



Public Service Commission

CAPITAL CIRCLE OFFICE CENTER • 2540 SHUMARD OAK BOULEVARD
TALLAHASSEE, FLORIDA 32399-0850

-M-E-M-O-R-A-N-D-U-M-

RECEIVED FPSC
MARCH 16 AM 9:53
RECORDS AND REPORTING

DATE: MARCH 16, 2000

TO: DIRECTOR, DIVISION OF RECORDS AND REPORTING (BAYO)

FROM: DIVISION OF ELECTRIC AND GAS (COLSON, GING)
DIVISION OF LEGAL SERVICES (CROSSMAN)

RE: DOCKET NO. 991791-EG - APPROVAL OF DEMAND-SIDE MANAGEMENT PLAN OF TAMPA ELECTRIC COMPANY.

AGENDA: 03/28/2000 - REGULAR AGENDA - PROPOSED AGENCY ACTION - INTERESTED PERSONS MAY PARTICIPATE

Handwritten notes: RVE, 3/16/00, JDT, JD

CRITICAL DATES: NONE

SPECIAL INSTRUCTIONS: NONE

FILE NAME AND LOCATION: S:\PSC\EAG\WP\991791.RCM

CASE BACKGROUND

The Florida Energy Efficiency and Conservation Act (FEECA), Chapter 366.82, Florida Statutes, requires the Commission to adopt goals to reduce and control the growth rates of electric consumption and weather-sensitive peak demand. In Docket No. 971005-EG (Order No. PSC-99-1942-FOF-EG, issued October 1, 1999), the Commission set numeric demand-side management (DSM) goals for Tampa Electric Company (TECO). Goals were set by the Commission after accepting a joint stipulation between TECO and an intervenor, Legal Environmental Assistance Foundation, Inc (LEAF), in Docket No. 971005-EG.

Rule 25-17.0021 (4), Florida Administrative Code, states that within 90 days of a final order establishing goals, a utility shall submit a DSM plan designed to meet its goals. TECO timely filed its DSM plan on December 29, 1999.

In Order No. 22176, issued November 14, 1989 in Docket No. 890737-PU, the Commission stated that conservation programs will be evaluated using the following criteria:

DOCUMENT NUMBER-DATE

03354-MAR 16 8

FPSC-RECORDS/REPORTING

1. Whether the program advances the policy objectives of Rule 25-17.001, Florida Administrative Code, and Sections 366.80 through 366.85, Florida Statutes, also known as the "Florida Energy Efficiency and Conservation Act" (FEECA);
2. Whether the program is directly monitorable and yields measurable results; and
3. Whether the program is cost-effective.

DISCUSSION OF ISSUES

ISSUE 1: Should the Commission approve Tampa Electric Company's Demand-Side Management Plan, including approval for cost recovery?

RECOMMENDATION: Yes. The Commission should approve TECO's Demand-Side Management Plan including cost recovery.

STAFF ANALYSIS: Overall, the level of TECO's new demand and energy goals for the period 2000 - 2009 is lower than the goals approved by the Commission in 1994. The primary reason for the decrease numeric goals is because the cost of new generating units has dropped substantially in the last five years. TECO has had to reduce rebates and incentives to customers in order to keep conservation programs cost-effective. Also, some existing DSM programs are approaching saturation levels, thereby reducing market potential. TECO's approach for developing its new DSM plan consisted of the following:

1. A comprehensive review of current programs;
2. Modifying appropriate programs to incorporate measures with market potential that were identified through the goals development process;
3. Examining research and development (R & D) efforts to measure applications that have reached commercial applicability in the marketplace;
4. Developing new residential and commercial programs that will exploit opportunities identified in those sectors;
5. Identifying a comprehensive approach to continue (R & D) in both the residential and commercial sectors;

6. Incorporating the specifics of the Commission approved stipulation between TECO and the Legal Environmental Assistance Foundation (LEAF); and

7. Maintaining an active presence with current and future cogeneration opportunities in the service area.

TECO's DSM Plan contains eight residential programs, seven commercial and industrial (C/I) programs, and one research and development (R&D) program, which can be either residential or C/I in nature. TECO's cumulative DSM savings in demand and energy for the residential market sector and for the C/I section for the period 2000 - 2009 are projected to exceed the Commission's goals set in Docket No. 971005-EG.

