Generation Interconnection

Feasibility Study Report

for

Queue Project AF2-259

LOCKS 34.5 KV

15 MW Capacity / 25 MW Energy

July 2020

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1 Introduction

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

2 Preface

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

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

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

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

3 General

The Interconnection Customer (IC), has proposed a Solar generating facility located in Chesterfield County, Virginia. The installed facilities will have a total capability of 25 MW with 15 MW of this output being recognized by PJM as Capacity. The proposed in-service date for this project is December 12, 2022. This study does not imply a TO commitment to this in-service date.

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Queue Number	AF2-259
Project Name	LOCKS 34.5 KV
State	Virginia
County	Chesterfield
Transmission Owner	Dominion
MFO	25
MWE	25
MWC	15
Fuel	Solar
Basecase Study Year	2023

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

AF2-259 will interconnect with the Dominion distribution system. The POI is a direct connection to an existing Locks 34.5 kV substation in the Dominion area. This is the primary Point of Interconnection (POI) chosen by the IC with the ITO's transmission system. The IC is responsible for securing right-of-way, permits and constructing the proposed attachment line from the solar facility site to the proposed new substation. Attachment 1 shows a one-line diagram of the proposed interconnection facilities. The IC may not install any facilities on Dominion's right-of-way without first obtaining the necessary approval from Dominion Energy.

There is no secondary point of interconnection specified for AF2-259.

5 Cost Summary

The costs associated with interconnecting the AF2-259 project to the Dominion distribution system will be documented in the two-party Interconnection Agreement between the IC and ITO.

The AF2-259 project will be responsible for the following costs:

Description	Total Cost
Total Physical Interconnection Costs	$ To be provided in two-party IA with ITO
Total System Network Upgrade Costs	$ 11,318,000
Total Costs	**$ 11,318,000**

This cost excludes a Federal Income Tax Gross Up charges. This tax may or may not be charged based on whether this project meets the eligibility requirements of IRS Notice 88-129. If at a future date it is determined

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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

Dominion assessed the impact of the proposed Queue Project AF2-259 was evaluated as a 15 MW Capacity (25.0 MW Energy) injection at the Locks 34.5 kV substation in the Dominion Distribution System, for compliance with NERC Reliability Criteria on Dominion Transmission System. The system was assessed using the summer 2023 AF2 case provided to Dominion by PJM. When performing a generation analysis, Dominion's main analysis will be load flow study results under single contingency (both normal and stressed system conditions). Dominion Criteria considers a transmission facility overloaded if it exceeds 94% of its emergency rating under normal and stressed system conditions. A full listing of Dominion's Planning Criteria and interconnection requirements can be found in the Company's Facility Connection Requirements which are publicly available at: http://www.dominionenergy.com.

The results of these studies evaluate the system under a limited set of operating conditions and do not guarantee the full delivery of the capacity and associated energy of this proposed generation facility under all operating conditions. NERC Planning and Operating Reliability Criteria allow for the re-dispatch of generating units to resolve projected and actual deficiencies in real time and planning studies. Specifically, in Planning Studies, NERC Planning Event 3 and 6 Contingency Conditions (Loss of generator, transmission circuit, transformer, shunt device, or Single Pole of a DC line followed by the loss of a generator, transmission circuit, transformer, shunt device or single pole of a DC line) allow for re-dispatch of generating units to resolve potential reliability deficiencies. For Dominion Planning Criteria the re-dispatch of generating units for these contingency conditions is allowed as long as the projected loading does not exceed 100% of a facility Load Dump Rating.

7 Schedule

The schedule for the required Network Impact Reinforcements will be more clearly identified in future study phases. The estimate elapsed time to complete each of the required reinforcements is identified in the "System Reinforcements" section of the report.

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8 Transmission Owner Analysis

8.1 Power Flow Analysis

PJM performed a power flow analysis of the transmission system using a 2023 summer peak load flow model and the results were verified by Dominion. Additionally, Dominion performed an analysis of its transmission system and no further deficiencies were identified.

9 Interconnection Customer Requirements

9.1 System Protection

The IC must design its Customer Facilities in accordance with all applicable standards, including the standards in Dominion's "Dominion Energy Electric Transmission Generator Interconnection Requirements" documented in Dominion's Facility Interconnection Requirements "Exhibit C" located at: https://www.dominionenergy.com/company/moving-energy/electric-transmission-access. Preliminary Protection requirements will be provided as part of the Facilities Study. Detailed Protection Requirements will be provided once the project enters the construction phase.

9.2 Compliance Issues and Interconnection Customer Requirements

The proposed Customer Facilities must be designed in accordance with Dominion's "Dominion's Facility Interconnection Requirements" document located at: https://www.dominionenergy.com/company/moving-energy/electric-transmission-access. In particular, the IC is responsible for the following:

1. The purchase and installation of a fully rated protection device (circuit breaker, circuit switcher, fuse) to protect the IC's GSU transformer(s).
2. The purchase and installation of the minimum required Dominion generation interconnection relaying and control facilities as described in the System Protection noted above. This includes over/under voltage protection, over/under frequency protection, and zero sequence voltage protection relays.
3. The purchase and installation of supervisory control and data acquisition ("SCADA") equipment to provide information in a compatible format to the Dominion Transmission System Control Center.
4. Compliance with the Dominion and PJM generator power factor and voltage control requirements.

The GSU(s) associated with the IC queue request shall meet the grounding requirements as noted in Dominion's "Dominion's Facility Interconnection Requirements" document located at: https://www.dominionenergy.com/company/moving-energy/electric-transmission-access.

The IC will also be required to meet all PJM, SERC, and NERC reliability criteria and operating procedures for standards compliance. For example, the IC will need to properly locate and report the over and under voltage and over and under frequency system protection elements for its units as well as the submission of the generator model and protection data required to satisfy the PJM and SERC audits. Failure to comply with

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these requirements may result in a disconnection of service if the violation is found to compromise the reliability of the Dominion system.

9.3 Power Factor Requirements

The IC shall design its non-synchronous Customer Facility with the ability to maintain a power factor of at least 0.95 leading (absorbing VARs) to 0.95 lagging (supplying VARs) measured at the high-side of the facility substation transformer(s) connected to the Dominion transmission system.

