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August 24, 2018

VIA: ELECTRONIC FILING

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

Re: Environmental Cost Recovery Clause
FPSC Docket No. 20180007-EI

Dear Ms. Stauffer:

Attached for filing in the above docket, on behalf of Tampa Electric Company, are the following:

1. Petition of Tampa Electric Company.

2. Prepared Direct Testimony and Exhibits (PAR-4) and (PAR-5) of Penelope A. Rusk.

3. Prepared Direct Testimony of Paul L. Carpinone.

Thank you for your assistance in connection with this matter.

Sincerely,

James D. Beasley

JDB/pp
Attachment

cc: All Parties of Record (w/attachment)

CERTIFICATE OF SERVICE

I HEREBY CERTIFY that a true and correct copy of the Petition and Testimonies, filed on behalf of Tampa Electric Company, has been furnished by electronic mail on this 24th day of August 2018 to the following:

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ATTORNEY

BEFORE THE FLORIDA PUBLIC SERVICE COMMISSION

In re: Environmental Cost Recovery Clause. ______________________	)))	DOCKET NO. 20180007-EI FILED: August 24, 2018

PETITION OF TAMPA ELECTRIC COMPANY

Tampa Electric Company ("Tampa Electric" or "the company"), hereby petitions the Commission for approval of the company's environmental cost recovery true-up and the cost recovery factor proposed for use during the period January 2019 through December 2019, and in support thereof, says:

Environmental Cost Recovery

1. Tampa Electric's final true-up amount for the period January 2017 through December 2017 is an over-recovery of $1,498,666. [See Exhibit No. PAR-1, Document No. 1 (Schedule 42-1A).]

2. Tampa Electric projects an actual/estimated true-up amount for the January 2018 through December 2018 period, which is based on actual data for the period January 1, 2018 through June 30, 2018 and revised estimates for the period July 1, 2018 through December 31, 2018, to be an over-recovery of $13,472,483. [See Exhibit No. PAR-2, Document No. 1 (Schedule 42-1E).]

3. The company's projected environmental cost recovery amount for the period January 1, 2019 through December 31, 2019, adjusted for taxes, is $42,980,454. When spread over projected kilowatt hour sales for the period January 1, 2019 through December 31, 2019, the average environmental cost recovery factor for the new period is 0.221 cents per kWh after application of factors which adjust for variations in line losses. [See Exhibit No. PAR-4, Document No. 7 (Schedule 42-7P).]

4. The accompanying Prepared Direct Testimony and Exhibits of Paul L. Carpinone and Penelope A. Rusk present:

(a) A description of each of Tampa Electric's environmental compliance actions for which cost recovery is sought; and

(b) The costs associated with each environmental compliance action.

5. For reasons more fully detailed in the Prepared Direct Testimony of witness Penelope A. Rusk, the environmental compliance costs sought to be approved for cost recovery proposed in this petition are consistent with the provisions of Section 366.8255, Florida Statutes, and with prior rulings by the Commission with respect to environmental compliance cost recovery for Tampa Electric and other investor-owned utilities.

WHEREFORE, Tampa Electric Company requests this Commission's approval of the company's prior period environmental cost recovery true-up calculations and projected environmental cost recovery charges to be collected during the period January 2019 through December 2019.

DATED this 24th day of August 2018.

Respectfully submitted,

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ATTORNEYS FOR TAMPA ELECTRIC COMPANY

CERTIFICATE OF SERVICE

I HEREBY CERTIFY that a true and correct copy of the foregoing Petition, filed on behalf of Tampa Electric Company, has been furnished by electronic mail on this 24th day of August 2018 to the following:

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ATTORNEY

BEFORE THE

FLORIDA PUBLIC SERVICE COMMISSION

DOCKET NO. 20180007-EI

IN RE: TAMPA ELECTRIC’S ENVIRONMENTAL COST RECOVERY

PROJECTION

JANUARY 2019 THROUGH DECEMBER 2019

TESTIMONY AND EXHIBIT

OF

PENELOPE A. RUSK

FILED: AUGUST 24, 2018

BEFORE THE FLORIDA PUBLIC SERVICE COMMISSION

PREPARED DIRECT TESTIMONY

OF

PENELOPE A. RUSK

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

A. My name is Penelope A. Rusk. My business address is 702 North Franklin Street, Tampa, Florida 33602. I am employed by Tampa Electric Company ("Tampa Electric" or "company") in the position of Manager, Rates in the Regulatory Affairs Department.

Q. Have you previously filed testimony in Docket No. 20180007-EI?

A. Yes, I submitted direct testimony on April 2, 2018 and July 25, 2018.

Q. Has your job description, education, or professional experience changed since then?

A. No, it has not.

Q. What is the purpose of your testimony in this proceeding?

A. The purpose of my testimony is to present, for Commission review and approval, the calculation of the revenue requirements and the projected Environmental Cost Recovery Clause (“ECRC”) factors for the period of January 2019 through December 2019. The projected ECRC factors have been calculated based on the current allocation methodology. In support of the projected ECRC factors, my testimony identifies the capital and operating & maintenance (“O&M”) costs associated with environmental compliance activities for the year 2019.

Q. Have you prepared an exhibit that shows the determination of recoverable environmental costs for the period of January 2019 through December 2019?

A. Yes. Exhibit No. PAR-4, containing eight documents, was prepared under my direction and supervision. Document Nos. 1 through 8 contain Forms 42-1P through 42-8P, which show the calculation and summary of the O&M and capital expenditures that support the development of the environmental cost recovery factors for 2019. I have also provided Exhibit No. PAR-5, which contains four documents, including selected schedules without the costs of Tampa Electric’s two new proposed ECRC projects for compliance with the Effluent Limitations Guidelines

("ELG") Rule and Section 316(b) of the Clean Water Act.

Q. Are you requesting Commission approval of the projected environmental cost recovery factors for the company's various rate schedules?

A. Yes. The company requests approval of the ECRC factors provided in Exhibit No. PAR-4, Document No. 7, on Form 42-7P. The factors were prepared under my direction and supervision. These annualized factors will apply for the period January 2019 through December 2019.

Q. What has Tampa Electric calculated as the net true-up to be applied in the period January 2019 to December 2019?

A. The net true-up applicable for this period is an over-recovery of $14,971,149. This consists of a final true-up over-recovery of $1,498,666 for the period of January 2017 through December 2017 and an estimated true-up over-recovery of $13,472,483 for the current period of January 2018 through December 2018. The detailed calculation supporting the estimated net true-up was provided on Forms 42-1E through 42-9E of Exhibit No. PAR-2 filed with the Commission on July 25, 2018.

Q. Did Tampa Electric include any new environmental compliance projects for ECRC cost recovery for the period from January 2019 through December 2019?

A. Yes, Tampa Electric included costs associated with the company's compliance with Section 316(b) of the Clean Water Act. The company's petition for approval to recover such costs through the ECRC was filed with the Commission on April 26, 2018. In addition, costs associated with compliance with the company's Effluent Limitations Guidelines Program ("ELG") have been included. The company's petition for approval to recover such costs through the ECRC was filed with the Commission on May 9, 2018. Tampa Electric's witness Paul L. Carpinone supports the need for the projects, as detailed in his direct testimony submitted on July 25, 2018 in this docket.

Q. What are the capital projects included in the calculation of the ECRC factors for 2019?

A. Tampa Electric proposes to include for ECRC recovery costs for the 27 previously approved capital projects along with the two new projects in the calculation of the 2019 ECRC factors. These projects are listed below.

1) Big Bend Unit 3 Flue Gas Desulfurization ("FGD")

Integration

2) Big Bend Units 1 and 2 Flue Gas Conditioning
3) Big Bend Unit 4 Continuous Emissions Monitors
4) Big Bend Fuel Oil Tank No. 1 Upgrade
5) Big Bend Fuel Oil Tank No. 2 Upgrade
6) Big Bend Unit 1 Classifier Replacement
7) Big Bend Unit 2 Classifier Replacement
8) Big Bend Section 114 Mercury Testing Platform
9) Big Bend Units 1 and 2 FGD
10) Big Bend FGD Optimization and Utilization
11) Big Bend NOx Emissions Reduction
12) Big Bend Particulate Matter ("PM") Minimization and Monitoring
13) Polk NO_x Emissions Reduction
14) Big Bend Unit 4 SOFA
15) Big Bend Unit 1 Pre-SCR
16) Big Bend Unit 2 Pre-SCR
17) Big Bend Unit 3 Pre-SCR
18) Big Bend Unit 1 SCR
19) Big Bend Unit 2 SCR
20) Big Bend Unit 3 SCR
21) Big Bend Unit 4 SCR
22) Big Bend FGD System Reliability
23) Mercury Air Toxics Standards ("MATS")
24) SO_2 Emission Allowances

25) Big Bend Gypsum Storage Facility

26) Big Bend Coal Combustion Residuals (“CCR”) Rule – Phase I

27) Big Bend CCR Rule - Phase II

28) Big Bend Unit 1 Section 316(b)Impingement Mortality

29) Big Bend Effluent Limitations Guidelines (“ELG”) Rule Compliance

Q. Have you prepared schedules showing the calculation of the recoverable capital project costs for 2019?

A. Yes. Form 42-3P contained in Exhibit No. PAR-4 summarizes the cost estimates for these projects. Form 42-4P, pages 1 through 29, provides the calculations resulting in recoverable jurisdictional capital costs of $45,357,454.

Q. What are the O&M projects included in the calculation of the ECRC factors for 2019?

A. Tampa Electric proposes to include for ECRC recovery O&M costs for 25 previously approved O&M projects and two new projects in the calculation of the ECRC factors for 2019. These projects are listed below.

1) Big Bend Unit 3 FGD Integration

2) Big Bend Units 1 and 2 Flue Gas Conditioning

3) SO_2 Emission Allowances

4) Big Bend Units 1 and 2 FGD

5) Big Bend PM Minimization and Monitoring

6) Big Bend NO_x Emissions Reduction

7) National Pollutant Discharge Elimination System ("NPDES") Annual Surveillance Fees

8) Gannon Thermal Discharge Study

9) Polk NO_x Emissions Reduction

10) Bayside SCR Consumables

11) Big Bend Unit 4 Separated Overfired Air ("SOFA")

12) Big Bend Unit 1 Pre-SCR

13) Big Bend Unit 2 Pre-SCR

14) Big Bend Unit 3 Pre-SCR

15) Clean Water Act Section 316(b) Phase II Study

16) Arsenic Groundwater Standard Program

17) Big Bend Unit 1 SCR

18) Big Bend Unit 2 SCR

19) Big Bend Unit 3 SCR

20) Big Bend Unit 4 SCR

21) Mercury Air Toxics Standards

22) Greenhouse Gas Reduction Program

23) Big Bend Gypsum Storage Facility

24) Big Bend CCR Rule Phase I

24) Big Bend CCR Rule Phase II25) Big Bend Unit 1 Section 316(b) Impingement Mortality

26) Big Bend ELG Rule Compliance

Q. Have you prepared a schedule showing the calculation of the recoverable O&M project costs for 2019?

A. Yes. Form 42-2P contained in Exhibit No. PAR-4 presents the recoverable jurisdictional O&M costs for these projects, which total $12,562,528 for 2019.

Q. Did you prepare a schedule providing the description and progress reports for all environmental compliance activities and projects?

A. Yes. Project descriptions and progress reports are provided in Form 42-5P, pages 1 through 34.

Q. What are the total projected jurisdictional costs for environmental compliance in the year 2019?

A. The total jurisdictional O&M and capital expenditures to be recovered through the ECRC are calculated on Form 42-1P of Exhibit No. PAR-4. These expenditures total $57,919,982.

Q. How were environmental cost recovery factors calculated?

A. The environmental cost recovery factors were calculated as shown on Schedules 42-6P and 42-7P. The demand and energy allocation factors were determined by calculating the percentage that each rate class contributes to the total demand or energy and then adjusted for line losses for each rate class. This information was calculated by applying historical rate class load research to 2019 projected system demand and energy. Form 42-7P presents the calculation of the proposed ECRC factors by rate class.

Q. What are the ECRC billing factors for the period January 2019 through December 2019 which Tampa Electric is seeking approval?

A. The computation of billing factors is shown in Exhibit No. PAR-4, Document No. 7, Form 42-7P. The proposed ECRC billing factors are summarized below.

Rate Class	Factors by Voltage Level (¢/kWh)
RS Secondary	0.222
GS, CS Secondary	0.221
GSD, SBF	
Secondary	0.220
Primary	0.218

Rate Class	**Factors by Voltage Level (¢/kWh)**
GSD, SBF, continued	
Transmission	0.216
IS	
Secondary	0.217
Primary	0.214
Transmission	0.212
LS1	0.217
Average Factor	0.221

Q. When does Tampa Electric propose to begin applying these environmental cost recovery factors?

A. The environmental cost recovery factors will be effective concurrent with the first billing cycle for January 2019.

Q. What capital structure, components and cost rates did Tampa Electric rely on to calculate the revenue requirement rate of return for January 2019 through December 2019?

A. Tampa Electric used the weighted average cost of capital methodology approved by the Commission in Order Nos. PSC-2012-0425-PAA-EU and PSC-2017-0456-S-EI to calculate the revenue requirement rate of return found on Form 42-8P.

Q. Have you incorporated the tax rate change from the Tax Cut and Job Act of 2017 into the company's calculated revenue requirement rate of return effective January 1, 2018?

A. Yes.

Q. Are the costs Tampa Electric is requesting for recovery through the ECRC for the period January 2019 through December 2019 consistent with the criteria established for ECRC recovery in Order No. PSC-1994-0044-FOF-EI?

A. Yes. The costs for which ECRC recovery is requested meet the following criteria:

1) Such costs were prudently incurred after April 13, 1993;
2) The activities are legally required to comply with a governmentally imposed environmental regulation enacted, became effective or whose effect was triggered after the company's last test year upon which rates were based; and,
3) Such costs are not recovered through some other cost recovery mechanism or through base rates.

Q. Please summarize your direct testimony.

A. My testimony supports the approval of a final average ECRC billing factor of 0.221 cents per kWh. This includes the projected capital and O&M revenue requirements of $57,919,982 associated with the company’s 36 ECRC projects and a net true-up over-recovery provision of $14,971,149. My testimony also explains that the projected environmental expenditures for 2019 are appropriate for recovery through the ECRC.

Q. Does this conclude your direct testimony?

A. Yes, it does.

INDEX

ENVIRONMENTAL COST RECOVERY

COMMISSION FORMS

JANUARY 2019 THROUGH DECEMBER 2019

Tampa Electric Company
Environmental Cost Recovery Clause (ECRC)
Total Jurisdictional Amount to Be Recovered

For the Projected Period
January 2019 to December 2019

Form 42 - 1P

Line	Energy ($)	Demand ($)	Total ($)
1. Total Jurisdictional Revenue Requirements for the projected period			
a. Projected O&M Activities (Form 42-2P, Lines 7, 8 & 9)	$12,438,028	$124,500	$12,562,528
b. Projected Capital Projects (Form 42-3P, Lines 7, 8 & 9)	44,588,995	768,459	45,357,454
c. Total Jurisdictional Revenue Requirements for the projected period (Lines 1a + 1b)	57,027,023	892,959	57,919,982
2. True-up for Estimated Over/(Under) Recovery for the current period January 2018 to December 2018 (Form 42-2E, Line 5 + 6 + 10)	13,373,740	98,046	13,472,483
3. Final True-up for the period January 2017 to December 2017 (Form 42-1A, Line 3)	1,482,763	15,903	1,498,666
4. Total Jurisdictional Amount to Be Recovered/(Refunded) in the projection period January 2019 to December 2019 (Line 1 - Line 2- Line 3)	42,170,520	779,010	42,949,530
5. Total Projected Jurisdictional Amount Adjusted for Taxes (Line 4 x Revenue Tax Multiplier)	$42,200,883	$779,571	$42,980,454

Form 42 - 2P

Tampa Electric Company
Environmental Cost Recovery Clause (ECRC)
Calculation of the Projected Period Amount
January 2019 to December 2019

O&M Activities
(in Dollars)

Line		Projected January	Projected February	Projected March	Projected April	Projected May	Projected June	Projected July	Projected August	Projected September	Projected October	Projected November	Projected December	End of Period Total	Method of Classification Demand	Method of Classification Energy
1.	Description of O&M Activities															
	a. Big Bend Unit 3 FGD Integration	$59,125	$59,125	$59,125	$59,125	$59,125	$59,125	$59,125	$59,125	$59,125	$59,125	$59,125	$59,127	$709,500		$709,500
	b. Big Bend Units 1 & 2 Flue Gas Conditioning	0	0	0	0	0	0	0	0	0	0	0	0	0		0
	c. SO_2 Emissions Allowances	0	0	0	0	0	0	0	0	0	0	0	0	0		0
	d. Big Bend Units 1 & 2 FGD	56,667	56,667	56,667	56,667	56,667	56,667	56,667	56,667	56,667	56,667	56,667	56,663	680,000		680,000
	e. Big Bend PM Minimization and Monitoring	33,208	33,208	33,208	33,208	33,208	33,208	33,208	33,208	33,208	33,208	33,210	33,210	398,500		398,500
	f. Big Bend NO_x Emissions Reduction	5,000	5,000	5,000	5,000	5,000	5,000	5,000	5,000	5,000	5,000	5,000	5,000	60,000		60,000
	g. NPDES Annual Surveillance Fees	34,500	0	0	0	0	0	0	0	0	0	0	0	34,500	$34,500	
	h. Gannon Thermal Discharge Study	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	i. Polk NO_x Emissions Reduction	375	425	375	375	425	450	550	550	550	175	375	375	5,000		5,000
	j. Bayside SCR and Ammonia	8,000	8,000	9,000	10,000	11,000	12,000	12,000	12,000	11,000	10,000	8,000	8,000	119,000		119,000
	k. Big Bend Unit 4 SOFA	0	0	0	0	0	0	0	0	0	0	0	0	0		0
	l. Big Bend Unit 1 Pre-SCR	500	500	500	500	500	500	500	500	500	500	500	500	6,000		6,000
	m. Big Bend Unit 2 Pre-SCR	500	500	500	500	500	500	500	500	500	500	500	500	6,000		6,000
	n. Big Bend Unit 3 Pre-SCR	500	500	500	500	500	500	500	500	500	500	500	500	6,000		6,000
	o. Clean Water Act Section 316(b) Phase II Study	5,000	15,000	0	20,000	0	25,000	25,000	0	0	0	0	0	90,000	90,000	
	p. Arsenic Groundwater Standard Program	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	q. Big Bend 1 SCR	0	0	10,000	22,320	0	0	0	31,140	0	93,780	10,000	0	167,240		167,240
	r. Big Bend 2 SCR	0	0	10,000	30,060	0	19,080	26,100	29,700	136,260	0	10,000	0	261,200		261,200
	s. Big Bend 3 SCR	11,700	37,960	25,000	24,660	0	30,780	16,020	21,060	43,740	111,220	59,200	15,120	396,460		396,460
	t. Big Bend 4 SCR	193,300	242,040	255,000	127,960	205,000	155,140	182,880	153,100	55,000	100,000	245,800	219,880	2,135,100		2,135,100
	u. Mercury Air Toxics Standards	0	0	7,823	55	0	6,250	10,500	9,750	10,500	9,750	10,500	9,750	74,878		74,878
	v. Greenhouse Gas Reduction Program	0	0	93,149	0	0	0	0	0	0	0	0	0	93,149		93,149
	w. Big Bend Gypsum Storage Facility (East 40)	110,000	110,000	110,000	110,000	110,000	110,000	110,000	110,000	110,000	110,000	110,000	110,000	1,320,000		1,320,000
	x. CCR Rule-Phase I	0	0	0	0	0	0	0	0	0	0	0	0	0		0
	y. CCR Rule-Phase II	500,000	500,000	500,000	500,000	500,000	500,000	500,000	500,000	500,000	500,000	500,000	500,000	6,000,000		6,000,000
	z. Big Bend Unit 1 Section 316(b) Impingement Mortality	0	0	0	0	0	0	0	0	0	0	0	0	0		0
	aa. Big Bend ELG Rule Compliance	0	0	0	0	0	0	0	0	0	0	0	0	0		0
2.	Total of O&M Activities	1,018,375	1,068,925	1,175,847	1,000,929	981,925	1,014,200	1,038,550	1,022,800	1,022,550	1,090,425	1,109,377	1,018,625	12,562,527	$124,500	$12,438,027
3.	Recoverable Costs Allocated to Energy	978,875	1,053,925	1,175,847	980,929	981,925	989,200	1,013,550	1,022,800	1,022,550	1,090,425	1,109,377	1,018,625	12,438,027		
4.	Recoverable Costs Allocated to Demand	39,500	15,000	0	20,000	0	25,000	25,000	0	0	0	0	0	124,500		
5.	Retail Energy Jurisdictional Factor	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000			
6.	Retail Demand Jurisdictional Factor	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000			
7.	Jurisdictional Energy Recoverable Costs (A)	978,875	1,053,925	1,175,847	980,929	981,925	989,200	1,013,550	1,022,800	1,022,550	1,090,425	1,109,377	1,018,625	12,438,028		
8.	Jurisdictional Demand Recoverable Costs (B)	39,500	15,000	0	20,000	0	25,000	25,000	0	0	0	0	0	124,500		
9.	Total Jurisdictional Recoverable Costs for O&M Activities (Lines 7 + 8)	$1,018,375	$1,068,925	$1,175,847	$1,000,929	$981,925	$1,014,200	$1,038,550	$1,022,800	1,022,550	1,090,425	$1,109,377	$1,018,625	$12,562,528		

Tampa Electric Company
Environmental Cost Recovery Clause (ECRC)
Calculation of the Projected Period Amount
January 2019 to December 2019

Capital Investment Projects-Recoverable Costs
(in Dollars)

Line		Description (A)		Projected January	Projected February	Projected March	Projected April	Projected May	Projected June	Projected July	Projected August	Projected September	Projected October	Projected November	Projected December	End of Period Total	Method of Classification Demand	Method of Classification Energy
1.	a.	Big Bend Unit 3 FGD Integration	1	$78,728	$78,547	$78,366	$78,186	$78,005	$77,825	$77,643	$77,463	$77,282	$77,102	$76,921	$76,740	$932,808		$932,808
	b.	Big Bend Units 1 and 2 Flue Gas Conditioning	2	20,131	20,030	19,929	19,827	19,725	19,624	19,523	19,422	19,321	19,220	19,119	19,018	234,889		234,889
	c.	Big Bend Unit 4 Continuous Emissions Monitors	3	4,160	4,145	4,130	4,116	4,102	4,087	4,073	4,059	4,043	4,029	4,015	4,000	48,959		48,959
	d.	Big Bend Fuel Oil Tank # 1 Upgrade	4	6,263	6,231	6,198	6,166	6,135	6,102	6,070	6,038	6,005	5,974	5,942	5,909	73,033	$73,033	
	e.	Big Bend Fuel Oil Tank # 2 Upgrade	5	10,300	10,247	10,194	10,142	10,089	10,036	9,983	9,931	9,878	9,825	9,772	9,720	120,117	120,117	
	f.	Big Bend Unit 1 Classifier Replacement	6	6,516	6,488	6,461	6,433	6,406	6,378	6,351	6,323	6,296	6,268	6,240	6,213	76,373		76,373
	g.	Big Bend Unit 2 Classifier Replacement	7	4,715	4,697	4,677	4,658	4,638	4,620	4,601	4,581	4,563	4,544	4,524	4,506	55,324		55,324
	h.	Big Bend Section 114 Mercury Testing Platform	8	700	699	696	695	693	691	690	687	686	684	682	681	8,284		8,284
	i.	Big Bend Units 1 & 2 FGD	9	493,173	491,532	489,890	488,249	486,608	484,967	483,326	481,685	480,043	478,402	476,761	475,120	5,809,756		5,809,756
	j.	Big Bend FGD Optimization and Utilization	10	133,093	132,750	132,450	132,151	131,850	131,550	131,249	130,950	130,649	130,349	130,050	129,749	1,576,840		1,576,840
	k.	Big Bend NO_x Emissions Reduction	11	41,109	41,046	40,981	40,918	40,854	40,790	40,726	40,662	40,599	40,535	40,471	40,407	489,098		489,098
	l.	Big Bend PM Minimization and Monitoring	12	148,048	147,667	147,286	146,904	146,523	146,141	145,760	145,378	144,997	144,615	144,234	143,853	1,751,406		1,751,406
	m.	Polk NO_x Emissions Reduction	13	9,247	9,219	9,192	9,164	9,136	9,108	9,081	9,053	9,025	8,998	8,970	8,942	109,135		109,135
	n.	Big Bend Unit 4 SOFA	14	16,230	16,190	16,150	16,110	16,069	16,029	15,989	15,950	15,910	15,870	15,830	15,790	192,117		192,117
	o.	Big Bend Unit 1 Pre-SCR	15	11,229	11,194	11,160	11,125	11,092	11,057	11,022	10,988	10,953	10,919	10,884	10,850	132,473		132,473
	p.	Big Bend Unit 2 Pre-SCR	16	10,683	10,653	10,622	10,591	10,561	10,530	10,500	10,469	10,438	10,408	10,377	10,347	126,179		126,179
	q.	Big Bend Unit 3 Pre-SCR	17	19,074	19,024	18,975	18,925	18,875	18,825	18,776	18,725	18,676	18,625	18,576	18,526	225,602		225,602
	r.	Big Bend Unit 1 SCR	18	641,285	639,349	637,412	635,474	633,538	631,600	629,663	627,725	625,789	623,851	621,914	619,977	7,567,577		7,567,577
	s.	Big Bend Unit 2 SCR	19	718,180	697,994	696,037	694,080	692,122	690,165	688,208	686,251	684,293	682,336	680,379	678,421	8,288,466		8,288,466
	t.	Big Bend Unit 3 SCR	20	569,595	568,016	566,436	564,856	563,277	561,698	560,118	558,539	556,960	555,379	553,800	552,221	6,730,895		6,730,895
	u.	Big Bend Unit 4 SCR	21	446,920	445,744	444,796	445,682	448,170	449,683	451,191	451,845	450,669	449,493	448,317	447,140	5,379,650		5,379,650
	v.	Big Bend FGD System Reliability	22	170,953	170,632	170,310	169,989	169,667	169,345	169,024	168,703	168,382	168,059	167,738	167,417	2,030,219		2,030,219
	w.	Mercury Air Toxics Standards	23	68,379	67,144	67,004	66,865	66,727	66,666	66,605	66,466	66,327	66,188	66,832	67,476	802,679		802,679
	x.	SO_2 Emissions Allowances (B)	24	(248)	(203)	(203)	(248)	(203)	(203)	(248)	(203)	(203)	(248)	(203)	(203)	(2,616)		(2,616)
	y.	Big Bend Gypsum Storage Facility	25	170,360	170,035	169,711	169,385	169,060	168,735	168,410	168,085	167,760	167,435	167,110	166,784	2,022,870		2,022,870
	z.	CCR-Phase I	26	16,509	17,479	19,035	19,808	19,798	19,787	19,776	19,766	19,755	19,902	22,398	27,087	241,100	241,100	
	aa.	CCR-Phase II	27	1,038	1,554	1,961	2,166	2,166	2,166	2,166	2,166	2,166	2,166	2,166	2,166	24,047	24,047	
	ab.	Big Bend ELG Rule Compliance	28	940	940	940	940	940	940	940	940	940	940	940	940	11,280	11,280	
	ac.	Big Bend Unit 1 Section 316(b) Impingement Morta	29	16,292	17,858	19,424	20,991	22,557	24,123	25,690	27,257	28,823	30,389	31,956	33,522	298,882	298,882	
2.		Total Investment Projects - Recoverable Costs		3,833,602	3,806,901	3,800,220	3,794,348	3,789,180	3,783,065	3,776,906	3,769,904	3,761,025	3,752,257	3,746,715	3,743,319	45,357,442	$768,459	$44,588,983
3.		Recoverable Costs Allocated to Energy		3,782,260	3,752,592	3,742,468	3,734,135	3,727,495	3,719,911	3,712,281	3,703,806	3,693,458	3,683,061	3,673,541	3,663,975	44,588,983		44,588,983
4.		Recoverable Costs Allocated to Demand		51,342	54,309	57,752	60,213	61,685	63,154	64,625	66,098	67,567	69,196	73,174	79,344	768,459	768,459	
5.		Retail Energy Jurisdictional Factor		1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000			
6.		Retail Demand Jurisdictional Factor		1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000			
7.		Jurisdictional Energy Recoverable Costs (C)		3,782,260	3,752,592	3,742,468	3,734,135	3,727,495	3,719,911	3,712,281	3,703,806	3,693,458	3,683,061	3,673,541	3,663,975	44,588,995		
8.		Jurisdictional Demand Recoverable Costs (D)		51,342	54,309	57,752	60,213	61,685	63,154	64,625	66,098	67,567	69,196	73,174	79,344	768,459		
9.		Total Jurisdictional Recoverable Costs for Investment Projects (Lines 7 + 8)		$3,833,602	$3,806,901	$3,800,220	$3,794,348	$3,789,180	$3,783,065	$3,776,906	$3,769,904	$3,761,025	$3,752,257	$3,746,715	$3,743,319	$45,357,454		

Notes:
(A) Each project's Total System Recoverable Expenses on Form 42-4P, Line 9
(B) Project's Total Return Component on Form 42-4P, Line 6
(C) Line 3 x Line 5
(D) Line 4 x Line 6

Tampa Electric Company
Environmental Cost Recovery Clause (ECRC)
Calculation of the Projected Period Amount
January 2019 to December 2019

Return on Capital Investments, Depreciation and Taxes
For Project: Big Bend Unit 3 FGD Integration
(in Dollars)

