Generation Interconnection

Feasibility Study Report

for

Queue Project AG1-422

LEXINGTON-DOOMS 230 KV

50 MW Capacity / 50 MW Energy

January 2021

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1 Introduction

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

2 Preface

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

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

The 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 Augusta County, Virginia. The installed facilities will have a total capability of 50 MW with 50 MW of this output being recognized by PJM as Capacity. The proposed in-service date for this project is December 29, 2023. This study does not imply a TO commitment to this in-service date.

Queue Number	AG1-422
Project Name	LEXINGTON-DOOMS 230 KV
State	Virginia
County	Augusta
Transmission Owner	Dominion
MFO	50
MWE	50
MWC	50
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 Point of Interconnection

AG1-422 "Lexington-Dooms 230 kV" will interconnect with the Dominion transmission system as an uprate to AG1-421, sharing the POI and Attachment Facilities.

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

Costs provided are contingent on the AG1-421 project being built. Should the AG1-421 project withdraw from the Interconnection Queue, the AG1-422 project will assume the Attachment, Direct Connection, and Non-Direct Connection costs identified in the AG1-421 study report for connection to the Dominion system.

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

4.2 Secondary Point of Interconnection

There is no secondary point of interconnection specified for AG1-422.

5 Cost Summary

The AG1-422 project will be responsible for the following costs:

Description	Total Cost
Total Physical Interconnection Costs	$0
Total System Network Upgrade Costs	$21,800,000[1]
Total Costs	$21,800,000

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

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

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

6 Transmission Owner Scope of Work

The required Attachment Facilities, Direct Connection and Non-Direct Connection work for the interconnection of AG1-422 to the Dominion Transmission System is detailed in the following sections. The associated one-line showing the generation project attachment facilities and primary direct and non-direct connection is shown in Attachment 1.

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

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

Description	Total Cost
Total Physical Interconnection Costs	$0

AG1-422 "Lexington-Dooms 230 kV" will interconnect with the Dominion transmission system as an uprate to AG1-421, sharing the POI and Attachment Facilities.

As AG1-422 is sharing the POI and Attachment Facilities with AG1-421, there are no associated interconnection costs for this project. Should the AG1-421 project withdraw from the Interconnection Queue,the AG1-422 project will assume the Attachment, Direct Connection, and Non-Direct Connection costs identified in the AG1-421 study report for connection to the Dominion system.

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

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

7 Schedule

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

The estimated schedule for the required Network Impact Reinforcements is identified in the "System Reinforcements" section of this report.

These schedules will be more cleary identified in future study phases.

8 Transmission Owner Analysis

Dominion assessed the impact of the proposed project for compliance with NERC Reliability Criteria on the Dominion Transmission System. The system was assessed using the summer 2024 AG1 case provided to Dominion by PJM.

When performing a generation analysis, Dominion's main analysis includes load flow study results following a single contingency event for both normal and stressed system conditions. Dominion Criteria considers a transmission facility overloaded if it exceeds 94% of its emergency rating under normal and stressed system conditions. A full listing of Dominion's Planning Criteria and interconnection requirements can be found in the Company's Facility Connection Requirements which are publicly available at: http://www.dominionenergy.com.

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

8.1 Power Flow Analysis

PJM performed a power flow analysis of the transmission system using a 2024 summer peak load flow model and the results were verified by Dominion. Additionally, Dominion performed an analysis of its transmission system and no further deficiencies were identified.

9 Interconnection Customer Requirements

9.1 System Protection

The IC must design its Customer Facilities in accordance with all applicable standards, including the standards in Dominion's "Dominion Energy Electric Transmission Generator Interconnection Requirements" documented

in Dominion's Facility Interconnection Requirements "Exhibit C" located at: https://www.dominionenergy.com/company/moving-energy/electric-transmission-access. Preliminary Protection requirements will be provided as part of the Facilities Study. Detailed Protection Requirements will be provided once the project enters the construction phase.

