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November 27, 2012

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COMMISSION
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Ms. Ann Cole, Director
Division of Commission Clerk
Florida Public Service Commission
2540 Shumard Oak Boulevard
Tallahassee, FL 32399-0850

Re: Tampa Electric Company's Petition to Determine Need for Polk 2-5 Combined Cycle Conversion; Corrections to Need Study, witness Rocha's Testimony and Exhibit and Interrogatories Nos. 38, 47, 76; FPSC Docket No. 120234-EI

Dear Ms. Cole:

I am writing on behalf of Tampa Electric Company to correct an inadvertent error in the fuel and purchased power cost calculation for Proposal B, submitted in response to the company's Request for Proposals, that was discovered in Tampa Electric's preparation of responses to Interrogatories Nos. 75 and 76. That input error in the model existed in the base case analysis as well as the updated forecast analysis in Table 13 of the company's Need Study.

As a result of these recalculations, the company needs to make corrections to its Need Study, the testimony and exhibit of witness R. James Rocha and the company's answer to three interrogatories. Enclosed for filing on behalf of Tampa Electric are the original and fifteen (15) copies of each of the following pages with the corrections shown in green typeface, each marked Revised November 27, 2012:

Need Study

Page 2 – Bullet No. 2 – Changed \$132.4 to \$117.9
Page 4 – 2nd paragraph – 1st sentence – Changed \$132.4 to \$117.9
Page 50 – Table 12 – Corrected Proposal B data
Page 50 – 1st paragraph – 2nd sentence – Changed \$132.4 to \$117.9
Page 50 – Section F. Final Selection – 1st sentence – Changed \$132.4 to \$117.9
Page 61 – Table 13 – Corrected Proposal B data
Page 61 – 1st paragraph – 1st sentence – Changed \$97.4 to \$75.4
Page 63 – 2nd paragraph – 1st sentence – Changed \$132.4 to \$117.9

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AFD I
APA I
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Page 2

Rocha Testimony

Page 27 – Line 14 - Changed \$132.4 to \$117.9
Page 30 – Line 20 - Changed \$97.4 to \$75.4
Page 36 – Line 22 - Changed \$132.4 to \$117.9

Rocha Testimony Documents

Document 11 – Updated Proposal B data in table
Document 13 – Updated Proposal B data in table

Interrogatories

Question 38 – Changed the values in the response
Question 47 – Changed the data in Proposal B table
Question 76 – Changed the values in Proposal B

We would appreciate your circulating these to the recipients of the original filing so that the appropriate corrected pages can be substituted in place of their earlier counterparts.

These corrections have the effect of reducing the amount by which Polk 2-5 is more cost-effective than the next most cost-effective alternative available. After the corrections Polk 2-5 is still more cost-effective alternative by approximately \$118 million in the base case, and remains the most cost-effective alternative when updated with the June 2012 load forecasts, and under all scenarios.

We apologize for any inconvenience this may cause.

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

JDB/pp
Enclosures

cc: All Parties of Record (w/encls.)

Determination of Need for Electrical Power: Polk 2-5 Combined Cycle Conversion

order to develop the optimum expansion plan, the company researched current technologies for feasible options. The resulting list of supply resources was screened for technical feasibility, reliability and relative economics. The initial screening resulted in the narrowing of technology alternatives to simple-cycle natural gas and NGCC for further detailed analysis.

Tampa Electric evaluated these technologies utilizing standard IRP techniques. Some of the economic and non-economic factors that were considered included resource reliability, efficiency, range of fuel capability and availability, capital and operating costs, ability to meet current and potential future environmental requirements, water use, and overall site benefits. As a result of this detailed analysis, Tampa Electric determined that NGCC technology is the best option to meet the 2017 need, and conversion of the four existing combustion turbines at Polk Power Station to an NGCC is the most cost-effective alternative.

Once this need was identified, Tampa Electric solicited market alternatives to its next planned generating unit as directed by the resource bid rule. The company issued a Request For Proposals ("RFP"), and considered price and non-price attributes, operational performance, dispatchability, reliability, and environmental compliance, and other issues. After carefully considering and integrating Tampa Electric's DSM load reduction and energy conservation programs and other supply resources, Polk 2-5 was selected as the most cost-effective, reliable means of serving Tampa Electric's customers for the following reasons:

1. It is the most cost-effective next addition to the Tampa Electric system, when compared with all of the "self-build" alternatives.
2. It is the most cost-effective alternative, and the project results in a savings of \$117.9 million Cumulative Present Worth Revenue Requirements ("CPWRR") compared to the next best proposal in the RFP process.