Line	Description	Beginning of Period Amount	Projected January	Projected February	Projected March	Projected April	Projected May	Projected June	Projected July	Projected August	Projected September	Projected October	Projected November	Projected December	End of Period Total
1.	Investments														
	a. Expenditures/Additions		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
	b. Clearings to Plant		0	0	0	0	0	0	0	0	0	0	0	0	
	c. Retirements		0	0	0	0	0	0	0	0	0	0	0	0	
	d. Other - AFUDC (excl from CWIP)		0	0	0	0	0	0	0	0	0	0	0	0	
2.	Plant-in-Service/Depreciation Base (A)	$13,763,081	$13,763,081	$13,763,081	$13,763,081	$13,763,081	$13,763,081	$13,763,081	$13,763,081	$13,763,081	$13,763,081	$13,763,081	$13,763,081	$13,763,081	
3.	Less: Accumulated Depreciation	(5,786,332)	(5,815,169)	(5,844,006)	(5,872,843)	(5,901,680)	(5,930,517)	(5,959,354)	(5,988,191)	(6,017,028)	(6,045,865)	(6,074,702)	(6,103,539)	(6,132,376)	
4.	CWIP - Non-Interest Bearing	0	0	0	0	0	0	0	0	0	0	0	0	0	
5.	Net Investment (Lines 2 + 3 + 4)	$7,976,749	7,947,912	7,919,075	7,890,238	7,861,401	7,832,564	7,803,727	7,774,890	7,746,053	7,717,216	7,688,379	7,659,542	7,630,705	
6.	Average Net Investment		7,962,331	7,933,494	7,904,657	7,875,820	7,846,983	7,818,146	7,789,309	7,760,472	7,731,635	7,702,798	7,673,961	7,645,124	
7.	Return on Average Net Investment														
	a. Equity Component Grossed Up For Taxes (B)		$38,515	$38,376	$38,236	$38,097	$37,957	$37,818	$37,678	$37,539	$37,399	$37,260	$37,120	$36,981	$452,976
	b. Debt Component Grossed Up For Taxes (C)		11,376	11,334	11,293	11,252	11,211	11,170	11,128	11,087	11,046	11,005	10,964	10,922	133,788
8.	Investment Expenses														
	a. Depreciation (D)		$28,837	$28,837	$28,837	$28,837	$28,837	$28,837	$28,837	$28,837	$28,837	$28,837	$28,837	$28,837	$346,044
	b. Amortization		0	0	0	0	0	0	0	0	0	0	0	0	0
	c. Dismantlement		0	0	0	0	0	0	0	0	0	0	0	0	0
	d. Property Taxes		0	0	0	0	0	0	0	0	0	0	0	0	0
	e. Other		0	0	0	0	0	0	0	0	0	0	0	0	0
9.	Total System Recoverable Expenses (Lines 7 + 8)		$78,728	$78,547	$78,366	$78,186	$78,005	$77,825	$77,643	$77,463	$77,282	$77,102	$76,921	$76,740	$932,808
	a. Recoverable Costs Allocated to Energy		78,728	78,547	78,366	78,186	78,005	77,825	77,643	77,463	77,282	77,102	76,921	76,740	932,808
	b. Recoverable Costs Allocated to Demand		0	0	0	0	0	0	0	0	0	0	0	0	0
10.	Energy Jurisdictional Factor		1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	
11.	Demand Jurisdictional Factor		1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	
12.	Retail Energy-Related Recoverable Costs (E)		78,728	78,547	78,366	78,186	78,005	77,825	77,643	77,463	77,282	77,102	76,921	76,740	932,808
13.	Retail Demand-Related Recoverable Costs (F)		0	0	0	0	0	0	0	0	0	0	0	0	0
14.	Total Jurisdictional Recoverable Costs (Lines 12 + 13)		$78,728	$78,547	$78,366	$78,186	$78,005	$77,825	$77,643	$77,463	$77,282	$77,102	$76,921	$76,740	$932,808

Notes:
(A) Applicable depreciable base for Big Bend; accounts 312.45 ($13,435,775) and 315.45 ($327,307)
(B) Line 6 x 5.8046% x 1/12. Based on ROE of 10.25% and weighted income tax rate of 25.345% (expansion factor of 1.34295)
(C) Line 6 x 1.7144% x 1/12.
(D) Applicable depreciation rates are 2.5% and 3.1%
(E) Line 9a x Line 10
(F) Line 9b x Line 11

Tampa Electric Company
Environmental Cost Recovery Clause (ECRC)
Calculation of the Projected Period Amount
January 2019 to December 2019

Return on Capital Investments, Depreciation and Taxes
For Project: Big Bend Units 1 and 2 Flue Gas Conditioning
(in Dollars)

Line	Description	Beginning of Period Amount	Projected January	Projected February	Projected March	Projected April	Projected May	Projected June	Projected July	Projected August	Projected September	Projected October	Projected November	Projected December	End of Period Total
1.	Investments														
	a. Expenditures/Additions		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
	b. Clearings to Plant		0	0	0	0	0	0	0	0	0	0	0	0	
	c. Retirements		0	0	0	0	0	0	0	0	0	0	0	0	
	d. Other		0	0	0	0	0	0	0	0	0	0	0	0	
2.	Plant-in-Service/Depreciation Base (A)	$5,017,734	$5,017,734	$5,017,734	$5,017,734	$5,017,734	$5,017,734	$5,017,734	$5,017,734	$5,017,734	$5,017,734	$5,017,734	$5,017,734	$5,017,734	
3.	Less: Accumulated Depreciation	(4,372,970)	(4,389,111)	(4,405,252)	(4,421,393)	(4,437,534)	(4,453,675)	(4,469,816)	(4,485,957)	(4,502,098)	(4,518,239)	(4,534,380)	(4,550,521)	(4,566,662)	
4.	CWIP - Non-Interest Bearing	0	0	0	0	0	0	0	0	0	0	0	0	0	
5.	Net Investment (Lines 2 + 3 + 4)	$644,764	628,623	612,482	596,341	580,200	564,059	547,918	531,777	515,636	499,495	483,354	467,213	451,072	
6.	Average Net Investment		636,694	620,553	604,412	588,271	572,130	555,989	539,848	523,707	507,566	491,425	475,284	459,143	
7.	Return on Average Net Investment														
	a. Equity Component Grossed Up For Taxes (B)		$3,080	$3,002	$2,924	$2,846	$2,767	$2,689	$2,611	$2,533	$2,455	$2,377	$2,299	$2,221	$31,804
	b. Debt Component Grossed Up For Taxes (C)		910	887	864	840	817	794	771	748	725	702	679	656	9,393
8.	Investment Expenses														
	a. Depreciation (D)		$16,141	$16,141	$16,141	$16,141	$16,141	$16,141	$16,141	$16,141	$16,141	$16,141	$16,141	$16,141	$193,692
	b. Amortization		0	0	0	0	0	0	0	0	0	0	0	0	0
	c. Dismantlement		0	0	0	0	0	0	0	0	0	0	0	0	0
	d. Property Taxes		0	0	0	0	0	0	0	0	0	0	0	0	0
	e. Other		0	0	0	0	0	0	0	0	0	0	0	0	0
9.	Total System Recoverable Expenses (Lines 7 + 8)		$20,131	$20,030	$19,929	$19,827	$19,725	$19,624	$19,523	$19,422	$19,321	$19,220	$19,119	$19,018	$234,889
	a. Recoverable Costs Allocated to Energy		20,131	20,030	19,929	19,827	19,725	19,624	19,523	19,422	19,321	19,220	19,119	19,018	234,889
	b. Recoverable Costs Allocated to Demand		0	0	0	0	0	0	0	0	0	0	0	0	0
10.	Energy Jurisdictional Factor		1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	
11.	Demand Jurisdictional Factor		1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	
12.	Retail Energy-Related Recoverable Costs (E)		20,131	20,030	19,929	19,827	19,725	19,624	19,523	19,422	19,321	19,220	19,119	19,018	234,889
13.	Retail Demand-Related Recoverable Costs (F)		0	0	0	0	0	0	0	0	0	0	0	0	0
14.	Total Jurisdictional Recoverable Costs (Lines 12 + 13)		$20,131	$20,030	$19,929	$19,827	$19,725	$19,624	$19,523	$19,422	$19,321	$19,220	$19,119	$19,018	$234,889

Notes:
(A) Applicable depreciable base for Big Bend; accounts 312.41 ($2,676,217) and 312.42 ($2,341,517)
(B) Line 6 x 5.8046% x 1/12. Based on ROE of 10.25% and weighted income tax rate of 25.345% (expansion factor of 1.34295)
(C) Line 6 x 1.7144% x 1/12.
(D) Applicable depreciation rates are 4.0% and 3.7%
(E) Line 9a x Line 10
(F) Line 9b x Line 11

Tampa Electric Company
Environmental Cost Recovery Clause (ECRC)
Calculation of the Projected Period Amount
January 2019 to December 2019

Return on Capital Investments, Depreciation and Taxes
For Project: Big Bend Unit 4 Continuous Emissions Monitors
(in Dollars)

Line	Description	Beginning of Period Amount	Projected January	Projected February	Projected March	Projected April	Projected May	Projected June	Projected July	Projected August	Projected September	Projected October	Projected November	Projected December	End of Period Total
1.	Investments														
	a. Expenditures/Additions		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
	b. Clearings to Plant		0	0	0	0	0	0	0	0	0	0	0	0	
	c. Retirements		0	0	0	0	0	0	0	0	0	0	0	0	
	d. Other		0	0	0	0	0	0	0	0	0	0	0	0	
2.	Plant-in-Service/Depreciation Base (A)	$866,211	$866,211	$866,211	$866,211	$866,211	$866,211	$866,211	$866,211	$866,211	$866,211	$866,211	$866,211	$866,211	
3.	Less: Accumulated Depreciation	(569,885)	(572,195)	(574,505)	(576,815)	(579,125)	(581,435)	(583,745)	(586,055)	(588,365)	(590,675)	(592,985)	(595,295)	(597,605)	
4.	CWIP - Non-Interest Bearing	0	0	0	0	0	0	0	0	0	0	0	0	0	
5.	Net Investment (Lines 2 + 3 + 4)	$296,326	294,016	291,706	289,396	287,086	284,776	282,466	280,156	277,846	275,536	273,226	270,916	268,606	
6.	Average Net Investment		295,171	292,861	290,551	288,241	285,931	283,621	281,311	279,001	276,691	274,381	272,071	269,761	
7.	Return on Average Net Investment														
	a. Equity Component Grossed Up For Taxes (B)		$1,428	$1,417	$1,405	$1,394	$1,383	$1,372	$1,361	$1,350	$1,338	$1,327	$1,316	$1,305	$16,396
	b. Debt Component Grossed Up For Taxes (C)		422	418	415	412	409	405	402	399	395	392	389	385	4,843
8.	Investment Expenses														
	a. Depreciation (D)		$2,310	$2,310	$2,310	$2,310	$2,310	$2,310	$2,310	$2,310	$2,310	$2,310	$2,310	$2,310	$27,720
	b. Amortization		0	0	0	0	0	0	0	0	0	0	0	0	0
	c. Dismantlement		0	0	0	0	0	0	0	0	0	0	0	0	0
	d. Property Taxes		0	0	0	0	0	0	0	0	0	0	0	0	0
	e. Other		0	0	0	0	0	0	0	0	0	0	0	0	0
9.	Total System Recoverable Expenses (Lines 7 + 8)		$4,160	$4,145	$4,130	$4,116	$4,102	$4,087	$4,073	$4,059	$4,043	$4,029	$4,015	$4,000	$48,959
	a. Recoverable Costs Allocated to Energy		4,160	4,145	4,130	4,116	4,102	4,087	4,073	4,059	4,043	4,029	4,015	4,000	48,959
	b. Recoverable Costs Allocated to Demand		0	0	0	0	0	0	0	0	0	0	0	0	0
10.	Energy Jurisdictional Factor		1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	
11.	Demand Jurisdictional Factor		1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	
12.	Retail Energy-Related Recoverable Costs (E)		4,160	4,145	4,130	4,116	4,102	4,087	4,073	4,059	4,043	4,029	4,015	4,000	48,959
13.	Retail Demand-Related Recoverable Costs (F)		0	0	0	0	0	0	0	0	0	0	0	0	0
14.	Total Jurisdictional Recoverable Costs (Lines 12 + 13)		$4,160	$4,145	$4,130	$4,116	$4,102	$4,087	$4,073	$4,059	$4,043	$4,029	$4,015	$4,000	$48,959

Notes:
(A) Applicable depreciable base for Big Bend; account 315.44
(B) Line 6 x 5.8046% x 1/12. Based on ROE of 10.25% and weighted income tax rate of 25.345% (expansion factor of 1.34295)
(C) Line 6 x 1.7144% x 1/12.
(D) Applicable depreciation rate is 3.2%
(E) Line 9a x Line 10
(F) Line 9b x Line 11

Tampa Electric Company
Environmental Cost Recovery Clause (ECRC)
Calculation of the Projected Period Amount
January 2019 to December 2019

Return on Capital Investments, Depreciation and Taxes
For Project: Big Bend Fuel Oil Tank # 1 Upgrade
(in Dollars)

Line	Description	Beginning of Period Amount	Projected January	Projected February	Projected March	Projected April	Projected May	Projected June	Projected July	Projected August	Projected September	Projected October	Projected November	Projected December	End of Period Total
1.	Investments														
	a. Expenditures/Additions		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
	b. Clearings to Plant		0	0	0	0	0	0	0	0	0	0	0	0	
	c. Retirements		0	0	0	0	0	0	0	0	0	0	0	0	
	d. Other		0	0	0	0	0	0	0	0	0	0	0	0	
2.	Plant-in-Service/Depreciation Base (A)	$497,578	$497,578	$497,578	$497,578	$497,578	$497,578	$497,578	$497,578	$497,578	$497,578	$497,578	$497,578	$497,578	
3.	Less: Accumulated Depreciation	(313,150)	(318,273)	(323,396)	(328,519)	(333,642)	(338,765)	(343,888)	(349,011)	(354,134)	(359,257)	(364,380)	(369,503)	(374,626)	
4.	CWIP - Non-Interest Bearing	0	0	0	0	0	0	0	0	0	0	0	0	0	
5.	Net Investment (Lines 2 + 3 + 4)	$184,428	179,305	174,182	169,059	163,936	158,813	153,690	148,567	143,444	138,321	133,198	128,075	122,952	
6.	Average Net Investment		181,867	176,744	171,621	166,498	161,375	156,252	151,129	146,006	140,883	135,760	130,637	125,514	
7.	Return on Average Net Investment														
	a. Equity Component Grossed Up For Taxes (B)		$880	$855	$830	$805	$781	$756	$731	$706	$681	$657	$632	$607	$8,921
	b. Debt Component Grossed Up For Taxes (C)		260	253	245	238	231	223	216	209	201	194	187	179	2,636
8.	Investment Expenses														
	a. Depreciation (D)		$5,123	$5,123	$5,123	$5,123	$5,123	$5,123	$5,123	$5,123	$5,123	$5,123	$5,123	$5,123	$61,476
	b. Amortization		0	0	0	0	0	0	0	0	0	0	0	0	0
	c. Dismantlement		0	0	0	0	0	0	0	0	0	0	0	0	0
	d. Property Taxes		0	0	0	0	0	0	0	0	0	0	0	0	0
	e. Other		0	0	0	0	0	0	0	0	0	0	0	0	0
9.	Total System Recoverable Expenses (Lines 7 + 8)		$6,263	$6,231	$6,198	$6,166	$6,135	$6,102	$6,070	$6,038	$6,005	$5,974	$5,942	$5,909	$73,033
	a. Recoverable Costs Allocated to Energy		0	0	0	0	0	0	0	0	0	0	0	0	0
	b. Recoverable Costs Allocated to Demand		6,263	6,231	6,198	6,166	6,135	6,102	6,070	6,038	6,005	5,974	5,942	5,909	73,033
10.	Energy Jurisdictional Factor		1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	
11.	Demand Jurisdictional Factor		1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	
12.	Retail Energy-Related Recoverable Costs (E)		0	0	0	0	0	0	0	0	0	0	0	0	0
13.	Retail Demand-Related Recoverable Costs (F)		6,263	6,231	6,198	6,166	6,135	6,102	6,070	6,038	6,005	5,974	5,942	5,909	73,033
14.	Total Jurisdictional Recoverable Costs (Lines 12 + 13)		$6,263	$6,231	$6,198	$6,166	$6,135	$6,102	$6,070	$6,038	$6,005	$5,974	$5,942	$5,909	$73,033

Notes:
(A) Applicable depreciable base for Big Bend; account 312.40
(B) Line 6 x 5.8046% x 1/12. Based on ROE of 10.25% and weighted income tax rate of 25.345% (expansion factor of 1.34295)
(C) Line 6 x 1.7144% x 1/12.
(D) Applicable depreciation rate through June 2018 was 3.4%; depreciation was accelerated to 12.36% as of July 2018.
(E) Line 9a x Line 10
(F) Line 9b x Line 11

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DOCKET NO. 20180007-EI
ECRC 2019 PROJECTION, FORM 42-4P
EXHIBIT NO. PAR-4, DOCUMENT NO. 4, PAGE 4 OF 29

Tampa Electric Company
Environmental Cost Recovery Clause (ECRC)
Calculation of the Projected Period Amount
January 2019 to December 2019

Return on Capital Investments, Depreciation and Taxes
For Project: Big Bend Fuel Oil Tank # 2 Upgrade
(in Dollars)

Line	Description	Beginning of Period Amount	Projected January	Projected February	Projected March	Projected April	Projected May	Projected June	Projected July	Projected August	Projected September	Projected October	Projected November	Projected December	End of Period Total
1.	Investments														
	a. Expenditures/Additions		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
	b. Clearings to Plant		0	0	0	0	0	0	0	0	0	0	0	0	
	c. Retirements		0	0	0	0	0	0	0	0	0	0	0	0	
	d. Other		0	0	0	0	0	0	0	0	0	0	0	0	
2.	Plant-in-Service/Depreciation Base (A)	$818,401	$818,401	$818,401	$818,401	$818,401	$818,401	$818,401	$818,401	$818,401	$818,401	$818,401	$818,401	$818,401	
3.	Less: Accumulated Depreciation	(515,062)	(523,488)	(531,914)	(540,340)	(548,766)	(557,192)	(565,618)	(574,044)	(582,470)	(590,896)	(599,322)	(607,748)	(616,174)	
4.	CWIP - Non-Interest Bearing	0	0	0	0	0	0	0	0	0	0	0	0	0	
5.	Net Investment (Lines 2 + 3 + 4)	$303,339	294,913	286,487	278,061	269,635	261,209	252,783	244,357	235,931	227,505	219,079	210,653	202,227	
6.	Average Net Investment		299,126	290,700	282,274	273,848	265,422	256,996	248,570	240,144	231,718	223,292	214,866	206,440	
7.	Return on Average Net Investment														
	a. Equity Component Grossed Up For Taxes (B)		$1,447	$1,406	$1,365	$1,325	$1,284	$1,243	$1,202	$1,162	$1,121	$1,080	$1,039	$999	$14,673
	b. Debt Component Grossed Up For Taxes (C)		427	415	403	391	379	367	355	343	331	319	307	295	4,332
8.	Investment Expenses														
	a. Depreciation (D)		$8,426	$8,426	$8,426	$8,426	$8,426	$8,426	$8,426	$8,426	$8,426	$8,426	$8,426	$8,426	$101,112
	b. Amortization		0	0	0	0	0	0	0	0	0	0	0	0	0
	c. Dismantlement		0	0	0	0	0	0	0	0	0	0	0	0	0
	d. Property Taxes		0	0	0	0	0	0	0	0	0	0	0	0	0
	e. Other		0	0	0	0	0	0	0	0	0	0	0	0	0
9.	Total System Recoverable Expenses (Lines 7 + 8)		$10,300	$10,247	$10,194	$10,142	$10,089	$10,036	$9,983	$9,931	$9,878	$9,825	$9,772	$9,720	$120,117
	a. Recoverable Costs Allocated to Energy		0	0	0	0	0	0	0	0	0	0	0	0	0
	b. Recoverable Costs Allocated to Demand		10,300	10,247	10,194	10,142	10,089	10,036	9,983	9,931	9,878	9,825	9,772	9,720	120,117
10.	Energy Jurisdictional Factor		1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	
11.	Demand Jurisdictional Factor		1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	
12.	Retail Energy-Related Recoverable Costs (E)		0	0	0	0	0	0	0	0	0	0	0	0	0
13.	Retail Demand-Related Recoverable Costs (F)		10,300	10,247	10,194	10,142	10,089	10,036	9,983	9,931	9,878	9,825	9,772	9,720	120,117
14.	Total Jurisdictional Recoverable Costs (Lines 12 + 13)		$10,300	$10,247	$10,194	$10,142	$10,089	$10,036	$9,983	$9,931	$9,878	$9,825	$9,772	$9,720	$120,117

Notes:
(A) Applicable depreciable base for Big Bend; account 312.40
(B) Line 6 x 5.8046% x 1/12. Based on ROE of 10.25% and weighted income tax rate of 25.345% (expansion factor of 1.34295)
(C) Line 6 x 1.7144% x 1/12.
(D) Applicable depreciation rate through June 2018 was 3.4%; depreciation was accelerated to 12.35% as of July 2018.
(E) Line 9a x Line 10
(F) Line 9b x Line 11

Tampa Electric Company
Environmental Cost Recovery Clause (ECRC)
Calculation of the Projected Period Amount
January 2019 to December 2019

Return on Capital Investments, Depreciation and Taxes
For Project: Big Bend Unit 1 Classifier Replacement
(in Dollars)

Line	Description	Beginning of Period Amount	Projected January	Projected February	Projected March	Projected April	Projected May	Projected June	Projected July	Projected August	Projected September	Projected October	Projected November	Projected December	End of Period Total
1.	Investments														
	a. Expenditures/Additions		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
	b. Clearings to Plant		0	0	0	0	0	0	0	0	0	0	0	0	
	c. Retirements		0	0	0	0	0	0	0	0	0	0	0	0	
	d. Other		0	0	0	0	0	0	0	0	0	0	0	0	
2.	Plant-in-Service/Depreciation Base (A)	$1,316,257	$1,316,257	$1,316,257	$1,316,257	$1,316,257	$1,316,257	$1,316,257	$1,316,257	$1,316,257	$1,316,257	$1,316,257	$1,316,257	$1,316,257	
3.	Less: Accumulated Depreciation	(974,504)	(978,892)	(983,280)	(987,668)	(992,056)	(996,444)	(1,000,832)	(1,005,220)	(1,009,608)	(1,013,996)	(1,018,384)	(1,022,772)	(1,027,160)	
4.	CWIP - Non-Interest Bearing	0	0	0	0	0	0	0	0	0	0	0	0	0	
5.	Net Investment (Lines 2 + 3 + 4)	$341,753	337,365	332,977	328,589	324,201	319,813	315,425	311,037	306,649	302,261	297,873	293,485	289,097	
6.	Average Net Investment		339,559	335,171	330,783	326,395	322,007	317,619	313,231	308,843	304,455	300,067	295,679	291,291	
7.	Return on Average Net Investment														
	a. Equity Component Grossed Up For Taxes (B)		$1,643	$1,621	$1,600	$1,579	$1,558	$1,536	$1,515	$1,494	$1,473	$1,451	$1,430	$1,409	$18,309
	b. Debt Component Grossed Up For Taxes (C)		485	479	473	466	460	454	448	441	435	429	422	416	5,408
8.	Investment Expenses														
	a. Depreciation (D)		$4,388	$4,388	$4,388	$4,388	$4,388	$4,388	$4,388	$4,388	$4,388	$4,388	$4,388	$4,388	$52,656
	b. Amortization		0	0	0	0	0	0	0	0	0	0	0	0	0
	c. Dismantlement		0	0	0	0	0	0	0	0	0	0	0	0	0
	d. Property Taxes		0	0	0	0	0	0	0	0	0	0	0	0	0
	e. Other		0	0	0	0	0	0	0	0	0	0	0	0	0
9.	Total System Recoverable Expenses (Lines 7 + 8)		$6,516	$6,488	$6,461	$6,433	$6,406	$6,378	$6,351	$6,323	$6,296	$6,268	$6,240	$6,213	$76,373
	a. Recoverable Costs Allocated to Energy		6,516	6,488	6,461	6,433	6,406	6,378	6,351	6,323	6,296	6,268	6,240	6,213	76,373
	b. Recoverable Costs Allocated to Demand		0	0	0	0	0	0	0	0	0	0	0	0	0
10.	Energy Jurisdictional Factor		1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	
11.	Demand Jurisdictional Factor		1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	
12.	Retail Energy-Related Recoverable Costs (E)		6,516	6,488	6,461	6,433	6,406	6,378	6,351	6,323	6,296	6,268	6,240	6,213	76,373
13.	Retail Demand-Related Recoverable Costs (F)		0	0	0	0	0	0	0	0	0	0	0	0	0
14.	Total Jurisdictional Recoverable Costs (Lines 12 + 13)		$6,516	$6,488	$6,461	$6,433	$6,406	$6,378	$6,351	$6,323	$6,296	$6,268	$6,240	$6,213	$76,373

Notes:
(A) Applicable depreciable base for Big Bend; account 312.41
(B) Line 6 x 5.8046% x 1/12. Based on ROE of 10.25% and weighted income tax rate of 25.345% (expansion factor of 1.34295)
(C) Line 6 x 1.7144% x 1/12.
(D) Applicable depreciation rate is 4.0%
(E) Line 9a x Line 10
(F) Line 9b x Line 11

Tampa Electric Company
Environmental Cost Recovery Clause (ECRC)
Calculation of the Projected Period Amount
January 2019 to December 2019

Return on Capital Investments, Depreciation and Taxes
For Project: Big Bend Unit 2 Classifier Replacement
(in Dollars)

Line	Description	Beginning of Period Amount	Projected January	Projected February	Projected March	Projected April	Projected May	Projected June	Projected July	Projected August	Projected September	Projected October	Projected November	Projected December	End of Period Total
1.	Investments														
	a. Expenditures/Additions		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
	b. Clearings to Plant		0	0	0	0	0	0	0	0	0	0	0	0	
	c. Retirements		0	0	0	0	0	0	0	0	0	0	0	0	
	d. Other		0	0	0	0	0	0	0	0	0	0	0	0	
2.	Plant-in-Service/Depreciation Base (A)	$984,794	$984,794	$984,794	$984,794	$984,794	$984,794	$984,794	$984,794	$984,794	$984,794	$984,794	$984,794	$984,794	
3.	Less: Accumulated Depreciation	(715,302)	(718,338)	(721,374)	(724,410)	(727,446)	(730,482)	(733,518)	(736,554)	(739,590)	(742,626)	(745,662)	(748,698)	(751,734)	
4.	CWIP - Non-Interest Bearing	0	0	0	0	0	0	0	0	0	0	0	0	0	
5.	Net Investment (Lines 2 + 3 + 4)	$269,492	266,456	263,420	260,384	257,348	254,312	251,276	248,240	245,204	242,168	239,132	236,096	233,060	
6.	Average Net Investment		267,974	264,938	261,902	258,866	255,830	252,794	249,758	246,722	243,686	240,650	237,614	234,578	
7.	Return on Average Net Investment														
	a. Equity Component Grossed Up For Taxes (B)		$1,296	$1,282	$1,267	$1,252	$1,237	$1,223	$1,208	$1,193	$1,179	$1,164	$1,149	$1,135	$14,585
	b. Debt Component Grossed Up For Taxes (C)		383	379	374	370	365	361	357	352	348	344	339	335	4,307
8.	Investment Expenses														
	a. Depreciation (D)		$3,036	$3,036	$3,036	$3,036	$3,036	$3,036	$3,036	$3,036	$3,036	$3,036	$3,036	$3,036	$36,432
	b. Amortization		0	0	0	0	0	0	0	0	0	0	0	0	0
	c. Dismantlement		0	0	0	0	0	0	0	0	0	0	0	0	0
	d. Property Taxes		0	0	0	0	0	0	0	0	0	0	0	0	0
	e. Other		0	0	0	0	0	0	0	0	0	0	0	0	0
9.	Total System Recoverable Expenses (Lines 7 + 8)		$4,715	$4,697	$4,677	$4,658	$4,638	$4,620	$4,601	$4,581	$4,563	$4,544	$4,524	$4,506	$55,324
	a. Recoverable Costs Allocated to Energy		4,715	4,697	4,677	4,658	4,638	4,620	4,601	4,581	4,563	4,544	4,524	4,506	55,324
	b. Recoverable Costs Allocated to Demand		0	0	0	0	0	0	0	0	0	0	0	0	0
10.	Energy Jurisdictional Factor		1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	
11.	Demand Jurisdictional Factor		1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	
12.	Retail Energy-Related Recoverable Costs (E)		4,715	4,697	4,677	4,658	4,638	4,620	4,601	4,581	4,563	4,544	4,524	4,506	55,324
13.	Retail Demand-Related Recoverable Costs (F)		0	0	0	0	0	0	0	0	0	0	0	0	0
15	Total Jurisdictional Recoverable Costs (Lines 12 + 13)		$4,715	$4,697	$4,677	$4,658	$4,638	$4,620	$4,601	$4,581	$4,563	$4,544	$4,524	$4,506	$55,324

Notes:
(A) Applicable depreciable base for Big Bend; account 312.42
(B) Line 6 x 5.8046% x 1/12. Based on ROE of 10.25% and weighted income tax rate of 25.345% (expansion factor of 1.34295)
(C) Line 6 x 1.7144% x 1/12.
(D) Applicable depreciation rate is 3.7%
(E) Line 9a x Line 10
(F) Line 9b x Line 11

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Tampa Electric Company
Environmental Cost Recovery Clause (ECRC)
Calculation of the Projected Period Amount
January 2019 to December 2019

Return on Capital Investments, Depreciation and Taxes
For Project: Big Bend Section 114 Mercury Testing Platform
(in Dollars)

Line	Description	Beginning of Period Amount	Projected January	Projected February	Projected March	Projected April	Projected May	Projected June	Projected July	Projected August	Projected September	Projected October	Projected November	Projected December	End of Period Total
1.	Investments														
	a. Expenditures/Additions		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
	b. Clearings to Plant		0	0	0	0	0	0	0	0	0	0	0	0	
	c. Retirements		0	0	0	0	0	0	0	0	0	0	0	0	
	d. Other		0	0	0	0	0	0	0	0	0	0	0	0	
2.	Plant-in-Service/Depreciation Base (A)	$120,737	$120,737	$120,737	$120,737	$120,737	$120,737	$120,737	$120,737	$120,737	$120,737	$120,737	$120,737	$120,737	
3.	Less: Accumulated Depreciation	(55,411)	(55,703)	(55,995)	(56,287)	(56,579)	(56,871)	(57,163)	(57,455)	(57,747)	(58,039)	(58,331)	(58,623)	(58,915)	
4.	CWIP - Non-Interest Bearing	0	0	0	0	0	0	0	0	0	0	0	0	0	
5.	Net Investment (Lines 2 + 3 + 4)	$65,326	65,034	64,742	64,450	64,158	63,866	63,574	63,282	62,990	62,698	62,406	62,114	61,822	
6.	Average Net Investment		65,180	64,888	64,596	64,304	64,012	63,720	63,428	63,136	62,844	62,552	62,260	61,968	
7.	Return on Average Net Investment														
	a. Equity Component Grossed Up For Taxes (B)		$315	$314	$312	$311	$310	$308	$307	$305	$304	$303	$301	$300	$3,690
	b. Debt Component Grossed Up For Taxes (C)		93	93	92	92	91	91	91	90	90	89	89	89	1,090
8.	Investment Expenses														
	a. Depreciation (D)		$292	$292	$292	$292	$292	$292	$292	$292	$292	$292	$292	$292	$3,504
	b. Amortization		0	0	0	0	0	0	0	0	0	0	0	0	0
	c. Dismantlement		0	0	0	0	0	0	0	0	0	0	0	0	0
	d. Property Taxes		0	0	0	0	0	0	0	0	0	0	0	0	0
	e. Other		0	0	0	0	0	0	0	0	0	0	0	0	0
9.	Total System Recoverable Expenses (Lines 7 + 8)		$700	$699	$696	$695	$693	$691	$690	$687	$686	$684	$682	$681	$8,284
	a. Recoverable Costs Allocated to Energy		700	699	696	695	693	691	690	687	686	684	682	681	8,284
	b. Recoverable Costs Allocated to Demand		0	0	0	0	0	0	0	0	0	0	0	0	0
10.	Energy Jurisdictional Factor		1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	
11.	Demand Jurisdictional Factor		1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	
12.	Retail Energy-Related Recoverable Costs (E)		700	699	696	695	693	691	690	687	686	684	682	681	8,284
13.	Retail Demand-Related Recoverable Costs (F)		0	0	0	0	0	0	0	0	0	0	0	0	0
14.	Total Jurisdictional Recoverable Costs (Lines 12 + 13)		$700	$699	$696	$695	$693	$691	$690	$687	$686	$684	$682	$681	$8,284

