



**NORTH CAROLINA
PUBLIC STAFF
UTILITIES COMMISSION**

November 16, 2020

Ms. Kimberley A. Campbell, Chief Clerk
North Carolina Utilities Commission
4325 Mail Service Center
Raleigh, North Carolina 27699-4300

Re: Docket No. EMP-110, Sub 0 – CPCN for 120MW Located on Woodard Rd. Near Morning Rd. on its Western Side and Middle Tract Rd. to the East in Bertie County

Dear Ms. Campbell:

In connection with the above-referenced docket, I transmit herewith for filing on behalf of the Public Staff the supplemental testimony and exhibit of Evan D. Lawrence, Utilities Engineer, Electric Section, Energy Division.

By copy of this letter, I am forwarding a copy to all parties of record by electronic delivery.

Sincerely,

/s/ Layla Cummings
Staff Attorney
layla.cummings@psncuc.nc.gov

Attachments

Executive Director
(919) 733-2435

Accounting
(919) 733-4279

Consumer Services
(919) 733-9277

Economic Research
(919) 733-2267

Energy
(919) 733-2267

Legal
(919) 733-6110

Transportation
(919) 733-7766

Water/Telephone
(919) 733-5610

BEFORE THE NORTH CAROLINA UTILITIES COMMISSION

DOCKET NO. EMP-110, SUB 0

In the Matter of
Application of Sumac Solar LLC for a)
Certificate of Public Convenience and)
Necessity to Construct a 120-MW Solar)
Facility in Bertie County, North Carolina) PUBLIC STAFF – NORTH
) CAROLINA UTILITIES
) COMMISSION

BEFORE THE NORTH CAROLINA UTILITIES COMMISSION

DOCKET NO. EMP-110, SUB 0

Testimony of Evan D. Lawrence

On Behalf of the Public Staff

North Carolina Utilities Commission

November 16, 2020

1 **Q. PLEASE STATE YOUR NAME AND ADDRESS FOR THE**
2 **RECORD.**

3 A. My name is Evan D. Lawrence. My business address is 430 North
4 Salisbury Street, Raleigh, North Carolina.

5 **Q. BRIEFLY STATE YOUR QUALIFICATIONS AND DUTIES.**

6 A. My qualifications and duties are included in Appendix A.

7 **Q. WHAT IS YOUR POSITION WITH THE PUBLIC STAFF?**

8 A. I am an engineer with the Electric Section – Operations and Planning
9 in the Public Staff's Energy Division.

10 **Q. PLEASE PROVIDE A BRIEF HISTORY OF THE APPLICATION.**

11 A. On April 16, 2020, Sumac Solar LLC (Sumac or Applicant) filed for a
12 certificate of public convenience and necessity (CPCN) to construct a
13 120-megawatt AC (MW_{AC}) solar photovoltaic electric generating

1 facility in Bertie County, North Carolina (the Facility). The application
2 included the testimony of the Applicant's witness, Kara Price. On May
3 12, 2020, the Applicant's other witness, Donna Robichaud, filed
4 direct testimony in response to the Commission's April 28, 2020
5 *Order Requiring Filing of Testimony, Establishing Procedural*
6 *Guidelines, and Requiring Public Notice*, which directed the
7 Applicant to file additional testimony addressing the amount of
8 network upgrades on Dominion Energy North Carolina's (DENC's) or
9 any affected system's transmission system, if any, required to
10 accommodate the operation of the Applicant's proposed facility.

11 On May 29, 2020, I filed direct testimony in this docket. In my
12 testimony, I stated that the Applicant had allayed the Public Staff's
13 concerns regarding the potential for significant upgrade costs that
14 could ultimately be borne by the using and consuming public, but that
15 if this potential arises in the future the Public Staff would re-evaluate
16 its position on the issue.

