santee cooper

December 30, 2009

Trish Jerman
Manager Energy Efficiency, Conservation & Outreach
SC Energy Office
1200 Senate St., 408 Wade Hampton Blg.
Columbia, SC 29201

Re: Integrated Resource Plan (2009) from the South Carolina Public Service Authority

Dear Ms. Jerman:

Enclosed is the 2009 Integrated Resource Plan (IRP) from the South Carolina Public Service Authority ("Santee Cooper") as required by SC Code Section 58-37-10, -30 and -40. The plan contains the demand and energy forecast for a fifteen-year period, as well as a program for meeting the requirements shown in the forecast. A description of demand-side management programs is also included.

If you have any questions, please call me at (843) 761-4123.

Sincerely,

Sylleste H. Davis
Manager, Wholesale Markets

One Riverwood Drive Moncks Corner, SC 29461-2901 (843) 761-8000 P.O. Box 2946101 Moncks Corner, SC 29461-6101

South Carolina Public Service Authority
(Santee Cooper)

INTEGRATED RESOURCE PLAN ANNUAL UPDATE

November 2009

TABLE OF CONTENTS

Introduction

The South Carolina Public Service Authority ("Santee Cooper") is a body corporate and politic of the State of South Carolina. Santee Cooper operates a vertically integrated electric utility system, including facilities for generation, transmission, and distribution of electric power and energy.

Santee Cooper is one of the nation's largest municipal wholesale utilities, whose System serves directly or indirectly over one-third of the State's population. Santee Cooper serves directly and indirectly some of the most rapidly developing areas of the State, including growing suburban areas outside Charleston, Columbia, Greenville, and Spartanburg as well as the coastal areas of Myrtle Beach and the Grand Strand, Hilton Head Island, Kiawah Island, and Seabrook Island.

Santee Cooper's direct customers currently include 31 large industrial customers, Central Electric Power Cooperative Inc. ("Central"), and two municipal electric systems; the City of Georgetown and the City of Bamberg. Santee Cooper also serves directly approximately 163,000 residential, commercial, and small industrial retail customers in parts of Berkeley, Georgetown, and Horry counties. Central is an association of 15 electric distribution cooperatives and the former Saluda River Electric Cooperative, Inc. ("Saluda"). Saluda is an association of five electric distribution cooperatives. Central serves primarily residential, commercial, and small industrial customers in all 46 counties of the State. Through Central, Saluda, and the two municipal electric systems, approximately 700,000 customers are served indirectly by Santee Cooper.

On a regular basis, Santee Cooper analyzes the existing and future demand energy needs of its customers in order to ensure it has a plan that will serve its customers in an economical and reliable manner. In an effort to meet its goal of providing customers with reliable and economical energy, Santee Cooper periodically assesses its future generating resource needs.

Several recent developments have caused Santee Cooper to begin re-evaluating its capital improvement program and long-term power supply plan. First, the on-going economic downturn has reduced the overall demand for electricity. In addition, proposed federal regulation of carbon emissions would significantly increase the operating costs of fossil-fired generating stations. Finally, in September 2009, Santee Cooper and Central Electric Power Cooperative, Inc. ("Central") entered into an agreement which, among other things, would permit Central to purchase the electric power and energy requirements necessary to serve five cooperatives located in the upper part of South Carolina from a supplier other than Santee Cooper. If the agreement between Central and a new supplier receives the requisite regulatory approvals, this load would transition to the new supplier over a seven year period beginning in 2013. Previously anticipated sales to Central would be reduced by the amount of the transitioned load. For the purposes of this update the full Central load is included.

Based on these factors, on August 24, 2009, the Authority suspended its efforts to further permit and develop the units at the Pee Dee site. The Authority is also reviewing other aspects of its capital improvement program and long-term power supply plan in light of these developments.

This Integrated Resource Plan ("IRP") contains the demand and energy forecast for a fifteen-year period, as well as a program for meeting the requirements shown in the forecast. This report also includes a description of demand-side management programs as required by SC Code Section 58-37-10, -30 and – 40.

I. Load Forecast

Overview

The load forecast is updated on an annual basis and consists of projections of monthly energy and peak demand requirements for a twenty year forecast horizon. Santee Cooper retains GDS Associates, Inc. to update and validate the forecasting models, develop an economic outlook, and prepare the energy and peak demand forecasts. The forecast is based on an analysis of historical events and assumptions regarding the future. These assumptions relate to key factors known to influence energy consumption and peak demand (e.g., economic activity, housing characteristics, appliance mix, electricity prices, weather conditions, and local area demographics).

For energy, the weather-sensitive portion of the forecast (residential and commercial classifications) is developed using econometric models. The non-weather sensitive industrial energy forecast is developed based on historical trends and information provided by individual industrial customers.

Peak demand projections are developed by sector. Econometrics is used to project peak demand for the Distribution, Central, Saluda, and Municipal sectors. Industrial customer demand is forecast based on contract demand.

In the 2009 load forecast, projected energy and peak demand are reduced to take into account potential savings from future energy efficiency and conservation programs. The current economic downturn is also taken into account. This "base case" load forecast is based on projected economic activity and normal weather conditions which are based on the most recent twenty-year averages. In addition to the base case load forecast, high and low-range projections of energy and peak demand requirements are developed to address uncertainties regarding the future.