9.2 Compliance Issues and Interconnection Customer Requirements

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

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

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

The IC will also be required to meet all PJM, SERC, and NERC reliability criteria and operating procedures for standards compliance. For example, the IC will need to properly locate and report the over and under voltage and over and under frequency system protection elements for its units as well as the submission of the generator model and protection data required to satisfy the PJM and SERC audits. Failure to comply with these requirements may result in a disconnection of service if the violation is found to compromise the reliability of the Dominion system.

9.3 Power Factor Requirements

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

10 Revenue Metering and SCADA Requirements

10.1 PJM Requirements

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

10.2 Meteorological Data Reporting Requirements

None

10.3 Interconnected Transmission Owner Requirements

The IC will be required to comply with all Interconnected Transmission Owner's revenue metering requirements for generation interconnection customers located at the following link:

http://www.pjm.com/planning/design-engineering/to-tech-standards/

11 Summer Peak - Load Flow Analysis

The Queue Project AG1-422 was evaluated as a 50.0 MW (Capacity 50.0 MW) injection tapping the Lexington to Dooms 230 kV line in the Dominion area. Project AG1-422 was evaluated for compliance with applicable reliability planning criteria (PJM, NERC, NERC Regional Reliability Councils, and Transmission Owners). Project AG1-422 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)

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
16945728 0	31474 9	6CHARLV L	230. 0	DVP	31477 2	6PROFFI T	230. 0	DVP	1	DVP_P 1-2: LN 550	singl e	550.8400268 55	108.97	110.02	DC	5.79

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.

None

11.5 System Reinforcements - Summer Peak Load Flow - Primary POI

ID	Idx	Facility	Upgrade Description	Cost
169457280	1	6CHARLVL 230.0 kV - 6PROFFIT 230.0 kV Ckt 1	DVP dom-365 (408) : Rebuild 8.72 miles of 230 kV Line 2054 from Charlottesville to Profit D.P. with 2-636 ACSR 150 C Project Type : FAC Cost : $21,800,000 Time Estimate : 36-40 Months	$21,800,000
			TOTAL COST	$21,800,000[1]

11.6 Flow Gate Details

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

11.6.1 Index 1

ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC|DC	MW IMPACT
169457280	314749	6CHARLVL	DVP	314772	6PROFFIT	DVP	1	DVP_P1-2: LN 550	single	550.84	108.97	110.02	DC	5.79

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
235034	01SHY_Z2-039	0.0097	80/20	0.0097
235035	01NHY_Z2-039	0.0158	80/20	0.0158
237092	AD1-085_C	0.1492	80/20	0.1492
242889	05REUSENS	0.0326	80/20	0.0326
313738	3CUSHAW	0.0896	80/20	0.0896
314333	6POWHATN	0.1395	80/20	0.1395
314429	3JTRSVLE	0.1640	80/20	0.1640
314677	6BUCKING	0.2361	80/20	0.2361
314859	4WSTVACO	4.1812	80/20	4.1812
315186	1LOWMORA	0.4088	80/20	0.4088
315188	1LOWMORC	0.4105	80/20	0.4105
315191	1BEARGRDN G1	4.0639	80/20	4.0639
315192	1BEARGRDN G2	4.0639	80/20	4.0639
315193	1BEARGRDN S1	5.2554	80/20	5.2554
315201	1BATH 1A	7.3173	80/20	7.3173
315202	1BATH 2B	7.3173	80/20	7.3173
315203	1BATH 3C	7.3217	80/20	7.3217
315204	1BATH 4D	7.3202	80/20	7.3202
315205	1BATH 5E	7.3290	80/20	7.3290
315206	1BATH 6F	7.3435	80/20	7.3435
315216	1CUNINGA	1.7533	80/20	1.7533
315217	1CUNINGB	1.7533	80/20	1.7533
315218	1CUNINGC	1.7533	80/20	1.7533
315219	1CUNINGD	3.9216	80/20	3.9216
315616	AA1-038 C	7.9074	80/20	7.9074
316152	AE1-098 C	0.1484	80/20	0.1484
316154	AE1-099 C	0.1484	80/20	0.1484
925611	AC1-036 C	0.0734	80/20	0.0734
926001	AC1-076 C	-2.1626	Adder	-2.54
926451	AC1-116 C	0.1642	80/20	0.1642
926481	AC1-120 C O1	-4.6912	Adder	-5.52
926501	AC1-121 C O1	-1.6111	Adder	-1.9
926611	AC1-143 C O1	-3.3136	Adder	-3.9
932511	AC2-071 C	0.2326	80/20	0.2326
932541	AC2-074 C	0.1137	80/20	0.1137
932854	AC2-112 C	14.3443	80/20	14.3443
933501	AC2-165 C	4.3554	80/20	4.3554
934625	AD1-088 C	3.7828	80/20	3.7828
935221	AD1-157 C	0.0977	80/20	0.0977
935241	AD1-161 C	1.5396	80/20	1.5396
936265	AD2-033 C	4.0287	80/20	4.0287

