Generation Interconnection

System Impact Study Report

for

Queue Project AG1-031

ELK RUN D.P.-GAINESVILLE 230 KV

8.4 MW Capacity / 20 MW Energy

August 2021

Table of Contents

1 Introduction

This System Impact Study has been prepared in accordance with the PJM Open Access Transmission Tariff, 205, as well as the System Impact 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 System Impact Study is to determine a plan, with approximate cost and construction time estimates, to connect the subject generation interconnection project to the PJM network at a location specified by the Interconnection Customer. As a requirement for interconnection, the Interconnection Customer may be responsible for the cost of constructing: Network Upgrades, which are facility additions, or upgrades to existing facilities, that are needed to maintain the reliability of the PJM system. All facilities required for interconnection of a generation interconnection project must be designed to meet the technical specifications (on PJM web site) for the appropriate transmission owner.

In some instances an Interconnection Customer may not be responsible for 100% of the identified network upgrade cost because other transmission network uses, e.g. another generation interconnection or merchant transmission upgrade, may also contribute to the need for the same network reinforcement. 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 System Impact Study is performed.

The System Impact 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.

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.

3 General

The Interconnection Customer (IC) has proposed an uprate to a planned Solar generating facility located in Fauquier, Virginia. This project is an increase to the Interconnection Customer's AE2-190 project, which will share the same point of interconnection. The AG1-031 queue position is a 20 MW uprate (8.4 MW Capacity uprate) to the previous project. The total installed facilities will have a capability of 90 MW with 35.42 MW of this output being recognized by PJM as Capacity. The proposed in-service date for this uprate project is November 30, 2021. This study does not imply a TO commitment to this in-service date.

Queue Number	AG1-031
Project Name	ELK RUN D.P.-GAINESVILLE 230 KV
State	Virginia
County	Fauquier
Transmission Owner	Dominion
MFO	90
MWE	20
MWC	8.4
Fuel	Solar
Basecase Study Year	2024

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

4 Point of Interconnection

AG1-031 "Elk Run D.P.-Gainesville 230 kV" will interconnect with the Dominion transmission system as an uprate to AE2-190, 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 AE2-190 project being built. Should the AE2-190 project withdraw from the Interconnection Queue, the AG1-031 project will assume the Attachment, Direct Connection, and Non-Direct Connection costs identified in the AE2-190 study report for connection to the Dominion system.

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

5 Cost Summary

The AG1-031 project will be responsible for the following costs:

Description	Total Cost
Total Physical Interconnection Costs	$0
Allocation towards System Network Upgrade Costs (PJM Identified - Summer Peak)*	$1,878,027
Total Costs	**$1,878,027**

*As your project progresses through the study process and other projects modify their request or withdraw, then your cost allocation could change.

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 that the Federal Income Tax Gross charge is required, the Transmission Owner shall be reimbursed by the Interconnection Customer for such taxes.

Note 1: PJM Open Access Transmission Tariff (OATT) section 217.3A outline cost allocation rules. The rules are further clarified in PJM Manual 14A Attachment B. The allocation of costs for a network upgrade will start with the first Queue project to cause the need for the upgrade. Later queue projects will receive cost allocation contingent on their contribution to the violation and are allocated to the queues that have not closed less than 5 years following the execution of the first Interconnection Service Agreement which identifies the need for this upgrade.

Note 2: For customers with System Reinforcements listed: If your present cost allocation to a System Reinforcement indicates $0, then please be aware that as changes to the interconnection process occur, such as prior queued projects withdrawing from the queue, reducing in size, etc, the cost responsibilities can change and a cost allocation may be assigned to your project. In addition, although your present cost allocation to a System Reinforcement is presently $0, your project may need this system reinforcement completed to be deliverable to the PJM system. If your project comes into service prior to completion of the system reinforcement, an interim deliverability study for your project will be required.

6 Transmission Owner Scope of Work

The required Attachment Facilities, Direct Connection and Non-Direct Connection work for the interconnection of AG1-031 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

AG1-031 "Elk Run D.P.-Gainesville 230 kV" will interconnect with the Dominion transmission system as an uprate to AE2-190, sharing the POI and Attachment Facilities.

As AG1-031 is sharing the POI and Attachment Facilities with AE2-190, there are no associated interconnection costs for this project. Should the AE2-190 project withdraw from the Interconnection Queue,the AG1-031 project will assume the Attachment, Direct Connection, and Non-Direct Connection costs identified in the AE2-190 study report for connection to the Dominion system.