The forecast referenced herein is Santee Cooper's 2009 Load Forecast adjusted to reflect savings from new energy efficiency programs (LF0901) for Calendar Years 2009 – 2028.

Process

1) Data Collection

The load forecast database is updated each year to include the most recent historical data. Database elements include: electric system data (e.g., number of customers, kWh sales, and revenues by customer class), economic and demographic data, market characteristics, housing characteristics, and weather data.

2) Economic Outlook

An economic outlook is prepared each year to address recent trends in economic activity and to develop growth trends for key economic and demographic factors, including: population, number of households, employment, personal income, retail sales, gross state product, and inflation. Economic outlooks are prepared for three areas: the Santee Cooper service area (Myrtle Beach metropolitan statistical area), the Central service area (primarily the state of South Carolina excluding counties in the northwest area), and the Saluda service area (northwest counties of the state). Historical values were obtained from Moody's Economy.com. Projected values were developed by Moody's Economy.com and the University of South Carolina (Division of Research, Moore School of Business).

3) Forecast Development

The Santee Cooper load forecast represents a territorial load covering portions throughout the state of South Carolina. The forecast is comprised of projections developed for the Distribution, Industrial, Central, Saluda, and Municipal sectors. Forecasts are prepared for each sector and are aggregated to produce the combined Santee Cooper territorial load forecast.

3.1 Distribution

Distribution requirements include energy sales, peak demand, and distribution losses for the residential, commercial, and small industrial classifications. The estimated number of residential customers is based on a regression model that specifies a relationship between number of customers and number of households. The estimated number of commercial and small

industrial customers is based on a regression model that specifies a relationship between number of customers and employment. A statistically adjusted end-use model is used to project average energy use per residential customer.[1] The model quantifies the impacts of real household income, price of electricity, household size, housing characteristics, market share of major electric end-uses, appliance efficiencies, and weather conditions. Energy sales are computed as the product of the number of customers and average energy use per customer.

An econometric model is used to project average commercial and small industrial energy use per customer. The model specifies a relationship between average annual use per customer, the ratio of real retail sales to employment, heating degree days, and cooling degree days. Energy sales are computed as the product of the number of customers and average energy use per customer.

Projections of peak demand are developed at the aggregate sector level by season (summer and winter). Econometric models are used to project peak demand as a function of weather normalized energy sales and maximum or minimum daily temperature on the summer or winter peak day.

3.2 *Industrial*

Projections of industrial energy sales and peak demand are developed individually for each customer. Projections are based on historical trends and information regarding future plans collected from the individual industrial customers.

3.3 *Central Requirements*

Central's 2009 load forecast was prepared by Central staff and provided to Santee Cooper. The forecast was based on econometric models and represents the aggregate 20-year forecast for Central's 20 member

[1] Statistically adjusted end-use ("SAE") models incorporate the strengths of traditional econometric and end-use models.

cooperatives. The forecast for Saluda is included in the aggregate Central forecast.

3.4 *Municipal*

The number of municipal customers is assumed at 2 throughout the forecast period. The number of customers served by the individual cities is not projected. An econometric model is used to project total energy sales for the municipal sector. The model includes real total personal income, heating degree days, and cooling degree days as independent variables.

Projections of peak demand are developed at the aggregate sector level by season (summer and winter). Econometric models are used to project peak demand as a function of weather normalized energy sales and maximum or minimum daily temperature on the summer or winter peak day.

3.5 *Total Territorial Requirements*

Total territorial requirements include the combined energy and peak demand requirements for the five sectors (i.e., Distribution, Industrial, Central, Saluda, and Municipal). The peak demand projections represent the highest simultaneous 60-minute load for the combined five sectors.

A simulation process is run to produce probabilistic energy and peak demand forecasts. Model inputs include probability distributions of total personal income, heating and cooling degree days, and peak day average temperatures. Outputs for each year of the forecast period include energy and peak demand distributions including projections from the 0% to 100% probability levels in increments of 5%. The high and low range forecasts are represented by the 95% and 5% probability levels. Results of the simulation analysis provide peak demand estimates for given temperatures and the probabilities that peak demand will rise or fall to specific levels around the base case forecast.

The following table (Table 1) contains the forecasted demand and energy included in LF0901. Table 2 contains historical energy and demand.

Table 1
2009 Load Forecast [1]

	Summer Peak (MW)	Winter Peak (MW)	Energy Sales (GWH)
2009	5,362	5,703	27,388
2010	5,460	5,927	27,937
2011	5,630	6,090	29,027
2012	5,747	6,201	29,523
2013	5,867	6,313	30,254
2014	5,962	6,400	30,631
2015	6,057	6,487	31,006
2016	6,158	6,600	31,453
2017	6,258	6,700	31,876
2018	6,359	6,804	32,299
2019	6,459	6,904	32,721
2020	6,558	7,007	33,139
2021	6,664	7,112	33,585
2022	6,770	7,218	34,033
2023	6,878	7,326	34,484

(1) Excludes all off-system sales.