10 Revenue Metering and SCADA Requirements

10.1 PJM Requirements

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

10.1.1 Meteorological Data Reporting Requirements

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

- Back Panel temperature (Fahrenheit)
- Irradiance (Watts/meter2)
- Ambient air temperature (Fahrenheit) – (Accepted, not required)
- Wind speed (meters/second) – (Accepted, not required)
- Wind direction (decimal degrees from true north) – (Accepted, not required)

10.2 Interconnected Transmission Owner Requirements

See Section 3.4.6 “Metering and telecommunications” of Dominion’s “Dominion’s Facility Interconnection Requirements” document located at: https://www.dominionenergy.com/company/moving-energy/electric-transmission-access.

11 Summer Peak - Load Flow Analysis

The Queue Project AF2-259 was evaluated as a 25.0 MW (Capacity 15.0 MW) injection at the Locks 34.5 kV substation in the Dominion area. Project AF2-259 was evaluated for compliance with applicable reliability planning criteria (PJM, NERC, NERC Regional Reliability Councils, and Transmission Owners). Project AF2-259 was studied with a commercial probability of 53%. Potential network impacts were as follows:

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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)

None

11.3 Contribution to Previously Identified Overloads

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

ID	FROM BUS#	FROM BUS	kV	FROM BUS AREA	TO BUS#	TO BUS	kV	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC|DC	MW IMPACT
97787704	314301	6HARR205	230.0	DVP	314346	6TYLER	230.0	DVP	1	DVP_P4-2: 562T563	breaker	541.0	126.74	128.82	DC	11.24
98055938	314301	6HARR205	230.0	DVP	314346	6TYLER	230.0	DVP	1	DVP_P1-2: LN 563	single	441.799987793	104.12	105.63	DC	6.68
97398083	314314	3LOCKS	115.0	DVP	940430	AE2-027 TAP	115.0	DVP	1	DVP_P4-2: 562T563	breaker	169.0	101.07	101.65	DC	2.19
97399125	314314	3LOCKS	115.0	DVP	940430	AE2-027 TAP	115.0	DVP	1	DVP_P7-1: LN 205-2003	tower	169.0	114.93	116.92	DC	3.37
97787659	314316	6LOCKS	230.0	DVP	314301	6HARR205	230.0	DVP	1	DVP_P4-2: 562T563	breaker	541.0	141.46	143.54	DC	11.24
98055720	314316	6LOCKS	230.0	DVP	314301	6HARR205	230.0	DVP	1	DVP_P1-2: LN 563	single	441.799987793	117.23	118.75	DC	6.68
97397962	940430	AE2-027 TAP	115.0	DVP	314298	3HARROWG	115.0	DVP	1	DVP_P4-2: 562T563	breaker	169.0	136.49	137.08	DC	2.19
97397963	940430	AE2-027 TAP	115.0	DVP	314298	3HARROWG	115.0	DVP	1	DVP_P4-6: T672	breaker	169.0	125.53	126.14	DC	2.27
97398341	940430	AE2-027 TAP	115.0	DVP	314298	3HARROWG	115.0	DVP	1	DVP_P1-2: LN 259	single	138.179992676	106.31	107.34	DC	1.42
97399097	940430	AE2-027 TAP	115.0	DVP	314298	3HARROWG	115.0	DVP	1	DVP_P7-1: LN 205-2003	tower	169.0	155.06	157.06	DC	3.37

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

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with network upgrades to eliminate the operational restriction at their discretion by submitting a Merchant Transmission Interconnection request.

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

ID	FROM BUS#	FROM BUS	kV	FROM BUS AREA	TO BUS#	TO BUS	kV	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC|DC	MW IMPACT
98055937	314301	6HARR205	230.0	DVP	314346	6TYLER	230.0	DVP	1	DVP_P1-2: LN 563	operation	441.799987793	108.17	110.69	DC	11.13
97398492	314314	3LOCKS	115.0	DVP	940430	AE2-027 TAP	115.0	DVP	1	DVP_P1-2: LN 23-B	operation	138.179992676	105.96	106.64	DC	2.09
98055719	314316	6LOCKS	230.0	DVP	314301	6HARR205	230.0	DVP	1	DVP_P1-2: LN 563	operation	441.799987793	137.04	139.56	DC	11.13
97398332	940430	AE2-027 TAP	115.0	DVP	314298	3HARROWG	115.0	DVP	1	DVP_P1-2: LN 563	operation	138.179992676	148.87	149.58	DC	2.16
97398337	940430	AE2-027 TAP	115.0	DVP	314298	3HARROWG	115.0	DVP	1	Base Case	operation	138.179992676	132.74	133.41	DC	2.07

11.5 System Reinforcements - Summer Peak Load Flow - Primary POI

ID	Idx	Facility	Upgrade Description	Cost
97397962,97397963,97398341,97399097	4	AE2-027 TAP 115.0 kV - 3HARROWG 115.0 kV Ckt 1	**DVP** **dom-097 (1163) : Rebuild 0.90 miles of 115 kV Line 100 from AE2-027 Tap to Harrowgate with 768 ACSS.** **Project Type : FAC** **Cost : $1,170,000** **Time Estimate : 30-36 Months**	$1,170,000
97399125,97398083	2	3LOCKS 115.0 kV - AE2-027 TAP 115.0 kV Ckt 1	**DVP** **dom-098 (1164) : Rebuild 4.4 miles of 115 kV Line 100 from Locks to AE2-027 Tap with 768 ACSS.** **Project Type : FAC** **Cost : $5,720,000** **Time Estimate : 30-36 Months**	$5,720,000
97787659,98055720	3	6LOCKS 230.0 kV - 6HARR205 230.0 kV Ckt 1	**DVP** **dom-165 (1216) : Uprate 5.4 miles of 230 kV Line 205 from Locks to Harrowgate with 1033.5 ACSR. Upgrade Relays at Locks.** **Project Type : FAC** **Cost : $2,280,000** **Time Estimate : 30-36 Months**	$2,280,000

