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March 23, 2017

VIA: ELECTRONIC FILING

Ms. Carlotta S. Stauffer
Commission Clerk
Florida Public Service Commission
2540 Shumard Oak Boulevard
Tallahassee, Florida 32399-0850

Re: UNDOCKETED – Workshop on Incentives for Electric Utilities

Dear Ms. Stauffer:

Attached for filing in the above-styled matter is Tampa Electric Company's Post-Workshop Comments – Incentives.

Thank you for your assistance in connection with this matter.

Sincerely,

James D. Beasley

JDB/pp
Attachment

cc:
Tom Ballinger	(w/attachment)
Phillip Ellis	(w/attachment)
Russell Badders	(w/attachment)
Matthew Bernier	(w/attachment)
Patricia Christensen	(w/attachment)
Jon Moyle	(w/attachment)

BEFORE THE FLORIDA PUBLIC SERVICE COMMISSION

In re: Workshop on Incentives for Electric Utilities.	)	UNDOCKETED
	)	FILED: March 23, 2017

TAMPA ELECTRIC COMPANY'S
POST-WORKSHOP COMMENTS – INCENTIVES

Tampa Electric Company ("Tampa Electric" or "the company") offers the following comments to follow up on the workshop conducted in this matter on February 9, 2017:

Tampa Electric's Pending Petition

On June 30, 2016 Tampa Electric filed its Petition for Approval of Energy Transaction Optimization Mechanism, which remains pending in Docket No. 160160-EI. The four-year pilot program proposed in that petition is designed to allow Tampa Electric to retain a portion of gains that its wholesale power transactions and asset optimization activities generate for Tampa Electric customers, once those gains exceed a prescribed threshold. The optimization mechanism is intended to operate as an inducement for Tampa Electric to maximize gains, to the mutual benefit of customers and the company.

The company's optimization mechanism is designed to operate in a manner similar to FPL's pilot incentive mechanism, first approved in the Commission's December 13, 2012 decision in Docket No. 120015-EI and recently extended for four years in Docket No. 160088-EI. The actual results of FPL's pilot program have demonstrated the substantial benefits to customers derived from a more robust incentive mechanism. Tampa Electric's proposed optimization mechanism is fundamentally the same as FPL's. It differs from FPL's only in that Tampa Electric has not proposed cost recovery of incremental personnel positions and software

costs and Tampa Electric's proposal has different threshold amounts to reflect the different sizes and systems of FPL and Tampa Electric.

FPL's petition to modify and extend its incentive mechanism pointed out that over the first three years of its similar incentive mechanism, FPL customers received gains, net of incremental O&M expenses, that reduced their fuel cost recovery factors by more than $124 million while paying incentives to FPL that represent a little less than ten percent of total gains. This demonstrates the benefits to all customers of an incentive mechanism like that proposed by Tampa Electric in Docket No. 160160-EI.

Staff's Strawman Proposal

Tampa Electric has reviewed the Staff's strawman proposal, presented at the February 9, 2017 workshop and considers it to be a genuine effort to devise an incentive mechanism that will bring benefits to all IOU electric customers in Florida. The Staff's strawman does not have a calculated threshold or thresholds, an attribute that makes it a lot easier to understand and administer.

Another benefit of the Staff's strawman proposal is that it would expand qualifying activities, thereby providing more opportunities for utilities to capture savings for the benefit of their customers. Tampa Electric does not believe there should be an exclusive list of activities. Instead, the utility should be free to develop and create new opportunities to capture savings arising from transactions that are related to necessary utility operations, as opposed to being constrained by a pre-defined list of qualifying activities.

Staff's proposed strawman has a five percent incentive level which Tampa Electric believes is too low to be meaningful. Instead of the five percent incentive, Tampa Electric believes that qualifying gains should be shared with 80 percent going to customers and 20

percent retained by the utility. This would provide customers the lion's share of gains from opportunity sales and purchases, while providing a meaningful incentive for the IOUs to invest in the additional resources needed to find these incremental savings-generating optimization transactions in the marketplace.

