adder	1.17
958551	AF2-146 C	1.4569	50/50	1.4569
958552	AF2-146 E	0.9713	50/50	0.9713
958571	AF2-148 C	1.2580	50/50	1.2580
958572	AF2-148 E	0.8387	50/50	0.8387
958601	AF2-151 C	-0.2906	Adder	-0.34
958871	AF2-178	0.2673	Adder	0.31

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
958881	AF2-179	0.3083	Adder	0.36
958891	AF2-180	0.3083	Adder	0.36
958931	AF2-184	0.2534	Adder	0.3
959223	AF2-213 BAT	4.9280	Merchant Transmission	4.9280
959241	AF2-215 C	0.1427	Adder	0.17
959242	AF2-215 E	0.0951	Adder	0.11
959381	AF2-229 C	0.7469	Adder	0.88
959382	AF2-229 E	0.6236	Adder	0.73
959773	AF2-268 BAT	0.1617	50/50	0.1617
959842	AF2-275 E	0.1595	Adder	0.19
959852	AF2-276 E	0.1595	Adder	0.19
961481	AF2-439 C	7.5080	50/50	7.5080
961482	AF2-439 E	6.9305	50/50	6.9305
962082	AG1-052 BAT	0.6605	Merchant Transmission	0.6605
963901	AG1-243 C	0.1817	Adder	0.4
963902	AG1-243 E	0.0978	Adder	0.22
964641	AG1-327 C O1	0.5731	Adder	1.27
964642	AG1-327 E O1	0.2952	Adder	0.66
964693	AG1-332 BAT	0.1533	Merchant Transmission	0.1533
965963	AG1-465 BAT	3.9252	Merchant Transmission	3.9252
966152	AG1-484 BAT	4.2560	50/50	4.2560
966172	AG1-486 BAT	1.6170	50/50	1.6170
966461	AG1-515 C	0.1313	Adder	0.29
966462	AG1-515 E	0.1969	Adder	0.44
WEC	WEC	0.0936	Confirmed LTF	0.0936
LGEE	LGEE	0.1860	Confirmed LTF	0.1860
CPL	CPL	0.1870	Confirmed LTF	0.1870
CBM-W2	CBM-W2	2.6253	Confirmed LTF	2.6253
NY	NY	0.1924	Confirmed LTF	0.1924
TVA	TVA	0.4074	Confirmed LTF	0.4074
O-066	O-066	4.4485	Confirmed LTF	4.4485
SIGE	SIGE	0.1005	Confirmed LTF	0.1005
CBM-S2	CBM-S2	2.9232	Confirmed LTF	2.9232
CBM-S1	CBM-S1	0.1110	Confirmed LTF	0.1110
G-007	G-007	0.6919	Confirmed LTF	0.6919
MEC	MEC	0.4688	Confirmed LTF	0.4688
LAGN	LAGN	0.5093	Confirmed LTF	0.5093
CBM-W1	CBM-W1	4.1639	Confirmed LTF	4.1639

11.7 Queue Dependencies

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

Queue Number	Project Name	Status
AB1-096	Carroll-Mt. Airy 34.5kV	Engineering and Procurement
AB1-124	Carroll-Monocacy 34.5kV	Suspended
AB1-125	Carroll-Monocacy 34.5kV	Suspended
AB1-127	St. Thomas-Guilford 34.5kV	In Service
AB1-128	St. Thomas-Mercersburg 34.5kV	In Service
AC1-048	Germantown 115kV	Suspended
AC2-053	Germantown 115kV	Suspended
AD1-020	Hunterstown-Lincoln 115 kV	Suspended
AD1-061	McConnellsburg-Mercersburg 34 kV	Active
AD2-009	McConnellsburg 138 kV	Active
AD2-062	Roxbury-Greene 138 kV	Active
AE1-006	Germantown 115 kV	Suspended
AE1-071	Shade Gap-Roxbury 115 kV	Active
AE1-101	McConnellsburg-Texas Eastern 138 kV	Active
AE1-129	Zion View - Middletown 115 kV	Active
AE1-131	Gardners-Hunterstown 115 kV	Active
AE1-132	McConnellsburg 138 kV	Active
AE1-138	Hamilton 115 kV	Active
AE1-139	Hunterstown 115 kV	Active
AE1-188	Fayetteville 34.5 kV	Engineering and Procurement
AE2-054	Warfordsburg 34 kV	Suspended
AE2-192	Orrtanna 115 kV	Active
AE2-345	Hunterstown-Texas Eastern Tap 115 kV	Active
AF1-166	Target-Chambers No.5 34.5 kV	Engineering and Procurement
AF1-178	Tolna 2 115 kV	Partially in Service - Under Construction
AF1-179	Tolna 1 115 kV	Partially in Service - Under Construction
AF1-188	Orrtanna 115 kV	Partially in Service - Under Construction
AF1-192	Mountain 2 115 kV	Partially in Service - Under Construction
AF1-193	Hunterstown 115 kV	Partially in Service - Under Construction
AF1-194	Hamilton CT1 115 kV	Partially in Service - Under Construction
AF1-209	Guilford 34.5 kV	Active
AF1-224	Fayetteville 34.5 kV	Engineering and Procurement
AF2-099	Taxville 2 13.2 kV	Engineering and Procurement
AF2-100	Taxville 1 13.2 kV	Engineering and Procurement
AF2-101	Allen 13.2 kV	Engineering and Procurement
AF2-102	Germantown 13.2 kV	Active
AF2-116	McConnellsburg 138 kV	Active
AF2-117	Warfordsburg-McConnellsburg 138 kV	Active
AF2-146	Hill Valley-Valley REC 46 kV	Active

Queue Number	Project Name	Status
AF2-148	Shade Gap-Three Springs KTS 23 kV	Active
AF2-151	Dillsburg 13.2 kV	Engineering and Procurement
AF2-175	Straban 13.2 kV	Active
AF2-178	Roxbury 23 kV II	In Service
AF2-179	St. Thomas-Mercersburg 34.5 kV II	In Service
AF2-180	St. Thomas-Guilford 34.5 kV II	In Service
AF2-184	McConnellsburg-Mercersburg 34 kV II	Active
AF2-213	Zions View-Smith Street 115 kV	Active
AF2-215	Saint Thomas-LeMasters Junction 34.5 kV	Engineering and Procurement
AF2-229	Roxbury 23 kV	Active
AF2-268	Orrtanna 13.2 kV	Engineering and Procurement
AF2-275	Guilford 12.47 kV	Active
AF2-276	Guilford 12.47 kV	Active
AF2-383	Tolna 115 kV	Active
AF2-439	Roxbury-Carlisle 115 kV	Active
AG1-052	Zionsview-Middletown 115 kV II	Active
AG1-053	Jackson-Three Mile Island 230 kV III	Active
AG1-243	Guilford-Fayetteville 34.5 kV	Active
AG1-248	York Storage 115 kV	Active
AG1-327	West Waynesboro-East Waynesboro 138 kV	Active
AG1-332	Oxford 13.2 kV	Active
AG1-465	North Hanover-Gitts Run 115 kV	Active
AG1-473	Shingletown-Lewistown 230 kV	Active
AG1-484	Mountain 115 kV	Active
AG1-486	Orrtanna 115 kV	Active
AG1-515	Guilford 138 kV	Active
W1-045	Roxbury 23 kV	In Service

11.8 Contingency Descriptions - Primary POI

Contingency Name	Contingency Definition
ME-P2-3-ME-115-033E	CONTINGENCY 'ME-P2-3-ME-115-033E' /* CLY 5 DISCONNECT BRANCH FROM BUS 204524 TO BUS 204682 CKT 1 /* 27CLY 978 115 27ES3 115 DISCONNECT BRANCH FROM BUS 204682 TO BUS 204572 CKT 1 /* 27ES3 115 27RAINTREE 115 DISCONNECT BRANCH FROM BUS 204572 TO BUS 204557 CKT 1 /* 27RAINTREE 115 27SMITH ST 115 DISCONNECT BRANCH FROM BUS 204523 TO BUS 204549 CKT 1 /* 27CLY 975 115 27NEWBERRY 115 DISCONNECT BRANCH FROM BUS 204549 TO BUS 204556 CKT 1 /* 27NEWBERRY 115 27ROUND TP 115 END
ME-P1-2-ME-115-025-B	CONTINGENCY 'ME-P1-2-ME-115-025-B' /* MIDD JUNCTION-ZIONSVIEW- SMITH STREET 115 KV DISCONNECT BRANCH FROM BUS 939000 TO BUS 204571 CKT 1 /* AE1-129 115 27ZIONS VW 115 DISCONNECT BRANCH FROM BUS 204571 TO BUS 959220 CKT 1 /* 27ZIONS VW 115 AF2-213 TAP 115 REMOVE LOAD 1 FROM BUS 204571 /* 27ZIONS VW 115 REMOVE LOAD 2 FROM BUS 204571 /* 27ZIONS VW 115 DISCONNECT BUS 204571 /* 27ZIONS VW 115 END
PL:10:P24:100548	CONTINGENCY 'PL:10:P24:100548' /* JUNI 230KV BUS_SEC_1-2 CB DISCONNECT BUS 208005 /* JUNI BU2 230 DISCONNECT BUS 208004 /* JUNI BU1 230 /* JUNI BU1 230 END
ME-P1-2-ME-230-019	CONTINGENCY 'ME-P1-2-ME-230-019' /* LINE 27HUNTRSTN 230.0 TO 27HUNTRST1 230.0 CIRCUIT 1 DISCONNECT BRANCH FROM BUS 204501 TO BUS 204575 CKT 1 /* 27HUNTRSTN 230 27HUNTRST1 230 END
PL:10:P45:102437	CONTINGENCY 'PL:10:P45:102437' /* JUNI BU2 230KV BUS; BUS_SEC_1-2 CB @ JUNI 230KV DISCONNECT BUS 208004 /* JUNI BU1 230 DISCONNECT BUS 208005 /* JUNI BU2 230 END

Contingency Name	Contingency Definition
ME-P7-1-ME-230-003	CONTINGENCY 'ME-P7-1-ME-230-003' /* HUNTERSTOWN-JACKSON 230 KV & HAMILTON-JACKSON 115 KV DISCONNECT BRANCH FROM BUS 204575 TO BUS 204502 CKT 1 /* 27HUNTRST1 230 27JACKSON 230 DISCONNECT BRANCH FROM BUS 204535 TO BUS 204700 CKT 1 /* 27HAMILTON 115 27JACKSON6 115 END
ME-P7-1-ME-230-004	CONTINGENCY 'ME-P7-1-ME-230-004' /* HUNTRSTWN-JACKSN 230 KV & HUNTRSTWN-HAMILTON 115 KV DISCONNECT BRANCH FROM BUS 204575 TO BUS 204502 CKT 1 /* 27HUNTRST1 230 27JACKSON 230 DISCONNECT BRANCH FROM BUS 204535 TO BUS 204539 CKT 1 /* 27HAMILTON 115 27HUNTRSTN 115 END
PL:10:P13:001633	CONTINGENCY 'PL:10:P13:001633' /* DAUPHIN 230/69KV T2 DISCONNECT BRANCH FROM BUS 207953 TO BUS 207955 CKT 1 /* DAUP TR1-DAUP TR2 230 DISCONNECT BRANCH FROM BUS 207955 TO BUS 208005 CKT 1 /* DAUP TR2-JUNI BU2 230 DISCONNECT BRANCH FROM BUS 207955 TO BUS 209866 CKT 2 /* DAUP TR2-DAUP 230-69 END
ME-P2-3-ME-230-005A	CONTINGENCY 'ME-P2-3-ME-230-005A' /* HUNTRSTOWN-JACKSON_ HUNTRSTWN BK1 (HUNTRSTWN-105392) DISCONNECT BRANCH FROM BUS 204575 TO BUS 204502 CKT 1 /* 27HUNTRST1 230 27JACKSON 230 DISCONNECT BRANCH FROM BUS 204575 TO BUS 204501 CKT 1 /* 27HUNTRST1 230 27HUNTRSTN 230 DISCONNECT BRANCH FROM BUS 200026 TO BUS 204501 CKT 1 /* HUNTERTN 500 27HUNTRSTN 230 DISCONNECT BUS 204501 /* 27HUNTRSTN 230 END
Base Case	
ME-P2-3-ME-230-005C	CONTINGENCY 'ME-P2-3-ME-230-005C' /* HUNTRSTOWN BK1_ HUNTRSTOWN BK4 (HUNTRSTWN-B1) DISCONNECT BRANCH FROM BUS 204575 TO BUS 204501 CKT 1 /* 27HUNTRST1 230 27HUNTRSTN 230 DISCONNECT BRANCH FROM BUS 200026 TO BUS 204501 CKT 1 /* HUNTERTN 500 27HUNTRSTN 230 DISCONNECT BRANCH FROM BUS 204575 TO BUS 204539 CKT 4 /* 27HUNTRST1 230 27HUNTRSTN 115 DISCONNECT BUS 204501 /* 27HUNTRSTN 230 END

