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August 30, 2019

VIA: ELECTRONIC FILING

Mr. Adam J. Teitzman
Commission Clerk
Florida Public Service Commission
2540 Shumard Oak Boulevard
Tallahassee, Florida 32399-0850

Re: Environmental Cost Recovery Clause
FPSC Docket No. 20190007-EI

Dear Mr. Teitzman:

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 Exhibit (PAR-3) 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 30th day of August 2019 to the following:

Mr. Charles W. Murphy
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ATTORNEY

BEFORE THE FLORIDA PUBLIC SERVICE COMMISSION

In re: Environmental Cost Recovery Clause.	)	DOCKET NO. 20190007-EI
______________________	)	FILED: August 30, 2019

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 factors proposed for use during the period January 2020 through December 2020, and in support thereof, says:

Environmental Cost Recovery

1. Tampa Electric's final true-up amount for the period January 2018 through December 2018 is an over-recovery of $2,396,214. [See Exhibit No. PAR-1, Document No. 1 (Form 42-1A).]

2. Tampa Electric projects an actual/estimated true-up amount for the January 2019 through December 2019 period, which is based on actual data for the period January 1, 2019 through June 30, 2019 and revised estimates for the period July 1, 2019 through December 31, 2019, to be an over-recovery of $4,108,435. [See Exhibit No. PAR-2, Document No. 1 (Form 42-1E).]

3. The company's projected environmental cost recovery amount for the period January 1, 2020 through December 31, 2020, including true-up amounts and adjusted for taxes, is $47,493,250. When spread over projected kilowatt hour sales for the period January 1, 2020 through December 31, 2020, the average environmental cost recovery factor for the new period is 0.244 cents per kWh after application of factors which adjust for variations in line losses. [See Exhibit No. PAR-3, Document No. 7 (Form 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 2020 through December 2020.

DATED this 30th day of August 2019.

Respectfully submitted,

JAMES D. BEASLEY
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Ausley McMullen
Post Office Box 391
Tallahassee, FL 32302
(850) 224-9115

ATTORNEYS FOR TAMPA ELECTRIC COMPANY

CERTIFICATE OF SERVICE

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ATTORNEY

BEFORE THE

FLORIDA PUBLIC SERVICE COMMISSION

DOCKET NO. 20190007-EI

IN RE: TAMPA ELECTRIC'S ENVIRONMENTAL COST RECOVERY

PROJECTION

JANUARY 2020 THROUGH DECEMBER 2020

TESTIMONY AND EXHIBIT

OF

PENELOPE A. RUSK

FILED: AUGUST 30, 2019

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 Director, Regulatory Affairs in the Regulatory Affairs Department.

Q. Have you previously filed testimony in Docket No. 20190007-EI?

A. Yes, I submitted direct testimony on April 1, 2019 and July 26, 2019.

Q. Has your job description, education, or professional experience changed since you last filed testimony?

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 2020 through December 2020. 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 2020.

Q. Have you prepared an exhibit that shows the determination of recoverable environmental costs for the period of January 2020 through December 2020?

A. Yes. Exhibit No. PAR-3, 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 2020.

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-3, 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 2020 through December 2020.

Q. What has Tampa Electric calculated as the net true-up to be applied in the period January 2020 to December 2020?

A. The net true-up applicable for this period is an over-recovery of $6,504,649. This consists of a final true-up over-recovery of $2,396,214 for the period of January 2018 through December 2018 and an estimated true-up over-recovery of $4,108,435 for the current period of January 2019 through December 2019. 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 26, 2019.

Q. Did Tampa Electric include any new environmental compliance projects for ECRC cost recovery for the period from January 2020 through December 2020?

A. No, Tampa Electric is not including costs for any new environmental projects.

Q. What are the capital projects included in the calculation of the ECRC factors for 2020?

A. Tampa Electric proposes to include for ECRC recovery costs for the 29 approved capital projects in the calculation of the 2020 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 2020?

