

ORIGINAL

BEFORE THE FLORIDA PUBLIC SERVICE COMMISSION

SEMINOLE ELECTRIC COOPERATIVE, INC.

DIRECT TESTIMONY OF GARL S. ZIMMERMAN

Docket No. 981890 - EU

August 16, 1999

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Q. PLEASE STATE YOUR NAME, OCCUPATION, AND BUSINESS ADDRESS.

A. My name is Garl S. Zimmerman and I am employed by Seminole Electric Cooperative as Manager of System Planning. My business address is 16313 N. Dale Mabry Highway, Tampa, Florida 33618.

Q. PLEASE DESCRIBE YOUR DUTIES AND RESPONSIBILITIES IN THAT POSITION.

A. I am responsible for generation and transmission planning which includes both supply and demand side alternatives. My duties include the coordination of our generation and transmission planning with other utilities as well as the North American Electric Reliability Council (NERC) and its regional council, the Florida Reliability Coordinating Council (FRCC).

Q. PLEASE SUMMARIZE YOUR BACKGROUND AND EXPERIENCE.

A. I graduated from the University of Florida in 1964 with a Bachelor's Degree in Electrical Engineering. I am a registered professional engineer in the State of Florida. In 1965, I worked for Tampa Electric Company as a distribution

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1 engineer. From 1966 through 1969, I served as a
2 communications officer in the U. S. Air Force and returned
3 to Tampa Electric in 1970 where I worked as an engineer and
4 senior engineer in power plant engineering, substation
5 engineering and power plant construction. In 1981, I joined
6 Seminole Electric Cooperative as System Protection Engineer.
7 I assumed my present position as Manager of System Planning
8 approximately 9 years ago.

9 In addition to my duties at Seminole, I am active in a
10 number of industry activities including NERC, where I serve
11 on the Compliance Review Working Group, and the FRCC, where
12 I am chairman of the Compliance Working Group and serve on
13 the Reliability Assessment Group and I am Seminole's
14 alternate member on the Engineering Committee. I am a Senior
15 Member of the Institute of Electrical and Electronic
16 Engineers (IEEE) Power Engineering Society.

17 Q. HAVE YOU TESTIFIED PREVIOUSLY?

18 A. Yes, I testified before the Commission in support of
19 Seminole's last need for power application, which was
20 granted in 1994.

21 Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY?

22 A. The purpose of my testimony is to explain why the
23 Commission does not need to establish a set reserve margin
24 adequacy criterion for individual utilities, or for
25 Peninsular Florida. In doing so, I will discuss Seminole's

1 planning criteria, provide an overview of the FRCC
2 reliability and adequacy review process, and explain the
3 authority and processes which we believe the Commission
4 presently has in place to insure the adequacy of the grid in
5 Peninsular Florida.

6 SEMINOLE'S RESOURCE PLANNING CRITERIA

7 Q. WHAT ARE SEMINOLE'S CURRENT POWER SUPPLY ARRANGEMENTS?

8 A. Seminole currently owns two (2) 600 MW class coal fired
9 units and a 14 MW ownership share of the Crystal River 3
10 nuclear unit. Seminole has purchased power agreements with
11 Florida Power Corporation, TECO Power Services, Gainesville
12 Regional Utilities, the Jacksonville Electric Authority, the
13 Orlando Utilities Commission, the County of Lee, Florida,
14 the City of Tallahassee, and Reliant Energy. Seminole is
15 planning to build a 500 MW class gas fired combined cycle
16 (Payne Creek Unit 1) to be in service January 1, 2002.

17 Q. WHAT ARE THE OBJECTIVES OF SEMINOLE'S RESOURCE PLANNING
18 PROCESS?

19 A. The primary objective of Seminole's resource planning
20 process are as follows:

21 1. To ensure that Seminole has adequate resources to
22 meet its reliability criteria.

23 2. To determine the most cost effective method of
24 meeting Seminole's future power supply obligations. As part
25 of this process, Seminole evaluates whether it can achieve

1 cost savings by displacing partial requirements purchases
2 (PR) with other resources.

