



**NORTH CAROLINA
PUBLIC STAFF
UTILITIES COMMISSION**

March 23, 2023

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

Re: Docket No. EMP-117, Sub 0 – Shawboro East Ridge Solar, LLC
CPCN to Construct a 150-MW Solar Facility in Currituck County,
North Carolina.

Dear Ms. Dunston:

In connection with the above-referenced docket, I transmit herewith for filing on behalf of the Public Staff the Second Supplemental Testimony of Jay B. Lucas, Manager, Electric Section – Operations and Planning, Energy Division.

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

Sincerely,

Electronically submitted
s/ Nadia L. Luhr
Staff Attorney
nadia.luhr@psncuc.nc.gov

Attachment

cc: Parties of Record

Executive Director
(919) 733-2435

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BEFORE THE NORTH CAROLINA UTILITIES COMMISSION

DOCKET NO. EMP-117, SUB 0

In the Matter of)	
Application of Shawboro East Ridge)	SECOND SUPPLEMENTAL
Solar, LLC, for a Certificate of Public)	TESTIMONY OF
Convenience and Necessity to)	JAY B. LUCAS
Construct a 150-MW Solar Facility in)	PUBLIC STAFF –
Currituck County, North Carolina)	NORTH CAROLINA
)	UTILITIES COMMISSION

MARCH 23, 2023

1 **Q. Please state your name, business address, and current**
2 **position.**

3 A. My name is Jay B. Lucas. My business address is 430 North
4 Salisbury Street, Dobbs Building, Raleigh, North Carolina. I am the
5 Manager of the Electric Section – Operations and Planning in the
6 Energy Division of the Public Staff – North Carolina Utilities
7 Commission.

8 **Q. Briefly state your qualifications and duties.**

9 A. My qualifications and duties are attached as Appendix A.

10 **Q. What is the mission of the Public Staff?**

11 A. The Public Staff represents the concerns of the using and consuming
12 public in all public utility matters that come before the North Carolina
13 Utilities Commission. Pursuant to N.C. Gen. Stat. § 62-15(d), it is the
14 Public Staff's duty and responsibility to review, investigate, and make
15 appropriate recommendations to the Commission with respect to the
16 following utility matters: (1) retail rates charged, service furnished,
17 and complaints filed, regardless of retail customer class; (2)
18 applications for certificates of public convenience and necessity; (3)
19 transfers of franchises, mergers, consolidations, and combinations
20 of public utilities; and (4) contracts of public utilities with affiliates or
21 subsidiaries. The Public Staff is also responsible for appearing

1 before State and federal courts and agencies in matters affecting
2 public utility service.

3 **Q. What is the purpose of your second supplemental testimony in**
4 **this proceeding?**

5 A. The purpose of my second supplemental testimony is to respond to
6 the Supplemental Testimony of Rob Price, filed by Shawboro East
7 Ridge Solar, LLC (Shawboro) in this docket on February 8, 2023. I
8 also present the recommendations of the Public Staff based on the
9 entire record in this proceeding.

10 **Q. Please provide a brief history of this proceeding.**

11 A. On June 22, 2021, Shawboro filed an application for a certificate of
12 public convenience and necessity (CPCN) to construct a solar
13 photovoltaic generating facility near Shawboro in Currituck County,
14 North Carolina (the Facility). The application included the direct
15 testimony and exhibits of Shawboro witness Linda Nwadike.

16 As proposed, the Facility will have a capacity of 150-megawatt AC
17 (MW_{AC}) and will interconnect to the Shawboro-Sligo 230 kilovolt (kV)
18 transmission line owned by Virginia Electric and Power Company,
19 d/b/a Dominion Energy North Carolina (DENC). Because DENC is
20 part of PJM Interconnection, L.L.C. (PJM), Shawboro is required to
21 enter into an interconnection service agreement with both entities.

22 The Facility was assigned PJM queue number AE1-072.

1 On September 9, 2021, Duke Energy Progress, LLC (DEP)
2 completed an affected system study to determine the necessary
3 upgrades to accommodate PJM cluster AE1. The upgrades identified
4 by DEP would be necessary to maintain system reliability.