Notes:
(A) Applicable depreciable base for Big Bend; account 311.40
(B) Line 6 x 5.8046% x 1/12. Based on ROE of 10.25% and weighted income tax rate of 25.345% (expansion factor of 1.34295)
(C) Line 6 x 1.7144% x 1/12.
(D) Applicable depreciation rate is 2.9%
(E) Line 9a x Line 10
(F) Line 9b x Line 11

Tampa Electric Company
Environmental Cost Recovery Clause (ECRC)
Calculation of the Projected Period Amount
January 2019 to December 2019

Return on Capital Investments, Depreciation and Taxes
For Project: Big Bend Units 1 and 2 FGD
(in Dollars)

Line	Description	Beginning of Period Amount	Projected January	Projected February	Projected March	Projected April	Projected May	Projected June	Projected July	Projected August	Projected September	Projected October	Projected November	Projected December	End of Period Total
1.	Investments														
	a. Expenditures/Additions		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
	b. Clearings to Plant		0	0	0	0	0	0	0	0	0	0	0	0	
	c. Retirements		0	0	0	0	0	0	0	0	0	0	0	0	
	d. Other - AFUDC (excl from CWIP)		0	0	0	0	0	0	0	0	0	0	0	0	
2.	Plant-in-Service/Depreciation Base (A)	$95,255,242	$95,255,242	$95,255,242	$95,255,242	$95,255,242	$95,255,242	$95,255,242	$95,255,242	$95,255,242	$95,255,242	$95,255,242	$95,255,242	$95,255,242	
3.	Less: Accumulated Depreciation	(58,217,237)	(58,479,156)	(58,741,075)	(59,002,994)	(59,264,913)	(59,526,832)	(59,788,751)	(60,050,670)	(60,312,589)	(60,574,508)	(60,836,427)	(61,098,346)	(61,360,265)	
4.	CWIP - Non-Interest Bearing	0	0	0	0	0	0	0	0	0	0	0	0	0	
5.	Net Investment (Lines 2 + 3 + 4)	$37,038,005	36,776,086	36,514,167	36,252,248	35,990,329	35,728,410	35,466,491	35,204,572	34,942,653	34,680,734	34,418,815	34,156,896	33,894,977	
6.	Average Net Investment		36,907,045	36,645,126	36,383,207	36,121,288	35,859,369	35,597,450	35,335,531	35,073,612	34,811,693	34,549,774	34,287,855	34,025,936	
7.	Return on Average Net Investment														
	a. Equity Component Grossed Up For Taxes (B)		$178,526	$177,259	$175,992	$174,725	$173,458	$172,191	$170,924	$169,657	$168,390	$167,123	$165,856	$164,589	$2,058,690
	b. Debt Component Grossed Up For Taxes (C)		52,728	52,354	51,979	51,605	51,231	50,857	50,483	50,109	49,734	49,360	48,986	48,612	608,038
8.	Investment Expenses														
	a. Depreciation (D)		$261,919	$261,919	$261,919	$261,919	$261,919	$261,919	$261,919	$261,919	$261,919	$261,919	$261,919	$261,919	$3,143,028
	b. Amortization		0	0	0	0	0	0	0	0	0	0	0	0	0
	c. Dismantlement		0	0	0	0	0	0	0	0	0	0	0	0	0
	d. Property Taxes		0	0	0	0	0	0	0	0	0	0	0	0	0
	e. Other		0	0	0	0	0	0	0	0	0	0	0	0	0
9.	Total System Recoverable Expenses (Lines 7 + 8)		$493,173	$491,532	$489,890	$488,249	$486,608	$484,967	$483,326	$481,685	$480,043	$478,402	$476,761	$475,120	$5,809,756
	a. Recoverable Costs Allocated to Energy		493,173	491,532	489,890	488,249	486,608	484,967	483,326	481,685	480,043	478,402	476,761	475,120	5,809,756
	b. Recoverable Costs Allocated to Demand		0	0	0	0	0	0	0	0	0	0	0	0	0
10.	Energy Jurisdictional Factor		1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	
11.	Demand Jurisdictional Factor		1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	
12.	Retail Energy-Related Recoverable Costs (E)		493,173	491,532	489,890	488,249	486,608	484,967	483,326	481,685	480,043	478,402	476,761	475,120	5,809,756
13.	Retail Demand-Related Recoverable Costs (F)		0	0	0	0	0	0	0	0	0	0	0	0	0
14.	Total Jurisdictional Recoverable Costs (Lines 12 + 13)		$493,173	$491,532	$489,890	$488,249	$486,608	$484,967	$483,326	$481,685	$480,043	$478,402	$476,761	$475,120	$5,809,756

Notes:
(A) Applicable depreciable base for Big Bend; accounts 312.46 ($94,929,061), 312.45 ($105,398) & 315.46 ($220,782)
(B) Line 6 x 5.8046% x 1/12. Based on ROE of 10.25% and weighted income tax rate of 25.345% (expansion factor of 1.34295)
(C) Line 6 x 1.7144% x 1/12.
(D) Applicable depreciation rates are 3.3%, 2.5% and 3.5%
(E) Line 9a x Line 10
(F) Line 9b x Line 11

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DOCKET NO. 20180007-EI
ECRC 2019 PROJECTION, FORM 42-4P
EXHIBIT NO. PAR-4, DOCUMENT NO. 4, PAGE 9 OF 29

Tampa Electric Company
Environmental Cost Recovery Clause (ECRC)
Calculation of the Projected Period Amount
January 2019 to December 2019

Return on Capital Investments, Depreciation and Taxes
For Project: Big Bend FGD Optimization and Utilization
(in Dollars)

Line	Description	Beginning of Period Amount	Projected January	Projected February	Projected March	Projected April	Projected May	Projected June	Projected July	Projected August	Projected September	Projected October	Projected November	Projected December	End of Period Total
1.	Investments														
	a. Expenditures/Additions		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
	b. Clearings to Plant		100,000	0	0	0	0	0	0	0	0	0	0	0	100,000
	c. Retirements		0	0	0	0	0	0	0	0	0	0	0	0	
	d. Other		0	0	0	0	0	0	0	0	0	0	0	0	
2.	Plant-in-Service/Depreciation Base (A)	$22,860,364	$22,960,364	$22,960,364	$22,960,364	$22,960,364	$22,960,364	$22,960,364	$22,960,364	$22,960,364	$22,960,364	$22,960,364	$22,960,364	$22,960,364	
3.	Less: Accumulated Depreciation	(9,346,870)	(9,394,813)	(9,442,714)	(9,490,615)	(9,538,516)	(9,586,417)	(9,634,318)	(9,682,219)	(9,730,120)	(9,778,021)	(9,825,922)	(9,873,823)	(9,921,724)	
4.	CWIP - Non-Interest Bearing	100,000	0	0	0	0	0	0	0	0	0	0	0	0	
5.	Net Investment (Lines 2 + 3 + 4)	$13,613,494	13,565,551	13,517,650	13,469,749	13,421,848	13,373,947	13,326,046	13,278,145	13,230,244	13,182,343	13,134,442	13,086,541	13,038,640	
6.	Average Net Investment		13,589,522	13,541,600	13,493,699	13,445,798	13,397,897	13,349,996	13,302,095	13,254,194	13,206,293	13,158,392	13,110,491	13,062,590	
7.	Return on Average Net Investment														
	a. Equity Component Grossed Up For Taxes (B)		$65,735	$65,503	$65,271	$65,040	$64,808	$64,576	$64,344	$64,113	$63,881	$63,649	$63,418	$63,186	$773,524
	b. Debt Component Grossed Up For Taxes (C)		19,415	19,346	19,278	19,210	19,141	19,073	19,004	18,936	18,867	18,799	18,731	18,662	228,462
8.	Investment Expenses														
	a. Depreciation (D)		$47,943	$47,901	$47,901	$47,901	$47,901	$47,901	$47,901	$47,901	$47,901	$47,901	$47,901	$47,901	$574,854
	b. Amortization		0	0	0	0	0	0	0	0	0	0	0	0	0
	c. Dismantlement		0	0	0	0	0	0	0	0	0	0	0	0	0
	d. Property Taxes		0	0	0	0	0	0	0	0	0	0	0	0	0
	e. Other		0	0	0	0	0	0	0	0	0	0	0	0	0
9.	Total System Recoverable Expenses (Lines 7 + 8)		$133,093	$132,750	$132,450	$132,151	$131,850	$131,550	$131,249	$130,950	$130,649	$130,349	$130,050	$129,749	$1,576,840
	a. Recoverable Costs Allocated to Energy		133,093	132,750	132,450	132,151	131,850	131,550	131,249	130,950	130,649	130,349	130,050	129,749	1,576,840
	b. Recoverable Costs Allocated to Demand		0	0	0	0	0	0	0	0	0	0	0	0	0
10.	Energy Jurisdictional Factor		1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	
11.	Demand Jurisdictional Factor		1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	
12.	Retail Energy-Related Recoverable Costs (E)		133,093	132,750	132,450	132,151	131,850	131,550	131,249	130,950	130,649	130,349	130,050	129,749	1,576,840
13.	Retail Demand-Related Recoverable Costs (F)		0	0	0	0	0	0	0	0	0	0	0	0	0
14.	Total Jurisdictional Recoverable Costs (Lines 12 + 13)		$133,093	$132,750	$132,450	$132,151	$131,850	$131,550	$131,249	$130,950	$130,649	$130,349	$130,050	$129,749	$1,576,840

Notes:
(A) Applicable depreciable base for Big Bend; accounts 312.45 ($22,835,587), 311.45 ($39,818), 316.40 ($36,254), 315.45 ($220), 312.46 ($47,047), and 312.24 ($1,438)
(B) Line 6 x 5.8046% x 1/12. Based on ROE of 10.25% and weighted income tax rate of 25.345% (expansion factor of 1.34295)
(C) Line 6 x 1.7144% x 1/12.
(D) Applicable depreciation rates are 2.5%, 2.0%, 4.2%, 3.1%, 3.3%, and 3.7%
(E) Line 9a x Line 10
(F) Line 9b x Line 11

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Tampa Electric Company
Environmental Cost Recovery Clause (ECRC)
Calculation of the Projected Period Amount
January 2019 to December 2019

Return on Capital Investments, Depreciation and Taxes
For Project: Big Bend NO_x Emissions Reduction
(in Dollars)

Line	Description	Beginning of Period Amount	Projected January	Projected February	Projected March	Projected April	Projected May	Projected June	Projected July	Projected August	Projected September	Projected October	Projected November	Projected December	End of Period Total
1.	Investments														
	a. Expenditures/Additions		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
	b. Clearings to Plant		0	0	0	0	0	0	0	0	0	0	0	0	
	c. Retirements		0	0	0	0	0	0	0	0	0	0	0	0	
	d. Other		0	0	0	0	0	0	0	0	0	0	0	0	
2.	Plant-in-Service/Depreciation Base (A)	$3,190,852	$3,190,852	$3,190,852	$3,190,852	$3,190,852	$3,190,852	$3,190,852	$3,190,852	$3,190,852	$3,190,852	$3,190,852	$3,190,852	$3,190,852	
3.	Less: Accumulated Depreciation	1,749,771	1,739,587	1,729,403	1,719,219	1,709,035	1,698,851	1,688,667	1,678,483	1,668,299	1,658,115	1,647,931	1,637,747	1,627,563	
4.	CWIP - Non-Interest Bearing	0	0	0	0	0	0	0	0	0	0	0	0	0	
5.	Net Investment (Lines 2 + 3 + 4)	$4,940,623	4,930,439	4,920,255	4,910,071	4,899,887	4,889,703	4,879,519	4,869,335	4,859,151	4,848,967	4,838,783	4,828,599	4,818,415	
6.	Average Net Investment		4,935,531	4,925,347	4,915,163	4,904,979	4,894,795	4,884,611	4,874,427	4,864,243	4,854,059	4,843,875	4,833,691	4,823,507	
7.	Return on Average Net Investment														
	a. Equity Component Grossed Up For Taxes (B)		$23,874	$23,825	$23,775	$23,726	$23,677	$23,628	$23,578	$23,529	$23,480	$23,431	$23,381	$23,332	$283,236
	b. Debt Component Grossed Up For Taxes (C)		7,051	7,037	7,022	7,008	6,993	6,978	6,964	6,949	6,935	6,920	6,906	6,891	83,654
8.	Investment Expenses														
	a. Depreciation (D)		$10,184	$10,184	$10,184	$10,184	$10,184	$10,184	$10,184	$10,184	$10,184	$10,184	$10,184	$10,184	$122,208
	b. Amortization		0	0	0	0	0	0	0	0	0	0	0	0	0
	c. Dismantlement		0	0	0	0	0	0	0	0	0	0	0	0	0
	d. Property Taxes		0	0	0	0	0	0	0	0	0	0	0	0	0
	e. Other		0	0	0	0	0	0	0	0	0	0	0	0	0
9.	Total System Recoverable Expenses (Lines 7 + 8)		$41,109	$41,046	$40,981	$40,918	$40,854	$40,790	$40,726	$40,662	$40,599	$40,535	$40,471	$40,407	$489,098
	a. Recoverable Costs Allocated to Energy		41,109	41,046	40,981	40,918	40,854	40,790	40,726	40,662	40,599	40,535	40,471	40,407	489,098
	b. Recoverable Costs Allocated to Demand		0	0	0	0	0	0	0	0	0	0	0	0	0
10.	Energy Jurisdictional Factor		1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	
11.	Demand Jurisdictional Factor		1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	
12.	Retail Energy-Related Recoverable Costs (E)		41,109	41,046	40,981	40,918	40,854	40,790	40,726	40,662	40,599	40,535	40,471	40,407	489,098
13.	Retail Demand-Related Recoverable Costs (F)		0	0	0	0	0	0	0	0	0	0	0	0	0
14.	Total Jurisdictional Recoverable Costs (Lines 12 + 13)		$41,109	$41,046	$40,981	$40,918	$40,854	$40,790	$40,726	$40,662	$40,599	$40,535	$40,471	$40,407	$489,098

Notes:
(A) Applicable depreciable base for Big Bend; accounts 312.41 ($1,675,171), 312.42 ($1,075,718), and 312.43 ($439,963).
(B) Line 6 x 5.8046% x 1/12. Based on ROE of 10.25% and weighted income tax rate of 25.345% (expansion factor of 1.34295)
(C) Line 6 x 1.7144% x 1/12.
(D) Applicable depreciation rates are 4.0%, 3.7% and 3.5%
(E) Line 9a x Line 10
(F) Line 9b x Line 11

Tampa Electric Company
Environmental Cost Recovery Clause (ECRC)
Calculation of the Projected Period Amount
January 2019 to December 2019

Return on Capital Investments, Depreciation and Taxes
For Project: Big Bend PM Minimization and Monitoring
(in Dollars)

Line	Description	Beginning of Period Amount	Projected January	Projected February	Projected March	Projected April	Projected May	Projected June	Projected July	Projected August	Projected September	Projected October	Projected November	Projected December	End of Period Total
1.	Investments														
	a. Expenditures/Additions		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
	b. Clearings to Plant		0	0	0	0	0	0	0	0	0	0	0	0	
	c. Retirements		0	0	0	0	0	0	0	0	0	0	0	0	
	d. Other		0	0	0	0	0	0	0	0	0	0	0	0	
2.	Plant-in-Service/Depreciation Base (A)	$19,757,750	$19,757,750	$19,757,750	$19,757,750	$19,757,750	$19,757,750	$19,757,750	$19,757,750	$19,757,750	$19,757,750	$19,757,750	$19,757,750	$19,757,750	
3.	Less: Accumulated Depreciation	(5,814,322)	(5,875,194)	(5,936,066)	(5,996,938)	(6,057,810)	(6,118,682)	(6,179,554)	(6,240,426)	(6,301,298)	(6,362,170)	(6,423,042)	(6,483,914)	(6,544,786)	
4.	CWIP - Non-Interest Bearing	0	0	0	0	0	0	0	0	0	0	0	0	0	
5.	Net Investment (Lines 2 + 3 + 4)	$13,943,428	13,882,556	13,821,684	13,760,812	13,699,940	13,639,068	13,578,196	13,517,324	13,456,452	13,395,580	13,334,708	13,273,836	13,212,964	
6.	Average Net Investment		13,912,992	13,852,120	13,791,248	13,730,376	13,669,504	13,608,632	13,547,760	13,486,888	13,426,016	13,365,144	13,304,272	13,243,400	
7.	Return on Average Net Investment														
	a. Equity Component Grossed Up For Taxes (B)		$67,299	$67,005	$66,711	$66,416	$66,122	$65,827	$65,533	$65,238	$64,944	$64,649	$64,355	$64,061	$788,160
	b. Debt Component Grossed Up For Taxes (C)		19,877	19,790	19,703	19,616	19,529	19,442	19,355	19,268	19,181	19,094	19,007	18,920	232,782
8.	Investment Expenses														
	a. Depreciation (D)		$60,872	$60,872	$60,872	$60,872	$60,872	$60,872	$60,872	$60,872	$60,872	$60,872	$60,872	$60,872	$730,464
	b. Amortization		0	0	0	0	0	0	0	0	0	0	0	0	0
	c. Dismantlement		0	0	0	0	0	0	0	0	0	0	0	0	0
	d. Property Taxes		0	0	0	0	0	0	0	0	0	0	0	0	0
	e. Other		0	0	0	0	0	0	0	0	0	0	0	0	0
9.	Total System Recoverable Expenses (Lines 7 + 8)		$148,048	$147,667	$147,286	$146,904	$146,523	$146,141	$145,760	$145,378	$144,997	$144,615	$144,234	$143,853	$1,751,406
	a. Recoverable Costs Allocated to Energy		148,048	147,667	147,286	146,904	146,523	146,141	145,760	145,378	144,997	144,615	144,234	143,853	1,751,406
	b. Recoverable Costs Allocated to Demand		0	0	0	0	0	0	0	0	0	0	0	0	0
10.	Energy Jurisdictional Factor		1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	
11.	Demand Jurisdictional Factor		1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	
12.	Retail Energy-Related Recoverable Costs (E)		148,048	147,667	147,286	146,904	146,523	146,141	145,760	145,378	144,997	144,615	144,234	143,853	1,751,406
13.	Retail Demand-Related Recoverable Costs (F)		0	0	0	0	0	0	0	0	0	0	0	0	0
14.	Total Jurisdictional Recoverable Costs (Lines 12 + 13)		$148,048	$147,667	$147,286	$146,904	$146,523	$146,141	$145,760	$145,378	$144,997	$144,615	$144,234	$143,853	$1,751,406

Notes:
(A) Applicable depreciable base for Big Bend; accounts 312.41 ($5,831,465), 312.42 ($5,153,072), 312.43 ($7,875,560), 315.41 ($17,504), 315.44 ($351,594), and 315.43 ($528,554)
(B) Line 6 x 5.8046% x 1/12. Based on ROE of 10.25% and weighted income tax rate of 25.345% (expansion factor of 1.34295)
(C) Line 6 x 1.7144% x 1/12.
(D) Applicable depreciation rates are 4.0%, 3.7%, 3.5%, 3.5%, 3.2%, and 3.6%
(E) Line 9a x Line 10
(F) Line 9b x Line 11

Tampa Electric Company
Environmental Cost Recovery Clause (ECRC)
Calculation of the Projected Period Amount
January 2019 to December 2019

Return on Capital Investments, Depreciation and Taxes
For Project: Polk NO_x Emissions Reduction
(in Dollars)

Line	Description	Beginning of Period Amount	Projected January	Projected February	Projected March	Projected April	Projected May	Projected June	Projected July	Projected August	Projected September	Projected October	Projected November	Projected December	End of Period Total
1.	Investments														
	a. Expenditures/Additions		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
	b. Clearings to Plant		0	0	0	0	0	0	0	0	0	0	0	0	
	c. Retirements		0	0	0	0	0	0	0	0	0	0	0	0	
	d. Other		0	0	0	0	0	0	0	0	0	0	0	0	
2.	Plant-in-Service/Depreciation Base (A)	$1,561,473	$1,561,473	$1,561,473	$1,561,473	$1,561,473	$1,561,473	$1,561,473	$1,561,473	$1,561,473	$1,561,473	$1,561,473	$1,561,473	$1,561,473	
3.	Less: Accumulated Depreciation	(789,498)	(793,922)	(798,346)	(802,770)	(807,194)	(811,618)	(816,042)	(820,466)	(824,890)	(829,314)	(833,738)	(838,162)	(842,586)	
4.	CWIP - Non-Interest Bearing	0	0	0	0	0	0	0	0	0	0	0	0	0	
5.	Net Investment (Lines 2 + 3 + 4)	$771,975	767,551	763,127	758,703	754,279	749,855	745,431	741,007	736,583	732,159	727,735	723,311	718,887	
6.	Average Net Investment		769,763	765,339	760,915	756,491	752,067	747,643	743,219	738,795	734,371	729,947	725,523	721,099	
7.	Return on Average Net Investment														
	a. Equity Component Grossed Up For Taxes (B)		$3,723	$3,702	$3,681	$3,659	$3,638	$3,616	$3,595	$3,574	$3,552	$3,531	$3,509	$3,488	$43,268
	b. Debt Component Grossed Up For Taxes (C)		1,100	1,093	1,087	1,081	1,074	1,068	1,062	1,055	1,049	1,043	1,037	1,030	12,779
8.	Investment Expenses														
	a. Depreciation (D)		$4,424	$4,424	$4,424	$4,424	$4,424	$4,424	$4,424	$4,424	$4,424	$4,424	$4,424	$4,424	$53,088
	b. Amortization		0	0	0	0	0	0	0	0	0	0	0	0	0
	c. Dismantlement		0	0	0	0	0	0	0	0	0	0	0	0	0
	d. Property Taxes		0	0	0	0	0	0	0	0	0	0	0	0	0
	e. Other		0	0	0	0	0	0	0	0	0	0	0	0	0
9.	Total System Recoverable Expenses (Lines 7 + 8)		$9,247	$9,219	$9,192	$9,164	$9,136	$9,108	$9,081	$9,053	$9,025	$8,998	$8,970	$8,942	$109,135
	a. Recoverable Costs Allocated to Energy		9,247	9,219	9,192	9,164	9,136	9,108	9,081	9,053	9,025	8,998	8,970	8,942	109,135
	b. Recoverable Costs Allocated to Demand		0	0	0	0	0	0	0	0	0	0	0	0	0
10.	Energy Jurisdictional Factor		1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	
11.	Demand Jurisdictional Factor		1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	
12.	Retail Energy-Related Recoverable Costs (E)		9,247	9,219	9,192	9,164	9,136	9,108	9,081	9,053	9,025	8,998	8,970	8,942	109,135
13.	Retail Demand-Related Recoverable Costs (F)		0	0	0	0	0	0	0	0	0	0	0	0	0
14.	Total Jurisdictional Recoverable Costs (Lines 12 + 13)		$9,247	$9,219	$9,192	$9,164	$9,136	$9,108	$9,081	$9,053	$9,025	$8,998	$8,970	$8,942	$109,135

Notes:
(A) Applicable depreciable base for Polk; account 342.81
(B) Line 6 x 5.8046% x 1/12. Based on ROE of 10.25% and weighted income tax rate of 25.345% (expansion factor of 1.34295)
(C) Line 6 x 1.7144% x 1/12.
(D) Applicable depreciation rate is 3.4%
(E) Line 9a x Line 10
(F) Line 9b x Line 11

Tampa Electric Company
Environmental Cost Recovery Clause (ECRC)
Calculation of the Projected Period Amount
January 2019 to December 2019

Return on Capital Investments, Depreciation and Taxes
For Project: Big Bend Unit 4 SOFA
(in Dollars)

Line	Description	Beginning of Period Amount	Projected January	Projected February	Projected March	Projected April	Projected May	Projected June	Projected July	Projected August	Projected September	Projected October	Projected November	Projected December	End of Period Total
1.	Investments														
	a. Expenditures/Additions		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
	b. Clearings to Plant		0	0	0	0	0	0	0	0	0	0	0	0	
	c. Retirements		0	0	0	0	0	0	0	0	0	0	0	0	
	d. Other		0	0	0	0	0	0	0	0	0	0	0	0	
2.	Plant-in-Service/Depreciation Base (A)	$2,558,730	$2,558,730	$2,558,730	$2,558,730	$2,558,730	$2,558,730	$2,558,730	$2,558,730	$2,558,730	$2,558,730	$2,558,730	$2,558,730	$2,558,730	
3.	Less: Accumulated Depreciation	(986,198)	(992,595)	(998,992)	(1,005,389)	(1,011,786)	(1,018,183)	(1,024,580)	(1,030,977)	(1,037,374)	(1,043,771)	(1,050,168)	(1,056,565)	(1,062,962)	
4.	CWIP - Non-Interest Bearing	0	0	0	0	0	0	0	0	0	0	0	0	0	
5.	Net Investment (Lines 2 + 3 + 4)	$1,572,532	1,566,135	1,559,738	1,553,341	1,546,944	1,540,547	1,534,150	1,527,753	1,521,356	1,514,959	1,508,562	1,502,165	1,495,768	
6.	Average Net Investment		1,569,334	1,562,937	1,556,540	1,550,143	1,543,746	1,537,349	1,530,952	1,524,555	1,518,158	1,511,761	1,505,364	1,498,967	
7.	Return on Average Net Investment														
	a. Equity Component Grossed Up For Taxes (B)		$7,591	$7,560	$7,529	$7,498	$7,467	$7,436	$7,405	$7,375	$7,344	$7,313	$7,282	$7,251	$89,051
	b. Debt Component Grossed Up For Taxes (C)		2,242	2,233	2,224	2,215	2,205	2,196	2,187	2,178	2,169	2,160	2,151	2,142	26,302
8.	Investment Expenses														
	a. Depreciation (D)		$6,397	$6,397	$6,397	$6,397	$6,397	$6,397	$6,397	$6,397	$6,397	$6,397	$6,397	$6,397	$76,764
	b. Amortization		0	0	0	0	0	0	0	0	0	0	0	0	0
	c. Dismantlement		0	0	0	0	0	0	0	0	0	0	0	0	0
	d. Property Taxes		0	0	0	0	0	0	0	0	0	0	0	0	0
	e. Other		0	0	0	0	0	0	0	0	0	0	0	0	0
9.	Total System Recoverable Expenses (Lines 7 + 8)		$16,230	$16,190	$16,150	$16,110	$16,069	$16,029	$15,989	$15,950	$15,910	$15,870	$15,830	$15,790	$192,117
	a. Recoverable Costs Allocated to Energy		16,230	16,190	16,150	16,110	16,069	16,029	15,989	15,950	15,910	15,870	15,830	15,790	192,117
	b. Recoverable Costs Allocated to Demand		0	0	0	0	0	0	0	0	0	0	0	0	0
10.	Energy Jurisdictional Factor		1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	
11.	Demand Jurisdictional Factor		1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	
12.	Retail Energy-Related Recoverable Costs (E)		16,230	16,190	16,150	16,110	16,069	16,029	15,989	15,950	15,910	15,870	15,830	15,790	192,117
13.	Retail Demand-Related Recoverable Costs (F)		0	0	0	0	0	0	0	0	0	0	0	0	0
14.	Total Jurisdictional Recoverable Costs (Lines 12 + 13)		$16,230	$16,190	$16,150	$16,110	$16,069	$16,029	$15,989	$15,950	$15,910	$15,870	$15,830	$15,790	$192,117

Notes:
(A) Applicable depreciable base for Big Bend; account 312.44
(B) Line 6 x 5.8046% x 1/12. Based on ROE of 10.25% and weighted income tax rate of 25.345% (expansion factor of 1.34295)
(C) Line 6 x 1.7144% x 1/12.
(D) Applicable depreciation rate is 3.0%
(E) Line 9a x Line 10
(F) Line 9b x Line 11

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Tampa Electric Company
Environmental Cost Recovery Clause (ECRC)
Calculation of the Projected Period Amount
January 2019 to December 2019

Return on Capital Investments, Depreciation and Taxes
For Project: Big Bend Unit 1 Pre-SCR
(in Dollars)

Line	Description	Beginning of Period Amount	Projected January	Projected February	Projected March	Projected April	Projected May	Projected June	Projected July	Projected August	Projected September	Projected October	Projected November	Projected December	End of Period Total
1.	Investments														
	a. Expenditures/Additions		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
	b. Clearings to Plant		0	0	0	0	0	0	0	0	0	0	0	0	
	c. Retirements		0	0	0	0	0	0	0	0	0	0	0	0	
	d. Other		0	0	0	0	0	0	0	0	0	0	0	0	
2.	Plant-in-Service/Depreciation Base (A)	$1,649,121	$1,649,121	$1,649,121	$1,649,121	$1,649,121	$1,649,121	$1,649,121	$1,649,121	$1,649,121	$1,649,121	$1,649,121	$1,649,121	$1,649,121	
3.	Less: Accumulated Depreciation	(731,593)	(737,090)	(742,587)	(748,084)	(753,581)	(759,078)	(764,575)	(770,072)	(775,569)	(781,066)	(786,563)	(792,060)	(797,557)	
4.	CWIP - Non-Interest Bearing	0	0	0	0	0	0	0	0	0	0	0	0	0	
5.	Net Investment (Lines 2 + 3 + 4)	$917,528	912,031	906,534	901,037	895,540	890,043	884,546	879,049	873,552	868,055	862,558	857,061	851,564	
6.	Average Net Investment		914,780	909,283	903,786	898,289	892,792	887,295	881,798	876,301	870,804	865,307	859,810	854,313	
7.	Return on Average Net Investment														
	a. Equity Component Grossed Up For Taxes (B)		$4,425	$4,398	$4,372	$4,345	$4,319	$4,292	$4,265	$4,239	$4,212	$4,186	$4,159	$4,132	$51,344
	b. Debt Component Grossed Up For Taxes (C)		1,307	1,299	1,291	1,283	1,276	1,268	1,260	1,252	1,244	1,236	1,228	1,221	15,165
8.	Investment Expenses														
	a. Depreciation (D)		$5,497	$5,497	$5,497	$5,497	$5,497	$5,497	$5,497	$5,497	$5,497	$5,497	$5,497	$5,497	$65,964
	b. Amortization		0	0	0	0	0	0	0	0	0	0	0	0	0
	c. Dismantlement		0	0	0	0	0	0	0	0	0	0	0	0	0
	d. Property Taxes		0	0	0	0	0	0	0	0	0	0	0	0	0
	e. Other		0	0	0	0	0	0	0	0	0	0	0	0	0
9.	Total System Recoverable Expenses (Lines 7 + 8)		$11,229	$11,194	$11,160	$11,125	$11,092	$11,057	$11,022	$10,988	$10,953	$10,919	$10,884	$10,850	$132,473
	a. Recoverable Costs Allocated to Energy		11,229	11,194	11,160	11,125	11,092	11,057	11,022	10,988	10,953	10,919	10,884	10,850	132,473
	b. Recoverable Costs Allocated to Demand		0	0	0	0	0	0	0	0	0	0	0	0	0
10.	Energy Jurisdictional Factor		1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	
11.	Demand Jurisdictional Factor		1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	
12.	Retail Energy-Related Recoverable Costs (E)		11,229	11,194	11,160	11,125	11,092	11,057	11,022	10,988	10,953	10,919	10,884	10,850	132,473
13.	Retail Demand-Related Recoverable Costs (F)		0	0	0	0	0	0	0	0	0	0	0	0	0
14.	Total Jurisdictional Recoverable Costs (Lines 12 + 13)		$11,229	$11,194	$11,160	$11,125	$11,092	$11,057	$11,022	$10,988	$10,953	$10,919	$10,884	$10,850	$132,473

