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April 24, 2007

Mr. Charles L. A. Terreni
Chief Clerk/Administrator
The Public Service Commission of South Carolina
P. O. Drawer 11649
Columbia, South Carolina 29211

Re: Petition of the Office of Regulatory Staff to Establish Dockets to Consider Implementing the Requirements of Section 1251 (Net Metering and Additional Standards) of the Energy Policy Act of 2005

PSC Docket No. 2005-385-E
Testimony of Duke Energy Carolinas, LLC Witness Barbara G. Yarbrough

Dear Mr. Terreni:

Please find enclosed for filing the original and ten (10) copies of the Direct Testimony and Exhibits A, B and C of Barbara G. Yarbrough in the above-referenced docket.

PLEASE NOTE THAT THESE DOCUMENTS ARE AN EXACT DUPLICATE, WITH THE EXCEPTION OF THE FORM OF THE SIGNATURE, OF THE E-FILED COPY SUBMITTED TO THE COMMISSION IN ACCORDANCE WITH ITS ELECTRONIC FILING INSTRUCTIONS.

By copy of this letter, we are also serving all other parties of record. Please contact me if you have any questions.

Sincerely,

Catherine E. Heigel

Catherine E. Heigel
Assistant General Counsel

Enclosures

cc: Parties of Record

BEFORE THE PUBLIC SERVICE COMMISSION OF SOUTH CAROLINA

DOCKET NO. 2005-385-E

In the Matter of: Petition of the Office of Regulatory Staff to Establish Dockets to Consider Implementing the Requirements of 1251 (Net Metering and Additional Standards of the Energy Policy Act of 2005	))))))))	DIRECT TESTIMONY OF BARBARA G. YARBROUGH FOR DUKE ENERGY CAROLINAS, LLC

Q. PLEASE STATE YOUR NAME, ADDRESS AND POSITION WITH DUKE ENERGY CAROLINAS.

A. My name is Barbara G. Yarbrough. My business address is 526 South Church Street, Charlotte, North Carolina. I am the Manager of Regulatory Interface for Duke Energy Carolinas, LLC (referred to hereinafter as "Duke Energy Carolinas" or the "Company"). I have responsibility for assisting in the development, implementation and proper administration of the Company's rate schedules and service regulations, as well as administering the Commission's Rules and Regulations. I am also responsible for responding to customer inquiries including those directed to the South Carolina Office of Regulatory Staff.

Q. PLEASE STATE BRIEFLY YOUR EDUCATION AND PROFESSIONAL EXPERIENCE.

A. I have a Bachelor of Science in Home Economics from the University of North Carolina at Greensboro. I joined Duke Power Company (now known as Duke Energy Carolinas, LLC) in 1974, and since 1979 I have held several positions in the Company's Rates and Regulatory Affairs Department. I have testified before the North Carolina Utilities

1 Commission and the Public Service Commission of South Carolina in numerous
2 proceedings, including matters related to development and application of the Company's
3 rate schedules and service regulations.

4 Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY?

5 A. The purpose of my testimony is to (i) propose a new net metering rider ("Rider NM") to the
6 Company's existing time of use rate schedules RT and OPT in SC; (ii) explain how Rider
7 NM is applied; (iii) show how the proposed Rider NM is consistent with recently approved
8 small generator interconnection standards in South Carolina; (iv) discuss how it is
9 consistent with the Company's practice in North Carolina; and (v) correlate how the rate
10 calculation methodology employed is consistent with the method proposed by joint
11 Company witness Dr. Julius A. "Chip" Wright.