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ID	Idx	Facility	Upgrade Description	Cost
98055938,97787704	1	6HARR205 230.0 kV - 6TYLER 230.0 kV Ckt 1	**DVP** **dom-163 (1214) : Reconductor 0.64 miles of 230 kV Line 205 from Harrowgate to Tyler with 1033.5 ACSR. Uprate 4.09 miles of 230 kV Line 205 from Harrowgate to Tyler.** **Project Type : FAC** **Cost : $2,148,000** **Time Estimate : 30-36 Months**	$2,148,000
			TOTAL COST	**$11,318,000**

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11.6 Flow Gate Details

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

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11.6.1 Index 1

ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC|DC	MW IMPACT
97787704	314301	6HARR205	DVP	314346	6TYLER	DVP	1	DVP_P4-2: 562T563	breaker	541.0	126.74	128.82	DC	11.24

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
314314	3LOCKS	0.4484	50/50	0.4484
314435	6SAPONY	0.3847	50/50	0.3847
314572	3EMPORIA	0.0441	50/50	0.0441
315073	1STONECA	-2.0407	Adder	-2.4
315131	**1EDGECMA (Deactivation : 22/04/2019)**	**3.1256**	**Adder**	**3.68**
315132	**1EDGECMB (Deactivation : 22/04/2019)**	**3.1256**	**Adder**	**3.68**
917342	Z2-044 E	0.1963	Adder	0.23
918492	AA1-063AE OP	1.4180	Adder	1.67
919692	AA2-053 E OP	1.4063	Adder	1.65
919702	AA2-057 E OP	1.1712	Adder	1.38
920592	AA2-165 E	0.1610	Adder	0.19
920672	AA2-174 E OP	0.1625	Adder	0.19
922922	AB1-081 C OP	3.0031	Adder	3.53
922923	AB1-081 E OP	1.2870	Adder	1.51
923262	**AB1-132 C OP (Suspended)**	**6.3446**	**Adder**	**7.46**
923263	**AB1-132 E OP (Suspended)**	**2.7191**	**Adder**	**3.2**
923572	AB1-173 C OP	1.0681	Adder	1.26
923573	AB1-173 E OP	0.4984	Adder	0.59
923582	AB1-173AC OP	1.0681	Adder	1.26
923583	AB1-173AE OP	0.4984	Adder	0.59
923852	AB2-025 E	1.0021	50/50	1.0021
923911	AB2-031 C O1	1.0602	Adder	1.25
923912	AB2-031 E O1	0.5222	Adder	0.61
923991	AB2-040 C O1	3.4812	Adder	4.1
923992	AB2-040 E O1	2.8482	Adder	3.35
924152	AB2-059 E OP	1.8233	Adder	2.15
924511	AB2-100 C	1.4223	50/50	1.4223
924512	AB2-100 E	4.0613	50/50	4.0613
925051	**AB2-160 C O1 (Suspended)**	**7.9019**	**50/50**	**7.9019**
925052	**AB2-160 E O1 (Suspended)**	**12.8925**	**50/50**	**12.8925**
925172	AB2-174 E O1	3.1192	Adder	3.67
925591	AC1-034 C	2.2925	Adder	2.7
925592	AC1-034 E	1.7295	Adder	2.03
925781	AC1-054 C O1	2.4514	Adder	2.88
925782	AC1-054 E O1	1.1293	Adder	1.33
926071	AC1-086 C	9.3432	Adder	10.99

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Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
926072	AC1-086 E	4.2524	Adder	5.0
926201	AC1-098 C	2.0796	Adder	2.45
926202	AC1-098 E	1.2389	Adder	1.46
926211	AC1-099 C	0.6969	Adder	0.82
926212	AC1-099 E	0.4093	Adder	0.48
927141	AC1-208 C	3.2021	Adder	3.77
927142	AC1-208 E	1.4219	Adder	1.67
932631	AC2-084 C	2.9646	Adder	3.49
932632	AC2-084 E	1.4602	Adder	1.72
934331	AD1-057 C O1	3.8896	Adder	4.58
934332	AD1-057 E O1	2.0749	Adder	2.44
936762	AD2-097 E	-3.0883	Adder	-3.63
938491	AE1-068 C O1	22.0260	Adder	25.91
938492	AE1-068 E O1	12.1652	Adder	14.31
938501	AE1-069 C O1	17.2195	Adder	20.26
938502	AE1-069 E O1	9.8445	Adder	11.58
939411	AE1-173 C	25.0186	Adder	29.43
939412	AE1-173 E	16.6790	Adder	19.62
940431	AE2-027 C O1	11.7209	50/50	11.7209
940432	AE2-027 E O1	7.8139	50/50	7.8139
940471	AE2-031 C	11.9947	Adder	14.11
940472	AE2-031 E	7.9965	Adder	9.41
940481	AE2-033 C	13.9347	50/50	13.9347
940482	AE2-033 E	9.3942	50/50	9.3942
940541	AE2-040 O1	4.0809	50/50	4.0809
940571	AE2-044 C	1.5015	Adder	1.77
940572	AE2-044 E	0.6435	Adder	0.76
941031	AE2-094 C	14.4471	Adder	17.0
941032	AE2-094 E	6.4705	Adder	7.61
942001	AE2-212 C	7.6140	50/50	7.6140
942002	AE2-212 E	5.0760	50/50	5.0760
942371	AE2-250 C O1	14.0362	50/50	14.0362
942372	AE2-250 E O1	7.4080	50/50	7.4080
942471	AE2-260 C O1	10.5310	50/50	10.5310
942472	AE2-260 E O1	14.9370	50/50	14.9370
942931	AE2-313 C	12.9874	Adder	15.28
942932	AE2-313 E	8.6582	Adder	10.19
943911	AF1-059	6.7532	Adder	7.94
944011	AF1-069 C	4.7204	Adder	5.55
944012	AF1-069 E	1.8338	Adder	2.16
944141	AF1-082	0.9653	Adder	1.14
945811	AF1-246 C O1	2.4290	Adder	2.86
945812	AF1-246 E O1	3.3544	Adder	3.95
946011	AF1-266	11.6645	50/50	11.6645
946281	AF1-292 C	0.9413	50/50	0.9413
946282	AF1-292 E	0.6346	50/50	0.6346
957481	AF2-042 C O1	9.1361	Adder	20.28
957482	AF2-042 E O1	6.0908	Adder	13.52
958141	AF2-108	7.8655	50/50	7.8655
959231	AF2-214 C	1.7195	Adder	3.82
959232	AF2-214 E	2.5779	Adder	5.72
959671	AF2-258 C	1.9035	50/50	1.9035

