

March 26, 2008

Office of the Secretary
Federal Energy Regulatory Commission
888 First Street, N.E.
Washington, D.C. 20426

Dear Secretary of the Commission:

This filing is a notice of self-certification of a qualifying facility (QF) under the Public Utilities Regulatory Policy Act (PURPA). This filing includes an original and fourteen copies of FERC Form No. 556. A copy of this notice and completed Form 556 has been provided to City of Washington Electric Utilities and the North Carolina Utilities Commission.

Sincerely,

Shawn Fitzpatrick
Program Manager, PV and Wind

CC: Bob Arrington, City of Wilson – Wilson Energy
Kim Jenkins, City of Wilson – Wilson Energy
Sam Watson, NC Utilities Commission

PART A:

1a. Full Name of Applicant: North Carolina Solar Center
Purpose of Filing: Self-Certification

1b. Full Address of Applicant:
NC Solar Center
NCSU
Campus Box 7401
Raleigh, NC 27695-7401

1c. Owner of Facility:
North Carolina Solar Center
North Carolina State University

1d. Signature of authorized individual evidencing accuracy and authenticity of information provided by applicant

2. Person to whom communications regarding the filed information can be addressed:

Name: Shawn Fitzpatrick
Title: Program Manager, PV and Wind
Telephone Number: (919) 515-7147
Mailing Address: NC Solar Center
NCSU
Campus Box 7401
Raleigh, NC 27695-7401

3a. Location of facility to be certified:

State: North Carolina
County: Wake
City or Town: Raleigh
Street Address: 1101 Gorman Street
Raleigh, NC 27606

3b. Utility interconnecting with facility, purchasing useful output, and providing supplementary power:

City of Washington Electric Utilities

4a. Principal Components Description:

Two 3 kW (DC) Photovoltaic (PV) Arrays
One 4 kW Inverter
One 2.5 KW Inverter

One 1 kW (DC) Wind Turbine

4b. Maximum Gross and Maximum Net Electric Power Production Capacity, Show Derivation:

Photovoltaic modules are rated for their DC power output at Standard Testing Conditions (STC). STC are defined as a solar radiation of 1000 W/m² and module temperature of 25°C. To estimate peak AC power of a PV system, corrections are made for system losses including DC to AC power conversion losses, array mismatch losses, wiring losses, and manufacturer power specification tolerances. The assumption is made that the AC power rating of the array is 79% of the DC power rating.¹ Therefore, the maximum power capacity of the two PV systems at the NCSU Solar House is 4.74 kW.

The maximum DC capacity of the wind turbine is 1.0 kW. Based on manufacturer specifications on the inverter DC to AC conversion efficiency and estimating wiring losses, the AC maximum power rating for the system will be about 85% of the DC rating of the turbine, or 0.85 kW.

4c. Actual or Expected Installation and Operation Dates of the Facility:

One photovoltaic system was installed in 1992 and interconnected to the utility. In the future, the photovoltaic modules will be replaced with more modern technology. Installation of the second PV system and the wind turbine was completed in 2004. The expected life of these systems is twenty years.

4d. Primary Energy Input:

Solar: Photovoltaic Modules

5. Average annual hourly energy input for the following fossil fuels (BTU):

Natural Gas: 0

Oil: 0

Coal: 0

6. Discuss any characteristic of the facility which the cogenerator or small power producer believes might bear on its qualifying status:

None

7. There is no fossil fuel input

8. There is no non-eligible facility located within one mile of the instant facility owned by the North Carolina Solar Center or their affiliates.