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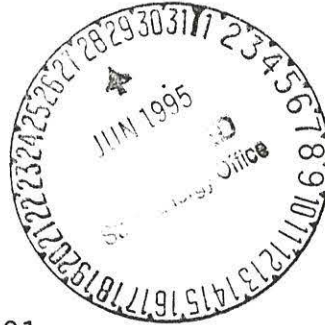
William R. Sutton, P.E.
Vice President



P.O. Box 2946101, Moncks Corner, South Carolina 29461-2901 • 803/761-4098 • Fax 803/761-4010

June 27, 1995

Via FedEx Delivery



Mr. Jay A. Flanagan, P.E.
Director
State Energy Office
1201 Main Street, Suite 820
Columbia, South Carolina 29201

Re: Santee Cooper's 1994 Integrated Resource Plan and 1995 Annual Integrated Resource Plan Update

Dear Mr. Flanagan:

Pursuant to Section 58-37-10 et seq. of the South Carolina Code and as amended by the South Carolina Energy Conservation and Efficiency Act of 1992, enclosed herewith are four copies of Santee Cooper's 1994 Integrated Resource Planning Analysis (IRP), dated January 1995. This IRP was prepared under contract by Metzler & Associates.

Also enclosed is the annual update (dated June 1995) to Santee Cooper's 1994 IRP. This update provides a status of the recommendations made for the "Metzler" IRP, filed by Santee Cooper on this date, and is being furnished as required by the South Carolina Code, Section 58-37-40.

If you need additional copies or would like to discuss any aspect of the IRP and/or annual update, please call me at (803) 761-4098.

Sincerely,

A handwritten signature in cursive script, appearing to read 'William R. Sutton'.

William R. Sutton, P.E.
Vice President
Planning and Power Supply

WRS/bcc (WRS4:94IRP-31.WIN)

Enclosures



One Riverwood Drive, P.O. Box 2946101, Moncks Corner, South Carolina 29461-2901 • (803) 761-8000

305

June 30, 1994

Mr. Jay Flanagan, P.E.
Director
State Energy Office
Room 201
915 Main Street
Columbia, South Carolina 29201

Dear Mr. Flanagan:

Enclosed is an update to Santee Cooper's 1993 Integrated Resource Plan, which provides a status of the recommendations made for the IRP and filed by Santee Cooper on June 30, 1993 as required by the South Carolina Energy Conservation and Efficiency Act of 1992, Section 58-37-40.

If you have any questions, please let me know.

Sincerely,

John D. Steedly
John D. Steedly
Director
Marketing

JDS: sbg

Enclosure

cc: CORPORATE PLANNING COMMITTEE MEMBERS:
Lonnie Carter
Bill Sutton
John West
Byron Rodgers

Marc Tye
Mike Brown
Bobby Johnson
J.D. Steedly

**1993 INTEGRATED RESOURCE PLAN
UPDATE**

South Carolina Public Service Authority

JUNE 1994

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I. 1993 Integrated Resource Plan Update

This report provides a status of the recommendations made for the 1993 Integrated Resource Plan (IRP) filed by the South Carolina Public Service Authority (Santee Cooper) June 30, 1993 as required by the South Carolina Energy Conservation and Efficiency Act of 1992, Section 58-37-40. The Act requires that all plans must be submitted every three years beginning June 30, 1993 and must be updated on an annual basis. The report will include the status of the recommended action plan for the 1993 IRP, a summary of existing DSM programs, and a summary of DSM programs evaluated and implemented since the 1993 IRP.

II. Status of Recommendations of Action from 1993 IRP

The following status of recommendations of actions taken by Santee Cooper are based on activity for CY93 and expected changes for the period prior to the next update. Among the accomplishments towards the implementation of the 1993 IRP was the selection of an outside consultant to perform a comprehensive Integrated Resource Plan. Santee Cooper selected Metzler and Associates February 1994 to complete a comprehensive Integrated Resource Plan which will focus on several of the items identified and assist in completing the recommendations from the 1993 IRP.

1. Continue the construction of Cross 1 and place in service as soon as possible (COD May 1995).

Should discuss economic, political, social conditions and potential impacts on IRP. Factors such as interest rates, exchange rates, abnormal weather, new laws/regulations could have major impacts on electric forecasts/DSM results.

Santee Cooper is continuing to build Cross 1. Construction of Cross 1 is on schedule with initial operation expected to begin November 1994 with a commercial operation date of May 1995 as reported in the IRP. Generating unit construction costs are under budget and estimated to be \$441,491,000 or \$818 per kW.