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Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
959672	AF2-258 E	1.2690	50/50	1.2690
959681	AF2-259 C	6.7419	50/50	6.7419
959682	AF2-259 E	4.4946	50/50	4.4946
959751	AF2-266 O1	1.4101	Adder	3.13
960081	AF2-299 C	1.5864	50/50	1.5864
960082	AF2-299 E	1.0576	50/50	1.0576
960122	AF2-303 E O1	2.1421	Adder	4.75
960331	AF2-324 C O1	1.3938	Adder	3.09
960332	AF2-324 E O1	0.7483	Adder	1.66
960351	AF2-326 C	0.4540	Adder	1.01
960352	AF2-326 E	0.1135	Adder	0.25
960831	AF2-374 C	0.2162	Adder	0.48
960832	AF2-374 E	0.3528	Adder	0.78
WEC	WEC	0.2867	Confirmed LTF	0.2867
LGEE	LGEE	0.5408	Confirmed LTF	0.5408
CPLE	CPLE	3.0006	Confirmed LTF	3.0006
CBM-W2	CBM-W2	11.5643	Confirmed LTF	11.5643
NY	NY	0.4120	Confirmed LTF	0.4120
CBM-W1	CBM-W1	10.6961	Confirmed LTF	10.6961
TVA	TVA	2.4332	Confirmed LTF	2.4332
O-066	O-066	5.8330	Confirmed LTF	5.8330
CBM-S2	CBM-S2	20.4265	Confirmed LTF	20.4265
CBM-S1	CBM-S1	13.5553	Confirmed LTF	13.5553
G-007	G-007	0.9110	Confirmed LTF	0.9110
MADISON	MADISON	0.6834	Confirmed LTF	0.6834
MEC	MEC	1.7400	Confirmed LTF	1.7400
AA2-074	AA2-074	2.0452	LTF	2.0452

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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
97399125	314314	3LOCKS	DVP	940430	AE2-027 TAP	DVP	1	DVP_P7-1: LN 205-2003	tower	169.0	114.93	116.92	DC	3.37

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
314314	3LOCKS	0.6478	50/50	0.6478
923852	AB2-025 E	0.3418	Adder	0.4
925051	**AB2-160 C O1 (Suspended)**	**11.4164**	**50/50**	**11.4164**
925052	**AB2-160 E O1 (Suspended)**	**18.6268**	**50/50**	**18.6268**
925061	**AB2-161 C O1 (Suspended)**	**0.9448**	**Adder**	**1.11**
925062	**AB2-161 E O1 (Suspended)**	**1.5415**	**Adder**	**1.81**
932581	AC2-078 C O1	1.8169	Adder	2.14
932582	AC2-078 E O1	2.9644	Adder	3.49
934571	AD1-082 C	2.1531	Adder	2.53
934572	AD1-082 E	1.2282	Adder	1.44
938631	AE1-085 C O1	3.7676	Adder	4.43
938632	AE1-085 E O1	1.8838	Adder	2.22
939191	AE1-149 C O1	6.0072	50/50	6.0072
939192	AE1-149 E O1	4.0048	50/50	4.0048
940061	AE2-000BC O1	4.4752	Adder	5.26
940062	AE2-000BE O1	2.9835	Adder	3.51
940481	AE2-033 C	4.7455	Adder	5.58
940482	AE2-033 E	3.1992	Adder	3.76
940541	AE2-040 O1	5.8960	50/50	5.8960
940651	AE2-052	2.0024	50/50	2.0024
942371	AE2-250 C O1	20.2792	50/50	20.2792
942372	AE2-250 E O1	10.7029	50/50	10.7029
942471	AE2-260 C O1	3.5478	Adder	4.17
942472	AE2-260 E O1	5.0321	Adder	5.92
946011	AF1-266	3.9724	Adder	4.67
958141	AF2-108	2.3573	50/50	2.3573
959681	AF2-259 C	2.0205	50/50	2.0205
959682	AF2-259 E	1.3470	50/50	1.3470
960361	AF2-327 C	0.4904	Adder	1.09
960362	AF2-327 E	0.1226	Adder	0.27
961111	AF2-402 C O1	0.1558	Adder	0.35
961112	AF2-402 E O1	0.2548	Adder	0.57
WEC	WEC	0.0759	Confirmed LTF	0.0759
LGEE	LGEE	0.1426	Confirmed LTF	0.1426
CPLE	CPLE	0.8441	Confirmed LTF	0.8441
CBM-W2	CBM-W2	3.0958	Confirmed LTF	3.0958
NY	NY	0.1073	Confirmed LTF	0.1073

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Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
CBM-W1	CBM-W1	2.8273	Confirmed LTF	2.8273
TVA	TVA	0.6538	Confirmed LTF	0.6538
O-066	O-066	1.5187	Confirmed LTF	1.5187
CBM-S2	CBM-S2	5.6239	Confirmed LTF	5.6239
CBM-S1	CBM-S1	3.6380	Confirmed LTF	3.6380
G-007	G-007	0.2371	Confirmed LTF	0.2371
MADISON	MADISON	0.1895	Confirmed LTF	0.1895
MEC	MEC	0.4624	Confirmed LTF	0.4624

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11.6.3 Index 3

ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC|DC	MW IMPACT
97787659	314316	6LOCKS	DVP	314301	6HARR205	DVP	1	DVP_P4-2: 562T563	breaker	541.0	141.46	143.54	DC	11.24