5 I filed direct testimony and exhibits on this matter on October 19,
6 2021, and witness Nwadike filed reply testimony and one exhibit on
7 November 4, 2021. The Commission held a hearing on November
8 23, 2021.

9 In January 2022, PJM issued Revision 1 of the System Impact Study
10 (SIS) Report for the Facility. PJM issued the first SIS report in August
11 2019.

12 On February 3, 2022, Shawboro filed a Motion for Leave to Submit
13 Additional Supplemental Testimony, which included the testimony
14 and exhibits of witness Nwadike. On February 11, 2022, the
15 Commission issued its Order Granting Motion for Leave to Submit
16 Supplemental Testimony and Providing Public Staff an Opportunity
17 to File Testimony in Response. I filed supplemental testimony on
18 February 25, 2022.

19 On November 1, 2022, the Commission issued an Order Requiring
20 Additional Information. The Order required that the parties to the
21 proceeding file all final reports from the retooling of the PJM AE1

1 cluster and the revised DEP affected system study report, if any. The
2 Commission further provided that if those reports were not yet
3 available, Shawboro must provide the Commission with an update
4 as to when it expects them to be available.

5 On November 14, 2022, Shawboro filed a report responsive to the
6 Commission's Order Requiring Additional Information. The report
7 indicated that Shawboro had not received any additional studies
8 since February 25, 2022, that it had no additional information as to
9 when PJM would complete a retooling of the relevant SISs, and that
10 it did not have any additional information as to when DEP would
11 complete its update of the affected system study.

12 On December 27, 2022, DEP completed a revised affected system
13 study that attributed affected system upgrades to the Facility and two
14 other solar generators located in Virginia with PJM cluster numbers
15 AE1-056 and AE1-148. Shawboro filed the affected system study
16 report in this docket on January 20, 2023. Table 1 below is an excerpt
17 from page 4 of the report:

Lucas Table 1: DEP's December 7, 2022 Affected System Study Results

Overloaded Transmission Facility	Contributing Requests	Upgrade Description	Upgrade Cost
Henderson-Kerr Dam (DVP) 115kV line	AE1-056 AE1-148	Reconductor 20.18 miles	\$60 M*
Greenville – Everetts (DVP) 230kV line	AE1-072	Rebuild 1.87 miles of aging double circuit 230kV towers, ISD 6/1/2027	\$19 M*
Greenville – Everetts (DVP) 230kV line	AE1-072	Reconductor 1.87 miles of one side of double circuit 230kV line plus terminal equipment	\$0.35 M*

* Transmission Planning or Class 5 estimates

As shown on page 5 of the report, DEP does not attribute any affected system upgrade costs to Shawboro.

On February 14, 2023, Shawboro filed the supplemental testimony of witness Price.

Q. Please summarize the February 14, 2023 supplemental testimony of witness Price.

A. In his supplemental testimony, Shawboro witness Price stated that the concerns raised in my initial and supplemental testimony have been addressed. He stated that the record now contains the recently completed 2022 studies from PJM and DEP, and that, since the latest filing of testimony by the parties, another solar developer (Sumac Solar LLC, Docket No. EMP-110, Sub 0) had signed an affected system operating agreement (ASOA) with DEP for the

1 current estimate of the relevant upgrades to DEP's transmission
2 system, making that developer responsible for any affected system
3 upgrade costs to the Greenville-Everetts line. Witness Price
4 requested that the Commission issue Shawboro a CPCN subject to
5 conditions.

6 **Q. Do any other queued projects in PJM affect the transmission**
7 **lines in Table 1?**

8 A. Yes. In response to a Public Staff data request, DEP stated that the
9 required \$60 million upgrade to its Henderson-Kerr Dam 115-kV line
10 is first contingent upon a solar generator in Virginia with PJM cluster
11 number AD2-063 and thus not part of DEP's affected system study
12 for cluster AE1. Shawboro and the other two solar generators in
13 DEP's study were therefore not assigned cost responsibility.