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
938371	AE1-056 C	2.6702	80/20	2.6702
938561	AE1-075 C	0.1213	80/20	0.1213
938625	AE1-084 C	6.9565	80/20	6.9565
938821	AE1-108 C O1	10.3789	80/20	10.3789
939231	AE1-154 C	-1.6680	Adder	-1.96
940451	AE2-029 C	3.2856	80/20	3.2856
941011	AE2-092 C	11.2095	80/20	11.2095
941791	AE2-182 C	0.6146	80/20	0.6146
942461	AE2-259 C O1	4.7598	80/20	4.7598
943571	AF1-028 O1	18.0880	80/20	18.0880
944071	AF1-075 C O1	4.9240	80/20	4.9240
946291	AF1-293 C O1	14.5885	80/20	14.5885
946301	AF1-294 C	1.6565	80/20	1.6565
946591	AF1-323 C	3.4802	80/20	3.4802
958131	AF2-107 C	2.3343	80/20	2.3343
958211	AF2-115 C	0.9744	80/20	0.9744
958501	AF2-144 C	0.6537	80/20	0.6537
958801	AF2-171 C	5.8275	80/20	5.8275
959311	AF2-222 C	5.5650	80/20	5.5650
959531	**AF2-244 C (Withdrawn : 01/06/2021)**	**0.6024**	**80/20**	**0.6024**
960111	AF2-302 C	1.2655	80/20	1.2655
961061	AF2-397 C	12.9886	80/20	12.9886
961101	AF2-401 C	-0.3410	Adder	-0.4
961791	AG1-021 C	0.7795	80/20	0.7795
961801	AG1-022 C	1.2655	80/20	1.2655
961891	AG1-030 C	5.5053	80/20	5.5053
962041	AG1-048 C	4.8720	80/20	4.8720
962741	AG1-123 C O1	2.5773	80/20	2.5773
962751	AG1-124 C O1	3.2931	80/20	3.2931
962881	AG1-137 C	4.4140	80/20	4.4140
963021	AG1-151 O1	9.0440	80/20	9.0440
963171	AG1-166 C	0.7795	80/20	0.7795
963181	AG1-167 C	0.7795	80/20	0.7795
963191	AG1-168 C	0.7795	80/20	0.7795
963201	AG1-169 C	0.7795	80/20	0.7795
963211	AG1-170 C	0.7795	80/20	0.7795
963271	AG1-176 C O1	5.0384	80/20	5.0384
963321	AG1-181 C O1	5.2820	80/20	5.2820
963361	AG1-185 O1	2.5555	80/20	2.5555
963461	AG1-195	16.2225	80/20	16.2225
963471	AG1-196 O1	19.3395	80/20	19.3395
963631	AG1-214 C	0.8796	80/20	0.8796
963641	AG1-215 C	0.3638	80/20	0.3638
964111	AG1-272 C	0.8341	80/20	0.8341
964121	AG1-273 C	0.8341	80/20	0.8341
964131	AG1-274 C	0.8341	80/20	0.8341
964231	AG1-284 C O1	5.6297	80/20	5.6297
964621	AG1-325 C O1	3.6174	80/20	3.6174
964821	AG1-345 C	0.3112	80/20	0.3112
964831	AG1-346 C	0.8315	80/20	0.8315
964841	AG1-347 C	3.1567	80/20	3.1567
965191	AG1-384 C	0.8341	80/20	0.8341