- 2. Continue investigating the possibility of selling reserve capacity following the completion of Cross 1.

Santee Cooper is reviewing its Load Forecast based on the summer 1993 peak and winter 1994 peak and determining the available reserves it has to sell. Neighboring utilities have been contacted and the possibilities of selling the excess capacities following the completion of Cross 1 have been discussed. (See APPENDIX A for list of utilities contacted.)

Contacted 17 companies about selling reserve capacity.

- 3. Develop site plans for the construction of several combustion turbine unit installations. At least eight combustion turbine units will be needed over an approximately 10-year period beginning 1998-2005.

Development of site plans are continuing as indicated in the 1993 IRP.

- 4. Continue to monitor and evaluate possibilities for buying and selling SO₂ allowances. The buying and selling of allowances could offset costs associated with the CAA compliance strategies outlined in this report.

The comprehensive IRP to be completed by Metzler and Associates will calculate the avoided cost for SO₂ removal to assess the possibility of bidding on future SO₂ allowances being placed on the market by DOE and other utilities.

5. Develop preliminary plans and schedules for retrofitting the Winyah 1 unit with an FGD system and determine the critical decision date for committing to the addition of the system. An FGD system will be needed for Winyah 1 if Alumax remains on the system unless other more cost effective compliance strategies emerge.

Preliminary plans and schedules for retrofitting the Winyah 1 unit with an FGD system have begun. Final determination will be evaluated based on results from the comprehensive IRP to be completed by Metzler and Associates.

6. Continue investigating other methods for achieving compliance with the CAA, including purchasing allowances, using fuel with a lower sulfur content, using Environmentally Sensitive Economic Dispatching, using natural gas at Winyah and other existing coal-fueled facilities, etc. Also investigate cost effective methods for deferring the Winyah 1 FGD system retrofit. Emerging technologies and markets, or other compliance options, may prove to be more cost effective to achieve CAA compliance if Alumax remains on the system.

The comprehensive IRP to be completed by Metzler and Associates will provide the avoided cost for SO₂ removal. This is needed to evaluate the different options discussed in the 1993 IRP. This will be the basis for a detailed study that will evaluate the most cost effective compliance for the Clean Air Act.

7. Continue existing DSM programs, and monitor and evaluate the programs to reflect the appropriate costs and incentives. Existing DSM programs were found to be cost effective in this study.

Good Cents New and Improved Home Program

The Good Cents Program is 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. This program is available

to site built, manufactured and modular homes. 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 all work for new and improved homes.

*Incentive changed from reduced \$/kwh energy charge to flat monthly credit plus lower energy charge. * see below*

Participants are eligible for an incentive rate. During a rate review for Santee Cooper's retail customers in 1993, changes were made to the type of incentive rate for Good Cents customers. The Good Cents incentive rate has changed from a reduced per kWh energy charge to a flat monthly credit plus a lower kWh energy charge. This was implemented for the retail Good Cents customers with the April 1994 rate adjustment and for wholesale customers beginning January 1995.

Program participation in 1993 resulted in a demand savings of 6,261 kW and energy savings of 3,221,531 kWh. Total expenditures for the Good Cents program incurred through Santee Cooper in 1993 were \$3,322,000. Program participation slightly exceeded expectations.

H₂O Advantage Off-peak Water Heating Program

H₂O 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 or larger water heater. An incentive is given in the form of rebates and monthly credits to customers for allowing Santee Cooper to control operation of the water heater during peak periods.

*Would be beneficial to discuss comparison of projected cost/benefit in actual. Use detail on DSM program evaluations, explanation/qualitative support provided when programs are modified results of DSM program evaluations * from*

Methodology for measuring actual results of DSM programs should be provided.

Program participation in 1993 resulted in a demand savings of 3,539 kW. Total expenditures for the H₂O Advantage program incurred through the South Carolina Public Service Authority in 1993 were \$5,418,000. Since wholesale participation far exceeded projections, demand savings for the program exceeded expectations.

*
see note
previous
page.

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 upfront rebate to encourage participation in the program.

Program participation in 1993 resulted in a demand savings of 91.5 kW and energy savings of 95,744 kWh. Total expenditures for the Commercial Good cents program incurred through the South Carolina Public Service Authority in 1993 were \$211,279. Due to lower than anticipated participation with wholesale customers, demand and energy savings were less than expected.

8. Develop a plan to further evaluate and implement the identified and feasible DSM programs. Proposed new DSM programs were found to be cost effective in this study.