Determination of Need for Electrical Power: Polk 2-5 Combined Cycle Conversion

deferral of the recommended plan could increase costs to customers by \$100 million. Tampa Electric also determined that fuel diversity is a key objective and the addition of natural gas combined cycle technology in 2017 still maintains a prudent balance in Tampa Electric's capacity and energy mix. Finally, when considering the viability of uncommitted resources, the risk of emerging environmental regulations, and the uncertainty of voluntary DSM programs, Polk 2-5 is needed as a firm resource within the FRCC region.

Polk 2-5 is the best of the "self-build" alternatives and provides significant savings of \$117.9 million to Tampa Electric's customers when compared to the second most cost-effective alternative in the RFP while providing additional benefits in the areas of reliability, fuel diversity, environmental impacts, and generating system efficiency. The results of these scenarios reinforce Tampa Electric's selection of Polk 2-5 as the best alternative for Tampa Electric and its customers.

Determination of Need for Electrical Power: Polk 2-5 Combined Cycle Conversion

Table 12: RFP CPWRR Results in 2012 (\$ million)

	CPWRR (\$ million)				
	Polk 2-5	Proposal A	Proposal B	Proposal C	Proposal D
Capital	\$1,575.2	\$1,253.3	\$1,400.1	\$1,430.9	\$1,416.6
O&M	\$1,099.7	\$1,064.6	\$1,068.4	\$1,111.2	\$1,109.2
Fuel & Purchased Power	<u>\$15,566.1</u>	<u>\$16,143.0</u>	<u>\$15,890.3</u>	<u>\$15,909.9</u>	<u>\$15,954.9</u>
Total	\$18,241.0	\$18,460.9	\$18,358.9	\$18,452.0	\$18,480.8
Delta		\$219.9	\$117.9	\$210.9	\$239.7

As seen above, Polk 2-5 is the lowest cost option against all proposals. Proposal B, which Tampa electric evaluated as the next best option shows a \$117.9 million CPWRR additional cost to Polk 2-5.

E. Non-Economic Evaluation

Tampa Electric understands that while the cost-effectiveness of its selection is important, there are many other qualitative impacts that must be considered. Therefore, thirteen unique, non-economic qualitative factors were developed and evaluated across Polk 2-5 and the proposals.. After review of all of these factors, Polk 2-5 was favored due to its overall reliability, emission rate, and dispatchability. The factors considered and a summary of how each proposal was judged is shown in Appendix P.

F. Final Selection

The results of the RFP analysis indicate that Polk 2-5 is the most economic plan to meet the 2017 capacity needs by \$117.9 million CPWRR compared to the next best proposal. Based on these economic results, and consideration of the non-economic impacts relative to the other proposals and technologies considered,

Determination of Need for Electrical Power: Polk 2-5 Combined Cycle Conversion

Table 13: Economic Evaluation with Consideration of June 2012 Updated Assumptions

CPWRR (\$ million)					
	Polk 2-5		Alternative 2		Proposal B
Capital	\$1,557.2		\$1,520.4		\$1,357.5
O&M	\$845.2		\$897.5		\$815.0
Fuel & Purchased Power	\$13,631.7		\$13,882.9		\$13,602.5
Total	\$16,034.1		\$16,300.8		\$16,109.6
Delta			\$266.7		\$75.4

As can be seen in the table, Polk 2-5 is still the best option compared to Alternative 2 and Proposal B, which are \$266.7 million and \$75.4 million more costly with the latest demand and energy and fuel cost forecasts considered.

XI. Adverse Consequences If Polk 2-5 Is Delayed Or Denied

In the event that Polk 2-5 is delayed by two years, project costs would increase, and customer fuel savings for 2017 and 2018 would not be realized. Tampa Electric would construct simple cycle peaking units in 2017 to cover the reserve margin requirement in 2017 and 2018. System energy requirements would be served by peaking capacity resulting in higher fuel costs. This would result in higher costs for customers of \$65.4 million on a CPWRR basis. Witness Hornick described the potential for an equipment demand spike scenario if there is a delay. If an equipment demand spike scenario materializes, this could result in higher costs for customers of \$100.0 million on a CPWRR basis.

If Tampa Electric's proposed Polk 2-5 is denied, Tampa Electric would not be able to satisfy its minimum 20 percent Reserve Margin and minimum 7 percent supply planning criteria by the summer of 2017 in the most reliable and cost-effective manner. This would expose Tampa Electric's customers to a greater

Determination of Need for Electrical Power: Polk 2-5 Combined Cycle Conversion

combined cycle technology in 2017 still maintains a prudent balance in Tampa Electric's capacity and energy mix.

