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MEMORANDUM

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REGULATORY AND
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TO: Blanca Bayo
FROM: Roy C. Young *[Signature]*
DATE: November 29, 1999
SUBJECT: Docket #990722-EG
Orlando Utilities Commission

Enclosed find the following in connection with the above-captioned matter for filing in the above docket:

- 1. Original and 15 copies of Testimony & Exhibits of Myron R. Rollins. ~~14545-99~~
- 2. Original and 15 copies of Testimony & Exhibits of Robert L. Aasheim. ~~14545-99~~
- 3. Diskette *exh.* ~~14545-99~~

If you need anything further, please advise.

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cc: Cochran Keating, Esquire

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14545-99

BEFORE THE FLORIDA PUBLIC SERVICE COMMISSION

In re: Adoption of Numeric) DOCKET NO. 990722-EG
Conservation Goals and)
Consideration of National)
Energy Act Standards (Section 111))
by Orlando Utilities Commission)
=====

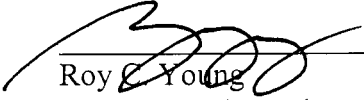
CERTIFICATE OF SERVICE

I HEREBY CERTIFY that a copy of the foregoing Testimony and Exhibits of Myron R. Rollins and Robert L. Aasheim have been mailed this 29th day of November, 1999, to the following parties of record:

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ORIGINAL



The Reliable One

**BEFORE THE
ORLANDO UTILITIES COMMISSION**

DOCKET NO. 990722-EG

ADOPTION OF NUMERIC CONSERVATION GOALS

NOVEMBER 15, 1999

TESTIMONY & EXHIBITS OF:

MYRON. R. ROLLINS

DOCUMENT NUMBER-DATE

~~14545~~ NOV 29 99

PROD-RECORDS/REPORTING

1 BEFORE THE PUBLIC SERVICE COMMISSION

2 ORLANDO UTILITIES COMMISSION

3 TESTIMONY OF MYRON R. ROLLINS

4 DOCKET NO. 990122-EG

5 NOVEMBER 15, 1999

6

7 **Q Please state your name and address.**

8 A My name is Myron R. Rollins. My business address is 11401 Lamar, Overland
9 Park, Kansas 66211.

10

11 **Q By whom are you employed and in what capacity?**

12 A I am employed by Black & Veatch as a Project Manager in the Energy Services
13 Group of the Power Division.

14

15 **Q Please describe your responsibilities in that position.**

16 A As a Project Manager in the Energy Services Group, I am responsible for
17 managing various projects for utility and non-utility clients. These projects
18 encompass a wide variety of services for the power industry. The services include
19 load forecasts, conservation and demand-side management, reliability criteria and
20 evaluation, development of generating unit addition alternatives, fuel forecasts,
21 screening evaluation, production cost simulation, optimal generation expansion
22 modeling, economic and financial evaluation, sensitivity analysis, risk analysis,
23 power purchase and sales evaluation, strategic considerations, analyses of the
24 effects of the 1990 Clean Air Act Amendments, feasibility studies, qualifying
25 facility and independent power producer evaluations, power market studies and

1 power plant financing.

2

3 **Q Please state your professional experience and educational background.**

4 A. I received a Bachelors of Science degree in Electrical Engineering from the
5 University of Missouri – Columbia. I also have two years of graduate study in
6 nuclear engineering at the University of Missouri – Columbia. I am a licensed
7 professional engineer and a Senior Member of the Institute of Electrical and
8 Electronic Engineers.

9

10 I have been employed by Black & Veatch since 1976 in the Power Sector
11 Advisory Services area. In the last ten years, I have been the project manager for
12 over 100 projects. I have conducted a majority of my work for Florida utilities.
13 Florida utilities for which I have worked include City of Lakeland-Department of
14 Electric Utilities, Kissimmee Utility Authority, Florida Municipal Power Agency,
15 Orlando Utilities Commission, JEA, City of St. Cloud, Utilities Commission of
16 New Smyrna Beach, Sebring Utilities Commission, City of Homestead, Florida
17 Power Corporation and Seminole Electric Cooperative.

18

19 I attempt to stay abreast of Florida Public Service Commission (PSC)
20 proceedings. For instance, I was the Project Manager for projects that prepared or
21 provided input to the preparation of 1999 Ten Year Site Plans for Kissimmee
22 Utility Authority, City of Lakeland, Orlando Utilities Commission and JEA. I
23 have previously presented testimony before the PSC for the Stanton 1 & 2 and
24 AES-Cedar Bay need for power certification and had my testimony stipulated for
25 Kissimmee Utility Authority and Florida Municipal Power Agency's Cane Island

1 Unit 3 need for power certification and the City of Lakeland's McIntosh Unit 5
2 need for power certification. I have also participated in the preparation of
3 testimony for the Seminole Electric's Hardee County Combined Cycle Project,
4 the Cypress Project and the Hines Energy Center Project need for power
5 certifications.