Table 2
Historical Sales and System Peak Loads

	Sales	System Peak Load (1)
	(GWH)	(MW)
2008	26,687	5,650
2007	27,221	5,563
2006	25,422	5,195
2005	25,064	5,371
2004	24,451	5,088
2003	24,060	5,373
2002	24,121	4,795
2001	22,400	4,803
2000	22,139	3,876
1999	20,281	3,729
1998	19,466	3,523
1997	18,437	3,336
1996	17,548	3,441
1995	16,022	3,102

(1) Excludes all off-system sales to other utilities.

II. Existing Resources

Santee Cooper's total summer peak generating capacity as of January 1, 2009 was 5,672 MW (see Table 3). In addition, Santee Cooper receives 84 MW of firm supply from the U.S. Army Corps of Engineers ("Corps") and 327 MW of firm hydroelectric power from the Southeastern Power Administration ("SEPA"). In August 2006, Santee Cooper entered into a lease agreement with the county of Greenwood, South Carolina for the Buzzard Roost hydro electric generating facility for an additional 15 MW of peak capability.

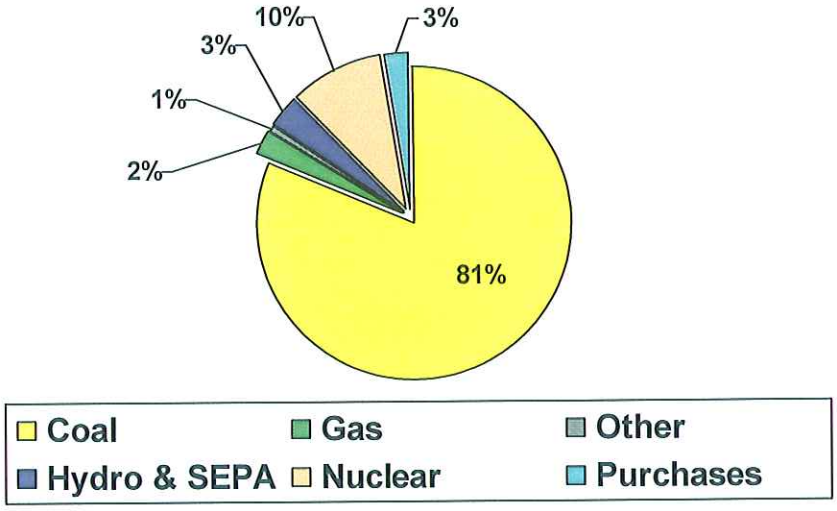
Table 3
Santee Cooper Owned Generating Facilities as of January 2009

Generating Facility	Units	Location	Summer Capacity	Winter Capacity	Fuel	Began Commercial Operation
Jefferies Station	1, 2, 3, 4, 6	Moncks Corner	128	128	Hydro	1942
Wilson Dam		Lake Marion	2	2	Hydro	1950
Jefferies Station	1 and 2	Moncks Corner	92	92	Oil	1954
	3 and 4		306	306	Coal	1970
Grainger	1 and 2	Conway	170	170	Coal	1966
Myrtle Beach Combustion Turbines	1 and 2	Myrtle Beach	20	22	Oil/Gas	1962
	3 and 4		40	50	Oil	1972
	5		30	35	Oil	1976
Hilton Head Combustion Turbines	1	Hilton Head Island	20	25	Oil	1973
	2		20	25	Oil	1974
	3		57	70	Oil	1979
Winyah Station	1	Georgetown	295	295	Coal	1975
	2		295	295	Coal	1977
	3		295	295	Coal	1980
	4		270	270	Coal	1981
V.C. Summer Nuclear Station[1]		Jenkinsville	318	318	Nuclear	1983
Cross Station	1	Cross	620	620	Coal	1995
	2		540	540	Coal	1983
	3		580	580	Coal	2007
	4		580	580	Coal	2008
Horry County Landfill Gas		Conway	3	3	Landfill methane gas	2001
Lee County Landfill Gas		Bishopville	5	5	Landfill methane gas	2005
Richland County Landfill Gas		Elgin	5	5	Landfill methane gas	2006
Anderson County Landfill Gas		Belton	3	3	Landfill methane gas	2008
Rainey Station	Combined Cycle	Starr	447	508	Gas	2002
	CT 2A		146	168	Gas	2002
	CT 2B		146	168	Gas	2002
	CT 3		74	85	Gas	2004
	CT 4		74	85	Gas	2004
	CT 5		74	85	Gas	2004
Diesel Units		Various	17	17	Oil	Purchased in 2003
Total Capacity			**5,672**	**5,850**		

(1) Santee Cooper's one-third ownership share. The operating license was extended to August 6, 2042 on April 23, 2004.

In 2010, it is forecasted that Santee Cooper's total energy needs will be met primarily by coal at 81% (see Figure 1). Nuclear energy is projected to supply 10% of the total energy needs, while natural gas is projected to supply 2%.

Figure 1
2010 Projected Total Energy Supply



III. Projections of Load, Capacity and Reserves

Santee Cooper meets its customers' demand and energy requirements through the use of Santee Cooper generation facilities as well as purchased power contracts. In addition, Santee Cooper ensures there is available capacity over and above that amount necessary to meet the load requirements. This reserve capacity is used to cover unexpected events, such as unit outages, adverse weather conditions, unexpected demand, or an unplanned loss in the transmission system. Currently, Santee Cooper uses planning reserve targets of 10% and 13%, respectively, for the winter and summer months.