A. Yes. Form 42-3P contained in Exhibit No. PAR-3 summarizes the cost estimates for these projects. Form 42-4P, pages 1 through 29, provides the calculations resulting in recoverable jurisdictional capital costs of $44,522,907.

Q. What O&M projects are included in the calculation of the

ECRC factors for 2020?

A. Tampa Electric proposes to include for ECRC recovery O&M costs for 27 approved O&M projects in the calculation of the ECRC factors for 2020. 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

25) Big Bend CCR Rule - Phase II

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

27) Big Bend ELG Rule Compliance

Q. Have you prepared a schedule showing the calculation of the recoverable O&M project costs for 2020?

A. Yes. Form 42-2P contained in Exhibit No. PAR-3 presents the recoverable jurisdictional O&M costs for these projects, which total $9,440,821 for 2020.

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 2020?

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-3. These expenditures total $53,963,728.

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 2020 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 2020 through December 2020, for which Tampa Electric is seeking approval?

A. The computation of the billing factors is shown in Exhibit

No. PAR-3, Document No. 7, Form 42-7P. The proposed ECRC billing factors are summarized below.

Rate Class	Factors by Voltage Level (¢/kWh)
RS Secondary	0.244
GS, CS Secondary	0.244
GSD, SBF	
Secondary	0.243
Primary	0.241
Transmission	0.238
IS	
Secondary	0.239
Primary	0.237
Transmission	0.234
LS1	0.241
Average Factor	0.244

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 2020.

Q. What capital structure components and cost rates did Tampa

Electric rely on to calculate the revenue requirement rate of return for January 2020 through December 2020?

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. Is Tampa Electric required to adjust its projected weighted average cost of capital calculations to avoid a tax normalization violation, which may occur in certain circumstances described in the utilities' unopposed joint motion to modify Order No. 2012-0425-PAA-EU, submitted in this docket on August 21, 2019?

A. No, an adjustment is not required for 2020. Tampa Electric expects to meet the limitation provision for the projected period. Therefore, the methodology used to calculate the revenue requirement rate of return shown on Form 42-8P is that described in Order No. 2012-0425-PAA-EU, and the use of the current methodology does not violate the tax normalization requirement.

Q. Are the costs Tampa Electric is requesting for recovery through the ECRC for the period January 2020 through

December 2020 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 0.244 cents per kWh. This includes the projected capital and O&M revenue requirements of $53,963,728 associated with the company's 36 ECRC projects and a net true-up over-recovery provision of $6,504,649. My testimony also explains that the projected environmental expenditures for 2020 are appropriate for recovery through the ECRC.

Q. Does this conclude your direct testimony?

A. Yes, it does.

EXHIBIT TO THE TESTIMONY OF PENELOPE A. RUSK

TAMPA ELECTRIC'S ENVIRONMENTAL COST RECOVERY

PROJECTION

JANUARY 2020 THROUGH DECEMBER 2020

INDEX

ENVIRONMENTAL COST RECOVERY

COMMISSION FORMS

JANUARY 2020 THROUGH DECEMBER 2020

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

Form 42 - 1P

For the Projected Period
January 2020 to December 2020

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)	$9,366,321	$74,500	$9,440,821
b. Projected Capital Projects (Form 42-3P, Lines 7, 8 & 9)	43,831,641	691,266	44,522,907
c. Total Jurisdictional Revenue Requirements for the projected period (Lines 1a + 1b)	53,197,962	765,766	53,963,728
2. True-up for Estimated Over/(Under) Recovery for the current period January 2019 to December 2019 (Form 42-2E, Line 5 + 6 + 10)	4,075,582	32,853	4,108,435
3. Final True-up for the period January 2018 to December 2018 (Form 42-1A, Line 3)	2,382,319	13,895	2,396,214
4. Total Jurisdictional Amount to Be Recovered/(Refunded) in the projection period January 2020 to December 2020 (Line 1 - Line 2- Line 3)	46,740,061	719,018	47,459,079
5. Total Projected Jurisdictional Amount Adjusted for Taxes (Line 4 x Revenue Tax Multiplier)	$46,773,714	$719,536	$47,493,250

