

OFFICIAL COPY

**STYERS,
KEMERAIT
& MITCHELL**

attorneys+counselors@law

1101 Haynes Street, Suite 101
Raleigh, North Carolina 27604
919.600.6270

StyersKemerait.com

August 12, 2013

HAND DELIVERED

Ms. Gail Mount
Chief Clerk
North Carolina Utilities Commission
430 N. Salisbury Street
Raleigh, NC 27611

FILED

AUG 12 2013

Clerk's Office
N.C. Utilities Commission

RECEIVED FILING FEE \$10.00

*Re: SunEnergy1 Complaint and Petition for Arbitration
Docket E-22, Sub 501*

cmitchell@StyersKemerait.com
919.600.6277

Dear Ms. Mount:

Please find enclosed an original and thirty-one (31) copies of a Complaint and Petition for Arbitration filed on behalf of SunEnergy1, LLC against Virginia Electric & Power Company d/b/a Dominion North Carolina Power. Also enclosed is our check in the amount of \$10.00 representing the filing fee for same.

We would appreciate your filing the same and returning one "filed" stamped copy via our courier.

If you have any questions or comments regarding this filing, please do not hesitate to call me. Thank you in advance for your assistance and cooperation.

Sincerely,



Charlotte A. Mitchell

✓ Foster
Clerk. 03
Watson
Green
Duttky
Conrad
H. B. Lewis
103 ELEC

M. Gray Styers, Jr.
Karen M. Kemerait
Charlotte A. Mitchell

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FILED

AUG 12 2013

Clerk's Office
N.C. Utilities Commission

STATE OF NORTH CAROLINA
UTILITIES COMMISSION
RALEIGH

Docket No. E-22, Sub 501

In the Matter of

Complaint by

SUNENERGY 1, LLC,
a North Carolina Corporation,

against

Virginia Electric & Power Co., d/b/a
Dominion North Carolina Power

COMPLAINT AND PETITION FOR
ARBITRATION

SUNENERGY 1, LLC, (hereinafter referred to as "Complainant"), by and through the undersigned counsel, submits this Complaint to the North Carolina Utilities Commission (hereinafter referred to as the "Commission") against Virginia Electric & Power Co., d/b/a Dominion North Carolina Power, (hereinafter referred to as "Respondent"), pursuant to Rule R1-9 of the Commission's Rules and Regulations, and this Petition for Arbitration, pursuant to N.C. Gen. Stat. § 62-40. Specifically, among other violations of statutes and Commission rules and Orders, Respondent has failed to offer Complainant "the option of contracts and rates derived by free and open negotiations" as required by the Commission's *Order Establishing Standard Rates and Contract Terms for Qualifying Facilities*, N.C.U.C. Docket No. E-100, Sub 127, issued July 27, 2011 (the "Order"). See *Order*, Discussion and Conclusion for Finding of Fact No. 6, p. 11. Complainant further submits this controversy between it and Respondent regarding a long-term power purchase agreement and payments thereunder, including

both capacity and energy components, to the Commission to decide as arbitrator. In support of this Complaint and Petition for Arbitration, Complainant respectfully shows the Commission the following:

Parties

1. Complainant is a limited liability company under the laws of the State of North Carolina, with its principal office located at 192 Raceway Drive, Mooresville, NC 28117.

2. Respondent Virginia Electric & Power Co., d/b/a Dominion North Carolina Power, is an electric public utility organized, existing and operating under the laws of the State of North Carolina for the purposes of generating, transmitting, and distributing electricity in its service territories in North Carolina. Respondent is an operating subsidiary of Dominion Resources, Inc. Respondent's principal office is located at P.O. Box 26666, Richmond, VA 23261.

3. Complainant's legal representative in this proceeding, to whom all notices, pleadings and other documents related to this proceeding should be directed, is:

Charlotte A. Mitchell
Styers, Kemerait & Mitchell, PLLC
1101 Haynes Street, Suite 101
Raleigh, North Carolina 27604
Telephone: (919) 600-6277
E-mail: cmitchell@styerskemerait.com

Facts

1. Complainant plans to develop a solar photovoltaic ("PV") array to be located off Edward's Fork Road in Scotland Neck, Halifax County (the "Facility"). On March 20, 2013 Complainant filed an application for a Certificate of Public Convenience

and Necessity (“CPCN”) with the Commission in N.C.U.C. Docket No. SP-751, Sub 8 for a 20 MW (AC) PV array. As proposed, the Facility will consist of 70,000 ground mount PV modules and will utilize forty (40) 500 kW inverters. As represented in the CPCN application, the Facility will be operational not later than December 31, 2013.

2. Complainant filed its interconnection request on March 19, 2013 and paid the required fee of one thousand dollars (\$1,000.00) for the interconnection study. A copy of that request, as well as proof of payment, is attached hereto as Exhibit 1.

3. On July 30, 2013 the Commission issued the *Order Issuing Certificate*, issuing the CPCN for the Facility, a copy of which is attached hereto as Exhibit 2.

4. Beginning on or around the third quarter of 2012, Complainant initiated discussions with Respondent for a long term power purchase agreement (“PPA”) for the output of the Facility. At that time, Complainant made clear its intention to sell all of its output to Respondent pursuant to a legally enforceable obligation over a specified term.

5. Since that time, Complainant and Respondent have engaged in negotiations regarding the applicable rate schedule for Facility. Respondent initially took the position, for the first six (6) months of the negotiation process, that rates set forth in Schedule 19-FP, as proposed in N.C.U.C. Docket No. E-100, Sub 136, were applicable. Negotiations with Respondent were increasingly protracted, and, in order to move forward with the project, Complainant made significant financial investment in the Facility, relying on the position taken by Respondent as to the applicable rates.