Notes:
(A) Applicable depreciable base for Big Bend; account 312.41
(B) Line 6 x 5.8046% x 1/12. Based on ROE of 10.25% and weighted income tax rate of 25.345% (expansion factor of 1.34295)
(C) Line 6 x 1.7144% x 1/12.
(D) Applicable depreciation rate is 4.0%
(E) Line 9a x Line 10
(F) Line 9b x Line 11

Tampa Electric Company
Environmental Cost Recovery Clause (ECRC)
Calculation of the Projected Period Amount
January 2019 to December 2019

Return on Capital Investments, Depreciation and Taxes
For Project: Big Bend Unit 2 Pre-SCR
(in Dollars)

Line	Description	Beginning of Period Amount	Projected January	Projected February	Projected March	Projected April	Projected May	Projected June	Projected July	Projected August	Projected September	Projected October	Projected November	Projected December	End of Period Total
1.	Investments														
	a. Expenditures/Additions		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
	b. Clearings to Plant		0	0	0	0	0	0	0	0	0	0	0	0	
	c. Retirements		0	0	0	0	0	0	0	0	0	0	0	0	
	d. Other		0	0	0	0	0	0	0	0	0	0	0	0	
2.	Plant-in-Service/Depreciation Base (A)	$1,581,887	$1,581,887	$1,581,887	$1,581,887	$1,581,887	$1,581,887	$1,581,887	$1,581,887	$1,581,887	$1,581,887	$1,581,887	$1,581,887	$1,581,887	
3.	Less: Accumulated Depreciation	(652,844)	(657,721)	(662,598)	(667,475)	(672,352)	(677,229)	(682,106)	(686,983)	(691,860)	(696,737)	(701,614)	(706,491)	(711,368)	
4.	CWIP - Non-Interest Bearing	0	0	0	0	0	0	0	0	0	0	0	0	0	
5.	Net Investment (Lines 2 + 3 + 4)	$929,043	924,166	919,289	914,412	909,535	904,658	899,781	894,904	890,027	885,150	880,273	875,396	870,519	
6.	Average Net Investment		926,605	921,728	916,851	911,974	907,097	902,220	897,343	892,466	887,589	882,712	877,835	872,958	
7.	Return on Average Net Investment														
	a. Equity Component Grossed Up For Taxes (B)		$4,482	$4,459	$4,435	$4,411	$4,388	$4,364	$4,341	$4,317	$4,293	$4,270	$4,246	$4,223	$52,229
	b. Debt Component Grossed Up For Taxes (C)		1,324	1,317	1,310	1,303	1,296	1,289	1,282	1,275	1,268	1,261	1,254	1,247	15,426
8.	Investment Expenses														
	a. Depreciation (D)		$4,877	$4,877	$4,877	$4,877	$4,877	$4,877	$4,877	$4,877	$4,877	$4,877	$4,877	$4,877	$58,524
	b. Amortization		0	0	0	0	0	0	0	0	0	0	0	0	0
	c. Dismantlement		0	0	0	0	0	0	0	0	0	0	0	0	0
	d. Property Taxes		0	0	0	0	0	0	0	0	0	0	0	0	0
	e. Other		0	0	0	0	0	0	0	0	0	0	0	0	0
9.	Total System Recoverable Expenses (Lines 7 + 8)		$10,683	$10,653	$10,622	$10,591	$10,561	$10,530	$10,500	$10,469	$10,438	$10,408	$10,377	$10,347	$126,179
	a. Recoverable Costs Allocated to Energy		10,683	10,653	10,622	10,591	10,561	10,530	10,500	10,469	10,438	10,408	10,377	10,347	126,179
	b. Recoverable Costs Allocated to Demand		0	0	0	0	0	0	0	0	0	0	0	0	0
10.	Energy Jurisdictional Factor		1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	
11.	Demand Jurisdictional Factor		1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	
12.	Retail Energy-Related Recoverable Costs (E)		10,683	10,653	10,622	10,591	10,561	10,530	10,500	10,469	10,438	10,408	10,377	10,347	126,179
13.	Retail Demand-Related Recoverable Costs (F)		0	0	0	0	0	0	0	0	0	0	0	0	0
14.	Total Jurisdictional Recoverable Costs (Lines 12 + 13)		$10,683	$10,653	$10,622	$10,591	$10,561	$10,530	$10,500	$10,469	$10,438	$10,408	$10,377	$10,347	$126,179

Notes:
(A) Applicable depreciable base for Big Bend; account 312.42
(B) Line 6 x 5.8046% x 1/12. Based on ROE of 10.25% and weighted income tax rate of 25.345% (expansion factor of 1.34295)
(C) Line 6 x 1.7144% x 1/12.
(D) Applicable depreciation rate is 3.7%
(E) Line 9a x Line 10
(F) Line 9b x Line 11

Tampa Electric Company
Environmental Cost Recovery Clause (ECRC)
Calculation of the Projected Period Amount
January 2019 to December 2019

Return on Capital Investments, Depreciation and Taxes
For Project: Big Bend Unit 3 Pre-SCR
(in Dollars)

Line	Description	Beginning of Period Amount	Projected January	Projected February	Projected March	Projected April	Projected May	Projected June	Projected July	Projected August	Projected September	Projected October	Projected November	Projected December	End of Period Total
1.	Investments														
	a. Expenditures/Additions		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
	b. Clearings to Plant		0	0	0	0	0	0	0	0	0	0	0	0	
	c. Retirements		0	0	0	0	0	0	0	0	0	0	0	0	
	d. Other		0	0	0	0	0	0	0	0	0	0	0	0	
2.	Plant-in-Service/Depreciation Base (A)	$2,706,507	$2,706,507	$2,706,507	$2,706,507	$2,706,507	$2,706,507	$2,706,507	$2,706,507	$2,706,507	$2,706,507	$2,706,507	$2,706,507	$2,706,507	
3.	Less: Accumulated Depreciation	(927,638)	(935,591)	(943,544)	(951,497)	(959,450)	(967,403)	(975,356)	(983,309)	(991,262)	(999,215)	(1,007,168)	(1,015,121)	(1,023,074)	
4.	CWIP - Non-Interest Bearing	0	0	0	0	0	0	0	0	0	0	0	0	0	
5.	Net Investment (Lines 2 + 3 + 4)	$1,778,869	1,770,916	1,762,963	1,755,010	1,747,057	1,739,104	1,731,151	1,723,198	1,715,245	1,707,292	1,699,339	1,691,386	1,683,433	
6.	Average Net Investment		1,774,893	1,766,940	1,758,987	1,751,034	1,743,081	1,735,128	1,727,175	1,719,222	1,711,269	1,703,316	1,695,363	1,687,410	
7.	Return on Average Net Investment														
	a. Equity Component Grossed Up For Taxes (B)		$8,585	$8,547	$8,509	$8,470	$8,432	$8,393	$8,355	$8,316	$8,278	$8,239	$8,201	$8,162	$100,487
	b. Debt Component Grossed Up For Taxes (C)		2,536	2,524	2,513	2,502	2,490	2,479	2,468	2,456	2,445	2,433	2,422	2,411	29,679
8.	Investment Expenses														
	a. Depreciation (D)		$7,953	$7,953	$7,953	$7,953	$7,953	$7,953	$7,953	$7,953	$7,953	$7,953	$7,953	$7,953	$95,436
	b. Amortization		0	0	0	0	0	0	0	0	0	0	0	0	0
	c. Dismantlement		0	0	0	0	0	0	0	0	0	0	0	0	0
	d. Property Taxes		0	0	0	0	0	0	0	0	0	0	0	0	0
	e. Other		0	0	0	0	0	0	0	0	0	0	0	0	0
9.	Total System Recoverable Expenses (Lines 7 + 8)		$19,074	$19,024	$18,975	$18,925	$18,875	$18,825	$18,776	$18,725	$18,676	$18,625	$18,576	$18,526	$225,602
	a. Recoverable Costs Allocated to Energy		19,074	19,024	18,975	18,925	18,875	18,825	18,776	18,725	18,676	18,625	18,576	18,526	225,602
	b. Recoverable Costs Allocated to Demand		0	0	0	0	0	0	0	0	0	0	0	0	0
10.	Energy Jurisdictional Factor		1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	
11.	Demand Jurisdictional Factor		1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	
12.	Retail Energy-Related Recoverable Costs (E)		19,074	19,024	18,975	18,925	18,875	18,825	18,776	18,725	18,676	18,625	18,576	18,526	225,602
13.	Retail Demand-Related Recoverable Costs (F)		0	0	0	0	0	0	0	0	0	0	0	0	0
14.	Total Jurisdictional Recoverable Costs (Lines 12 + 13)		$19,074	$19,024	$18,975	$18,925	$18,875	$18,825	$18,776	$18,725	$18,676	$18,625	$18,576	$18,526	$225,602

Notes:
(A) Applicable depreciable base for Big Bend; account 312.43 ($1,995,677) and 315.43 ($710,830)
(B) Line 6 x 5.8046% x 1/12. Based on ROE of 10.25% and weighted income tax rate of 25.345% (expansion factor of 1.34295)
(C) Line 6 x 1.7144% x 1/12.
(D) Applicable depreciation rate is 3.5% and 3.6%
(E) Line 9a x Line 10
(F) Line 9b x Line 11

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Tampa Electric Company
Environmental Cost Recovery Clause (ECRC)
Calculation of the Projected Period Amount
January 2019 to December 2019

Return on Capital Investments, Depreciation and Taxes
For Project: Big Bend Unit 1 SCR
(in Dollars)

Line	Description	Beginning of Period Amount	Projected January	Projected February	Projected March	Projected April	Projected May	Projected June	Projected July	Projected August	Projected September	Projected October	Projected November	Projected December	End of Period Total
1.	Investments														
	a. Expenditures/Additions		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
	b. Clearings to Plant		0	0	0	0	0	0	0	0	0	0	0	0	0
	c. Retirements		0	0	0	0	0	0	0	0	0	0	0	0	
	d. Other		0	0	0	0	0	0	0	0	0	0	0	0	
2.	Plant-in-Service/Depreciation Base (A)	$85,719,102	$85,719,102	$85,719,102	$85,719,102	$85,719,102	$85,719,102	$85,719,102	$85,719,102	$85,719,102	$85,719,102	$85,719,102	$85,719,102	$85,719,102	
3.	Less: Accumulated Depreciation	(32,559,630)	(32,868,796)	(33,177,962)	(33,487,128)	(33,796,294)	(34,105,460)	(34,414,626)	(34,723,792)	(35,032,958)	(35,342,124)	(35,651,290)	(35,960,456)	(36,269,622)	
4.	CWIP - Non-Interest Bearing (B)	0	0	0	0	0	0	0	0	0	0	0	0	0	
5.	Net Investment (Lines 2 + 3 + 4)	$53,159,472	52,850,306	52,541,140	52,231,974	51,922,808	51,613,642	51,304,476	50,995,310	50,686,144	50,376,978	50,067,812	49,758,646	49,449,480	
6.	Average Net Investment		53,004,889	52,695,723	52,386,557	52,077,391	51,768,225	51,459,059	51,149,893	50,840,727	50,531,561	50,222,395	49,913,229	49,604,063	
7.	Return on Average Net Investment														
	a. Equity Component Grossed Up For Taxes (C)		$256,393	$254,898	$253,403	$251,907	$250,412	$248,916	$247,421	$245,925	$244,430	$242,934	$241,439	$239,943	$2,978,021
	b. Debt Component Grossed Up For Taxes (D)		75,726	75,285	74,843	74,401	73,960	73,518	73,076	72,634	72,193	71,751	71,309	70,868	879,564
8.	Investment Expenses														
	a. Depreciation (E)		$309,166	$309,166	$309,166	$309,166	$309,166	$309,166	$309,166	$309,166	$309,166	$309,166	$309,166	$309,166	$3,709,992
	b. Amortization		0	0	0	0	0	0	0	0	0	0	0	0	0
	c. Dismantlement		0	0	0	0	0	0	0	0	0	0	0	0	0
	d. Property Taxes		0	0	0	0	0	0	0	0	0	0	0	0	0
	e. Other		0	0	0	0	0	0	0	0	0	0	0	0	0
9.	Total System Recoverable Expenses (Lines 7 + 8)		$641,285	$639,349	$637,412	$635,474	$633,538	$631,600	$629,663	$627,725	$625,789	$623,851	$621,914	$619,977	$7,567,577
	a. Recoverable Costs Allocated to Energy		641,285	639,349	637,412	635,474	633,538	631,600	629,663	627,725	625,789	623,851	621,914	619,977	7,567,577
	b. Recoverable Costs Allocated to Demand		0	0	0	0	0	0	0	0	0	0	0	0	0
10.	Energy Jurisdictional Factor		1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	
11.	Demand Jurisdictional Factor		1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	
12.	Retail Energy-Related Recoverable Costs (F)		641,285	639,349	637,412	635,474	633,538	631,600	629,663	627,725	625,789	623,851	621,914	619,977	7,567,577
13.	Retail Demand-Related Recoverable Costs (G)		0	0	0	0	0	0	0	0	0	0	0	0	0
14.	Total Jurisdictional Recoverable Costs (Lines 12 + 13)		$641,285	$639,349	$637,412	$635,474	$633,538	$631,600	$629,663	$627,725	$625,789	$623,851	$621,914	$619,977	$7,567,577

Notes:
(A) Applicable depreciable base for Big Bend; account 311.51 ($22,278,982), 312.51 ($48,529,672), 315.51 ($14,063,245), and 316.51 ($847,203)
(B) Beginning CWIP balance of $1,362, 824 has been moved to from Big Bent Unit 1 SCR to Big Bend Unit 2 SCR as it relates to that project.
(C) Line 6 x 5.8046% x 1/12. Based on ROE of 10.25% and weighted income tax rate of 25.345% (expansion factor of 1.34295)
(D) Line 6 x 1.7144% x 1/12.
(E) Applicable depreciation rate is 4.1%, 4.3%, 4.8%, and 4.1%
(F) Line 9a x Line 10
(G) Line 9b x Line 11

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DOCKET NO. 20180007-EI
ECRC 2019 PROJECTION, FORM 42-4P
EXHIBIT NO. PAR-4, DOCUMENT NO. 4, PAGE 18 OF 29

Tampa Electric Company
Environmental Cost Recovery Clause (ECRC)
Calculation of the Projected Period Amount
January 2019 to December 2019

Return on Capital Investments, Depreciation and Taxes
For Project: Big Bend Unit 2 SCR
(in Dollars)

Line	Description	Beginning of Period Amount	Projected January	Projected February	Projected March	Projected April	Projected May	Projected June	Projected July	Projected August	Projected September	Projected October	Projected November	Projected December	End of Period Total
1.	Investments														
	a. Expenditures/Additions		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
	b. Clearings to Plant		1,362,824	0	0	0	0	0	0	0	0	0	0	0	1,362,824
	c. Retirements		0	0	0	0	0	0	0	0	0	0	0	0	
	d. Other		0	0	0	0	0	0	0	0	0	0	0	0	
2.	Plant-in-Service/Depreciation Base (A)	$95,175,309	$96,538,133	$96,538,133	$96,538,133	$96,538,133	$96,538,133	$96,538,133	$96,538,133	$96,538,133	$96,538,133	$96,538,133	$96,538,133	$96,538,133	
3.	Less: Accumulated Depreciation	(34,508,540)	(34,839,089)	(35,151,466)	(35,463,843)	(35,776,220)	(36,088,597)	(36,400,974)	(36,713,351)	(37,025,728)	(37,338,105)	(37,650,482)	(37,962,859)	(38,275,236)	
4.	CWIP - Non-Interest Bearing (B)	1,362,824	0	0	0	0	0	0	0	0	0	0	0	0	
5.	Net Investment (Lines 2 + 3 + 4)	$62,029,593	61,699,044	61,386,667	61,074,290	60,761,913	60,449,536	60,137,159	59,824,782	59,512,405	59,200,028	58,887,651	58,575,274	58,262,897	
6.	Average Net Investment		61,864,318	61,542,855	61,230,478	60,918,101	60,605,724	60,293,347	59,980,970	59,668,593	59,356,216	59,043,839	58,731,462	58,419,085	
7.	Return on Average Net Investment														
	a. Equity Component Grossed Up For Taxes (C)		$299,248	$297,693	$296,182	$294,671	$293,160	$291,649	$290,138	$288,627	$287,116	$285,605	$284,094	$282,583	$3,490,766
	b. Debt Component Grossed Up For Taxes (D)		88,383	87,924	87,478	87,032	86,585	86,139	85,693	85,247	84,800	84,354	83,908	83,461	1,031,004
8.	Investment Expenses														
	a. Depreciation (E)		330,549	$312,377	$312,377	$312,377	$312,377	$312,377	$312,377	$312,377	$312,377	$312,377	$312,377	$312,377	$3,766,696
	b. Amortization		0	0	0	0	0	0	0	0	0	0	0	0	0
	c. Dismantlement		0	0	0	0	0	0	0	0	0	0	0	0	0
	d. Property Taxes		0	0	0	0	0	0	0	0	0	0	0	0	0
	e. Other		0	0	0	0	0	0	0	0	0	0	0	0	0
9.	Total System Recoverable Expenses (Lines 7 + 8)		$718,180	$697,994	$696,037	$694,080	$692,122	$690,165	$688,208	$686,251	$684,293	$682,336	$680,379	$678,421	$8,288,466
	a. Recoverable Costs Allocated to Energy		718,180	697,994	696,037	694,080	692,122	690,165	688,208	686,251	684,293	682,336	680,379	678,421	8,288,466
	b. Recoverable Costs Allocated to Demand		0	0	0	0	0	0	0	0	0	0	0	0	0
10.	Energy Jurisdictional Factor		1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	
11.	Demand Jurisdictional Factor		1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	
12.	Retail Energy-Related Recoverable Costs (F)		718,180	697,994	696,037	694,080	692,122	690,165	688,208	686,251	684,293	682,336	680,379	678,421	8,288,466
13.	Retail Demand-Related Recoverable Costs (G)		0	0	0	0	0	0	0	0	0	0	0	0	0
14.	Total Jurisdictional Recoverable Costs (Lines 12 + 13)		$718,180	$697,994	$696,037	$694,080	$692,122	$690,165	$688,208	$686,251	$684,293	$682,336	$680,379	$678,421	$8,288,466

Notes:

(A) Applicable depreciable base for Big Bend; account 311.52 ($25,208,869), 312.52 ($54,456,221), 315.52 ($15,914,427), and 316.52 ($958,616).
(B) Beginning CWIP balance of $1,362, 824 has been moved to from Big Bent Unit 1 SCR to Big Bend Unit 2 SCR as it relates to that project.
(C) Line 6 x 5.8046% x 1/12. Based on ROE of 10.25% and weighted income tax rate of 25.345% (expansion factor of 1.34295)
(D) Line 6 x 1.7144% x 1/12.
(E) Applicable depreciation rates are 3.5%, 4.0%, 4.1%, and 3.7%.
(F) Line 9a x Line 10
(G) Line 9b x Line 11

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Tampa Electric Company
Environmental Cost Recovery Clause (ECRC)
Calculation of the Projected Period Amount
January 2019 to December 2019

Return on Capital Investments, Depreciation and Taxes
For Project: Big Bend Unit 3 SCR
(in Dollars)

Line	Description	Beginning of Period Amount	Projected January	Projected February	Projected March	Projected April	Projected May	Projected June	Projected July	Projected August	Projected September	Projected October	Projected November	Projected December	End of Period Total
1.	Investments														
	a. Expenditures/Additions		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
	b. Clearings to Plant		0	0	0	0	0	0	0	0	0	0	0	0	
	c. Retirements		0	0	0	0	0	0	0	0	0	0	0	0	
	d. Other		0	0	0	0	0	0	0	0	0	0	0	0	
2.	Plant-in-Service/Depreciation Base (A)	$81,764,602	$81,764,602	$81,764,602	$81,764,602	$81,764,602	$81,764,602	$81,764,602	$81,764,602	$81,764,602	$81,764,602	$81,764,602	$81,764,602	$81,764,602	
3.	Less: Accumulated Depreciation	(30,963,585)	(31,215,659)	(31,467,733)	(31,719,807)	(31,971,881)	(32,223,955)	(32,476,029)	(32,728,103)	(32,980,177)	(33,232,251)	(33,484,325)	(33,736,399)	(33,988,473)	
4.	CWIP - Non-Interest Bearing	0	0	0	0	0	0	0	0	0	0	0	0	0	
5.	Net Investment (Lines 2 + 3 + 4)	$50,801,017	50,548,943	50,296,869	50,044,795	49,792,721	49,540,647	49,288,573	49,036,499	48,784,425	48,532,351	48,280,277	48,028,203	47,776,129	
6.	Average Net Investment		50,674,980	50,422,906	50,170,832	49,918,758	49,666,684	49,414,610	49,162,536	48,910,462	48,658,388	48,406,314	48,154,240	47,902,166	
7.	Return on Average Net Investment														
	a. Equity Component Grossed Up For Taxes (B)		$245,123	$243,904	$242,685	$241,465	$240,246	$239,027	$237,807	$236,588	$235,369	$234,149	$232,930	$231,711	$2,861,004
	b. Debt Component Grossed Up For Taxes (C)		72,398	72,038	71,677	71,317	70,957	70,597	70,237	69,877	69,517	69,156	68,796	68,436	845,003
8.	Investment Expenses														
	a. Depreciation (D)		$252,074	$252,074	$252,074	$252,074	$252,074	$252,074	$252,074	$252,074	$252,074	$252,074	$252,074	$252,074	$3,024,888
	b. Amortization		0	0	0	0	0	0	0	0	0	0	0	0	0
	c. Dismantlement		0	0	0	0	0	0	0	0	0	0	0	0	0
	d. Property Taxes		0	0	0	0	0	0	0	0	0	0	0	0	0
	e. Other		0	0	0	0	0	0	0	0	0	0	0	0	0
9.	Total System Recoverable Expenses (Lines 7 + 8)		$569,595	$568,016	$566,436	$564,856	$563,277	$561,698	$560,118	$558,539	$556,960	$555,379	$553,800	$552,221	$6,730,895
	a. Recoverable Costs Allocated to Energy		569,595	568,016	566,436	564,856	563,277	561,698	560,118	558,539	556,960	555,379	553,800	552,221	6,730,895
	b. Recoverable Costs Allocated to Demand		0	0	0	0	0	0	0	0	0	0	0	0	0
10.	Energy Jurisdictional Factor		1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	
11.	Demand Jurisdictional Factor		1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	
12.	Retail Energy-Related Recoverable Costs (E)		569,595	568,016	566,436	564,856	563,277	561,698	560,118	558,539	556,960	555,379	553,800	552,221	6,730,895
13.	Retail Demand-Related Recoverable Costs (F)		0	0	0	0	0	0	0	0	0	0	0	0	0
14.	Total Jurisdictional Recoverable Costs (Lines 12 + 13)		$569,595	$568,016	$566,436	$564,856	$563,277	$561,698	$560,118	$558,539	$556,960	$555,379	$553,800	$552,221	$6,730,895

Notes:
(A) Applicable depreciable base for Big Bend; account 311.53 ($21,689,422), 312.53 ($45,559,543), 315.53 ($13,690,954), and 316.53 ($824,684).
(B) Line 6 x 5.8046% x 1/12. Based on ROE of 10.25% and weighted income tax rate of 25.345% (expansion factor of 1.34295)
(C) Line 6 x 1.7144% x 1/12.
(D) Applicable depreciation rates are 3.1%, 3.9%, 4.0%, and 3.4%
(E) Line 9a x Line 10
(F) Line 9b x Line 11

Tampa Electric Company
Environmental Cost Recovery Clause (ECRC)
Calculation of the Projected Period Amount
January 2019 to December 2019

Return on Capital Investments, Depreciation and Taxes
For Project: Big Bend Unit 4 SCR
(in Dollars)

Line	Description	Beginning of Period Amount	Projected January	Projected February	Projected March	Projected April	Projected May	Projected June	Projected July	Projected August	Projected September	Projected October	Projected November	Projected December	End of Period Total
1.	Investments														
	a. Expenditures/Additions		$0	$0	$73,000	$585,000	$585,000	$273,000	$584,000	$0	$0	$0	$0	$0	$2,100,000
	b. Clearings to Plant		0	0	0	0	0	0	0	0	0	0	0	3,016,335	3,016,335
	c. Retirements		0	0	0	0	0	0	0	0	0	0	0	0	
	d. Other		0	0	0	0	0	0	0	0	0	0	0	0	
2.	Plant-in-Service/Depreciation Base (A)	$65,312,581	$65,312,581	$65,312,581	$65,312,581	$65,312,581	$65,312,581	$65,312,581	$65,312,581	$65,312,581	$65,312,581	$65,312,581	$65,312,581	$68,328,915	
3.	Less: Accumulated Depreciation	($24,766,293)	(24,954,003)	(25,141,713)	(25,329,423)	(25,517,133)	(25,704,843)	(25,892,553)	(26,080,263)	(26,267,973)	(26,455,683)	(26,643,393)	(26,831,103)	(27,018,813)	
4.	CWIP - Non-Interest Bearing	$916,335	916,335	916,335	989,335	1,574,335	2,159,335	2,432,335	3,016,335	3,016,335	3,016,335	3,016,335	3,016,335	0	
5.	Net Investment (Lines 2 + 3 + 4)	$41,462,622	41,274,912	41,087,202	40,972,492	41,369,782	41,767,072	41,852,362	42,248,652	42,060,942	41,873,232	41,685,522	41,497,812	41,310,102	
6.	Average Net Investment		41,368,767	41,181,057	41,029,847	41,171,137	41,568,427	41,809,717	42,050,507	42,154,797	41,967,087	41,779,377	41,591,667	41,403,957	
7.	Return on Average Net Investment														
	a. Equity Component Grossed Up For Taxes (B)		$200,108	$199,200	$198,468	$199,152	$201,073	$202,241	$203,405	$203,910	$203,002	$202,094	$201,186	$200,278	$2,414,117
	b. Debt Component Grossed Up For Taxes (C)		59,102	58,834	58,618	58,820	59,387	59,732	60,076	60,225	59,957	59,689	59,421	59,152	713,013
8.	Investment Expenses														
	a. Depreciation (D)		$187,710	$187,710	$187,710	$187,710	$187,710	$187,710	$187,710	$187,710	$187,710	$187,710	$187,710	$187,710	$2,252,520
	b. Amortization		0	0	0	0	0	0	0	0	0	0	0	0	0
	c. Dismantlement		0	0	0	0	0	0	0	0	0	0	0	0	0
	d. Property Taxes		0	0	0	0	0	0	0	0	0	0	0	0	0
	e. Other		0	0	0	0	0	0	0	0	0	0	0	0	0
9.	Total System Recoverable Expenses (Lines 7 + 8)		$446,920	$445,744	$444,796	$445,682	$448,170	$449,683	$451,191	$451,845	$450,669	$449,493	$448,317	$447,140	$5,379,650
	a. Recoverable Costs Allocated to Energy		446,920	445,744	444,796	445,682	448,170	449,683	451,191	451,845	450,669	449,493	448,317	447,140	5,379,650
	b. Recoverable Costs Allocated to Demand		0	0	0	0	0	0	0	0	0	0	0	0	0
10.	Energy Jurisdictional Factor		1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	
11.	Demand Jurisdictional Factor		1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	
12.	Retail Energy-Related Recoverable Costs (E)		446,920	445,744	444,796	445,682	448,170	449,683	451,191	451,845	450,669	449,493	448,317	447,140	5,379,650
13.	Retail Demand-Related Recoverable Costs (F)		0	0	0	0	0	0	0	0	0	0	0	0	0
14.	Total Jurisdictional Recoverable Costs (Lines 12 + 13)		$446,920	$445,744	$444,796	$445,682	$448,170	$449,683	$451,191	$451,845	$450,669	$449,493	$448,317	$447,140	$5,379,650

Notes:
(A) Applicable depreciable base for Big Bend; account 311.54 ($16,857,250), 312.54 ($36,567,266), 315.54 ($10,642,027), 316.54 ($687,934), 315.40 ($558,103), and 312.44 ($3,016,335)
(B) Line 6 x 5.8046% x 1/12. Based on ROE of 10.25% and weighted income tax rate of 25.345% (expansion factor of 1.34295)
(C) Line 6 x 1.7144% x 1/12.
(D) Applicable depreciation rates are 2.4%, 3.8%, 3.9%, 3.3%, 3.7%, and 3.0%
(E) Line 9a x Line 10
(F) Line 9b x Line 11

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Tampa Electric Company
Environmental Cost Recovery Clause (ECRC)
Calculation of the Projected Period Amount
January 2019 to December 2019

Return on Capital Investments, Depreciation and Taxes
For Project: Big Bend FGD System Reliability
(in Dollars)

Line	Description	Beginning of Period Amount	Projected January	Projected February	Projected March	Projected April	Projected May	Projected June	Projected July	Projected August	Projected September	Projected October	Projected November	Projected December	End of Period Total
1.	Investments														
	a. Expenditures/Additions		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
	b. Clearings to Plant		0	0	0	0	0	0	0	0	0	0	0	0	
	c. Retirements		0	0	0	0	0	0	0	0	0	0	0	0	
	d. Other		0	0	0	0	0	0	0	0	0	0	0	0	
2.	Plant-in-Service/Depreciation Base (A)	$24,336,707	$24,336,707	$24,336,707	$24,336,707	$24,336,707	$24,336,707	$24,336,707	$24,336,707	$24,336,707	$24,336,707	$24,336,707	$24,336,707	$24,336,707	
3.	Less: Accumulated Depreciation	(5,216,370)	(5,267,679)	(5,318,988)	(5,370,297)	(5,421,606)	(5,472,915)	(5,524,224)	(5,575,533)	(5,626,842)	(5,678,151)	(5,729,460)	(5,780,769)	(5,832,078)	
4.	CWIP - Non-Interest Bearing	0	0	0	0	0	0	0	0	0	0	0	0	0	
5.	Net Investment (Lines 2 + 3 + 4)	$19,120,337	19,069,028	19,017,719	18,966,410	18,915,101	18,863,792	18,812,483	18,761,174	18,709,865	18,658,556	18,607,247	18,555,938	18,504,629	
6.	Average Net Investment		19,094,683	19,043,374	18,992,065	18,940,756	18,889,447	18,838,138	18,786,829	18,735,520	18,684,211	18,632,902	18,581,593	18,530,284	
7.	Return on Average Net Investment														
	a. Equity Component Grossed Up For Taxes (B)		$92,364	$92,116	$91,868	$91,620	$91,371	$91,123	$90,875	$90,627	$90,379	$90,130	$89,882	$89,634	$1,091,989
	b. Debt Component Grossed Up For Taxes (C)		27,280	27,207	27,133	27,060	26,987	26,913	26,840	26,767	26,694	26,620	26,547	26,474	322,522
8.	Investment Expenses														
	a. Depreciation (D)		$51,309	$51,309	$51,309	$51,309	$51,309	$51,309	$51,309	$51,309	$51,309	$51,309	$51,309	$51,309	$615,708
	b. Amortization		0	0	0	0	0	0	0	0	0	0	0	0	0
	c. Dismantlement		0	0	0	0	0	0	0	0	0	0	0	0	0
	d. Property Taxes		0	0	0	0	0	0	0	0	0	0	0	0	0
	e. Other		0	0	0	0	0	0	0	0	0	0	0	0	0
9.	Total System Recoverable Expenses (Lines 7 + 8)		$170,953	$170,632	$170,310	$169,989	$169,667	$169,345	$169,024	$168,703	$168,382	$168,059	$167,738	$167,417	$2,030,219
	a. Recoverable Costs Allocated to Energy		170,953	170,632	170,310	169,989	169,667	169,345	169,024	168,703	168,382	168,059	167,738	167,417	2,030,219
	b. Recoverable Costs Allocated to Demand		0	0	0	0	0	0	0	0	0	0	0	0	0
10.	Energy Jurisdictional Factor		1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	
11.	Demand Jurisdictional Factor		1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	
12.	Retail Energy-Related Recoverable Costs (E)		170,953	170,632	170,310	169,989	169,667	169,345	169,024	168,703	168,382	168,059	167,738	167,417	2,030,219
13.	Retail Demand-Related Recoverable Costs (F)		0	0	0	0	0	0	0	0	0	0	0	0	0
14.	Total Jurisdictional Recoverable Costs (Lines 12 + 13)		$170,953	$170,632	$170,310	$169,989	$169,667	$169,345	$169,024	$168,703	$168,382	$168,059	$167,738	$167,417	$2,030,219