Contingency Name	Contingency Definition
ME-P2-2-ME-115-030	CONTINGENCY 'ME-P2-2-ME-115-030' /* YORKANA 115 KV BUS 4 FAULT DISCONNECT BRANCH FROM BUS 204570 TO BUS 204687 CKT 1 /* 27YORKANA 115 27PROSPECT 115 DISCONNECT BRANCH FROM BUS 204570 TO BUS 204568 CKT 1 /* 27YORKANA 115 27YOE TAP 115 DISCONNECT BRANCH FROM BUS 204570 TO BUS 204701 CKT ZB /* 27YORKANA 115 27YORKANAB 115 DISCONNECT BRANCH FROM BUS 204515 TO BUS 204570 CKT 1 /* 27YORKANA 230 27YORKANA 115 DISCONNECT BUS 204570 /* 27YORKANA 115 END
ME-P1-3-ME-500-003T	CONTINGENCY 'ME-P1-3-ME-500-003T' /* TRAN HUNTERTN 500.00 TO 27HUNTRSTN 230.00 CIRCUIT 1 DISCONNECT BRANCH FROM BUS 200026 TO BUS 204501 CKT 1 /* HUNTERTN 500 27HUNTRSTN 230 END
ME-P2-3-ME-230-019CT	CONTINGENCY 'ME-P2-3-ME-230-019CT' /* YORKANA-B11 DISCONNECT BRANCH FROM BUS 204515 TO BUS 208048 CKT 1 /* 27YORKANA 230 OTCR 230 DISCONNECT BRANCH FROM BUS 204515 TO BUS 207922 CKT 1 /* 27YORKANA 230 BRIS 230 DISCONNECT BRANCH FROM BUS 204515 TO BUS 204570 CKT 1 /* 27YORKANA 230 27YORKANA 115 END
PL:10:P13:001616	CONTINGENCY 'PL:10:P13:001616' /* JUNIATA 230/69KV T3 DISCONNECT BRANCH FROM BUS 208004 TO BUS 208005 CKT 1 /* JUNI BU1-JUNI BU2 230 DISCONNECT BRANCH FROM BUS 207950 TO BUS 208004 CKT 1 /* DISCONNECT BRANCH FROM BUS 208004 TO BUS 209997 CKT 3 /* JUNI BU1-JUNI 230- 69 DISCONNECT BRANCH FROM BUS 207950 TO BUS 208004 CKT 1 /* CUMB TR2-JUNI BU1 230 DISCONNECT BRANCH FROM BUS 200009 TO BUS 208004 CKT 1 /* JUNIATA-JUNI BU1 500-230 END

Contingency Name	Contingency Definition
ME-P2-3-ME-115-032AT	CONTINGENCY 'ME-P2-3-ME-115-032AT' /* YORKANA-1B45 (TIE BREAKER) DISCONNECT BRANCH FROM BUS 204570 TO BUS 204687 CKT 1 /* 27YORKANA 115 27PROSPECT 115 DISCONNECT BRANCH FROM BUS 204701 TO BUS 208720 CKT 1 /* 27YORKANAB 115 RED FRONT 115 DISCONNECT BRANCH FROM BUS 204570 TO BUS 204568 CKT 1 /* 27YORKANA 115 27YOE TAP 115 DISCONNECT BRANCH FROM BUS 204570 TO BUS 204701 CKT ZB /* 27YORKANA 115 27YORKANAB 115 DISCONNECT BRANCH FROM BUS 204701 TO BUS 204574 CKT 1 /* 27YORKANAB 115 27MODRN LF 13 DISCONNECT BRANCH FROM BUS 204515 TO BUS 204570 CKT 1 /* 27YORKANA 230 27YORKANA 115 DISCONNECT BRANCH FROM BUS 204515 TO BUS 204701 CKT 3 /* 27YORKANA 230 27YORKANAB 115 REMOVE LOAD 2 FROM BUS 204701 /* 27YORKANAB 115 DISCONNECT BUS 204701 /* 27YORKANAB 115 DISCONNECT BUS 204574 /* 27MODRN LF 13 DISCONNECT BUS 204570 /* 27YORKANA 115 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 AG1-465 was evaluated as a 100.0 MW (Capacity 40.0 MW) injection tapping the North Hanover to Jackson 115 kV line in the ME area. Project AG1-465 was evaluated for compliance with applicable reliability planning criteria (PJM, NERC, NERC Regional Reliability Councils, and Transmission Owners). Project AG1-465 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)

None

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	CK T ID	CONT NAME	Type	Rating MVA	PRE PROJE CT LOADIN G %	POST PROJE CT LOADIN G %	AC D C	MW IMPAC T
166620237	204551	27OXFOR D	115.0	METE D	204548	27N.HANOV R	115.0	METE D	1	ME-P7-1-ME-230-003	tower	282.0	94.82	107.92	DC	36.95
166620238	204551	27OXFOR D	115.0	METE D	204548	27N.HANOV R	115.0	METE D	1	ME-P7-1-ME-230-004	tower	282.0	94.51	107.61	DC	36.94
166055125	204571	27ZIONS VW	115.0	METE D	959220	AF2-213 TAP	115.0	METE D	1	ME-P2-3-ME-115-033E	break er	156.0	99.52	101.42	DC	5.59
174487012	941990	AE2-211 TAP	230.0	METE D	204502	27JACKSON	230.0	METE D	1	ME-P2-3-ME-230-019C T	break er	659.0	92.45	100.09	DC	45.3

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	CK T ID	CONT NAME	Type	Rating MVA	PRE PROJE CT LOADIN G %	POST PROJE CT LOADIN G %	AC D C	MW IMPAC T
173915439	200009	JUNIATA	500.0	PPL	208005	JUNI BU2	230.0	PPL	2	PL:11:P42:000140	break er	814.0	121.94	122.56	DC	9.53
165124742	200504	26CARLISL E	115.0	PENEL EC	204528	27GARDNE RS	115.0	METE D	1	PL:10:P24:100548	bus	160.0	100.63	102.46	DC	5.54
165818247	200520	26ROXBUR Y	115.0	PENEL EC	961480	AF2-439 TAP	115.0	PENEL EC	1	PL:10:P24:100548	bus	159.0	110.01	111.81	DC	5.4
166054970	200520	26ROXBUR Y	115.0	PENEL EC	961480	AF2-439 TAP	115.0	PENEL EC	1	ME-P2-3-ME-230-005A	break er	159.0	111.77	114.23	DC	7.37
166054971	200520	26ROXBUR Y	115.0	PENEL EC	961480	AF2-439 TAP	115.0	PENEL EC	1	PL:10:P45:102437	break er	159.0	110.01	111.81	DC	5.4
166054972	200520	26ROXBUR Y	115.0	PENEL EC	961480	AF2-439 TAP	115.0	PENEL EC	1	ME-P2-3-ME-230-005C	break er	159.0	108.95	111.1	DC	6.44
166620235	204523	27CLY 975	115.0	METE D	204524	27CLY 978	115.0	METE D	ZB	ME-P7-1-ME-230-008A-B	tower	140.0	109.08	110.99	DC	5.03
166620236	204523	27CLY 975	115.0	METE D	204524	27CLY 978	115.0	METE D	ZB	ME-P7-1-ME-230-008A-A	tower	140.0	103.94	105.84	DC	5.03
166620227	204539	27HUNTRS TN	115.0	METE D	204551	27OXFORD	115.0	METE D	1	ME-P7-1-ME-230-003	tower	282.0	101.38	114.47	DC	36.95
166620228	204539	27HUNTRS TN	115.0	METE D	204551	27OXFORD	115.0	METE D	1	ME-P7-1-ME-230-004	tower	282.0	101.07	114.17	DC	36.94

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 PROJECTIONS LOADING %	POST PROJECTIONS LOADING %	AC/D C	MW IMPACT
166054891	204559	27TAXVILLE	115.0	METED	204563	27WESTGATE	115.0	METED	1	ME-P2-3-ME-115-032AT	breaker	282.0	138.05	139.45	DC	8.75
166054943	204563	27WESTGATE	115.0	METED	204558	27SMITH TP	115.0	METED	1	ME-P2-3-ME-115-032AT	breaker	282.0	125.61	127.01	DC	8.75
166054986	204598	27MIDD JCT	115.0	METED	939000	AE1-129 TAP	115.0	METED	1	ME-P2-3-ME-115-033E	breaker	156.0	110.96	112.86	DC	5.59
166054987	204598	27MIDD JCT	115.0	METED	939000	AE1-129 TAP	115.0	METED	1	ME-P2-3-ME-230-019CT	breaker	156.0	104.68	106.45	DC	5.22
165124665	204701	27YORKAN AB	115.0	METED	208720	RED FRONT	115.0	PPL	1	ME-P2-2-ME-115-030	bus	208.0	123.28	124.73	DC	5.69
165124687	208720	RED FRONT	115.0	PPL	204567	27YOE	115.0	METED	1	ME-P2-2-ME-115-030	bus	208.0	120.73	122.18	DC	5.69
166054909	939000	AE1-129 TAP	115.0	METED	204571	27ZIONS VW	115.0	METED	1	ME-P2-3-ME-115-033E	breaker	156.0	136.89	138.79	DC	5.59
166054913	939000	AE1-129 TAP	115.0	METED	204571	27ZIONS VW	115.0	METED	1	ME-P2-3-ME-230-019CT	breaker	156.0	123.82	125.6	DC	5.22
166055033	959220	AF2-213 TAP	115.0	METED	204557	27SMITH ST	115.0	METED	1	ME-P2-3-ME-115-033E	breaker	156.0	108.82	110.72	DC	5.59
165818231	961480	AF2-439 TAP	115.0	PENEL EC	200504	26CARLISLE	115.0	PENEL EC	1	PL:10:P24:100548	bus	159.0	119.4	121.2	DC	5.4
166054944	961480	AF2-439 TAP	115.0	PENEL EC	200504	26CARLISLE	115.0	PENEL EC	1	ME-P2-3-ME-230-005A	breaker	159.0	120.53	122.99	DC	7.37
166054945	961480	AF2-439 TAP	115.0	PENEL EC	200504	26CARLISLE	115.0	PENEL EC	1	PL:10:P45:102437	breaker	159.0	119.4	121.2	DC	5.4
166054946	961480	AF2-439 TAP	115.0	PENEL EC	200504	26CARLISLE	115.0	PENEL EC	1	ME-P2-3-ME-230-005C	breaker	159.0	117.9	120.05	DC	6.44