In conclusion, Polk 2-5 provides significant savings of \$117.9 million to Tampa Electric's customers when compared to the next higher cost alternative while providing additional benefits in the areas of reliability, fuel diversity, environmental impacts, and generating system efficiency. All these reasons reinforce Tampa Electric's selection of Polk 2-5 as the best alternative for Tampa Electric and its customers.

1 initial screening and individual economic ranking, but did
2 not individually meet the capacity requirement for a given
3 year, were evaluated in portfolios that matched them with
4 other resources to meet the capacity need and the sequence of
5 annual need identified in the solicitation.

6
7 **Q.** What was the result of the RFP for 2017 capacity?

8
9 **A.** Document No. 10 of my exhibit contains a summary of the
10 short-listed bidders. After comparing the results of Tampa
11 Electric's analysis and those performed by the independent
12 evaluator, Polk 2-5 NGCC was selected as the most cost-
13 effective alternative. This resulted in a CPWRR savings of
14 \$117.9 million relative to the next higher cost bidder. A
15 summary of the RFP resource plans and economic analysis is
16 shown in Document No. 11 of my exhibit.

17
18 **Q.** Please describe Tampa Electric's proposed Polk 2-5 NGCC unit.

19
20 **A.** The existing Polk 2 through 5 combustion turbines will be
21 converted to a NGCC facility located at Polk Power Station by
22 integrating a new steam turbine with an additional capacity
23 of 459 MW summer and 463 MW winter, incrementally. This
24 incremental capacity is derived from waste heat from the four
25 existing combustion turbines of 339 MW summer and 352 MW

1 2013 TYSP filing due in April 2013. This analysis included
2 the impacts of new and modified DSM programs. An assessment
3 of the June 2012 updated fuel price forecast and customer
4 demand and energy forecast confirm the forecasts are within
5 the bands of the sensitivities used in the original IRP
6 process. The updated fuel price forecast reflects lower
7 natural gas prices overall; the updated solid fuel price
8 forecast are somewhat lower as well.

9
10 The updated demand and energy forecast reflects lower growth
11 in customer demand and energy requirements which reduces the
12 amount of capacity needed in 2017 from 294 MW to 205 MW; this
13 affirms Tampa Electric's stated need for additional resources
14 in 2017. The updated forecasts were used to test the IRP and
15 RFP recommended plan to construct Polk 2-5 NGCC as the most
16 cost-effective alternative. For the IRP alternate expansion
17 plan cases using updated forecasts, the Polk 2-5 plan
18 resulted in CPWRR savings of \$266.7 million relative to the
19 closest IRP alternate expansion plan. For the RFP proposals
20 using updated forecasts, the resulting CPWRR savings is \$75.4
21 million relative to the most competitive bidder. Both of
22 these updated forecast results support Tampa Electric's final
23 recommended resource plan. Document No. 13 of my exhibit
24 contains a summary of the analysis utilizing updated
25 assumptions. Finally, considering the comprehensive

1 technologies, sensitivities, timing, and a market
2 solicitation were evaluated and the selection of Polk 2-5 was
3 supported by subsequent economic analyses of viable supply
4 alternatives, demonstrating that Polk 2-5 is the most cost-
5 effective option compared to other technologies and available
6 supply capacity from the Florida market.

7
8 After consideration of all existing, new and modified DSM
9 programs and renewable energy initiatives, the construction
10 of Polk 2-5 with a January 2017 in-service date should not be
11 deferred. A two-year deferral of the recommended plan could
12 increase costs to customers by \$100.0 million. Tampa
13 Electric also determined that fuel diversity is a key
14 objective and the addition of natural gas combined cycle
15 technology in 2017 still maintains a prudent balance in Tampa
16 Electric's capacity and energy mix. When considering the
17 viability of uncommitted resources, the risk of emerging
18 environmental regulations, and the uncertainty of voluntary
19 DSM programs, Polk 2-5 is needed as a firm resource within
20 the FRCC region.

21
22 Polk 2-5 provides significant savings of \$117.9 million to
23 Tampa Electric's customers when compared to the most cost-
24 effective alternative while providing additional benefits in
25 the areas of reliability, fuel diversity, environmental