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
314314	3LOCKS	0.4484	50/50	0.4484
314435	6SAPONY	0.3847	50/50	0.3847
314572	3EMPORIA	0.0441	50/50	0.0441
315073	1STONECA	-2.0407	Adder	-2.4
315131	**1EDGECMA (Deactivation : 22/04/2019)**	**3.1256**	**Adder**	**3.68**
315132	**1EDGECMB (Deactivation : 22/04/2019)**	**3.1256**	**Adder**	**3.68**
900672	V4-068 E	0.0874	Adder	0.1
917332	Z2-043 E	0.3603	Adder	0.42
917342	Z2-044 E	0.1963	Adder	0.23
917512	Z2-088 E OP1	1.2083	Adder	1.42
918492	AA1-063AE OP	1.4180	Adder	1.67
918512	AA1-065 E OP	1.1096	Adder	1.31
918532	AA1-067 E	0.2104	Adder	0.25
919692	AA2-053 E OP	1.4063	Adder	1.65
919702	AA2-057 E OP	1.1712	Adder	1.38
920042	AA2-088 E OP	2.9997	Adder	3.53
920592	AA2-165 E	0.1610	Adder	0.19
920672	AA2-174 E OP	0.1625	Adder	0.19
922922	AB1-081 C OP	3.0031	Adder	3.53
922923	AB1-081 E OP	1.2870	Adder	1.51
923262	**AB1-132 C OP (Suspended)**	**6.3446**	**Adder**	**7.46**
923263	**AB1-132 E OP (Suspended)**	**2.7191**	**Adder**	**3.2**
923572	AB1-173 C OP	1.0681	Adder	1.26
923573	AB1-173 E OP	0.4984	Adder	0.59
923582	AB1-173AC OP	1.0681	Adder	1.26
923583	AB1-173AE OP	0.4984	Adder	0.59
923852	AB2-025 E	1.0021	50/50	1.0021
923911	AB2-031 C O1	1.0602	Adder	1.25
923912	AB2-031 E O1	0.5222	Adder	0.61
923991	AB2-040 C O1	3.4812	Adder	4.1
923992	AB2-040 E O1	2.8482	Adder	3.35
924022	AB2-043 E O1	0.8350	Adder	0.98
924152	AB2-059 E OP	1.8233	Adder	2.15
924162	AB2-060 E OP	1.2536	Adder	1.47
924301	**AB2-077 C O1 (Suspended)**	**0.5927**	**Adder**	**0.7**
924302	**AB2-077 E O1 (Suspended)**	**0.3951**	**Adder**	**0.46**

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Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
924311	AB2-078 C O1 (Suspended)	0.5927	Adder	0.7
924312	AB2-078 E O1 (Suspended)	0.3951	Adder	0.46
924321	AB2-079 C O1 (Suspended)	0.5927	Adder	0.7
924322	AB2-079 E O1 (Suspended)	0.3951	Adder	0.46
924501	AB2-099 C (Suspended)	0.1725	Adder	0.2
924502	AB2-099 E (Suspended)	0.0739	Adder	0.09
924511	AB2-100 C	1.4223	50/50	1.4223
924512	AB2-100 E	4.0613	50/50	4.0613
925051	AB2-160 C O1 (Suspended)	7.9019	50/50	7.9019
925052	AB2-160 E O1 (Suspended)	12.8925	50/50	12.8925
925172	AB2-174 E O1	3.1192	Adder	3.67
925591	AC1-034 C	2.2925	Adder	2.7
925592	AC1-034 E	1.7295	Adder	2.03
925781	AC1-054 C O1	2.4514	Adder	2.88
925782	AC1-054 E O1	1.1293	Adder	1.33
926071	AC1-086 C	9.3432	Adder	10.99
926072	AC1-086 E	4.2524	Adder	5.0
926201	AC1-098 C	2.0796	Adder	2.45
926202	AC1-098 E	1.2389	Adder	1.46
926211	AC1-099 C	0.6969	Adder	0.82
926212	AC1-099 E	0.4093	Adder	0.48
927021	AC1-189 C	2.6258	Adder	3.09
927022	AC1-189 E	1.3080	Adder	1.54
927141	AC1-208 C	3.2021	Adder	3.77
927142	AC1-208 E	1.4219	Adder	1.67
932581	AC2-078 C O1	1.1238	Adder	1.32
932582	AC2-078 E O1	1.8336	Adder	2.16
932631	AC2-084 C	2.9646	Adder	3.49
932632	AC2-084 E	1.4602	Adder	1.72
934331	AD1-057 C O1	3.8896	Adder	4.58
934332	AD1-057 E O1	2.0749	Adder	2.44
934611	AD1-087 C O1	2.4186	Adder	2.85
934612	AD1-087 E O1	1.1367	Adder	1.34
935171	AD1-152 C O1	2.4035	Adder	2.83
935172	AD1-152 E O1	1.6024	Adder	1.89
936361	AD2-046 C O1	2.8106	Adder	3.31
936362	AD2-046 E O1	1.2925	Adder	1.52
936401	AD2-051 C O1	2.4640	Adder	2.9
936402	AD2-051 E O1	1.0580	Adder	1.24
936481	AD2-063 C O1	4.1960	Adder	4.94
936482	AD2-063 E O1	2.7740	Adder	3.26
936762	AD2-097 E	-3.0883	Adder	-3.63
937481	AD2-202 C O1	0.6409	Adder	0.75
937482	AD2-202 E O1	0.3605	Adder	0.42
938221	AE1-035 C	0.6195	Adder	0.73
938222	AE1-035 E	0.3051	Adder	0.36
938491	AE1-068 C O1	22.0260	Adder	25.91

