

Orlando Utilities Commission
500 South Orange Avenue
P.O. Box 3193
Orlando, Florida 32802
Phone: 407.423.9100
Administrative Fax: 407.236.9616
Purchasing Fax: 407.384.4141
Website: www.ouc.com



The *Reliable* One

August 13, 1999

VIA HAND DELIVERY

Ms. Blanca S. Bayo, Director
Division of Records and Reporting
Florida Public Service Commission
2540 Shumard Oak Boulevard
Tallahassee, FL 32399-0850

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Re: Generic Investigation into Aggregate Electric Utility Reserve
Margins Planned for Pensinsular Florida; FPSC Docket No.
981890-EU

Dear Ms. Bayo:

Enclosed for filing in this docket are the original and fifteen copies of Orlando Utilities Commission's Testimony in the referenced case. Also enclosed is a diskette with the testimony.

Thank you for your assistance in this matter.

Sincerely,

Thomas B. Tart

Thomas B. Tart
General Counsel

TBT/reb

Enclosures

cc: All parties of record (w/encl.)
Robert V. Elias, Esquire
Leslie J. Paugh, Esquire
Roy C. Young, Esquire

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STATE OF FLORIDA PUBLIC SERVICE COMMISSION

CERTIFICATE OF SERVICE

I HEREBY CERTIFY that the original and 15 copies of Orlando Utilities Commission's Testimony of Myron R. Rollins have been furnished by hand delivery to The Director of the Division of Records and Reporting and to Robert V. Elias and Leslie J. Paugh, Staff Counsel, Florida Public Service Commission, Gerald L. Gunter Building, 2540 Shumard Oak Boulevard, Tallahassee, Florida 32399, and a true and correct copy has been furnished by U. S. Mail this 16th day of August, 1999, to the following:

Reedy Creek Improvement
District
Willard Smith/Fran Winchester
Post Office Box 10175
Lake Buena Vista, FL 32830

Utilities Commission, City of New
Smyrna Beach
Ronald L. Vaden
Post Office Box 100
New Smyrna Beach, FL 32170

City of Tallahassee
Richard G. Feldman
300 S. Adams Street
Tallahassee, FL 32301

Office of Public Counsel
John Roger Howe
111 W. Madison St., Room 812
Tallahassee, FL 32399

McWhirter Reeves McGlothlin
Vicki Gordon Kaufman
117 S. Gadsden Street
Tallahassee, FL 32301

Beggs & Lane
Jeffrey Stone
Post Office Box 12950
Pensacola, FL 32576

Ausley & McMullen
James Beasley
Post Office Box 391
Tallahassee, FL 32301

FL Electric Cooperative Assoc.
Michelle Hershel
Post Office Box 590
Tallahassee, FL 32302

Legal Environmental Assistance
Foundation
Deb Swim
1114 Thomasville Rd., Ste. E
Tallahassee, FL 32303

Florida Reliability Coordinating
Council
Ken Wiley
405 Reo Street, Suite 100
Tampa, FL 33609

Landers & Parsons
Scheff Wright
Post Office Box 271
Tallahassee, FL 32302

Moyle Flanigan
John Moyle, Jr.
210 S. Monroe Street
Tallahassee, FL 32301

Steel Hector and Davis
Matthew M. Childs
210 S. Monroe St., Ste. 601
Tallahassee, FL 32301

City of Homestead
James Swartz
675 N. Flagler Street
Homestead, FL 33030

City of Lake Worth Utilities
Harvey Wildschuetz
1900 Second Avenue, North
Lake Worth, FL 33461

Seminole Electric Cooperative
Timothy Woodbury
Post Office Box 272000
Tampa, FL 33688

Florida Power Corporation
Jim McGee
Post Office Box 14042
St. Petersburg, FL 33733

City of Lakeland
Gary Lawrence
501 E. Lemon Street
Lakeland, FL 33801

Gainesville Regional Utilities
Raymond O. Manasco, Jr.
P. O. Box 147177, Sta. A-138
Gainesville, FL 32614-7117

Jacksonville Electric Authority
Tracey E. Danese
21 W. Church Street, Tower 16
Jacksonville, FL 32202

Kissimmee Utility Authority
A. K. (Ben) Sharma
Post Office Box 423219
Kissimmee, FL 34742

Young van Assenderp & Varnadoe
Roy Young
Post Office Box 1833
Tallahassee, FL 32302-1833

Florida Municipal Power Agency
Frederick Bryant
Post Office Box 3209
Tallahassee, FL 32315

Thornton Williams & Assoc.
Paul Sexton
Post Office Box 10109
Tallahassee, FL 32302