6
7 **Q Please describe the overall process leading to the determination of the**
8 **proposed numeric conservation goals for OUC?**

9 A Six major steps were taken to determine the proposed numeric conservation goals
10 for OUC. First, DSM measures with the highest potential of being cost-effective
11 were chosen. Second, the avoided cost was established. Third, the selected DSM
12 measures were cost-effectively analyzed against the avoided costs. Fourth, the
13 results were analyzed. Fifth, the proposed numeric goals were set based on the
14 results of the analyses. Sixth, a DSM plan was developed.

15
16 **Q What is the purpose of your testimony in this proceeding?**

17 A The purpose of my testimony is to address steps one through five. In my
18 testimony, I will discuss the selection of the measures to be tested, the
19 determination of the avoided costs, and methodology used to evaluate the cost-
20 effectiveness of these goals. I will also discuss economic assumptions used in
21 the evaluations as well as the fuel price projections used. I will show that OUC
22 has adequately explored demand side programs and is proposing appropriate
23 goals.

24
25 **Q Was the OUC 2000 Demand Side Management Plan (Exhibit OUC-1)**

1 **prepared by you or under your direct supervision?**

2 A Yes.

3

4 **Q Are you adopting Sections of the OUC 2000 Demand Side Management Plan**
5 **as part of your testimony?**

6 A Yes, I am adopting Sections 1.0 through 6.0 and Appendices A and B as part of
7 my testimony.

8

9 **Q Are there any corrections to these Sections?**

10 A No.

11

12 **Q Please describe the evaluation process by which OUC determined the**
13 **demand side management measures for cost effectiveness analysis.**

14 A In order to reduce the cost of complying with this docket, OUC did not model
15 each possible DSM measure. Rather, OUC's study focused on alternatives that
16 are expected to have the highest potential in Florida for being cost-effective. The
17 measures were taken from OUC's 1995 Demand Side Management Plan, and the
18 recent results of Florida Power & Light's (FPL) cost-effective analysis of demand
19 side measures associated with FPL's 1999 goals. These measures were compiled
20 and used in a cost-effectiveness analysis versus OUC's avoided unit costs.

21

22 **Q Please describe how the avoided costs were determined.**

23 A Avoided costs are determined by selecting an avoided unit. The avoided unit is
24 the unit that could potentially be avoided or delayed due to the implementation of
25 DSM programs.

1 The selection of the avoided unit is based on the next planned unit for OUC.
2 Based on OUC's 1999 Ten Year Site Plan, OUC's expansion plan does not
3 require unit additions for the time period of 1999 through 2008. There has been a
4 major change since the submittal of the 1999 Ten Year Site Plan. OUC has sold
5 its Indian River steam units to Reliant. Under this agreement, OUC will purchase
6 power generated from the Indian River steam units for four years. At the
7 expiration of the four-year contract, OUC maintains the option of signing a
8 second four-year contract.

9
10 For the purpose of evaluating DSM programs, OUC has chosen a combined cycle
11 as an avoided unit. This represents a conservative assumption. If the cost of
12 continuing to purchase power is less than the combined cycle, then the DSM
13 programs evaluated will be less cost effective.

14

15 **Q What type of financing has been assumed to be used for the installation of**
16 **the avoided unit?**

17 A The avoided unit is assumed to be financed with 100% debt. Because OUC is a
18 municipal utility, it can issue low cost tax-free municipal bonds. This allows the
19 installed cost of a new unit to be extremely cost effective and cost competitive.

20

21 **Q Please describe the evaluation process by which potential DSM programs**
22 **were evaluated?**

23 A The process used to evaluate the cost-effectiveness of DSM programs conforms
24 to that required in Rule 25-17.008, Fla. Admin. Code. Specifically, the
25 procedures used are those set forth in the Florida Public Service Commission

1 Cost-effectiveness Manual for Demand Side Management Programs and Self
2 Service Wheeling Proposals. The Florida Integrated Resource Evaluator (FIRE)
3 spreadsheet, originally developed by Florida Power Corporation, was used to
4 assess the potential effectiveness of DSM programs.

5
6 Using the procedures specified in Rule 25-17.008 Fla. Admin. Code, FIRE
7 provides a systematic framework for identifying the benefits and costs associated
8 with specific DSM programs. Avoided utility costs are economically evaluated
9 against DSM costs and load impacts to assess the effectiveness of the program
10 over its useful life. Three DSM program benefits / cost tests are produced by the
11 FIRE model and are used in considering DSM cost-effectiveness. These tests are
12 the Rate Impact Test (RIM), the Total Resource Cost Test (TRC) and the
13 Participants Test. The results of the three cost-effectiveness tests for the DSM
14 programs evaluated are shown in Table 5-1 of OUC's 2000 Demand Side
15 Management Plan.