6. Thereafter, in July 2013 Respondent changed its position entirely, indicating that the rates proposed in Schedule 19-FP, as proposed in N.C.U.C. Docket No. E-100, Sub 136, does not apply to the project, but rather re-calculated rates, which

are significantly lower, apply to the project. It is Complainant's position that the re-calculated rates understate Respondent's full avoided costs.

7. At no point during the negotiation process did Respondent notify Complainant regarding any certification requirements, notwithstanding the directive to do so set forth in *Order Requiring Electric Utilities to Notify Potential Cogenerators and Small Power Producers of G.S. 62-110.1*, N.C.U.C. Docket No. E-100, Sub 41, issued August 17, 1983.

8. Believing that Respondent had been negotiating in good faith, Complainant had moved forward with the development of the Facility, specifically: 1) entering into ground leases for approximately one hundred (100) acres of land on which the Facility will be located; 2) planning and designing the Facility; 3) meeting on a number of occasions with representatives of Respondent to discuss the design of the Facility and the interconnection issues; 4) filing and paying for an interconnection request; 5) conducting a number of feasibility studies, including surveying and environmental assessment; and 6) meeting with representatives of PJM to discuss project details. In short, based on representations made by Respondent during negotiation of the PPA, Complainant invested substantial sums in the development of the Facility.

9. Complainant is prepared to commit the capacity from the Facility to Respondent for a period of fifteen years and is seeking a 15-year PPA to this end.

10. However, as negotiations with Respondent have been increasingly protracted and now have stalled, Complainant has no choice but to submit this dispute for arbitration by the Commission pursuant to section 62-40 of the North Carolina General Statutes.

11. It is Complainant's position that the applicable rates are those set forth in Schedule 19-FP, as proposed in N.C.U.C. Docket No. E-100, Sub 136, based on the initial representations of Respondent. This position is consistent with the Commission's *Order on Availability of Rates*, N.C.U.C. Docket No. E-100, Sub 136, issued on May 14, 2013. In addition, this position is fair to both parties, given the expenditures made by Complainant in reasonable reliance on Respondent's representations.

12. Thus, the issues to be resolved in this arbitration are: 1) whether rates set forth in Schedule 19-FP, as proposed in N.C.U.C. Docket No. E-100, Sub 136, are applicable; and 2) if the Commission is not inclined to require Respondent to off the rates set forth in Schedule 19-FP, as proposed in N.C.U.C. Docket No. E-100, Sub 136, then whether the rates offered understate Respondent's full avoided costs.

13. Pursuant to section 62-40 of the North Carolina General Statutes, Complainant requests that the Commission act as an arbiter and resolve the issues arising from the negotiations. Given that negotiation of the PPA has been ongoing for months and that time is of the essence in developing the Facility, Complainant respectfully requests an expedited process for resolving the issues in dispute in effort to cease the prolonged delay of negotiations.

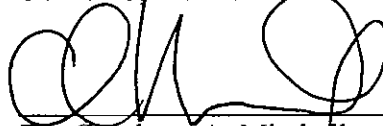
WHEREFORE, Complainant respectfully requests that the Commission:

1. Find and conclude that Respondent did not engage in free, open, and good faith negotiations with Complainant regarding the applicable rates;

2. Consider this course of dealing in determining Respondent's avoided costs, including both capacity and energy components, during arbitration between the parties;
3. Arbitrate the unresolved issues between Complainant and Respondent consistent with the positions of Complainant set forth herein; and
4. Order such other relief as the Commission deems appropriate and necessary.

Respectfully submitted this the 12th day of August, 2013.

STYERS, KEMERAIT & MITCHELL, PLLC



By: Charlotte A. Mitchell
Styers, Kemerait & Mitchell, PLLC
1101 Haynes Street, Suite 101
Raleigh, North Carolina 27604
Telephone: (919) 600-6277
E-mail: cmitchell@styerskemerait.com

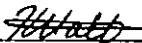
STATE OF NORTH CAROLINA

IREDELL COUNTY

VERIFICATION

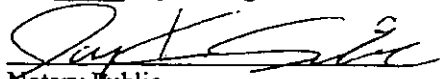
The undersigned, being first duly sworn, deposes and says that he is Kenny Habul, President & CEO of SunEnergy 1. He further states that he has read the foregoing Complaint and Petition for Arbitration, and that to his personal knowledge and belief, the matters and statements contained therein are true, except as to those matters or statements made upon information and belief, and as to those, he believes them to be true; and that he verifies the attached Complaint and Petition for Arbitration on behalf of SunEnergy 1.

This the 9 day of August, 2013.



Kenny Habul
President & CEO
SunEnergy 1

Sworn to and subscribed before me
this 9 day of August, 2013.


Notary Public

My Commission Expires: 4/29/2018

CERTIFICATE OF SERVICE

The undersigned certifies that he has served a copy of the foregoing **COMPLAINT AND PETITION FOR ARBITRATION** upon the parties of record in this proceeding, or their attorneys, by hand delivery, electronically, facsimile, or by depositing a copy of the same in the United States Mail, postage prepaid and properly addressed as follows:


Dominion North Carolina Power

Mark O. Webb
Horace P. Payne, Jr.
120 Tredegar Street, RS-2
Richmond, Virginia 23219

Public Staff – NC Utilities Commission

Christopher J. Ayers
Executive Director
4326 Mail Service Center
Raleigh, North Carolina 27699-4326

This 12th day of August, 2013.