It is estimated to take 24-30 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

Based on the scope of work for the interconnection facilities, it is expected to take a minimum of 24-30 months after the signing of an Interconnection Construction Service Agreement (or "Interconnection Agreement" if non-FERC) and construction kickoff call to complete the installation of the physical connection work. 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 interconnection work, and that all system outages will be allowed when requested.

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

8 Transmission Owner Analysis

Dominion assessed the impact of the proposed AG1-031 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

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

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

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 Analysis

The Queue Project AG1-031 was evaluated as a 20.0 MW (Capacity 8.40 MW) injection as an uprate to AE2-190 which is tapping the Elk Run to Gainesville 230 kV line in the Dominion area. Project AG1-031 was evaluated for compliance with applicable reliability planning criteria (PJM, NERC, NERC Regional Reliability Councils, and Transmission Owners). Project AG1-031 was studied with a commercial probability of 100.0 %. 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
163079076	941850	AE2-190 TAP	230.0	DVP	314037	6GAINSVL	230.0	DVP	1	DVP_P7-1: LN 2039-2040	tower	1204.0	108.73	109.69	AC	13.16

11.4 Steady-State Voltage Requirements

To be determined

11.5 Potential Congestion due to Local Energy Deliverability

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

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

ID	FROM BUS#	FROM BUS	kV	FROM BUS AREA	TO BUS#	TO BUS	kV	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC|DC	MW IMPACT
168308656	314085	6REMNGCT	230.0	DVP	314099	6GI1MRUN	230.0	DVP	1	DVP_P1-2: LN 2114-B	operation	571.5	81.08	82.59	AC	8.81

11.6 System Reinforcements

ID	Idx	Facility	Upgrade Description	Cost	Cost Allocated to AG1-031	Upgrade Number
163079076,163079078	1	AE2-190 TAP 230.0 kV - 6GAINSVL 230.0 kV Ckt 1	**DVP** Project ID: n6322 (dom-192) Description: Reconductor 20.4 miles of 230 kV Line 2114 from AE2-190 Tap to Gainsville with 795 ACSR. Type : FAC Total Cost : $16,320,000 Time Estimate : 36-42 Months Ratings : 1225.0/1225.0/1409.0 Queue | MW | Cost % | Cost $ AE2-190 | 19.04 | 18.81% | $2,717,146 AF1-301 | 17.45 | 17.24% | $2,490,241 AF2-040 | 49.34 | 48.75% | $7,041,175 AF2-063 | 15.37 | 15.19% | $2,193,410 AG1-031 | 13.16 | 11.51% | $1,878,027	$16,320,000	$1,878,027	n6322
			TOTAL COST	**$16,320,000**	**$1,878,027**	

Note : For customers with System Reinforcements listed: If your present cost allocation to a System Reinforcement indicates $0, then please be aware that as changes to the interconnection process occur, such as prior queued projects withdrawing from the queue, reducing in size, etc, the cost responsibilities can change and a cost allocation may be assigned to your project. In addition, although your present cost allocation to a System Reinforcement is presently $0, your project may need this system reinforcement completed to be deliverable to the PJM system. If your project comes into service prior to completion of the system reinforcement, an interim deliverability study for your project will be required.

11.7 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".

11.7.1 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
163079076	941850	AE2-190 TAP	DVP	314037	6GAINSVL	DVP	1	DVP_P7-1: LN 2039-2040	tower	1204.0	108.73	109.69	AC	13.16

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
315021	1REMNGT1	14.89	80|50	14.89
315022	1REMNGT2	15.09	80|50	15.09
315023	1REMNGT3	15.14	80|50	15.14
315024	1REMNGT4	15.09	80|50	15.09
315030	1M RUN C	16.02	80|50	16.02
923892	AB2-029 E	5.69	Adder	6.69
925022	AB2-158 E	3.26	Adder	3.84
925671	**AC1-043 C (Suspended)**	**10.68**	**Adder**	**12.56**
925672	**AC1-043 E (Suspended)**	**17.43**	**Adder**	**20.51**
926001	AC1-076 C	3.25	Adder	3.82
926002	AC1-076 E	5.28	Adder	6.21
926481	**AC1-120 C O1 (Suspended)**	**8.18**	**Adder**	**9.62**
926482	**AC1-120 E O1 (Suspended)**	**4.22**	**Adder**	**4.96**
926501	**AC1-121 C O1 (Suspended)**	**2.81**	**Adder**	**3.31**
926502	**AC1-121 E O1 (Suspended)**	**1.32**	**Adder**	**1.55**
926611	AC1-143 C O1	17.65	Adder	20.76
926612	AC1-143 E O1	8.05	Adder	9.47