RFP Resource Plans & Analysis

Resource Plans

Year	Polk 2-5	Proposal A	Proposal B	Proposal C	Proposal D
2012					
2013			Proposal B		
2014					
2015					
2016					
2017	(1) Polk 2-5 NGCC 463/459 MW	Proposal A		Proposal C (1) 7FA CT 177/149 MW	Proposal D (1) 7FA CT 177/149 MW
2018			(1) Polk 2-5 NGCC 463/459 MW		
2019	(1) 7FA CT 177/149 MW	(1) 7FA CT 177/149 MW		(2) 7FA CT 354/298 MW	(2) 7FA CT 354/298 MW
2020					
2021					
2022	(1) 7FA CT 177/149 MW	(1) 7FA CT 177/149 MW			
2023				(1) Polk 2-5 NGCC 463/459 MW	(1) Polk 2-5 NGCC 463/459 MW
2024					
2025	(1) 7FA CT 177/149 MW	(1) 7FA CT 177/149 MW			
2026			(1) 7FA CT 177/149 MW		
2027		(1) Polk 2-5 NGCC 463/459 MW			
2028					
2029	(1) 7FA CT 177/149 MW	(1) 7FA CT 177/149 MW	(1) 7FA CT 177/149 MW	(1) 7FA CT 177/149 MW	
2030					
2031					
2032					(1) 7FA CT 177/149 MW

CPWRR (\$ million)

	Polk 2-5	Proposal A	Proposal B	Proposal C	Proposal D
Capital	\$1,575.2	\$1,253.3	\$1,400.1	\$1,430.9	\$1,416.6
O&M	\$1,099.7	\$1,064.6	\$1,068.4	\$1,111.2	\$1,109.2
Fuel & Purchased Power	<u>\$15,566.1</u>	<u>\$16,143.0</u>	<u>\$15,890.3</u>	<u>\$15,909.9</u>	<u>\$15,954.9</u>
Total	\$18,241.0	\$18,460.9	\$18,358.9	\$18,452.0	\$18,480.8
Delta		\$219.9	\$117.9	\$210.9	\$239.7

June 2012 Assumptions Update

Polk 2-5		Resource Plans Alternative 2		Proposal B	
2012		2012		2012	
2013		2013		2013	Proposal B
2014		2014		2014	
2015		2015		2015	
2016		2016		2016	
2017	(1) Polk 2-5 NGCC 463/459 MW	2017	(2) 7FA CT 354/298 MW	2017	
2018		2018		2018	
2019		2019	(1) 7FA CT 177/149 MW	2019	(1) Polk 2-5 NGCC 463/459 MW
2020	(1) 7FA CT 177/149 MW	2020	(1) 7FA CT 177/149 MW	2020	
2021		2021		2021	
2022		2022		2022	
2023	(1) 7FA CT 177/149 MW	2023	(1) 7FA CT 177/149 MW	2023	
2024		2024		2024	
2025		2025		2025	
2026	(1) 7FA CT 177/149 MW	2026	(1) Polk 2-5 NGCC 463/459 MW	2026	
2027		2027		2027	(1) 7FA CT 177/149 MW
2028		2028		2028	
2029	(1) 7FA CT 177/149 MW	2029		2029	(1) 7FA CT 177/149 MW
2030		2030		2030	
2031		2031		2031	
2032		2032		2032	

CPWRR (\$ million)

	Polk 2-5	Alternative 2	Proposal B
Capital	\$1,557.2	\$1,520.4	\$1,357.5
O&M	\$845.2	\$897.5	\$815.0
Fuel & Purchased Power	\$13,631.7	\$13,882.9	\$13,937.1
Total	\$16,034.1	\$16,300.8	\$16,109.6
Delta		\$266.7	\$75.4

**TAMPA ELECTRIC COMPANY
DOCKET NO. 120234-EI
STAFF'S SECOND SET OF
INTERROGATORIES
INTERROGATORY NO. 38
PAGE 1 OF 1
FILED: OCTOBER 23, 2012
REVISED: NOVEMBER 27, 2012**

38. Referencing Table 13, under the column labeled "Proposal B", of the Determination of Need Study, the total value does not appear to be consistent with the summation of its components (Capital, O&M, Fuel, and Purchased Power). Please reconcile this difference.

a. If the total value is incorrect and it should be equal to the summation of the components in that column, how would this impact the conclusion of TECO's economic evaluation?

A. For Proposal B, the line item labeled, "Fuel & Purchased Power" was incorrect, due to an incorrect link to a cell that was in the source spreadsheet.

Please note that this error also existed in Exhibit 1, Document 13 of witness Rocha's testimony.

Subsequent to the change identified above, while preparing the response to Staff's 4th set of interrogatories question 75, the company discovered an inadvertent input error in the model that impacts the fuel and purchased power estimated costs of only Proposal B. As such, the original calculated fuel and purchased power costs should have been \$13,602.5 million resulting in a total CPWRR of \$16,109.6 million and a delta of \$75.4 million.

a. The total value has been corrected and does not impact the conclusion of Tampa Electric's economic evaluation.

