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December 29, 2017

VIA: ELECTRONIC FILING

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

Re: Petition for approval of conservation street and outdoor lighting conversion program, by Tampa Electric Company; FPSC Docket No. 20170199-EI

Dear Ms. Stauffer:

Attached are Tampa Electric Company's responses to Staff's Fourth Data Request Nos. 1-2. The Excel portions of responses to Data Request Nos. 1b and 2a are being hand delivered on a CD via separate cover letter.

Thank you for your assistance in connection with this matter.

Sincerely,



James D. Beasley

JDB/pp
Attachment

cc: Daniel Lee (w/attachment)

**TAMPA ELECTRIC COMPANY
DOCKET NO. 20170199-EI
STAFF'S FOURTH DATA REQUEST
REQUEST NO. 1
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1. Please refer to TECO's response to Staff's Third Data Request, No. 3.
 - a. Does Rule 25-17.008, Florida Administrative Code, require the participation to stop at the year prior to the next avoided unit entering service in performing the cost-effectiveness tests? If so, please identify where in the Rule it is required. If not, please identify where the Company has been directed to perform the cost-effectiveness analysis in this manner.
 - b. Please provide a revised cost-effectiveness analysis of the program using the Participant Test, the Rate Impact Measure (RIM) Test, and the Total Resource Cost (TRC) Test, without the stop of participants at the year prior to the next avoided unit coming online.
- A.
 - a. Yes, the Florida Public Service Commission's prescribed process for performing cost-effectiveness requires the participation to stop at the year prior to the next avoided unit entering service. It is identified in the rule in the example (i.e. instructions) that are provided in the cost effectiveness manual.

In the cost-effectiveness manual on the input sheet of the example provided (page 40 of the manual), it lists the base year as 1990 and avoided unit year as 1995.

On page 59 demonstrates how to calculate the Total Resource Cost ("TRC") Test. (PSC CE 2.3, page 1 of 1) – shows participants and utility costs from 1998 and stopping the year prior to the avoided unit (1994) even though the study period for the conservation program is 15 years.

On page 62 demonstrates how to calculate the Participant Cost Test ("PCT"). (PSC CE 2.4, page 1 of 1) – shows utility rebates and costs from 1998 and stopping the year prior to the avoided unit (1994) even though the study period for the conservation program is 15 years.

On page 65 demonstrates how to calculate the Rate Impact Measure ("RIM") Test. (PSC CE 2.5, page 1 of 1) – shows utility program costs, incentives from 1998 and stopping the year prior to the avoided unit (1994) even though the study period for the conservation program is 15 years.

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In each of these prescribed cost-effectiveness tests the participants counting toward trying to avoid the unit stops the year prior to the avoided unit coming online. This has been the same prescribed process that Tampa Electric has adhered to since the Commission approved this methodology in Order No. 24745 within Docket No 19891324-EU.

- b. Tampa Electric reformed the cost-effectiveness test for the proposed Conservation Street and Outdoor Lighting Conversion Program incorporating the changes as requested from Commission Staff as follows:
- The participation for each luminaire conversion was carried through all the projected years of proposed Light Emitting Diode (“LED”) luminaire conversion program which carried the participants past the avoided unit projected to come online in 2021. The company also provided the cost-effectiveness results for stopping participants the year prior to the avoided unit.
 - The energy was reconciled to the difference in the tariffs between the existing Metal Halide (“MH”) and High-Pressure Sodium (“HPS”) luminaires versus the proposed LED luminaires.
 - The incremental cost between the difference in tariffs which reflected the change in fixture and maintenance charges per unit were inserted as a customer O&M cost into the cost-effectiveness test. The associated escalation rate was also adjusted to reflect this change in rate.

The table below provides the updated cost-effectiveness tests (RIM test, TRC test and PCT)) obtained from making these adjustments. The calculations of the cost-effectiveness tests (RIM test, TRC test and PCT) incorporating the changes as requested from Commission Staff is also included on the accompanying CD.

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Proposed Conservation Street and Outdoor Lighting Conversion Program	RIM	TRC	PCT	PCT (NPV)
System Conversion - Holding Participants at Avoided Unit	1.24	0.81	1.42	24,492
System Conversion - Participants and Costs past Avoided Unit	1.01	0.70	1.42	24,492

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- 2.** Please refer to TECO's response to Staff's Third Data Request, No. 4.
 - a. Please provide a revised Excel spreadsheet that shows the impact of the change in tariffs from the customer's original tariff to the new LED conversion tariff.
 - b. Did TECO consider making its new tariffed rates for LEDs revenue neutral or beneficial to all conversion participants? Please explain your response.

- A.**
 - a. Tampa Electric reformed the cost-effectiveness tests incorporating the changes as requested from Commission Staff that shows the impact of the change in tariffs from the customer's original tariff to the new LED conversion tariff. The table below provides the updated cost-effectiveness tests (RIM test, TRC test and PCT) obtained from making these adjustments. The calculation of the cost-effectiveness tests (RIM test, TRC test and PCT) incorporating the change as requested from Commission Staff to customers for each tariff conversion separately is also included on the accompanying CD.