Charlotte A. Mitchell

Exhibit 1



March 19, 2013

Mr. Richard Jessee
% Virginia Dominion Power
701 East Cary Street
Eighth Floor
Richmond, Virginia 23219

Dear Richard,

Enclosed is the Interconnect Request for the 20 Megawatt project in Scotland Neck, NC. Also enclosed is the \$1,000.00 fee for the study. Please advise if this is not the correct amount.

I appreciate all of your help and assistance on this project and look forward to hearing from you soon.

Sincerely,

Bill Long

Senior Business Development Executive

4200

SUNENERGY1, LLC

192 Raceway Drive
Moorestville, NC 28117
(704) 662-0375

AQUESTA BANK

66-1271-531



3/19/2013

PAY TO THE
ORDER OF

Virginia Dominion Power

\$ 1,000.00

One Thousand and 00/100*****

DOLLARS

Virginia Dominion Power
701 East Cary Street
Eighth Floor
Richmond, VA 23219



AUTHORIZED SIGNATURE

MEMO

Security features. Details on back

SUNENERGY1, LLC

Virginia Dominion Power
Cost of Goods Sold: Interconnection Cost Scotland Neck, NC

3/19/2013

1,000.00

4255

Aquesta Bank (2037)

1,000.00

**NORTH CAROLINA
INTERCONNECTION REQUEST**

Utility: Dominion Power
Designated Contact Person: Bradley Fite
Address: 125 Raceway Drive, Mooresville, NC 28117
Telephone Number: (704) 662- 0375
Fax: (704) 662-0052 E-Mail Address: bradley.fite@sunenergy1.com

An Interconnection Request is considered complete when it provides all applicable and correct information required below.

Preamble and Instructions

An Interconnection Customer who requests a North Carolina Utilities Commission jurisdictional interconnection must submit this Interconnection Request by hand delivery, mail, e-mail, or fax to the Utility.

Request for: Fast Track Process Study Process
(All Generating Facilities larger than 2 MW must use the Study Process.)

Processing Fee or Deposit

Fast Track Process – Non-Refundable Processing Fees

- If the Generating Facility is 20 kW or smaller, the fee is \$100.
- If the Generating Facility is larger than 20 kW but not larger than 100 kW, the fee is \$250.
- If the Generating Facility is larger than 100 kW but not larger than 2 MW, the fee is \$500.

Study Process – Deposit

If the Interconnection Request is submitted under the Study Process, whether a new submission or an Interconnection Request that did not pass the Fast Track Process, the Interconnection Customer shall submit to the Utility a deposit not to exceed \$1,000 towards study costs.

Change in Ownership – Non-Refundable Processing Fee

If the Interconnection Request is submitted solely due to a transfer of ownership of the Generating Facility, the fee is \$50.

Interconnection Customer Information

Legal Name of the Interconnection Customer (or, if an individual, individual's name)

Name: SunEnergy1, LLC

Contact Person: Bradley Fite

Mailing Address: 192 Raceway Drive

City: Mooresville

State: NC

Zip: 28117

Facility Location (if different from above): Scotland Neck, NC

Telephone (Day): _____

Telephone (Evening): (704) 667-3506

Fax: (704) 662-0052

E-Mail Address: bradley.fite@sunenergy1.com

Alternative Contact Information (if different from the Interconnection Customer)

Contact Name: Bradley Fite

Title: _____

Address: _____

Telephone (Day): _____

Telephone (Evening): _____

Fax: _____

E-Mail Address: _____

Application is for:

New Generating Facility

Capacity Addition to Existing Generating Facility

Transfer of Ownership of Existing Generating Facility

If capacity addition to existing Generating Facility, please describe: _____

Will the Generating Facility be used for any of the following?

Net Metering? Yes No

To Supply Power to the Interconnection Customer? Yes No

To Supply Power to the Utility? Yes No

To Supply Power to Others? Yes No

(If yes, discuss with the Utility whether the interconnection is covered by the NC Interconnection Standard.)

For installations at locations with existing electric service to which the proposed Generating Facility will interconnect, provide: _____

(Local Electric Service Provider*)

(Existing Account Number*)

[*To be provided by the Interconnection Customer if the local electric service provider is different from the Utility]

Contact Name: _____

Title: _____

Address: _____

Telephone (Day): _____ Telephone (Evening): _____

Fax: _____ E-Mail Address: _____

Requested Point of Interconnection: Edwards Fork Road, SCOTLAND NECK, N.C.

Interconnection Customer's Requested In-Service Date: December 31, 2013

Generating Facility Information

Data apply only to the Generating Facility, not the Interconnection Facilities.

Energy Source: Solar Wind Hydro Hydro Type (e.g. Run-of-River): _____ Fuse Link
Diesel Natural Gas Fuel Oil Other (state type) _____

Prime Mover: Fuel Cell Recip Engine Gas Turbine Steam Turbine
Microturbine PV Other _____

Type of Generator: Synchronous Induction Inverter
 Generator Nameplate Rating: 500 kW (Typical) Generator Nameplate: _____ kVAR
 Interconnection Customer or Customer-Site Load: 2 kW (if none, so state)
 Typical Reactive Load (if known): _____
 Maximum Physical Export Capability Requested: 20,000 kW

List components of the Generating Facility equipment package that are currently certified:

	Equipment Type	Certifying Entity
1.	<u>Schnieder 500GT</u>	<u>UL 1741</u>
2.	<u>Datewyler Racking</u>	<u>UL 467</u>
3.	<u>Solar Bos Combiner Boxes</u>	<u>UL 1741</u>
4.	<u>Bosch</u>	<u>UL 1703</u>
5.	_____	_____

Is the prime mover compatible with the certified protective relay package? Yes No

Generator (or solar collector) BOSCH
 Manufacturer, Model Name, & Number: _____
 Version Number: SSB290W-36P

Nameplate Output Power Rating in kW: (Summer) 290 (Winter) _____

Nameplate Output Power Rating in kVA: (Summer) _____ (Winter) _____

Individual Generator Power Factor

Rated Power Factor: Leading: _____ Lagging: +/- 0.9 Adjustable

Total Number of Generators in wind farm to be interconnected pursuant to this Interconnection Request: _____ Elevation: _____

Single phase Three phase

Inverter Manufacturer, Model Name, & Number (if used): Schnieder 500GT, 40

List of adjustable set points for the protective equipment or software: _____

Note: A completed Power Systems Load Flow data sheet must be supplied with the Interconnection Request.