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
965281	AG1-393 C	0.7795	80/20	0.7795
965531	AG1-421 C	13.8936	80/20	13.8936
965541	AG1-422	5.7890	80/20	5.7890
965581	AG1-426	2.2612	80/20	2.2612
965641	AG1-432 C O1	9.5196	80/20	9.5196
965831	AG1-451	1.5866	80/20	1.5866
966251	AG1-494 C	1.2116	80/20	1.2116
966671	AG1-537 C	4.4522	80/20	4.4522
966791	AG1-550 O1	6.7130	80/20	6.7130
966851	AG1-556	10.3250	80/20	10.3250
966861	**AG1-557 C O1 (Withdrawn : 12/14/2020)**	**0.9520**	**80/20**	**0.9520**
WEC	WEC	0.5226	Confirmed LTF	0.5226
LGEE	LGEE	1.1316	Confirmed LTF	1.1316
CPLE	CPLE	1.6557	Confirmed LTF	1.6557
CBM-W2	CBM-W2	17.7408	Confirmed LTF	17.7408
NY	NY	0.7770	Confirmed LTF	0.7770
TVA	TVA	3.0856	Confirmed LTF	3.0856
SIGE	SIGE	0.3628	Confirmed LTF	0.3628
CBM-S2	CBM-S2	26.2253	Confirmed LTF	26.2253
CBM-S1	CBM-S1	0.8098	Confirmed LTF	0.8098
MEC	MEC	2.8221	Confirmed LTF	2.8221
LAGN	LAGN	3.7188	Confirmed LTF	3.7188
CBM-W1	CBM-W1	22.0114	Confirmed LTF	22.0114

11.7 Queue Dependencies

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

Queue Number	Project Name	Status
AA1-038	Lexington-Low Moor 230kV	Engineering and Procurement
AC1-036	Twittys Creek 34.5kV	Partially in Service - Under Construction
AC1-076	Locust Grove-Paytes 115kV	Engineering and Procurement
AC1-116	Mount Eagle 34.5kV	Engineering and Procurement
AC1-120	Mitchell-Mountain Run 115kV	Engineering and Procurement
AC1-121	Mitchell-Mountain Run 115kV	Engineering and Procurement
AC1-143	Brandy-Remington 115kV	Engineering and Procurement
AC2-071	Buckingham 35kV	Engineering and Procurement
AC2-074	Mt. Jackson 35kV	Engineering and Procurement
AC2-112	Stuarts Draft-Waynesboro 115kV	Engineering and Procurement
AC2-165	Bremo-Powhatan 230kV	Engineering and Procurement
AD1-085	North Shenandoah-Stanley 34.5 kV	Engineering and Procurement
AD1-088	Briery-Clover 230 kV	Active
AD1-157	South Creek 34.5 kV	Engineering and Procurement
AD1-161	Stonewall-Long Mountain 69 kV	Active
AD2-033	Chase City-Lunenburg 115 kV	Active
AE1-056	Red House-South Creek 115 kV	Active
AE1-075	Powhatan 34.5 kV	Engineering and Procurement
AE1-084	Barterbrook-Stuarts Draft 115 kV	Active
AE1-098	Endless Caverns 34.5 kV	Engineering and Procurement
AE1-099	Endless Caverns 34.kV	Engineering and Procurement
AE1-108	Bremo-Scottsville 138 kV	Active
AE1-154	Louisa-South Anna 230 kV	Engineering and Procurement
AE2-029	Grottoes-Merck 115kV	Active
AE2-092	Kidds Store-Sherwood 115 kV	Active
AE2-182	Briery-Clover 230 kV	Active
AE2-259	Curdsville-Willis Mtn 115 kV	Active
AF1-028	Endless Caverns 115 kV	Active
AF1-075	Harrisburg-Endless Caverns 230 kV	Active
AF1-293	Kidds Store-Fort Union 115 kV	Active
AF1-294	Jetersville-Ponton 115 kV	Active
AF1-323	Scottsville-Colleen 138 kV	Active
AF2-107	Clifford 138 kV	Active
AF2-115	Jetersville-Ponton 115 kV	Active
AF2-144	Powhatan 34.5 kV	Active
AF2-171	Madisonville 115 kV	Active
AF2-222	Madisonville DP-Twitty's Creek 115 kV	Active
AF2-244	Powhatan 34.5 kV	Withdrawn
AF2-302	Scottsville-Colleen 138 kV	Active
AF2-397	Fork Union-Mt. Eagle 230 kV	Active
AF2-401	Culpeper 34.5 kV	Engineering and Procurement
AG1-021	Jetersville-Ponton 115 kV	Active
AG1-022	Scottsville-Colleen 138 kV	Active

