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August 26, 1999

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Florida Public Service Commission  
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Re: Docket No. 981890-EU

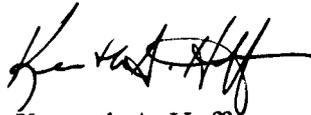
Dear Ms. Bayo:

Enclosed herewith for filing in the above-referenced docket on behalf of the City of Tallahassee are the original and fifteen copies of the Direct Testimony of David Byrne, P.E.

Please acknowledge receipt of these documents by stamping the extra copy of this letter "filed" and returning the same to me.

Thank you for your assistance with this filing.

Sincerely,



Kenneth A. Hoffman

AFA 2  
APP \_\_\_\_\_  
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**CERTIFICATE OF SERVICE**

I HEREBY CERTIFY that a true and correct copy of the Direct Testimony of David Byrne, P.E., has been furnished by U.S. Mail this 26<sup>th</sup> day of August, 1999, to the following:

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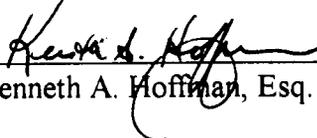
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By:   
Kenneth A. Hoffman, Esq.

**ORIGINAL**

1                   **BEFORE THE FLORIDA PUBLIC SERVICE COMMISSION**

2                                   **CITY OF TALLAHASSEE**

3                                   **DIRECT TESTIMONY OF DAVID BYRNE, P.E.**

4                                   **Docket No. 981890-EU**

5                                   **August 26, 1999**

6

7    Q.    PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.

8    A.    My name is David Byrne. My business address is the  
9           City of Tallahassee, 400 E. Van Buren Street,  
10           Tallahassee, FL 32301

11

12   Q.    WHAT IS YOUR POSITION WITH THE CITY OF TALLAHASSEE?

13   A.    I am the Chief Planning Engineer, in the Electric  
14           System Reliability and Transmission Services Division.  
15           I have been employed in this position for six years.

16

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

19   A.    My duties and responsibilities as Chief Planning  
20           Engineer include generation resource planning and  
21           transmission planning. I am responsible for  
22           supervising a staff of three engineers and one  
23           administrative specialist in their duties related to  
24           electric system planning. I oversee and am responsible  
25           for the analysis, evaluation, and recommendation of

1 power and transmission resources which assure adequate  
2 supply and reliability. I manage the preparation of  
3 system reports such as the Ten Year Site Plan and most  
4 recently was responsible for the City of Tallahassee's  
5 response to the Staff's First Set of Interrogatories in  
6 this docket.

7

8 Q. PLEASE SUMMARIZE YOUR BACKGROUND AND EXPERIENCE.

9 A. I have over eleven years experience in electric utility  
10 system planning, including six years in Tallahassee.  
11 Prior to joining the City of Tallahassee in 1993, I was  
12 employed for one and one-half years by Orange and  
13 Rockland Utilities, Inc. as a Demand-Side Management  
14 Engineer, with responsibility for planning and  
15 evaluating the system impacts of Demand-Side Management  
16 programs. Prior to that, I was employed for three  
17 years by Central Hudson Gas & Electric Corp. as an  
18 Electrical Engineer with responsibility for generation  
19 and transmission planning studies. I am a licensed  
20 Professional Engineer in the State of Florida. I have  
21 a Bachelors Degree in Electrical and Computer  
22 Engineering from Clarkson University, a Masters Degree  
23 in Electrical Engineering from Polytechnic University,  
24 and a Masters in Business Administration from Florida  
25 State University.

1

2 Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY IN THIS  
3 PROCEEDING?

4 A. The purpose of my testimony is to address Issues 10,  
5 12, and 14 as identified in Docket No. 981890-EU,  
6 Generic Investigation Into the Aggregate Electric  
7 Utility Reserve Margins Planned for Peninsular Florida.

8

9 Q. PLEASE SUMMARIZE YOUR TESTIMONY.

10 A. The City of Tallahassee ("Tallahassee") currently plans  
11 its resources to meet a minimum 17% reserve margin  
12 target. This margin is sufficient to provide an  
13 adequate and reliable source of energy for operational  
14 and emergency purposes in Tallahassee's service area  
15 and in assistance to Florida. Tallahassee calculates  
16 its reserve margins in a manner consistent with the  
17 Florida Reliability Coordinating Council's (FRCC)  
18 methodology. This method determines reserve margins as  
19 a function of seasonal firm capacity and forecast  
20 seasonal firm peak demand. Tallahassee forecasts its  
21 demand using an econometric model, which also includes  
22 historical winter and summer temperatures as inputs.  
23 Firm capacity is based on the total of the net seasonal  
24 capabilities of Tallahassee's generating units and firm  
25 purchases.