Tampa Electric Company
Environmental Cost Recovery Clause (ECRC)
Calculation of the Projected Period Amount
January 2020 to December 2020

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	$32,563	$32,563	$32,563	$32,563	$32,563	$32,563	$32,563	$32,563	$32,563	$32,563	$32,563	$32,563	$390,754		$390,754
	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	(4)	11	11	(4)	11	11	(4)	11	11	(4)	11	11	71		71
	d. Big Bend Units 1 & 2 FGD	20,845	20,845	20,845	20,845	20,845	20,845	20,845	20,845	20,845	20,845	20,845	20,845	250,146		250,146
	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	33,208	33,208	398,500		398,500
	f. Big Bend NO_x Emissions Reduction	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	12,000		12,000
	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	0	0	0	0	0	0	0	0	0	0	0	0	0		0
	j. Bayside SCR Consumables	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	900	900	900	900	900	900	900	900	900	900	900	900	10,800		10,800
	m. Big Bend Unit 2 Pre-SCR	900	900	900	900	900	900	900	900	900	900	900	900	10,800		10,800
	n. Big Bend Unit 3 Pre-SCR	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	12,000		12,000
	o. Clean Water Act Section 316(b) Phase II Study	5,000	15,000	0	20,000	0	0	0	0	0	0	0	0	40,000	40,000	
	p. Arsenic Groundwater Standard Program	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	q. Big Bend Unit 1 SCR	9,325	4,508	11,094	13,931	19,199	24,328	9,996	14,598	15,045	16,464	15,349	10,832	164,668		164,668
	r. Big Bend Unit 2 SCR	11,834	6,165	41,830	20,451	14,676	39,307	35,625	28,393	27,341	33,420	48,922	21,651	329,616		329,616
	s. Big Bend Unit 3 SCR	30,480	112,319	73,818	77,060	67,637	59,747	54,224	54,487	46,664	60,950	40,281	38,359	716,027		716,027
	t. Big Bend Unit 4 SCR	129,939	50,206	46,457	61,756	71,685	79,987	103,524	105,891	84,148	62,364	68,646	104,032	968,634		968,634
	u. Mercury Air Toxics Standards	2,000	2,000	3,000	3,000	2,000	2,000	2,000	2,000	2,000	3,000	2,000	2,000	27,000		27,000
	v. Greenhouse Gas Reduction Program	0	0	53,528	0	39,621	0	0	0	0	0	0	0	93,150		93,150
	w. Big Bend Gypsum Storage Facility (East 40)	78,922	78,922	78,922	78,922	78,922	78,922	78,922	78,922	78,922	78,922	78,922	78,922	947,064		947,064
	x. Big Bend CCR Rule - Phase I	0	0	0	0	0	0	0	0	0	0	0	0	0		0
	y. Big Bend ELG Compliance	0	0	0	0	0	0	0	0	0	0	0	0	0		0
	z. Big Bend CCR Rule - Phase II	409,674	409,674	409,674	409,674	409,674	409,674	409,674	409,674	409,674	409,674	409,674	409,674	4,916,092		4,916,092
	aa. Big Bend Unit 1 Sec. 316(b) Impingement Mortality	0	0	0	0	0	0	0	0	0	0	0	0	0		0
2.	Total of O&M Activities	810,088	777,221	817,750	785,207	804,843	796,393	796,379	796,393	765,221	765,207	762,221	763,898	9,440,821	$74,500	$9,366,322
3.	Recoverable Costs Allocated to Energy	770,588	762,221	817,750	765,207	804,843	796,393	796,379	796,393	765,221	765,207	762,221	763,898	9,366,321		
4.	Recoverable Costs Allocated to Demand	39,500	15,000	0	20,000	0	0	0	0	0	0	0	0	74,500	.	
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)	770,588	762,221	817,750	765,207	804,843	796,393	796,379	796,393	765,221	765,207	762,221	763,898	9,366,321		
8.	Jurisdictional Demand Recoverable Costs (B)	39,500	15,000	0	20,000	0	0	0	0	0	0	0	0	74,500		
9.	Total Jurisdictional Recoverable Costs for O&M Activities (Lines 7 + 8)	$810,088	$777,221	$817,750	$785,207	$804,843	$796,393	$796,379	$796,393	765,221	765,207	$762,221	$763,898	$9,440,821		