17 On June 22, 2020, the Commission issued an *Order Cancelling*
18 *Expert Witness Hearing and Requiring Additional Testimony* (June
19 22 Order). This order stated:

20 The Presiding Commissioner notes that the
21 Commission has seen an increase in the number of
22 merchant plant facility applications. Due to the increase
23 in non-utility generation on the North Carolina system
24 and the Commission's statutory duty to examine the

1 long-range needs for the generation of electricity in
2 North Carolina, the Presiding Commissioner finds good
3 cause to require the filing of additional testimony and
4 exhibits in this proceeding addressing the following
5 questions:

6 1) Provide the Levelized Cost of Transmission
7 (LCOT) information for any required transmission
8 system upgrades or modifications.

9 2) Provide any interconnection study received for
10 the proposed facility. If you have not received a study,
11 provide a date by when the study is expected to be
12 completed.

13 3) Are you aware of any system other than the
14 studied system that is or will be affected by the
15 interconnection? If yes, explain the impact and basis.

16 4) If the Applicant proposes to sell energy and
17 capacity from the facility to a distribution utility
18 regulated by the Commission, provide a discussion of
19 how the facility's output conforms to or varies from the
20 regulated utility's most recent IRP.

21 5) If the Applicant proposes to sell energy and
22 capacity from the facility to a distribution utility not
23 regulated by the Commission but serving retail
24 customers in North Carolina (e.g., a co-op or muni),
25 provide a discussion of how the facility's output
26 conforms to or varies from the purchasing distribution
27 utility's long-range resource plan.

28 6) If the Applicant proposes to sell energy and
29 capacity from the facility to a purchaser who is subject
30 to a statutory or regulatory mandate with respect to its
31 energy sourcing (e.g., a REPS requirement or
32 Virginia's new statutory mandate for renewables),
33 explain how, if at all, the facility will assist or enable
34 compliance with that mandate. Provide any contracts
35 that support that compliance.

1 7) Provide any PPA agreements, REC sale
2 contracts, or contracts for compensation for
3 environmental attributes for the output of the facility.

4 On August 12, 2020, witness Robichaud filed supplemental
5 testimony responding to the June 22 Order.

6 On October 15, 2020, the Applicant filed a letter informing the
7 Commission of the sale of the Facility to EDF Renewables
8 Development, Inc. (EDF Renewables), and indicating that the
9 Applicant would provide supplemental testimony regarding EDF and
10 notify the Commission of any changes to the contents of the
11 application resulting from the sale. On November 16, 2020, the
12 Applicant filed a supplemental application and the direct testimony of
13 Emily Dalager, Project Development Manager with EDF. The Public
14 Staff has reviewed the supplemental application and testimony of
15 witness Dalager and does not take issue with either filing.

16 **Q. WHAT IS THE PURPOSE OF YOUR SUPPLEMENTAL**
17 **TESTIMONY IN THIS PROCEEDING?**

18 A. The purpose of my supplemental testimony is to make additional
19 recommendations to the Commission on Sumac's application based
20 on new information regarding the cost of transmission upgrades, the
21 supplemental testimony filed by witness Robichaud on August 12,
22 2020, and the comments and reply comments in the proceeding

1 established by the Commission in Docket No. E-100, Sub 170 (Sub
2 170 Proceeding).

3 **Q. PLEASE DESCRIBE THE PLANNED INTERCONNECTION OF**
4 **THE FACILITY.**

5 A. The Facility will interconnect to the Cashie-Trowbridge 230 kilovolt
6 (kV) transmission line owned by Virginia Electric and Power
7 Company, d/b/a DENC. Since DENC is part of PJM Interconnection
8 (PJM), the Applicant is required to enter into an interconnection
9 service agreement with both entities. The Facility has PJM queue
10 number AD1-022/AD1-023. AD1-022 represents 80 MW of capacity,
11 and AD1-023 represents 40 MW of capacity.