TECO's measurement plan to evaluate assumed demand and energy savings appears reasonable. Non-audit programs included in TECO's DSM plan are cost-effective under the rate impact measure (RIM), total resource cost (TRC), and Participant tests. However, it must be emphasized that staff is not addressing the prudence of expenditures for programs contained in TECO's DSM plan; such a review is performed annually in the Energy Conservation Cost Recovery (ECCR) docket. All of TECO's DSM program costs are to be recovered through the ECCR clause. However, Research & Development, and Cogeneration programs will not contribute towards TECO's goals.

TECO's DSM programs are summarized starting on page 6. The attached tables on pages 8 and 11 illustrate each DSM program's projected demand and energy savings and contribution toward TECO's numeric DSM goals.

Seven of TECO's eight residential DSM programs are current programs. TECO's new program, **Residential New Construction program**, is scheduled to begin in June, 2000. The program is designed to reduce the growth of peak demand and energy in the residential new construction market through the installation of high efficiency equipment and building envelope options. The program utilizes incentives to encourage the construction of new homes to be above the minimum energy efficiency levels required in the state of Florida Energy Efficiency Code for new construction. By implementing this program, TECO hopes to achieve the following: Certification of new home construction that meets or exceeds the standards used in Environmental Protection Agency's (EPA) Energy Star Program; promote the construction of energy efficient housing by educating builders (for profit and not-for-profit), trade groups, architects, realtors, lenders and home buyers in a manner designed to transform the residential new construction market by influencing decisions toward energy efficiency in building

techniques and practices; placing an emphasis on securing participation by affordable housing builders and buyers through education efforts, coordinated through affordable housing financiers and affordable housing builders; and encouraging the use of environmentally friendly building techniques. A summary of the program is contained on page 7.

TECO's C/I market sector also consists of eight programs, seven current and one new program. TECO's new program, **the Commercial Cooling program**, is scheduled to begin in June, 2000. The program provides an incentive for the installation of high efficiency direct expansion (DX) cooling systems in commercial buildings. This program is aimed at reducing the growth of peak demand and energy by encouraging customers to replace worn out, inefficient cooling equipment with high efficiency equipment that exceeds minimum product manufacturing standards. A summary of the program is contained on page 10.

TECO's Conservation Research and Development (R&D) program, estimated to start in June, 2000 is also new. This program is in response to Rule 25-17.001 (5)(f), Florida Administrative Code, requiring that aggressive research and development projects be "...an ongoing part of the practices of every well-managed electric utility's programs." TECO's R&D activity will be conducted on proposed measures to determine the impact to the company and ratepayers and will occur at customer premises, TECO's facilities or an independent test site. Most technology measures are eligible for consideration. Program costs are estimated at \$150,000 per year for a five year period. Expenses for a given year may not exceed \$150,000; however, total cost shall not exceed 750,000 for the five years. Data collected, shall be consistent with the Florida Public Service Commission's cost effectiveness methodology. Positive measure evaluation results will support future ECCR program filings by TECO. A summary of the program is contained on page 12.

TECO's DSM plan contains a minor change to the Commercial Standby Generator program (GSSG-1 Tariff). On sheet No. 3.202, paragraph seven, TECO added the wording that is highlighted below:

"The company will not call for the transfer of the customer load to the standby generator(s) included in this program during non-prime hours (as defined in the notification schedule) except for emergencies on the Company's system or during statewide power emergencies"

Based on the above discussion, staff recommends that the Commission approve Tampa Electric Company's Demand-Side Management Plan, including approval for cost recovery.

ISSUE 2: Should Tampa Electric Company be required to submit detailed program participation standards?