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DOCKET NO. 20190007-EI
ECRC 2020 PROJECTION, FORM 42-2P
EXHIBIT NO. PAR-3, DOCUMENT NO. 2

Form 42-3P

Tampa Electric Company
Environmental Cost Recovery Clause (ECRC)
Calculation of the Projected Period Amount
January 2020 to December 2020

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	$78,130	$77,943	$77,757	$77,571	$77,384	$77,197	$77,011	$76,824	$76,637	$76,451	$76,264	$76,077	$925,246		$925,246
	b.	Big Bend Units 1 and 2 Flue Gas Conditioning	2	19,008	18,904	18,799	18,695	18,590	18,485	18,381	18,277	18,172	18,068	17,964	17,859	221,202		221,202
	c.	Big Bend Unit 4 Continuous Emissions Monitors	3	4,041	4,026	4,011	3,996	3,981	3,966	3,951	3,937	3,921	3,906	3,892	3,876	47,504		47,504
	d.	Big Bend Fuel Oil Tank # 1 Upgrade	4	5,902	5,869	5,835	5,803	5,770	5,736	5,703	5,670	5,637	5,604	5,570	5,538	68,637	$68,637	
	e.	Big Bend Fuel Oil Tank # 2 Upgrade	5	9,708	9,653	9,598	9,544	9,490	9,435	9,380	9,326	9,271	9,217	9,163	9,107	112,892	112,892	
	f.	Big Bend Unit 1 Classifier Replacement	6	6,245	6,216	6,188	6,159	6,131	6,103	6,074	6,046	6,017	5,989	5,961	5,932	73,061		73,061
	g.	Big Bend Unit 2 Classifier Replacement	7	4,534	4,515	4,495	4,476	4,456	4,436	4,417	4,397	4,377	4,358	4,338	4,319	53,118		53,118
	h.	Big Bend Section 114 Mercury Testing Platform	8	691	689	687	685	684	682	680	678	676	674	672	671	8,169		8,169
	i.	Big Bend Units 1 & 2 FGD	9	480,434	478,738	477,044	475,349	473,654	471,959	470,264	468,569	466,874	465,179	463,484	461,788	5,653,336		5,653,336
	j.	Big Bend FGD Optimization and Utilization	10	129,924	129,616	129,307	128,999	128,690	128,382	128,074	127,765	127,457	127,148	126,841	126,533	1,538,736		1,538,736
	k.	Big Bend NO_x Emissions Reduction	11	41,335	41,269	41,203	41,138	41,071	41,005	40,939	40,874	40,808	40,742	40,675	40,610	491,669		491,669
	l.	Big Bend PM Minimization and Monitoring	12	146,188	145,794	145,399	145,005	144,611	144,217	143,823	143,430	143,036	142,642	142,248	141,853	1,728,246		1,728,246
	m.	Polk NO_x Emissions Reduction	13	9,062	9,034	9,005	8,976	8,948	8,919	8,891	8,862	8,833	8,805	8,776	8,747	106,858		106,858
	n.	Big Bend Unit 4 SOFA	14	16,056	16,015	15,974	15,933	15,891	15,850	15,808	15,767	15,725	15,684	15,643	15,602	189,948		189,948
	o.	Big Bend Unit 1 Pre-SCR	15	10,991	10,955	10,920	10,884	10,848	10,813	10,777	10,741	10,706	10,670	10,635	10,599	129,539		129,539
	p.	Big Bend Unit 2 Pre-SCR	16	10,495	10,463	10,432	10,400	10,369	10,337	10,306	10,274	10,243	10,211	10,180	10,148	123,858		123,858
	q.	Big Bend Unit 3 Pre-SCR	17	18,822	18,770	18,719	18,667	18,616	18,564	18,514	18,462	18,411	18,359	18,308	18,256	222,468		222,468