ORLANDO UTILITIES COMMISSION

By: Thomas B. Tart
Thomas B. Tart, Esquire
General Counsel
Florida Bar No. 0113120
500 South Orange Avenue
Orlando, Florida 32801
(407) 423-9123

1 BEFORE THE FLORIDA PUBLIC SERVICE COMMISSION

2 ORLANDO UTILITIES COMMISSION

3 TESTIMONY OF MYRON R. ROLLINS

4 DOCKET NO. 981890-EU

5 AUGUST 16, 1999

6
7 **Q. Please state your name and business address.**

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

10
11 **Q. Who is your employer and what position do you hold?**

12 A. I am employed by Black & Veatch Corporation (Black and Veatch) as a Project
13 Manager in the Plant Services Department of the Power Division.

14
15 **Q. Please describe your responsibilities in that position.**

16 A. As a Project Manager in the Plant Services Department, 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, screening
21 evaluations, production cost simulation, optimal generation expansion modeling,
22 economic and financial evaluation, sensitivity analysis, risk analysis, power
23 purchase and sales evaluations, strategic considerations, analyses of the effects of
24 the 1990 Clean Air Act Amendments, feasibility studies, qualifying facility and

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1 independent power producer evaluations, power market studies, and power plant
2 licensing.

3
4 **Q. Please summarize your background and experience.**

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

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

19
20 I attempt to stay abreast of Florida Public Service Commission (PSC)
21 proceedings. For instance, I was the Project Manager for projects which have
22 prepared Ten Year Site Plans for Kissimmee Utility Authority, City of Lakeland,
23 Orlando Utilities Commission and Jacksonville Electric Authority. I have
24 previously presented testimony before the PSC for the Stanton 1 and 2 and AES-
25 Cedar Bay, Cane Island 3 and McIntosh 5 need for power certifications. I have

1 also participated in the preparation of testimony for the Seminole Electric's
2 Hardee County Combined Cycle Project, the Cypress Project, and the Hines
3 Energy Center Project need for power certifications.
4

5 **Q. What is your relationship with Orlando Utilities Commission?**

6 A. Black & Veatch has been providing engineering services to OUC for over 40
7 years. I have personally provided power supply planning services to OUC since
8 1979.
9

10 **Q. What is the purpose of your testimony?**

11 A. The purpose of my testimony is to discuss OUC's positions on the issues in this
12 Docket.
13

14 **Q. Please describe Orlando Utilities Commission (OUC) reserve margin
15 planning criteria.**

16 A. OUC uses a minimum reserve margin of approximately 15 percent applied to the
17 hourly integrated annual peak demand. The use of a minimum reserve margin
18 planning criterion directly infers that there may well be circumstances in which
19 OUC may deem a higher planning reserve margin prudent. Likewise, there may
20 be some rare short-term instances in which OUC deems it prudent to allow its
21 minimum-planning criterion to dip slightly below 15 percent. Ultimately, OUC's
22 management is responsible for determining the adequacy of OUC's resources to
23 meet OUC's customer's needs and for balancing the cost of reserves versus their
24 benefits.
25

1 **Q: Why does OUC use a minimum reserve criterion of approximately 15**
2 **percent?**

3 A. There are a number of reasons OUC uses a minimum reserve criterion of 15
4 percent. One reason is that the Florida Public Service Commission (FPSC) has
5 established a minimum planned reserve margin criterion of 15 percent in Section
6 25-6.035(1) Fla. Admin. Code for the purposes of sharing responsibility for grid
7 reliability. The Florida Reliability Coordinating Council (FRCC) of which OUC
8 is a member, has also set a minimum planning reserve margin criterion of 15
9 percent. In addition to the FPSC and FRCC requirements, the minimum 15
10 percent reserve margin criterion appears appropriate for OUC at this time when
11 all things are considered.

12
13 **Q. What additional things are considered by OUC in determining their**
14 **minimum reserve margin criterion?**

15 A. There are a number of considerations. One consideration is the cost of capacity
16 related to supplying reserves. OUC desires to keep costs to OUC's customers as
17 low as possible consistent with reliable service. With a municipal utility, all costs
18 are passed through to the customers. Generally the higher the reserves, the higher
19 the cost. The concern over cost is compounded by the potential for retail
20 deregulation. With retail deregulation, excess reserves may place OUC in a
21 noncompetitive situation. Another consideration is to provide reliable service to
22 customers. Inadequate generating capacity is only one component contributing to
23 customer outages. In fact, lack of generation is one of the smallest components
24 contributing to customer outages. The distribution system generally is the largest
25 component contributing to customer outages.