Generating Performance Incentive Factor

With respect to the Generating Performance Incentive Factor ("GPIF") mechanism, Tampa Electric believes that it has worked well over time and should be retained. The GPIF model has provided a real incentive for the utilities to maximize fuel savings for their customers by carefully managing the heat rates and unit availabilities of their GPIF units.

Tampa Electric personnel who are responsible for operating and maintaining these power plants take their obligations very seriously. They believe that GPIF rewards or penalties directly reflect on their management skills and expertise. They strive to operate the company's generating units efficiently and to meet or exceed the GPIF targets.

The GPIF has also worked well with the current incentive for short-term wholesale sales. The GPIF sets operational targets and provides the company an incentive for performing well. The GPIF has benefitted customers by encouraging the utility to maintain and operate its units efficiently, and shared fuel savings between the customers and company when the utility successfully achieved its targets of better than recent historical performance. Additionally, the company incurs penalties if it does not operate its GPIF units to reach those targets. The wholesale sales incentive provides the company an incentive for its incremental effort and participation in the wholesale transaction market. The current wholesale sales incentive encourages the utility to engage in short-term wholesale sales that result in gains for customers, and the company receives 20 percent of those gains above a threshold level, based upon the most

recent three-year average of gains. The short-term wholesale sales incentive has benefitted customers by encouraging the company to seek sales opportunities while providing most of the wholesale sales gains to the company's customers. Both programs have been in place for the last 16 years without causing conflicting signals or confusion to the company, and each program has benefitted customers.

In analyzing the relationship between the GPIF and a separate incentive for making short-term off-system sales and/or purchases it is important to recognize that these are two different types of incentives for two different areas of the company. The GPIF influences operations while the short-term sales/purchases incentive occurs within a market environment.

Tampa Electric does not believe there exists any conflict between the operation of the GPIF and the utility's other operations. In fact, the GPIF and wholesale transactions are complementary and work together to benefit ratepayers. A utility is not going to make a short-term purchase or sale unless it is economic to do so and in its customers' best interests. By the same token, a utility would not take an outage unless necessary to do so, for fear of sustaining a GPIF penalty. Moreover, utilities are incented by the GPIF to take extra measures to minimize the duration of forced outages to avoid GPIF penalties.

Statistical Analyses Confirm that the GPIF and Power Transactions do not Conflict

Tampa Electric has performed statistical analyses that make it clear that the GPIF incentive does not conflict with power transactions including short-term purchases and sales. Tampa Electric performed a regression analysis in Excel to determine whether any relationship exists between power transactions, including short-term purchases and sales, and the metrics for the GPIF model (reward or penalty, equivalent availability factor ("EAF") and average net operating heat rate ("ANOHR")). The company relied upon available actual data over the period

2000 through 2016. The purpose of the regression analysis was to express a potential transaction incentive mechanism relationship to the company's current GPIF metrics, mathematically. Three different statistical tests were performed including Pearson Correlation Coefficient ("r"), Coefficient of Determination ("r^2") and Statistical Hypothesis Testing.

The results of each of the three tests against each GPIF metric showed that there was no correlation for short-term wholesale sales gains or short-term wholesale purchase savings. These results are provided in Exhibit A.

Specifically, Tampa Electric's understanding is that Staff believes that economy purchase savings and GPIF rewards or penalties are correlated and would offset each other. The statistical test results do not support this conclusion, as described in Exhibit A. In the first test, the calculated Pearson Correlation Coefficient, a measure of linear dependence between the company's economy purchase savings and its GPIF reward or penalty, was 0.016, proving little or no correlation between these two variables.

The second test, the Coefficient of Determination, a statistical measure of how well a regression line approximates the real data points, produced a factor of 0.0002, showing no correlation between actual economy purchase savings and the company's GPIF reward or penalty. Because this value is so close to zero, it contradicts any hypothesis that an increase in economy purchase savings would offset a utility's GPIF penalty.