3 Q. WHAT ARE SEMINOLE'S RELIABILITY CRITERIA?

4 A. Seminole currently uses a dual criteria when evaluating
5 the adequacy of its power supply arrangements. Seminole's
6 criteria are a maximum 1% Expected Unserved Energy (EUE) and
7 a minimum reserve margin of 15% at the time of Seminole's
8 annual system peak demand.

9 Q. WHICH OF THE TWO CRITERIA IS THE DETERMINING FACTOR IN
10 ADDING RESOURCES TO THE SEMINOLE SYSTEM?

11 A. Historically, the criterion of 1% EUE resulted in a
12 reserve margin for Seminole well in excess of that carried
13 by most other Florida utilities (i.e., over 30% reserve
14 margin). This was due to Seminole's having large base load
15 units relative to our system size. Since the Seminole system
16 has grown, and Seminole has increased its obligation and
17 diversified its resource mix, the EUE criterion would now
18 allow Seminole to carry less than 15% reserves, therefore,
19 the 15% reserve margin criterion has become the dominating
20 factor.

21 Q. HAS SEMINOLE EVALUATED THE USE LOSS OF LOAD PROBABILITY
22 (LOLP) FOR USE AS A RELIABILITY CRITERION?

23 A. Yes, in the early 1980s, when Seminole first began
24 operating the two 600 MW class units, the small size of
25 Seminole's obligation compared to the size of the units,

1 coupled with the use of PR to meet peak demands, LOLP did
2 not produce meaningful results. Seminole evaluated its
3 historical EUE and determined that 1% EUE for the Seminole
4 system was approximately equivalent to a 1 day in 10 year
5 LOLP for a larger utility.

6 Q. DOES SEMINOLE EVALUATE ANY OTHER FACTORS WHEN
7 DETERMINING THE RELIABILITY OF ITS POWER SUPPLY
8 ARRANGEMENTS?

9 A. For long term planning purposes 15% reserve margin and
10 1% EUE are the only factors evaluated. For the shorter term
11 (two to three years), Seminole reviews the type of, and any
12 restrictions on, the installed reserves to determine if they
13 are suitable for operating reserves. If the installed
14 reserves are not adequate to meet operating reserve
15 requirements, additional resources are obtained on a short
16 term or seasonal basis.

17 THE FRCC RESOURCE ADEQUACY REVIEW PROCESS

18 Q. DOES THE FRCC DETERMINE THE RESOURCE REQUIREMENTS FOR
19 THE STATE OR THE PENINSULA AS A WHOLE?

20 A. No, the FRCC Resource Working Group (RWG) assesses the
21 adequacy of an aggregate peninsular Florida ten year
22 resource plan. The RWG calculates reserve margins and LOLP
23 for the aggregate plan and will calculate the missing
24 megawatts if criteria are not met, but does not determine

1 the type of capacity needed or the entity responsible for
2 adding the capacity.

3 Q. DOES THE FRCC PROCESS RESULT IN AN ADEQUATE ASSESSMENT
4 OF THE RESOURCE ADEQUACY IN PENINSULAR FLORIDA?

5 A. Yes, there are two offsetting factors in using the
6 aggregate of the individual ten year plans rather than a
7 specific FRCC plan; the loads in the aggregate plan are
8 higher because load diversity between the various load
9 serving entities is not taken into account resulting in
10 conservatism in the reserve margin calculation; this effect
11 is somewhat offset by the fact that most load forecasts use
12 a historical average of normal peak temperatures rather than
13 extremes. Low winter temperature extremes, however, are also
14 accompanied by additional capacity from many generating
15 units, especially from combustion turbine and combined cycle
16 units. Evaluating all of these factors, I believe that the
17 FRCC process results in an accurate assessment of the
18 adequacy of the Peninsular Florida resources.

19 THE FLORIDA PUBLIC SERVICE COMMISSION'S AUTHORITY AND
20 PROCESSES TO INSURE THE ADEQUACY OF THE PENINSULAR FLORIDA
21 POWER SUPPLY RESOURCES.