In planning for future reserve needs, the load forecast's firm load requirements, less any requirements that are served by reserved resources such as SEPA, are used. The amount of future reserves needed is compared to the amount of current and planned generation to gauge the need for future generating units.

The load forecast, as well as reserve margin and capacity information, is contained in the table that follows (see Table 4).

Table 4

Seasonal Projections of Load, Capacity, and Resources Based on LF0901

W=Winter, S=Summer	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S
	08/09	2009	09/10	2010	10/11	2011	11/12	2012	12/13	2013	13/14	2014	14/15	2015	15/16	2016	16/17	2017	17/18	2018	18/19	2019	19/20	2020	20/21	2021	21/22	2022	22/23	2023	23/24	2024
Forecast Requirements																															
1 Santee Cooper System Peak	5,703	5,363	5,928	5,461	6,090	5,631	6,201	5,748	6,314	5,868	6,401	5,963	6,488	6,058	6,601	6,159	6,701	6,259	6,804	6,360	6,905	6,459	7,007	6,559	7,113	6,665	7,219	6,771	7,326	6,879	7,433	6,986
2 Interruptible Load	(73)	(273)	(289)	(289)	(355)	(372)	(386)	(386)	(395)	(395)	(395)	(395)	(395)	(395)	(395)	(395)	(395)	(395)	(395)	(395)	(395)	(395)	(395)	(395)	(395)	(395)	(395)	(395)	(395)	(395)	(395)	(395)
3 Firm Sales	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26
4 Total Reserved Load	5,656	5,115	5,663	5,196	5,761	5,284	5,841	5,387	5,944	5,497	6,030	5,593	6,117	5,688	6,230	5,789	6,331	5,889	6,434	5,989	6,534	6,089	6,637	6,188	6,742	6,294	6,848	6,401	6,956	6,508	7,063	6,615
5 Load Not Requiring Reserve	(411)	(411)	(411)	(411)	(411)	(411)	(411)	(411)	(411)	(411)	(411)	(411)	(411)	(411)	(411)	(411)	(411)	(411)	(411)	(411)	(411)	(411)	(411)	(411)	(411)	(411)	(411)	(411)	(411)	(411)	(411)	(411)
6 Total Load Requiring Reserve	5,245	4,704	5,252	4,785	5,350	4,873	5,430	4,976	5,533	5,086	5,619	5,182	5,706	5,277	5,819	5,378	5,920	5,478	6,023	5,578	6,123	5,678	6,226	5,777	6,331	5,883	6,437	5,990	6,545	6,097	6,652	6,204
Cumulative System Capacity																															
7 Available Generating Capacity	5,889	5,711	5,889	5,711	5,889	5,711	5,889	5,711	5,889	5,711	5,889	5,711	5,889	5,711	5,889	5,711	5,889	5,711	5,889	5,711	5,889	5,711	5,889	5,711	5,889	5,711	5,889	5,711	5,889	5,711	5,889	5,711
8 Catawba Entitlement	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9 Renewable Resources	16	21	21	22	25	25	80	82	125	125	126	126	168	168	169	169	209	209	209	209	249	249	289	289	289	289	289	289	289	289	289	289
10 Projected Resource Additions	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	495	503	495	503	495	1,005	991	1,005	991	1,005	991	1,005	991	1,005	991	1,005	991
11 Available Generating Capacity	5,905	5,732	5,910	5,733	5,914	5,736	5,969	5,793	6,014	5,836	6,015	5,837	6,057	5,879	6,058	6,376	6,601	6,416	6,601	6,416	7,144	6,951	7,184	6,991	7,184	6,991	7,184	6,991	7,184	6,991	7,184	6,991
Cumulative Purchase (Sales) Contracts																															
12 Long Term	411	411	411	411	411	411	411	411	411	411	411	411	411	411	411	411	411	411	411	411	411	411	411	411	411	411	411	411	411	411	411	411
13 Mid Term Contract					170	146	170	146	170	146	170	146																			
14 Proj Short Term Contract		(100)											225	90	345				30										20		135	25
15 Cumulative Production Capacity	6,316	6,043	6,321	6,144	6,495	6,293	6,550	6,350	6,595	6,393	6,596	6,394	6,693	6,380	6,814	6,787	7,012	6,827	7,042	6,827	7,555	7,362	7,595	7,402	7,595	7,402	7,595	7,402	7,615	7,402	7,730	7,427
Reserves																															
16 Generating Reserves	660	927	657	947	734	1,009	710	963	651	896	566	802	576	692	584	998	681	938	608	838	1,020	1,273	958	1,214	852	1,108	747	1,002	659	894	667	812
17 % Reserve Margin	13%	20%	13%	20%	14%	21%	13%	19%	12%	18%	10%	15%	10%	13%	10%	19%	12%	17%	10%	15%	17%	22%	15%	21%	13%	19%	12%	17%	10%	15%	10%	13%

IV. Generation Expansion Plan

Santee Cooper's overall power supply objective is to continue to satisfy the electric demand and energy needs of its customers with economical and reliable service. In developing a generation expansion plan to accomplish these objectives, Santee Cooper follows a systematic process in accordance with standard industry practice.

