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September 27, 1999

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## ORIGINAL

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

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

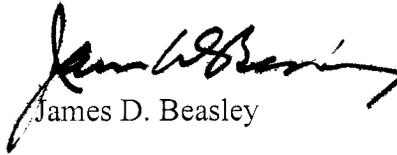
Dear Ms. Bayo:

Enclosed for filing in this docket are the original and fifteen (15) copies of Tampa Electric Company's Rebuttal Testimony and Exhibit (MDW-2) of Mark D. Ward.

Please acknowledge receipt and filing of the above by stamping the duplicate copy of this letter and returning same to this writer.

Thank you for your assistance in connection with this matter.

Sincerely,

  
James D. Beasley

- AFA 2 JDB/pp
- APP \_\_\_\_\_ Enclosures
- CAF \_\_\_\_\_
- CMU \_\_\_\_\_
- CTR \_\_\_\_\_ cc: All Parties of Record (w/enc.)
- EAG** \_\_\_\_\_
- LEG 1 \_\_\_\_\_
- MAS 5 + org \_\_\_\_\_
- OPC \_\_\_\_\_
- PAI 2 \_\_\_\_\_
- SEC 1 \_\_\_\_\_
- WAW \_\_\_\_\_
- OTH \_\_\_\_\_

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CERTIFICATE OF SERVICE

I HEREBY CERTIFY that a true copy of the foregoing Rebuttal Testimony and Exhibit of Mark D. Ward, filed on behalf of Tampa Electric Company, has been served by U. S. Mail or hand delivery(\*) on this 27<sup>th</sup> date of September 1999 to the following:

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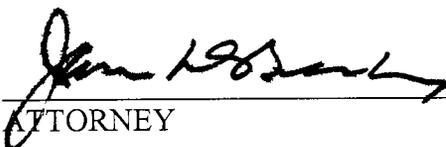
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ATTORNEY

BEFORE THE FLORIDA PUBLIC SERVICE COMMISSION

REBUTTAL TESTIMONY

OF

MARK D. WARD

ORIGINAL

1 Q. Please state your name, address, occupation and employer.

2  
3  
4  
5  
6  
7  
8 A. My name is Mark D. Ward. My business address is 702  
9 North Franklin Street, Tampa, Florida 33602. I am  
10 employed by Tampa Electric Company ("Tampa Electric" or  
11 "Company") in the position of Manager, Resource Planning.

12  
13 Q. Are you the same Mark D. Ward who submitted prepared  
14 direct testimony in this proceeding on August 16, 1999?

15  
16 A. Yes, I am.

17  
18 Q. What is the purpose of your rebuttal testimony?

19  
20 A. The purpose of my rebuttal testimony is to: i) address  
21 Staff witness Ballinger's misinterpretation of that  
22 portion of my pre-filed testimony that describes the  
23 Florida Reliability Coordinating Council's ("FRCC")  
24 methodology for testing the 15 percent minimum reserve  
25 margin criteria and calculation of projected reserve

1 margins, and ii) address and respond to Staff witness  
2 Trapp's assertion that Tampa Electric Company's ten year  
3 expansion plan is not suitable.  
4

5 Q. Have you prepared an exhibit in support of your rebuttal  
6 testimony?  
7

8 A. Yes. Exhibit \_\_\_ (MDW-2), consisting of one document,  
9 was prepared under my direction and supervision.  
10

11 Q. Could you please address your first point?  
12

13 A. Yes. In his prefiled direct testimony in this proceeding  
14 Mr. Ballinger misinterpreted that portion of my testimony  
15 that discusses the FRCC methodology for testing the 15  
16 percent firm reserve margin criteria and the calculation  
17 of projected aggregate Peninsular Florida firm reserve  
18 margins. On page 6 of my testimony I briefly explain the  
19 FRCC methodology for testing the firm reserve margin  
20 criteria and then reference the "FRCC 1999 Reserve Margin  
21 Assessment."  
22

23 Nowhere in this discussion did I indicate that the  
24 methodology should use aggregate non-coincident peaks.  
25 In fact the FRCC methodology implements load diversity

1 when testing projected reserve margins with reserve  
2 margins adjusted by certainty factors. In reality this  
3 load diversity exists in the Peninsular Florida region.  
4

5  
6 I also correctly describe, on pages 7 through 9 of my  
7 testimony, the FRCC calculation of projected firm reserve  
8 margins that are provided in the annual FRCC Load and  
9 Resource Plan. The projected firm reserve margins are  
10 calculated using projected aggregate non-coincident  
11 seasonal firm peak demands for Peninsular Florida.  
12

13 Q. Could you address your concern with Mr. Trapp's exclusion  
14 of Tampa Electric Company's ten-year expansion plan as  
15 being suitable?  
16

17 A. Yes. In his prefiled testimony, Mr. Trapp identifies  
18 those Peninsular Florida utilities planning to maintain  
19 20 percent summer and winter firm reserve margins. For  
20 those utilities that have plans that will not meet these  
21 reserve margins, he indicates that they should be  
22 considered unsuitable. Although Tampa Electric fits in  
23 this category, it believes that its resource plan  
24 resulting from the Company's dual criteria (15 percent  
25 minimum seasonal firm reserve margin and 7 percent