12 Q. PLEASE DESCRIBE THE NET METERING RIDER THE COMPANY PROPOSES TO
13 OFFER IN SOUTH CAROLINA.

14 A. Attached as Yarbrough Exhibit A to my testimony is the Company's proposed Net Metering
15 Rider. Rider NM is designed to provide an appropriate pricing mechanism and means for
16 interconnecting residential and small general service customers to the Duke Energy
17 Carolinas system, and to allow the customer to offset the load that would otherwise be
18 required from the Company with their own generation. Duke Energy Carolinas proposes to
19 make Rider NM available to residential and non-residential customers receiving concurrent
20 service from the Company on time of use rate schedules RT and OPT, where a photovoltaic,
21 wind-powered, micro-hydro or biomass-fueled generation source of energy is installed on
22 the customer's side of the delivery point for the customer's own use. The customer's
23 generation source must be interconnected with and operate in parallel with the Company's

distribution system in conformity with the Company's Standard for Interconnecting Small Generation 100 KW or Less with Electric Power Systems ("Interconnection Standard") approved by the Commission in Docket No. 2005-387-E. Further, for residential customers the Nameplate Rating of the customer's installed generation equipment must not exceed the estimated maximum monthly kilowatt demand of the residence or 20 KW, whichever is less. For nonresidential facilities, the customer's installed generation equipment must not exceed the estimated maximum monthly kilowatt demand of the facility or 100 KW, whichever is less. Schedules RT and OPT, shown in Yarbrough Exhibits B and C, have been revised to allow parallel operation when used in conjunction with Rider NM.

Q. PLEASE DESCRIBE HOW RIDER NM IS APPLIED AND HOW THE CUSTOMER'S BILL IS CALCULATED.

A. For customers wishing to participate in net metering, the Company installs a bi-directional time of use meter that registers the kilowatt hours going in either direction, *i.e.* the kilowatt hours purchased by the customer from the Company's system and the excess kilowatt hours produced by the customer's generator. The meter also registers the customer's highest thirty-minute integrated demand during peak hours, and for nonresidential customers, the highest thirty-minute integrated demand during off-peak hours. The meters are read for billing purposes approximately every thirty (30) days and bills are subsequently rendered. The bills for net metering customers will include a Basic Facilities Charge, a Demand Charge, On-Peak Energy Charges and Off-Peak Energy Charges. Excess On-Peak Energy and Off-Peak energy generated by the customer's system may be used to offset On-Peak and Off-Peak Energy Charges, respectively, during any billing month, but the charge will not be less than zero. However, any excess energy credits may be carried forward and applied to

On-Peak and Off-Peak Energy Charges, as appropriate, in successive billing months for up to twelve (12) months. At the beginning of each summer season, June 1, any remaining renewable energy credits are donated to the Company.

Q. HOW IS THE COMPANY'S PROPOSED RIDER NM CONSISTENT WITH THE RECENTLY APPROVED INTERCONNECTION STANDARD IN SOUTH CAROLINA?

A. Rider NM is available to residential customers with generator systems 20 KW or less, and to nonresidential customers with generator systems 100 KW or less, which complies with the approved Interconnection Standard.

Q. HOW IS THE PROPOSED RIDER NM CONSISTENT WITH THE COMPANY'S TARIFFS IN NORTH CAROLINA?

A. Duke Energy Carolinas proposed Rider NM (SC) is virtually identical to the Company's Net Metering Rider previously approved in North Carolina by the North Carolina Utilities Commission in NCUC Docket No. E-100, Sub 83.

Q. PLEASE DESCRIBE HOW THE RATE CALCULATION METHODOLOGY EMPLOYED BY THE COMPANY FOR ITS NM RIDER IS CONSISTENT WITH THE METHOD PROPOSED BY JOINT COMPANY WITNESS DR. JULIUS A. "CHIP" WRIGHT.

A. First, Rider NM allows the customer to use any excess electricity generated to offset electricity used at other times, provided however, that if the customer uses more electricity than the interconnected system generates, then the customer pays the difference. Second, Rider NM provides for limitations on the size and impacts of customer generators to the Company's system. Rider NM is limited to systems 20 KW or less for residential and 100

KW or less for nonresidential, but in either case, the system may not exceed the customer's normal load. Additionally, the Company may limit the aggregate of customer generator systems served under Rider NM to 0.2% of the Company's South Carolina jurisdictional retail peak demand for the previous calendar year. Third, Rider NM requires a time of use rate and a meter that can separately register on-peak and off-peak kilowatt hours to help ensure that the exchanges of electricity are of equal value. Rider NM, used in conjunction with a time of use rate that includes a demand charge, helps ensure that participating customers do not avoid paying their appropriate share of the total system costs incurred by the Company to serve them, including but not limited to customer service, billing collection costs and distribution and transmission system costs. In addition, the Company is essentially back standing the customer's generation system, which in the case of solar and wind generation technologies, have limits on availability.