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	CK T ID	CONT NAME	Type	Rating MVA	PRE PROJECTIONS LOADING %	POST PROJECTIONS LOADING %	AC/D C	MW IMPACT
167738147	200504	26CARLISLE	115.0	PENEL EC	204528	27GARDNERS	115.0	METED	1	Base Case	operation	133.0	100.02	102.05	DC	5.12
166278752	200520	26ROXBURY	115.0	PENEL EC	961480	AF2-439 TAP	115.0	PENEL EC	1	ME-P1-3-ME-500-003T	operation	159.0	108.36	110.45	DC	6.24
166278753	200520	26ROXBURY	115.0	PENEL EC	961480	AF2-439 TAP	115.0	PENEL EC	1	ME-P1-2-ME-230-019	operation	159.0	108.36	110.45	DC	6.24
166278731	204524	27CLY 978	115.0	METED	204682	27ES3	115.0	METED	1	ME-P1-2-ME-115-025-B	operation	130.0	116.67	118.85	DC	5.33
166278745	204682	27ES3	115.0	METED	204572	27RAINTR EE	115.0	METED	1	ME-P1-2-ME-115-025-B	operation	130.0	113.82	116.0	DC	5.33
167738153	208004	JUNI BU1	230.0	PPL	207950	CUMB TR2	230.0	PPL	1	PL:10:P13:001633	operation	618.0	104.38	105.12	DC	8.61
167738030	208005	JUNI BU2	230.0	PPL	207955	DAUP TR2	230.0	PPL	1	PL:10:P12:000195	operation	531.0	107.61	108.39	DC	7.83

ID	FROM BUS#	FROM BUS	kV	FROM BUS AREA	TO BUS#	TO BUS	kV	TO BUS AREA	CK T ID	CONT NAME	Type	Rati ng MVA	PRE PROJEC T LOADI NG %	POST PROJEC T LOADI NG %	AC D C	MW IMPA CT
1662786 93	9614 80	AF2-439 TAP	115. 0	PENEL EC	2005 04	26CARLISL E	115. 0	PENEL EC	1	ME-P1-2-ME- 230-019	operati on	159. 0	117.35	119.43	DC	6.24
1662786 94	9614 80	AF2-439 TAP	115. 0	PENEL EC	2005 04	26CARLISL E	115. 0	PENEL EC	1	ME-P1-3-ME- 500-003T	operati on	159. 0	117.35	119.43	DC	6.24

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".

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
166620238	204551	27OXFORD	METED	204548	27N.HANOV	METED	1	ME-P7-1-ME-230-004	tower	282.0	94.51	107.61	DC	36.94

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
204647	27HUNTR CT	2.3416	50/50	2.3416
204648	27MOUNT CT	0.6777	50/50	0.6777
204649	27ORTAN CT	0.7370	50/50	0.7370
205907	AC1-048 C (Suspended)	2.3815	50/50	2.3815
205908	AC1-048 E (Suspended)	3.8856	50/50	3.8856
205909	AC2-053 C (Suspended)	1.3609	50/50	1.3609
205910	AC2-053 E (Suspended)	2.2203	50/50	2.2203
901242	W1-045 E OP1	0.1959	Adder	0.23
923202	AB1-124 C (Suspended)	0.3433	Adder	0.4
923203	AB1-124 E (Suspended)	0.5602	Adder	0.66
923212	AB1-125 C OP (Suspended)	0.2575	Adder	0.3
923213	AB1-125 E OP (Suspended)	0.4202	Adder	0.49
930522	AB1-096 E	0.2747	Adder	0.32
933974	AD1-020 C (Suspended)	12.9331	50/50	12.9331
933975	AD1-020 BAT (Suspended)	4.8258	50/50	4.8258
933976	AD1-020 E (Suspended)	6.3701	50/50	6.3701
938041	AE1-006 C (Suspended)	1.3609	50/50	1.3609
938042	AE1-006 E (Suspended)	2.2203	50/50	2.2203
939021	AE1-131 C O1	7.4950	50/50	7.4950
939022	AE1-131 E O1	4.9967	50/50	4.9967
939101	AE1-139 C O1	9.1662	50/50	9.1662
939102	AE1-139 E O1	6.1108	50/50	6.1108
941871	AE2-192 C	9.3424	50/50	9.3424
941872	AE2-192 E	6.2283	50/50	6.2283
943161	AE2-345 C	12.1335	50/50	12.1335
943162	AE2-345 E	8.0890	50/50	8.0890
945231	AF1-188	0.0378	50/50	0.0378
945271	AF1-192	0.0172	50/50	0.0172
945281	AF1-193	0.1561	50/50	0.1561
958071	AF2-101 C	0.1337	Adder	0.16
958072	AF2-101 E	0.0891	Adder	0.1
958081	AF2-102 C	0.3223	50/50	0.3223
958082	AF2-102 E	0.2149	50/50	0.2149
958601	AF2-151 C	0.1293	Adder	0.15
958602	AF2-151 E	0.0862	Adder	0.1
958841	AF2-175 C	0.3943	50/50	0.3943
958842	AF2-175 E	0.2629	50/50	0.2629
958871	AF2-178	0.1709	Adder	0.2

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
959223	AF2-213 BAT	5.3389	Merchant Transmission	5.3389
959381	AF2-229 C	0.4776	Adder	0.56
959382	AF2-229 E	0.3987	Adder	0.47
959772	AF2-268 E	0.4791	50/50	0.4791
960922	AF2-383 BAT	2.1604	50/50	2.1604
961481	AF2-439 C	1.1865	Adder	1.4
961482	AF2-439 E	1.0953	Adder	1.29
962082	AG1-052 BAT	0.6126	Merchant Transmission	0.6126
962092	AG1-053 BAT	0.8145	Merchant Transmission	0.8145
963953	AG1-248 BAT	8.4450	Merchant Transmission	8.4450
964691	AG1-332 C	1.6591	50/50	1.6591
964692	AG1-332 E	0.5829	50/50	0.5829
965963	AG1-465 BAT	36.9410	50/50	36.9410
966151	AG1-484	2.1748	50/50	2.1748
966171	AG1-486	3.5933	50/50	3.5933
WEC	WEC	0.1414	Confirmed LTF	0.1414
LGEE	LGEE	0.2859	Confirmed LTF	0.2859
CPL	CPL	0.3638	Confirmed LTF	0.3638
CBM-W2	CBM-W2	4.1754	Confirmed LTF	4.1754
NY	NY	0.4983	Confirmed LTF	0.4983
TVA	TVA	0.6678	Confirmed LTF	0.6678
O-066	O-066	8.0693	Confirmed LTF	8.0693
SIGE	SIGE	0.1737	Confirmed LTF	0.1737
CBM-S2	CBM-S2	5.3870	Confirmed LTF	5.3870
CBM-S1	CBM-S1	0.1797	Confirmed LTF	0.1797
G-007	G-007	1.2232	Confirmed LTF	1.2232
MEC	MEC	0.7230	Confirmed LTF	0.7230
LAGN	LAGN	0.8312	Confirmed LTF	0.8312
CBM-W1	CBM-W1	6.2109	Confirmed LTF	6.2109

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
166055125	204571	27ZIONS VW	METED	959220	AF2-213 TAP	METED	1	ME-P2-3-ME-115-033E	breaker	156.0	99.52	101.42	DC	5.59

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
204660	27YK H STA	0.8165	50/50	0.8165
939001	AE1-129 C	23.9531	50/50	23.9531
939002	AE1-129 E	16.6143	50/50	16.6143
959223	AF2-213 BAT	32.8673	50/50	32.8673
960922	AF2-383 BAT	1.2358	Merchant Transmission	1.2358
962081	AG1-052	10.1928	50/50	10.1928
963953	AG1-248 BAT	22.7120	50/50	22.7120
965963	AG1-465 BAT	2.9611	Merchant Transmission	2.9611
G-007A	G-007A	0.7336	Confirmed LTF	0.7336
VFT	VFT	2.0511	Confirmed LTF	2.0511
CALDERWOOD	CALDERWOOD	0.0557	Confirmed LTF	0.0557
PRAIRIE	PRAIRIE	0.2583	Confirmed LTF	0.2583
CHEOAH	CHEOAH	0.0566	Confirmed LTF	0.0566
CBM-N	CBM-N	0.3888	Confirmed LTF	0.3888
COTTONWOOD	COTTONWOOD	0.2247	Confirmed LTF	0.2247
HAMLET	HAMLET	0.0757	Confirmed LTF	0.0757
GIBSON	GIBSON	0.0530	Confirmed LTF	0.0530
BLUEG	BLUEG	0.1684	Confirmed LTF	0.1684
TRIMBLE	TRIMBLE	0.0540	Confirmed LTF	0.0540
CATAWBA	CATAWBA	0.0437	Confirmed LTF	0.0437

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
174487012	941990	AE2-211 TAP	METED	204502	27JACKSON	METED	1	ME-P2-3-ME-230-019CT	breaker	659.0	92.45	100.09	DC	45.3

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
204784	27LMR_E02	0.0767	Adder	0.09
933977	AD1-020 EBAT (Suspended)	7.3452	50/50	7.3452
941991	AE2-211 C	7.4024	50/50	7.4024
941992	AE2-211 E	10.2224	50/50	10.2224
942431	AE2-256 C O1	1.9532	Adder	2.3
942432	AE2-256 E O1	2.6973	Adder	3.17
943891	AF1-057 C	2.6918	50/50	2.6918
943892	AF1-057 E	3.7172	50/50	3.7172
945001	AF1-165 C	0.6109	Adder	0.72
945002	AF1-165 E	0.4072	Adder	0.48
945461	AF1-211 C	0.6109	Adder	0.72
945462	AF1-211 E	0.4072	Adder	0.48
945471	AF1-212 C	0.6109	Adder	0.72
945472	AF1-212 E	0.4072	Adder	0.48
946701	AF1-334 C O1	0.5565	Adder	0.65
946702	AF1-334 E O1	0.3710	Adder	0.44
946711	AF1-335 C (Withdrawn : 01/15/2021)	3.0363	Adder	3.57
946712	AF1-335 E (Withdrawn : 01/15/2021)	2.0242	Adder	2.38
946721	AF1-336 C O1	0.5565	Adder	0.65
946722	AF1-336 E O1	0.3710	Adder	0.44
957361	AF2-030 C	0.3610	Adder	0.42
957362	AF2-030 E	0.5415	Adder	0.64
958071	AF2-101 C	-0.4060	Adder	-0.48
958601	AF2-151 C	-0.4047	Adder	-0.48
958701	AF2-161 C	0.0940	Adder	0.11
958702	AF2-161 E	0.0627	Adder	0.07
959223	AF2-213 BAT	23.8712	50/50	23.8712
959371	AF2-228 C	2.6076	Adder	3.07
959372	AF2-228 E	1.7384	Adder	2.05
959773	AF2-268 BAT	0.5470	50/50	0.5470
959812	AF2-272 E	0.1401	Adder	0.16
959872	AF2-278 E	0.1758	Adder	0.21
959952	AF2-286 E	0.2177	Adder	0.26
960922	AF2-383 BAT	9.8258	50/50	9.8258
961382	AF2-429 E	0.1617	Adder	0.19
961471	AF2-438 C	0.6372	Adder	0.75
961472	AF2-438 E	0.4248	Adder	0.5
962082	AG1-052 BAT	5.2252	50/50	5.2252