12 **LCOT Analysis for Network Upgrades**

13 **Q. HAVE YOU REVIEWED THE LCOT ANALYSIS FOR NETWORK**
14 **UPGRADES PROVIDED BY WITNESS ROBICHAUD?**

15 A. Yes. In her supplemental testimony filed on August 12, 2020, witness
16 Robichaud provided an LCOT analysis for the network upgrades
17 based on the Facility's December 2019 System Impact Study (SIS),
18 as well as alternative LCOT analyses based on updated information
19 provided in interconnection reports for other facilities, and taking into
20 consideration projects that have withdrawn from the PJM queue.
21 Witness Robichaud noted that it is not possible to prepare a definitive
22 LCOT analysis at this time because a project's SIS might not reveal

1 the final network upgrade costs for that project. The final costs will
2 not be known until PJM executes the Interconnection Services
3 Agreement (ISA), which is scheduled for release for the Facility on
4 April 30, 2021. Witness Robichaud did state, however, that under
5 either of her evaluations, the final network upgrade costs would not
6 be reimbursed by ratepayers.

7 Using cost information from other related projects in the PJM queue,
8 witness Robichaud evaluated the LCOT under multiple different
9 scenarios. For the DENC specific upgrades, she calculated an LCOT
10 of \$5.57/MWh for Scenario 1, and under Scenario 2, she calculated
11 an LCOT of \$0.49/MWh. Scenario 1 used the information provided
12 in the SIS provided to Sumac Solar, while Scenario 2 used
13 information provided in the SIS for project queue number AE2-147.

14 **Q. DID WITNESS ROBICHAUD PROVIDE AN LCOT ANALYSIS FOR**
15 **ANY AFFECTED SYSTEM UPGRADES IN HER SUPPLEMENTAL**
16 **TESTIMONY?**

17 A. Yes, to a limited extent and based on the current information
18 available. PJM has determined that generation by the Facility has the
19 potential to affect three transmission lines owned by Duke Energy
20 Progress, LLC (DEP): the Rocky Mount-Battleboro 115 kV line, the
21 Everetts-Greenville 230 kV line, and the Rocky Mount-Hathaway 230
22 kV line. DEP completed an affected system study for its Rocky

1 Mount-Battleboro line in May 2020 for PJM cluster AC1 (DEP AC1
2 Report), but this report does not include upgrades needed for PJM
3 cluster AD1. Witness Robichaud stated, however, that the potential
4 effects on the three transmission lines mentioned above might not
5 materialize because some projects will most likely withdraw from the
6 queue. Also, DEP began independent modeling of the transmission
7 system in the spring of 2020, which could provide different results.
8 Previously, DEP relied on PJM's planning assumptions.

9 The only affected system study report currently available for the
10 PJM/DEP interface is the DEP AC1 Report. The total projected cost
11 for upgrade of the Rocky Mount-Battleboro line is \$23,204,593. Most
12 of the cost is required to re-conductor and rebuild 8.5 miles of the
13 line. Witness Robichaud calculated an LCOT of \$0.57/MWh for the
14 Rocky Mount-Battleboro upgrade assuming that several projects in
15 the AC1, AC2, and AD1 clusters are completed. For the Everetts-
16 Greenville 230 kV line, she calculated an LCOT of \$1.37/MWh if just
17 Sumac proceeds. This LCOT decreases to \$0.12/MWh if multiple
18 projects in the AD1, AD2, AE1, and AE2 queue proceed. However,
19 she cautioned that these two LCOTs were based on a cost estimate
20 from a PJM SIS, not from any DEP studies.

1 **Q. DO YOU HAVE ANY CONCERNS ABOUT USE OF THE LCOT?**

2 A. Yes. The Public Staff does not disagree with witness Robichaud's
3 LCOT calculations, but still has some concerns regarding application
4 of the LCOT to network upgrade costs identified in an affected
5 system study that results in costs being borne by another utility's
6 ratepayers who do not see a direct benefit.

7 In her supplemental testimony, witness Robichaud fully explains the
8 tentative nature of her LCOT calculations because many necessary
9 cost estimates for upgrades are not available.