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Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
938492	AE1-068 E O1	12.1652	Adder	14.31
938501	AE1-069 C O1	17.2195	Adder	20.26
938502	AE1-069 E O1	9.8445	Adder	11.58
938631	AE1-085 C O1	2.3847	Adder	2.81
938632	AE1-085 E O1	1.1923	Adder	1.4
939181	AE1-148 C O1	2.7641	Adder	3.25
939182	AE1-148 E O1	1.8427	Adder	2.17
939191	AE1-149 C O1	3.0779	Adder	3.62
939192	AE1-149 E O1	2.0519	Adder	2.41
939411	AE1-173 C	25.0186	Adder	29.43
939412	AE1-173 E	16.6790	Adder	19.62
940431	AE2-027 C O1	11.7209	50/50	11.7209
940432	AE2-027 E O1	7.8139	50/50	7.8139
940471	AE2-031 C	11.9947	Adder	14.11
940472	AE2-031 E	7.9965	Adder	9.41
940481	AE2-033 C	13.9347	50/50	13.9347
940482	AE2-033 E	9.3942	50/50	9.3942
940541	AE2-040 O1	4.0809	50/50	4.0809
940571	AE2-044 C	1.5015	Adder	1.77
940572	AE2-044 E	0.6435	Adder	0.76
940651	AE2-052	1.0260	Adder	1.21
940661	AE2-053 O1	1.0237	Adder	1.2
941031	AE2-094 C	14.4471	Adder	17.0
941032	AE2-094 E	6.4705	Adder	7.61
941541	AE2-151 C	0.3203	Adder	0.38
941542	AE2-151 E	0.1725	Adder	0.2
942371	AE2-250 C O1	14.0362	50/50	14.0362
942372	AE2-250 E O1	7.4080	50/50	7.4080
942451	AE2-258	0.6967	Adder	0.82
942471	AE2-260 C O1	10.5310	50/50	10.5310
942472	AE2-260 E O1	14.9370	50/50	14.9370
942931	AE2-313 C	12.9874	Adder	15.28
942932	AE2-313 E	8.6582	Adder	10.19
943171	AE2-346 C	0.4141	Adder	0.49
943172	AE2-346 E	0.1775	Adder	0.21
943911	AF1-059	6.7532	Adder	7.94
944011	AF1-069 C	4.7204	Adder	5.55
944012	AF1-069 E	1.8338	Adder	2.16
944141	AF1-082	0.9653	Adder	1.14
945811	AF1-246 C O1	2.4290	Adder	2.86
945812	AF1-246 E O1	3.3544	Adder	3.95
946011	AF1-266	11.6645	50/50	11.6645
946281	AF1-292 C	0.9413	50/50	0.9413
946282	AF1-292 E	0.6346	50/50	0.6346
957481	AF2-042 C O1	9.1361	Adder	20.28
957482	AF2-042 E O1	6.0908	Adder	13.52
957521	AF2-046 C	2.6117	Adder	5.8
957522	AF2-046 E	1.3137	Adder	2.92
957861	AF2-080 C	1.2640	Adder	2.81
957862	AF2-080 E	0.5603	Adder	1.24
958141	AF2-108	7.8655	50/50	7.8655
959231	AF2-214 C	1.7195	Adder	3.82

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Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
959232	AF2-214 E	2.5779	Adder	5.72
959681	AF2-259 C	6.7419	50/50	6.7419
959682	AF2-259 E	4.4946	50/50	4.4946
959731	AF2-264 C	0.3504	Adder	0.78
959732	AF2-264 E	0.1726	Adder	0.38
959751	AF2-266 O1	1.4101	Adder	3.13
960081	AF2-299 C	1.5864	50/50	1.5864
960082	AF2-299 E	1.0576	50/50	1.0576
960122	AF2-303 E O1	2.1421	Adder	4.75
960331	AF2-324 C O1	1.3938	Adder	3.09
960332	AF2-324 E O1	0.7483	Adder	1.66
960351	AF2-326 C	0.4540	Adder	1.01
960352	AF2-326 E	0.1135	Adder	0.25
960811	AF2-372 C	0.1984	Adder	0.44
960812	AF2-372 E	0.3238	Adder	0.72
960821	AF2-373 C	0.1411	Adder	0.31
960822	AF2-373 E	0.2116	Adder	0.47
960831	AF2-374 C	0.2162	Adder	0.48
960832	AF2-374 E	0.3528	Adder	0.78
WEC	WEC	0.2867	Confirmed LTF	0.2867
LGEE	LGEE	0.5408	Confirmed LTF	0.5408
CPLE	CPLE	3.0006	Confirmed LTF	3.0006
CBM-W2	CBM-W2	11.5643	Confirmed LTF	11.5643
NY	NY	0.4120	Confirmed LTF	0.4120
CBM-W1	CBM-W1	10.6961	Confirmed LTF	10.6961
TVA	TVA	2.4332	Confirmed LTF	2.4332
O-066	O-066	5.8330	Confirmed LTF	5.8330
CBM-S2	CBM-S2	20.4265	Confirmed LTF	20.4265
CBM-S1	CBM-S1	13.5553	Confirmed LTF	13.5553
G-007	G-007	0.9110	Confirmed LTF	0.9110
MADISON	MADISON	0.6834	Confirmed LTF	0.6834
MEC	MEC	1.7400	Confirmed LTF	1.7400
AA2-074	AA2-074	2.0452	LTF	2.0452

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ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC|DC	MW IMPACT
97399097	940430	AE2-027 TAP	DVP	314298	3HARROWG	DVP	1	DVP_P7-1: LN 205-2003	tower	169.0	155.06	157.06	DC	3.37