Metzler and Associates were contracted to perform the 1994 Integrated Resource Plan Least-Cost Study to further evaluate the identified and feasible DSM programs for Santee Cooper.

This project is expected to be completed in the third quarter 1994. Recommendations from this outside consultant will be reviewed and appropriate action taken to develop any changes to the priority of DSM program evaluation and implementation.

9. Continue reviewing and improving integrated resource planning procedures and study methodologies, and continue conducting integrated resource studies and sensitivity analyses based on updated input information and revised study assumptions. Periodically have an integrated resource plan conducted by an outside consulting agency to take advantage of additional sources of data on DSM programs and capacity expansion options.

The comprehensive IRP to be completed by Metzler and Associates in 1994 will focus on meeting this requirement.

10. Develop contingency plans to install future capacity to meet the highest growth scenario with the flexibility to defer the additions to meet the lowest growth scenario. The timing of new capacity additions following the completion of Cross 1 varies among the forecast scenarios studied.

The comprehensive IRP to be completed by Metzler and Associates will also provide the complete evaluation of all plans needed to determine the contingency plans to meet the future power requirements for Santee Cooper's customers.

III. DSM Programs Evaluated in the 1993 IRP

Following are the DSM Programs evaluated in the 1993 IRP. They include two new programs that have been implemented since the 1993 IRP filing and an update on the work completed and expected changes until the next update for the remaining three residential and three commercial DSM programs that were evaluated.

A. New Programs Implemented Since 1993 IRP

1. Water Conservation Program

This program is targeted at existing residential homes in which older high-flow showerheads would be replaced with low-flow showerheads. The savings would be derived from the reduced energy requirement for heating water.

Program approval occurred the 3rd quarter of 1993 with implementation the 4th quarter of 1993. One direct mailing was completed and estimated energy savings was 4,927 kWh for 1993. Total expenditures were \$15,200 in 1993. Program participation is less than projected for the initial promotions.

2. Thermal Energy Storage Cooling Program

This 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.

Program development continued in 1993. Approval by Management and Board given in June 1994. Program implementation to be completed in 1994.

B. Residential DSM Programs Evaluated in 1993 IRP

1. Swimming Pool Load Management Program

This program would reduce summer peak load by preventing residential pool pumps from operating at peak hours. Pool pumps would be interrupted by radio-controlled communication devices. An incentive would possibly be offered to encourage customer participation.

Program development continues. Program development is expected to be completed in 1994 with submission to Executive Management for approval. Implementation will follow in 1994 and 1995 upon approval.

2. Geothermal Heat Pumps

This program would reduce summer and winter peak demands of residential customers by promoting heat pump technology utilizing water as the medium of heat transfer to the ground. Rebates would possibly be offered to customers who install equipment with higher than standard efficiencies to offset a portion of their higher costs for such equipment.

Initial research has been completed. Program development will begin after approval and implementation of Swimming Pool Load Management Program.

3. Duct Leakage Program

This program would lower residential energy consumption by locating and correcting leakage in existing household duct work.

Initial testing, research and program development continued in 1993. Program development will continue in 1994 with completion expected after implementing Swimming Pool Load Management Program. Upon receiving management approval, implementation is expected to be completed in 1995.

3. Duct Leakage Program

This program would lower residential energy consumption by locating and correcting leakage in existing household duct work.

Initial testing, research and program development continued in 1993. Program development will continue in 1994 with completion expected after implementing Swimming Pool Load Management Program. Upon receiving management approval, implementation is expected to be completed in 1995.

B. Commercial DSM Programs Evaluated in 1993 IRP

1. High Efficiency Space Conditioning Program

This program involves the implementation of high-efficiency space conditioning equipment for commercial and industrial customers and would reduce peak demand in both summer and winter through the installation of more efficient space heating and cooling equipment. Rebates would be offered to customers who install equipment with higher than standard efficiencies.

Program development will begin when implementation of the Thermal Energy Storage Program is completed. The availability of more efficient commercial equipment is limited due to new federal minimum standards. New more efficient equipment is expected to be available next year.

2. High Efficiency Lighting Program

This program involves the implementation of high-efficiency lighting equipment for commercial and industrial customers and would reduce peak demand in both summer and winter. Rebates would be offered to customers who install equipment with higher than standard efficiencies.

Program development will begin after approval and implementation of High Efficiency Space Conditioning Program.