	r.	Big Bend Unit 1 SCR	18	628,194	626,194	624,192	622,192	620,191	618,190	616,189	614,188	612,187	610,187	608,185	606,185	7,406,274		7,406,274
	s.	Big Bend Unit 2 SCR	19	688,434	686,412	684,390	682,369	680,347	678,326	676,304	674,283	672,261	670,239	668,217	666,196	8,127,778		8,127,778
	t.	Big Bend Unit 3 SCR	20	560,458	558,826	557,195	555,563	553,932	552,300	550,669	549,038	547,407	545,775	544,144	542,512	6,617,819		6,617,819
	u.	Big Bend Unit 4 SCR	21	449,031	447,785	446,540	445,294	444,048	442,802	441,556	440,311	439,065	437,820	436,574	435,328	5,306,154		5,306,154
	v.	Big Bend FGD System Reliability	22	171,980	171,647	171,313	170,979	170,646	170,311	169,977	169,644	169,310	168,976	168,643	168,309	2,041,735		2,041,735
	w.	Mercury Air Toxics Standards	23	67,557	67,410	67,264	67,118	66,972	66,825	66,680	66,533	66,387	66,240	66,094	65,948	801,028		801,028
	x.	SO_2 Emissions Allowances (B)	24	(222)	(222)	(222)	(222)	(222)	(222)	(222)	(222)	(222)	(222)	(222)	(222)	(2,664)		(2,664)
	y.	Big Bend Gypsum Storage Facility	25	170,226	169,891	169,555	169,219	168,884	168,548	168,212	167,877	167,541	167,204	166,869	166,533	2,020,559		2,020,559
	z.	Big Bend CCR Rule - Phase I	26	10,867	10,884	10,934	11,015	11,250	11,543	13,294	16,104	18,584	22,009	24,353	24,616	185,453	185,453	
	aa.	Big Bend CCR Rule - Phase II	27	4,055	4,118	4,182	4,247	4,347	4,485	4,640	4,829	5,279	5,696	6,276	7,292	59,446	59,446	
	ab.	Big Bend ELG Compliance	28	935	1,259	2,391	4,333	6,274	8,215	11,128	15,011	18,895	22,777	26,014	28,602	145,834	145,834	
	ac.	Big Bend Unit 1 Sec. 316(b) Impingement Mortality	29	6,358	7,005	7,651	8,299	8,946	9,594	10,240	10,888	11,535	12,183	12,829	13,476	119,004	119,004	
2.		Total Investment Projects - Recoverable Costs		3,749,439	3,739,678	3,730,758	3,722,686	3,714,799	3,707,003	3,701,660	3,698,383	3,695,030	3,692,591	3,688,590	3,682,290	44,522,907	$691,266	$43,831,641
3.		Recoverable Costs Allocated to Energy		3,711,614	3,700,890	3,690,167	3,679,445	3,668,722	3,657,995	3,647,275	3,636,555	3,625,829	3,615,105	3,604,385	3,593,659	43,831,641		43,831,641
4.		Recoverable Costs Allocated to Demand		37,825	38,788	40,591	43,241	46,077	49,008	54,385	61,828	69,201	77,486	84,205	88,631	691,266	691,266	
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)		3,711,614	3,700,890	3,690,167	3,679,445	3,668,722	3,657,995	3,647,275	3,636,555	3,625,829	3,615,105	3,604,385	3,593,659	43,831,641		
8.		Jurisdictional Demand Recoverable Costs (D)		37,825	38,788	40,591	43,241	46,077	49,008	54,385	61,828	69,201	77,486	84,205	88,631	691,266		
9.		Total Jurisdictional Recoverable Costs for Investment Projects (Lines 7 + 8)		$3,749,439	$3,739,678	$3,730,758	$3,722,686	$3,714,799	$3,707,003	$3,701,660	$3,698,383	$3,695,030	$3,692,591	$3,688,590	$3,682,290	$44,522,907		