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
962091	AG1-053	6.4090	50/50	6.4090
963953	AG1-248 BAT	88.8580	50/50	88.8580
964693	AG1-332 BAT	1.3122	50/50	1.3122
964981	AG1-362 C	0.0726	Adder	0.16
964982	AG1-362 E	0.0408	Adder	0.09
965511	AG1-419 C O2	0.4838	Adder	1.07
965512	AG1-419 E O2	0.6681	Adder	1.48
965963	AG1-465 BAT	45.2990	50/50	45.2990
966152	AG1-484 BAT	5.4358	50/50	5.4358
966172	AG1-486 BAT	5.4699	50/50	5.4699
966891	AG1-560 BAT	1.6116	Merchant Transmission	1.6116
966901	AG1-561 BAT	1.3551	Merchant Transmission	1.3551
G-007A	G-007A	5.9218	Confirmed LTF	5.9218
VFT	VFT	16.3378	Confirmed LTF	16.3378
CALDERWOOD	CALDERWOOD	0.4592	Confirmed LTF	0.4592
PRAIRIE	PRAIRIE	2.2214	Confirmed LTF	2.2214
CHEOAH	CHEOAH	0.4635	Confirmed LTF	0.4635
CBM-N	CBM-N	3.0660	Confirmed LTF	3.0660
COTTONWOOD	COTTONWOOD	1.8816	Confirmed LTF	1.8816
HAMLET	HAMLET	0.5891	Confirmed LTF	0.5891
GIBSON	GIBSON	0.4603	Confirmed LTF	0.4603
BLUEG	BLUEG	1.4652	Confirmed LTF	1.4652
TRIMBLE	TRIMBLE	0.4697	Confirmed LTF	0.4697
CATAWBA	CATAWBA	0.3462	Confirmed LTF	0.3462

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
173915439	200009	JUNIATA	PPL	208005	JUNI BU2	PPL	2	PL:11:P42:000140	breaker	814.0	121.94	122.56	DC	9.53

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
200852	26WARR RDG	-0.2930	Adder	-0.34
204784	27LMR_E02	-0.1215	Adder	-0.14
208769	SISO	-0.1458	Adder	-0.17
209022	WHFR IPP (Deactivation : 03/03/2020 WD - 01/03/2020)	2.2804	Adder	2.68
235007	AC1-025 BAT	0.2547	50/50	0.2547
236828	01GRAYMONT	-0.5534	Adder	-0.65
933977	AD1-020 EBAT (Suspended)	1.6422	Merchant Transmission	1.6422
939171	AE1-147 C	-1.6488	Adder	-1.94
939891	AE1-225 C O1	0.6485	Adder	0.76
939892	AE1-225 E O1	0.7175	Adder	0.84
940561	AE2-042 C	3.0213	Adder	3.55
940562	AE2-042 E	1.4977	Adder	1.76
940721	AE2-059 C	0.5423	Adder	0.64
940722	AE2-059 E	0.7489	Adder	0.88
940941	AE2-084 C	0.5423	Adder	0.64
940942	AE2-084 E	0.7489	Adder	0.88
941161	AE2-110 C	0.4822	Adder	0.57
941162	AE2-110 E	0.6659	Adder	0.78
941171	AE2-111 C	0.5795	Adder	0.68
941172	AE2-111 E	0.8002	Adder	0.94
941351	AE2-131 C (Suspended)	-0.8537	Adder	-1.0
941371	AE2-133 C	0.5795	Adder	0.68
941372	AE2-133 E	0.8002	Adder	0.94
942281	AE2-241 C	0.4822	Adder	0.57
942282	AE2-241 E	0.6659	Adder	0.78
942561	AE2-271 C	3.6095	Adder	4.25
942562	AE2-271 E	2.4063	Adder	2.83
942771	AE2-295 C	1.5003	Adder	1.77
942772	AE2-295 E	8.7042	Adder	10.24
943721	AF1-040 C	0.0690	Adder	0.08
943722	AF1-040 E	1.3107	Adder	1.54
944901	AF1-155 C	-0.7499	Adder	-0.88
945511	AF1-216 C1O1	2.7034	Adder	3.18
945512	AF1-216 E1O1	1.8002	Adder	2.12
945521	AF1-216 C2O1	2.7034	Adder	3.18
945522	AF1-216 E2O1	1.8002	Adder	2.12
945611	AF1-226 C	0.8439	Adder	0.99
945612	AF1-226 E	1.1654	Adder	1.37
946423	AF1-306 BAT	19.7027	Merchant Transmission	19.7027

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
946471	AF1-311 C O1	3.3750	Adder	3.97
946472	AF1-311 E O1	5.5066	Adder	6.48
946691	AF1-333 C O1	0.8039	Adder	0.95
946692	AF1-333 E O1	0.5359	Adder	0.63
946731	AF1-337 C	0.8039	Adder	0.95
946732	AF1-337 E	0.5359	Adder	0.63
946741	AF1-338 C	0.8039	Adder	0.95
946742	AF1-338 E	0.5359	Adder	0.63
946751	AF1-339 C O1	0.8039	Adder	0.95
946752	AF1-339 E O1	0.5359	Adder	0.63
946761	AF1-271AC	0.7037	Adder	0.83
946762	AF1-271AE	0.4691	Adder	0.55
957363	AF2-030 BAT	1.2536	Merchant Transmission	1.2536
957621	AF2-056 C	1.7500	Adder	2.06
957622	AF2-056 E	0.9015	Adder	1.06
957881	AF2-082 C	2.2765	Adder	2.68
957882	AF2-082 E	1.5177	Adder	1.79
957921	AF2-086 C	0.6889	Adder	0.81
957922	AF2-086 E	0.4593	Adder	0.54
957931	AF2-087 C (Suspended)	-0.2237	Adder	-0.26
958071	AF2-101 C	-0.1544	Adder	-0.18
958461	AF2-140	1.8281	Adder	2.15
958511	AF2-145 C1	0.9630	Adder	1.13
958512	AF2-145 E1	0.6420	Adder	0.76
958521	AF2-145 C2	0.9630	Adder	1.13
958522	AF2-145 E2	0.6420	Adder	0.76
958601	AF2-151 C	-0.1548	Adder	-0.18
959121	AF2-203 C	0.6889	Adder	0.81
959122	AF2-203 E	0.4593	Adder	0.54
959223	AF2-213 BAT	9.0668	50/50	9.0668
959411	AF2-232 C	1.3778	Adder	1.62
959412	AF2-232 E	0.9185	Adder	1.08
959421	AF2-233 C	0.8278	Adder	0.97
959422	AF2-233 E	0.5519	Adder	0.65
959431	AF2-234 C	1.6557	Adder	1.95
959432	AF2-234 E	1.1038	Adder	1.3
959773	AF2-268 BAT	0.1224	Merchant Transmission	0.1224
959803	AF2-271 BAT	0.1762	50/50	0.1762
959813	AF2-272 BAT	0.1037	Merchant Transmission	0.1037
959873	AF2-278 BAT	0.4056	50/50	0.4056
959883	AF2-279 BAT	0.1172	Merchant Transmission	0.1172
959893	AF2-280 BAT	0.0902	Merchant Transmission	0.0902
959932	AF2-284 E	0.1225	Adder	0.14
959953	AF2-286 BAT	0.2420	50/50	0.2420
959963	AF2-287 BAT	0.7121	50/50	0.7121
959973	AF2-288 BAT	0.7121	50/50	0.7121
959982	AF2-289 E	0.1837	Adder	0.22
959992	AF2-290 E	0.1291	Adder	0.15
960023	AF2-293 BAT	0.1881	50/50	0.1881
960401	AF2-331 C	1.7763	Adder	2.09
960402	AF2-331 E	1.1842	Adder	1.39
960411	AF2-332 C	1.7763	Adder	2.09

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
960412	AF2-332 E	1.1842	Adder	1.39
960421	AF2-333 C	0.7105	Adder	0.84
960422	AF2-333 E	0.4737	Adder	0.56
960431	AF2-334 C	0.7105	Adder	0.84
960432	AF2-334 E	0.4737	Adder	0.56
960922	AF2-383 BAT	2.0632	50/50	2.0632
961271	AF2-418 C	0.6889	Adder	0.81
961272	AF2-418 E	0.4593	Adder	0.54
961331	AF2-424 C	0.7005	Adder	0.82
961332	AF2-424 E	0.4670	Adder	0.55
961341	AF2-425 C	0.7005	Adder	0.82
961342	AF2-425 E	0.4670	Adder	0.55
961362	AF2-427 E	0.1837	Adder	0.22
961412	AF2-432 E	0.1148	Adder	0.14
961421	AF2-433 C O1	0.6889	Adder	0.81
961422	AF2-433 E O1	0.4593	Adder	0.54
961431	AF2-434 C O1	0.6889	Adder	0.81
961432	AF2-434 E O1	0.4593	Adder	0.54
961531	AF2-444 C	0.6889	Adder	0.81
961532	AF2-444 E	0.4670	Adder	0.55
961541	AF2-445AC	0.6258	Adder	0.74
961542	AF2-445AE	0.4243	Adder	0.5
962061	AG1-050	0.6843	Adder	1.52
962082	AG1-052 BAT	2.2644	50/50	2.2644
962092	AG1-053 BAT	2.2692	50/50	2.2692
962151	AG1-060 C	0.7952	Adder	1.77
962152	AG1-060 E	4.6132	Adder	10.24
963751	AG1-227 C	0.3373	Adder	0.75
963752	AG1-227 E	0.2249	Adder	0.5
963761	AG1-228 C	0.3373	Adder	0.75
963762	AG1-228 E	0.2249	Adder	0.5
963911	AG1-244 C	0.2377	Adder	0.53
963912	AG1-244 E	0.1280	Adder	0.28
963953	AG1-248 BAT	21.1220	50/50	21.1220
964051	AG1-259 C	0.3035	Adder	0.67
964052	AG1-259 E	0.4241	Adder	0.94
964061	AG1-260 C	0.3035	Adder	0.67
964062	AG1-260 E	0.4241	Adder	0.94
964671	AG1-330 C	0.1645	Adder	0.37
964672	AG1-330 E	0.0183	Adder	0.04
964693	AG1-332 BAT	0.1500	Merchant Transmission	0.1500
964731	AG1-336 C	0.1426	Adder	0.32
964732	AG1-336 E	0.0402	Adder	0.09
964741	AG1-337 C	0.1389	Adder	0.31
964742	AG1-337 E	0.0439	Adder	0.1
965203	AG1-385 BAT	0.3367	Merchant Transmission	0.3367
965303	AG1-395 BAT	0.3802	Merchant Transmission	0.3802
965311	AG1-396 C	0.1463	Adder	0.32
965312	AG1-396 E	0.1280	Adder	0.28
965963	AG1-465 BAT	5.0482	Merchant Transmission	5.0482
966152	AG1-484 BAT	1.0461	Merchant Transmission	1.0461
966172	AG1-486 BAT	0.6487	Merchant Transmission	0.6487

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
966891	AG1-560 BAT	5.4344	50/50	5.4344
966901	AG1-561 BAT	1.4319	Merchant Transmission	1.4319
WEC	WEC	0.0633	Confirmed LTF	0.0633
LGEE	LGEE	0.1156	Confirmed LTF	0.1156
G-007A	G-007A	2.5437	Confirmed LTF	2.5437
VFT	VFT	8.1463	Confirmed LTF	8.1463
CALDERWOOD	CALDERWOOD	0.0070	Confirmed LTF	0.0070
CBM-W2	CBM-W2	0.9318	Confirmed LTF	0.9318
TVA	TVA	0.0588	Confirmed LTF	0.0588
CHEOAH	CHEOAH	0.0100	Confirmed LTF	0.0100
CBM-S1	CBM-S1	0.0258	Confirmed LTF	0.0258
CBM-N	CBM-N	2.2788	Confirmed LTF	2.2788
HAMLET	HAMLET	0.1588	Confirmed LTF	0.1588
MEC	MEC	0.2654	Confirmed LTF	0.2654
LAGN	LAGN	0.0910	Confirmed LTF	0.0910
CATAWBA	CATAWBA	0.0655	Confirmed LTF	0.0655
CBM-W1	CBM-W1	3.0423	Confirmed LTF	3.0423

13.5.5 Index 5

ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CK T ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADIN G %	POST PROJECT LOADIN G %	AC D C	MW IMPAC T
16512474 2	20050 4	26CARLISL E	PENELE C	20452 8	27GARDNER S	METE D	1	PL:10:P24:10054 8	bus	160.0	100.63	102.46	DC	5.54