10 On June 11, 2020, the Commission issued an *Order Denying*
11 *Application for a Certificate of Public Convenience and Necessity for*
12 *a Merchant Generating Facility* requested by Friesian Holdings, LLC
13 (Friesian), in Docket No. EMP-105, Sub 0. In that Order, the
14 Commission found that, "The use of the levelized cost of
15 transmission (LCOT) provides a benchmark as to the
16 reasonableness of the transmission network upgrade cost
17 associated with interconnecting a proposed new generating facility."

18 The Public Staff agrees with the Commission; however, an LCOT
19 calculation that only includes the network upgrades required by an
20 affected system to which a generating facility is not directly
21 interconnected would be distorted by the fact that: (1) energy flows
22 occur that provide no direct benefit to DEP customers, (2) network

1 upgrades on the DENC system, whose costs may be borne by the
2 interconnection customer or DENC's customers, may also be
3 required, and (3) the projected need for the Facility and any network
4 upgrades is not driven by DEP.

5 As noted in the concurring opinion by Chair Mitchell to the
6 Commission's September 2, 2020, *Order on Reconsideration* in
7 Docket No. EMP-107, Sub 0, (Halifax Order on Reconsideration), a
8 properly calculated LCOT may be used as a benchmark to consider
9 the overall costs of transmission needed to interconnect a solar
10 facility, but it is just one factor to be considered in determining
11 whether to grant a CPCN to a merchant generating facility:

12 Prior to the Federal Energy Regulatory Commission's
13 open access transmission rule, Order No. 888, and the
14 formation of regional transmission organizations, the
15 Commission would not approve siting of a true
16 merchant plant. When the Commission adopted Rule
17 R8-63 and opened the door for the construction of
18 merchant generating facilities, it was assumed that the
19 developer of a facility would bear all of the financial risk
20 and that no costs would be imposed upon retail
21 ratepayers other than those costs that would flow from
22 the purchase of power from the facility by a utility under
23 least cost principles. When that is still the case, the
24 LCOT analysis is less important. Whatever costs are
25 caused are borne by the developer and recovered
26 through the sale of power, which is bounded either by
27 such least costs principles if in a traditional bilateral
28 wholesale power market such as most of this State or
29 by the market clearing price in a restructured market,
30 such as PJM. When that is not the case, it is the

1 Commission's role and obligation to protect retail
2 ratepayers from unreasonable costs.¹

3 **Q. PLEASE SUMMARIZE THE PUBLIC STAFF'S CONCERNS**
4 **REGARDING THE FACILITY AND OTHER MERCHANT POWER**
5 **FACILITIES IN DENC TERRITORY AND THEIR AFFECT ON DEP.**

6 A. The Public Staff is concerned that (1) the large amount of solar
7 capacity in PJM's North Carolina queue (over 5,000 MW) could
8 trigger many millions of dollars of affected system upgrades that
9 DEP's customers would have to pay for but may not need for reliable
10 electric service; (2) the Virginia Clean Economy Act could lead to
11 more renewable energy facilities in Virginia near DENC territory,
12 which would be above those facilities in the PJM's North Carolina
13 queue, increasing the risk for more affected system upgrades for
14 DEP; (3) DEP could build network upgrades that go unused for
15 extended periods of time if some interconnection projects withdraw
16 from the queue late in the review process; and (4) in order to
17 accommodate future clusters, upgrades to accommodate an earlier
18 cluster may need to be replaced with even greater transmission
19 assets long before the end of their normal service life of 40 to 60

¹ Order on Reconsideration, *Application of Halifax County Solar, LLC, for a Certificate of Public Convenience and Necessity to Construct an 80-MW Solar Facility in Halifax County, North Carolina*, No. EMP-107, Sub 0, at 2 (Mitchell, C., concurring) (N.C.U.C. September 2, 2020).

1 years, thereby resulting in stranded costs that would be borne by
2 DEP's customers.