Generating Facility Characteristic Data (for inverter-based machines)

Max design fault contribution current: _____ Instantaneous or RMS?

Harmonics Characteristics: < 3% at rated power

Start-up requirements: < 350 VDC

Generating Facility Characteristic Data (for rotating machines)

RPM Frequency: _____

(*) Neutral Grounding Resistor (if applicable): _____

Synchronous Generators:

Direct Axis Synchronous Reactance, X_d : _____ P.U.
Direct Axis Transient Reactance, X'_d : _____ P.U.
Direct Axis Subtransient Reactance, X''_d : _____ P.U.
Negative Sequence Reactance, X_2 : _____ P.U.
Zero Sequence Reactance, X_0 : _____ P.U.
KVA Base: _____
Field Volts: _____
Field Amperes: _____

Induction Generators:

Motoring Power (kW): _____
 I_2^2t or K (Heating Time Constant): _____
Rotor Resistance, R_r : _____
Stator Resistance, R_s : _____
Stator Reactance, X_s : _____
Rotor Reactance, X_r : _____
Magnetizing Reactance, X_m : _____
Short Circuit Reactance, X_d'' : _____
Exciting Current: _____
Temperature Rise: _____
Frame Size: _____
Design Letter: _____
Reactive Power Required In Vars (No Load): _____
Reactive Power Required In Vars (Full Load): _____
Total Rotating Inertia, H: _____ Per Unit on kVA Base

Note: Please contact the Utility prior to submitting the Interconnection Request to determine if the specified information above is required.

Excitation and Governor System Data for Synchronous Generators Only

Provide appropriate IEEE model block diagram of excitation system, governor system and power system stabilizer (PSS) in accordance with the regional reliability council criteria. A PSS may be determined to be required by applicable studies. A copy of the manufacturer's block diagram may not be substituted.

Interconnection Facilities Information

Will a transformer be used between the generator and the point of common coupling?

Yes No

Will the transformer be provided by the Interconnection Customer? Yes No

Transformer Data (if applicable, for Interconnection Customer-owned transformer):

Is the transformer: Single phase Three phase Size: 500 kVA

Transformer Impedance: 4.6 % on 500 kVA Base

If Three Phase:

Transformer Primary: 34.5kv Volts _____ Delta _____ Wye x Wye Grounded

Transformer Secondary: 208 Volts _____ Delta x Wye _____ Wye Grounded

Transformer Tertiary: _____ Volts _____ Delta _____ Wye _____ Wye Grounded

Transformer Fuse Data (if applicable, for Interconnection Customer-owned fuse):

(Attach copy of fuse manufacturer's Minimum Melt and Total Clearing Time-Current Curves)

Manufacturer: ABB Type: Fuse Link Size: 16amp Speed: _____ Curve 6

Interconnecting Circuit Breaker (if applicable):

Manufacturer: _____ Type: _____

Load Rating (Amps): _____ Interrupting Rating (Amps): _____ Trip Speed (Cycles): _____

Interconnection Protective Relays (if applicable):

If Microprocessor-Controlled:

List of Functions and Adjustable Setpoints for the protective equipment or software:

	Setpoint Function	Minimum	Maximum
1.	_____	_____	_____
2.	_____	_____	_____
3.	_____	_____	_____
4.	_____	_____	_____
5.	_____	_____	_____
6.	_____	_____	_____

If Discrete Components:

(Enclose Copy of any Proposed Time-Overcurrent Coordination Curves)

Manufacturer: _____ Type: _____ Style/Catalog No.: _____ Proposed Setting: _____

Manufacturer: _____ Type: _____ Style/Catalog No.: _____ Proposed Setting: _____

Manufacturer: _____ Type: _____ Style/Catalog No.: _____ Proposed Setting: _____

Manufacturer: _____ Type: _____ Style/Catalog No.: _____ Proposed Setting: _____

Manufacturer: _____ Type: _____ Style/Catalog No.: _____ Proposed Setting: _____

Current Transformer Data (if applicable):

(Enclose Copy of Manufacturer's Excitation and Ratio Correction Curves)

Manufacturer: _____

Type: _____ Accuracy Class: _____ Proposed Ratio Connection: _____

Manufacturer: _____

Type: _____ Accuracy Class: _____ Proposed Ratio Connection: _____

Potential Transformer Data (if applicable):

Manufacturer: _____

Type: _____ Accuracy Class: _____ Proposed Ratio Connection: _____

Manufacturer: _____

Type: _____ Accuracy Class: _____ Proposed Ratio Connection: _____

General Information

Enclose copy of site electrical one-line diagram showing the configuration of all Generating Facility equipment, current and potential circuits, and protection and control schemes. This one-line diagram must be signed and stamped by a licensed Professional Engineer if the Generating Facility is larger than 50 kW.

Is One-Line Diagram Enclosed? Yes No

Enclose copy of any site documentation that indicates the precise physical location of the proposed Generating Facility (e.g., USGS topographic map or other diagram or documentation).