The company begins its resource planning process by reviewing its past load history and developing a load forecast that extends 20 years into the future. Following the determination of future load, potential supply-side generating resources are screened to determine which units are both viable and cost effective. These units are then included for consideration in the plan. Santee Cooper considers the possible addition of a variety of new power resources which may include nuclear, natural gas, oil and coal-fired units, renewable resources, and long-term power purchase agreements.

Assumptions about the future operating environment as well as the various costs associated with operating the new units and the overall system are also defined during the process of screening supply-side options. All of these assumptions are used to develop a recommended generation resource plan.

Santee Cooper then undergoes a rigorous financial and risk analysis to verify that the recommended generation resource plan meets Santee Cooper's needs under a variety of different scenarios.

After a methodical examination and analysis of the developed assumptions, modeling of a variety of different generation mixes, and a thorough analysis of the financial and risk sensitivity of the model results, preliminary recommendations are made.

Currently, Santee Cooper generation expansion plans include:

1) Suspension of the permitting for (2) coal-fired units at the Pee Dee site.
2) Continuation of the efforts to obtain a combined construction and operating license for a 45% ownership share of two 1,107 MW nuclear units at the V.C. Summer Nuclear Station site.
3) Monitoring of legislation related to carbon emissions.
4) Periodic evaluation of the generation expansion plan to determine the impacts of items such as potential carbon legislation, nuclear licensing efforts, changes in the load forecast, and updated cost information.

V. Transmission System Adequacy

Santee Cooper's transmission and distribution lines, as well as substations, deliver from the generating stations the reliable, low-cost power expected by customers. Santee Cooper operates an integrated transmission system which includes lines owned and leased by Santee Cooper as well as those owned by Central. The transmission system includes approximately 1,220 miles of 230 kilovolt ("kV"), 1,701 miles of 115 kV, 84 miles of 100kV, 1,713 miles of 69 kV, 57 miles of 46 kV and 96 miles of 34 kV and below overhead and underground transmission lines (see Figure 2). The Authority operates 102 transmission substations and switching stations serving 80 distribution substations and 474 Central Cooperative delivery points. Communications sites at 99 locations are in place to support the monitoring and controlling of integrated power system operations. The Authority plans the transmission system to operate during normal and contingency conditions that are outlined in electric system reliability standards adopted by the North American Electric Reliability Corporation ("NERC") and to maintain system voltages that are consistent with good utility practice.

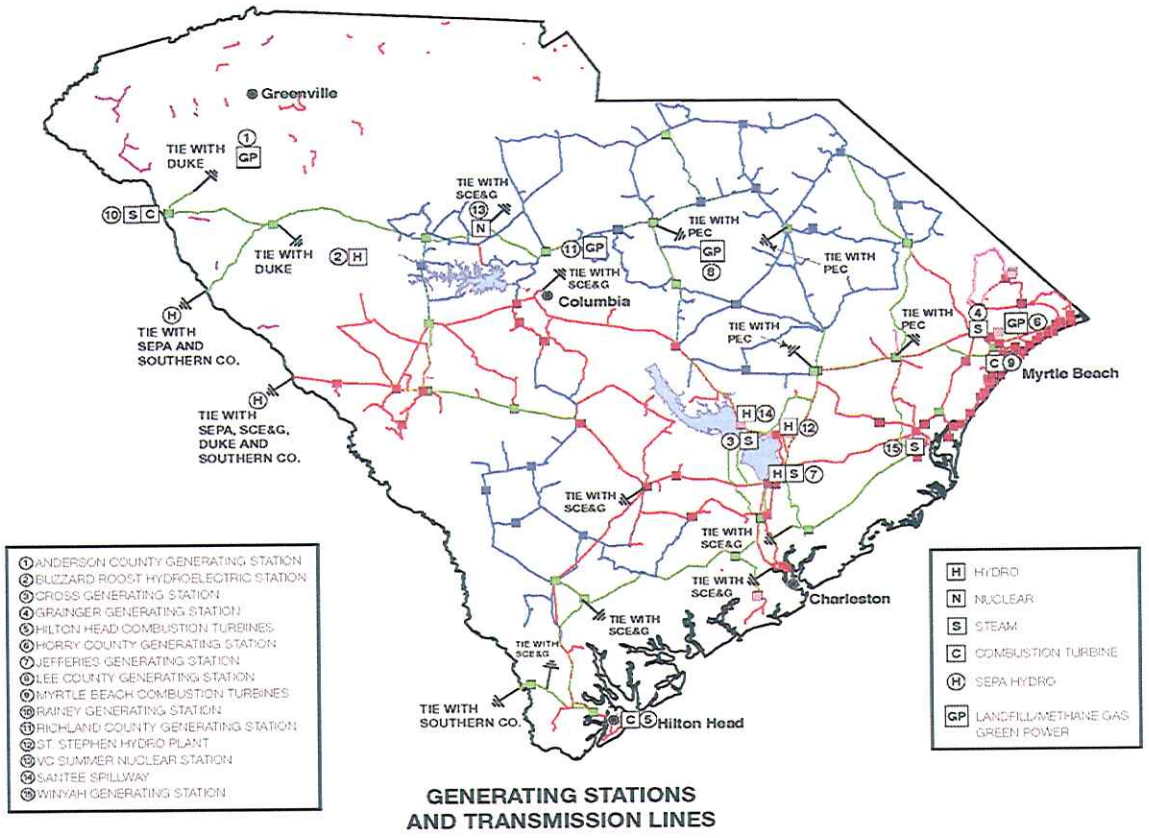
Santee Cooper's transmission system is interconnected with other major electric utilities in the region. It is directly interconnected with SCE&G at eight locations; with Progress Energy Carolinas ("Progress Energy") at seven locations; with Southern Company Services, Inc. ("Southern Company") at one location; and with Duke Energy Carolinas, a subsidiary of Duke Energy Corporation ("Duke"), at two locations. Santee Cooper is also interconnected with SCE&G, Duke, Southern Company and SEPA through a five-way interconnection at SEPA's J. Strom Thurmond Hydroelectric Project, and with Southern Company and SEPA through a three-way interconnection at SEPA's R. B. Russell Hydroelectric Project. Through these interconnections, Santee Cooper's transmission system is integrated into the regional transmission system serving the southeastern areas of the United States and the Eastern Interconnection. Santee Cooper has separate interchange agreements with each of the companies with which it is interconnected which provide for mutual exchanges of power.