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
934861	AD1-115 C	5.34	Adder	6.28
934862	AD1-115 E	8.71	Adder	10.25
939225	AE1-153 C	34.66	Adder	40.78
939226	AE1-153 E	23.37	Adder	27.49
939231	AE1-154 C	1.2	Adder	1.41
939232	AE1-154 E	0.84	Adder	0.99
941361	AE2-132	1.76	80|50	1.76
941381	AE2-134	2.24	Adder	2.64
941851	AE2-190 C	17.77	80|50	17.77
941852	AE2-190 E	28.27	80|50	28.27
944111	AF1-079 C	2.28	Adder	2.68
944112	AF1-079 E	3.1	Adder	3.65
946371	AF1-301 C	8.88	Adder	10.45
946372	AF1-301 E	5.96	Adder	7.01
957431	AF2-037 C	4.9	Adder	5.76
957432	AF2-037 E	3.26	Adder	3.84
957461	AF2-040	49.33	80|50	49.33
957691	AF2-063 C	7.81	Adder	9.19
957692	AF2-063 E	5.21	Adder	6.13
961101	AF2-401 C	1.15	Adder	1.35
961102	AF2-401 E	1.91	Adder	2.25
961901	AG1-031 C	5.53	80|50	5.53
961902	AG1-031 E	7.63	80|50	7.63
963031	AG1-152 C	24.24	80|50	24.24
963032	AG1-152 E	36.36	80|50	36.36
964811	**AG1-344 C (Withdrawn : 06/10/2021)**	**3.95**	**Adder**	**4.65**
964812	**AG1-344 E (Withdrawn : 06/10/2021)**	**2.63**	**Adder**	**3.09**
965971	AG1-466 C	1.64	Adder	1.93
965972	AG1-466 E	1.1	Adder	1.29
965981	AG1-467 C	1.81	Adder	2.13
965982	AG1-467 E	1.21	Adder	1.42
966001	AG1-469 C	1.81	Adder	2.13
966002	AG1-469 E	1.2	Adder	1.41
966331	AG1-502 C	9.61	Adder	11.31
966332	AG1-502 E	6.41	Adder	7.54
966341	AG1-503 C	2.4	Adder	2.82
966342	AG1-503 E	1.6	Adder	1.88
966501	AG1-519 C	2.17	Adder	2.55
966502	AG1-519 E	1.45	Adder	1.71
966681	AG1-538 C	12.46	Adder	14.66
966682	AG1-538 E	16.75	Adder	19.71
LTFEXP_AA2-074	LTFEXP_AA2-074->LTFIMP_AA2-074	0.4816	Confirmed LTF	0.4816
LTFEXP_CBM-S1	LTFEXP_CBM-S1->LTFIMP_CBM-S1	0.1859	LTF/CBM	0.1859
LTFEXP_CBM-S2	LTFEXP_CBM-S2->LTFIMP_CBM-S2	9.6083	LTF/CBM	9.6083
LTFEXP_CBM-W1	LTFEXP_CBM-W1->LTFIMP_CBM-W1	2.9136	LTF/CBM	2.9136
LTFEXP_CBM-W2	LTFEXP_CBM-W2->LTFIMP_CBM-W2	3.7691	LTF/CBM	3.7691