1 minimum summer supply-side reserve margin) is suitable  
2 for reliably serving its firm customers under reasonably  
3 expected variations in weather and generation  
4 availability. I would like to reference Tampa Electric's  
5 expansion plan, my Exhibit MDW-2, that is the product of  
6 the dual reserve margin criteria described in my pre-  
7 filed testimony. The Company's dual criteria are based  
8 upon historical variances in projected and actual firm  
9 peak demands and available supply-side resources. These  
10 criteria produce an expansion plan with adequate  
11 resources to serve Tampa Electric's firm customers and  
12 should be considered suitable by the Commission. There  
13 are several reasons why the Ten-Year Site Plan shown in  
14 Document 11 should be considered a suitable plan by the  
15 Commission.

16 1) Tampa Electric does not believe Mr. Trapp's  
17 test for a suitable Ten-Year Site Plan should be based on  
18 a 20 percent firm reserve margin criteria without taking  
19 into account utility differences. Tampa Electric has  
20 adopted a 15 percent minimum seasonal firm reserve margin  
21 and 7 percent minimum summer supply-side reserve margin  
22 criteria. The dual criteria were developed based upon  
23 several years of historical data combined with the  
24 planning experience of Tampa Electric's management and  
25 are set at levels to a meet variations in resource

1 availability and weather. The minimum supply-side  
2 reserve margin is intended to improve the quality of its  
3 reserve margins while providing a balance between supply-  
4 side and demand-side resources used as reserves during  
5 the summer when Tampa Electric experiences high load  
6 factors.

7  
8 Tampa Electric does not support Mr. Trapp's concept of a  
9 global 20 percent reserve margin standard or criterion  
10 for all Peninsular Florida utilities. Reserve margin  
11 criteria should vary from utility to utility because each  
12 generation system and demand and energy requirements  
13 differ. For example, a utility serving a 500 MW firm  
14 load would have a more reliable system with six 100 MW  
15 units than would a system with one 600 MW unit, if units  
16 in both systems had equal availability. Both systems  
17 would show a 20 percent firm reserve margin but the  
18 single unit system would have to obtain additional firm  
19 resources to equal the reliability of the system with six  
20 units. The reason is simple. If units in both systems  
21 have the same probability of being unavailable, then when  
22 both systems suffer a single unit outage only the system  
23 with the six 100 MW units will be able to serve its load.

1           2) In his testimony Mr. Trapp recommends a 20  
2 percent minimum firm reserve margin for individual  
3 utilities and for Peninsular Florida. Mr. Trapp  
4 admittedly developed his recommendation from his own  
5 judgement and Mr. Ballinger's "relook" at the December  
6 1989 "Christmas conditions" which failed to include  
7 operational measures that could be called on during such  
8 conditions. Tampa Electric is concerned that an  
9 arbitrary set of criteria, like the one Mr. Trapp  
10 establishes, could produce too few reserves or too many  
11 reserves for Tampa Electric and Peninsular Florida. In  
12 either case Tampa Electric customers and Peninsular  
13 Florida customers stand to suffer from such an action.  
14 Even if Tampa Electric had determined that its minimum  
15 firm reserve margin criteria should be 20 percent it  
16 would still have concerns over Mr. Trapp's approach for  
17 determining the adequate reserve margins for individual  
18 utilities and Peninsular Florida.

19  
20 In this docket Tampa Electric has offered a sound basis  
21 for its recommended expansion plan. Tampa Electric's  
22 resource plan is based on reserve margin criteria that  
23 have been tested using methodologies that properly  
24 account for reasonably expected weather extremes and  
25 availability of firm supply-side resources. As stated in

1 my pre-filed testimony, Tampa Electric's 15 percent,  
2 minimum firm reserve margin is based on historical and  
3 projected supply-side and firm peak demand values used in  
4 the firm reserve margin formula. The seasonal 15 percent  
5 minimum firm reserve margin criteria were tested using  
6 the average variation of projected and actual supply-side  
7 resources for the period of 1985 through 1998 and the  
8 average and absolute average variation of projected and  
9 actual seasonal firm peak demands for the period of 1975  
10 through 1993. Projected firm peaks that were used for  
11 each year of actual data were made 5 years prior to the  
12 actual peak occurrence to account for a worst-case  
13 schedule for constructing new capacity. Tampa Electric's  
14 7 percent minimum summer supply-side reserve margin was  
15 also developed using the average variation of firm  
16 projected and actual supply-side resources for 14 years  
17 of data.

18  
19 The historical supply-side and projected data as well as  
20 the reserve margin criteria methodologies are shown in  
21 documents 5, 6, 7, and 8 of the exhibit that accompanied  
22 my pre-filed testimony.