Santee Cooper is party to the Virginia-Carolinas Reliability Agreement ("VACAR") which exists for the purpose of safeguarding the reliability of the electric service of the parties

thereto. Other parties to the VACAR agreement are SCE&G, Progress Energy, Duke, SEPA, APGI-Yadkin Division, Dominion Virginia Power, North Carolina Electric Membership Corporation, and Public Works Commission of the City of Fayetteville.

As a party to VACAR, Santee Cooper is also a member of the SERC Reliability Corporation, which is one of 8 regions of the North American Electric Reliability Corporation.

Figure 2



GENERATING STATIONS AND TRANSMISSION LINES

VI. Energy Efficiency, Conservation, and Demand Side Management (DSM) Activities

Demand-side management ("DSM") programs, including energy efficiency and conservation programs, are evaluated on a regular basis for their effect on energy and demand. Santee Cooper offers these DSM programs where cost effective and continues to search for ways to promote energy conservation. In the fall of 2007, Santee Cooper established a Conservation and Renewable Energy Department. This department focuses on developing new energy efficiency and conservation programs, as well as obtaining renewable resources to serve load. Additionally, Santee Cooper has developed rates that have encouraged over 450 MW of peak load control by industrial customers.

The impacts of the projected participation by Santee Cooper's directly served retail customers in existing and potential future programs as well as participation by the Central member cooperatives in their existing and potential future programs is considered when updating the Generation Plan. The list of current programs offered by Santee Cooper to its directly served retail customers and their general descriptions follows:

1) Good Cents New and Improved Home Program

The Good Cents Program was developed to provide residential customers an incentive to build new homes to higher levels of energy efficiency and improve existing homes by upgrading heating and air conditioning equipment and the thermal envelope to high energy efficiency standards. All homes are evaluated to determine if they meet the standards set for the program. Inspections are completed during construction for new homes and at the completion of construction for new and improved homes.

This program was closed to new customers on and after November 1, 2009, except for any customer who applied for the Good Cents Program prior to that date and whose home is certified under Santee Cooper's Good Cents Home Program prior to November 1, 2010.

Program participation in 2008 resulted in an estimated demand savings of 18,923 kW and estimated energy savings of 23,348,000 kWh. Total expenditures for the Good Cents Program incurred through Santee Cooper in 2008 were $1,569,070.55. (Demand savings are based on summer peak demand reduction of 1.05 kW).

2) H_2O Advantage Water Heating Program

H_2O Advantage is a storage water heating program designed to shift the demand related to water heating off-peak. This is accomplished with the installation of an electronic timer or radio controlled switch on an 80 gallon water heater. This program began in 1990 and was offered for the last time in 2000. The contract spans 10 years so this program will no longer be impacting the system after 2010.

Program participation in 2008 resulted in an estimated demand savings of 1,017 kW. Total expenditures for the H_2O Advantage Program incurred through Santee Cooper in 2008 for existing participants were $41,032.47.

3) Commercial Good Cents

Commercial Good Cents is offered to commercial customers building new facilities that improve the efficiency in the building thermal envelope, heating and cooling equipment, and lighting. Commercial customers that meet program standards are given an up-front rebate to encourage participation in the program.

Program participation in 2008 resulted in an estimated demand savings of 30 kW and estimated energy savings of 44,769 kWh. Total expenditures for the Commercial Good Cents Program incurred through Santee Cooper in 2008 were $9,410.

4) Thermal Storage Cooling Program

The Thermal Storage Cooling Program shifts energy used by commercial customers for air conditioning from peak to off-peak hours by utilizing thermal energy stored in a medium such as ice or water. Rebates are offered to customers who install this type of

equipment. There is currently one active participant in this program and an estimated demand reduction of 203 kW.

As part of Santee Cooper's demand control program, currently there are approximately 500 MW of load taking service under interruptible and economy power schedules. This load is excluded from the peak demand calculations for generation planning and reserves resource planning.