Q. DOES THIS CONCLUDE YOUR DIRECT TESTIMONY?

A. Yes, it does.

Rider NM (SC)
Net Metering

AVAILABILTY (South Carolina only)

Available on a first-come, first-served basis to residential and nonresidential Customers receiving concurrent service from the Company where a photovoltaic, wind-powered, micro-hydro or biomass-fueled generation source of energy, is installed on the Customer's side of the delivery point, for the Customer's own use, interconnected with and operated in parallel with the Company's distribution system. The aggregate capacity of all Customer-Generators served under this Rider shall not exceed 0.2% of the Company's South Carolina jurisdictional retail peak demand for the previous calendar year.

GENERAL PROVISIONS

1. To qualify for service under this Rider, a residential Customer must be served on time of use rate Schedule RT. The Nameplate Rating of the Customer's installed generation system and equipment must not exceed the estimated maximum monthly kilowatt (KW) demand of the residence or 20 KW, whichever is less.
2. To qualify for service under this Rider, a nonresidential Customer must be served on time of use rate Schedule OPT and may not be receiving service under Rider IS or SG. The Nameplate Rating of the Customer's installed generation system and equipment must not exceed the Customer's Contract Demand or 100 KW, whichever is less.
3. If the electricity supplied to the Customer by the Company exceeds the electricity delivered to the grid by the Customer-Generator during a monthly billing period, the Customer-Generator shall be billed for the net electricity in kilowatt hours supplied by the Company, plus any demand or other charges under the applicable time of use rate schedule. If the electricity delivered to the grid by the Customer-Generator exceeds the electricity in kilowatt hours supplied by the utility during a monthly billing period, the Customer-Generator shall be credited for the excess kilowatt hours generated during that billing period. Charges or credits will be determined using the appropriate on-peak and off-peak energy rates of the applicable rate schedule as further outlined in the RATE paragraph below:
4. All other provisions of the applicable time of use rate schedule including, but not limited to, Determination of Billing Demand, Determination of On-Peak and Off-Peak Hours, Definition of Month, Contract Demand, Adjustment for Fuel Costs, etc. will apply to service supplied under this Rider.
5. If the Customer is not the owner of the premises receiving electric service from the Company, the Company shall have the right to require that the owner of the premises give satisfactory written approval of the Customer's request for service under this Rider.
6. Any renewable energy credits (RECs) associated with excess energy shall be retained by the Company at the season rate change on June 1 of each year.

RATE

The rate shall be the applicable time of use demand rate schedule and the monthly bill shall be determined as follows:

I. The Basic Facilities Charge shall be the Basic Facilities Charge from Schedule RT or Schedule OPT as appropriate.

II. The Demand Charge shall be determined as outlined in Schedule RT or Schedule OPT as appropriate.

III. Energy Charges (or Credits) shall be based on the net On-Peak and Off-Peak kilowatt hours purchased from or delivered to the Company for the bill month. For any bill month during which either the On-Peak or Off-Peak Energy Charges are a net credit, the respective On-Peak and/or Off-peak Energy Charges for the month shall be zero. Any Energy Credits shall carry forward on following month's bill by first applying excess On-Peak kwh against On-Peak kwh charges and excess Off-peak kwh against Off-peak kwh charges, then applying any remaining On-Peak kwh against any remaining Off-Peak kwh charges. Effective with the seasonal rate change on June 1 of each year, any accrued credit will be reset to zero. Credits shall not offset the Basic Facilities Charge or the Demand Charge.

MINIMUM BILL

The monthly minimum bill for Customers receiving service under this Rider shall be no less than Basic Facilities Charge plus the Demand Charge and, if applicable, the Economy Demand Charge from the applicable time of use rate schedule, and Extra Facilities Charge, if applicable.