Proposed location of protective interface equipment on property (include address if different from the Interconnection Customer's address) _____

Enclose copy of any site documentation that describes and details the operation of the protection and control schemes. Is Available Documentation Enclosed? Yes No

Enclose copies of schematic drawings for all protection and control circuits, relay current circuits, relay potential circuits, and alarm/monitoring circuits (if applicable).

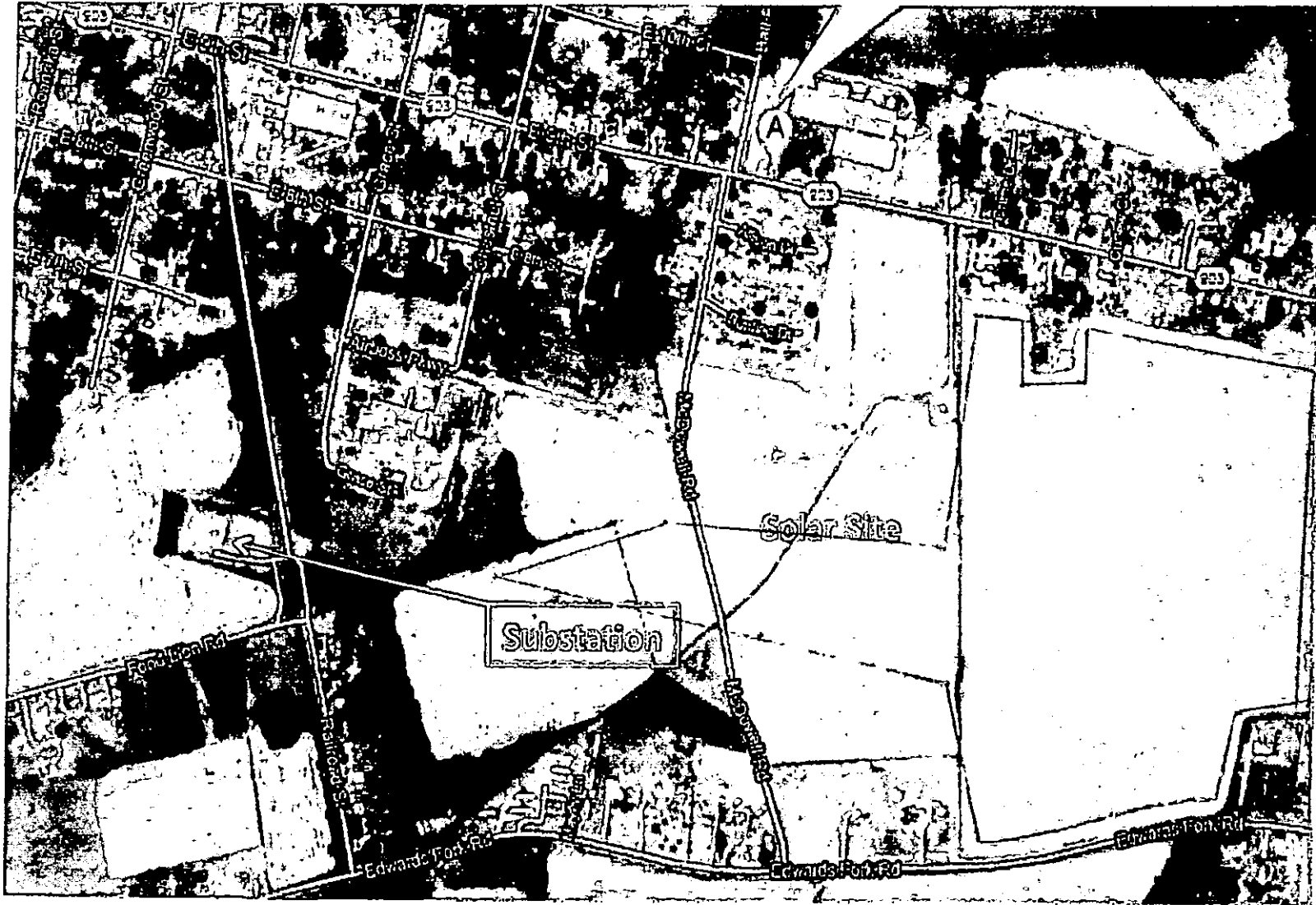
Are Schematic Drawings Enclosed? Yes No

Applicant Signature

I hereby certify that, to the best of my knowledge, all the information provided in this Interconnection Request is true and correct.

For Interconnection Customer: Brendy Lee Date: 3-19-13

PROPOSED SITE
OUTLINED IN RED



PROPOSED LAYOUT



Transformer fuse

Table 4 - Data points for minimum melt curve in Amperes *

Curve number	#2	#3	#3A	#4	#5	#5A	#6	#7	#7A	#8	#9	#10	#11
Time(s):													
0.01	78	128	188	225	315	441	576	828	1080	1440	2745	3960	6120
0.10	34	62	70	84	126	153	198	279	392	486	873	1197	1935
0.40	22	32	41	49	73	85	108	150	203	257	360	621	945
1.0	18	25	30	36	53	60	75	104	135	173	194	423	630
4.0	14	19	23	28	37	41	50	70	85	106	131	281	378
10	13	17	20	23	31	35	42	58	68	81	106	207	302
40	12	15	18	21	28	30	35	50	56	68	89	178	252
100	12	15	18	20	25	29	34	47	52	63	84	187	239
1000	11	14	17	20	24	29	34	47	52	61	82	182	239