5) Energy Efficient Lighting

This program, new in 2008, encourages the use of compact fluorescent lights (CFLs) in homes served by Santee Cooper as a way to conserve energy. Customers received a voucher for 12 Energy Star, 75-watt equivalent CFLs that were redeemable by dropping by any of Santee Cooper's Customer Service offices. With more than 135,000 direct serve residential customers, the potential number of CFLs to be given away would be 1.6 million bulbs. This would equate to over 68,000 MWh per year in total energy savings. CFLs use up to 75% less energy than incandescent light bulbs, last up to 10 times longer, and provide a quick return on investment.

Program participation in 2008 resulted in 771,502 CFLs being distributed. There were a total of 65,298 customers participating, resulting in an estimated demand savings of 32.38 GWh.

6) Interruptible / Economy Power Pricing Rates

Santee Cooper has developed and offers time-of-use, non-firm, and off-peak rates to its direct-served residential, commercial, and industrial customers to encourage them to reduce their peak demand. The use of these rates is taken into account when developing the load forecast and generation plan.

An "economy power" rate is available to industrial customers, which is based on an hourly incremental energy rate. This is a real time pricing rate; the price for energy changes each hour. Customers must schedule their usage each hour. Service under this

Rider is curtailable in emergency situations by Santee Cooper. Pricing alternatives are available under this rate where the energy price is fixed during certain hours.There are also supplemental curtailable and interruptible rates available to industrial customers which allow for curtailment under certain circumstances.

As part of Santee Cooper's demand control program, currently there are over 450 MW's of load taking service under interruptible and economy power schedules. The portion of this load estimated to be on the system at the peak is excluded from the peak demand calculations for generation planning and reserves resource planning.

7) New Energy Efficiency Programs

In September 2009, Santee Cooper unveiled a new multiyear campaign aimed at substantially reducing the use of electricity and improving energy efficiency among its direct serve residential and commercial customers through rebates and new initiatives. The comprehensive "Reduce the Use South Carolina" energy efficiency campaign includes a total of 42 energy efficiency initiatives. "Reduce the Use" provides initiatives, education, best practices regarding energy saving tips, and rebates to help Santee Cooper's customers become more energy efficient.

Several incentives associated with Reduce the Use were launched in September 2009, including: (1) Refrigerator Rebate initiative that provides rebates for businesses and homeowners to replace their older residential type refrigerators with more efficient ENERGY STAR® qualified models and to recycle older working refrigerators; and (2) Compact Fluorescent Light (CFL) bulb distribution initiative for residential and commercial customers.

In November, 2009, Santee Cooper unveiled its "Smart Energy Homes Program" as part of Reduce the Use. Replacing the Good Cents Home Program, the Smart Energy Homes Program provides significant rebates to both homeowners and homebuilders.

More energy efficient programs are scheduled to launch in 2010 and 2011.

VII. Renewable Resources and Programs

1) Renewable Energy

1.1 Hydro

Santee Cooper's largest source of renewable energy is the hydro electric facilities that were developed during the birth of Santee Cooper. Since the 1940's the water that flows through the Santee Cooper lake system has played an integral role in the ability of Santee Cooper to provide low cost reliable power. Originally the hydro units were Santee Cooper's only source of generating capacity. As Santee Cooper grew over the years the hydro electric units on the lake have gradually shifted from the sole source of electric generation to being used mainly as peaking capacity today.

While there are no practical larger hydro projects the scale of the Santee Cooper lake system available in the state there may be the potential to develop small scale projects distributed throughout the state.

1.2 Biomass

In 2001, Santee Cooper became the first utility in South Carolina to produce 20 MW of generating capacity that is fueled by methane gas collected at large landfills with plans to increase that capacity in the future.

Santee Cooper is looking for ways to increase the use of various forms of biomass to produce electricity. Santee Cooper is investigating the potential of using various wood sources as a fuel, and the potential for methane produced from agricultural waste. Santee Cooper has partnered with Clemson University and one of the state's many farmers to investigate using animal waste in an anaerobic digester to produce methane gas to fuel a generator.

In June of 2009 the renewable energy program took a significant step forward when the Board of Directors authorized a Power Purchase Agreement where Santee Cooper agreed to purchase 50MW of biomass generated electricity from Loblolly Green Power, LLC.

1.3 Solar

Santee Cooper has developed a Solar School program that is very successful in the middle schools where the program has been setup. At the participating schools, Santee Cooper and the local electric cooperative installs a small 2 kW photovoltaic solar panel (PV) and provides a science curriculum. Eighteen Solar School installations have been completed with a total capacity of over 36 kW. To provide training opportunities for the teachers that will be using the curriculum, a similar 2 kW PV panel has also been installed at our Wampee Conference Center.

While South Carolina is not an ideal state for solar potential, Santee Cooper continues to investigate and utilize this resource. In addition to the 16kW Solar Pavilion at Coastal Carolina University, Santee Cooper built a 20kW installation at the Center for Hydrogen Research in Aiken and plans to complete a second 20kW installation in December of 2009 at the Technical College of the Lowcountry in Bluffton.

Another area where Santee Cooper promoted the use of solar power was in our Solar Homes Initiative. In this program, Santee Cooper encouraged consumers to install PV at their homes and sell any additional power that may be generated to Santee Cooper under its Net Billing rate schedule. Under the Solar Homes Initiative, Santee Cooper is offered a $3.00 per watt rebate to the first ten qualified customers, along with a zero percent interest, ten-year loan for installation costs not covered by the rebate.