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
314314	3LOCKS	0.6478	50/50	0.6478
923852	AB2-025 E	0.3418	Adder	0.4
925051	**AB2-160 C O1 (Suspended)**	**11.4164**	**50/50**	**11.4164**
925052	**AB2-160 E O1 (Suspended)**	**18.6268**	**50/50**	**18.6268**
925061	**AB2-161 C O1 (Suspended)**	**0.9448**	**Adder**	**1.11**
925062	**AB2-161 E O1 (Suspended)**	**1.5415**	**Adder**	**1.81**
932581	AC2-078 C O1	1.8169	Adder	2.14
932582	AC2-078 E O1	2.9644	Adder	3.49
934571	AD1-082 C	2.1531	Adder	2.53
934572	AD1-082 E	1.2282	Adder	1.44
938631	AE1-085 C O1	3.7676	Adder	4.43
938632	AE1-085 E O1	1.8838	Adder	2.22
939191	AE1-149 C O1	6.0072	50/50	6.0072
939192	AE1-149 E O1	4.0048	50/50	4.0048
940061	AE2-000BC O1	4.4752	Adder	5.26
940062	AE2-000BE O1	2.9835	Adder	3.51
940431	AE2-027 C O1	40.6951	50/50	40.6951
940432	AE2-027 E O1	27.1301	50/50	27.1301
940481	AE2-033 C	4.7455	Adder	5.58
940482	AE2-033 E	3.1992	Adder	3.76
940541	AE2-040 O1	5.8960	50/50	5.8960
940651	AE2-052	2.0024	50/50	2.0024
942371	AE2-250 C O1	20.2792	50/50	20.2792
942372	AE2-250 E O1	10.7029	50/50	10.7029
942471	AE2-260 C O1	3.5478	Adder	4.17
942472	AE2-260 E O1	5.0321	Adder	5.92
946011	AF1-266	3.9724	Adder	4.67
958141	AF2-108	2.3573	50/50	2.3573
959681	AF2-259 C	2.0205	50/50	2.0205
959682	AF2-259 E	1.3470	50/50	1.3470
960361	AF2-327 C	0.4904	Adder	1.09
960362	AF2-327 E	0.1226	Adder	0.27
961111	AF2-402 C O1	0.1558	Adder	0.35
961112	AF2-402 E O1	0.2548	Adder	0.57
WEC	WEC	0.0759	Confirmed LTF	0.0759
LGEE	LGEE	0.1426	Confirmed LTF	0.1426
CPLE	CPLE	0.8441	Confirmed LTF	0.8441

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Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
CBM-W2	CBM-W2	3.0958	Confirmed LTF	3.0958
NY	NY	0.1073	Confirmed LTF	0.1073
CBM-W1	CBM-W1	2.8273	Confirmed LTF	2.8273
TVA	TVA	0.6538	Confirmed LTF	0.6538
O-066	O-066	1.5187	Confirmed LTF	1.5187
CBM-S2	CBM-S2	5.6239	Confirmed LTF	5.6239
CBM-S1	CBM-S1	3.6380	Confirmed LTF	3.6380
G-007	G-007	0.2371	Confirmed LTF	0.2371
MADISON	MADISON	0.1895	Confirmed LTF	0.1895
MEC	MEC	0.4624	Confirmed LTF	0.4624

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11.7 Queue Dependencies

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

Queue Number	Project Name	Status
AA1-063A	Carolina–Seaboard 115kV	In Service
AA1-065	Earleys 230kV	In Service
AA1-067	Everetts 34.5kV	In Service
AA2-053	Carolina-Jackson 115kV	In Service
AA2-057	Hornertown-Whitakers 115kV	In Service
AA2-074	CPLE-PJM	Confirmed
AA2-088	Boykins-Handsome 115kV	In Service
AA2-165	Hornertown-Whitakers 115kV	In Service
AA2-174	Carolina-Jackson 115kV	In Service
AB1-081	Anaconda-Mayo Dunbar 115kV	Under Construction
AB1-132	Thelma 230kV	Suspended
AB1-173	Brink-Trego 115kV	Engineering and Procurement
AB1-173A	Brink-Trego 115kV	Engineering and Procurement
AB2-025	Sapony 34.5kV	In Service
AB2-031	Brink-Trego 115kV	Engineering and Procurement
AB2-040	Brink 115kV	Engineering and Procurement
AB2-043	Chase City 115kV	Under Construction
AB2-059	Benson-Dunbar 115kV	Under Construction
AB2-060	Chase City-Lunenburg 115kV	Under Construction
AB2-077	Buggs Island-Chase City 115kV	Suspended
AB2-078	Buggs Island-Chase City 115kV	Suspended
AB2-079	Buggs Island-Chase City 115kV	Suspended
AB2-099	Ahoskie 34.5kV	Suspended
AB2-100	Clubhouse-Lakeview 230kV	Under Construction
AB2-160	Reams 115kV	Suspended
AB2-161	Waverly #2 DP 115kV	Suspended
AB2-174	Emporia-Trego 115kV	Under Construction
AC1-034	Heartsease DP - Mayo Dunbar 115kV	Active
AC1-054	Kerr Dam–Eatons Ferry 115 kV	Engineering and Procurement
AC1-086	Thelma 230kV	Active
AC1-098	Dawson-South Justice 115kV	Engineering and Procurement
AC1-099	Dawson-South Justice 115kV	Engineering and Procurement
AC1-189	Chinquapin-Everetts 230kV	Active
AC1-208	Cox-Whitakers 115kV	Active
AC2-078	Disputanta-Waverly 115kV	Active
AC2-084	Dawson-South Justice 115kV	Active
AD1-057	Hornertown-Hathaway 230 kV	Active
AD1-082	Bakers Pond-Ivor 115kV	Active
AD1-087	Clover-Sedge Hill 230 kV	Active