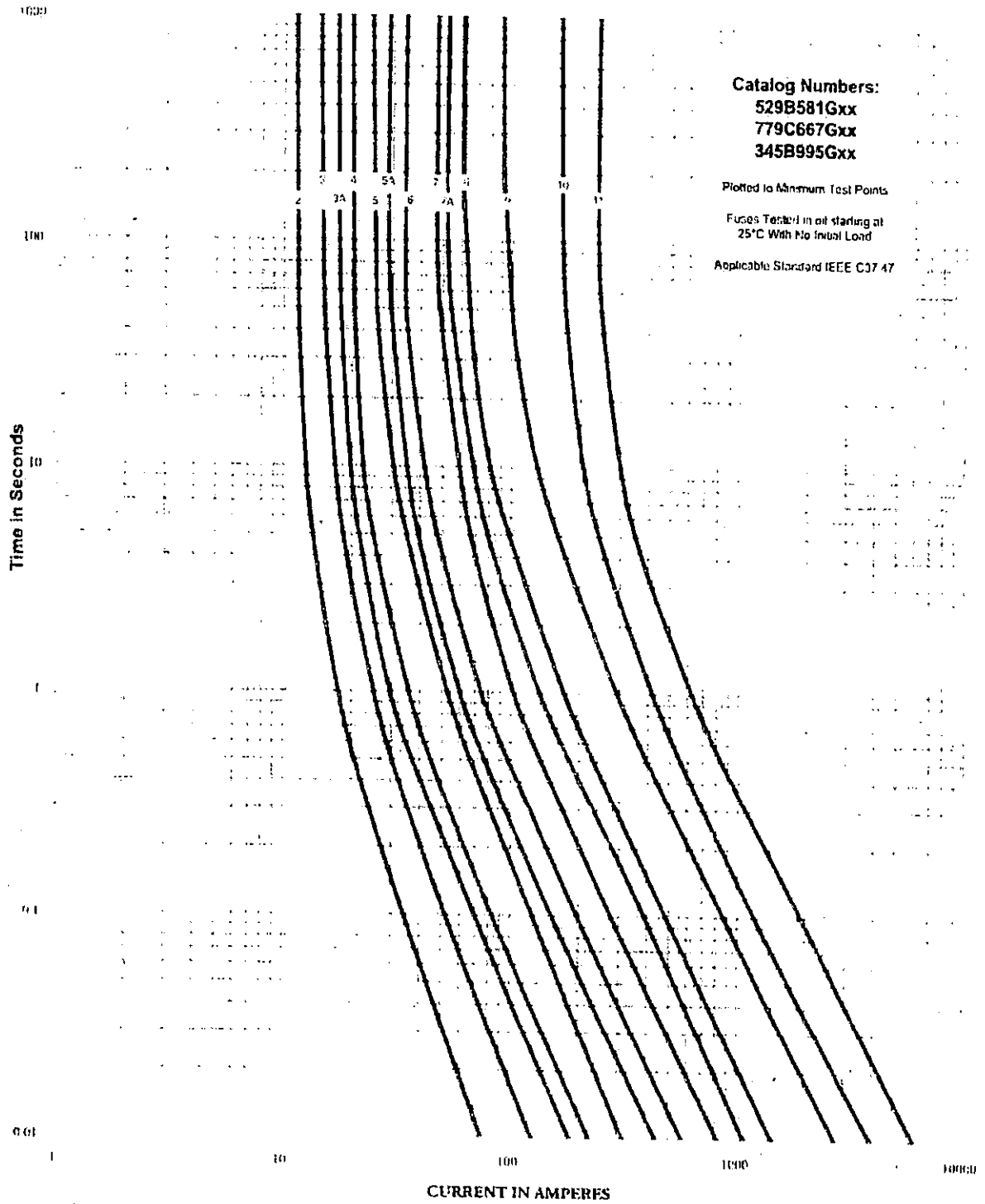
* Data points are presented as a convenience. The published curve 1ZUAS67001-AAA, Rev 2 should be used for coordination.

Table 5 - Data points for total clearing curve in Amperes *

Curve number	#2	#3	#3A	#4	#5	#5A	#6	#7	#7A	#8	#9	#10	#11
Time(s):													
0.014	112	190	280	350	475	680	880	1300	1700	2200	4400		
0.02	92	154	228	275	385	539	704	1012	1320	1780	3355	6000	
0.1	42	64	88	102	154	187	242	341	479	594	1067	1483	2366
0.4	27	40	50	59	89	103	132	184	248	314	440	759	1155
1	21	31	38	44	65	74	91	127	165	211	237	517	770
4	17	23	28	32	45	51	62	86	103	130	160	319	482
10	15	21	24	28	37	43	51	73	84	99	130	253	389
40	14	19	22	25	32	37	43	61	68	84	121	215	308
100	14	18	21	25	31	35	42	57	64	77	114	204	292
1000	14	18	21	24	30	35	42	57	64	75	112	198	292

* Data points are presented as a convenience. The published curve 1ZUAS67001-AAB, Rev 2 should be used for coordination.