3 **Q. PLEASE DESCRIBE DEP'S OTHER AFFECTED SYSTEM**
4 **STUDIES.**

5 A. Aside from the DEP AC1 Report, DEP is currently developing 22
6 other affected system studies with a combined capacity of 2,676 MW
7 and had anticipated completing several of them by October 1, 2020.
8 Lawrence Exhibit 1 contains a discovery response in Docket No.
9 EMP-111, Sub 0 from DEP. This response includes a table that lists
10 the studies and their estimated completion dates. As of this date,
11 DEP has not completed any of the studies listed and is not
12 developing affected system studies for the Everetts-Greenville 230
13 kV line or the Rocky Mount-Hathaway 230 kV line.

14 **Q. PLEASE DESCRIBE DEP'S PREVIOUS PROCESS FOR**
15 **AFFECTED SYSTEM REVIEW AND COST RECOVERY.**

16 A. In the past, if one or more generator(s) caused affected system
17 costs, the generator(s) would be responsible for these network
18 upgrade costs, consistent with the Joint Open Access Transmission
19 Tariff of Duke Energy Carolinas, LLC (DEC), Duke Energy Florida,
20 LLC (DEF), and DEP (Duke OATT). However, pursuant to the
21 previous Duke OATT, upon commercial operation, the generator(s)
22 that paid for the network upgrades would be entitled to receive

1 could assist the Commission in determining whether proposed
2 merchant generating facilities triggering significant network upgrade
3 costs or affected system costs are in the public convenience and
4 necessity.

5 **Q. PLEASE SUMMARIZE THE COMMENTS OF DEP AND DEC IN**
6 **THE SUB 170 PROCEEDING.**

7 A. Duke stated on page 3 of their October 7, 2020 response that
8 merchant generators would be responsible for any affected systems
9 upgrade costs:

10 Historically, interconnection customers that were
11 assigned affected system network upgrades in
12 DEP/DEC/DEF were reimbursed after the applicable
13 projects achieved commercial operation pursuant to
14 the terms of the affected system operating agreement.
15 However, DEP and DEC (along with Duke Energy
16 Florida, LLC) implemented a change to its standard
17 affected system operating agreement effective October
18 1, 2020 that eliminated the reimbursement.

19 **Q. PLEASE SUMMARIZE THE COMMENTS OF DENC.**

20 A. DENC also confirmed that the generator would be responsible for
21 any affected systems upgrade costs, consistent with how it has
22 treated those costs historically.

23 **Q. PLEASE SUMMARIZE THE PUBLIC STAFF'S REPLY**
24 **COMMENTS IN THE SUB 170 PROCEEDING.**

1 A. As stated in the Public Staff's reply comments, the recent change to
2 Duke's affected systems studies process addresses a key concern
3 raised by the Public Staff in recent merchant generator CPCN
4 proceedings that affected system upgrade costs could be passed on
5 to a utility's customers who were not causing or contributing to the
6 need for the upgrade. Thus, the Public Staff is supportive of the
7 proposed revisions. This change also brings Duke's costs
8 responsibility and cost allocation procedures for affected systems in
9 alignment with those of DENC.

10 Also in its Sub 170 comments, the Public Staff recommended that,
11 going forward, the Commission should condition any CPCN approval
12 for a merchant facility that includes potential affected system
13 Network Upgrade costs to require the Applicant to file a copy of an
14 executed Affected Systems Operating Agreement (ASOA) with the
15 Commission at the same time such filing is made at FERC (at least
16 61 days prior to commencing construction on the upgrades). The
17 Public Staff also recommended that the CPCN applicant file a
18 verified statement acknowledging that under Duke's Affected
19 Systems Business Procedure and PJM's OATT, the Interconnection
20 Customer is responsible for all affected system Network Upgrade
21 costs without reimbursement.

1 **Q. DOES THE PUBLIC STAFF HAVE ANY COMMENTS ON THE**
2 **OTHER PARTIES' REPLY COMMENTS FILED IN THE SUB 170**
3 **PROCEEDING AS THEY APPLY TO THIS APPLICATION?**

4 A. In its joint reply comments, NCCEBA-NCSEA stated that Duke's
5 policy change to deny reimbursement for FERC-jurisdictional
6 network upgrade costs is a "sweeping policy change" and "it is far
7 from clear that Duke may do so without FERC approval." (NCCEBA-
8 NCSEA Reply Comments, p. 5.)