22 Q. WHAT AUTHORITY DOES THE COMMISSION HAVE TO INSURE THE
23 ADEQUACY OF RESOURCES?

24 A. Seminole believes that section 366.05, Florida
25 Statutes, authorizes the Public Service Commission to

1 investigate and address inadequacies in the energy grids
2 developed by the public utility industry. In particular,
3 section 366.05(7) empowers the Public Service Commission to
4 require electric utilities to report information relating to
5 the adequacy and reliability of the energy grids.
6 Furthermore, section 366.05(8) authorizes the Public Service
7 Commission, in accordance with certain procedural
8 requirements, to address any inadequacies in the energy
9 grids by requiring the installation or repair of facilities
10 to insure the adequacy of the grids.

11 Q. WHAT IS THE CURRENT PROCESS IN PLACE FOR THE COMMISSION
12 TO MONITOR THE ADEQUACY OF RESOURCES IN FLORIDA?

13 A. The primary means for the Commission to monitor the
14 adequacy of the resources in Florida is through the Ten Year
15 Site Plan and associated workshops. Utilities in Florida are
16 required to submit annual Ten Year Site Plans to the
17 Commission detailing planned generation and transmission
18 additions for the ten year planning horizon. The FRCC is
19 required to submit their aggregate plan and adequacy
20 analysis subsequent to the submission of the individual
21 utility ten year plan submittals. Each year workshops are
22 held to allow the Commission, Staff, utilities, interested
23 parties, and the public to review and question all aspects
24 of the ten year plans.

1 Q. SHOULD THE COMMISSION ESTABLISH NEW OR ADDITIONAL
2 RESERVE MARGIN ADEQUACY PLANNING CRITERIA FOR THE PENINSULA
3 OR FOR INDIVIDUAL UTILITIES?

4 A. No, the Commission should continue to monitor and
5 assess the adequacy of the Peninsular Florida resource
6 reserves through the ten year plan workshops and through
7 close coordination with, and observation of, the FRCC's
8 Engineering Committee, Reliability Assessment Group,
9 Resource Working Group, and Compliance Working Group and
10 does not need to establish a reserve margin adequacy
11 standard for the Peninsula.

12 Seminole does believe that every load serving entity
13 should provide adequate reserves to be able to meet its load
14 obligations as well as its reciprocal obligations to its
15 interchange and/or reserve sharing partners. We also believe
16 that the studies performed by the FRCC have demonstrated
17 that the FRCC 15% reserve margin is adequate for Penninsular
18 Florida. If the FPSC believes the state has inadequate
19 reserves on an "aggregate" basis, then the grid bill
20 provides adequate authority to make such conclusions and
21 proceed accordingly. The focus in this docket on individual
22 reserves is premature in that the aggregate reserves have
23 not yet been determined to be inadequate. In any event,
24 individual reserve margins can better be handled in the Ten
25 Year Site Plan process.

1 Q. DOES THIS CONCLUDE YOUR TESTIMONY?

2 A. Yes.

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BEFORE THE FLORIDA PUBLIC SERVICE COMMISSION

In re: Generic investigation into the aggregate
electric utility reserve margins planned for
Peninsular Florida.

DOCKET NO. 981890-EU

August 16, 1999

**NOTICE OF SERVICE OF SEMINOLE ELECTRIC COOPERATIVE'S
DIRECT TESTIMONY OF GARL S. ZIMMERMAN**

I HEREBY CERTIFY that Seminole Electric Cooperative's Direct Testimony of
Garl S. Zimmerman has been furnished via U.S. Mail this 16th day of August, 1999 to the
following:

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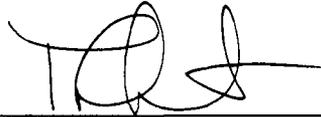
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Peninsular Florida.

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CERTIFICATE OF SERVICE

I HEREBY CERTIFY that one true and correct copy of the Direct Testimony of Garl S. Zimmerman has been furnished by hand delivery to Robert V. Elias, Florida Public Service Commission, Gerald L. Gunter Building, 2540 Shumard Oak Boulevard, Tallahassee, Florida 32399, and that one true and correct copy has been furnished by U.S. Mail this 16th day of August, 1999, to the following:

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