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
200870	26C_T85_W218	0.3757	50/50	0.3757
203905	26W1-045 C	0.2399	50/50	0.2399
237329	01CHBRG_I12	0.5202	50/50	0.5202
901242	W1-045 E OP1	1.3251	50/50	1.3251
930822	AB1-127 E	0.3881	Adder	0.46
930832	AB1-128 E	0.3881	Adder	0.46
933977	AD1-020 EBAT (Suspended)	1.3794	Merchant Transmission	1.3794
934371	AD1-061 C	0.3669	Adder	0.43
934372	AD1-061 E	0.3186	Adder	0.37
936061	AD2-009 C	2.4854	Adder	2.92
936062	AD2-009 E	1.1316	Adder	1.33
936471	AD2-062 C O1	10.9654	50/50	10.9654
936472	AD2-062 E O1	5.4929	50/50	5.4929
938384	AE1-071-C	14.1867	50/50	14.1867
938385	AE1-071-E	8.6811	50/50	8.6811
938753	AE1-101 C1	1.9142	Adder	2.25
938754	AE1-101 C2	0.9571	Adder	1.13
938756	AE1-101 E1	3.9517	Adder	4.65
938757	AE1-101 E2	1.9729	Adder	2.32
939033	AE1-132 C	2.6352	Adder	3.1
939034	AE1-132 E	1.7568	Adder	2.07
939591	AE1-188 C	0.6808	Adder	0.8
939592	AE1-188 E	0.3999	Adder	0.47
940671	AE2-054 C (Suspended)	0.5756	Adder	0.68
940672	AE2-054 E (Suspended)	0.3837	Adder	0.45
945011	AF1-166 C	0.5644	Adder	0.66
945012	AF1-166 E	0.3763	Adder	0.44
945441	AF1-209 C O1	0.5609	Adder	0.66
945442	AF1-209 E O1	0.3739	Adder	0.44
945591	AF1-224 C	0.4269	Adder	0.5
945592	AF1-224 E	0.2161	Adder	0.25
958071	AF2-101 C	-0.2674	Adder	-0.31
958221	AF2-116 C	0.6872	Adder	0.81
958222	AF2-116 E	0.3462	Adder	0.41
958231	AF2-117 C	2.1961	Adder	2.58
958232	AF2-117 E	1.0978	Adder	1.29
958551	AF2-146 C	1.8602	50/50	1.8602
958552	AF2-146 E	1.2402	50/50	1.2402
958571	AF2-148 C	1.5119	50/50	1.5119
958572	AF2-148 E	1.0080	50/50	1.0080
958601	AF2-151 C	-0.2638	Adder	-0.31

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
958871	AF2-178	1.1561	50/50	1.1561
958881	AF2-179	0.3411	Adder	0.4
958891	AF2-180	0.3411	Adder	0.4
958931	AF2-184	0.2800	Adder	0.33
959223	AF2-213 BAT	4.6893	Merchant Transmission	4.6893
959241	AF2-215 C	0.1578	Adder	0.19
959242	AF2-215 E	0.1052	Adder	0.12
959381	AF2-229 C	3.2312	50/50	3.2312
959382	AF2-229 E	2.6976	50/50	2.6976
959773	AF2-268 BAT	0.1026	Merchant Transmission	0.1026
959842	AF2-275 E	0.1764	Adder	0.21
959852	AF2-276 E	0.1764	Adder	0.21
961481	AF2-439 C	8.0462	50/50	8.0462
961482	AF2-439 E	7.4273	50/50	7.4273
962082	AG1-052 BAT	0.6306	Merchant Transmission	0.6306
963901	AG1-243 C	0.2010	Adder	0.45
963902	AG1-243 E	0.1082	Adder	0.24
964693	AG1-332 BAT	0.1049	Merchant Transmission	0.1049
965963	AG1-465 BAT	2.9357	Merchant Transmission	2.9357
966041	AG1-473 C	0.7851	Adder	1.74
966042	AG1-473 E	0.5234	Adder	1.16
966152	AG1-484 BAT	3.8508	50/50	3.8508
966172	AG1-486 BAT	0.5437	Merchant Transmission	0.5437
966461	AG1-515 C	0.1450	Adder	0.32
966462	AG1-515 E	0.2176	Adder	0.48
WEC	WEC	0.1304	Confirmed LTF	0.1304
LGEE	LGEE	0.2576	Confirmed LTF	0.2576
CPL	CPL	0.2355	Confirmed LTF	0.2355
CBM-W2	CBM-W2	3.5930	Confirmed LTF	3.5930
NY	NY	0.2030	Confirmed LTF	0.2030
TVA	TVA	0.5502	Confirmed LTF	0.5502
O-066	O-066	6.4608	Confirmed LTF	6.4608
SIGE	SIGE	0.1437	Confirmed LTF	0.1437
CBM-S2	CBM-S2	3.7584	Confirmed LTF	3.7584
CBM-S1	CBM-S1	0.1505	Confirmed LTF	0.1505
G-007	G-007	1.0133	Confirmed LTF	1.0133
MEC	MEC	0.6499	Confirmed LTF	0.6499
LAGN	LAGN	0.6895	Confirmed LTF	0.6895
CBM-W1	CBM-W1	5.8744	Confirmed LTF	5.8744

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
166054970	200520	26ROXBURY	PENELEC	961480	AF2-439 TAP	PENELEC	1	ME-P2-3-ME-230-005A	breaker	159.0	111.77	114.23	DC	7.37

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
237329	01CHBRG_I12	0.4706	50/50	0.4706
901242	W1-045 E OP1	0.3063	Adder	0.36
930822	AB1-127 E	0.3508	Adder	0.41
930832	AB1-128 E	0.3508	Adder	0.41
933977	AD1-020 EBAT (Suspended)	2.1736	50/50	2.1736
934371	AD1-061 C	0.3320	Adder	0.39
934372	AD1-061 E	0.2883	Adder	0.34
936061	AD2-009 C	2.2487	Adder	2.65
936062	AD2-009 E	1.0238	Adder	1.2
936471	AD2-062 C O1	9.9066	50/50	9.9066
936472	AD2-062 E O1	4.9626	50/50	4.9626
938384	AE1-071-C	12.4256	50/50	12.4256
938385	AE1-071-E	7.6034	50/50	7.6034
938753	AE1-101 C1	1.7324	Adder	2.04
938754	AE1-101 C2	0.8662	Adder	1.02
938756	AE1-101 E1	3.5765	Adder	4.21
938757	AE1-101 E2	1.7856	Adder	2.1
939033	AE1-132 C	2.3842	Adder	2.8
939034	AE1-132 E	1.5895	Adder	1.87
939591	AE1-188 C	0.6143	Adder	0.72
939592	AE1-188 E	0.3608	Adder	0.42
940671	AE2-054 C (Suspended)	0.5208	Adder	0.61
940672	AE2-054 E (Suspended)	0.3472	Adder	0.41
945011	AF1-166 C	0.5102	Adder	0.6
945012	AF1-166 E	0.3401	Adder	0.4
945441	AF1-209 C O1	0.5070	Adder	0.6
945442	AF1-209 E O1	0.3380	Adder	0.4
945591	AF1-224 C	0.3852	Adder	0.45
945592	AF1-224 E	0.1950	Adder	0.23
958071	AF2-101 C	-0.2947	Adder	-0.35
958221	AF2-116 C	0.6218	Adder	0.73
958222	AF2-116 E	0.3132	Adder	0.37
958231	AF2-117 C	1.9863	Adder	2.34
958232	AF2-117 E	0.9929	Adder	1.17
958551	AF2-146 C	1.4569	50/50	1.4569
958552	AF2-146 E	0.9713	50/50	0.9713
958571	AF2-148 C	1.2580	50/50	1.2580
958572	AF2-148 E	0.8387	50/50	0.8387
958601	AF2-151 C	-0.2906	Adder	-0.34
958871	AF2-178	0.2673	Adder	0.31

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
958881	AF2-179	0.3083	Adder	0.36
958891	AF2-180	0.3083	Adder	0.36
958931	AF2-184	0.2534	Adder	0.3
959223	AF2-213 BAT	4.9280	Merchant Transmission	4.9280
959241	AF2-215 C	0.1427	Adder	0.17
959242	AF2-215 E	0.0951	Adder	0.11
959381	AF2-229 C	0.7469	Adder	0.88
959382	AF2-229 E	0.6236	Adder	0.73
959773	AF2-268 BAT	0.1617	50/50	0.1617
959842	AF2-275 E	0.1595	Adder	0.19
959852	AF2-276 E	0.1595	Adder	0.19
962082	AG1-052 BAT	0.6605	Merchant Transmission	0.6605
963901	AG1-243 C	0.1817	Adder	0.4
963902	AG1-243 E	0.0978	Adder	0.22
964693	AG1-332 BAT	0.1533	Merchant Transmission	0.1533
965963	AG1-465 BAT	3.9077	Merchant Transmission	3.9077
966152	AG1-484 BAT	4.2560	50/50	4.2560
966172	AG1-486 BAT	1.6170	50/50	1.6170
966461	AG1-515 C	0.1313	Adder	0.29
966462	AG1-515 E	0.1969	Adder	0.44
WEC	WEC	0.0936	Confirmed LTF	0.0936
LGEE	LGEE	0.1860	Confirmed LTF	0.1860
CPL	CPL	0.1870	Confirmed LTF	0.1870
CBM-W2	CBM-W2	2.6253	Confirmed LTF	2.6253
NY	NY	0.1924	Confirmed LTF	0.1924
TVA	TVA	0.4074	Confirmed LTF	0.4074
O-066	O-066	4.4485	Confirmed LTF	4.4485
SIGE	SIGE	0.1005	Confirmed LTF	0.1005
CBM-S2	CBM-S2	2.9232	Confirmed LTF	2.9232
CBM-S1	CBM-S1	0.1110	Confirmed LTF	0.1110
G-007	G-007	0.6919	Confirmed LTF	0.6919
MEC	MEC	0.4688	Confirmed LTF	0.4688
LAGN	LAGN	0.5093	Confirmed LTF	0.5093
CBM-W1	CBM-W1	4.1639	Confirmed LTF	4.1639

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
166620235	204523	27CLY 975	METED	204524	27CLY 978	METED	ZB	ME-P7-1-ME-230-008A-B	tower	140.0	109.08	110.99	DC	5.03

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
204648	27MOUNT CT	0.8330	50/50	0.8330
939001	AE1-129 C	12.9964	50/50	12.9964
939002	AE1-129 E	9.0146	50/50	9.0146
945271	AF1-192	0.0211	50/50	0.0211
958071	AF2-101 C	0.3033	50/50	0.3033
958072	AF2-101 E	0.2022	50/50	0.2022
958601	AF2-151 C	0.3116	50/50	0.3116
958602	AF2-151 E	0.2078	50/50	0.2078
959223	AF2-213 BAT	20.8562	50/50	20.8562
960922	AF2-383 BAT	1.4098	Merchant Transmission	1.4098
962081	AG1-052	5.5304	50/50	5.5304
963953	AG1-248 BAT	27.0040	50/50	27.0040
965963	AG1-465 BAT	2.6664	Merchant Transmission	2.6664
966151	AG1-484	2.6734	50/50	2.6734
G-007A	G-007A	0.1582	Confirmed LTF	0.1582
VFT	VFT	0.4838	Confirmed LTF	0.4838
CALDERWOOD	CALDERWOOD	0.0060	Confirmed LTF	0.0060
PRAIRIE	PRAIRIE	0.0103	Confirmed LTF	0.0103
CHEOAH	CHEOAH	0.0065	Confirmed LTF	0.0065
CBM-N	CBM-N	0.1008	Confirmed LTF	0.1008
COTTONWOOD	COTTONWOOD	0.0189	Confirmed LTF	0.0189
HAMLET	HAMLET	0.0150	Confirmed LTF	0.0150
GIBSON	GIBSON	0.0011	Confirmed LTF	0.0011
BLUEG	BLUEG	0.0035	Confirmed LTF	0.0035
TRIMBLE	TRIMBLE	0.0011	Confirmed LTF	0.0011
CATAWBA	CATAWBA	0.0073	Confirmed LTF	0.0073
CBM-W1	CBM-W1	0.0140	Confirmed LTF	0.0140