9 Geenex, a co-developer of this facility and the Sweetleaf Solar LLC,
10 facility proposed in Docket No. EMP-111, Sub 0, similarly stated in
11 its reply comments that "Duke's elimination of cost reimbursement
12 for Affected System Upgrades is a substantial change in policy."
13 (Geenex Reply Comments, p 19.) Geenex further stated that,
14 because the policy is new, it has not had the opportunity to assess
15 whether it must be approved by FERC or whether it is consistent with
16 FERC requirements. (Id. at 3, n.1.)

17 The Public Staff agrees that, if the new policy were challenged at
18 FERC and the challenging parties were successful in shifting cost
19 responsibility ultimately back to DEP's retail and wholesale
20 ratepayers, it would be appropriate for the affected system costs to
21 be considered by the Commission as part of a determination of
22 whether a facility is in the public convenience and necessity. Given

1 the recent changes to Duke Energy's Affected System process, the
2 continued interest in solar development in North Carolina, and the
3 current cost estimates or tools used to evaluate the reasonableness
4 of the costs be passed onto ratepayers (e.g., LCOT benchmark), and
5 the fact that an affected system study has not been completed or
6 considered, if any path remains open that would place undue costs
7 on to ratepayers, the Public Staff believes too much uncertainty
8 exists regarding the magnitude and responsibility of these costs to
9 make a determination as to whether the Facility is in the public
10 convenience and necessity at this time.

11 In the event the Commission has already issued a CPCN for a facility
12 and new costs are subsequently assigned to the facility that will
13 ultimately be borne by North Carolina retail ratepayers, the Public
14 Staff believes the Commission should reconsider the issuance of the
15 CPCN after the Applicant has provided accurate updated cost
16 estimates.

17 **Recommendation on the Application**

18 **Q. WHAT IS THE PUBLIC STAFF'S RECOMMENDATION ON**
19 **SUMAC'S APPLICATION FOR A CPCN?**

20 A. The Public Staff has reviewed the application, the testimony of the
21 Applicant's witnesses Price, Robichaud, and Dalager, and the other
22 evidence in this docket. The Public Staff has also reviewed the

1 comments and reply comments in the Sub 170 Proceeding. Based
2 on this information, and the Public Staff's understanding that DEP
3 and DENC's current interconnection procedures applicable to
4 merchant generation do not provide for reimbursement for
5 interconnection facilities, network upgrade costs, affected system
6 costs, or other costs required to allow energization and operation of
7 the Facility, the Public Staff recommends that the Commission issue
8 the CPCN, subject to the following conditions:

- 9 i. The Applicant shall file a copy of an executed Affected
10 System Operating Agreement (ASOA) with the
11 Commission at the same time such filing is made at FERC
12 (at least 61 days prior to commencing construction on the
13 upgrades).
- 14 ii. The Applicant shall file a verified statement acknowledging
15 that, under Duke's Affected Systems Business Procedure
16 and PJM's OATT, the Interconnection Customer is
17 responsible for all affected system Network Upgrade
18 Costs assigned to the Applicant's facility, if any, without
19 reimbursement.
- 20 iii. The Applicant shall notify the Commission of any change
21 in the cost estimates for the construction of the Facility
22 itself, interconnection facilities, network upgrades, or

1 affected system costs within 30 days of becoming aware
2 of such change.
3 iv. If at any time the Applicant seeks to be reimbursed for any
4 interconnection facilities, network upgrade costs, affected
5 system costs, or other costs required to allow energization
6 and operation of the Facility, including as a result of any
7 change to the DEP/DEC/DEF OATT or any other
8 governing document(s), the Commission shall weigh the
9 costs to be borne by DEP's retail and wholesale customers
10 with the generation needs in the state or region consistent
11 with its ruling in its Order Denying Application for a
12 Certificate of Public Convenience and Necessity for a
13 Merchant Generating Facility requested by Friesian
14 Holdings, LLC, in Docket No. EMP-105, Sub 0.