Notes:

(A) Applicable depreciable base for Big Bend; account 312.45 ($22,880,499) and 312.44 ($1,456,209).
(B) Line 6 x 5.8046% x 1/12. Based on ROE of 10.25% and weighted income tax rate of 25.345% (expansion factor of 1.34295)
(C) Line 6 x 1.7144% x 1/12.
(D) Applicable depreciation rate is 2.5% and 3.0%.
(E) Line 9a x Line 10
(F) Line 9b x Line 11

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DOCKET NO. 20180007-EI
ECRC 2019 PROJECTION, FORM 42-4P
EXHIBIT NO. PAR-4, DOCUMENT NO. 4,PAGE 22 OF 29

Tampa Electric Company
Environmental Cost Recovery Clause (ECRC)
Calculation of the Projected Period Amount
January 2019 to December 2019

Return on Capital Investments, Depreciation and Taxes
For Project: Mercury Air Toxics Standards (MATS)
(in Dollars)

Line	Description	Beginning of Period Amount	Projected January	Projected February	Projected March	Projected April	Projected May	Projected June	Projected July	Projected August	Projected September	Projected October	Projected November	Projected December	End of Period Total
1.	Investments														
	a. Expenditures/Additions (A)		($350,000)	$0	$0	$0	$0	$25,000	$0	$0	$0	$0	$250,000	$0	($75,000)
	b. Clearings to Plant		0	0	0	0	0	0	0	0	0	0	0	275,000	275,000
	c. Retirements		0	0	0	0	0	0	0	0	0	0	0	0	
	d. Other - AFUDC (excl from CWIP)		0	0	0	0	0	0	0	0	0	0	0	0	
2.	Plant-in-Service/Depreciation Base (B)	$8,627,974	8,627,974	8,627,974	8,627,974	8,627,974	8,627,974	8,627,974	8,627,974	8,627,974	8,627,974	8,627,974	8,627,974	8,902,974	
3.	Less: Accumulated Depreciation	($1,420,316)	(1,442,506)	(1,464,696)	(1,486,886)	(1,509,076)	(1,531,266)	(1,553,456)	(1,575,646)	(1,597,836)	(1,620,026)	(1,642,216)	(1,664,406)	(1,686,596)	
4.	CWIP - Non-Interest Bearing	$350,000	0	0	0	0	0	25,000	25,000	25,000	25,000	25,000	275,000	0	
5.	Net Investment (Lines 2 + 3 + 4)	$7,557,658	7,185,468	7,163,278	7,141,088	7,118,898	7,096,708	7,099,518	7,077,328	7,055,138	7,032,948	7,010,758	7,238,568	7,216,378	
6.	Average Net Investment		7,371,563	7,174,373	7,152,183	7,129,993	7,107,803	7,098,113	7,088,423	7,066,233	7,044,043	7,021,853	7,124,663	7,227,473	
7.	Return on Average Net Investment														
	a. Equity Component Grossed Up For Taxes (C)		$35,657	$34,704	$34,596	$34,489	$34,382	$34,335	$34,288	$34,181	$34,073	$33,966	$34,463	$34,960	$414,094
	b. Debt Component Grossed Up For Taxes (D)		10,532	10,250	10,218	10,186	10,155	10,141	10,127	10,095	10,064	10,032	10,179	10,326	122,305
8.	Investment Expenses														
	a. Depreciation (E)		22,190	22,190	22,190	22,190	22,190	22,190	22,190	22,190	22,190	22,190	22,190	22,190	$266,280
	b. Amortization		0	0	0	0	0	0	0	0	0	0	0	0	0
	c. Dismantlement		0	0	0	0	0	0	0	0	0	0	0	0	0
	d. Property Taxes		0	0	0	0	0	0	0	0	0	0	0	0	0
	e. Other		0	0	0	0	0	0	0	0	0	0	0	0	0
9.	Total System Recoverable Expenses (Lines 7 + 8)		$68,379	$67,144	$67,004	$66,865	$66,727	$66,666	$66,605	$66,466	$66,327	$66,188	$66,832	$67,476	$802,679
	a. Recoverable Costs Allocated to Energy		68,379	67,144	67,004	66,865	66,727	66,666	66,605	66,466	66,327	66,188	66,832	67,476	802,679
	b. Recoverable Costs Allocated to Demand		0	0	0	0	0	0	0	0	0	0	0	0	0
10.	Energy Jurisdictional Factor		1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	
11.	Demand Jurisdictional Factor		1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	
12.	Retail Energy-Related Recoverable Costs (F)		68,379	67,144	67,004	66,865	66,727	66,666	66,605	66,466	66,327	66,188	66,832	67,476	802,679
13.	Retail Demand-Related Recoverable Costs (G)		0	0	0	0	0	0	0	0	0	0	0	0	0
14.	Total Jurisdictional Recoverable Costs (Lines 12 + 13)		$68,379	$67,144	$67,004	$66,865	$66,727	$66,666	$66,605	$66,466	$66,327	$66,188	$66,832	$67,476	$802,679

Notes:
(A) $350,000 of expenditures included in CWIP for the 2018 Actual/Estimate will not be spent until later in 2019 and 2020.
(B) Applicable depreciable base for Big Bend and Polk; accounts 312.44 ($3,427,481), 341.80 ($26,150), 315.40 ($1,226,949), 315.41 ($138,853), 315.42 ($138,853), 312.45 ($2,053,017), 312.46 ($1,242,315), 315.44 ($291,035), 315.45
(C) Line 6 x 5.8046% x 1/12. Based on ROE of 10.25% and weighted income tax rate of 25.345% (expansion factor of 1.34295)
(D) Line 6 x 1.7144% x 1/12.
(E) Applicable depreciation rate is 3.0%, 2.2%, 3.7%, 3.5%, 3.3%, 2.5%, 3.3%, 3.2%, 3.1%, 3.5%, 2.9%, 3.3%, 3.8% and 14.3%
(F) Line 9a x Line 10
(G) Line 9b x Line 11

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DOCKET NO. 20180007-EI
ECRC 2019 PROJECTION, FORM 42-4P
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Tampa Electric Company
Environmental Cost Recovery Clause (ECRC)
Calculation of the Projected Period Amount
January 2019 to December 2019

For Project: SO_2 Emissions Allowances
(in Dollars)

Line	Description	Beginning of Period Amount	Projected January	Projected February	Projected March	Projected April	Projected May	Projected June	Projected July	Projected August	Projected September	Projected October	Projected November	Projected December	End of Period Total
1.	Investments														
	a. Purchases/Transfers		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
	b. Sales/Transfers		0	0	0	0	0	0	0	0	0	0	0	0	
	c. Auction Proceeds/Other		0	0	0	0	0	0	0	0	0	0	0	0	
2.	Working Capital Balance														
	a. FERC 158.1 Allowance Inventory	$0	0	0	0	0	0	0	0	0	0	0	0	0	
	b. FERC 158.2 Allowances Withheld	0	0	0	0	0	0	0	0	0	0	0	0	0	
	c. FERC 182.3 Other Regl. Assets - Losses	0	0	0	0	0	0	0	0	0	0	0	0	0	
	d. FERC 254.01 Regulatory Liabilities - Gains	(34,440)	(34,395)	(34,395)	(34,395)	(34,350)	(34,350)	(34,350)	(34,304)	(34,304)	(34,304)	(34,259)	(34,259)	(34,259)	
3.	Total Working Capital Balance	($34,440)	(34,395)	(34,395)	(34,395)	(34,350)	(34,350)	(34,350)	(34,304)	(34,304)	(34,304)	(34,259)	(34,259)	(34,259)	
4.	Average Net Working Capital Balance		(34,417)	(34,395)	(34,395)	(34,372)	(34,350)	(34,350)	(34,327)	(34,304)	(34,304)	(34,282)	(34,259)	(34,259)	
5.	Return on Average Net Working Capital Balance														
	a. Equity Component Grossed Up For Taxes (A)		($166)	($166)	($166)	($166)	($166)	($166)	($166)	($166)	($166)	($166)	($166)	($166)	($1,992)
	b. Debt Component Grossed Up For Taxes (B)		(49)	(49)	(49)	(49)	(49)	(49)	(49)	(49)	(49)	(49)	(49)	(49)	(588)
6.	Total Return Component		(215)	(215)	(215)	(215)	(215)	(215)	(215)	(215)	(215)	(215)	(215)	(215)	(2,580)
7.	Expenses:														
	a. Gains		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
	b. Losses		0	0	0	0	0	0	0	0	0	0	0	0	0
	c. SO_2 Allowance Expense		(33)	12	12	(33)	12	12	(33)	12	12	(33)	12	12	(36)
8.	Net Expenses (D)		(33)	12	12	(33)	12	12	(33)	12	12	(33)	12	12	(36)
9.	Total System Recoverable Expenses (Lines 6 + 8)		($248)	($203)	($203)	($248)	($203)	($203)	($248)	($203)	($203)	($248)	($203)	($203)	($2,616)
	a. Recoverable Costs Allocated to Energy		(248)	(203)	(203)	(248)	(203)	(203)	(248)	(203)	(203)	(248)	(203)	(203)	(2,616)
	b. Recoverable Costs Allocated to Demand		0	0	0	0	0	0	0	0	0	0	0	0	0
10.	Energy Jurisdictional Factor		1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	
11.	Demand Jurisdictional Factor		1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	
12.	Retail Energy-Related Recoverable Costs (E)		(248)	(203)	(203)	(248)	(203)	(203)	(248)	(203)	(203)	(248)	(203)	(203)	(2,616)
13.	Retail Demand-Related Recoverable Costs (F)		0	0	0	0	0	0	0	0	0	0	0	0	0
14.	Total Juris. Recoverable Costs (Lines 12 + 13)		($248)	($203)	($203)	($248)	($203)	($203)	($248)	($203)	($203)	($248)	($203)	($203)	($2,616)

Notes:
(A) Line 6 x 5.8046% x 1/12. Based on ROE of 10.25% and weighted income tax rate of 25.345% (expansion factor of 1.34295)
(B) Line 6 x 1.7144% x 1/12.
(C) Line 6 is reported on Schedule 7E.
(D) Line 8 is reported on Schedule 5E.
(E) Line 9a x Line 10
(F) Line 9b x Line 11

* Totals on this schedule may not foot due to rounding.

Tampa Electric Company
Environmental Cost Recovery Clause (ECRC)
Calculation of the Projected Period Amount
January 2019 to December 2019

Return on Capital Investments, Depreciation and Taxes
For Project: Big Bend Gypsum Storage Facility
(in Dollars)

Line	Description	Beginning of Period Amount	Projected January	Projected February	Projected March	Projected April	Projected May	Projected June	Projected July	Projected August	Projected September	Projected October	Projected November	Projected December	End of Period Total
1.	Investments														
	a. Expenditures/Additions		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
	b. Clearings to Plant		0	0	0	0	0	0	0	0	0	0	0	0	
	c. Retirements		0	0	0	0	0	0	0	0	0	0	0	0	
	d. Other - AFUDC (excl from CWIP)		0	0	0	0	0	0	0	0	0	0	0	0	
2.	Plant-in-Service/Depreciation Base (A)	$21,467,359	$21,467,359	$21,467,359	$21,467,359	$21,467,359	$21,467,359	$21,467,359	$21,467,359	$21,467,359	$21,467,359	$21,467,359	$21,467,359	$21,467,359	
3.	Less: Accumulated Depreciation	(2,532,327)	(2,584,206)	(2,636,085)	(2,687,964)	(2,739,843)	(2,791,722)	(2,843,601)	(2,895,480)	(2,947,359)	(2,999,238)	(3,051,117)	(3,102,996)	(3,154,875)	
4.	CWIP - Non-Interest Bearing	0	0	0	0	0	0	0	0	0	0	0	0	0	
5.	Net Investment (Lines 2 + 3 + 4)	$18,935,032	18,883,153	18,831,274	18,779,395	18,727,516	18,675,637	18,623,758	18,571,879	18,520,000	18,468,121	18,416,242	18,364,363	18,312,484	
6.	Average Net Investment		18,909,093	18,857,214	18,805,335	18,753,456	18,701,577	18,649,698	18,597,819	18,545,940	18,494,061	18,442,182	18,390,303	18,338,424	
7.	Return on Average Net Investment														
	a. Equity Component Grossed Up For Taxes (B)		$91,466	$91,215	$90,965	$90,714	$90,463	$90,212	$89,961	$89,710	$89,459	$89,208	$88,957	$88,706	$1,081,036
	b. Debt Component Grossed Up For Taxes (C)		27,015	26,941	26,867	26,792	26,718	26,644	26,570	26,496	26,422	26,348	26,274	26,199	319,286
8.	Investment Expenses														
	a. Depreciation (D)		51,879	51,879	51,879	51,879	51,879	51,879	51,879	51,879	51,879	51,879	51,879	51,879	$622,548
	b. Amortization		0	0	0	0	0	0	0	0	0	0	0	0	0
	c. Dismantlement		0	0	0	0	0	0	0	0	0	0	0	0	0
	d. Property Taxes		0	0	0	0	0	0	0	0	0	0	0	0	0
	e. Other		0	0	0	0	0	0	0	0	0	0	0	0	0
9.	Total System Recoverable Expenses (Lines 7 + 8)		$170,360	$170,035	$169,711	$169,385	$169,060	$168,735	$168,410	$168,085	$167,760	$167,435	$167,110	$166,784	$2,022,870
	a. Recoverable Costs Allocated to Energy		170,360	170,035	169,711	169,385	169,060	168,735	168,410	168,085	167,760	167,435	167,110	166,784	2,022,870
	b. Recoverable Costs Allocated to Demand		0	0	0	0	0	0	0	0	0	0	0	0	0
10.	Energy Jurisdictional Factor		1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	
11.	Demand Jurisdictional Factor		1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	
12.	Retail Energy-Related Recoverable Costs (E)		170,360	170,035	169,711	169,385	169,060	168,735	168,410	168,085	167,760	167,435	167,110	166,784	2,022,870
13.	Retail Demand-Related Recoverable Costs (F)		0	0	0	0	0	0	0	0	0	0	0	0	0
14.	Total Jurisdictional Recoverable Costs (Lines 12 + 13)		$170,360	$170,035	$169,711	$169,385	$169,060	$168,735	$168,410	$168,085	$167,760	$167,435	$167,110	$166,784	$2,022,870

Notes:
(A) Applicable depreciable base for Big Bend; accounts 311.40
(B) Line 6 x 5.8046% x 1/12. Based on ROE of 10.25% and weighted income tax rate of 25.345% (expansion factor of 1.34295)
(C) Line 6 x 1.7144% x 1/12.
(D) Applicable depreciation rate is 2.9%
(E) Line 9a x Line 10
(F) Line 9b x Line 11

DOCKET NO. 20180007-EI
ECRC 2019 PROJECTION, FORM 42-4P
EXHIBIT NO. PAR-4, DOCUMENT NO. 4, PAGE 25 OF 29

Tampa Electric Company
Environmental Cost Recovery Clause (ECRC)
Calculation of the Projected Period Amount
January 2019 to December 2019

Return on Capital Investments, Depreciation and Taxes
For Project: Big Bend CCR Rule-Phase I
(in Dollars)

Line	Description	Beginning of Period Amount	Projected January	Projected February	Projected March	Projected April	Projected May	Projected June	Projected July	Projected August	Projected September	Projected October	Projected November	Projected December	End of Period Total
1.	Investments														
	a. Expenditures/Additions		$50,000	$250,000	$250,000	$0	$0	$0	$0	$0	$0	$50,000	$750,000	$750,000	$2,100,000
	b. Clearings to Plant (A)		(1,709,679)	0	0	0	0	0	0	0	0	0	0	0	(1,709,679)
	c. Retirements		0	0	0	0	0	0	0	0	0	0	0	0	
	d. Other - AFUDC (excl from CWIP)		0	0	0	0	0	0	0	0	0	0	0	0	
2.	Plant-in-Service/Depreciation Base (B)	$2,378,414	668,735	668,735	668,735	668,735	668,735	668,735	668,735	668,735	668,735	668,735	668,735	668,735	
3.	Less: Accumulated Depreciation	($41,011)	(29,833)	(31,505)	(33,177)	(34,849)	(36,521)	(38,193)	(39,865)	(41,537)	(43,209)	(44,881)	(46,553)	(48,225)	
4.	CWIP - Non-Interest Bearing	$0	1,759,679	2,009,679	2,259,679	2,259,679	2,259,679	2,259,679	2,259,679	2,259,679	2,259,679	2,309,679	3,059,679	3,809,679	
5.	Net Investment (Lines 2 + 3 + 4)	$2,337,403	2,398,581	2,646,909	2,895,237	2,893,565	2,891,893	2,890,221	2,888,549	2,886,877	2,885,205	2,933,533	3,681,861	4,430,189	
6.	Average Net Investment		2,367,992	2,522,745	2,771,073	2,894,401	2,892,729	2,891,057	2,889,385	2,887,713	2,886,041	2,909,369	3,307,697	4,056,025	
7.	Return on Average Net Investment														
	a. Equity Component Grossed Up For Taxes (C)		$11,454	$12,203	$13,404	$14,001	$13,993	$13,985	$13,976	$13,968	$13,960	$14,073	$16,000	$19,620	$170,637
	b. Debt Component Grossed Up For Taxes (D)		3,383	3,604	3,959	4,135	4,133	4,130	4,128	4,126	4,123	4,157	4,726	5,795	50,399
8.	Investment Expenses														
	a. Depreciation (E)		1,672	1,672	1,672	1,672	1,672	1,672	1,672	1,672	1,672	1,672	1,672	1,672	$20,064
	b. Amortization		0	0	0	0	0	0	0	0	0	0	0	0	0
	c. Dismantlement		0	0	0	0	0	0	0	0	0	0	0	0	0
	d. Property Taxes		0	0	0	0	0	0	0	0	0	0	0	0	0
	e. Other		0	0	0	0	0	0	0	0	0	0	0	0	0
9.	Total System Recoverable Expenses (Lines 7 + 8)		$16,509	$17,479	$19,035	$19,808	$19,798	$19,787	$19,776	$19,766	$19,755	$19,902	$22,398	$27,087	$241,100
	a. Recoverable Costs Allocated to Energy		0	0	0	0	0	0	0	0	0	0	0	0	0
	b. Recoverable Costs Allocated to Demand		16,509	17,479	19,035	19,808	19,798	19,787	19,776	19,766	19,755	19,902	22,398	27,087	241,100
10.	Energy Jurisdictional Factor		1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	
11.	Demand Jurisdictional Factor		1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	
12.	Retail Energy-Related Recoverable Costs (F)		0	0	0	0	0	0	0	0	0	0	0	0	0
13.	Retail Demand-Related Recoverable Costs (G)		16,509	17,479	19,035	19,808	19,798	19,787	19,776	19,766	19,755	19,902	22,398	27,087	241,100
14.	Total Jurisdictional Recoverable Costs (Lines 12 + 13)		$16,509	$17,479	$19,035	$19,808	$19,798	$19,787	$19,776	$19,766	$19,755	$19,902	$22,398	$27,087	$241,100

Notes:
(A) $1,709,679 of expenditures included in Clearings to Plant CWIP for the 2018 Actual/Estimate projection will not be cleared to plant until after 2019. The adjustment is made in January 2019 amounts.
(B) Applicable depreciable base for Big Bend; accounts 312.44
(C) Line 6 x 5.8046% x 1/12. Based on ROE of 10.25% and weighted income tax rate of 25.345% (expansion factor of 1.34295)
(D) Line 6 x 1.7144% x 1/12.
(E) Applicable depreciation rate is 3.0%
(F) Line 9a x Line 10
(G) Line 9b x Line 11

Tampa Electric Company
Environmental Cost Recovery Clause (ECRC)
Calculation of the Projected Period Amount
January 2019 to December 2019

Return on Capital Investments, Depreciation and Taxes
For Project: CCR Rule-Phase II
(in Dollars)

Line	Description	Beginning of Period Amount	Projected January	Projected February	Projected March	Projected April	Projected May	Projected June	Projected July	Projected August	Projected September	Projected October	Projected November	Projected December	End of Period Total
1.	Investments														
	a. Expenditures/Additions		$100,000	$65,000	$65,000	$0	$0	$0	$0	$0	$0	$0	$0	$0	$230,000
	b. Clearings to Plant		0	0	0	0	0	0	0	0	0	0	0	0	
	c. Retirements		0	0	0	0	0	0	0	0	0	0	0	0	
	d. Other - AFUDC (excl from CWIP)		0	0	0	0	0	0	0	0	0	0	0	0	
2.	Plant-in-Service/Depreciation Base (A)	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	
3.	Less: Accumulated Depreciation	0	0	0	0	0	0	0	0	0	0	0	0	0	
4.	CWIP - Non-Interest Bearing	115,595	215,595	280,595	345,595	345,595	345,595	345,595	345,595	345,595	345,595	345,595	345,595	345,595	
5.	Net Investment (Lines 2 + 3 + 4)	$115,595	215,595	280,595	345,595	345,595	345,595	345,595	345,595	345,595	345,595	345,595	345,595	345,595	
6.	Average Net Investment		165,595	248,095	313,095	345,595	345,595	345,595	345,595	345,595	345,595	345,595	345,595	345,595	
7.	Return on Average Net Investment														
	a. Equity Component Grossed Up For Taxes (B)		$801	$1,200	$1,514	$1,672	$1,672	$1,672	$1,672	$1,672	$1,672	$1,672	$1,672	$1,672	$18,563
	b. Debt Component Grossed Up For Taxes (C)		237	354	447	494	494	494	494	494	494	494	494	494	5,484
8.	Investment Expenses														
	a. Depreciation (D)		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
	b. Amortization		0	0	0	0	0	0	0	0	0	0	0	0	0
	c. Dismantlement		0	0	0	0	0	0	0	0	0	0	0	0	0
	d. Property Taxes		0	0	0	0	0	0	0	0	0	0	0	0	0
	e. Other		0	0	0	0	0	0	0	0	0	0	0	0	0
9.	Total System Recoverable Expenses (Lines 7 + 8)		$1,038	$1,554	$1,961	$2,166	$2,166	$2,166	$2,166	$2,166	$2,166	$2,166	$2,166	$2,166	$24,047
	a. Recoverable Costs Allocated to Energy		0	0	0	0	0	0	0	0	0	0	0	0	0
	b. Recoverable Costs Allocated to Demand		1,038	1,554	1,961	2,166	2,166	2,166	2,166	2,166	2,166	2,166	2,166	2,166	24,047
10.	Energy Jurisdictional Factor		1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	
11.	Demand Jurisdictional Factor		1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	
12.	Retail Energy-Related Recoverable Costs (E)		0	0	0	0	0	0	0	0	0	0	0	0	0
13.	Retail Demand-Related Recoverable Costs (F)		1,038	1,554	1,961	2,166	2,166	2,166	2,166	2,166	2,166	2,166	2,166	2,166	24,047
14.	Total Jurisdictional Recoverable Costs (Lines 12 + 13)		$1,038	$1,554	$1,961	$2,166	$2,166	$2,166	$2,166	$2,166	$2,166	$2,166	$2,166	$2,166	$24,047

Notes:
(A) Applicable depreciable base for Big Bend; accounts 312.44
(B) Line 6 x 5.8046% x 1/12. Based on ROE of 10.25% and weighted income tax rate of 25.345% (expansion factor of 1.34295)
(C) Line 6 x 1.7144% x 1/12.
(D) Applicable depreciation rate is 3.0%
(E) Line 9a x Line 10
(F) Line 9b x Line 11

Tampa Electric Company
Environmental Cost Recovery Clause (ECRC)
Calculation of the Projected Period Amount
January 2019 to December 2019

Return on Capital Investments, Depreciation and Taxes
For Project: Big Bend ELG Rule Compliance
(in Dollars)

Line	Description	Beginning of Period Amount	Projected January	Projected February	Projected March	Projected April	Projected May	Projected June	Projected July	Projected August	Projected September	Projected October	Projected November	Projected December	End of Period Total
1.	Investments														
	a. Expenditures/Additions		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
	b. Clearings to Plant		0	0	0	0	0	0	0	0	0	0	0	0	
	c. Retirements		0	0	0	0	0	0	0	0	0	0	0	0	
	d. Other - AFUDC (excl from CWIP)		0	0	0	0	0	0	0	0	0	0	0	0	
2.	Plant-in-Service/Depreciation Base (A)	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	
3.	Less: Accumulated Depreciation	0	0	0	0	0	0	0	0	0	0	0	0	0	
4.	CWIP - Non-Interest Bearing	150,000	150,000	150,000	150,000	150,000	150,000	150,000	150,000	150,000	150,000	150,000	150,000	150,000	
5.	Net Investment (Lines 2 + 3 + 4)	$150,000	150,000	150,000	150,000	150,000	150,000	150,000	150,000	150,000	150,000	150,000	150,000	150,000	
6.	Average Net Investment		150,000	150,000	150,000	150,000	150,000	150,000	150,000	150,000	150,000	150,000	150,000	150,000	
7.	Return on Average Net Investment														
	a. Equity Component Grossed Up For Taxes (B)		$726	$726	$726	$726	$726	$726	$726	$726	$726	$726	$726	$726	$8,712
	b. Debt Component Grossed Up For Taxes (C)		214	214	214	214	214	214	214	214	214	214	214	214	2,568
8.	Investment Expenses														
	a. Depreciation (D)		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
	b. Amortization		0	0	0	0	0	0	0	0	0	0	0	0	0
	c. Dismantlement		0	0	0	0	0	0	0	0	0	0	0	0	0
	d. Property Taxes		0	0	0	0	0	0	0	0	0	0	0	0	0
	e. Other		0	0	0	0	0	0	0	0	0	0	0	0	0
9.	Total System Recoverable Expenses (Lines 7 + 8)		$940	$940	$940	$940	$940	$940	$940	$940	$940	$940	$940	$940	$11,280
	a. Recoverable Costs Allocated to Energy		0	0	0	0	0	0	0	0	0	0	0	0	0
	b. Recoverable Costs Allocated to Demand		940	940	940	940	940	940	940	940	940	940	940	940	11,280
10.	Energy Jurisdictional Factor		1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	
11.	Demand Jurisdictional Factor		1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	
12.	Retail Energy-Related Recoverable Costs (E)		0	0	0	0	0	0	0	0	0	0	0	0	0
13.	Retail Demand-Related Recoverable Costs (F)		940	940	940	940	940	940	940	940	940	940	940	940	11,280
14.	Total Jurisdictional Recoverable Costs (Lines 12 + 13)		$940	$940	$940	$940	$940	$940	$940	$940	$940	$940	$940	$940	$11,280

Notes:
(A) Applicable depreciable base for Big Bend; accounts 312.45
(B) Line 6 x 5.8046% x 1/12. Based on ROE of 10.25% and weighted income tax rate of 25.345% (expansion factor of 1.34295)
(C) Line 6 x 1.7144% x 1/12.
(D) Applicable depreciation rate is 2.5%
(E) Line 9a x Line 10
(F) Line 9b x Line 11

Tampa Electric Company
Environmental Cost Recovery Clause (ECRC)
Calculation of the Projected Period Amount
January 2019 to December 2019

Return on Capital Investments, Depreciation and Taxes
For Project: Big Bend Unit 1 Section 316(b) Impingement Mortality
(in Dollars)

Line	Description	Beginning of Period Amount	Projected January	Projected February	Projected March	Projected April	Projected May	Projected June	Projected July	Projected August	Projected September	Projected October	Projected November	Projected December	End of Period Total
1.	Investments														
	a. Expenditures/Additions		$250,000	$250,000	$250,000	$250,000	$250,000	$250,000	$250,000	$250,000	$250,000	$250,000	$250,000	$250,000	$3,000,000
	b. Clearings to Plant		0	0	0	0	0	0	0	0	0	0	0	5,325,000	
	c. Retirements		0	0	0	0	0	0	0	0	0	0	0	0	
	d. Other - AFUDC (excl from CWIP)		0	0	0	0	0	0	0	0	0	0	0	0	
2.	Plant-in-Service/Depreciation Base (A)	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$5,325,000	
3.	Less: Accumulated Depreciation	0	0	0	0	0	0	0	0	0	0	0	0	0	
4.	CWIP - Non-Interest Bearing	2,475,000	2,725,000	2,975,000	3,225,000	3,475,000	3,725,000	3,975,000	4,225,000	4,475,000	4,725,000	4,975,000	5,225,000	150,000	
5.	Net Investment (Lines 2 + 3 + 4)	$2,475,000	2,725,000	2,975,000	3,225,000	3,475,000	3,725,000	3,975,000	4,225,000	4,475,000	4,725,000	4,975,000	5,225,000	5,475,000	
6.	Average Net Investment		2,600,000	2,850,000	3,100,000	3,350,000	3,600,000	3,850,000	4,100,000	4,350,000	4,600,000	4,850,000	5,100,000	5,350,000	
7.	Return on Average Net Investment														
	a. Equity Component Grossed Up For Taxes (B)		$12,577	$13,786	$14,995	$16,205	$17,414	$18,623	$19,832	$21,042	$22,251	$23,460	$24,670	$25,879	$230,734
	b. Debt Component Grossed Up For Taxes (C)		3,715	4,072	4,429	4,786	5,143	5,500	5,858	6,215	6,572	6,929	7,286	7,643	68,148
8.	Investment Expenses														
	a. Depreciation (D)		-	-	-	-	-	-	-	-	-	-	-	-	-
	b. Amortization		0	0	0	0	0	0	0	0	0	0	0	0	0
	c. Dismantlement		0	0	0	0	0	0	0	0	0	0	0	0	0
	d. Property Taxes		0	0	0	0	0	0	0	0	0	0	0	0	0
	e. Other		0	0	0	0	0	0	0	0	0	0	0	0	0
9.	Total System Recoverable Expenses (Lines 7 + 8)		$16,292	$17,858	$19,424	$20,991	$22,557	$24,123	$25,690	$27,257	$28,823	$30,389	$31,956	$33,522	$298,882
	a. Recoverable Costs Allocated to Energy		0	0	0	0	0	0	0	0	0	0	0	0	0
	b. Recoverable Costs Allocated to Demand		16,292	17,858	19,424	20,991	22,557	24,123	25,690	27,257	28,823	30,389	31,956	33,522	298,882
10.	Energy Jurisdictional Factor		1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	
11.	Demand Jurisdictional Factor		1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	
12.	Retail Energy-Related Recoverable Costs (E)		0	0	0	0	0	0	0	0	0	0	0	0	0
13.	Retail Demand-Related Recoverable Costs (F)		16,292	17,858	19,424	20,991	22,557	24,123	25,690	27,257	28,823	30,389	31,956	33,522	298,882
14.	Total Jurisdictional Recoverable Costs (Lines 12 + 13)		$16,292	$17,858	$19,424	$20,991	$22,557	$24,123	$25,690	$27,257	$28,823	$30,389	$31,956	$33,522	$298,882

Notes:
(A) Applicable depreciable base for Big Bend; accounts 312.41 ($2,662,500) and 312.42 ($2,662,500)
(B) Line 6 x 5.8046% x 1/12. Based on ROE of 10.25% and weighted income tax rate of 25.345% (expansion factor of 1.34295)
(C) Line 6 x 1.7144% x 1/12.
(D) Applicable depreciation rate is 4.0% and 3.7%
(E) Line 9a x Line 10
(F) Line 9b x Line 11

Tampa Electric Company
Environmental Cost Recovery Clause
January 2019 through December 2019
Description and Progress Report for
Environmental Compliance Activities and Projects

Project Title: Big Bend Unit 3 Flue Gas Desulfurization Integration

Project Description:

This project involved the integration of Big Bend Unit 3 flue gases into the Big Bend Unit 4 Flue Gas Desulfurization ("FGD") system. The integration was accomplished by installing interconnecting ductwork between Unit 3 precipitator outlet ducts and the Unit 4 FGD inlet duct. The Unit 4 FGD outlet duct was interconnected with the Unit 3 chimney via new ductwork and a new stack breaching. New ductwork, linings, isolation dampers, support steel, and stack annulus pressurization fans were procured and installed. Modifications to the materials handling systems and controls were also necessary.