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
166620228	204539	27HUNTRSTN	METED	204551	27OXFORD	METED	1	ME-P7-1-ME-230-004	tower	282.0	101.07	114.17	DC	36.94

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
204647	27HUNTR CT	2.3416	50/50	2.3416
204648	27MOUNT CT	0.6777	50/50	0.6777
204649	27ORTAN CT	0.7370	50/50	0.7370
205907	AC1-048 C (Suspended)	2.3815	50/50	2.3815
205908	AC1-048 E (Suspended)	3.8856	50/50	3.8856
205909	AC2-053 C (Suspended)	1.3609	50/50	1.3609
205910	AC2-053 E (Suspended)	2.2203	50/50	2.2203
901242	W1-045 E OP1	0.1959	Adder	0.23
923202	AB1-124 C (Suspended)	0.3433	Adder	0.4
923203	AB1-124 E (Suspended)	0.5602	Adder	0.66
923212	AB1-125 C OP (Suspended)	0.2575	Adder	0.3
923213	AB1-125 E OP (Suspended)	0.4202	Adder	0.49
930522	AB1-096 E	0.2747	Adder	0.32
933974	AD1-020 C (Suspended)	12.9331	50/50	12.9331
933975	AD1-020 BAT (Suspended)	4.8258	50/50	4.8258
933976	AD1-020 E (Suspended)	6.3701	50/50	6.3701
938041	AE1-006 C (Suspended)	1.3609	50/50	1.3609
938042	AE1-006 E (Suspended)	2.2203	50/50	2.2203
939021	AE1-131 C O1	7.4950	50/50	7.4950
939022	AE1-131 E O1	4.9967	50/50	4.9967
939101	AE1-139 C O1	9.1662	50/50	9.1662
939102	AE1-139 E O1	6.1108	50/50	6.1108
941871	AE2-192 C	9.3424	50/50	9.3424
941872	AE2-192 E	6.2283	50/50	6.2283
943161	AE2-345 C	12.1335	50/50	12.1335
943162	AE2-345 E	8.0890	50/50	8.0890
945231	AF1-188	0.0378	50/50	0.0378
945271	AF1-192	0.0172	50/50	0.0172
945281	AF1-193	0.1561	50/50	0.1561
958071	AF2-101 C	0.1337	Adder	0.16
958072	AF2-101 E	0.0891	Adder	0.1
958081	AF2-102 C	0.3223	50/50	0.3223
958082	AF2-102 E	0.2149	50/50	0.2149
958601	AF2-151 C	0.1293	Adder	0.15
958602	AF2-151 E	0.0862	Adder	0.1
958841	AF2-175 C	0.3943	50/50	0.3943
958842	AF2-175 E	0.2629	50/50	0.2629
958871	AF2-178	0.1709	Adder	0.2

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
959223	AF2-213 BAT	5.3389	Merchant Transmission	5.3389
959381	AF2-229 C	0.4776	Adder	0.56
959382	AF2-229 E	0.3987	Adder	0.47
959772	AF2-268 E	0.4791	50/50	0.4791
960922	AF2-383 BAT	2.1604	50/50	2.1604
961481	AF2-439 C	1.1865	Adder	1.4
961482	AF2-439 E	1.0953	Adder	1.29
962082	AG1-052 BAT	0.6126	Merchant Transmission	0.6126
962092	AG1-053 BAT	0.8145	Merchant Transmission	0.8145
963953	AG1-248 BAT	8.4450	Merchant Transmission	8.4450
964693	AG1-332 BAT	1.7375	50/50	1.7375
965963	AG1-465 BAT	36.9410	50/50	36.9410
966151	AG1-484	2.1748	50/50	2.1748
966171	AG1-486	3.5933	50/50	3.5933
WEC	WEC	0.1414	Confirmed LTF	0.1414
LGEE	LGEE	0.2859	Confirmed LTF	0.2859
CPL	CPL	0.3638	Confirmed LTF	0.3638
CBM-W2	CBM-W2	4.1754	Confirmed LTF	4.1754
NY	NY	0.4983	Confirmed LTF	0.4983
TVA	TVA	0.6678	Confirmed LTF	0.6678
O-066	O-066	8.0693	Confirmed LTF	8.0693
SIGE	SIGE	0.1737	Confirmed LTF	0.1737
CBM-S2	CBM-S2	5.3870	Confirmed LTF	5.3870
CBM-S1	CBM-S1	0.1797	Confirmed LTF	0.1797
G-007	G-007	1.2232	Confirmed LTF	1.2232
MEC	MEC	0.7230	Confirmed LTF	0.7230
LAGN	LAGN	0.8312	Confirmed LTF	0.8312
CBM-W1	CBM-W1	6.2109	Confirmed LTF	6.2109

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
166054891	204559	27TAXVILLE	METED	204563	27WESTGATE	METED	1	ME-P2-3-ME-115-032AT	breaker	282.0	138.05	139.45	DC	8.75

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
204639	27GLATFLTR	0.5688	50/50	0.5688
204650	27TOLNA CT	0.7184	50/50	0.7184
939091	AE1-138 C	0.8993	Adder	1.06
939092	AE1-138 E	0.5995	Adder	0.71
945131	AF1-178	0.0278	50/50	0.0278
945141	AF1-179	0.0186	50/50	0.0186
958051	AF2-099 C	0.4446	50/50	0.4446
958052	AF2-099 E	0.2964	50/50	0.2964
958061	AF2-100 C	0.4446	50/50	0.4446
958062	AF2-100 E	0.2964	50/50	0.2964
958071	AF2-101 C	-0.2061	Adder	-0.24
958601	AF2-151 C	-0.2126	Adder	-0.25
959223	AF2-213 BAT	35.4730	50/50	35.4730
960921	AF2-383	2.3532	50/50	2.3532
962082	AG1-052 BAT	7.8166	50/50	7.8166
963953	AG1-248 BAT	112.4060	50/50	112.4060
964691	AG1-332 C	0.1046	Adder	0.23
964692	AG1-332 E	0.0367	Adder	0.08
965961	AG1-465 C O2	1.5773	Adder	3.5
965962	AG1-465 E O2	2.3659	Adder	5.25
966152	AG1-484 BAT	2.0544	50/50	2.0544
WEC	WEC	0.0192	Confirmed LTF	0.0192
LGEE	LGEE	0.0396	Confirmed LTF	0.0396
CPL	CPL	0.0614	Confirmed LTF	0.0614
CBM-W2	CBM-W2	0.6003	Confirmed LTF	0.6003
NY	NY	0.0818	Confirmed LTF	0.0818
TVA	TVA	0.0980	Confirmed LTF	0.0980
O-066	O-066	1.0903	Confirmed LTF	1.0903
SIGE	SIGE	0.0236	Confirmed LTF	0.0236
CBM-S2	CBM-S2	0.8770	Confirmed LTF	0.8770
CBM-S1	CBM-S1	0.0262	Confirmed LTF	0.0262
G-007	G-007	0.1554	Confirmed LTF	0.1554
MEC	MEC	0.1001	Confirmed LTF	0.1001
LAGN	LAGN	0.1225	Confirmed LTF	0.1225
CBM-W1	CBM-W1	0.8272	Confirmed LTF	0.8272

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
166054943	204563	27WESTGATE	METED	204558	27SMITH TP	METED	1	ME-P2-3-ME-115-032AT	breaker	282.0	125.61	127.01	DC	8.75

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
204639	27GLATFLTR	0.5688	50/50	0.5688
204650	27TOLNA CT	0.7184	50/50	0.7184
939091	AE1-138 C	0.8993	Adder	1.06
939092	AE1-138 E	0.5995	Adder	0.71
945131	AF1-178	0.0278	50/50	0.0278
945141	AF1-179	0.0186	50/50	0.0186
958051	AF2-099 C	0.4446	50/50	0.4446
958052	AF2-099 E	0.2964	50/50	0.2964
958061	AF2-100 C	0.4446	50/50	0.4446
958062	AF2-100 E	0.2964	50/50	0.2964
958071	AF2-101 C	-0.2061	Adder	-0.24
958601	AF2-151 C	-0.2126	Adder	-0.25
959223	AF2-213 BAT	35.4730	50/50	35.4730
960921	AF2-383	2.3532	50/50	2.3532
962082	AG1-052 BAT	7.8166	50/50	7.8166
963953	AG1-248 BAT	112.4060	50/50	112.4060
964691	AG1-332 C	0.1046	Adder	0.23
964692	AG1-332 E	0.0367	Adder	0.08
965961	AG1-465 C O2	1.5773	Adder	3.5
965962	AG1-465 E O2	2.3659	Adder	5.25
966152	AG1-484 BAT	2.0544	50/50	2.0544
WEC	WEC	0.0192	Confirmed LTF	0.0192
LGEE	LGEE	0.0396	Confirmed LTF	0.0396
CPL	CPL	0.0614	Confirmed LTF	0.0614
CBM-W2	CBM-W2	0.6003	Confirmed LTF	0.6003
NY	NY	0.0818	Confirmed LTF	0.0818
TVA	TVA	0.0980	Confirmed LTF	0.0980
O-066	O-066	1.0903	Confirmed LTF	1.0903
SIGE	SIGE	0.0236	Confirmed LTF	0.0236
CBM-S2	CBM-S2	0.8770	Confirmed LTF	0.8770
CBM-S1	CBM-S1	0.0262	Confirmed LTF	0.0262
G-007	G-007	0.1554	Confirmed LTF	0.1554
MEC	MEC	0.1001	Confirmed LTF	0.1001
LAGN	LAGN	0.1225	Confirmed LTF	0.1225
CBM-W1	CBM-W1	0.8272	Confirmed LTF	0.8272

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
166054986	204598	27MIDD JCT	METED	939000	AE1-129 TAP	METED	1	ME-P2-3-ME-115-033E	breaker	156.0	110.96	112.86	DC	5.59

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
204660	27YK H STA	0.8165	50/50	0.8165
959223	AF2-213 BAT	32.8673	50/50	32.8673
960922	AF2-383 BAT	1.2358	Merchant Transmission	1.2358
962082	AG1-052 BAT	9.8072	50/50	9.8072
963953	AG1-248 BAT	22.7120	50/50	22.7120
965963	AG1-465 BAT	2.9611	Merchant Transmission	2.9611
G-007A	G-007A	0.7336	Confirmed LTF	0.7336
VFT	VFT	2.0511	Confirmed LTF	2.0511
CALDERWOOD	CALDERWOOD	0.0557	Confirmed LTF	0.0557
PRAIRIE	PRAIRIE	0.2583	Confirmed LTF	0.2583
CHEOAH	CHEOAH	0.0566	Confirmed LTF	0.0566
CBM-N	CBM-N	0.3888	Confirmed LTF	0.3888
COTTONWOOD	COTTONWOOD	0.2247	Confirmed LTF	0.2247
HAMLET	HAMLET	0.0757	Confirmed LTF	0.0757
GIBSON	GIBSON	0.0530	Confirmed LTF	0.0530
BLUEG	BLUEG	0.1684	Confirmed LTF	0.1684
TRIMBLE	TRIMBLE	0.0540	Confirmed LTF	0.0540
CATAWBA	CATAWBA	0.0437	Confirmed LTF	0.0437

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
165124665	204701	27YORKANAB	METED	208720	RED FRONT	PPL	1	ME-P2-2-ME-115-030	bus	208.0	123.28	124.73	DC	5.69