RECOMMENDATION: Yes. TECO should file program participation standards within 30 days of the issuance of the order in this docket. Staff should be allowed to administratively approve the program participation standards if they conform to the description of the programs contained in TECO's DSM plan.

STAFF ANALYSIS: TECO's program standards should clearly state the requirements for participation in the programs, customer eligibility requirements, details on how rebates or incentives will be processed, technical specifications on equipment eligibility, and necessary reporting requirements. Staff recommends that it be allowed to administratively approve these program participation standards if they conform to the description of the programs contained in TECO's approved DSM Plan.

ISSUE 3: Should this docket be closed?

RECOMMENDATION: Yes, this docket should be closed upon issuance of a Consummating Order unless a person whose substantial interests are affected by the Commission's proposed agency action in Issue 1 files a protest within 21 days of the issuance of the order.

STAFF ANALYSIS: If no person whose substantial interests are affected by the Commission's proposed agency action in Issue 1 files a protest within 21 days of the issuance of the order, this docket should be closed upon issuance of a Consummating Order.

TAMPA ELECTRIC COMPANY / DEMAND-SIDE MANAGEMENT PLAN

RESIDENTIAL PROGRAMS

1. **Alternate Audit (Free):** Free walk-through audit offered to all residential customers. This program is designed to save demand and energy by increasing customer awareness of available conservation measures which can reduce their energy use. Savings are dependent on the customer implementing energy saving recommendations.
2. **Mail-In Energy Audit:** Customers are supplied with an energy data collection form which the customer completes and returns for analysis. Energy conservation recommendations are made based on form responses. There is no charge to the customer.
3. **Residential Conservation Service (RCS) Audit:** Comprehensive energy audit where specific data on the structure of the residence and the customer's lifestyle is collected. The data is then entered into a computer program which calculates installation cost, investment payback period and estimated energy savings of available conservation programs. The charge for the audit is \$15.00.
4. **Ceiling Insulation:** Program to reduce demand and energy by decreasing the load on residential air conditioning and heating equipment. Customers must add a minimum of R-11 insulation in order to qualify for the incentive of \$100.00 in the form of a certificate which the customers may apply to the total cost of installing ceiling insulation.
5. **Duct Repair:** This program identifies demand and energy savings opportunities in HVAC equipment by inspecting air distribution system losses with a blower door test. The customer receives an assessment of any problems discovered during the inspection and, will receive a certificate equal to 75 percent of the total repair up to a maximum of \$200 to be used towards repairs performed by an approved HVAC contractor. The cost to the customer for the blower door test will be \$25.
6. **Heating and Cooling:** This program targets reducing the rate of growth in peak demand (particularly winter) and energy in the company's service area by increasing the saturation of high efficiency heat pumps and/or central air conditioning (without oil or resistance heat) through two types of equipment replacement in single family dwellings. Type one (1) heat pump replacing resistance heat and type two (2) heat pump replacing heat pump. For type one, an incentive of \$75 per qualifying unit is paid to participating dealers and the customer receives \$250 for a unit with a minimum SEER of 12.0. For a type two, an incentive of \$25 per qualifying unit is

paid to participating dealers and the customer receives \$100 for a replacement unit with a minimum SEER of 12.0

7. **Prime Time Load Management:** Prime Time is a residential load management program designed to control summer and winter peak demand loads. Certain selected appliances such as air conditioners, water heaters and pool pumps are controlled by a radio signal from TECO's system dispatchers. Except during emergencies, appliances are only interrupted during peak hours. Participants receive a monthly credit on their electric bill based on the appliances selected for load control and the type of interruption. The credit for central heating and cooling appliances is \$12.00 per month for a continuous 3-hour interruption and \$6.00 per month for summer cycle interruption. Hot water heaters and swimming pool pumps are \$4.00 and \$3.00 per month, respectively.