Queue Number	Project Name	Status
AG1-030	Victoria DP-Martin DP 115 kV	Active
AG1-048	Jetersville-Ponton 115 kV	Active
AG1-123	Amherst-Riverville138 kV	Active
AG1-124	Gladstone 138 kV	Active
AG1-137	Harrisonburg 230 kV	Active
AG1-151	Endless Caverns 115 kV	Active
AG1-166	Lone Pine 115 kV	Active
AG1-167	Lone Pine 115 kV	Active
AG1-168	Lone Pine 115 kV	Active
AG1-169	Lone Pine 115 kV	Active
AG1-170	Lone Pine 115 kV	Active
AG1-176	Briery-Clover 230 kV	Active
AG1-181	Pamplin-Chase City 115 kV	Active
AG1-185	Pamplin-Chase City 115 kV	Active
AG1-195	Valley 230 kV	Active
AG1-196	Grottoes-Dooms 230 kV	Active
AG1-214	Grottoes 12.5 kV	Active
AG1-215	Fort Pickett 13.2 kV	Active
AG1-272	Twitty's Creek 115 kV	Active
AG1-273	Twitty's Creek 115 kV	Active
AG1-274	Twitty's Creek 115 kV	Active
AG1-284	Bremo-Cunningham DP 115 kV	Active
AG1-325	Barterbrook-Stuarts Draft 115 kV	Active
AG1-345	Crewe 12.5 kV	Active
AG1-346	Mount Jackson DP 115 kV	Active
AG1-347	Briery DP-Clover 230 kV	Active
AG1-384	Twitty's Creek 115 kV	Active
AG1-393	Fort Pickett DP 34.5 kV	Active
AG1-421	Lexington-Dooms 230 kV	Active
AG1-422	Lexington-Dooms 230 kV	Active
AG1-426	Bremo-Scottsville 138 kV	Active
AG1-432	Curdsville DP-Willis Mt. 115 kV	Active
AG1-451	Curdsville DP-Willis Mt. 115 kV	Active
AG1-494	Boxwood-Riverville 138 kV	Active
AG1-537	Barterbrook-Stuarts Draft 115 kV	Active
AG1-550	Mount Eagle-Fork Union 230 kV	Active
AG1-556	Lexington 115 kV	Active
AG1-557	Curdsville DP 115 kV	Withdrawn
Z2-039	PF Hydro	In Service

11.8 Contingency Descriptions

Contingency Name	Contingency Definition
DVP_P1-2: LN 550	CONTINGENCY 'DVP_P1-2: LN 550' OPEN BRANCH FROM BUS 314917 TO BUS 314926 CKT 1 /* 8MT STM 500.00 - 8VALLEY 500.00 END

12 Short Circuit Analysis

The following Breakers are overdutied:

None

13 Affected Systems

None

14 Attachment 1: One Line Diagram