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Queue Number	Project Name	Status
AD1-152	Clover-Sedge Hill 230 kV	Active
AD2-046	Boydton DP-Kerr Dam 115 kV	Active
AD2-051	Earleys – Northampton 230kV	Active
AD2-063	Central-Chase City 115kV	Active
AD2-097	Spruance NUG 230kV	In Service
AD2-202	Clover-Sedge Hill 230kV	Active
AE1-035	Earleys 230 kV	Engineering and Procurement
AE1-068	Carson-Rogers Rd 500 kV	Active
AE1-069	Carson-Rogers Road 500 kV	Active
AE1-085	Bakers Pond-Bell Ave 115 kV	Active
AE1-148	Kerr Dam-Ridge Rd 115 kV	Active
AE1-149	Disputanta-Poe 115 kV	Active
AE1-173	Carson-Suffolk 500 kV	Active
AE2-000B	N/A	N/A
AE2-027	Harrowgate-Locks 115kV	Active
AE2-031	Carson-Rawlings 500 kV	Active
AE2-033	Clubhouse-Sappony 230 kV	Active
AE2-040	Sapony 34.5 kV	Active
AE2-044	Anaconda-Dunbar 115 kV	Active
AE2-052	Disputanta-Poe 115 kV	Active
AE2-053	Kerr Dam-Ridge Road 115 kV	Active
AE2-094	Carson-Rogers Road 500 kV	Active
AE2-151	Earleys 34.5kV	Engineering and Procurement
AE2-212	Harrowgate 34 kV	Active
AE2-250	Purdy Sw.-Reams 115 kV	Active
AE2-258	Chase City 115 kV	Active
AE2-260	Clubhouse 230 kV	Active
AE2-313	Carson-Rawlings 500 kV	Active
AE2-346	Ahoskie 34.5 kV	Active
AF1-059	Brodnax-South Hill 115 kV	Active
AF1-069	Carson-Rogers Rd 500 kV	Active
AF1-082	Heartsease-Mayo Dunbar DP	Active
AF1-246	Clover-Rawlings 500 kV	Active
AF1-266	Clubhouse-Sapony 230 kV	Active
AF1-292	Fields Crossroads 34.5 kV	Active
AF2-042	Clover 500 kV	Active
AF2-046	Tunis-Mapleton 115 kV	Active
AF2-080	Chinquapin-Everetts 230 kV	Active
AF2-108	Locks 34.5 kV	Active
AF2-214	Heartsease DP-Anaconda 115 kV	Active
AF2-258	Harrowgate 34.5 kV	Active
AF2-259	Locks 34.5 kV	Active
AF2-264	Tunis 34.5 kV	Active
AF2-266	Clover 230 kV	Active
AF2-299	Fields 34.5 kV	Active
AF2-303	Edgecombe 230 kV	Active
AF2-324	Edgecombe 230 kV	Active
AF2-326	Edgecombe 13 kV	Active
AF2-327	Wakefield 13 kV	Active
AF2-372	Black Branch 34.5 kV	Active
AF2-373	Mount Laurel 115 kV	Active
AF2-374	Woodland 34.5 kV	Active

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Queue Number	Project Name	Status
AF2-402	Ivor-Oak Ridge 115 kV	Active
V4-068	Murphy's 34.5kV	In Service
Z2-043	Kelford 34.5kV	In Service
Z2-044	Whitakers 34.5kV	In Service
Z2-088	Tarboro-Everetts 230kV	In Service

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11.8 Contingency Descriptions

Contingency Name	Contingency Definition
DVP_P1-2: LN 563	CONTINGENCY 'DVP_P1-2: LN 563' OPEN BRANCH FROM BUS 314902 TO BUS 314914 CKT 1 /* 8CARSON 500.00 - 8MDLTHAN 500.00 END
DVP_P4-6: T672	CONTINGENCY 'DVP_P4-6: T672' /* BASIN 230 KV OPEN BUS 314276 /* 6BASIN 230.00 KV END
DVP_P1-2: LN 23-B	CONTINGENCY 'DVP_P1-2: LN 23-B' OPEN BRANCH FROM BUS 314206 TO BUS 314529 CKT 1 /* 3OAKRIDG 115.00 - 3KINGFORK 115.00 OPEN BRANCH FROM BUS 314206 TO BUS 314532 CKT Z1 /* 3OAKRIDG 115.00 - 3OAKRI23 115.00 OPEN BRANCH FROM BUS 932590 TO BUS 314532 CKT 1 /* AC2-079 TAP 115.00 - 3OAKRI23 115.00 OPEN BRANCH FROM BUS 314532 TO BUS 314536 CKT 1 /* 3OAKRI23 115.00 - 3SUFFOLK 115.00 OPEN BUS 314206 /* ISLAND: 3OAKRIDG 115.00 OPEN BUS 314261 /* ISLAND: 3OAKRI_1 115.00 OPEN BUS 314529 /* ISLAND: 3KINGFORK 115.00 OPEN BUS 314532 /* ISLAND: 3OAKRI23 115.00 END
DVP_P4-2: 562T563	CONTINGENCY 'DVP_P4-2: 562T563' /* CARSON 500 KV OPEN BRANCH FROM BUS 314902 TO BUS 940640 CKT 1 /* 8CARSON 500.00 - AE2-051 TAP 500.00 OPEN BRANCH FROM BUS 314902 TO BUS 314914 CKT 1 /* 8CARSON 500.00 - 8MDLTHAN 500.00 END
Base Case	

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Contingency Name	Contingency Definition
DVP_P7-1: LN 205-2003	CONTINGENCY 'DVP_P7-1: LN 205-2003' /* . OPEN BRANCH FROM BUS 314287 TO BUS 314346 CKT 1 /* 6CHESTF B 230.00 - 6TYLER 230.00 OPEN BRANCH FROM BUS 314301 TO BUS 314316 CKT 1 /* 6HARR205 230.00 - 6LOCKS 230.00 OPEN BRANCH FROM BUS 314301 TO BUS 314346 CKT 1 /* 6HARR205 230.00 - 6TYLER 230.00 OPEN BRANCH FROM BUS 314314 TO BUS 314316 CKT 1 /* 3LOCKS 115.00 - 6LOCKS 230.00 OPEN BUS 314301 /* ISLAND: 6HARR205 230.00 OPEN BUS 314346 /* ISLAND: 6TYLER 230.00 OPEN BRANCH FROM BUS 314263 TO BUS 314287 CKT 1 /* 6TYLER1 230.00 - 6CHESTF B 230.00 OPEN BRANCH FROM BUS 314263 TO BUS 314299 CKT 1 /* 6TYLER1 230.00 - 6HARROWG 230.00 OPEN BRANCH FROM BUS 314299 TO BUS 314331 CKT 1 /* 6HARROWG 230.00 - 6POE 230.00 OPEN BRANCH FROM BUS 314329 TO BUS 314331 CKT 2 /* 3POE 115.00 - 6POE 230.00 OPEN BUS 314263 /* ISLAND: 6TYLER1 230.00 OPEN BUS 314299 /* ISLAND: 6HARROWG 230.00 END
DVP_P1-2: LN 259	CONTINGENCY 'DVP_P1-2: LN 259' OPEN BRANCH FROM BUS 314276 TO BUS 314287 CKT 1 /* 6BASIN 230.00 - 6CHESTF B 230.00 END

12 Short Circuit Analysis

Short circuit analysis will be provided in the System Impact Study report.

13 Affected Systems

13.1 TVA

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

13.2 Duke Energy Progress

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

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