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Luminaire Count	Luminaire Type	RIM	TRC	PCT (BCR)	PCT (NPV)
6,332	Cobra (closed)	0.57	0.37	0.87	-95
20	Post Top (closed)	0.55	0.25	0.50	-2
11,755	Cobra/Nema (closed)	0.84	0.55	1.17	318
4,088	Coach Post Top (closed)	0.84	0.55	1.17	111
82,910	Cobra	1.00	0.62	1.18	3,289
5,060	Nema	0.92	0.49	0.84	-176
8,903	Classic Post Top	1.04	0.63	1.17	362
3,387	Colonial PT	0.77	0.52	1.17	78
18,602	Salem PT	0.94	0.59	1.17	641
2,211	Shoebox	0.63	0.45	1.18	41
14,300	Cobra	1.02	0.62	1.17	574
102	General PT	1.32	1.55	3.52	36
283	Salem PT	1.18	0.99	2.02	53
13	Shoebox	0.93	5.26	Div/0	9
801	General PT	1.40	1.88	4.38	345
946	Salem PT	1.28	1.12	2.18	224
13	Shoebox (closed)	1.02	6.21	Div/0	11
18,240	Cobra	1.36	0.74	1.17	1,338
886	Flood (closed)	1.14	0.27	0.39	-450
1,646	Shoebox	1.39	0.74	1.17	128
131	Cobra	1.61	1.39	2.24	62
51	Flood	1.56	2.92	7.00	38
323	Shoebox	1.53	5.49	Div/0	229
13,355	Cobra	1.63	0.81	1.17	1,785
2,043	Flood	1.56	0.63	0.86	-218
375	Mongoose	1.57	0.80	1.17	42
1,380	Shoebox (closed)	1.63	1.80	3.09	860
534	Cobra	1.68	1.03	1.51	189
1,031	Flood	1.60	1.73	3.00	569
4,570	Shoebox	1.52	0.79	1.17	457
2,165	Flood	1.94	2.22	3.14	4,035
3,365	Shoebox	1.93	22.80	Div/0	9,629

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- b. Yes. Tampa Electric sought to match as close as possible both the conversion facilities and their photometric output with the luminaires being converted. In many instances, this matching in concert with cost and market considerations led to a beneficial bill impact (14 luminaires in all). However, there were four existing luminaires that, each for their own reasons, were better replaced by one of the new LED luminaires already being utilized to convert another existing luminaire. Because it was the same LED replacement, the same luminaire rate was utilized to remove price discrimination as a concern (i.e., same light providing the same service but at a different price).

In three of the cases where the bill impact was not beneficial, the conversion group with the smaller number of installed units was chosen to receive the higher bill impact to reduce the number of impacted customers. In the fourth case, the more decorative and costly version of the standard offer was separated into its own rate. With respect to the four and their individual considerations:

The 50Watt ("W") HPS Cobra is a street light which has some 6,332 fixtures versus the 70W variant which has 11,755. Over time, these lower wattage street lights have been determined by Tampa Electric and customers (e.g., municipal street light departments) to have insufficient lumen output to adequately light the streets. Many were being replaced each year with the 70W luminaire to improve illumination of streets. Hence, no lower lumen version was proposed to replace the 50W in LED, and the bill difference was small.

The 400W HPS Flood is a flood light which has some 2,043 fixtures versus the 250W variant which has 866. Flood lights, unlike street lights which illuminate linear streets, are usually used to light parking lots, work areas or general outdoor spaces. Hence there is usually more opportunities to place and direct their lighting to the desired space on the ground. The new LED flood luminaire offering for this market has a lumen output between the 400W HPS Flood and the 250W Flood but due to the directional nature of LED luminaires it will provide the ability to focus the light on the desired space rather than broad washing light into other areas. While the bill difference is higher than the other four, the higher lumen output and the directional lighting ability will greatly improve the lighting for the 250W customers.

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The 50W HPS Post Top is a light most often used in subdivision street lighting which has only 20 fixtures in service versus the 70W variant which has 4,088. Like the 50W street light, it has been recognized for some time that the 50W Post Top has insufficient lumen output and the 70W is a better option for subdivision streets. With only 20 fixtures in service, and consideration already underway at the company to cease current service for this option it made sense to convert them to a luminaire that provides the necessary lumen output and improves their overall lighting quality with the associated slight bill increase.

The Enhanced Classic 100 W HPS Post Top is another subdivision street light which has some 2,300 fixtures versus the Classic 100W HPS variant which has 6,083 fixtures. The difference between these same wattage luminaires is the word "enhanced" which refers more to the additional decorative features and greater aesthetic value of the fixture rather than its luminosity. These additional decorative features include gold colored ribbing, fennel top, and bases and have been sought to help differentiate residential aesthetics. In this case, the increased price reflects that the "enhanced" version has a higher cost to install and maintain. This also affords customers the opportunity to further differentiate aesthetics along a broader range of decorative options while the additional incremental costs are recovered through the higher rate.