15 **Q. DOES THIS CONCLUDE YOUR TESTIMONY?**

16 A. Yes.

1

2

QUALIFICATIONS AND EXPERIENCE

3

EVAN D. LAWRENCE

4 I graduated from East Carolina University in Greenville, North
5 Carolina in May of 2016 earning a Bachelor of Science degree in
6 Engineering and a concentration in Electrical Engineering. I started my
7 current position with the Public Staff in September of 2016. Since that time
8 my duties and responsibilities have focused around the review of renewable
9 energy projects, rate design, and renewable energy portfolio standards
10 compliance. I have filed affidavits in Dominion Energy North Carolina's 2017
11 and 2018 REPS cost recovery proceeding, testimony in DEP's 2019 REPS
12 cost recovery proceeding, an affidavit in DEC's 2019 REPS cost recovery
13 proceeding, testimony in New River Light and Power's most recent rate
14 case proceeding, Western Carolina University's most recent rate case
15 proceeding, and testimony in multiple dockets for requests for CPCNs.
16 Additionally, I am currently serving as a co-chair of the National Association
17 of State Utility and Consumer Advocates (NASUCA) DER and EE
18 committee.

Lawrence Exhibit 1

Sweetleaf Solar LLC

Docket No. EMP-111, Sub 0

Public Staff Data Request No. 3 to Duke Energy Progress, LLC (DEP)

Date Sent: September 2, 2020

Requested Due Date: September 14, 2020

Public Staff Technical Contact: Jay Lucas

Phone #: (919) 733-0882

Email: jay.lucas@psncuc.nc.gov

Public Staff Legal Contact: Megan Jost

Phone #: (919) 733-0978

Email: megan.jost@psncuc.nc.gov

Please provide any available responses electronically. If in Excel format, include all working formulas.

Please include (1) the name and title of the individual who has the responsibility for the subject matter addressed therein, and (2) the identity of the person making the response by name, occupation, and job title.

Topic: Affected System Studies

1. Please provide a description of any affected system studies DEP is currently developing to include the following information:
 - a. Name and voltage of the transmission line;
 - b. Name and cluster number of each facility in each affected system study;
 - c. MW capacity of each facility in each affected system study; and
 - d. Estimated completion date of the affected system study.

DEP's Response:

Name and Voltage of Transmission Line	Queue Number	MW Capacity	Estimated Date of Study Completion
Dawson-South Justice 115kV	AC2-084	60	10/1/2020
Cashie-Trowbridge 230 kV	AD1-023	40	10/1/2020
Hornertown-Hathaway 230 kV	AD1-057	34	10/1/2020
Trowbridge 230 kV	AD1-076	109	10/1/2020
Chase City-Lunenburg 115 kV	AD2-033	130	10/1/2020
Boydton DP-Kerr Dam 115 kV	AD2-046	80	10/1/2020
Earleys – Northampton 230kV	AD2-051	74.9	10/1/2020
Central-Chase City 115kV	AD2-063	149.5	10/1/2020
Cashie 230 kV	AE1-026	80	TBD
Red House-South Creek 115 kV	AE1-056	60	TBD
Shawboro-Sligo 230 kV	AE1-072	150	TBD
Kerr Dam-Ridge Rd 115 kV	AE1-148	90	TBD
Carson-Rawlings 500 kV	AE2-031	290	TBD
Clubhouse-Sappony 230 kV	AE2-033	149	TBD
Mackeys 230 kV	AE2-034	140	TBD
Anaconda-Dunbar 115 kV	AE2-044	120	TBD
Carson-Septa 500 kV	AE2-051	150	TBD
Kerr Dam-Ridge Road 115 kV	AE2-053	20	TBD
Carson-Rogers Road 500 kV	AE2-094	300	TBD
Swamp 230 kV	AE2-147	150	TBD
Curdsville-Willis Mtn 115 kV	AE2-259	100	TBD
Clubhouse 230 kV	AE2-260	200	TBD
		2676	