23  
24 3) Mr. Trapp's assertion that "if utilities could  
25 credibly quantify the availability of non-committed

1 capacity" he would include this capacity in projecting  
2 future firm reserve margins is counter-intuitive. The  
3 basis of the firm reserve margin formula is available  
4 firm resources at the time of the firm peak demand.  
5 Including uncommitted capacity or as-available resources  
6 in the calculation of projected reserve margins could  
7 effectively reduce future firm reserve margins to levels  
8 below 15 percent for both Tampa Electric and Peninsular  
9 Florida if those resources do not materialize or if they  
10 are used to serve customers outside Peninsular Florida at  
11 the time of firm peak demand.

12  
13 Tampa Electric's firm reserve margins resulting from the  
14 15 percent minimum seasonal firm and 7 percent minimum  
15 summer supply-side reserve margin planning criteria are  
16 calculated using the accepted industry standard reserve  
17 margin formula. This formula, which is presented in  
18 Document 3 of the exhibit that accompanied my direct  
19 testimony, does not have a component for uncommitted  
20 capacity. On an individual utility basis it would be  
21 difficult to determine which utility or utilities would  
22 have first call on the uncommitted capacity. More than  
23 one utility might count on the same uncommitted capacity  
24 for planning reserves. Finally, without any obligation  
25 to serve there is no guarantee that the resource with

1 uncommitted capacity will be available for use when it is  
2 needed. For these reasons, Tampa Electric believes that  
3 reserve margins should be based on firm resources that  
4 are committed to serving its customers' needs.  
5

6 4) The expansion plan in my Exhibit MDW-2 meets  
7 Tampa Electric Company's 15 percent minimum seasonal firm  
8 reserve margin and 7 percent minimum summer supply-side  
9 reserve margin criteria as described in my pre-filed  
10 testimony by the year 2001.  
11

12 In view of the deficiencies I have described, the  
13 Commission should not rely on the conclusions reached by  
14 Mr. Ballinger and Mr. Trapp in determining the  
15 suitability of Tampa Electric's Ten-Year Site Plan. Mr.  
16 Ballinger and Mr. Trapp have offered no sound analytical  
17 methodology to support their conclusion that Tampa  
18 Electric should utilize a 20 percent firm reserve margin  
19 criterion. Tampa Electric also believes that Mr. Trapp's  
20 suggested reliance on planned uncommitted capacity in  
21 projecting firm reserve margins would set a dangerous  
22 precedent. The Peninsular Florida utilities that have an  
23 obligation to serve could find themselves capacity  
24 deficient in the future if planned uncommitted resources

1 do not materialize or are used to serve customers outside  
2 of Florida.

3  
4 Q. What does Tampa Electric include in the category of firm  
5 supply-side resources?

6  
7 A. Tampa Electric considers installed capacity and firm  
8 contracted capacity as firm supply-side resources. A  
9 utility's installed capacity should consist of an  
10 appropriate mix of baseload, intermediate and peaking  
11 supply side resources (including distributed generation  
12 resources) that are integrated to serve its service  
13 area's demand and energy requirements. A utility may also  
14 include firm contracted capacity as part of its firm  
15 supply side resources.

16  
17 Q. You mentioned distributed resources, does Tampa Electric  
18 have an opinion about such resources?

19  
20 A. Yes. Tampa Electric believes it would be worthwhile to  
21 explore potential benefits of distributed resources, both  
22 on a supply-side and demand-side basis, to help meet  
23 Florida's energy service needs.

24  
25 Q. Please summarize your testimony.

1 A. In summary, Tampa Electric's expansion plan should be  
2 considered suitable by the Commission because it is based  
3 on tested reserve margin criteria. These criteria  
4 properly address reasonable weather extremes and  
5 historical availability of supply-side resources, ensure  
6 a balance between the contribution of supply-side and  
7 demand-side resources towards reserves, and provide  
8 projected reserve margins that reflect resources that are  
9 committed to serving the company's customers.

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25

Q. Does this conclude your testimony?

A. Yes it does.

**TAMPA ELECTRIC RESOURCE PLAN SUMMARY**

**2000 Ten Year Resource Plan**

	Resource Additions	Unit Retirements	Firm Reserve Margins		Supply-Side Reserve Margins
			Winter	Summer	Summer
2000	Purch.-90	-	17%	18%	6%
2001	CT-180 <sup>1</sup>	-	19%	22%	10%
2002	CT-180 <sup>2</sup>	-	20%	23%	12%
2003	CT-180 <sup>2</sup>	HP-208	21%	22%	11%
2004	CT-180 <sup>2</sup>	-	23%	24%	13%
2005	CT-180 <sup>2,3</sup>	-	23%	24%	13%
2006	-	-	24%	20%	10%
2007	-	-	21%	17%	7%
2008	CT-180 <sup>4</sup>	-	23%	18%	8%
2009	CT-180 <sup>4</sup>	-	24%	19%	10%

- 1) CT in-service date October
- 2) CT in-service date May
- 3) Polk Site reaches permitted capacity in summer of 2005
- 4) CT in-service date January

Note: MWs are given for winter net capabilities  
 CT: Combustion Turbine  
 HP: Hookers Point Station