Project Accomplishments:

Fiscal Expenditures: The actual/estimated depreciation plus return for the period January 2018 through December 2018, is $960,463 compared to the original projection of $1,063,216. The variance is due to the TCJA tax rate change from 35 percent to 21 percent.

The actual/estimated O&M expense for the period January 2018 through December 2018 is $1,894,681 compared to the original projection of $4,423,789. The variance is due to greater operation on natural gas, compared to the original projection. This reduces the expected need for consumables and maintenance.

Progress Summary: This project was approved by the Commission in Docket No. 19960688-EI, Order No. PSC-1996-1048-FOF-EI, issued August 14, 1996. The project is complete and in service.

Projections: Estimated depreciation plus return for the period January 2019 through December 2019 is $932,808.

Estimated O&M costs for the period January 2019 through December 2019 are $709,500.

Tampa Electric Company
Environmental Cost Recovery Clause
January 2019 through December 2019
Description and Progress Report for
Environmental Compliance Activities and Projects

Project Title: Big Bend Units 1 & 2 Flue Gas Conditioning

Project Description:

The existing electrostatic precipitators were not designed for the range of fuels needed for compliance with the Clean Air Act Amendments ("CAAA"). Flue gas conditioning was required to assure operation of the generating units in accordance with applicable permits and regulations. This equipment is still required to ensure compliance with the CAAA in the event the FGD system on Units 1 & 2 is not operating.

The project involved the addition of molten sulfur unloading, storage and conveying to sulfur burners and catalytic converters where SO_2 is converted to SO_3. The control and injection system then injects this into the ductwork ahead of the electrostatic precipitators.

Project Accomplishments:

Fiscal Expenditures: The actual/estimated depreciation plus return for the period January 2018 through December 2018 is $249,611 compared to the original projection of $280,951. The variance is due to the TCJA tax rate change from 35 percent to 21 percent.

There was no actual/estimated O&M expense projected, nor any original projection for the period January 2018 through December 2018.

Progress Summary: This project was approved by the Commission in Docket No. 19960688-EI, Order No. PSC-1996-1048-FOF-EI, issued August 14, 1996. The project is complete and in service.

Projections: Estimated depreciation plus return for the period January 2019 through December 2019 is $234,889.

There are no O&M costs projected for the period of January 2019 through December 2019.

Tampa Electric Company
Environmental Cost Recovery Clause
January 2019 through December 2019
Description and Progress Report for
Environmental Compliance Activities and Projects

Project Title: Big Bend Unit 4 Continuous Emissions Monitors

Project Description:

Continuous emissions monitors ("CEMs") were installed on the flue gas inlet and outlet of Big Bend Unit 4 to monitor compliance with the CAAA requirements. The monitors are capable of measuring, recording and electronically reporting SO_2, NO_x and volumetric gas flow out of the stack. The project consisted of monitors, a CEM building, the CEMs control and power cables to supply a complete system.

40 CFR Part 75 includes the general requirements for the installation, certification, operation and maintenance of CEMs and specific requirements for the monitoring of pollutants, opacity and volumetric flow. These regulations are very comprehensive and specific as to the requirements for CEMs, and in essence, they define the components needed and their configuration.

Project Accomplishment:

Fiscal Expenditures: The actual/estimated depreciation plus return for the period January 2018 through December 2018 is $51,105 compared to the original projection of $55,016. The variance is due to the TCJA tax rate change from 35 percent to 21 percent.

Progress Summary: This project was approved by the Commission in Docket No. 19960688-EI, Order No. PSC-1996-1048-FOF-EI, issued August 14, 1996. The project is complete and in service.

Projections: Estimated depreciation plus return for the period January 2019 through December 2019 is $48,959.

Tampa Electric Company
Environmental Cost Recovery Clause
January 2019 through December 2019
Description and Progress Report for
Environmental Compliance Activities and Projects

Project Title: Big Bend Unit 1 Classifier Replacement

Project Description:

The boiler modifications at Big Bend Unit 1 are part of Tampa Electric's NO_X compliance strategy for Phase II of the CAAA. The classifier replacements optimize coal fineness by providing a uniform particle size. This finer classification, combined with the equalized distribution of coal to outlet pipes and furnaces, enables a uniform, staged combustion. As a result, firing systems operate at lower NO_X levels.

Project Accomplishments:

Fiscal Expenditures: The actual/estimated depreciation plus return for the period January 2018 through December 2018 is $80,406 compared to the original projection of $85,047. The variance is due to the TCJA tax rate change from 35 percent to 21 percent.

Progress Summary: This project was approved by the Commission in Docket No. 19980007-EI, Order No. PSC-1998-1764-FOF-EI, issued December 31, 1998. The project is complete and in service.

Projections: Estimated depreciation plus return for the period January 2019 through December 2019 is $76,373

Tampa Electric Company
Environmental Cost Recovery Clause
January 2019 through December 2019
Description and Progress Report for
Environmental Compliance Activities and Projects

Project Title: Big Bend Unit 2 Classifier Replacement

Project Description:

The boiler modifications at Big Bend Unit 2 are part of Tampa Electric's NO_X compliance strategy for Phase II of the CAAA. The classifier replacements optimize coal fineness by providing a more uniform particle size. This finer classification, combined with the equalized distribution of coal to outlet pipes and furnaces, enables a uniform, staged combustion. As a result, firing systems operate at lower NO_X levels.

Project Accomplishments:

Fiscal Expenditures: The actual/estimated depreciation plus return for the period January 2018 through December 2018 is $58,125 compared to the original projection of $61,751. The variance is due to the TCJA tax rate change from 35 percent to 21 percent.

Progress Summary: This project was approved by the Commission in Docket No. 19980007-EI, Order No. PSC-1998-1764-FOF-EI, issued December 31, 1998. The project is complete and in service.

Projections: Estimated depreciation plus return for the period January 2019 through December 2019 is $55,324.

Tampa Electric Company
Environmental Cost Recovery Clause
January 2019 through December 2019
Description and Progress Report for
Environmental Compliance Activities and Projects

Project Title: Big Bend Units 1 & 2 FGD

Project Description:

The Big Bend Units 1 & 2 FGD system consists of equipment capable of removing SO_2 from the flue gas generated by the combustion of coal. The FGD was installed in order to comply with Phase II of the CAAA. Compliance with Phase II is required by January 1, 2000. The CAAA impose SO_2 emission limits on existing steam electric units with an output capacity of greater than 25 megawatts and all new utility units. Tampa Electric conducted an exhaustive analysis of options to comply with Phase II of the CAAA that culminated in the selection of the FGD project to serve Big Bend Units 1 & 2.

Project Accomplishments:

Fiscal Expenditures: The actual/estimated depreciation plus return for the period January 2018 through December 2018 is $6,053,894 compared to the original projection of $6,674,906. The variance is due to the TCJA tax rate change from 35 percent to 21 percent.

The actual/estimated O&M expense for the period January 2018 through December 2018 is $570,804 compared to the original estimate of $2,200,000, resulting in a variance of -74.1 percent. This variance is due to Big Bend Units 1 and 2 burning more natural gas and less coal than projected, which reduced the consumables and maintenance needed.

Progress Summary: This project was approved by the Commission in Docket No. 19980693-EI, Order No. PSC-1999-0075-FOF-EI, issued January 11, 1999. The project is complete and in service.

Projections: Estimated depreciation plus return for the period January 2019 through December 2019 is $5,809,756.

Estimated O&M costs for the period January 2019 through December 2019 are $680,000.

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Project Title: Big Bend Section 114 Mercury Testing Platform

Project Description:

The Mercury Emissions Information Collection Effort is mandated by the EPA. The EPA asserts that Section 114 of the CAAA grants EPA the authority to request the collection of information necessary for it to study whether it is appropriate and necessary to develop performance of emission standards for electric utility steam generating units.

In a letter dated November 25, 1998, Tampa Electric was notified by the EPA that, pursuant to Section 114 of the CAAA, the company was required to periodically sample and analyze coal shipments for mercury and chlorine content during the period January 1, 1999 through December 31, 1999.

In addition to coal sampling, stack testing and analyses are also required. Tampa Electric received a second letter from EPA, dated March 11, 1999, requiring Tampa Electric to perform specialized mercury testing of the inlet and outlet of the last emission control device installed for Big Bend Units 1, 2 or 3, and Polk Unit 1 as part of the mercury data collection. Part of the cost incurred to perform the stack testing is due to the need to construct special test facilities at the Big Bend stack testing location to meet EPA's testing requirements.

Project Accomplishments:

Fiscal Expenditures: The actual/estimated depreciation plus return for the period January 2018 through December 2018, is $8,562 compared to the original projection of $9,406. The variance is due to the TCJA tax rate change from 35 percent to 21 percent.

Progress Summary: This project was approved by the Commission in Docket No. 19990976-EI, Order No. PSC-1999-2103-PAA-EI, issued October 25, 1999. The project was placed in service in December 1999 and completed in May 2000.

Projections: Estimated depreciation plus return for the period January 2019 through December 2019 is $8,284.

Tampa Electric Company
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Project Title: Big Bend FGD Optimization and Utilization

Project Description:

In order to meet the requirements of the FDEP Consent Final Judgment and the EPA Consent Decree, Tampa Electric was required to optimize the SO_2 removal efficiency and operations of the Big Bend Units 1, 2 and 3 FGD systems. Tampa Electric performed activities in three key areas to improve the performance and reliability of the Big Bend Units 1, 2 and 3 FGD systems. The majority of the improvements required on the Unit 3 tower module included the tower piping, nozzle and internal improvements, ductwork improvements, electrical system reliability improvements, tower control improvements, dibasic acid system improvements, booster fan reliability, absorber system improvements, quencher system improvements, and tower demister improvements. Big Bend Units 1 and 2 FGD system improvements included additional preventative maintenance, oxidation air control improvements, and tower water, air reagent and start-up piping upgrades. In order to ensure reliability of the FGD systems, improvements to the common limestone supply, gypsum de-watering stack reliability and wastewater treatment plant were also performed.

Project Accomplishments:

Fiscal Expenditures: The actual/estimated depreciation plus return for the period January 2018 through December 2018 is $1,554,567 compared to the original projection of $1,712,875. The variance is due to the TCJA tax rate change from 35 percent to 21 percent.

Progress Summary: This project was approved by the Commission in Docket No. 20000685-EI, Order No. PSC-2000-1906-PAA-EI, issued October 18, 2000. The project is complete and in service.

Projections: Estimated depreciation plus return for the period January 2019 through December 2019 is $1,576,840.

Tampa Electric Company
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Project Title: Big Bend PM Minimization and Monitoring

Project Description:

In order to meet the requirements of the FDEP Consent Final Judgment and the EPA Consent Decree, Tampa Electric is required to develop a Best Operational Practices ("BOP") study to minimize emissions from each electrostatic precipitator ("ESP") at Big Bend, as well as perform a best available control technology ("BACT") analysis for the upgrade of each existing ESP. The company is also required to install and operate particulate matter continuous emission monitors on Big Bend Units 1, 2 and 3 FGD systems. Tampa Electric identified improvements that were necessary to optimize ESP performance such as modifications to the turning vanes and precipitator distribution plates, and upgrades to the controls and software system of the precipitators. Tampa Electric incurred costs associated with the recommendations of the BOP study and the BACT analysis in 2001 and continues to make O&M and capital expenditures.

Project Accomplishments:

Fiscal Expenditures: The actual/estimated depreciation plus return for the period January 2018 through December 2018 is $1,809,209 compared to the original projection of $1,989,614. The variance is due to the TCJA tax rate change from 35 percent to 21 percent.

The actual/estimated O&M expense for the period January 2018 through December 2018 is $406,562 compared to the original projection of $611,283, resulting in a variance of -33.5 percent. This variance is due to less maintenance being required than expected, after inspection.

Progress Summary: This project was approved by the Commission in Docket No. 20001186-EI, Order No. PSC-2000-2104-PAA-EI, issued November 6, 2000. The project is complete and in service.

Projections: Estimated depreciation plus return for the period January 2019 through December 2019 is $1,751,406.

Estimated O&M costs for the period January 2019 through December 2019 are $398,500.

Tampa Electric Company
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Project Title: Big Bend NO_x Emissions Reduction

Project Description:

In order to meet the requirements of the FDEP Consent Final Judgment and the EPA Consent Decree, Tampa Electric was required to spend up to $3 million with the goal to reduce NO_x emissions at Big Bend Station. By 2002, the Consent Decree required the company to achieve at least a 30 percent reduction beyond 1998 NO_x emission levels for Big Bend Units 1 and 2 and at least a 15 percent reduction in NO_x emissions from Big Bend Unit 3. Tampa Electric identified and completed projects that were the first steps to decrease NO_x emissions in these units such as burner and windbox modifications and the installation of a neural network system on each of the Big Bend units.

Project Accomplishments:

Fiscal Expenditures: The actual/estimated depreciation plus return for the period January 2018 through December 2018 is $499,286 compared to the original projection of $562,354. The variance is due to the TCJA tax rate change from 35 percent to 21 percent.

The actual/estimated O&M expense for the period January 2018 through December 2018 is $78,693 compared to the original projection of $138,956, resulting in a variance of -43.4% percent. This variance is due to the operation of Big Bend Units 1 and 2 on natural gas.

Progress Summary: This project was approved by the Commission in Docket No. 20001186-EI, Order No. PSC-2000-2104-PAA-EI, issued November 6, 2000. The project is complete and in service.

Projections: Estimated depreciation plus return for the period January 2019 through December 2019 is $489,098.

Estimated O&M costs for the period January 2019 through December 2019 are $60,000.

Tampa Electric Company
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Project Title: Big Bend Fuel Oil Tank No. 1 Upgrade

Project Description:

The Big Bend Fuel Oil Tank No. 1 Upgrade is a 500,000 gallon field-erected fuel storage tank that is required to meet the requirements of FDEP Rule 62-762 as an existing field-erected above ground storage tank containing a regulated pollutant (diesel fuel). The rule required various modifications and a complete internal inspection by the end of 1999.

The scope of work for this project included cleaning and inspecting the tank in accordance with API 653 specifications, coating the internal floor plus 30 inches up the tank wall, installing an AEl Segundo bottom to the tank as well as installing a leak detection system, installing a spill containment for piping fittings and valves surrounding the tank, installing a new truck unloading facility and spill containment for the truck unloading facility, installing level instrumentation for overfill protection, installing secondary containment for below ground piping or reroute to above ground, and conducting a tank closure assessment.

Project Accomplishments:

Fiscal Expenditures: The actual/estimated depreciation plus return for the period January 2018 through December 2018 is $55,001 compared to the original projection of $35,856. The variance is due to the depreciation change requested in the 2018 actual-estimated filing submitted on July 25, 2018.

Progress Summary: This project was approved by the Commission in Docket No. 19980007-EI, Order No. PSC-1998-0408-FOF-EI, issued March 18, 1998. The project has been retired.

Projections: Estimated depreciation plus return for the period January 2019 through December 2019 is projected to be $73,033.

Tampa Electric Company
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Project Title: Big Bend Fuel Oil Tank No. 2 Upgrade

Project Description:

The Big Bend Fuel Oil Tank No. 2 is a 4,200,000 gallon field-erected fuel storage tank that is required to meet the requirements of FDEP Rule 62-762 as an existing field-erected above ground storage tank containing a regulated pollutant (diesel fuel). The rule required various modifications and a complete internal inspection by the end of 1999.

The scope of work for this project included cleaning and inspecting the tank in accordance with API 653 specifications, coating the internal floor plus 30 inches up the tank wall, installing an AEl Segundo bottom to the tank as well as installing a leak detection system, installing a spill containment for piping fittings and valves surrounding the tank, installing a new truck unloading facility and spill containment for the truck unloading facility, installing level instrumentation for overfill protection, installing secondary containment for below ground piping or reroute to above ground, and conducting a tank closure assessment.

Project Accomplishments:

Fiscal Expenditures: The actual/estimated depreciation plus return for the period January 2018 through December 2018 is $90,462 compared to the original projection of $58,969. The variance is due to the depreciation change requested in the 2018 actual-estimated filing submitted on July 25, 2018.

Progress Summary: This project was approved by the Commission in Docket No. 19980007-EI, Order No. PSC-1998-0408-FOF-EI, issued March 18, 1998. The project has been retired.

Projections: Estimated depreciation plus return for the period January 2019 through December 2019 is $120,117.

Tampa Electric Company
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Project Title: SO_2 Emission Allowances

Project Description:

The acid rain control title of the CAAA sets forth a comprehensive regulatory mechanism designed to control acid rain by limiting sulfur dioxide emissions by electric utilities. The CAAA requires reductions in SO_2 emissions in two phases. Phase I began on January 1, 1995 and applies to 110 mostly coal-fired utility plants containing about 260 generating units. These plants are owned by some 40 jurisdictional utility systems that are expected to reduce annual SO_2 emissions by as much as 4.5 million tons. Phase II began on January 1, 2000, and applies to virtually all existing steam-electric generating utility units with capacity exceeding 25 megawatts and to new generating utility units of any size. The EPA issues to the owners of generating units allowances (defined as an authorization to emit, during or after a specified calendar year, one ton of SO_2) equal to the number of tons of SO_2 emissions authorized by the CAAA. EPA does not assess a charge for the allowances it awards.

Project Accomplishments:

Fiscal Expenditures: The actual/estimated return on average net working capital for the period January 2018 through December 2018 is ($2,616) compared to the original projection of ($3,015). The variance is due to the TCJA tax rate change from 35 percent to 21 percent.

The actual/estimated O&M for the period January 2018 through December 2018 is ($98) compared to the original projection of $9,151. The variance is not material.

Progress Summary: SO_2 emission allowances are being used by Tampa Electric to meet compliance standards for Phase I of the CAAA.

Project Projections: Estimated return on average net working capital for the period January 2019 through December 2019 is ($2,616).

There are no O&M costs projected for the period of January 2019 through December 2019.

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Project Title: National Pollutant Discharge Elimination System ("NPDES") Annual Surveillance Fees

Project Description:

Chapter 62-4.052, Florida Administrative Code ("F. A. C."), implements the annual regulatory program and surveillance fees for wastewater permits. These fees are in addition to the application fees described in Rule 62-4.050, F. A. C. Tampa Electric's Big Bend, Polk and Bayside Stations are affected by this rule.

Project Accomplishments:

Fiscal Expenditures: The actual/estimated O&M expense for the period January 2018 through December 2018 is $35,883 compared to the original projection of $34,500. The variance is not material.

Progress Summary: NPDES Surveillance fees are paid annually for the prior year.

Projections: Estimated O&M costs for the period January 2019 through December 2019 are $34,500.

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Project Title: Gannon Thermal Discharge Study

Project Description:

This project was a direct requirement from the FDEP in conjunction with the renewal of Tampa Electric's Industrial Wastewater Facility Permit under the provisions of Chapter 403, Florida Statutes, and applicable rules of the Florida Administrative Code, which constitute authorization for the company's Gannon Station facility to discharge to waters of the State under the NPDES. The FDEP permit is Permit No. FL0000809. Specifically, Tampa Electric was required to perform a 316(a) determination for Gannon Station to ensure the protection and propagation of a balanced, indigenous population of shellfish, fish and wildlife with in the primary area of study. The project had two facets: 1) developing a plan of study and identified the thermal plume, and 2) implemented the plan of study through appropriate sampling to make the determination if any adverse impacts are occurring.

Project Accomplishments:

Fiscal Expenditures: There is no actual/estimated O&M expense projected, nor any original projection for the period January 2018 through December 2018.

Progress Summary: This project was approved by the Commission in Docket No. 20010593-EI, Order No. PSC-2001-1847-PAA-EI on September 4, 2001. The project is complete and in service.

Projections: There are no O&M costs projected for the period of January 2019 through December 2019.

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Project Title: Polk NO_x Emissions Reduction

Project Description:

This project was designed to meet a lower NO_x emissions limit established by the FDEP for Polk Unit 1 by July 1, 2005. The lower limit of 15 parts per million by volume dry basis at 15 percent O_2 is specified in FDEP Permit No. PSD-FL-194F issued February 5, 2002. The project consisted of two phases: 1) the humidification of syngas through the installation of a syngas saturator; and 2) the modification of controls and the installation of additional guide vanes to the diluent nitrogen compressor.

Project Accomplishments:

Fiscal Expenditures: The actual/estimated depreciation plus return for the period January 2018 through December 2018 is $113,289 compared to the original projection of $123,356. The variance is due to the TCJA tax rate change from 35 percent to 21 percent.

The actual/estimated O&M for the period January 2018 through December 2018 is $5,317 compared to the original projection of $19,988. The variance is not material.

Progress Summary: This project was approved by the Commission in Docket No. 20020726-EI, Order No. PSC-2002-1445-PAA-EI on October 21, 2002. The project is complete and in service.

Project Projections: Estimated depreciation plus return for the period January 2019 through December 2019 is $109,135.

Estimated O&M costs for the period January 2019 through December 2019 are $5,000.

Tampa Electric Company
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Project Title: Bayside SCR Consumables

Project Description:

This project is necessary to achieve the NO_x emissions limit of 3.5 parts per million established by the FDEP Consent Final Judgment and the EPA Consent Decree for the natural gas-fired Bayside Power Station. To achieve this NO_x limit, the installation of selective catalytic reduction (SCR) systems is required. An SCR system requires consumable goods – primarily anhydrous ammonia – to be injected into the catalyst bed in order to achieve the required NO_x emissions limit. Principally, the project was designed to capture the cost of consumable goods necessary to operate the SCR systems.

Project Accomplishments:

Fiscal Expenditures: The actual/estimated O&M expense for the period January 2018 through December 2018 is $111,102, compared to the original projection of $203,882, resulting in a variance of -45.5 percent. This variance is due to the Bayside units' re-projected run time being less than originally projected, resulting in less ammonia consumption.

Progress Summary: This project was approved by the Commission in Docket No. 20021255-EI, Order No. PSC-2003-0469-PAA-EI, issued April 4, 2003. Annual O&M expenses will continue to be incurred.

Projections: Estimated O&M costs for the period January 2019 through December 2019 are projected to be $119,000.

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Project Title: Big Bend Unit 4 Separated Overfire Air ("SOFA")

Project Description:

This project is necessary to assist in achieving the NO_x emissions limit established by the FDEP Consent Final Judgment and the EPA Consent Decree for Big Bend Unit 4. A SOFA system stages secondary combustion air to prevent NO_x formation that would otherwise require removal by post-combustion technology. In-furnace combustion control through a SOFA system is the most cost-effective means to reduce NO_x emissions prior to the application of these technologies. Costs associated with the SOFA system entailed capital expenditures for equipment installation and subsequent annual maintenance.

Project Accomplishments:

Fiscal Expenditures: The actual/estimated depreciation plus return for the period January 2018 through December 2018 is $198,213 compared to the original projection of $218,523. The variance is due to the TCJA tax rate change from 35 percent to 21 percent.

The actual/estimated O&M expense for this project for the period January 2018 through December 2018 is $0, compared to the original projection of $37,200. The variance is not material.

Progress Summary: This project was approved by the Commission in Docket No. 20030226-EI, Order No. PSC-2003-0684-PAA-EI, issued June 6, 2003. The project is complete and in service.

Projections: Estimated depreciation plus return for the period January 2019 through December 2019 is $192,117.

There are no O&M costs projected for the period of January 2019 through December 2019.

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Project Title: Big Bend Unit 1 Pre-SCR

Project Description:

In order to meet the requirements of the FDEP Consent Final Judgment and the EPA Consent Decree, Tampa Electric was required to make additional reductions of NO_x emissions at Big Bend Station on a per unit basis at prescribed times from 2018 through 2019. Thus, the installation of cost-effective SCR technology on the generating units was necessary to meet NO_x emissions requirements. This project was a necessary precursor to an SCR system designed to reduce inlet NO_x concentrations to the SCR system thereby mitigating overall capital and O&M costs. The Big Bend Unit 1 Pre-SCR technologies included a neural network system, secondary air controls and windbox modifications.

Project Accomplishments:

Fiscal Expenditures: The actual/estimated depreciation plus return for the period January 2018 through December 2018 is $137,625 compared to the original projection of $149,608. The variance is due to the TCJA tax rate change from 35 percent to 21 percent.

The actual/estimated O&M expense for this project for the period January 2018 through December 2018 is $39, compared to the original projection of $37,200. The variance is not material.

Progress Summary: This project was approved by the Commission in Docket No. 20040750-EI, Order No. PSC-2004-1080-CO-EI, issued November 4, 2004. The project is complete and in service.

Projections: Estimated depreciation plus return for the period January 2019 through December 2019 is $132,473.

Estimated O&M costs for the period of January 2019 through December 2019 is are $6,000.

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Project Title: Big Bend Unit 2 Pre-SCR

Project Description:

In order to meet the requirements of the FDEP Consent Final Judgment and the EPA Consent Decree, Tampa Electric was required to make additional reductions of NO_x emissions at Big Bend Station on a per unit basis at prescribed times from 2018 through 2019. Thus, the installation of cost-effective SCR technology on the generating units was necessary to meet NO_x emissions requirements. This project was a necessary precursor to an SCR system designed to reduce inlet NO_x concentrations to the SCR system thereby mitigating overall capital and O&M costs. The Big Bend Unit 2 Pre-SCR technologies included secondary air controls and windbox modifications.

Project Accomplishments:

Fiscal Expenditures: The actual/estimated depreciation plus return for the period January 2018 through December 2018 is $130,774 compared to the original projection of $142,854. The variance is due to the TCJA tax rate change from 35 percent to 21 percent.

The actual/estimated O&M expense for this project for the period January 2018 through December 2018 is $1,450, compared to the original projection of $37,200. The variance is not material.

Progress Summary: This project was approved by the Commission in Docket No. 20040750-EI, Order No. PSC-2004-1080-CO-EI, issued November 4, 2004. The project is complete and in service.

Projections: Estimated depreciation plus return for the period January 2019 through December 2019 is $126,179.

Estimated O&M costs for the period of January 2019 through December 2019 are $6,000.

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Project Title: Big Bend Unit 3 Pre-SCR

Project Description:

In order to meet the requirements of the FDEP Consent Final Judgment and the EPA Consent Decree, Tampa Electric was required to make additional reductions of NO_x emissions at Big Bend Station on a per unit basis at prescribed times from 2018 through 2019. Thus, the installation of cost-effective SCR technology on the generating units was necessary to meet NO_x emissions requirements. This project was a necessary precursor to an SCR system designed to reduce inlet NO_x concentrations to the SCR system thereby mitigating overall capital and O&M costs. The Big Bend Unit 3 Pre-SCR technologies included a neutral network system, secondary air controls, windbox modifications and primary coal/air flow controls.

Project Accomplishments:

Fiscal Expenditures: The actual/estimated depreciation plus return for the period January 2018 through December 2018 is $233,143 compared to the original projection of $256,173. The variance is due to the TCJA tax rate change from 35 percent to 21 percent.

The actual/estimated O&M for the period January 2018 through December 2018 is $3,808 compared to the original projection of $37,200. The variance is not material.

Progress Summary: This project was approved by the Commission in Docket No. 20040750-EI, Order No. PSC-2004-1080-CO-EI, issued November 4, 2004. The project is complete and in service.

Projections: Estimated depreciation plus return for the period January 2019 through December 2019 is $225,602.

Estimated O&M costs for the period of January 2019 through December 2019 is are $6,000.

Tampa Electric Company
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Project Title: Clean Water Act Section 316(b) Phase II Study

Project Description:

This project was a direct requirement from the EPA to reduce impingement and entrainment of aquatic organisms related to the withdrawal of waters for cooling purposes through cooling water intake structures. The Phase II Rule requires that power plants meeting certain criteria to comply with national performance standards for impingement and entrainment. Accordingly, Tampa Electric must develop its compliance strategies for its Bayside and Big Bend Stations and then submit these strategies for approval through a Comprehensive Demonstration Study to the FDEP.

Project Accomplishments:

Fiscal Expenditures: The actual/estimated O&M for the period January 2018 through December 2018 is $74,158 compared to the original projection of $321,000, resulting in a variance of -76.9 percent. The variance is related to uncertainty regarding the timing of the final requirements and reporting that must be submitted once the permit is finalized.

Progress Summary: This project was approved by the Commission in Docket No. 20041300-EI, Order No. PSC-2005-0164-PAA-EI, issued February 10, 2005. The project is complete and in service.

Projections: Estimated O&M costs for the period January 2019 through December 2019 are $90,000.

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Project Title: Big Bend Unit 1 SCR

Project Description:

In order to meet the requirements of the FDEP Consent Final Judgment and the EPA Consent Decree, Tampa Electric was required to make additional reductions of NO_x emissions at Big Bend Station on a per unit basis at prescribed times from 2018 through 2019. The installation of cost-effective SCR technology on the generating units was necessary to meet NO_x emissions requirements.