3. Commercial Standby Generator Program

This program involves commercial and industrial customers serving their own load with their own generators during peak hours, and would reduce the summer and winter peak demands as

metered by Santee Cooper. Each participating customer would receive a monthly payment based on capacity and energy, as determined by a special meter installed on the customer's equipment.

This program was not recommended for implementation in the 1993 IRP. This program will be evaluated again in the next full IRP evaluation.

IV. Conclusion

Santee Cooper believes that it has made good progress towards the implementation of the recommendations in the 1993 IRP. These recommendations will be further reviewed in the studies by Metzler and Associates scheduled to be completed by September 30, 1994. The IRP conducted by Metzler and Associates will be forwarded to the State Energy Office as a supplement to this report during the 4th quarter of 1994.

- Establish formal comment process of consumers.
- Used same forecast - no changes.
- ISU programs - objectives
- How DSM benefits are estimated, how actual benefits determined.
- Results of major tests - TRC, RIT, PT, etc.
- More detail on implementation process.

APPENDIX A

NAMES/ADDRESSES FOR UTILITY SURVEYS

FOR

SCPSA'S 1994 IRP

- 1) South Carolina Electric & Gas Company
P. O. Box 764
Columbia, South Carolina 29218
Attention: Mr. Mitchell S. Tibshirany, Jr.
Vice President, T&D Engineering & Power Delivery
- 2) Carolina Power & Light
P. O. Box 1551
Raleigh, North Carolina 27602-1551
Attention: Mr. Bobby Montague
Vice President, System Planning & Operations
- 3) Duke Power Company
P. O. Box 1006
Charlotte, North Carolina 28201-1006
Attention: Mr. William F. Reinke
Vice President, System Planning and Operations
- 4) Virginia Power
P. O. Box 26666
Richmond, Virginia 23261-6666
Attention: Mr. Larry W. Ellis
Sr. Vice President, Power Operations & Planning
- 5) Southern Company Services
P. O. Box 2625
Birmingham, Alabama 35202
Attention: Mr. James G. Tulloss
Bulk Power Marketing
- 6) Jacksonville Electric Authority
21 West Church Street
Jacksonville, Florida 32202
Attention: Mr. P. G. Para
Division Chief of System Planning
- 7) Oglethorpe Power Corporation
P. O. Box 1349
Tucker, Georgia 30085-1349
Attention: Mr. Douglas Calvert
Manager of System Control
- 8) Cajun Electric Power Cooperative, Inc.
P. O. Box 15540
Baton Rouge, Louisiana 70895
Attention: Mr. James J. Weaver
Bulk Power Marketing Coordinator

- 9) Municipal Electric Authority of Georgia
1470 Riveredge
Parkway Northwest
Atlanta, Georgia 30328-4640
Attention: Mr. William E. Scott
Principal Engineer, Power Coordination
- 10) Piedmont Municipal Power Agency
121 Village Drive
Greer, South Carolina 29651
Attention: Mr. James A. Bauer
General Manager
- 11) North Carolina Eastern Municipal Power Agency
P. O. Box 29513
Raleigh, North Carolina 27626-0513
Attention: Mr. William F. Watson
Manager of Power Supply Operations
- 12) North Carolina Electric Membership Corporation
P. O. Box 27306
Raleigh, North Carolina 27611-7306
Attention: Mr. Gary D. Tipps
Vice President, Power Supply Division
- 13) Florida Power & Light Company
P. O. Box 029100
Miami, Florida 33102-9100
Attention: Mr. K. Adjemian
Manager, IRP
- 14) Entergy Electric System
P. O. Box 6100
Pine Bluff, Arkansas 71611
Attention: Mr. Bill Aycock
Manager of Dispatch
- 15) American Electric Power Service Corporation
P. O. Box 16631
Columbus, Ohio 43216-6631
Attention: Mr. C. A. Falcone
System Transactions Department - 27th Floor
- 16) Alabama Electric Cooperative, Inc.
Post Office Box 550
Andalusia, Alabama 36420
Attention: Mr. Damon Morgan
System Planning Department Manager
- 17) Florida Power Corporation
Post Office Box 14042
St. Petersburg, Florida 33733
Attention: Mr. Maurice H. Phillips
Executive Vice President

- 18) Orlando Utilities Commission
Post Office Box 3193
Orlando, Florida 32802
Attention: Mr. Troy W. Todd
Executive Vice President and General Manager

- 19) Tampa Electric Company
Post Office Box 111
Tampa, Florida 33601
Attention: Mr. H. I. Wilson
Vice President, Transmission & Distribution