**TAMPA ELECTRIC COMPANY
DOCKET NO. 120234-EI
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INTERROGATORY NO. 47
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Proposal B

Year	Annual Revenue Requirements (Generation Capital) (\$millions, 2012 \$)	Annual Revenue Requirements (Transmission Capital) (\$millions, 2012 \$)	Annual Revenue Requirements (O&M) (\$millions, 2012 \$)	Annual Revenue Requirements (Fuel) (\$millions, 2012 \$)	Annual Revenue Requirements (Environmental) (\$millions, 2012 \$)	Total (\$millions, 2012 \$)	Bill Impact (2012 \$/1,000 kWh)*
2012	-	-	55.62	759.63	-	815.26	0.00
2013	13.87	-	38.05	673.24	-	725.16	1.52
2014	14.13	-	37.18	664.79	-	716.11	1.98
2015	12.51	-	35.27	648.63	-	696.41	1.75
2016	11.09	-	34.13	598.58	-	643.80	0.92
2017	9.83	-	32.84	570.54	-	613.21	-2.02
2018	8.72	-	31.43	548.79	-	588.93	-1.70
2019	60.04	16.63	30.48	514.36	-	621.50	1.63
2020	58.48	16.41	28.86	488.06	-	591.81	0.62
2021	52.14	14.65	27.74	468.50	-	563.03	0.53
2022	46.49	13.08	26.62	452.01	-	538.21	0.46
2023	41.45	11.68	25.61	444.28	-	523.03	-0.30
2024	36.95	10.44	24.48	431.20	-	503.06	-0.32
2025	32.93	9.32	23.84	416.91	-	483.00	-0.20
2026	29.34	8.33	22.71	401.84	-	462.21	-0.66
2027	36.54	7.44	22.38	396.28	-	462.63	0.04
2028	33.56	6.63	21.46	379.35	-	441.00	-0.06
2029	39.31	5.90	21.35	366.64	-	433.20	-0.03
2030	35.88	5.25	20.37	354.49	-	416.00	-0.01
2031	31.81	4.66	19.60	346.39	-	402.46	-0.03
2032	28.19	4.13	18.56	332.71	-	383.58	0.00
2033	24.95	3.65	17.83	320.23	-	366.66	0.01
2034	22.06	3.21	16.79	309.48	-	351.53	0.03
2035	19.47	2.83	16.03	304.77	-	343.09	0.02
2036	76.74	2.48	18.58	293.50	-	391.30	0.02
2037	68.44	2.17	17.70	281.90	-	370.21	0.03
2038	60.34	1.89	17.16	278.02	-	357.40	-0.02
2039	53.31	1.65	16.42	270.11	-	341.49	-0.04
2040	47.37	1.46	15.59	257.09	-	321.52	-0.03
2041	42.10	1.30	14.85	247.31	-	305.56	-0.03
2042	37.40	1.16	14.23	239.02	-	291.81	-0.03
2043	33.24	1.03	13.63	230.97	-	278.87	-0.03
2044	29.53	0.91	13.07	223.21	-	266.72	-0.03
2045	26.21	0.81	12.53	215.75	-	255.29	-0.01
2046	23.24	0.71	12.02	208.53	-	244.50	-0.01
Total	1,197.65	159.81	814.99	13,937.11	-	16,109.56	

*Assumes the Polk 2-5 utilizing June 2012 assumptions is the base case compared to Alternative 2 and Proposal B.

TAMPA ELECTRIC COMPANY
DOCKET NO. 120234-EI
STAFF'S FOURTH SET OF
INTERROGATORIES
INTERROGATORY NO. 76
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FILED: NOVEMBER 26, 2012
REVISED: NOVEMBER 27, 2012

A. The requested information is provided in the following tables.

**Table 6: Results of Final Economic Analysis
(Including CO₂ Costs)**

Total System Costs (2012 \$ Million)

	Polk 2-5		
	Conversion	Alternative 1	Alternative 2
CPWRR	24,995	25,414	25,256
Delta		419	260

**Table 13: Economic Evaluation with Consideration of June 2012
Updated Assumptions (Including CO₂ Costs)**

		CPWRR (\$ million)		
		Polk 2-5	Alternative 2	Proposal B
Capital		\$1,557.2	\$1,520.4	\$1,357.5
O&M		\$845.2	\$897.5	\$815.1
Fuel & Purchased Power		\$13,631.7	\$13,882.9	\$13,937.1
CO2 Costs		<u>\$6,647.6</u>	<u>\$6,712.6</u>	<u>\$6,649.3</u>
	Total	\$22,681.8	\$23,013.5	\$22,758.8
	Delta		\$331.7	\$77.1