1 **Q: Are there load considerations that contribute to the selection of the reserve**
2 **criterion?**

3 A. Yes. The customers' load shape and the availability of demand side management
4 and interruptible or curtailable loads have an influence on the selection of the
5 reserve criterion. Winter peaks are generally more spiked in nature, while summer
6 peaks are broader. Generally the broader the peak, the greater the requirement for
7 reserves. OUC is generally a winter peaking utility, but sometimes peaks in the
8 summer if the winters are mild. Thus with OUC's 15 percent planning reserve
9 margin applied to the winter peak demand, the resulting reserve margin on the
10 broader summer peaks is proportionately higher.

11
12 **Q. Are there generating unit and purchase power contract considerations**
13 **related to the selection of a minimum reserve margin criterion?**

14 A. Yes. There are a number of considerations. The higher the availability of
15 generating units, the less reserves are required. This factor is generally not
16 considered in reserve margin calculations. There are also generating unit
17 considerations associated with the season during which the peak occurs. For
18 instance in the winter, as it gets colder, generally the generating capability of units
19 increases. On the other hand, in summer, as the temperature gets higher the
20 capability of the generating units decreases. Specific aspects of purchase power
21 and sales contracts also have an impact on reserve requirements. Some of these
22 aspects include the firmness, any options for additional power, and provisions for
23 recalling the power.

1 **Q: Are there reserve sharing characteristics that impact the reserve margin**
2 **criteria determination?**

3 A. Yes. OUC is a member of the Florida Municipal Power Pool (FMPP). Each
4 member is responsible for their own planning reserves. FMPP is not a capacity
5 sharing pool. While each member of FMPP is responsible for providing their own
6 reserves, there are provisions for obtaining capacity from the other members
7 through FMPP if OUC's units are unavailable due to forced outage or
8 maintenance. OUC also has agreements with most if not all of the utilities in
9 Florida to provide Schedule A and B capacity in the case of forced outages or
10 maintenance. OUC is able to access this capacity through its numerous
11 interconnections with the other utilities in the state.

12

13 **Q. Does OUC have any Qualifying Facilities (QF's) in their service area that**
14 **impact reserve margin requirements?**

15 A. OUC does not have any QF's in its service area.

16

17 **Q Can you summarize why OUC uses the minimum reserve criterion of**
18 **approximately 15 percent?**

19 A. Yes. As indicated by the above discussions, OUC considers many things in
20 determining a planning reserve criterion. The impact from each of the individual
21 considerations is difficult, if not impossible to quantify, but when taken
22 altogether, OUC believes the selected reserve margin criterion appropriately
23 balances cost and reliability for OUC's system and is an appropriate criterion to
24 use for OUC at this time.

25

1 **Q. Does OUC use Loss of Load Probability (LOLP) or Expected Unserved**
2 **Energy (EUE) to determine reliability requirements?**

3 A. No.

4
5 **Q. Why?**

6 A. LOLP and EUE are not particularly appropriate for small heavily interconnected
7 systems such as OUC's. It is difficult to determine what the LOLP or EUE
8 criteria should be on an unassisted basis. The criteria would be unique to each
9 individual system and would vary widely from system to system. On an assisted
10 basis, the difficulty is attempting to model the assistance from the
11 interconnections. For small heavily interconnected systems such as OUC's, the
12 reliability stemming from the interconnections completely outweighs the
13 reliability from the generating units. The inability to obtain detailed data for
14 neighboring systems necessary to properly model contributions from those
15 systems precludes any meaningful evaluation.

16
17 **Q. What is the appropriate period for seasonal peak demand?**

18 A. One hour integrated demand is the appropriate period because that is the most
19 standard period for reporting and modeling. If shorter periods are considered,
20 then the percent reserve margin should change to reflect the same reliability.

21
22 **Q. Please discuss load uncertainty.**

23 A. Load uncertainty due to winter temperature is by far the greatest factor
24 contributing to variation in reserve margins. As the temperature decreases more

25

1 and more resistance heating is reflected in the load. As the temperature decreases,
2 the diversity in resistance heating decreases resulting in the increased load.

3

4 **Q. Is OUC's reserve criterion adequate to cover such an uncertainty in load?**

5 A. Yes, OUC believes that the 15 percent reserve margin criterion is adequate to
6 cover existing load uncertainty. Even if the 15 percent reserve margin criterion
7 would be inadequate to cover uncertainty in load due to extreme temperature,
8 OUC does not believe that it is economical to further increase reserves.