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
958071	AF2-101 C	-0.1043	Adder	-0.12
958601	AF2-151 C	-0.1058	Adder	-0.12
959223	AF2-213 BAT	11.9169	50/50	11.9169
960922	AF2-383 BAT	1.3524	Merchant Transmission	1.3524
962082	AG1-052 BAT	2.6428	50/50	2.6428
963953	AG1-248 BAT	72.7640	50/50	72.7640
965963	AG1-465 BAT	3.0136	Merchant Transmission	3.0136
966152	AG1-484 BAT	0.6436	Merchant Transmission	0.6436
G-007A	G-007A	0.2493	Confirmed LTF	0.2493
VFT	VFT	0.6450	Confirmed LTF	0.6450
CALDERWOOD	CALDERWOOD	0.0174	Confirmed LTF	0.0174
PRAIRIE	PRAIRIE	0.1007	Confirmed LTF	0.1007
CHEOAH	CHEOAH	0.0175	Confirmed LTF	0.0175
CBM-N	CBM-N	0.1104	Confirmed LTF	0.1104
COTTONWOOD	COTTONWOOD	0.0777	Confirmed LTF	0.0777
HAMLET	HAMLET	0.0156	Confirmed LTF	0.0156
GIBSON	GIBSON	0.0218	Confirmed LTF	0.0218
BLUEG	BLUEG	0.0694	Confirmed LTF	0.0694
TRIMBLE	TRIMBLE	0.0223	Confirmed LTF	0.0223
CATAWBA	CATAWBA	0.0105	Confirmed LTF	0.0105

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
165124687	208720	RED FRONT	PPL	204567	27YOE	METED	1	ME-P2-2-ME-115-030	bus	208.0	120.73	122.18	DC	5.69

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
958071	AF2-101 C	-0.1043	Adder	-0.12
958601	AF2-151 C	-0.1058	Adder	-0.12
959223	AF2-213 BAT	11.9169	50/50	11.9169
960922	AF2-383 BAT	1.3524	Merchant Transmission	1.3524
962082	AG1-052 BAT	2.6428	50/50	2.6428
963953	AG1-248 BAT	72.7640	50/50	72.7640
965963	AG1-465 BAT	3.0136	Merchant Transmission	3.0136
966152	AG1-484 BAT	0.6436	Merchant Transmission	0.6436
G-007A	G-007A	0.2493	Confirmed LTF	0.2493
VFT	VFT	0.6450	Confirmed LTF	0.6450
CALDERWOOD	CALDERWOOD	0.0174	Confirmed LTF	0.0174
PRAIRIE	PRAIRIE	0.1007	Confirmed LTF	0.1007
CHEOAH	CHEOAH	0.0175	Confirmed LTF	0.0175
CBM-N	CBM-N	0.1104	Confirmed LTF	0.1104
COTTONWOOD	COTTONWOOD	0.0777	Confirmed LTF	0.0777
HAMLET	HAMLET	0.0156	Confirmed LTF	0.0156
GIBSON	GIBSON	0.0218	Confirmed LTF	0.0218
BLUEG	BLUEG	0.0694	Confirmed LTF	0.0694
TRIMBLE	TRIMBLE	0.0223	Confirmed LTF	0.0223
CATAWBA	CATAWBA	0.0105	Confirmed LTF	0.0105

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
166054909	939000	AE1-129 TAP	METED	204571	27ZIONS VW	METED	1	ME-P2-3-ME-115-033E	breaker	156.0	136.89	138.79	DC	5.59

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
204660	27YK H STA	0.8165	50/50	0.8165
939001	AE1-129 C	23.9531	50/50	23.9531
939002	AE1-129 E	16.6143	50/50	16.6143
959223	AF2-213 BAT	32.8673	50/50	32.8673
960922	AF2-383 BAT	1.2358	Merchant Transmission	1.2358
962081	AG1-052	10.1928	50/50	10.1928
963953	AG1-248 BAT	22.7120	50/50	22.7120
965963	AG1-465 BAT	2.9611	Merchant Transmission	2.9611
G-007A	G-007A	0.7336	Confirmed LTF	0.7336
VFT	VFT	2.0511	Confirmed LTF	2.0511
CALDERWOOD	CALDERWOOD	0.0557	Confirmed LTF	0.0557
PRAIRIE	PRAIRIE	0.2583	Confirmed LTF	0.2583
CHEOAH	CHEOAH	0.0566	Confirmed LTF	0.0566
CBM-N	CBM-N	0.3888	Confirmed LTF	0.3888
COTTONWOOD	COTTONWOOD	0.2247	Confirmed LTF	0.2247
HAMLET	HAMLET	0.0757	Confirmed LTF	0.0757
GIBSON	GIBSON	0.0530	Confirmed LTF	0.0530
BLUEG	BLUEG	0.1684	Confirmed LTF	0.1684
TRIMBLE	TRIMBLE	0.0540	Confirmed LTF	0.0540
CATAWBA	CATAWBA	0.0437	Confirmed LTF	0.0437

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
166055033	959220	AF2-213 TAP	METED	204557	27SMITH ST	METED	1	ME-P2-3-ME-115-033E	breaker	156.0	108.82	110.72	DC	5.59

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
204660	27YK H STA	0.8165	50/50	0.8165
939001	AE1-129 C	23.9531	50/50	23.9531
939002	AE1-129 E	16.6143	50/50	16.6143
959221	AF2-213 C	18.9521	50/50	18.9521
959222	AF2-213 E	28.4282	50/50	28.4282
960922	AF2-383 BAT	1.2358	Merchant Transmission	1.2358
962081	AG1-052	10.1928	50/50	10.1928
963953	AG1-248 BAT	22.7120	50/50	22.7120
965963	AG1-465 BAT	2.9611	Merchant Transmission	2.9611
G-007A	G-007A	0.7336	Confirmed LTF	0.7336
VFT	VFT	2.0511	Confirmed LTF	2.0511
CALDERWOOD	CALDERWOOD	0.0557	Confirmed LTF	0.0557
PRAIRIE	PRAIRIE	0.2583	Confirmed LTF	0.2583
CHEOAH	CHEOAH	0.0566	Confirmed LTF	0.0566
CBM-N	CBM-N	0.3888	Confirmed LTF	0.3888
COTTONWOOD	COTTONWOOD	0.2247	Confirmed LTF	0.2247
HAMLET	HAMLET	0.0757	Confirmed LTF	0.0757
GIBSON	GIBSON	0.0530	Confirmed LTF	0.0530
BLUEG	BLUEG	0.1684	Confirmed LTF	0.1684
TRIMBLE	TRIMBLE	0.0540	Confirmed LTF	0.0540
CATAWBA	CATAWBA	0.0437	Confirmed LTF	0.0437

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
166054944	961480	AF2-439 TAP	PENELEC	200504	26CARLISLE	PENELEC	1	ME-P2-3-ME-230-005A	breaker	159.0	120.53	122.99	DC	7.37

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
237329	01CHBRG_I12	0.4706	50/50	0.4706
901242	W1-045 E OP1	0.3063	Adder	0.36
930822	AB1-127 E	0.3508	Adder	0.41
930832	AB1-128 E	0.3508	Adder	0.41
933977	AD1-020 EBAT (Suspended)	2.1736	50/50	2.1736
934371	AD1-061 C	0.3320	Adder	0.39
934372	AD1-061 E	0.2883	Adder	0.34
936061	AD2-009 C	2.2487	Adder	2.65
936062	AD2-009 E	1.0238	Adder	1.2
936471	AD2-062 C O1	9.9066	50/50	9.9066
936472	AD2-062 E O1	4.9626	50/50	4.9626
938384	AE1-071-C	12.4256	50/50	12.4256
938385	AE1-071-E	7.6034	50/50	7.6034
938753	AE1-101 C1	1.7324	Adder	2.04
938754	AE1-101 C2	0.8662	Adder	1.02
938756	AE1-101 E1	3.5765	Adder	4.21
938757	AE1-101 E2	1.7856	Adder	2.1
939033	AE1-132 C	2.3842	Adder	2.8
939034	AE1-132 E	1.5895	Adder	1.87
939591	AE1-188 C	0.6143	Adder	0.72
939592	AE1-188 E	0.3608	Adder	0.42
940671	AE2-054 C (Suspended)	0.5208	Adder	0.61
940672	AE2-054 E (Suspended)	0.3472	Adder	0.41
945011	AF1-166 C	0.5102	Adder	0.6
945012	AF1-166 E	0.3401	Adder	0.4
945441	AF1-209 C O1	0.5070	Adder	0.6
945442	AF1-209 E O1	0.3380	Adder	0.4
945591	AF1-224 C	0.3852	Adder	0.45
945592	AF1-224 E	0.1950	Adder	0.23
958071	AF2-101 C	-0.2947	Adder	-0.35
958221	AF2-116 C	0.6218	Adder	0.73
958222	AF2-116 E	0.3132	Adder	0.37
958231	AF2-117 C	1.9863	Adder	2.34
958232	AF2-117 E	0.9929	Adder	1.17
958551	AF2-146 C	1.4569	50/50	1.4569
958552	AF2-146 E	0.9713	50/50	0.9713
958571	AF2-148 C	1.2580	50/50	1.2580
958572	AF2-148 E	0.8387	50/50	0.8387
958601	AF2-151 C	-0.2906	Adder	-0.34
958871	AF2-178	0.2673	Adder	0.31

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
958881	AF2-179	0.3083	Adder	0.36
958891	AF2-180	0.3083	Adder	0.36
958931	AF2-184	0.2534	Adder	0.3
959223	AF2-213 BAT	4.9280	Merchant Transmission	4.9280
959241	AF2-215 C	0.1427	Adder	0.17
959242	AF2-215 E	0.0951	Adder	0.11
959381	AF2-229 C	0.7469	Adder	0.88
959382	AF2-229 E	0.6236	Adder	0.73
959773	AF2-268 BAT	0.1617	50/50	0.1617
959842	AF2-275 E	0.1595	Adder	0.19
959852	AF2-276 E	0.1595	Adder	0.19
961481	AF2-439 C	7.5080	50/50	7.5080
961482	AF2-439 E	6.9305	50/50	6.9305
962082	AG1-052 BAT	0.6605	Merchant Transmission	0.6605
963901	AG1-243 C	0.1817	Adder	0.4
963902	AG1-243 E	0.0978	Adder	0.22
964693	AG1-332 BAT	0.1533	Merchant Transmission	0.1533
965963	AG1-465 BAT	3.9077	Merchant Transmission	3.9077
966152	AG1-484 BAT	4.2560	50/50	4.2560
966172	AG1-486 BAT	1.6170	50/50	1.6170
966461	AG1-515 C	0.1313	Adder	0.29
966462	AG1-515 E	0.1969	Adder	0.44
WEC	WEC	0.0936	Confirmed LTF	0.0936
LGEE	LGEE	0.1860	Confirmed LTF	0.1860
CPL	CPL	0.1870	Confirmed LTF	0.1870
CBM-W2	CBM-W2	2.6253	Confirmed LTF	2.6253
NY	NY	0.1924	Confirmed LTF	0.1924
TVA	TVA	0.4074	Confirmed LTF	0.4074
O-066	O-066	4.4485	Confirmed LTF	4.4485
SIGE	SIGE	0.1005	Confirmed LTF	0.1005
CBM-S2	CBM-S2	2.9232	Confirmed LTF	2.9232
CBM-S1	CBM-S1	0.1110	Confirmed LTF	0.1110
G-007	G-007	0.6919	Confirmed LTF	0.6919
MEC	MEC	0.4688	Confirmed LTF	0.4688
LAGN	LAGN	0.5093	Confirmed LTF	0.5093
CBM-W1	CBM-W1	4.1639	Confirmed LTF	4.1639