16
17 **Q What economic parameters were assumed as inputs for the FIRE Model?**

18 **A** The economic parameters assumed represent a consistent set of economic
19 parameters from OUC's 1999 Ten Year Site Plan. A general inflation rate of
20 3.0 percent was used. The 3.0 percent annual general inflation rate is applicable
21 to capital costs, operations and maintenance (O&M) expenses and various other
22 expenses. A long-term bond interest rate of 5.5 percent was assumed and the
23 same interest rate was assumed for interest during construction. These were both
24 selected to be consistent with a 3.0 percent general inflation rate. A fixed charge
25 rate of 8.78 percent was developed based on the 5.5 percent bond interest rate and

1 applied to the capital cost for a new unit addition in the evaluations.

2

3 **Q What fuel forecasts were developed or used for the FIRE Model evaluations?**

4 A The base case natural gas fuel price projection in Appendix A of OUC's 2000
5 Demand Side Management Plan is the same as presented in OUC's 1999 Ten
6 Year Site Plan and was used in the FIRE Model.

7

8 **Q Are the fuel price projections developed reasonable for use in evaluating
9 different generating unit alternatives?**

10 A Yes. The fuel price projections are consistent with current fuel prices for existing
11 units at OUC and are reasonable to use to evaluate the avoided unit.

12

13 **Q Please describe the three DSM tests used to evaluate DSM programs.**

14 A All the DSM cost effectiveness tests are based on the comparison of discounted
15 present worth benefits to costs for a specific DSM program. Each test is designed
16 to measure costs and benefits from a different perspective.

17

18 The Rate Impact Test is a measure of the expected impact on customer rates
19 resulting from a DSM program. The test statistic is the ratio of the utility's
20 benefits (avoided supply costs and increased revenues) compared to the utility's
21 costs (program costs, incentives paid, increased supply costs and revenue losses).

22 A value of less than one indicates an upward pressure on rate levels as a result of
23 the DSM program.

24

25 The Total Resources Cost Test measures the benefit / cost ratio by comparing the

1 total program benefits (both the participant's and utility's) to the total program
2 costs (equipment costs, supply costs, participant costs).

3
4 The Participants Test measures the impact of the DSM program on the
5 participating customer. Benefits to the participant may include bill reductions,
6 incentives paid, and tax credits. Participants' costs may include equipment costs,
7 operation and maintenance expenses, equipment removal, etc.

8

9 **Q Which cost-effectiveness test was utilized by OUC in evaluating DSM**
10 **measures?**

11 A All three cost effectiveness tests were calculated for each DSM measures
12 analyzed and considered in our evaluation. The Rate Impact Test serves as the
13 primary test for OUC in determining cost-effectiveness of DSM measures. In
14 other words, OUC does not, in general, support DSM programs, which increase
15 rates.

16

17 **Q Please describe the selection of DSM measures for evaluation.**

18 A A total of 7 residential and 4 commercial potential DSM measures was evaluated
19 to assess cost-effectiveness. The measures were selected to ensure that all
20 potentially cost-effective measures were evaluated. The measures were selected
21 from three areas of potentially cost-effective measures. First, the cost-effective
22 measures from OUC's 1995 goals were selected. Second, measures from OUC's
23 current DSM programs were selected. Third, the most cost-effective measure
24 from FPL's 1999 goals was selected. This selection process was used in order to
25 reduce the number of measures evaluated in the FIRE model and, thus, the cost of

1 complying with this docket. This process saved evaluating numerous measures
2 only to find that they were not cost-effective. In selecting the most cost-effective
3 measure evaluated by FPL, it was reasoned that if the most cost-effective FPL
4 measure evaluated was not cost-effective, then none of the hundreds of measures
5 that were evaluated by FPL would be cost-effective.

6
7 **Q Please describe the results of the analysis undertaken to evaluate the cost**
8 **effectiveness of potential DSM measures.**

9 A None of the measures evaluated was cost-effective based on the Rate Impact Test.

10
11 **Q Does it surprise you that no DSM measures proved to be cost-effective for**
12 **OUC?**

13 A No. I didn't expect any DSM measures to be cost-effective for OUC.

14
15 **Q Why did you not expect any DSM measures to be cost-effective?**

16 A I had recently evaluated dozens of DSM measures for similarly situated municipal
17 utilities as part of the Need for Power dockets for Cane Island Unit 3 and the
18 Combined Cycle Conversion of McIntosh 5. None of the measures evaluated was
19 cost-effective.

20
21 **Q Why is it so much more difficult for DSM to be cost-effective today than it**
22 **was in 1995?**

23 A A number of things have changed to make DSM less cost-effective. For one,
24 appliances are more efficient and building codes and practices result in more
25 efficient buildings. The cost of building power plants has decreased and the

1 efficiency of power plants has increased. In addition, fuel costs have decreased
2 along with the projected cost of fuel. These, along with other factors, result in
3 DSM being less cost-effective.

4
5 **Q Why do the investor owned utilities indicate that some DSM measures are**
6 **cost-effective while municipal utilities do not?**

7 A The main reason is that municipal utilities are able to use tax exempt bonds for
8 financing the avoided unit. Thus, the cost of financing is much less for municipal
9 utilities than it is for investor owned utilities.

10
11 **Q Does this conclude your testimony?**

12 A Yes.

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