8. **Residential New Construction program:** Residential New Construction is designed to reduce the growth of peak demand and energy in the residential new construction market through the installation of high efficiency equipment and building envelope options. The program utilizes incentives to encourage the construction of new homes to be above the minimum energy efficiency levels required in the state of Florida Energy Efficiency Code for new construction. Incentives for qualifying levels will be offered to the home buyer for the following installations:
 - a. Level one - Incentive - \$00.00 - Requirement - Duct closure with mastic and meets the HERS standards for allowable duct leakage.

 - b. Level two - Incentive - \$100.00 - Requirement - Meet Level one plus the installation of a heat pump with a minimum 12 SEER (Seasonal Energy Efficiency Rating) and a minimum 7.2 HSPF (Heating Seasonal Performance Factor);
OR
Meet level one requirements plus installation of an air condition system that has a minimum 12 SEER and heating source must not be electric resistance heat or fuel oil.

 - c. Level three - Incentive - \$200.00 - Requirement - Meet level one and two requirements plus install R-30 ceiling insulation.

 - d. Level four - Incentive - \$300.00 - Requirement - Meet level one, two, and three requirements plus installation of heat recovery unit or a heat pump water heater (applicable only when used with an electric water heater).

TECO's RESIDENTIAL DSM PROGRAMS

DSM Program	Summer Peak Demand		Winter Peak Demand		Annual Energy Consumption		B/C Ratio (RIM)
	Savings (MW)	% of Goal	Savings (MW)	% of Goal	Savings (GWH)	% of Goal	
Residential Alternate Audit (Free)	1.871	4.643	4.210	3.859	15.576	20.685	N/A
Residential Conservation Service (RCS) Audit	0.004	0.010	0.009	0.008	0.033	0.044	N/A
Residential Mail in Audit	1.755	4.355	3.978	3.646	14.625	19.422	N/A
Residential Duct Repair	18.392	45.638	16.118	14.774	40.397	53.648	1.250
Residential New Construction	2.667	6.618	1.986	1.820	5.335	7.085	1.300
Residential Heating & Cooling	5.427	13.467	26.110	23.932	17.046	22.637	1.190
Residential Ceiling Insulation	5.790	14.367	25.187	23.086	25.669	34.089	1.370
Residential Load Management	18.125	44.975	41.869	38.377	0.000	0.000	1.240
TOTAL SAVINGS	54.031	134.072	119.467	109.502	118.681	157.611	
GOAL	40.300		109.100		75.300		

1
 00
 1

COMMERCIAL/INDUSTRIAL PROGRAMS

1. C/I Audit-Free: A conservation program designed to reduce demand and energy consumption by increasing customer awareness of energy use in their facilities. Recommendations are based on the replacement of less efficient equipment and systems or modifications to operations to enhance the customer's overall efficiency. Recommendations are primarily standardized and encourage the customer to implement measures that, if cost-effective, move the customer beyond the efficiency level typically installed in the marketplace. C/I customers on firm rates are eligible.
2. Comprehensive C/I Audit-Paid: A more detailed audit which may involve monitoring of specific equipment within a customer's facility to determine its electric usage with respect to time of operation. Based on the results, recommended changes to save energy on equipment and/or operation are made. Charges to the customer range from \$15.00 to \$75.00 depending on rate class.
3. Commercial Indoor Lighting: This incentive program for existing facilities is designed to encourage investment in more efficient fluorescent lighting technology within conditioned space. The customer receives a \$.10 per watt incentive by achieving a minimum of 1 KW in lighting reduction from any lighting source retrofitted with more efficient fluorescent lighting system (ballast and lamps).
4. C/I Load Management: Monthly credits are paid based on duration of interruption, for control of specified end-use equipment. Large loads, such as walk-in freezers, are interrupted for up to three hours, and Commercial air conditioning equipment is cycled during summer control periods. The credit for large loads interrupted up to three continuous hours is \$3.00/kW/month. Cycled air conditioning equipment is given a \$1.00/kW/month credit.
5. Commercial Standby Generator: Program designed to utilize the on-site generation of C/I facilities in order to reduce weather sensitive peak demand. Participating customers are given an hour notice to start their generators and arrange for orderly transfer of load. The standby generators are metered to determine the average portion of customer load served by the generators when called on by TECO. Participants receive a monthly credit of \$3.00 per kW.
6. Conservation Value: An incentive program designed to encourage investment in C/I measures which will substantially reduce or shift demand but which have limited application within the C/I sector and are consequently not covered under other conservation programs. To be approved, the measure must have a minimum summer and winter demand savings of 5 kW. Incentive - \$200/avg.kW reduction is the maximum amount to be paid on savings from a baseline case.