METERING REQUIREMENTS

The Company will furnish, install, own and maintain metering to measure the kilowatt demand delivered by the Company to the Customer, and to measure the net kilowatt-hours purchased by the Customer or delivered to the Company. The Company shall have the right to install special metering and load research devices on the Customer's equipment and the right to use the Customer's telephone line for communication with the Company's and the Customer's equipment.

SAFETY, INTERCONNECTION AND INSPECTION REQUIREMENTS

This Rider is only applicable for installed generation systems and equipment that comply with the South Carolina Standard for Interconnecting Small Generation 100 kW or less with Electric Power Systems (EPS), hereinafter the "Interconnection Standard". The Customer must comply with the liability insurance requirements of the Interconnection Standard.

The Customer must submit an Application to Interconnect Small Generation 100kW or Less (SC) which must be accepted by the Company and pay an application fee in accordance with the Interconnection Standard.

POWER FACTOR CORRECTION

When the average monthly power factor of the power supplied by the Customer to the Company is less than 90 percent or greater than 97 percent, the Company may correct the energy in kilowatt-hours, as appropriate. The Company reserves the right to install facilities necessary for the measurement of power factor.

CONTRACT PERIOD

Each Customer shall enter into a contract for a minimum original term of one (1) year, except that either party may terminate the contract after one year by giving at least sixty (60) days previous notice of such termination in writing.

The Company reserves the right to terminate the Customer's contract under this Rider at any time upon written notice to the Customer in the event that the Customer violates any of the terms or conditions of this Rider, or operates the generation system and equipment in a manner which is detrimental to the Company or any of its customers. In the event of early termination of a contract under this Rider, the Customer will be required to pay the Company for the costs due to such early cancellation, in accordance with the Company's South Carolina Service Regulations.

SCHEDULE RT (SC)
RESIDENTIAL SERVICE, TIME-OF-USE

AVAILABILITY (South Carolina Only)
Available on a voluntary basis to individually-metered residential customers in residences, condominiums, mobile homes, or apartments which provide independent and permanent facilities for living, sleeping, eating, cooking, and sanitation.
Power delivered under this schedule shall not be used for resale or exchange or in parallel with other electric power or as a substitute for power contracted for or which may be contracted for, under any other schedule of the Company, except at the option of the Company, or for service in conjunction with Rider NM, under special terms and conditions expressed in writing in the contract with the customer.

TYPE OF SERVICE
The Company will furnish 60 Hertz service through one meter, at one delivery point, at one of the following approximate voltages, where available:

Single-phase, 120/240 volts; or
3-phase, 208Y/120 volts; or other available voltages at the Company's option.

Motors in excess of 2 H. P., frequently started, or arranged for automatic control, must be of a type to take the minimum starting current and must be equipped with controlling devices approved by the Company.

Three-phase service will be supplied, if available. Where three-phase and single-phase service is supplied through the same meter, it will be billed on the rate below. Where three-phase service is supplied through a separate meter, it will be billed on the applicable General Service schedule.

RATE:

I.	Basic Facilities Charge per month	$11.59	
		Summer Months June 1 – September 30	Winter Months October 1 – May 31
II.	On-Peak Demand Charge per month	$6.41	$3.21
III.	Energy Charge		
	a. On-Peak energy per month	4.9530 cents per kWh	4.9530 cents per kWh
	b. Off-Peak energy per month	3.9732 cents per kWh	3.9732 cents per kWh

DETERMINATION OF ON-PEAK AND OFF-PEAK HOURS

	Summer Months June 1 – September 30	Winter Months October 1 – May 31
On-Peak Period Hours	1:00 p.m. – 7:00 p.m. Monday – Friday	7:00 a.m. – 12:00 noon Monday - Friday
Off-Peak Period Hours	All other weekday hours and all Saturday and Sunday hours. All hours for the following holidays shall be considered as Off-Peak: New Year's Day, Good Friday, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, Day after Thanksgiving Day and Christmas Day.	

ADJUSTMENT FOR FUEL COSTS
The Company's Adjustment for Fuel Costs is incorporated as a part of, and will apply to all service supplied under, this Schedule.

DEFINITION OF "MONTH"
The term "month" as used in this Schedule means the period intervening between meter readings for the purposes of monthly billing. Readings are taken each month at intervals of approximately thirty (30) days. Summer months' rates apply to service from June 1 through September 30. Winter months' rates apply to service from October 1 through May 31.