Project Accomplishments:

Fiscal Expenditures: The actual/estimated depreciation plus return for the period January 2018 through December 2018 is $7,960,376 compared to the original projection of $8,698,396. The variance is due to the TCJA tax rate change from 35 percent to 21 percent.

The actual/estimated O&M for the period January 2018 through December 2018 is $351,102 compared to the original projection of $1,498,585, resulting in a variance of -76.6 percent. This variance is due to greater use of natural gas and reduced use of coal, which reduced the unit's need for consumables and maintenance work, compared to the original projection.

Progress Summary: This project was approved by the Commission in Docket No. 20041376-EI, Order No. PSC-2005-0616-CO-EI, issued June 3, 2005. The project is complete and in service.

Projections: Estimated depreciation plus return for the period January 2019 through December 2019 is $7,567,577.

Estimated O&M costs for the period January 2019 through December 2019 are $167,240.

Tampa Electric Company
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Project Title: Big Bend Unit 2 SCR

Project Description:

In order to meet the requirements of the FDEP Consent Final Judgment and the EPA Consent Decree, Tampa Electric was required to make additional reductions of NO_x emissions at Big Bend Station on a per unit basis at prescribed times from 2018 through 2019. The installation of cost-effective SCR technology on the generating units was necessary to meet NO_x emissions requirements.

Project Accomplishments:

Fiscal Expenditures: The actual/estimated depreciation plus return for the period January 2018 through December 2018 is $8,407,010 compared to the original projection of $9,195,158. The variance is due to the TCJA tax rate change from 35 percent to 21 percent.

The actual/estimated O&M for the period January 2018 through December 2018 is $361,113 compared to the original projection of $1,629,977, resulting in a variance of -77.8 percent. This variance is due to operation of the unit on natural gas, which reduces the use of consumables and need for maintenance work, compared to the original projection.

Progress Summary: This project was approved by the Commission in Docket No. 20041376-EI, Order No. PSC-2005-0616-CO-EI, issued June 3, 2005. The project is complete and in service.

Projections: Estimated depreciation plus return for the period January 2019 through December 2019 is $8,288,466.

Estimated O&M costs for the period January 2019 through December 2019 are $261,200.

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Project Title: Big Bend Unit 3 SCR

Project Description:

In order to meet the requirements of the FDEP Consent Final Judgment and the EPA Consent Decree, Tampa Electric was required to make additional reductions of NO_x emissions at Big Bend Station on a per unit basis at prescribed times from 2018 through 2019. The installation of cost-effective SCR technology on the generating units was necessary to meet NO_x emissions requirements.

Project Accomplishments:

Fiscal Expenditures: The actual/estimated depreciation plus return for the period January 2018 through December 2018 is $6,968,871 compared to the original projection of $7,628,421. The variance is due to the TCJA tax rate change from 35 percent to 21 percent.

The actual/estimated O&M for the period January 2018 through December 2018 is $1,553,384 compared to the original projection of $1,694,774, resulting in a variance of -8.3 percent. This variance is due to greater use of natural gas, compared to the original projection.

Progress Summary: This project was approved by the Commission in Docket No. 20041376-EI, Order No. PSC-2005-0616-CO-EI, issued June 3, 2005. The project is complete and in service.

Projections: Estimated depreciation plus return for the period January 2019 through December 2019 is $6,730,895.

Estimated O&M costs for the period January 2019 through December 2019 are $396,460.

Tampa Electric Company
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Project Title: Big Bend Unit 4 SCR

Project Description:

In order to meet the requirements of the FDEP Consent Final Judgment and the EPA Consent Decree, Tampa Electric was required to make additional reductions of NO_x emissions at Big Bend Station on a per unit basis at prescribed times from 2018 through 2019. The installation of cost-effective SCR technology on the generating units was necessary to meet NO_x emissions requirements.

Project Accomplishments:

Fiscal Expenditures: The actual/estimated depreciation plus return for the period January 2018 through December 2018 is $5,420,387 compared to the original projection of $5,919,666. The variance is due to the TCJA tax rate change from 35 percent to 21 percent.

The actual/estimated O&M for the period January 2018 through December 2018 is $651,145 compared to the original projection of $1,061,162, resulting in a variance of -38.6 percent. This variance is due to less total run time estimated when compared to the original projection.

Progress Summary: This project was approved by the Commission in Docket No. 20040750-EI, Order No. PSC-2004-0986-PAA-EI, issued October 11, 2004. The project is complete and in service.

Projections: Estimated depreciation plus return for the period January 2019 through December 2019 is $5,379,650.

Estimated O&M costs for the period January 2019 through December 2019 are $2,135,100.

Tampa Electric Company
Environmental Cost Recovery Clause
January 2019 through December 2019
Description and Progress Report for
Environmental Compliance Activities and Projects

Project Title: Arsenic Groundwater Standard Program

Project Description:
The Arsenic Groundwater Standard Program that is required by the Environmental Protection Agency and the Department of Environmental Protection became effective January 1, 2005. It requires regulated entities of the State of Florida to monitor the drinking water and groundwater Maximum Contaminant Level ("MCL") for arsenic under the federal rule known as the Safe Drinking Water Act.

Project Accomplishments:

Fiscal Expenditures: No O&M costs were included in the actual/estimated projection, nor were any included in the original projection for the period January 2018 through December 2018. The Big Bend Station Arsenic Plan of Study is complete and has been submitted to FDEP for its review; however, the scope of needed remediation activities is still under review.

Progress Summary: This project was approved by the Commission in Docket No. 20050683-EI, Order No. PSC-2006-0138-PAA-EI, issued February 23, 2006. The project is complete and in service.

Projections: There are no O&M costs projected for the period of January 2019 through December 2019.

Tampa Electric Company
Environmental Cost Recovery Clause
January 2019 through December 2019
Description and Progress Report for
Environmental Compliance Activities and Projects

Project Title: Big Bend Flue Gas Desulfurization ("FGD") System Reliability

Project Description:
The Big Bend FGD Reliability project is necessary to maintain the FGD system operations that are required by the Consent Decree. Tampa Electric is required to operate the FGD systems at Big Bend Station whenever coal is combusted in the units with few exceptions. The compliance dates for the strictest operational characteristics were January 1, 2011 for Big Bend Unit 3 and January 1, 2014 for Big Bend Units 1 and 2.

Project Accomplishments:

Fiscal Expenditures: The actual/estimated depreciation plus return for the period January 2018 through December 2018 is $2,080,400 compared to the original projection of $2,325,371. The variance is due to the TCJA tax rate change from 35 percent to 21 percent.

Progress Summary: This project was approved by the Commission in Docket No. 20050598-EI, Order No. PSC-2006-0602-PAA-EI, issued July 10, 2006. The project is complete and in service.

Projections: Estimated depreciation plus return for the period January 2019 through December 2019 is $2,030,219.

Tampa Electric Company
Environmental Cost Recovery Clause
January 2019 through December 2019
Description and Progress Report for
Environmental Compliance Activities and Projects

Project Title: Mercury Air Toxics Standards ("MATS")

Project Description:
In March 2005, the Environmental Protection Agency ("EPA") promulgated the Clean Air Mercury Rule ("CAMR") and was later challenged in court. On February 8, 2008, the Circuit Court of Appeals for the District of Columbia vacated CAMR and ordered a new rule by March 2011. On December 11, 2011, the EPA issued a final version of the rule that applies to all coal and oil-fired electric generating units with a capacity of 25 MW or more and with a compliance deadline is April 16, 2015. The rule sets forth hazardous air pollutant standards ("HAP") for mercury, non-mercury metal HAPs and acid gasses.

Project Accomplishments:

Fiscal Expenditures: The actual/estimated depreciation plus return for the period January 2018 through December 2018 is $824,496 compared to the original projection of $928,320. The variance is due to the TCJA tax rate change from 35 percent to 21 percent.

The actual/estimated O&M for the period January 2018 through December 2018 is $24,378 compared to the original projection of $231,000, resulting in a variance of -89.4 percent. Both Polk and Big Bend Power Stations achieved Low Emitting Electric Generating Unit status in 2017. As a result, monitoring is not required at this time, only periodic testing, and costs were lower than originally projected.

Progress Summary: This project was approved by the Commission in Docket No. 20120302-EI, Order No. PSC-2013-0191-PAA-EI, issued May 6, 2013. The project is in service.

Projections: Estimated depreciation plus return for the period January 2019 through December 2019 is projected to be $802,679.

Estimated O&M costs for the period January 2019 through December 2019 are projected to be $74,878.

Tampa Electric Company
Environmental Cost Recovery Clause
January 2019 through December 2019
Description and Progress Report for
Environmental Compliance Activities and Projects

Project Title: Greenhouse Gas Reduction Program

Project Description:
On September 22, 2009, the EPA enacted a new rule for reporting Greenhouse Gas ("GHG") emissions from large sources and suppliers effective January 1, 2010 in preparation for the first annual GHG report, due March 31, 2011. The new rule is intended to collect accurate and timely emissions data to inform future policy decisions as set forth in the final rule for GHG emission reporting pursuant to the Florida Climate Protection Act, Chapter 403.44 of the Florida Statutes and the docket EPA-HQ-OAR2008-0508-054. The nationwide GHG emissions reduction rule will impact Tampa Electric's generation fleet, components of its transmission and distribution system as well as company service vehicles. According to the rule, the company began collecting greenhouse gas emissions data effective January 1, 2010 to establish a baseline inventory to report to the EPA.

Project Accomplishments:

Fiscal Expenditures: The actual/estimated O&M for the period January 2018 through December 2018 is $95,974 compared to the original projection of $93,149. The variance is not material.

Progress Summary: This project was approved by the Commission in Docket No. 20090508-EI, Order No. PSC-2010-0157-PAA-EI, issued March 22, 2010. The project is complete and in service.

Projections: Estimated O&M costs for the period January 2019 through December 2019 are $93,149.

Tampa Electric Company
Environmental Cost Recovery Clause
January 2019 through December 2019
Description and Progress Report for
Environmental Compliance Activities and Projects

Project Title: Big Bend Gypsum Storage Facility

Project Description:

The Big Bend New Gypsum Storage Facility is necessary to maintain the FGD system operations that are required by the Consent Decree. Tampa Electric is required to operate the FGD systems in order to comply with the CAAA. Gypsum is a by-product of the FGD operations and Tampa Electric had been managing its gypsum inventory through marketing efforts to sell gypsum an existing storage facility. However, the existing storage facility was no longer sufficient to hold the entire gypsum inventory, and Tampa Electric needed an additional storage facility. The new storage facility covers approximately 27 acres and holds approximately 870,000 tons of gypsum.

Project Accomplishments:

Fiscal Expenditures: The actual/estimated depreciation plus return for the period January 2018 through December 2018 is $2,073,526 compared to the original projection of $2,316,204. The variance is due to the TCJA tax rate change from 35 percent to 21 percent.

The actual/estimated O&M for the period January 2018 through December 2018 is $1,638,273 compared to the original projection of $1,663,000. The variance is not material.

Progress Summary: This project was approved by the Commission in Docket No. 20110262-EI, Order No. PSC-2012-0493-PAA-EI, issued September 26, 2012. The project was placed in service in November 2014.

Projections: Estimated depreciation plus return for the period January 2019 through December 2019 is $2,022,870.

Estimated O&M costs for the period January 2019 through December 2019 are $1,320,000.

Tampa Electric Company
Environmental Cost Recovery Clause
January 2019 through December 2019
Description and Progress Report for
Environmental Compliance Activities and Projects

Project Title: Big Bend Coal Combustion Residuals ("CCR") Rule - Phase I & II

Project Description:

On April 17, 2015, the EPA published the CCR Rule with an effective date of October 19, 2015. The new rule requires the safe disposal of CCR in landfills and surface impoundments. Compliance activities include placing fugitive emissions dust control plans, increasing inspections, installing new groundwater monitoring wells, and closure of certain impoundments at CCR regulated management units.

Project Accomplishments:

Fiscal Expenditures: The actual/estimated depreciation plus return for the period January 2018 through December 2018 for Phase I and Phase II is $130,502 and $2,299 compared to the original projections of $224,233 and $0 respectively. The variances are due to timing differences in the project schedules when compared to the original projections.

The actual/estimated O&M for the period January 2018 through December 2018 for Phase I and Phase II is $38,250 and $4,757,238, respectively, compared to the original projections of $0 and $6,125,000. The variances are due to timing differences in the project schedules when compared to the original projections. The projected expenditures are expected to be incurred in the future.

Progress Summary: Phase I was approved by the Commission in Docket No. 20150223-EI, Order No. PSC-2016-0068-PAA-EI, issued February 9, 2016. Phase II was approved by the Commission in Docket No. 20170168-EI, Order No. 2017-0483-PAA-EI, issued December 22, 2017.

Projections: Estimated depreciation plus return for the period January 2019 through December 2019 for Phase I and Phase II is $241,100 and $24,047, respectively.

Estimated O&M costs for the period January 2019 through December 2019 for Phase II are $6,000,000. There are no O&M costs projected for Phase I.

Tampa Electric Company
Environmental Cost Recovery Clause
January 2019 through December 2019
Description and Progress Report for
Environmental Compliance Activities and Projects

Project Title: Effluent Limitation Guidelines ("ELG") – Study and Compliance Program

Project Description:

On November 3, 2015, the EPA published the ELG Rule with an effective date of January 4, 2016. The ELG Rule establish limits for wastewater discharges from flue gas desulfurization ("FGD") processes, fly ash and bottom ash transport water, leachate from ponds and landfills containing coal combustion residuals ("CCR"), gasification processes, and flue gas mercury controls. The final rule requires compliance as soon as possible after November 1, 2019, and no later than December 31, 2023. Tampa Electric hired an engineering consulting firm to perform the Big Bend ELG Compliance Study, to be completed in 2018, concluding with a determination of the most appropriate ELG compliance measures identified through the study.

Project Accomplishments:

Fiscal Expenditures: The actual/estimated depreciation plus return for the period January 2018 through December 2018 for the Study program is $0, and for the proposed ELG Rule Compliance program it is $1,411. There were no original projections related to either of these ELG programs for the period.

The actual/estimated O&M for the period January 2018 through December 2018 for the Study program is $54,007, compared to $0 in the original projection. The variance is due to timing differences in the project schedule when compared to the original projection. There were no O&M costs included in the original projections for the proposed ELG Rule Compliance program.

Progress Summary: The Study program was approved by the Commission in Docket No. 20160027-EI, Order No. PSC-2016-0248-PAA-EI, issued June 28, 2016, and it is now complete. The company submitted its petition for approval of the proposed ELG Rule Compliance program to the Commission in this docket on May 9, 2018.

Projections: The ELG Rule Compliance program estimated depreciation plus return for the period January 2019 through December 2019 is $11,280.

The ELG Rule Compliance program projected O&M costs for the period of January 2019 through December 2019 are $0.

Tampa Electric Company
Environmental Cost Recovery Clause
January 2019 through December 2019
Description and Progress Report for
Environmental Compliance Activities and Projects

Project Title: Big Bend Unit 1 Impingement Mortality-316(b)

Project Description:

In August 2014 the Environmental Protection Agency ("EPA") published their final rule regarding Section 316(b) of the Clean Water Act. The rule became effective in October 2014. The rule establishes requirements for cooling water intake structures ("CWIS") at existing facilities. Section 316(b) requires that the location, design, construction and capacity of CWIS reflect the best technology available ("BTA") for minimizing adverse environmental impacts. For this project, compliance activities include modifying the existing Big Bend Unit 1 CWIS to reduce impingement mortality of affected living organisms.

Project Accomplishments:

Fiscal Expenditures: The actual/estimated depreciation plus return for the period January 2018 through December 2018 is $38,927. There was no original projection for this project for the period.

There are no actual/estimated O&M costs for the period January 2018 through December 2018, nor was there an original projection.

Progress Summary: The company submitted its petition for approval of this project to the Commission in this docket on April 26, 2018.

Projections: Estimated depreciation plus return for the period January 2019 through December 2019 is $298,882.

There are no O&M costs projected for the period of January 2019 through December 2019.

Form 42 - 6P

Tampa Electric Company
Environmental Cost Recovery Clause (ECRC)
Calculation of the Energy & Demand Allocation % By Rate Class
January 2019 to December 2019

Rate Class	(1) Average 12 CP Load Factor at Meter (%)	(2) Projected Sales at Meter (MWh)	(3) Effective Sales at Secondary Level (MWh)	(4) Projected Avg 12 CP at Meter (MW)	(5) Demand Loss Expansion Factor	(6) Energy Loss Expansion Factor	(7) Projected Sales at Generation (MWh)	(8) Projected Avg 12 CP at Generation (MW)	(9) Percentage of MWh Sales at Generation (%)	(10) Percentage of 12 CP Demand at Generation (%)	(11) 12 CP & 1/13 Allocation Factor (%)
RS	53.88%	9,382,624	9,382,624	1,988	1.08036	1.05201	9,870,588	2,148	48.29%	57.05%	56.38%
GS, CS	65.19%	955,831	955,831	167	1.08036	1.05199	1,005,526	181	4.92%	4.81%	4.82%
GSD, SBF	75.74%	8,170,311	8,155,834	1,232	1.07581	1.04842	8,565,903	1,325	41.91%	35.19%	35.71%
IS	90.33%	800,071	785,633	101	1.02952	1.01769	814,225	104	3.98%	2.76%	2.85%
LS1	305.67%	173,595	173,595	6	1.05201	1.05201	182,623	7	0.89%	0.19%	0.24%
TOTAL *		19,482,432	19,453,517	3,494			20,438,865	3,765	100.00%	100.00%	100.00%

Notes:
(1) Average 12 CP load factor based on 2019 Projected calendar data
(2) Projected MWh sales for the period January 2019 to December 2019
(3) Effective sales at secondary level for the period January 2019 to December 2019.
(4) Column 2 / (Column 1 x 8760)
(5) Based on 2019 projected demand losses.
(6) Based on 2019 projected energy losses.
(7) Column 2 x Column 6
(8) Column 4 x Column 5
(9) Column 7 / Total Column 7
(10) Column 8 / Total Column 8
(11) Column 9 x1/13 + Column 10 x 12/13

* Totals on this schedule may not foot due to rounding

DOCKET NO. 20180007-EI
ECRC 2019 PROJECTION, FORM 42-6P
EXHIBIT NO. PAR-4, DOCUMENT NO. 6

Form 42 - 7P

Tampa Electric Company
Environmental Cost Recovery Clause (ECRC)
Calculation of the Energy & Demand Allocation % By Rate Class
January 2019 to December 2019

Rate Class	(1) Percentage of MWh Sales at Generation (%)	(2) 12 CP & 25% Allocation Factor (%)	(3) Energy-Related Costs ($)	(4) Demand-Related Costs ($)	(5) Total Environmental Costs ($)	(6) Projected Sales at Meter (MWh)	(7) Effective Sales at Secondary Level (MWh)	**(8) Environmental Cost Recovery Factors (¢/kWh)**
RS	48.29%	56.38%	20378806	439,522	20,818,328	9,382,624	9,382,624	**0.222**
GS, CS	4.92%	4.82%	2,076,283	37,575	2,113,858	955,831	955,831	**0.221**
GSD, SBF	41.91%	35.71%	17,686,390	278,385	17,964,775	8,170,311	8,155,834	
Secondary								**0.220**
Primary								**0.218**
Transmission								**0.216**
IS	3.98%	2.85%	1,679,595	22,218	1,701,813	800,071	785,633	
Secondary								**0.217**
Primary								**0.214**
Transmission								**0.212**
LS1	0.89%	0.24%	375,588	1,871	377,459	173,595	173,595	**0.217**
TOTAL *	100.00%	100.00%	42,200,883	779,571	42,980,454	19,482,432	19,453,517	**0.221**

* Totals on this schedule may not foot due to rounding

Notes:
(1) From Form 42-6P, Column 9
(2) From Form 42-6P, Column 11
(3) Column 1 x Total Energy Jurisdictional Dollars from Form 42-1P, line 5
(4) Column 2 x Total Demand Jurisdictional Dollars from Form 42-1P, line 5
(5) Column 3 + Column 4
(6) From Form 42-6P, Column 2
(7) From Form 42-6P, Column 3
(8) Column 5 / Column 7 x 10

Form 42 - 8P

Tampa Electric Company
Environmental Cost Recovery Clause (ECRC)
Calculation of the Current Period Actual / Estimated Amount
January 2019 to December 2019

Calculation of Revenue Requirement Rate of Return
(In Dollars)

	(1) Jurisdictional Rate Base *Actual May 2018* ($000)	(2) Ratio %	(3) Cost Rate %	(4) Weighted Cost Rate %
Long Term Debt	$ 1,719,219	30.51%	5.13%	1.5652%
Short Term Debt	244,333	4.34%	2.18%	0.0945%
Preferred Stock	0	0.00%	0.00%	0.0000%
Customer Deposits	96,005	1.70%	2.43%	0.0414%
Common Equity	2,367,502	42.02%	10.25%	4.3067%
Accum. Deferred Inc. Taxes & Zero Cost ITC's	1,187,473	21.07%	0.00%	0.0000%
Deferred ITC - Weighted Cost	20,116	0.36%	8.10%	0.0289%
Total	$ 5,634,648	100.00%		6.04%

ITC split between Debt and Equity:

Long Term Debt	$ 1,719,219	Long Term Debt	46.00%
Equity - Preferred	0	Equity - Preferred	0.00%
Equity - Common	2,367,502	Equity - Common	54.00%
Total	$ 4,086,721	Total	100.00%

Deferred ITC - Weighted Cost:

Debt = 0.0289% * 46.00%	0.0133%
Equity = 0.0289% * 54.00%	0.0156%
Weighted Cost	0.0289%

Total Equity Cost Rate:

Preferred Stock	0.0000%
Common Equity	4.3067%
Deferred ITC - Weighted Cost	0.0156%
	4.3223%
Times Tax Multiplier	1.34295
Total Equity Component	5.8046%

Total Debt Cost Rate:

Long Term Debt	1.5652%
Short Term Debt	0.0945%
Customer Deposits	0.0414%
Deferred ITC - Weighted Cost	0.0133%
Total Debt Component	1.7144%
	7.5190%

Notes:
Column (1) - Per WACC Stipulation & Settlement Agreement Dated July 17, 2012 and 2017 Settlement Agreement Dated September 27, 2017.
Column (2) - Column (1) / Total Column (1)
Column (3) - Per WACC Stipulation & Settlement Agreement Dated July 17, 2012 and 2017 Settlement Agreement Dated September 27, 2017.
Column (4) - Column (2) x Column (3)

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ENVIRONMENTAL COST RECOVERY

COMMISSION FORMS

JANUARY 2019 THROUGH DECEMBER 2019

NOT INCLUDING THE COMPANY’S TWO

NEW PROPOSED ECRC PROJECTS

Tampa Electric Company

Environmental Cost Recovery Clause (ECRC)
Total Jurisdictional Amount to Be Recovered
Not Including the Company's Two New Proposed ECRC Projects
For the Projected Period
January 2019 to December 2019

Form 42 - 1P

Line	Energy ($)	Demand ($)	Total ($)
1. Total Jurisdictional Revenue Requirements for the projected period			
a. Projected O&M Activities (Form 42-2P, Lines 7, 8 & 9)	$12,438,028	$124,500	$12,562,528
b. Projected Capital Projects (Form 42-3P, Lines 7, 8 & 9)	44,588,995	458,297	45,047,292
c. Total Jurisdictional Revenue Requirements for the projected period (Lines 1a + 1b)	57,027,023	582,797	57,609,820
2. True-up for Estimated Over/(Under) Recovery for the current period January 2018 to December 2018 (Form 42-2E, Line 5 + 6 + 10)	13,373,740	98,046	13,512,974
3. Final True-up for the period January 2017 to December 2017 (Form 42-1A, Line 3)	1,482,763	15,903	1,498,666
4. Total Jurisdictional Amount to Be Recovered/(Refunded) in the projection period January 2019 to December 2019 (Line 1 - Line 2- Line 3)	42,170,520	468,848	42,639,368
5. Total Projected Jurisdictional Amount Adjusted for Taxes (Line 4 x Revenue Tax Multiplier)	$42,200,883	$469,186	$42,670,069

Form 42 - 2P

Tampa Electric Company
Environmental Cost Recovery Clause (ECRC)
Calculation of the Projected Period Amount
January 2019 to December 2019
Not Including the Company's Two New Proposed ECRC Projects
O&M Activities
(in Dollars)

Line		Projected January	Projected February	Projected March	Projected April	Projected May	Projected June	Projected July	Projected August	Projected September	Projected October	Projected November	Projected December	End of Period Total	Method of Classification Demand	Method of Classification Energy
1.	Description of O&M Activities															
	a. Big Bend Unit 3 FGD Integration	$59,125	$59,125	$59,125	$59,125	$59,125	$59,125	$59,125	$59,125	$59,125	$59,125	$59,125	$59,127	$709,500		$709,500
	b. Big Bend Units 1 & 2 Flue Gas Conditioning	0	0	0	0	0	0	0	0	0	0	0	0	0		0
	c. SO_2 Emissions Allowances	0	0	0	0	0	0	0	0	0	0	0	0	0		0
	d. Big Bend Units 1 & 2 FGD	56,667	56,667	56,667	56,667	56,667	56,667	56,667	56,667	56,667	56,667	56,667	56,663	680,000		680,000
	e. Big Bend PM Minimization and Monitoring	33,208	33,208	33,208	33,208	33,208	33,208	33,208	33,208	33,208	33,208	33,210	33,210	398,500		398,500
	f. Big Bend NO_x Emissions Reduction	5,000	5,000	5,000	5,000	5,000	5,000	5,000	5,000	5,000	5,000	5,000	5,000	60,000		60,000
	g. NPDES Annual Surveillance Fees	34,500	0	0	0	0	0	0	0	0	0	0	0	34,500	$34,500	
	h. Gannon Thermal Discharge Study	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	i. Polk NO_x Emissions Reduction	375	425	375	375	425	450	550	550	550	175	375	375	5,000		5,000
	j. Bayside SCR and Ammonia	8,000	8,000	9,000	10,000	11,000	12,000	12,000	12,000	11,000	10,000	8,000	8,000	119,000		119,000
	k. Big Bend Unit 4 SOFA	0	0	0	0	0	0	0	0	0	0	0	0	0		0
	l. Big Bend Unit 1 Pre-SCR	500	500	500	500	500	500	500	500	500	500	500	500	6,000		6,000
	m. Big Bend Unit 2 Pre-SCR	500	500	500	500	500	500	500	500	500	500	500	500	6,000		6,000
	n. Big Bend Unit 3 Pre-SCR	500	500	500	500	500	500	500	500	500	500	500	500	6,000		6,000
	o. Clean Water Act Section 316(b) Phase II Study	5,000	15,000	0	20,000	0	25,000	25,000	0	0	0	0	0	90,000	90,000	
	p. Arsenic Groundwater Standard Program	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	q. Big Bend 1 SCR	0	0	10,000	22,320	0	0	0	31,140	0	93,780	10,000	0	167,240		167,240
	r. Big Bend 2 SCR	0	0	10,000	30,060	0	19,080	26,100	29,700	136,260	0	10,000	0	261,200		261,200
	s. Big Bend 3 SCR	11,700	37,960	25,000	24,660	0	30,780	16,020	21,060	43,740	111,220	59,200	15,120	396,460		396,460
	t. Big Bend 4 SCR	193,300	242,040	255,000	127,960	205,000	155,140	182,880	153,100	55,000	100,000	245,800	219,880	2,135,100		2,135,100
	u. Mercury Air Toxics Standards	0	0	7,823	55	0	6,250	10,500	9,750	10,500	9,750	10,500	9,750	74,878		74,878
	v. Greenhouse Gas Reduction Program	0	0	93,149	0	0	0	0	0	0	0	0	0	93,149		93,149
	w. Big Bend Gypsum Storage Facility (East 40)	110,000	110,000	110,000	110,000	110,000	110,000	110,000	110,000	110,000	110,000	110,000	110,000	1,320,000		1,320,000
	x. CCR Rule-Phase I	0	0	0	0	0	0	0	0	0	0	0	0	0		0
	y. CCR Rule-Phase II	500,000	500,000	500,000	500,000	500,000	500,000	500,000	500,000	500,000	500,000	500,000	500,000	6,000,000		6,000,000
	z. Big Bend Unit 1 Section 316(b) Impingement Mortality	0	0	0	0	0	0	0	0	0	0	0	0	0		0
	aa. Big Bend ELG Rule Compliance	0	0	0	0	0	0	0	0	0	0	0	0	0		0
2.	Total of O&M Activities	1,018,375	1,068,925	1,175,847	1,000,929	981,925	1,014,200	1,038,550	1,022,800	1,022,550	1,090,425	1,109,377	1,018,625	12,562,527	$124,500	$12,438,027
3.	Recoverable Costs Allocated to Energy	978,875	1,053,925	1,175,847	980,929	981,925	989,200	1,013,550	1,022,800	1,022,550	1,090,425	1,109,377	1,018,625	12,438,027		
4.	Recoverable Costs Allocated to Demand	39,500	15,000	0	20,000	0	25,000	25,000	0	0	0	0	0	124,500		
5.	Retail Energy Jurisdictional Factor	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000			
6.	Retail Demand Jurisdictional Factor	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000			
7.	Jurisdictional Energy Recoverable Costs (A)	978,875	1,053,925	1,175,847	980,929	981,925	989,200	1,013,550	1,022,800	1,022,550	1,090,425	1,109,377	1,018,625	12,438,028		
8.	Jurisdictional Demand Recoverable Costs (B)	39,500	15,000	0	20,000	0	25,000	25,000	0	0	0	0	0	124,500		
9.	Total Jurisdictional Recoverable Costs for O&M Activities (Lines 7 + 8)	$1,018,375	$1,068,925	$1,175,847	$1,000,929	$981,925	$1,014,200	$1,038,550	$1,022,800	1,022,550	1,090,425	$1,109,377	$1,018,625	$12,562,528		

DOCKET NO. 20180007-EI
ECRC 2019 PROJECTION, FORM 42-2P
EXHIBIT NO. PAR-5 , DOCUMENT NO. 2

Tampa Electric Company
Environmental Cost Recovery Clause (ECRC)
Calculation of the Projected Period Amount
January 2019 to December 2019
Not Including the Company's Two New Proposed ECRC Projects
Capital Investment Projects-Recoverable Costs
(in Dollars)