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
LTFEXP_CPLE	LTFEXP_CPLE->LTFIMP_CPLE	0.7292	Confirmed LTF	0.7292
LTFEXP_G-007	LTFEXP_G-007->LTFIMP_G-007	1.6016	LTF/CMTX NF	1.6016
LTFEXP_LAGN	LTFEXP_LAGN->LTFIMP_LAGN	0.8924	Confirmed LTF	0.8924
LTFEXP_LGE-0012019	LTFEXP_LGE-0012019->LTFIMP_LGE-0012019	0.0673	Confirmed LTF	0.0673
LTFEXP_LGEE	LTFEXP_LGEE->LTFIMP_LGEE	0.1824	Confirmed LTF	0.1824
LTFEXP_MEC	LTFEXP_MEC->LTFIMP_MEC	0.4883	Confirmed LTF	0.4883
LTFEXP_NY	LTFEXP_NY->LTFIMP_NY	0.7468	Confirmed LTF	0.7468
LTFEXP_O-066	LTFEXP_O-066->LTFIMP_O-066	10.198	LTF/CMTX NF	10.198
LTFEXP_SIGE	LTFEXP_SIGE->LTFIMP_SIGE	0.0316	Confirmed LTF	0.0316
LTFEXP_TVA	LTFEXP_TVA->LTFIMP_TVA	0.7466	Confirmed LTF	0.7466
LTFEXP_WEC	LTFEXP_WEC->LTFIMP_WEC	0.0771	Confirmed LTF	0.0771

11.8 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
AA2-074	CPLE-PJM	Confirmed
AB2-029	Remington 34.5kV	In Service
AB2-158	Louisa-South Anna 230kV	Partially in Service - Under Construction
AC1-043	Mountain Run-Mitchell 115 kV	Suspended
AC1-076	Locust Grove-Paytes 115kV	Engineering and Procurement
AC1-120	Mitchell-Mountain Run 115kV	Suspended
AC1-121	Mitchell-Mountain Run 115kV	Suspended
AC1-143	Brandy-Remington 115kV	Engineering and Procurement
AD1-115	Mountain Run-Mitchell 115 kV	Active
AE1-153	Remington-Gordonsville 230 kV	Active
AE1-154	Louisa-South Anna 230 kV	Engineering and Procurement
AE2-132	Remington CT 230 kV	In Service
AE2-134	Locust Grove-Paytes 115 kV	Engineering and Procurement
AE2-190	Elk Run D.P.-Gainesville 230 kV	Active
AF1-079	Louisa-South Anna 230 kV	Active
AF1-301	Louisa-South Anna 230 kV	Active
AF2-037	Louisa-North Anna 230 kV	Active
AF2-040	Elk Run-Gainesville 230 kV	Active
AF2-063	Louisa-North Anna 230 kV	Active
AF2-401	Culpeper 34.5 kV	Engineering and Procurement
AG1-031	Elk Run D.P.-Gainesville 230 kV	Active
AG1-152	Remington CT 230 kV	Active
AG1-344	Culpeper 34.5 kV	Withdrawn
AG1-466	Orange 34.5 kV	Active
AG1-467	Somerset 34.5 kV	Active
AG1-469	Gordonsville 34.5 kV	Active
AG1-502	Oak Green 115 kV	Active
AG1-503	Oak Green 115 kV	Active
AG1-519	Cash's Corner 230 kV	Active
AG1-538	Remington-Gordonsville 230 kV	Active

11.9 Contingency Descriptions

Contingency Name	Contingency Definition
DVP_P7-1: LN 280-299	CONTINGENCY 'DVP_P7-1: LN 280-299' /* . OPEN BRANCH FROM BUS 314080 TO BUS 314099 CKT 1 /* 6REMNGTN 230.00 - 6GI1MRUN 230.00 OPEN BRANCH FROM BUS 314085 TO BUS 314099 CKT 1 /* 6REMNGCT 230.00 - 6GI1MRUN 230.00 END
DVP_P1-2: LN 2114-B	CONTINGENCY 'DVP_P1-2: LN 2114-B' OPEN BRANCH FROM BUS 314037 TO BUS 941850 CKT 1 /* 6GAINSVL 230.00 - AE2-190 TAP 230.00 END
DVP_P7-1: LN 2039-2040	CONTINGENCY 'DVP_P7-1: LN 2039-2040' /* . OPEN BRANCH FROM BUS 314063 TO BUS 314099 CKT 1 /* 6MORRSVL 230.00 - 6GI1MRUN 230.00 OPEN BRANCH FROM BUS 314063 TO BUS 314099 CKT 2 /* 6MORRSVL 230.00 - 6GI1MRUN 230.00 END

12 Light Load Analysis

Not required for solar facility.

13 Short Circuit Analysis

None found to be overdutied.

13.1 System Reinforcements - Short Circuit

No reinforcements required.

14 Stability and Reactive Power

Stability study required. Results to be determined in the Facilities Study Phase.

15 Affected Systems

None

16 Attachment 1: One Line Diagram