DETERMINATION OF BILLING DEMAND
The On-Peak Demand for billing purposes each month shall be the maximum integrated thirty-minute demand measured for the On-Peak period during the month for which the bill is rendered.

MINIMUM BILL
The minimum bill shall be the Basic Facilities Charge.

Schedule RT (SC) (continued)

SALES TAX AND MUNICIPAL FEES

Any applicable sales tax, municipal service agreement fee, business license fee or other fee assessed by or remitted to a state or local governmental authority will be added to the charges determined.

PAYMENT

Bills under this Schedule are due and payable on the date of the bill at the office of the Company. Bills are past due and delinquent on the twenty-fifth day after the date of the bill. In addition, all bills not paid by the twenty-fifth day after the date of the bill shall be subject to a one and one-half percent (1 1/2%) late payment charge on the unpaid amount. This late payment charge shall be rendered on the following month's bill and it shall become part of and be due and payable with the bill on which it is rendered.

CONTRACT PERIOD

The original term of this contract shall be one year, and thereafter, until terminated by either party on thirty days' written notice.

SCHEDULE OPT (SC)
OPTIONAL POWER SERVICE, TIME-OF-USE

AVAILABILITY (South Carolina Only)
Available to the individual customer.

Service under this Schedule shall be used solely by the contracting Customer in a single enterprise, located entirely on a single, contiguous premise.

This Schedule is not available to the individual customer who qualifies for a residential schedule, nor for auxiliary or breakdown service. Power delivered under this schedule shall not be used for resale or exchange or in parallel with other electric power or as a substitute for power contracted for or which may be contracted for, under any other schedule of the Company, except at the option of the Company, *or for service in conjunction with Rider NM*, under special terms and conditions expressed in writing in the contract with the Customer.

The obligations of the Company in regard to supplying power are dependent upon its securing and retaining all necessary rights-of-way, privileges, franchises and permits, for the delivery of such power. The Company shall not be liable to any customer or applicant for power in the event it is delayed in, or is prevented from furnishing the power by its failure to secure and retain such rights-of-way, rights, privileges, franchises and permits.

TYPE OF SERVICE
The Company will furnish 60 Hertz service through one meter, at one delivery point, at one of the following approximate voltages, where available:

Single-phase, 120/240 volts, 120/208 volts, 240/480 volts or other available single-phase voltages at the company's option; or
3-phase, 208Y/120 volts, 460Y/265 volts, 480Y/277 volts; or
3-phase, 3-wire, 240, 460, 480, 575, or 2300 volts; or
3-phase, 4160Y/2400, 12470Y/7200, or 24940Y/14400 volts; or
3-phase voltages other than those listed above may be available at the Company's option if the size of the Customer's contract warrants a substation solely to serve that Customer, and if the Customer furnishes suitable outdoor space on the premises to accommodate a ground-type transformer installation, or substation, or a transformer vault built in accordance with the Company's specifications.

The type of service supplied will depend upon the voltage available. Prospective customers should determine the available voltage by contacting the nearest office of the Company before purchasing equipment.

Motors of less than 5 H.P. may be single-phase. All motors of more than 5 H.P. must be equipped with starting compensators. The Company reserves the right, when in its opinion the installation would not be detrimental to the service of the Company, to permit other types of motors.

RATE:

I.	Basic Facilities Charge	$33.54	
II.	Demand Charge	Summer Months	Winter Months
	A. On-Peak Demand Charge per month	June 1 – September 30	October 1 – May 31
	For the first 2000 kW of Billing Demand per month	$13.16 per kW	$7.69 per kW
	For the next 3000 kW of Billing Demand per month	$11.67 per kW	$6.40 per kW
	For all over 5000 kW of Billing Demand per month	$ 9.40 per kW	$4.74 per kW
	B. Economy Demand Charge per month	$1.01 per kW	$1.01 per kW
III.	Energy Charge		
	A. All On-Peak Energy per month	4.9854 cents per kWh	4.9854 cents per kWh
	B. All Off-Peak Energy per month	2.3253 cents per kWh	2.3253 cents per kWh

DETERMINATION OF ON-PEAK AND OFF-PEAK HOURS

	Summer Months	Winter Months
	June 1 – September 30	October 1 – May 31
On-Peak Period Hours	1:00 p.m. – 9:00 p.m.	6:00 a.m. – 1:00 p.m.
	Monday – Friday	Monday – Friday
Off-Peak Period Hours	All other weekday hours and all Saturday and Sunday hours.	