2) *Wind*

In 2005 Santee Cooper began investigating the wind generating potential in the state. Santee Cooper partnered with the US Department of Energy and the South Carolina Energy Office to contract with AWS Truewind to provide wind mapping of South Carolina. Since the completion of the mapping, Santee Cooper has joined in on several partnerships to further the study of potential wind generation in the state.

2.1 Tall Towers

Santee Cooper helped install and maintain 50m tall towers at Waites Island in Horry County and the Baruch Institute in Georgetown. Santee Cooper worked with Coastal Carolina University, Clemson University, Savannah River National Labs, Secondwind, and the Baruch Foundation to complete these projects. The Waites Tower was removed in August after two years of operation and the Baruch Tower is still reporting data. While the towers proved that inland wind resources were not strong enough to sustain utility scale wind turbines, they also partially validated the estimates produced by AWS Truewinds in 2005 that predict a large wind resource exists in SC's offshore waters. Also, the Baruch Tower is being used to validate an emerging wind measuring technology, developed by Secondwind. Following the testing, this technology could improve the ability to take actual wind data in offshore settings without the installation of large meteorological towers.

2.2 Wind for Schools

Santee Cooper has partnered with Clemson to install a small wind turbine at four public locations where the wind resource is determined to be adequate. Preliminary studies at the Coastal Carolina campus and Georgetown High School revealed an inadequate wind resource at these inland sites. Subsequent testing is underway in Horry and Georgetown Counties in locations with greater access to coastal winds.

2.3 Palmetto Wind Research Project

A loosely knit group sharply focused on studying the feasibility of offshore wind farms. The principal focus now is a buoy initiative partnering a public utility, a public research university, and a state energy agency that places South Carolina among the leaders nationally in the arena of offshore wind research. In March 2009, Santee Cooper, Coastal Carolina University, and the SC Energy Office announced a joint study that could lay the foundation for offshore wind energy in the Palmetto State.

Six buoys and two land-based stations measure wind speed, direction and frequency at stations up to six miles off the SC coast. One string of buoys begins at Georgetown near the Baruch tower and the other at Waites Island near the previous location of the Waites tower. After sufficient buoy data is gathered, Santee Cooper plans to install an offshore anemometer tower near one of the buoy paths. This platform will measure upper-level winds similar to those a wind turbine would encounter. Coastal Carolina researchers, working closely with counterparts at NC State, will analyze the buoy data to help determine the best location for the platform. A private consulting firm will be contracted to design and install the offshore platform.

Concurrently, Santee Cooper is assisting in transmission and regulatory studies that will help streamline the installation process if Santee Cooper decides to push forward with an offshore project.

3) GOFER Program

Santee Cooper's Give Oil For Energy Recovery ("GOFER") program, in place since 1990, provides do-it-yourself oil changers a place to safely dispose of used motor oil. In 2008, Santee Cooper collected 1,824,754 gallons of used oil from more than 550 do-it-yourself sites and approximately 900 commercial sites. This oil was safely converted into 18,568,697 kilowatt-hours of power with a savings of more than $1,861,619 in fuel costs.

4) Green Power Program

With the addition of landfill methane generation in 2001, Santee Cooper began its Green Power program in which customers can pay an extra $3.00 per 100 kWh block on their electric bills to support future expansion of Santee Cooper renewable energy. Currently the majority of Santee Cooper's Green Power is produced from a form of Biomass – landfill methane. Santee Cooper's Green Power program continues to be successful, and has expanded to include its Green Power Tags program. The Green Power Tags program allows any South Carolina citizen to purchase Green Power Tags. As of December 31, 2008, more than 6,000 industries, businesses and homeowners all across the state have joined the effort to protect the environment by purchasing Green Power. All of Santee Cooper's Green Power and Green Power Tags are certified through the Center for Resource Solutions' (CRS) Green-e Program.

VIII. Environmental

The mission of Santee Cooper is to be the state's leading resource for improving the quality of life for the people of South Carolina. To fulfill this mission, Santee Cooper is firmly committed to being a steward of the environment. As such, Santee Cooper has developed the following Environmental Policy statement:

Santee Cooper is committed to:

Compliance with all applicable federal, state and local environmental statutes, regulations, enforceable agreements, and permits, and continual improvement in environmental performance, through

1. proactively seeking ways to enhance compliance,
2. promoting conservation and renewable energy initiatives,
3. minimizing environmental risks,
4. promoting pollution prevention, and
5. dedicating personnel, equipment, training, and materials for the comprehensive Environmental Management System.

Conclusion

Santee Cooper has been a leader in protecting our environment, being the first utility in the state to offer Green Power, generating electricity using landfill gas, promoting conservation and energy efficiency, installing state-of-the-art emission control technology, and funding innovative research into alternative forms of energy. Santee Cooper continues to evaluate and adjust the load forecast and resource plans as needed to meet future customer demand in a reliable and cost effective manner. Demand-side management programs are evaluated on a regular basis for their effect on energy and demand. Santee Cooper offers these DSM programs where cost effective, and has completed generation resource planning necessary to ensure a reliable generation plan to meet projected customer requirements through 2024. Additionally, Santee Cooper has developed rates that have encouraged over 450 MW of contracted peak load control by industrial customers.