In the third test, the Statistical Hypothesis test, the company used a null hypothesis ("H_o") with 99 percent confidence that there is no correlation between short-term power purchase savings and GPIF rewards or penalties is real. The company tested the alternative hypothesis ("H_a") that there is a correlation between short-term power purchase savings and GPIF rewards or penalties. Using a two-tailed critical value table, the company looked up the critical value

with an alpha of 0.01 and degrees of freedom of 10, resulting in a critical value of 0.708. If the critical value is less than the Pearson Correlation Coefficient, calculated in the first test, then the company would reject the null hypothesis and accept the alternative hypothesis. This was not the case as the resulting critical value was greater than the Pearson Correlation Coefficient. Therefore, the null hypothesis is real, reflecting no correlation between short-term power purchase savings and GPIF rewards or penalties.

The results of the statistical tests shown in Exhibit A, page 4, confirm that there is no correlation between Tampa Electric's short-term power transactions and the metrics used in the GPIF model. Stated differently, the existence and operation of the GPIF has had no influence on the company's decision-making about engaging in short-term power purchases and sales, and the use of the GPIF in conjunction with an optimization incentive that includes savings from short-term wholesale sales and purchases does not create a system of conflicting incentives.

Summary

Tampa Electric adheres to the belief that approval of its pending energy transaction optimization mechanism would greatly benefit the company's customers. The company also sees merit in the Staff's proposed strawman for a global incentive mechanism, subject to the suggested modifications of a meaningful sharing level and retention of the GPIF mechanism. Regardless of which incentive mechanism the Commission may select, the GPIF mechanism has worked well, has promoted generating unit efficiency and should be retained. Retention of the GPIF is supported by objective statistical analyses that confirm that no correlation exists between Tampa Electric's short-term power purchases and sales savings or gains, and the rewards or penalties received under the GPIF. Tampa Electric recommends the prompt approval of its

pending optimization mechanism or other acceptable optimization mechanism so that its customers can begin reaping the benefits of these additional optimization transactions.

WHEREFORE, Tampa Electric submits the foregoing post-workshop comments regarding incentives.

DATED this 23rd day of March 2017.

Respectfully submitted,

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ATTORNEYS FOR TAMPA ELECTRIC COMPANY

EXHIBIT A

Exhibit A

A description of the statistical analysis we used is provided for the test of a relationship between economy power purchase savings and GPIF reward/penalty variables. The company also tested for relationships between short-term power sales and GPIF reward/penalty or GPIF performance metrics. The results are shown in the table on page 4 of this exhibit.

First Test: Pearson Correlation Coefficient (r)

In statistics, the Pearson Correlation Coefficient (r), also referred to as the Pearson's r, is a measure of the linear dependence or correlation between two variables X and Y. It has a value between +1 and −1 inclusive, where 1 is total positive linear correlation, 0 is no linear correlation, and −1 is total negative linear correlation.

As shown on line 1 of the summary table, the Pearson's Correlation Coefficient of the economy power purchase savings and GPIF reward/penalty variables is r = 0.016. This was calculated by using Excel's regression analysis tool and selecting purchase savings as the X variable and GPIF reward or penalty as the Y variable. The formula used for the data sample of 12 years was:

$$r = \frac{\sum_{i=1}^{n}(x_i - \bar{x})(y_i - \bar{y})}{\sqrt{\sum_{i=1}^{n}(x_i - \bar{x})^2}\sqrt{\sum_{i=1}^{n}(y_i - \bar{y})^2}}$$

where:

n = the number of years sampled,

x_i = economy power purchase savings ($),

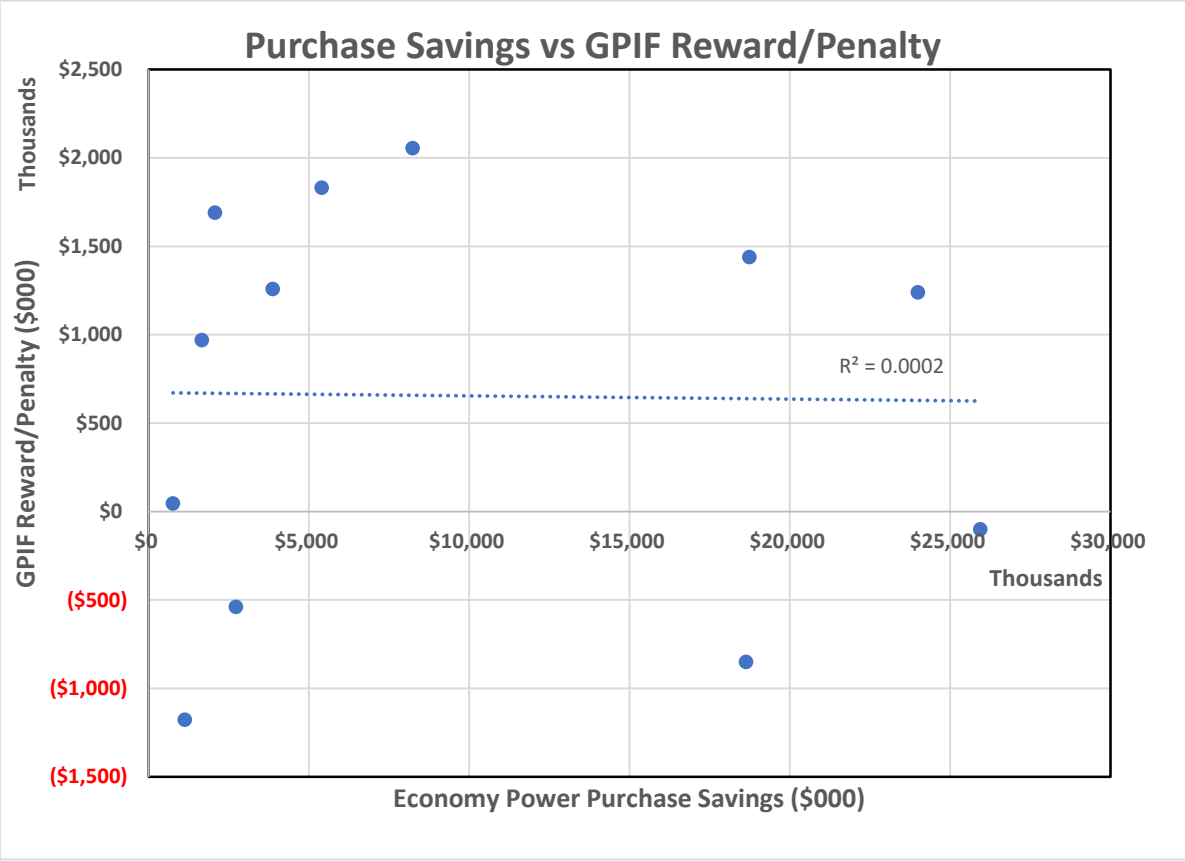
y_i = GPIF reward/penalty ($),

$\overline{x}$ = the sample mean; and analogously for $\overline{y}$

Second Test: Coefficient of Determination (r^2)

In statistics, the Coefficient of Determination (r^2) is a number that indicates the proportion of the variance in the dependent variable that is predictable from the independent variable. The Coefficient of Determination ranges from 0 to 1, where 1 is total linear correlation and 0 is no linear correlation.

Graphical depiction of the two variables visually shows no relationship between them. See Graph 1 below.



Graph 1: Relationship of Economy Purchase Power Savings to GPIF Reward/Penalty for 12 Years

This is supported by the results of the test. As shown on line 1 of the summary table, the Coefficient of Determination of the economy power purchase savings and GPIF reward/penalty variables is $r^2 = 0.0002$. The r^2 was calculated by using Excel's regression analysis tool and selecting purchase savings dollars as X and the GPIF reward or penalty dollars as Y, and it is equal to squaring the sampled Pearson Correlation Coefficient (r) calculated in the First Test. Our sample consisted of 12 years of data. An r^2 value of 0.0002, so close to zero, demonstrates that there is no relationship, or correlation, between the two variables.

Third Test: Statistical Hypothesis Testing

A Statistical Hypothesis Test uses a hypothesis that is testable based on observing a modeled process and is a method of statistical inference. A hypothesis is proposed for the statistical relationship between the two data series, and this is compared as an alternative to an idealized null hypothesis (H_0) that proposes no relationship between the two data series. The comparison is deemed statistically significant if the relationship between the data would be an unlikely realization of the null hypothesis according to a threshold probability—the significance level (α). We selected a significance level of 99 percent, or a 1-in-100 chance that we conclude the null hypothesis is real when it occurred by chance. This represents a very high probability that our observation is real and our conclusion is correct.