14 DEP further stated that the required \$19 million and \$0.35 million
15 upgrades to its Greenville-Everetts 230-kV line are contingent upon
16 Sumac Solar LLC (PJM cluster number AD1-022), which received a
17 CPCN from the Commission on January 31, 2023, in Docket No.
18 EMP-110, Sub 0, and has signed an ASOA with DEP for the
19 Greenville-Everetts upgrades.

20 **Q. Does the Public Staff have any concerns with the upgrades to**
21 **the Greenville-Everetts 230-kV line?**

1 A. At this time, the Public Staff does not take issue with the costs
2 associated with the planned upgrades to the Greenville-Everetts line.
3 These upgrades are discussed more fully in my joint testimony with
4 Public Staff witness Evan D. Lawrence, filed on August 30, 2022, in
5 Docket Nos. EMP-110, Sub 0, EMP-111, Sub 0, and EMP-119, Sub
6 0.¹ Below is an excerpt from page 2 of that testimony:

7 DEP plans to replace this line due to its aging
8 components at an expense of \$19.8 million, but the
9 replacement is not attributable to any generators
10 interconnecting in PJM. DEP originally estimated the
11 cost of incrementally reconductoring its portion of this
12 line to accommodate the three facilities (DEP Upgrade)
13 as \$350,000, but later reduced this cost to \$150,000,
14 as stated in a letter filed by Macadamia on August 15,
15 2022, in Docket No. EMP119, Sub 0
16

17 **Q. Will Shawboro be responsible for any affected system upgrade**
18 **costs?**

19 A. No. The affected system upgrades and their costs are not attributable
20 to the Facility. For that reason, the Public Staff does not at this time
21 have any concerns regarding affected system costs for Shawboro.

22 **Q. What is the Public Staff's recommendation on Shawboro's**
23 **CPCN Application for the Facility?**

24 A. The Public Staff has reviewed the Application and the entire record
25 in this proceeding, as well as information obtained through discovery,

¹<https://starw1.ncuc.gov/NCUC/ViewFile.aspx?Id=fce22cc7-aa78-4da5-8b89-11451728c6b9>.

- 1 and recommends that the Commission approve the CPCN
2 application, subject to the following conditions:
- 3 1. The Applicant shall construct and operate the Facility in strict
4 accordance with applicable laws and regulations, including any local
5 zoning and environmental permitting requirements.
 - 6 2. The CPCN shall be subject to Commission Rule R8-63(e) and all
7 orders, rules and regulations as are now or may hereafter be lawfully
8 made by the Commission.
 - 9 3. The Applicant shall file with the Commission in this docket any
10 significant revisions in the cost estimates for the construction of the
11 Facility itself, interconnection facilities, network upgrades, or affected
12 system upgrades, or any other significant change in costs, within 30
13 days of becoming aware of such revisions.
 - 14 4. The Applicant shall file a copy of any executed Affected System
15 Operating Agreement with the Commission at the same time such
16 filing is made at the Federal Energy Regulatory Commission (at least
17 61 days prior to commencing construction on the upgrades).
 - 18 5. If at any time the Applicant seeks reimbursement for any
19 interconnection facilities, network upgrade costs, affected system
20 costs, or other costs required to allow energization and operation of
21 the Facility, the Applicant shall notify the Commission no later than
22 60 days before seeking reimbursement.

- 1 Q. Does this conclude your testimony?
- 2 A. Yes.

APPENDIX A

QUALIFICATIONS AND EXPERIENCE

JAY B. LUCAS

I graduated from the Virginia Military Institute in 1985, earning a Bachelor of Science Degree in Civil Engineering. Afterwards, I served for four years as an engineer in the U. S. Air Force performing many civil and environmental engineering tasks. I left the Air Force in 1989 and attended the Virginia Polytechnic Institute and State University (Virginia Tech), earning a Master of Science degree in Environmental Engineering. After completing my graduate degree, I worked for an engineering consulting firm and worked for the North Carolina Department of Environmental Quality in its water quality programs. Since joining the Public Staff in January 2000, I have worked on utility cost recovery, renewable energy program management, customer complaints, and other aspects of utility regulation. Since September 2020, I have been the Manager of the Electric Section – Operations and Planning in the Public Staff’s Energy Division. I am a licensed Professional Engineer in North Carolina.