9 Extremely low temperature causing large increases in loads above projected levels
10 is an extremely low probability event. Because of its rare occurrence, empirical
11 data is not available to determine accurately the load uncertainty. During the
12 1989 freeze, OUC had adequate capacity to serve all of its native load and firm
13 power obligations.

14

15 **Q. Does OUC have any interruptible or curtailable loads?**

16 A. Yes, only one, at 1 MW on a General Service-Demand Secondary Curtailable
17 Rate Schedule.

18

19 **Q. Does OUC have any wholesale loads?**

20 A. OUC has several wholesale loads. These loads are included when calculating
21 OUC's reserve requirements.

22

23 **Q. What is the appropriate time frame for a percent reserve margin planning**
24 **criterion?**

25

1 A. The reserve margin criterion should be on an annual basis. The criterion should
2 consider seasonal, monthly, daily, and hourly variations on loads.

3

4 **Q. How should OUC's generating units be rated for inclusion on the percent
5 reserve margin planning criterion.**

6 A. OUC rates their units consistent with the planning reserve criterion used. In other
7 words, units are normally rated at something less than their absolute maximum
8 rating. For instance combustion turbines are rated at their base firing rating rather
9 than their peak firing rating. If the units were rated at their peak firing rating, then
10 the percent reserve margin criterion should be increased to provide the same level
11 of reliability.

12

13

14 **Q. How should individual utility's reserve margins be integrated into the
15 aggregated reserve margin for Peninsular Florida?**

16 A. The individual utilities need to develop reserve margin criterion that are
17 appropriate for their unique systems. The simple aggregation of the loads and
18 resources resulting from the individual utility criteria results in an aggregated
19 reserve margin for Peninsular Florida; however, the individual utilities will likely
20 be considering their loads and resources differently.

21

22 **Q. Should there be a limit on the ratio of non-firm load to MW reserves?**

23 A. Yes. The ratio of non-firm load to MW reserves needs to be determined on a
24 case-by-case basis for each utility based on the unique characteristics of each

25

1 utility. OUC does not have a direct load control program which minimizes this
2 ratio.

3
4 **Q. Should there be a minimum of supply-side resources when determining**
5 **reserve margins?**

6 A. The level of supply-side resources required in determining reserve margins should
7 be determined on a case-by-case basis based on the unique characteristics of each
8 utility.

9
10 **Q. Should the import capability of Peninsular Florida be accounted for in**
11 **measuring and evaluating reserve margins and other reliability criteria, both**
12 **for individual utilities and for Peninsular Florida.**

13 A. Import capability should be considered in determining reserve margins for
14 individual utilities and Peninsular Florida as a whole. Both the physical
15 transmission import capability and the generating resources available should be
16 considered.

17
18 **Q. Has the Florida Reliability Coordinating Council's 15 percent resource**
19 **margin planning criterion been adequately tested to warrant using it as a**
20 **planning criterion for the review of generation adequacy on a Peninsular**
21 **Florida basis?**

22 A. Yes. With a 15 percent reserve margin planning criterion, Peninsular Florida
23 appears to have demonstrated a reasonable balance between economics and
24 reliability.

25

1 **Q. Should the Commission adopt a reserve margin standard to individual**
2 **utilities in Florida?**

3 A. Municipal utilities should be allowed to determine their reserve margin criteria on
4 a case-by-case basis incorporating the unique aspects of each system. Municipal
5 utilities should also be allowed to change their reserve margin criteria as
6 conditions change. When reserve margin criteria change, a transition period is
7 often necessary to effect the change.

8
9 **Q. Should a reserve margin criteria be set such that all load is served during the**
10 **most extreme conditions?**

11 A. Reliability is very important to all customers, but a reasonable balance must be
12 struck between the reliability level and the cost of achieving the reliability level.
13 It is unlikely that the cost of serving all loads under the most extreme conditions
14 can be justified, nor is it desired by the customers. Under extreme conditions,
15 such as extremely cold temperatures, problems besides lack of generation often
16 contribute to customer interruptions such as problems in the distribution system.
17 Expenditures for increased reliability need to be properly balanced between
18 distribution, transmission, and generation.

19
20 **Q. Please summarize your overall views on planning reserve margins.**

21 A. The overall objective is to provide reliable service to the customer in an economic
22 manner. There are many things that contribute to providing reliable service.
23 Reserve margins merely measure one of the things contributing to providing that
24 reliable service. In different systems, the same reserve margin can provide very
25 different levels of customer reliability. Thus, reserve margins must be dealt with

1 on a case-by-case basis as one component of providing reliable service to
2 customers.

3

4 **Q. Does this complete your prefiled testimony?**

5 **A. Yes, it does.**