We must choose a significance level because every hypothesis test uses samples to infer properties of a population based on an analysis of a sample. Therefore, there is some chance that although the analysis is flawless, the conclusion may be incorrect. These sampling errors are not errors in the usual sense, because they cannot be corrected (without using 100 percent sampling with no measurement errors).

In Test #1, the null hypothesis (H_0) is that there is no correlation between economic power purchase savings and GPIF rewards or penalties. We chose a significance level (α) of 0.01, or 99 percent confidence that our observation is real. The company also used an alternative hypothesis (H_a) that there is a correlation between economic power purchase savings and GPIF rewards or penalties. Using a two-tailed critical value table, we looked up the critical value with an alpha of 0.01 and degrees of freedom of 10, resulting in a critical value of 0.708. If the critical value is less than the Pearson Correlation Coefficient calculated in the first test, then we reject the null hypothesis and accept the alternative hypothesis. This was not the case as the resulting critical value was greater than the Pearson Correlation Coefficient. Therefore, the null hypothesis is real, reflecting no correlation between short-term power purchase savings and GPIF rewards or penalties.

Conclusion

The results of each of the three tests are contrary to Staff's assertion that there is a relationship between GPIF rewards or penalties and short-term economic purchase savings.

Tampa Electric
Summary Results of Testing for Correlation Between Short-Term Wholesale Power Purchases or Sales and GPIF Metrics
2000 - 2016

			First Test		Second Test		Third Test								
Line	X-variable	Y-variable	*Pearson Correlation Coefficient (r)*	*Results*	*Coefficient of Determination (r^2)*	*Results*	*Degrees of Freedom (df)*	*Critical Value of t for two-tailed test*	*Pearson Correlation Coefficient (r)*	*ABS(Critical Value) less than r*	*Event Probability (p-value)*	*Chosen Significance Level (alpha α)*	*Null Hypothesis Confidence Level (1-alpha)*	*p-value vs. alpha (α)*	*Results*
1	Economy Power Purchase Savings ($) *	GPIF Reward/Penalty ($)	0.016	There is no statistically significant correlation between the X and Y variables.	0.0002	Very low r^2 indicates there is no statistically significant correlation between the X and Y variables.	10	0.708	0.016	no	0.962	0.01	99% confident that observation is real, that there is no correlation between the X and Y variables.	p>α	There is no statistically significant correlation between the X and Y variables at the alpha level chosen.
2	Gains on Short-Term Power Sales ($) +	GPIF System EAF (%)	0.304		0.0924		13	0.641	0.304	no	0.271				
3	Short-Term Power Sales (MWh)	GPIF System EAF (%)	0.037		0.0014		15	0.606	0.037	no	0.888				
4	Gains on Short-Term Power Sales ($) +	GPIF System ANOHR (Btu/kWh)	0.540		0.2918		13	0.641	0.540	no	0.038				
5	Short-Term Power Sales (MWh)	GPIF System ANOHR (Btu/kWh)	0.107		0.0114		15	0.606	0.107	no	0.683				
6	Gains on Short-Term Power Sales ($) +	GPIF Reward/Penalty ($)	0.565		0.3197		13	0.641	0.565	no	0.028				

Definitions:

First Test: The Pearson Correlation Coefficient r is a measure of the linear dependence (correlation) between two variables X and Y.

Second Test: Coefficient of Determination r^2 is a statistical measure of how well the regression line approximates the real data points. An r^2 of 1 indicates that the regression line perfectly fits the data.

Third Test: Degrees of freedom (df) = number of years - 2; Critical value uses the two-tailed test with a given alpha of 0.01 from "2t" tables; If critical value is less than r, reject the null hypothesis and accept the alternative.

The significance level alpha α is the probability of rejecting the null hypothesis given that it is true. The null hypothesis is rejected if the p-value is less than a predetermined level, α.

The p-value is defined as the probability, under the assumption of hypothesis, of obtaining a result equal to or more extreme than what was actually observed.

* Analysis period 2005-2016. Purchase savings data available from 2005-2016.

+ Analysis period 2002-2016. Sales gains data available from 2002-2016.