Transformer fuser



Catalog Numbers:
 529B581Gxx
 779C667Gxx
 345B995Gxx

Plotted to Minimum Test Points

Fuses Tested in oil starting at
 25°C With No Initial Load

Applicable Standard IEEE C37.47



ABB Inc.
 1128 S. Cavalier Drive
 Alamo, TN 35001, USA
 Telephone: 731-696-5561
 Fax: 731-696-5377
www.abb.com/electricalcomponents

Revision 2
 Date: June 2001

MINIMUM MELT TIME - CURRENT CHARACTERISTICS
PROTECTIVE LINKS IN TRANSFER OIL
 (FOR CLEARING CHARACTERISTICS SEE CURVE NUMBER IZUA567001-AAB)
CURVE NO. IZUA567001-AAA

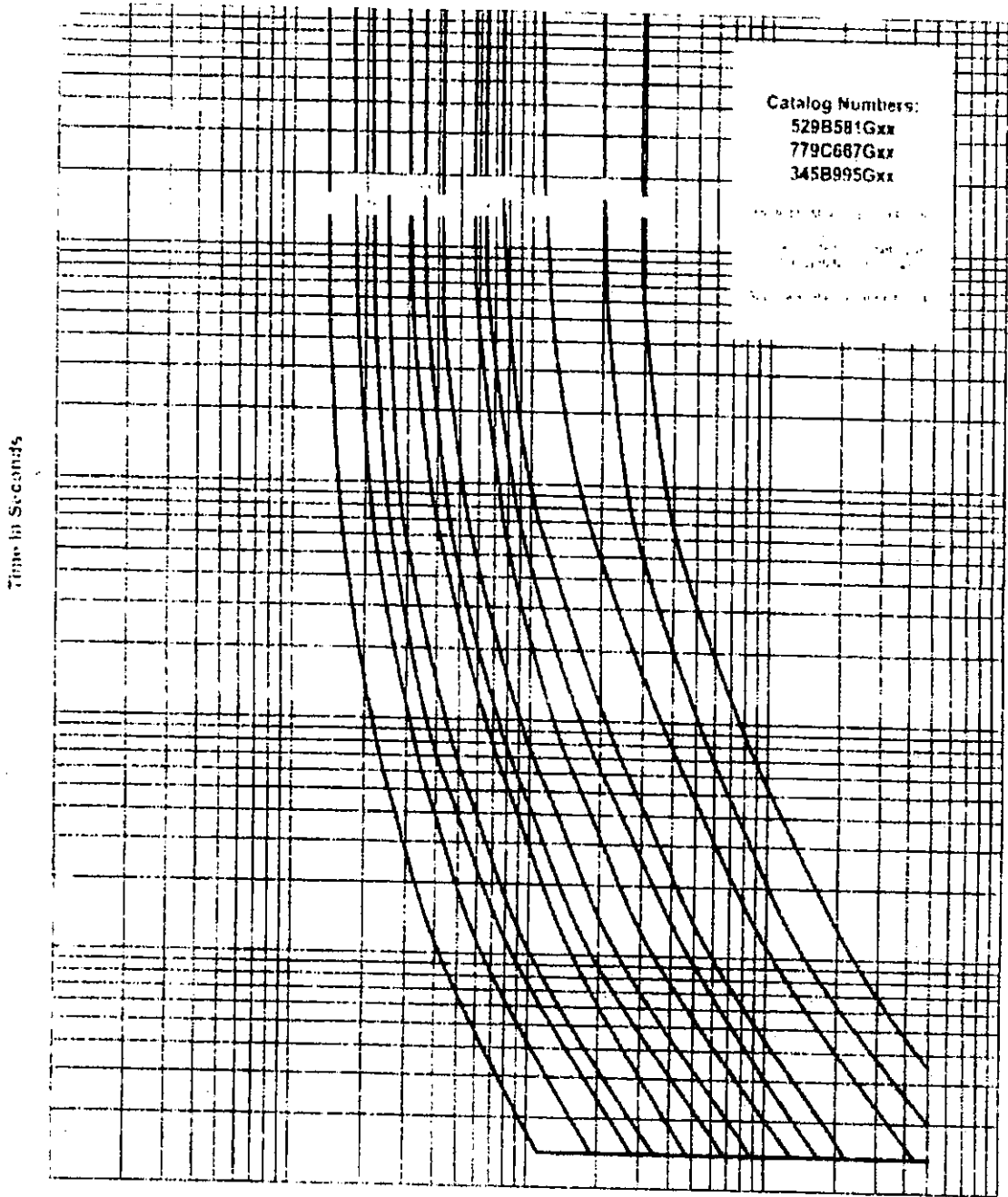
Inverter

Xantrex™ GT500

Device short name	GT500 480	GT500 600	GT500 MV*
Electrical specifications			
Input (DC)			
Photovoltaic power	560 kW	560 kW	560 kW
Input voltage range, MPPT	310 to 480 V	310 to 480 V	310 to 480 V
Max. input voltage, open circuit	600 V	600 V	600 V
Max. input current	1660 A	1680 A	1700 A
Max. input short circuit current	2150 A	2150 A	2850 A
Utility backfeed current	0 A	0 A	0 A
Output (AC)			
Nominal output power	500 kW	500 kW	500 kW
Output voltage	480 V	600 V	208 V (for direct connection to a medium voltage isolation transformer)
Frequency	60 Hz	60 Hz	60 Hz
Nominal output current	601 A	482 A	1388 A
Power factor	> 0.99	> 0.99	> 0.99 (+/- 0.9 adjustable)
Harmonic distortion	< 3% at rated power	< 3% at rated power	< 3% at rated power
Topology	Isolation transformer standard and integrated within the inverter enclosure (480 V and 600 V only)		
Efficiency			
Peak	97.0%	97.0%	98% not including MV transformer
CEC weighted	98.0%	98.0%	97% not including MV transformer
General specifications			
Power consumption, night time	< 200 W	< 200 W	< 100 W
NEMA degree of protection	NEMA 3R (outdoor rating)	NEMA 3R (outdoor rating)	NEMA 3R (outdoor rating)
Enclosure material	Steel	Steel	Steel
Product weight	3103 kg (6840 lb)	3103 kg (6840 lb)	1587 kg (3499 lb)
Product dimensions (H x W x D)	224.0 x 463.8 x 108.7 cm (88.2 x 182.6 x 42.8 in)	224.0 x 463.8 x 108.7 cm (88.2 x 182.6 x 42.8 in)	224.6 x 228.6 x 126 cm (88.4 x 90.0 x 49.6 in)
Ambient air temperature for operation	-20°C to 50°C (-4°F to 122°F) tested to -35°C		
Operating altitude	Up to 2012 m (6600 ft) without de-rating		
Relative humidity	0 to 85% non-condensing		
Part number	820-0076-01-01	820-0076-02-01	820-0049-06-01*
Features and options			
Type of cooling	Forced convection cooling		
Display type	Standard bright fluorescent green Vacuum display		
Communication interface	Optional RS485/Modbus and RS232 communications interface kit		
AC/DC disconnect	Standard and integrated within the inverter enclosure		
Ground fault detection/interruption	Standard and integrated within the inverter enclosure		
Sub-array combiner	Optional integrated with the inverter enclosure, 100 A 150 A or 200 A circuits		
Warranty	Five-year standard		
Regulatory approvals			
Safety	UL1741 rev. 2005, CSA 107.1		
Interconnect	IEEE 1547 and CSA 107.1		