13.6 Contingency Descriptions - Secondary POI

Contingency Name	Contingency Definition
ME-P2-3-ME-115-033E	CONTINGENCY 'ME-P2-3-ME-115-033E' /* CLY 5 DISCONNECT BRANCH FROM BUS 204524 TO BUS 204682 CKT 1 /* 27CLY 978 115 27ES3 115 DISCONNECT BRANCH FROM BUS 204682 TO BUS 204572 CKT 1 /* 27ES3 115 27RAINTREE 115 DISCONNECT BRANCH FROM BUS 204572 TO BUS 204557 CKT 1 /* 27RAINTREE 115 27SMITH ST 115 DISCONNECT BRANCH FROM BUS 204523 TO BUS 204549 CKT 1 /* 27CLY 975 115 27NEWBERRY 115 DISCONNECT BRANCH FROM BUS 204549 TO BUS 204556 CKT 1 /* 27NEWBERRY 115 27ROUND TP 115 END
ME-P1-2-ME-115-025-B	CONTINGENCY 'ME-P1-2-ME-115-025-B' /* MIDD JUNCTION-ZIONSVIEW-SMITH STREET 115 KV DISCONNECT BRANCH FROM BUS 939000 TO BUS 204571 CKT 1 /* AE1-129 115 27ZIONS VW 115 DISCONNECT BRANCH FROM BUS 204571 TO BUS 959220 CKT 1 /* 27ZIONS VW 115 AF2-213 TAP 115 REMOVE LOAD 1 FROM BUS 204571 /* 27ZIONS VW 115 REMOVE LOAD 2 FROM BUS 204571 /* 27ZIONS VW 115 DISCONNECT BUS 204571 /* 27ZIONS VW 115 END
PL:10:P24:100548	CONTINGENCY 'PL:10:P24:100548' /* JUNI 230KV BUS_SEC_1-2 CB DISCONNECT BUS 208005 /* JUNI BU2 230 DISCONNECT BUS 208004 /* JUNI BU1 230 /* JUNI BU1 230 END
ME-P1-2-ME-230-019	CONTINGENCY 'ME-P1-2-ME-230-019' /* LINE 27HUNTRSTN 230.0 TO 27HUNTRST1 230.0 CIRCUIT 1 DISCONNECT BRANCH FROM BUS 204501 TO BUS 204575 CKT 1 /* 27HUNTRSTN 230 27HUNTRST1 230 END
PL:11:P42:000140	CONTINGENCY 'PL:11:P42:000140' / 1 OPEN BRANCH FROM BUS 200009 TO BUS 200016 CKT 1 / 200009 JUNIATA 500 200016 3 MILE I 500 1 OPEN BRANCH FROM BUS 200009 TO BUS 208004 CKT 1 / 200009 JUNIATA 500 208004 JUNI BU1 230 1 REMOVE SWSHUNT FROM BUS 200009 /* 200009 JUNIATA 500 END

Contingency Name	Contingency Definition
ME-P7-1-ME-230-008A-A	CONTINGENCY 'ME-P7-1-ME-230-008A-A' /* MIDD JCT-SMITH ST 977 & MIDD JCT-CLY 978 115 KV DISCONNECT BRANCH FROM BUS 204598 TO BUS 204566 CKT 1 /* 27MIDD JCT 115 27YK HAVEN 115 DISCONNECT BRANCH FROM BUS 204566 TO BUS 204660 CKT ZL /* 27YK HAVEN 115 27YK H STA 115 DISCONNECT BRANCH FROM BUS 204566 TO BUS 204524 CKT 1 /* 27YK HAVEN 115 27CLY 978 115 DISCONNECT BRANCH FROM BUS 204598 TO BUS 939000 CKT 1 /* 27MIDD JCT 115 AE1-129 TAP 115 DISCONNECT BUS 204566 /* 27YK HAVEN 115 DISCONNECT BUS 204660 /* 27YK H STA 115 END
ME-P7-1-ME-230-003	CONTINGENCY 'ME-P7-1-ME-230-003' /* HUNTERSTOWN-JACKSON 230 KV & HAMILTON-JACKSON 115 KV DISCONNECT BRANCH FROM BUS 204575 TO BUS 204502 CKT 1 /* 27HUNTRST1 230 27JACKSON 230 DISCONNECT BRANCH FROM BUS 204535 TO BUS 204700 CKT 1 /* 27HAMILTON 115 27JACKSON6 115 END
ME-P7-1-ME-230-004	CONTINGENCY 'ME-P7-1-ME-230-004' /* HUNTRSTWN-JACKSN 230 KV & HUNTRSTWN-HAMILTON 115 KV DISCONNECT BRANCH FROM BUS 204575 TO BUS 204502 CKT 1 /* 27HUNTRST1 230 27JACKSON 230 DISCONNECT BRANCH FROM BUS 204535 TO BUS 204539 CKT 1 /* 27HAMILTON 115 27HUNTRSTN 115 END
ME-P7-1-ME-230-008A-B	CONTINGENCY 'ME-P7-1-ME-230-008A-B' /* MIDD JCT-SMITH ST 977 & MIDD JCT-CLY 978 115 KV DISCONNECT BRANCH FROM BUS 204598 TO BUS 204566 CKT 1 /* 27MIDD JCT 115 27YK HAVEN 115 DISCONNECT BRANCH FROM BUS 204566 TO BUS 204660 CKT ZL /* 27YK HAVEN 115 27YK H STA 115 DISCONNECT BRANCH FROM BUS 204566 TO BUS 204524 CKT 1 /* 27YK HAVEN 115 27CLY 978 115 DISCONNECT BRANCH FROM BUS 939000 TO BUS 204571 CKT 1 /* AE1-129 TAP 115 27ZIONS VW 115 DISCONNECT BRANCH FROM BUS 204571 TO BUS 959220 CKT 1 /* 27ZIONS VW 115 AF2-213 TAP ST 115 DISCONNECT BUS 204566 /* 27YK HAVEN 115 DISCONNECT BUS 204660 /* 27YK H STA 115 DISCONNECT BUS 204571 /* 27ZIONS VW 115 END

Contingency Name	Contingency Definition
ME-P2-3-ME-230-005A	CONTINGENCY 'ME-P2-3-ME-230-005A' /* HUNTRSTOWN-JACKSON_ HUNTRSTWN BK1 (HUNTRSTWN-105392) DISCONNECT BRANCH FROM BUS 204575 TO BUS 204502 CKT 1 /* 27HUNTRST1 230 27JACKSON 230 DISCONNECT BRANCH FROM BUS 204575 TO BUS 204501 CKT 1 /* 27HUNTRST1 230 27HUNTRSTN 230 DISCONNECT BRANCH FROM BUS 200026 TO BUS 204501 CKT 1 /* HUNTERTN 500 27HUNTRSTN 230 DISCONNECT BUS 204501 /* 27HUNTRSTN 230 END
Base Case	
ME-P2-3-ME-230-005C	CONTINGENCY 'ME-P2-3-ME-230-005C' /* HUNTRSTOWN BK1_ HUNTRSTOWN BK4 (HUNTRSTWN-B1) DISCONNECT BRANCH FROM BUS 204575 TO BUS 204501 CKT 1 /* 27HUNTRST1 230 27HUNTRSTN 230 DISCONNECT BRANCH FROM BUS 200026 TO BUS 204501 CKT 1 /* HUNTERTN 500 27HUNTRSTN 230 DISCONNECT BRANCH FROM BUS 204575 TO BUS 204539 CKT 4 /* 27HUNTRST1 230 27HUNTRSTN 115 DISCONNECT BUS 204501 /* 27HUNTRSTN 230 END
ME-P2-2-ME-115-030	CONTINGENCY 'ME-P2-2-ME-115-030' /* YORKANA 115 KV BUS 4 FAULT DISCONNECT BRANCH FROM BUS 204570 TO BUS 204687 CKT 1 /* 27YORKANA 115 27PROSPECT 115 DISCONNECT BRANCH FROM BUS 204570 TO BUS 204568 CKT 1 /* 27YORKANA 115 27YOE TAP 115 DISCONNECT BRANCH FROM BUS 204570 TO BUS 204701 CKT ZB /* 27YORKANA 115 27YORKANAB 115 DISCONNECT BRANCH FROM BUS 204515 TO BUS 204570 CKT 1 /* 27YORKANA 230 27YORKANA 115 DISCONNECT BUS 204570 /* 27YORKANA 115 END
PL:10:P45:102437	CONTINGENCY 'PL:10:P45:102437' /* JUNI BU2 230KV BUS; BUS_SEC_1-2 CB @ JUNI 230KV DISCONNECT BUS 208004 /* JUNI BU1 230 DISCONNECT BUS 208005 /* JUNI BU2 230 END
ME-P1-3-ME-500-003T	CONTINGENCY 'ME-P1-3-ME-500-003T' /* TRAN HUNTERTN 500.00 TO 27HUNTRSTN 230.00 CIRCUIT 1 DISCONNECT BRANCH FROM BUS 200026 TO BUS 204501 CKT 1 /* HUNTERTN 500 27HUNTRSTN 230 END

Contingency Name	Contingency Definition
ME-P2-3-ME-230-019CT	CONTINGENCY 'ME-P2-3-ME-230-019CT' / 2252 OPEN BRANCH FROM BUS 204515 TO BUS 208048 CKT 1 / 204515 27YORKANA 230 208048 OTCR 230 1 OPEN BRANCH FROM BUS 204515 TO BUS 207922 CKT 1 / 204515 27YORKANA 230 207922 BRIS 230 1 OPEN BRANCH FROM BUS 204570 TO BUS 204515 CKT 1 / 204570 27YORKANA 115 204515 27YORKANA 230 1 END
PL:10:P13:001633	CONTINGENCY 'PL:10:P13:001633' / 1249 OPEN BRANCH FROM BUS 207953 TO BUS 207955 CKT 1 / 207953 DAUP TR1 230 207955 DAUP TR2 230 1 OPEN BRANCH FROM BUS 207955 TO BUS 208005 CKT 1 / 207955 DAUP TR2 230 208005 JUNI BU2 230 1 OPEN BRANCH FROM BUS 209866 TO BUS 207955 CKT 2 / 209866 DAUP 69.0 207955 DAUP TR2 230 2 END
PL:10:P12:000195	CONTINGENCY 'PL:10:P12:000195' / 401 OPEN BRANCH FROM BUS 207950 TO BUS 208004 CKT 1 / 207950 CUMB TR2 230 208004 JUNI BU1 230 1 OPEN BRANCH FROM BUS 209852 TO BUS 207950 CKT 2 / 209852 CUMB 69.0 207950 CUMB TR2 230 2 OPEN BRANCH FROM BUS 207948 TO BUS 207950 CKT 1 / 207948 CUMB 230 207950 CUMB TR2 230 1 END
ME-P2-3-ME-115-032AT	CONTINGENCY 'ME-P2-3-ME-115-032AT' /* YORKANA-1B45 (TIE BREAKER) DISCONNECT BRANCH FROM BUS 204570 TO BUS 204687 CKT 1 /* 27YORKANA 115 27PROSPECT 115 DISCONNECT BRANCH FROM BUS 204701 TO BUS 208720 CKT 1 /* 27YORKANAB 115 RED FRONT 115 DISCONNECT BRANCH FROM BUS 204570 TO BUS 204568 CKT 1 /* 27YORKANA 115 27YOE TAP 115 DISCONNECT BRANCH FROM BUS 204570 TO BUS 204701 CKT ZB /* 27YORKANA 115 27YORKANAB 115 DISCONNECT BRANCH FROM BUS 204701 TO BUS 204574 CKT 1 /* 27YORKANAB 115 27MODRN LF 13 DISCONNECT BRANCH FROM BUS 204515 TO BUS 204570 CKT 1 /* 27YORKANA 230 27YORKANA 115 DISCONNECT BRANCH FROM BUS 204515 TO BUS 204701 CKT 3 /* 27YORKANA 230 27YORKANAB 115 REMOVE LOAD 2 FROM BUS 204701 /* 27YORKANAB 115 DISCONNECT BUS 204701 /* 27YORKANAB 115 DISCONNECT BUS 204574 /* 27MODRN LF 13 DISCONNECT BUS 204570 /* 27YORKANA 115 END

14 Affected Systems

14.1 NYISO

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

14.2 MISO

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