1

2 Q. HOW DOES TALLAHASSEE CALCULATE RESERVE MARGINS?

3 A. Tallahassee's method for calculating reserve margins  
4 follows the traditional definition of Total Seasonal  
5 Firm Capacity minus Forecast Seasonal Firm Peak Demand,  
6 then divided by Forecast Seasonal Firm Peak Demand, and  
7 expressed in percent, which is shown by the following  
8 function:

9

10 % Reserve Margin = [(Seasonal Firm Capacity - Forecast Seasonal  
11 Firm Peak Demand) / Forecast Seasonal Firm Peak Demand] x 100%

12

13 The capacity in this function is the seasonal net  
14 capability of Tallahassee's generating units plus the  
15 total of firm purchases from other systems. The demand  
16 in this function is the total peak customer load  
17 expected to occur in each of the winter and summer  
18 seasons.

19

20 Q. DOES TALLAHASSEE APPROPRIATELY ACCOUNT FOR HISTORICAL  
21 WINTER AND SUMMER TEMPERATURES WHEN FORECASTING  
22 SEASONAL PEAK LOADS FOR PURPOSES OF ESTABLISHING A  
23 PERCENT RESERVE MARGIN PLANNING CRITERION? (ISSUE 10)

24 A. Yes. Tallahassee does appropriately account for  
25 historical winter and summer temperatures when  
26 forecasting seasonal peak loads for purposes of

1           establishing a percent reserve margin planning  
2           criterion. In forecasting its winter peak demand,  
3           Tallahassee uses the average of the low temperatures  
4           experienced on the last five years' winter peak days.  
5           Likewise, for summer peak demand, the average of high  
6           temperatures on the last five years' summer peak days  
7           is used. (This information was presented to the  
8           Commission staff previously in Tallahassee's response  
9           to Staff's First Set of Interrogatories in this  
10          docket.) Although it is possible that future  
11          temperatures can be more extreme, thus driving actual  
12          demands higher than forecast, these variations are  
13          acceptable because Tallahassee plans for large enough  
14          capacity reserves (reserve margin) to accommodate such  
15          extreme demands. To date, Tallahassee's reserves have  
16          been sufficient to cover any extreme loads arising due  
17          to colder or hotter than average weather.

18

19    Q.    WHAT PERCENT RESERVE MARGIN IS CURRENTLY PLANNED FOR  
20           TALLAHASSEE AND IS IT SUFFICIENT TO PROVIDE AN ADEQUATE  
21           AND RELIABLE SOURCE OF ENERGY FOR OPERATIONAL AND  
22           EMERGENCY PURPOSES IN FLORIDA? (ISSUE 12)

23    A.    Tallahassee currently uses a 17% planning reserve  
24           margin. This percentage was determined through a  
25           system reliability study completed in June 1995, and it

1 is still believed to be adequate. (This study was  
2 presented to the Commission staff previously in  
3 Tallahassee's response to Staff's First Request for  
4 Production of Documents in this docket.) This margin  
5 has proven to be sufficient to meet recent extreme  
6 demands in both summer and winter. Tallahassee  
7 believes that it will be adequate for planning over the  
8 next ten years.

9

10 Q. SHOULD THE COMMISSION ADOPT A RESERVE MARGIN STANDARD  
11 FOR INDIVIDUAL UTILITIES IN FLORIDA? IF SO, WHAT  
12 SHOULD BE THE APPROPRIATE RESERVE MARGIN CRITERIA FOR  
13 INDIVIDUAL UTILITIES IN FLORIDA? SHOULD THERE BE A  
14 TRANSITION PERIOD FOR UTILITIES TO MEET THAT STANDARD?  
15 (ISSUE 14)

16 A. No. The Commission should not adopt a standard for  
17 individual utilities. Each utility has a different  
18 system configuration in terms of generation mix,  
19 purchases, and transmission interconnections. As a  
20 result, even two utilities that had the same forecast  
21 demand and the same amount of power resource would not  
22 necessarily require the same amount of reserves to  
23 ensure an adequate and reliable supply of energy for  
24 its customers.

25

1 Tallahassee has set its own reserve margin target based  
2 on its unique knowledge and experience with its system,  
3 as well as its customers' expectations for reliability  
4 and cost. For the Commission to set a reserve margin  
5 for all utilities would be to ignore the distinctions  
6 between each utility. Tallahassee recognizes that  
7 sufficient reserves are important for reliable  
8 operations in Florida, but believes that the Commission  
9 rule requiring a 15% planned reserve margin, together  
10 with the planning and coordinating work of the FRCC are  
11 sufficient to assure adequate reserve margins in the  
12 future. No additional rules are needed. As long as  
13 there are sufficient reserves on a statewide basis,  
14 each utility should establish its own planning  
15 criteria.

16

17 Q. DOES THAT CONCLUDE YOUR TESTIMONY?

18 A. Yes.