Specifications are subject to change without notice.
* Other options available upon request.

Transformer fuse



Catalog Numbers:
529B581Gxx
779C667Gxx
345B995Gxx

Time in Seconds

CURRENT IN AMPERES

ABB

TOTAL CLEARING TIME - CURRENT CHARACTERISTICS
PROTECTIVE LINKS IN TRANSFORMER
FOR MINIMUM MATEL CHARACTERISTICS SEE CURVE NUMBER IZUA567001-AAA
CURVE NO. IZUA567001-ABB

Exhibit 2

**STATE OF NORTH CAROLINA
UTILITIES COMMISSION
RALEIGH**

DOCKET NO. SP-751, SUB 8

BEFORE THE NORTH CAROLINA UTILITIES COMMISSION

In the Matter of
Application of SunEnergy1, LLC, for a)
Certificate of Public Convenience and) ORDER ISSUING CERTIFICATE
Necessity to Construct a 20-MW Solar)
Facility in Halifax County, North Carolina)

BY THE COMMISSION: On March 20, 2013, SunEnergy1, LLC (Applicant), filed an application with the Commission seeking a certificate of public convenience and necessity pursuant to G.S. 62-110.1 for construction of a 20-MW_{AC} solar photovoltaic electric generating facility to be located on Edwards Fork Road, Scotland Neck, Halifax County, North Carolina. The Applicant plans to sell the electricity generated by this facility to Dominion North Carolina Power (DNCP).

On March 25, 2013, the Commission issued an Order Requiring Publication of Notice, which required the Applicant to (1) publish notice of the application as required by G.S. 62-82(a) and file an affidavit of publication with the Commission, (2) mail a copy of the application and notice, no later than the first date that such notice is published, to the electric utility to which the Applicant plans to sell and distribute the electricity, and (3) file a certificate of service of such mailing to the utility. The Order also specified that if a complaint was received within 10 days after the last date of the publication of the notice, the Commission would schedule a public hearing to determine whether a certificate of public convenience and necessity should be awarded. The Order further specified that if the Commission received no complaints within the time specified above and if the Commission did not order a hearing upon its own initiative, it would enter an order awarding the certificate of public convenience and necessity.

On May 7, 2013, the State Clearinghouse filed comments. Because of the nature of the comments, the cover letter indicated that no further State Clearinghouse review action by the Commission was required for compliance with the North Carolina Environmental Policy Act.

On July 2, 2013, the Applicant filed a certificate of service stating that the public notice was provided to DNCP. Contemporaneously, the Applicant filed an affidavit of publication stating that the publication of notice was completed on June 25, 2013. No complaints have been received.

The Public Staff presented this matter to the Commission at its Regular Staff Conference on July 29, 2013. The Public Staff recommended that the Commission approve the application and issue a certificate of public convenience and necessity.

After careful consideration, the Commission finds good cause to approve the application and issue the attached certificate of public convenience and necessity for the proposed solar photovoltaic electric generating facility on Edwards Fork Road, Scotland Neck, Halifax County, North Carolina.

IT IS, THEREFORE, ORDERED as follows:

1. That the application filed by SunEnergy1, LLC, for a certificate of public convenience and necessity shall be, and is hereby, approved.
2. That Appendix A shall constitute the certificate of public convenience and necessity issued to SunEnergy1, LLC, for the 20-MW_{AC} solar photovoltaic electric generating facility located on Edwards Fork Road, Scotland Neck, Halifax County, North Carolina.

ISSUED BY ORDER OF THE COMMISSION.

This the 30th day of July, 2013.

NORTH CAROLINA UTILITIES COMMISSION

Gail L. Mount

Gail L. Mount, Chief Clerk

STATE OF NORTH CAROLINA
UTILITIES COMMISSION
RALEIGH

DOCKET NO. SP-751, SUB 8

SunEnergy1, LLC
192 Raceway Drive
 Mooresville, North Carolina 28117

is hereby issued this

CERTIFICATE OF PUBLIC CONVENIENCE AND NECESSITY
PURSUANT TO G.S. 62-110.1

for a 20-MW_{AC} solar photovoltaic electric generating facility

located on

Edwards Fork Road, Scotland Neck, Halifax County, North Carolina,

subject to all orders, rules, regulations and conditions
as are now or may hereafter be lawfully made
by the North Carolina Utilities Commission.

ISSUED BY ORDER OF THE COMMISSION.

This the 30th day of July, 2013.

NORTH CAROLINA UTILITIES COMMISSION

Gail L. Mount

Gail L. Mount, Chief Clerk