Line	Description (A)		Projected January	Projected February	Projected March	Projected April	Projected May	Projected June	Projected July	Projected August	Projected September	Projected October	Projected November	Projected December	End of Period Total	Method of Classification Demand	Method of Classification Energy
1. a.	Big Bend Unit 3 FGD Integration	1	$78,728	$78,547	$78,366	$78,186	$78,005	$77,825	$77,643	$77,463	$77,282	$77,102	$76,921	$76,740	$932,808		$932,808
b.	Big Bend Units 1 and 2 Flue Gas Conditioning	2	20,131	20,030	19,929	19,827	19,725	19,624	19,523	19,422	19,321	19,220	19,119	19,018	234,889		234,889
c.	Big Bend Unit 4 Continuous Emissions Monitors	3	4,160	4,145	4,130	4,116	4,102	4,087	4,073	4,059	4,043	4,029	4,015	4,000	48,959		48,959
d.	Big Bend Fuel Oil Tank # 1 Upgrade	4	6,263	6,231	6,198	6,166	6,135	6,102	6,070	6,038	6,005	5,974	5,942	5,909	73,033	$73,033	
e.	Big Bend Fuel Oil Tank # 2 Upgrade	5	10,300	10,247	10,194	10,142	10,089	10,036	9,983	9,931	9,878	9,825	9,772	9,720	120,117	120,117	
f.	Big Bend Unit 1 Classifier Replacement	6	6,516	6,488	6,461	6,433	6,406	6,378	6,351	6,323	6,296	6,268	6,240	6,213	76,373		76,373
g.	Big Bend Unit 2 Classifier Replacement	7	4,715	4,697	4,677	4,658	4,638	4,620	4,601	4,581	4,563	4,544	4,524	4,506	55,324		55,324
h.	Big Bend Section 114 Mercury Testing Platform	8	700	699	696	695	693	691	690	687	686	684	682	681	8,284		8,284
i.	Big Bend Units 1 & 2 FGD	9	493,173	491,532	489,890	488,249	486,608	484,967	483,326	481,685	480,043	478,402	476,761	475,120	5,809,756		5,809,756
j.	Big Bend FGD Optimization and Utilization	10	133,093	132,750	132,450	132,151	131,850	131,550	131,249	130,950	130,649	130,349	130,050	129,749	1,576,840		1,576,840
k.	Big Bend NO_x Emissions Reduction	11	41,109	41,046	40,981	40,918	40,854	40,790	40,726	40,662	40,599	40,535	40,471	40,407	489,098		489,098
l.	Big Bend PM Minimization and Monitoring	12	148,048	147,667	147,286	146,904	146,523	146,141	145,760	145,378	144,997	144,615	144,234	143,853	1,751,406		1,751,406
m.	Polk NO_x Emissions Reduction	13	9,247	9,219	9,192	9,164	9,136	9,108	9,081	9,053	9,025	8,998	8,970	8,942	109,135		109,135
n.	Big Bend Unit 4 SOFA	14	16,230	16,190	16,150	16,110	16,069	16,029	15,989	15,950	15,910	15,870	15,830	15,790	192,117		192,117
o.	Big Bend Unit 1 Pre-SCR	15	11,229	11,194	11,160	11,125	11,092	11,057	11,022	10,988	10,953	10,919	10,884	10,850	132,473		132,473
p.	Big Bend Unit 2 Pre-SCR	16	10,683	10,653	10,622	10,591	10,561	10,530	10,500	10,469	10,438	10,408	10,377	10,347	126,179		126,179
q.	Big Bend Unit 3 Pre-SCR	17	19,074	19,024	18,975	18,925	18,875	18,825	18,776	18,725	18,676	18,625	18,576	18,526	225,602		225,602
r.	Big Bend Unit 1 SCR	18	641,285	639,349	637,412	635,474	633,538	631,600	629,663	627,725	625,789	623,851	621,914	619,977	7,567,577		7,567,577
s.	Big Bend Unit 2 SCR	19	718,180	697,994	696,037	694,080	692,122	690,165	688,208	686,251	684,293	682,336	680,379	678,421	8,288,466		8,288,466
t.	Big Bend Unit 3 SCR	20	569,595	568,016	566,436	564,856	563,277	561,698	560,118	558,539	556,960	555,379	553,800	552,221	6,730,895		6,730,895
u.	Big Bend Unit 4 SCR	21	446,920	445,744	444,796	445,682	448,170	449,683	451,191	451,845	450,669	449,493	448,317	447,140	5,379,650		5,379,650
v.	Big Bend FGD System Reliability	22	170,953	170,632	170,310	169,989	169,667	169,345	169,024	168,703	168,382	168,059	167,738	167,417	2,030,219		2,030,219
w.	Mercury Air Toxics Standards	23	68,379	67,144	67,004	66,865	66,727	66,666	66,605	66,466	66,327	66,188	66,832	67,476	802,679		802,679
x.	SO_2 Emissions Allowances (B)	24	(248)	(203)	(203)	(248)	(203)	(203)	(248)	(203)	(203)	(248)	(203)	(203)	(2,616)		(2,616)
y.	Big Bend Gypsum Storage Facility	25	170,360	170,035	169,711	169,385	169,060	168,735	168,410	168,085	167,760	167,435	167,110	166,784	2,022,870		2,022,870
z.	CCR-Phase I	26	16,509	17,479	19,035	19,808	19,798	19,787	19,776	19,766	19,755	19,902	22,398	27,087	241,100	241,100	
aa.	CCR-Phase II	27	1,038	1,554	1,961	2,166	2,166	2,166	2,166	2,166	2,166	2,166	2,166	2,166	24,047	24,047	
ab.	Big Bend ELG Rule Compliance	28	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
ac.	Big Bend Unit 1 Section 316(b) Impingement Mortali	29	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
2.	Total Investment Projects - Recoverable Costs		3,816,370	3,788,103	3,779,856	3,772,417	3,765,683	3,758,002	3,750,276	3,741,707	3,731,262	3,720,928	3,713,819	3,708,857	45,047,280	$458,297	$44,588,983
3.	Recoverable Costs Allocated to Energy		3,782,260	3,752,592	3,742,468	3,734,135	3,727,495	3,719,911	3,712,281	3,703,806	3,693,458	3,683,061	3,673,541	3,663,975	44,588,983		44,588,983
4.	Recoverable Costs Allocated to Demand		34,110	35,511	37,388	38,282	38,188	38,091	37,995	37,901	37,804	37,867	40,278	44,882	458,297	458,297	
5.	Retail Energy Jurisdictional Factor		1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000			
6.	Retail Demand Jurisdictional Factor		1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000	1.0000000			
7.	Jurisdictional Energy Recoverable Costs (C)		3,782,260	3,752,592	3,742,468	3,734,135	3,727,495	3,719,911	3,712,281	3,703,806	3,693,458	3,683,061	3,673,541	3,663,975	44,588,995		
8.	Jurisdictional Demand Recoverable Costs (D)		34,110	35,511	37,388	38,282	38,188	38,091	37,995	37,901	37,804	37,867	40,278	44,882	458,297		
9.	Total Jurisdictional Recoverable Costs for Investment Projects (Lines 7 + 8)		$3,816,370	$3,788,103	$3,779,856	$3,772,417	$3,765,683	$3,758,002	$3,750,276	$3,741,707	$3,731,262	$3,720,928	$3,713,819	$3,708,857	$45,047,292		

Notes:
(A) Each project's Total System Recoverable Expenses on Form 42-4P, Line 9
(B) Project's Total Return Component on Form 42-4P, Line 6
(C) Line 3 x Line 5
(D) Line 4 x Line 6

DOCKET NO. 20180007-EI
ECRC 2019 PROJECTION, FORM 42-3P
EXHIBIT NO. PAR-5, DOCUMENT NO. 3

<u>Tampa Electric Company</u>
Environmental Cost Recovery Clause (ECRC)
Calculation of the Energy & Demand Allocation % By Rate Class
Not Including the Company's Two New Proposed ECRC Projects
January 2019 to December 2019

Rate Class	(1) Percentage of MWh Sales at Generation (%)	(2) 12 CP & 25% Allocation Factor (%)	(3) Energy-Related Costs ($)	(4) Demand-Related Costs ($)	(5) Total Environmental Costs ($)	(6) Projected Sales at Meter (MWh)	(7) Effective Sales at Secondary Level (MWh)	**(8) Environmental Cost Recovery Factors (¢/kWh)**
RS	48.29%	56.38%	20378806	264,527	20,643,333	9,382,624	9,382,624	**0.220**
GS, CS	4.92%	4.82%	2,076,283	22,615	2,098,898	955,831	955,831	**0.220**
GSD, SBF	41.91%	35.71%	17,686,390	167,546	17,853,936	8,170,311	8,155,834	
Secondary								**0.219**
Primary								**0.217**
Transmission								**0.215**
IS	3.98%	2.85%	1,679,595	13,372	1,692,967	800,071	785,633	
Secondary								**0.215**
Primary								**0.213**
Transmission								**0.211**
LS1	0.89%	0.24%	375,588	1,126	376,714	173,595	173,595	**0.217**
TOTAL *	100.00%	100.00%	42,200,883	469,186	42,670,069	19,482,432	19,453,517	**0.219**

* Totals on this schedule may not foot due to rounding

Notes:
(1) From Form 42-6P, Column 9
(2) From Form 42-6P, Column 11
(3) Column 1 x Total Energy Jurisdictional Dollars from Form 42-1P, line 5
(4) Column 2 x Total Demand Jurisdictional Dollars from Form 42-1P, line 5
(5) Column 3 + Column 4
(6) From Form 42-6P, Column 2
(7) From Form 42-6P, Column 3
(8) Column 5 / Column 7 x 10

DOCKET NO. 20180007-EI
ECRC 2019 PROJECTION, FORM 42-7P
EXHIBIT NO. PAR-5 , DOCUMENT NO. 4

TECO
TAMPA ELECTRIC
AN EMERA COMPANY

BEFORE THE
FLORIDA PUBLIC SERVICE COMMISSION

DOCKET NO. 20180007-EI

ENVIRONMENTAL COST RECOVERY FACTORS

PROJECTIONS

JANUARY 2019 THROUGH DECEMBER 2019

TESTIMONY
OF
PAUL L. CARPINONE

FILED: AUGUST 24, 2018

BEFORE THE FLORIDA PUBLIC SERVICE COMMISSION

PREPARED DIRECT TESTIMONY

OF

PAUL L. CARPINONE

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

A. My name is Paul L. Carpinone. My business address is 702 North Franklin Street, Tampa, Florida 33602. I am employed by Tampa Electric Company ("Tampa Electric" or "company") as Director, Environmental Services in the Environmental Services Department.

Q. Please provide a brief outline of your educational background and business experience.

A. I received a Bachelor of Science degree in Water Resources Engineering Technology from the Pennsylvania State University in 1978. I have been a Registered Professional Engineer in the states of Florida and Pennsylvania since 1984. Prior to joining Tampa Electric, I worked for Seminole Electric Cooperative as a Civil Engineer in various positions and in environmental consulting. In February 1988, I joined Tampa Electric as a Principal Engineer, and I have primarily worked in the area of environmental, health and safety. In 2006, I became Director of Environmental Services. My responsibilities include the development and administration of the company’s environmental policies and goals. I am also responsible for ensuring resources, procedures and programs meet or surpass compliance with applicable environmental requirements, and that rules and polices are in place and functioning appropriately and consistently throughout the company.

Q. What is the purpose of your testimony in this proceeding?

A. The purpose of my testimony is to demonstrate that the activities for which Tampa Electric seeks cost recovery through the Environmental Cost Recovery Clause (“ECRC”) for the January 2019 through December 2019 projection period are activities related to programs previously approved or for which petitions are pending approval by the Commission for recovery through the ECRC. For those where a petition is pending approval, the projects meet the criteria for ECRC recovery relevant to this docket, as established by Order No. PSC-1994-0044-FOF-EI.

Q. Please provide an overview of the environmental compliance requirements that are the result of the Consent

Final Judgment ("CFJ") entered into with the Florida Department of Environmental Protection ("FDEP") and the Consent Decree ("CD") lodged with the U.S. Environmental Protection Agency ("EPA") and the Department of Justice ("the Orders").

A. The general requirements of the Orders provide for further reductions of sulfur dioxide ("SO_2"), particulate matter ("PM") and nitrogen oxides ("NO_x") emissions at Big Bend Station. Tampa Electric has implemented the requirements of the Orders, and now these agreements have been terminated by the corresponding court systems. The ongoing requirements of these projects, which are further described later in my testimony, are now part of the Big Bend Title V operating permit (0570039-110-AV). The projects that are now required under the operating permit are listed below.

- Big Bend PM Minimization Program
- Big Bend NO_x Emission Reduction Program
- Big Bend Units 1 – 3 Pre-Selective Catalytic Reduction ("SCR") Projects
- Big Bend Units 1 – 4 SCR Projects

Q. Does the termination of the Orders change any of the environmental compliance requirements applicable to the company's generating units?

A. No, the termination of the Orders does not change any of the environmental compliance requirements applicable to the company's generating units. The requirements of the Orders are now part of the Title V operating permit.

Q. Please describe the Big Bend PM Minimization and Monitoring program activities and provide the estimated capital and O&M expenditures for the period of January 2019 through December 2019.

A. The Big Bend PM Minimization and Monitoring Program was approved by the Commission in Docket No. 20001186-EI, Order No. PSC-2000-2104-PAA-EI, issued November 6, 2000. In the Order, the Commission found that the program met the requirements for recovery through the ECRC. Tampa Electric had previously identified various projects to improve precipitator performance and reduce PM emissions as required by the Orders. Tampa Electric does not anticipate any capital expenditures for this program during 2019; however, the O&M expenses associated with existing and recently installed Best Operating Practice (BOP) and best available control technology ("BACT") equipment and continued implementation of the BOP procedures are expected to be $398,500.

Q. Please describe the Big Bend NO_x Emission Reduction program activities and provide the estimated capital and O&M expenses for the period of January 2019 through December 2019.

A. The Big Bend NO_x Emission Reduction program was approved by the Commission in Docket No. 20001186-EI, Order No. PSC-2000-2104-PAA-EI, issued November 6, 2000. In the Order, the Commission found that the program met the requirements for recovery through the ECRC. Tampa Electric does not anticipate any capital expenditures in 2019; however, the company will perform maintenance on the previously approved and installed NO_x reduction equipment. This activity is expected to result in approximately $60,000 of O&M expenses during 2019.

Q. Please describe the Big Bend Units 1 through 3 Pre-SCR and the Big Bend Units 1 through 4 SCR projects and provide estimated capital and O&M expenditures for the period of January 2019 through December 2019.

A. In Docket No. 20040750-EI, Order No. PSC-2004-0986-PAA-EI, issued October 11, 2004, the Commission approved cost recovery of the Big Bend Units 1 through 3 Pre-SCR and the Big Bend Unit 4 SCR projects. The Big Bend Units 1 through 3 SCR projects were approved by the Commission in Docket No. 20041376-EI, Order No. PSC-2005-0502-PAA-EI, issued May 9, 2005. The purpose of the Pre-SCR technologies is to reduce inlet NO_x concentrations to the SCR systems, thereby mitigating overall SCR capital and O&M costs. Those Pre-SCR technologies include windbox modifications, secondary air controls and coal/air flow controls. The SCR projects at Big Bend Unit 1 through 4 encompass the design, procurement, installation and annual O&M expenses associated with an SCR system for each unit. The SCRs for Big Bend Units 1 through 4 were placed in-service April 2010, September 2009, July 2008 and May 2007, respectively.

For the period of January 2019 through December 2019, there are not any capital expenditures anticipated for the Big Bend Units 1 through 3 Pre-SCR projects. The O&M expenditures for Big Bend Pre-SCR projects are projected to be $6,000 for Big Bend Unit 1 Pre-SCR, $6,000 for Big Bend Unit 2 Pre-SCR, and $6,000 for Big Bend Unit 3 Pre-SCR for equipment maintenance. There are not any anticipated capital expenditures for Big Bend Units 1, 2, or 3 SCRs; however, the capital expenditures for Big Bend

Unit 4 SCR is projected to be $2,100,000, for catalyst replacement. Additionally, the O&M expenses are projected to be $167,240 for Big Bend Unit 1 SCR, $261,200 for Big Bend Unit 2 SCR, $396,460 for Big Bend Unit 3 SCR and $2,135,100 for Big Bend Unit 4 SCR. These expenses are primarily associated with ammonia purchases.

Q. Please identify and describe the other Commission-approved programs, or those pending Commission approval, that you will discuss.

A. The programs previously approved by the Commission that I will discuss include the following projects:

1) Big Bend Unit 3 Flue Gas Desulfurization ("FGD") Integration.
2) Big Bend Units 1 and 2 FGD
3) Gannon Thermal Discharge Study
4) Bayside SCR Consumables
5) Clean Water Act Section 316(b) Phase II Study
6) Big Bend FGD System Reliability
7) Arsenic Groundwater Standard
8) Mercury and Air Toxics Standards ("MATS")
9) Greenhouse Gas ("GHG") Reduction Program
10) Big Bend Gypsum Storage Facility
11) Coal Combustion Residuals ("CCR")

12) Effluent Limitations Guidelines Study

The programs pending Commission approval that I will discuss include the following projects:

13) Big Bend Unit 1 Section 316(b) Impingement Mortality

14) Effluent Limitations Guidelines Rule Compliance Program

Q. Please describe the Big Bend Unit 3 FGD Integration and the Big Bend Units 1 and 2 FGD activities and provide the estimated capital and O&M expenditures for the period of January 2019 through December 2019.

A. The Big Bend Unit 3 FGD Integration program was approved by the Commission in Docket No. 19960688-EI, Order No. PSC-1996-1048-FOF-EI, issued August 14, 1996. The Big Bend Units 1 and 2 FGD program was approved by the Commission in Docket No. 19980693-EI, Order No. PSC-1999-0075-FOF-EI, issued January 11, 1999. In these Orders, the Commission found that the programs met the requirements for recovery through the ECRC. The programs were implemented to meet the SO_2 emission requirements of the Phase I and II Clean Air Act Amendments (“CAAA”) of 1990.

The company does not anticipate any capital expenditures during January 2019 through December 2019 for the Big Bend Unit 3 FGD Integration project; however, O&M expenses are projected to be $709,500 for consumables, primarily anhydrous ammonia, and ongoing maintenance. There are not any anticipated capital expenditures for the Big Bend Units 1 & 2 FGD project during January 2019 through December 2019; however, the O&M expenses are projected to be $680,000 for consumables, primarily anhydrous ammonia, and ongoing maintenance.

Q. Please describe the Gannon Thermal Discharge Study program activities and provide the estimated O&M expenditures for the period of January 2019 through December 2019.

A. The Gannon Thermal Discharge Study program was approved by the Commission in Docket No. 20010593-EI, Order No. PSC-2001-1847-PAA-EI, issued September 14, 2001. In that Order, the Commission found that the program met the requirements for recovery through the ECRC. For the period of January 2019 through December 2019, there are not any projected O&M expenditures for this program. In the intent to issue the permit renewal, dated August 9, 2013, FDEP indicated that the proposed NPDES permit authorizes a thermal variance under 316(a) for the permit period. Bayside Power Station applied for renewal of the National Pollutant Discharge Elimination System ("NPDES") Permit in February 2018, and at this time, the company anticipates that an additional thermal study will not be required. If a thermal study is required, Tampa Electric will incur O&M expenses and will include them in the true-up filing.

Q. Please describe the Bayside SCR Consumables program activities and provide the estimated O&M expenditures for the period of January 2019 through December 2019.

A. The Bayside SCR Consumables program was approved by the Commission in Docket No. 20021255-EI, Order No. PSC-2003-0469-PAA-EI, issued April 4, 2003. For the period of January 2019 through December 2019, Tampa Electric projects O&M expenses associated with the consumable goods (primarily anhydrous ammonia) to be approximately $119,000.

Q. Please describe the Clean Water Act Section 316(b) Phase II Study Program and the associated Big Bend Unit 1 Section 316(b) Impingement Mortality Project activities and provide the estimated capital and O&M expenditures for the period of January 2019 through December 2019.

A. The Clean Water Act Section 316(b) Phase II Study program was approved by the Commission in Docket No. 20041300-EI, Order No. PSC-2005-0164-PAA-EI, issued February 10, 2005. The final rule adopted under Section 316(b), the Cooling Water Intake Structures ("CWIS") Rule, became effective October 14, 2014. The rule establishes requirements for CWIS at existing facilities. Section 316(b) requires that the location, design, construction and capacity of CWIS reflect the best technology available ("BTA") for minimizing adverse environmental impacts. Tampa Electric is currently finalizing its compliance strategy for the CWIS Rule at Big Bend and is working with the regulating authority to determine the need and scheduling for biological, financial and technical study elements necessary to comply with the rule. These elements will ultimately be used by the regulating authority to determine the necessity of cooling water system retrofits. However, for Big Bend Unit 1, which will be repowered to a clean, natural gas-fired combined cycle unit, the permit will require installation of the impingement mortality controls as part of the modernization project. Completing the work during the repowering activities will also reduce overall costs because an additional outage will not be needed to retrofit the unit to comply with Section 316(b) impingement mortality requirements at a later date.

The biological, financial, and technical study elements have been identified for Bayside Power Station and submitted with the NPDES permit renewal application in February 2018. Retrofits could include the installation of cooling towers or screening facilities. All costs associated with the Section 316 (b) study have been incurred, unless additional information is required by the regulatory agencies.

Tampa Electric filed its petition for Commission approval of the Big Bend Unit 1 Section 316(b) Impingement Mortality project in early 2018, and I submitted testimony in support of the project on July 25, 2018 under this docket. For the period of January 2019 through December 2019, Tampa Electric projects capital expenditures for the Big Bend Unit 1 Section 316(b) Impingement Mortality Project to be $3,000,000. There are no O&M expenses anticipated during 2019.

Q. Please describe the Big Bend FGD System Reliability program activities and provide the estimated capital expenditures for the period of January 2019 through

December 2019.

A. Tampa Electric’s Big Bend FGD System Reliability program was approved by the Commission in Docket No. 20050958-EI, Order No. PSC-2006-0602-PAA-EI, issued July 10, 2006. The Commission granted cost recovery approval for prudent costs associated with this project. The Big Bend FGD System Reliability project has been running concurrently with the installation of the SCR systems on the generating units. For the period of January 2019 through December 2019, there are no anticipated capital expenditures for this project.

Q. Please describe the Arsenic Groundwater Standard program activities and provide the estimated O&M expenditures for the period of January 2019 through December 2019.

A. The Arsenic Groundwater Standard program was approved by the Commission in Docket No. 20050683-EI, Order No. PSC-2006-0138-PAA-EI, issued February 23, 2006. In that Order, the Commission found that the program met the requirements for recovery through the ECRC and granted Tampa Electric cost recovery for prudently incurred costs. This groundwater standard applies to Tampa Electric’s Bayside, Big Bend, and Polk Power Stations.

For the period of January 2019 through December 2019, there are no anticipated O&M expenses at Bayside or Polk Power Stations. Although no O&M expenses are currently anticipated for Big Bend Power Station in 2019, a detailed plan of study has been submitted to the FDEP for review, which may refine the program's scope of work and require future expenditures.

Q. Please describe the MATS program activities.

A. The MATS program was approved by the Commission in Docket 20120302-EI, Order No. PSC-2013-0191-PAA-EI, issued May 6, 2013. In that Order, the Commission found that the program met the requirements for recovery through the ECRC and granted Tampa Electric cost recovery approval for prudently incurred costs. Additionally, the Commission granted the subsumption of the previously approved CAMR program into the MATS program.

On February 8, 2008, the Washington D.C. Circuit Court vacated EPA's rule removing power plants from the Clean Air Act list of regulated sources of hazardous air pollutants under section 112. At the same time, the Court vacated the Clean Air Mercury Rule. On May 3, 2011, the EPA published a new proposed rule for mercury and other hazardous air pollutants according to the National Emissions Standards for Hazardous Air Pollutants section of the Clean Air Act. On February 16, 2012, the EPA published the final rule for MATS. The rule revised the mercury limits and provided more flexible monitoring and record keeping requirements. Additionally, monitoring of acid gases and particulate matter is required. Compliance with the rule began on April 16, 2015. Tampa Electric is currently meeting or exceeding the standards required by the MATS rule for mercury, particulate matter, and acid gases at Polk Power Station and Big Bend Power Station.

Q. Please provide MATS program estimated capital and O&M expenditures for the period of January 2019 through December 2019.

A. For 2019, Tampa Electric anticipates capital expenditures of $275,000 under the MATS program for monitoring equipment. O&M expenditures are projected to be approximately $74,880 for testing requirements and maintenance of equipment.

Q. Please describe the GHG Reduction program activities and provide the estimated capital and O&M expenditures for the period of January 2019 through December 2019.

A. Tampa Electric’s GHG Reduction program was approved by the Commission in Docket No. 20090508-EI, Order No. PSC-2010-0157-PAA-EI, issued March 22, 2010, is a result of the EPA’s Mandatory reporting rule requiring annual reporting of greenhouse gas emissions. Tampa Electric was required to report greenhouse gas emissions for the first time in 2011. Reporting for the EPA’s Greenhouse Gas Mandatory Reporting rule will continue in 2019. For 2019, this activity is projected to result in approximately $93,150 of O&M expenditures.

Q. Please describe the Big Bend Gypsum Storage Facility activities and provide the estimated capital and O&M expenditures for the period of January 2019 through December 2019.

A. The Big Bend Gypsum Storage Facility program was approved by the Commission in Docket No. 20110262-EI, Order No. PSC-2012-0493-PAA-EI, issued in September 26, 2012. In that Order, the Commission found that the program meets the requirements for recovery through the ECRC. The project was placed in service in November 2014. For 2019, Tampa Electric does not anticipate any capital expenditures; however, the projected O&M expenses for this program during 2019 are $1,320,000.

Q. Please describe the EPA Coal Combustion Residuals ("CCR") Rule compliance activities and provide the estimated capital and O&M expenditures for the period of January 2019 through December 2019.

A. On April 17, 2015, the EPA issued a final rule to regulate coal combustion residuals ("CCRs") as non-hazardous waste under Subtitle D of the Resource Conservation and Recovery Act ("RCRA"). The rule, which became effective on October 19, 2015, covers all operational CCR disposal facilities, as well as inactive impoundments which contain CCRs and liquids. The Big Bend Unit 4 Economizer Ash Ponds, the East Coalfield Stormwater Pond (converted former slag fines pond) and the North Gypsum Stackout Area are regulated under the rule.

The initial phase of the company's CCR compliance was approved by the Commission in Docket No. 20150223-EI, Order No. PSC-2016-00994-PAA-EI, issued on February 9, 2016. In that Order, the Commission found that the CCR Rule – Phase I program met the requirements for recovery through the ECRC. Incremental ongoing O&M expenses resulting from the groundwater monitoring program, berm inspections and general maintenance of regulated units were approved under the Order. In order to determine the best option to remain in compliance with the new rule, the company evaluated whether to continue operation of the regulated CCR units or to close them. Tampa Electric, for Phase II of the project, chose a combination of closure and retrofit projects to remain in compliance with the CCR Rule, as discussed later in this section.

Two CCR retrofit projects were also approved for Tampa Electric’s Phase I CCR program under Order No. PSC-2016-00994-PAA-EI. These included: 1) removal of remaining residual slag from the East Coalfield Stormwater Runoff Pond and lining the pond to continue operating it as part of the Station’s stormwater system; and 2) installing secondary stormwater containment facilities and lining drainage ditches for the North Gypsum Stackout Area to make it fully compliant with the rule’s requirements.

Phase II of Tampa Electric’s CCR program was approved by Commission Order No. 2017-0483-PAA-EI issued in Docket No. 20170168-EI on December 22, 2017. In that Order, the Commission found that the Phase II program met the requirements for recovery through the ECRC. Expenses for the CCR Economizer Ash Pond System Closure Project, which includes removal and offsite disposal of all CCRs and restoration of the area to original grade, were approved by the Commission’s Order.

The Economizer Ash Pond System Closure Project is expected to begin in the fourth quarter of 2018 with initial dewatering and removal of CCRs for disposal. Due to the large amount of CCRs in the Economizer Ash Ponds which will need to be dewatered and shipped to the landfill, this project is expected to continue through 2021. The East Coalfield Stormwater Runoff Pond (slag pond) closure and retrofit project is scheduled to begin in the first half of 2019 and completed by the end of 2019. The North Gypsum Stackout Area Drainage Improvements Project is expected to commence in 2019 and be completed in early 2020.

Tampa Electric expects to incur $2,100,000 and $230,000 in 2019 capital expenditures for CCR Rule Phase I and Phase II projects, respectively. The company expects to incur $6,000,000 for O&M expenses for the CCR Rule - Phase II project. There are no O&M expenses projected for CCR Rule – Phase I during 2019.

Q. Please describe Tampa Electric’s Effluent Limitations Guidelines activities, both study and compliance related, and provide the estimated capital and O&M expenditures for the period of January 2019 through December 2019.

A. On November 3, 2015, the EPA published the final Steam Electric Power Generating Effluent Limitations Guidelines ("ELG"), with an effective date of January 4, 2016. The ELG establish limits for wastewater discharges from FGD processes, fly ash, and bottom ash transport water, leachate from ponds and landfills containing CCR, gasification processes, and flue gas mercury controls. Big Bend Station's FGD system is affected by this rule. The blow-down stream from the FGD system is currently sent to a physical chemical treatment system to remove solids, some metals, ammonia and adjust pH prior to discharge to Tampa Bay via the once through condenser cooling system water. This treatment system will need to be modified or replaced to achieve compliance with the new EPA regulations. The rule requires compliance after November 1, 2018, but no later than December 31, 2023. EPA issued a temporary stay of these compliance deadlines (beginning April 25, 2017) for certain waste streams, including FGD wastewater.

The Big Bend ELG Study Program ("Study") was approved in Order No. PSC-2016-0248-PAA-EI issued June 28, 2016 in Docket No. 20160027-EI, and confirmed in Consummating Order

No. PSC-2016-0290-CO-EI issued July 25, 2016 in Docket No. 20160027-EI.

The Study, which was completed in 2018, identified viable technologies to treat the Tampa Electric Big Bend Station combined effluent streams in order to bring the streams into compliance with the more stringent requirements under the ELG Rule and resulted in the selection of the deep well injection solution.

Tampa Electric filed its petition for Commission approval of the ELG Rule Compliance Program in early 2018, and I submitted testimony in support of the project under this docket on July 25, 2018. The company expects to begin permitting and design activities in 2018.

On June 6, 2017, the EPA issued proposed rulemaking to postpone these deadlines until it has completed reconsideration of the 2015 rule. On August 11, 2017, EPA issued a letter to the Utility Water Act Group (“UWAG”) and the U.S. Small Business Association regarding petitions received by the EPA requesting reconsideration of the rule. In this letter, EPA stated that it would be appropriate to conduct rulemaking to “potentially revise” the limitations for bottom ash transport water and FGD wastewater. The compliance deadlines for these wastestreams were revised to be as soon as possible after November 1, 2020, but no later than December 31, 2023. Tampa Electric expects that the selected compliance option will continue to be required as the best option for customers even if some changes are made to the rule. Tampa Electric does not currently project any O&M or capital expenditures for this project for the period January 2019 through December 2019.

Q. Please summarize your testimony.

A. The settlement agreements Tampa Electric had with FDEP and EPA required significant reductions in emissions from Big Bend and Gannon Power Stations. These settlement agreements have been terminated due to the company having satisfied all requirements as set forth by the CFJ and CD. Ongoing requirements for projects originating with the CFJ and CD have been incorporated into Big Bend's Title V Operating permit (0570039-110-AV) and are discussed throughout my testimony. I described the progress Tampa Electric has made to achieve the more stringent environmental standards. I identified estimated costs, by project, which the company expects to incur in 2019. Additionally, my testimony identified other projects that are required for Tampa Electric to meet environmental requirements, and I provided the associated 2019 activities and projected expenditures.

Q. Does this conclude your direct testimony?

A. Yes, it does.