ADJUSTMENT FOR FUEL COSTS
The Company's Adjustment for Fuel Costs is incorporated as a part of, and will apply to all service supplied under, this Schedule.

DEFINITION OF "MONTH"

The term "month" as used in this Schedule means the period intervening between meter readings for the purposes of monthly billing. Readings are taken each month at intervals of approximately thirty (30) days.

Summer months' rates apply to service from June 1 through September 30. Winter months' rates apply to service from October 1 through May 31.

For customers in billing cycles 1-14 and 21-34, summer months' rates apply to the billing months of July through October. Winter months' rates apply to the billing months of November through June.

CONTRACT DEMAND

The Company will require contracts to specify the maximum demand to be delivered to the Customer which shall be the Contract Demand.

Where the Customer can restrict on-peak demand to levels considerably below that of the Contract Demand, the Company may also contract for a limited On-Peak Contract Demand in addition to the Contract Demand.

DETERMINATION OF BILLING DEMAND

A. The On-Peak Billing Demand each month shall be the largest of the following:

   1. The maximum integrated thirty-minute demand during the applicable summer or winter on-peak period during the month for which the bill is rendered.
   2. Fifty percent (50%) of the Contract Demand (or 50% of the On-Peak Contract Demand if such is specified in the contract)
   3. 15 kilowatts (kW)

B. Economy Demand

   To determine the Economy Demand, the larger of

   1. The maximum integrated thirty-minute demand during the month for which the bill is rendered; or
   2. 50% of the Contract Demand

   shall be compared to the On-Peak Billing Demand as determined in A. above. If the demand determined by the larger of B. 1 and B. 2 above exceeds the On-Peak Billing Demand, the difference shall be the Economy Demand.

MINIMUM BILL

The minimum bill shall be the bill calculated on the Rate above including the Basic Facilities Charge, Demand Charge and Energy Charge, but the sum of the On-Peak Demand Charge and the Economy Demand Charge shall not be less than $1.49 per month per kW of Contract Demand. If the Customer's measured demand exceeds the Contract Demand, the Company may at any time establish the minimum based on the maximum integrated demand in the previous twelve months including the month for which the bill is rendered.

POWER FACTOR CORRECTION

When the average monthly power factor of the Customer's power requirements is less than 85 percent, the Company may correct the integrated demand in kilowatts for that month by multiplying by 85 percent and dividing by the average power factor in percent for that month.

SALES TAX AND MUNICIPAL FEES

Any applicable sales tax, municipal service agreement fee, business license fee or other fee assessed by or remitted to a state or local governmental authority will be added to the charges determined above.

PAYMENT

Bills under the Schedule are due and payable on the date of the bill at the office of the Company. Bills are past due and delinquent on the fifteenth day after the date of the bill. If any bill is not so paid, the Company has the right to suspend service. In addition, all bills not paid by the twenty-fifth day after the date of the bill shall be subject to a one and one-half percent (1 1/2%) late payment charge on the unpaid amount. This late payment charge shall be rendered on the following month's bill and it shall become part of and be due and payable with the bill on which it is rendered.

CONTRACT PERIOD

Each customer shall enter into a contract to purchase electricity from the Company for a minimum original term of one (1) year, and thereafter from year to year upon the condition that either party can terminate the contract at the end of the original term, or at any time thereafter by giving at least sixty (60) days' previous notice of such termination in writing; but the Company may require a contract for a longer original term of years where the requirement is justified by the circumstances.

If the Customer requests an amendment to or termination of the agreement before the expiration of the initial term of the agreement, the Customer shall pay to the Company an early termination charge as set forth in the Company's Service Regulations.