7. **Cogeneration:** Program to encourage cogeneration by providing assistance to commercial/industrial customers in the development of cost effective cogeneration alternatives to help meet and offset base load energy and peak load demands. Projected recoverable expenses for 2000 are estimated to be \$362,000. The preponderance of these expenses are allocated to payroll and benefits. TECO expects overall program expenses to escalate at three to five percent annually.

8. **Commercial Cooling program:** program provides an incentive for the installation of high efficiency direct expansion (DX) cooling systems in commercial buildings. This program is aimed at reducing the growth of peak demand and energy by encouraging customers to replace worn out, inefficient cooling equipment with high efficiency equipment that exceeds minimum product manufacturing standards. The commercial building must be a new or existing commercial structure in TECO's service area. Minimum qualifying rating (ARI rating only) is 10.0 EER. The range of sizes for commercial cooling to be eligible will be from 65,000 to 240,000 Btu's. Customer rebate will be \$25.00 per ton (\$0.002083 per Btu).

TECO's COMMERCIAL / INDUSTRIAL DSM PROGRAMS

DOCKET NO. 991791-EG
 DATE: MARCH 16, 2000

DSM Program	Summer Peak Demand		Winter Peak Demand		Annual Energy Consumption		B/C Ratio (RIM)
	Savings (MW)	% of Goal	Savings (MW)	% of Goal	Savings (GWH)	% of Goal	
Commercial/Industrial (C/I) Audit (Free)	0.130	0.422	0.098	0.731	0.554	0.486	N/A
Comprehensive C/I Audit (Paid)	0.002	0.006	0.001	0.007	0.007	0.006	N/A
Commercial Cooling Program	0.307	0.997	0.000	0.000	1.238	1.085	1.28
Commercial Indoor Lighting	28.640	92.987	9.222	68.821	120.110	105.267	1.10
Commercial Load Management - Cyclic	0.624	2.026	0.000	0.000	0.000	0.000	5.31
Commercial Load Management - Extended	0.916	2.974	0.600	4.478	0.000	0.000	3.07
Standby Generator	6.624	21.506	7.182	53.597	0.671	0.588	2.96
Conservation Value	1.103	3.581	0.347	2.590	3.357	2.942	1.48
TOTAL SAVINGS	38.346	124.500	17.450	130.224	125.937	110.374	
GOAL	30.800		13.400		114.100		

OTHER PROGRAMS

1. **Conservation Measures Research & Development:** This program is in response to Rule 25-17.001 (5)(f), Florida Administrative Code, requiring that aggressive research and development projects be "...an ongoing part of the practices of every well-managed utility's programs". TECO's R&D activity will be conducted on proposed measures to determine the impact to the company and ratepayers and will occur at customer premises, TECO's facilities or an independent test site. Most technology measures are eligible for consideration including renewable and green energy sources, energy efficient construction, heat recovery, space conditioning equipment, refrigeration, cooking, fuel cells, ventilation, pumps and fan efficiency, thermal energy storage systems, water heating, etc. Program costs are estimated at \$150,000 per year for a five year period. Expenses for a given year may not exceed \$150,000, however, total cost shall not exceed \$750,000 for the five years. Data collected, shall be consistent with the Florida Public Service Commission cost effectiveness methodology. Positive measure evaluation results will support future ECCR program filings by TECO.