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 2020 to December 2020

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)	$13,763,263	$13,763,263	$13,763,263	$13,763,263	$13,763,263	$13,763,263	$13,763,263	$13,763,263	$13,763,263	$13,763,263	$13,763,263	$13,763,263	$13,763,263	
3.	Less: Accumulated Depreciation	(6,132,393)	(6,161,231)	(6,190,069)	(6,218,907)	(6,247,745)	(6,276,583)	(6,305,421)	(6,334,259)	(6,363,097)	(6,391,935)	(6,420,773)	(6,449,611)	(6,478,449)	
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)	$7,630,870	7,602,032	7,573,194	7,544,356	7,515,518	7,486,680	7,457,842	7,429,004	7,400,166	7,371,328	7,342,490	7,313,652	7,284,814	
6.	Average Net Investment		7,616,451	7,587,613	7,558,775	7,529,937	7,501,099	7,472,261	7,443,423	7,414,585	7,385,747	7,356,909	7,328,071	7,299,233	
7.	Return on Average Net Investment														
	a. Equity Component Grossed Up For Taxes (B)		$38,268	$38,123	$37,978	$37,834	$37,689	$37,544	$37,399	$37,254	$37,109	$36,964	$36,819	$36,674	$449,655
	b. Debt Component Grossed Up For Taxes (C)		11,024	10,982	10,941	10,899	10,857	10,815	10,774	10,732	10,690	10,649	10,607	10,565	129,535
8.	Investment Expenses														
	a. Depreciation (D)		28,838	28,838	28,838	28,838	28,838	28,838	28,838	28,838	28,838	28,838	28,838	28,838	346,056
	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)		78,130	77,943	77,757	77,571	77,384	77,197	77,011	76,824	76,637	76,451	76,264	76,077	925,246
	a. Recoverable Costs Allocated to Energy		78,130	77,943	77,757	77,571	77,384	77,197	77,011	76,824	76,637	76,451	76,264	76,077	925,246
	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)		78,130	77,943	77,757	77,571	77,384	77,197	77,011	76,824	76,637	76,451	76,264	76,077	925,246
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)		$78,130	$77,943	$77,757	$77,571	$77,384	$77,197	$77,011	$76,824	$76,637	$76,451	$76,264	$76,077	$925,246

Notes:
(A) Applicable depreciable base for Big Bend; accounts 312.45 ($13,435,775), 315.45 ($327,307), and 312.40 ($182)
(B) Line 6 x 6.0293% 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 1.7369% x 1/12.
(D) Applicable depreciation rates are 2.5%, 3.1%, 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 2020 to December 2020

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	(4,566,662)	(4,582,803)	(4,598,944)	(4,615,085)	(4,631,226)	(4,647,367)	(4,663,508)	(4,679,649)	(4,695,790)	(4,711,931)	(4,728,072)	(4,744,213)	(4,760,354)	
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)	$451,072	434,931	418,790	402,649	386,508	370,367	354,226	338,085	321,944	305,803	289,662	273,521	257,380	
6.	Average Net Investment		443,002	426,861	410,720	394,579	378,438	362,297	346,156	330,015	313,874	297,733	281,592	265,451	
7.	Return on Average Net Investment														
	a. Equity Component Grossed Up For Taxes (B)		$2,226	$2,145	$2,064	$1,983	$1,901	$1,820	$1,739	$1,658	$1,577	$1,496	$1,415	$1,334	$21,358
	b. Debt Component Grossed Up For Taxes (C)		641	618	594	571	548	524	501	478	454	431	408	384	6,152
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)		19,008	18,904	18,799	18,695	18,590	18,485	18,381	18,277	18,172	18,068	17,964	17,859	221,202
	a. Recoverable Costs Allocated to Energy		19,008	18,904	18,799	18,695	18,590	18,485	18,381	18,277	18,172	18,068	17,964	17,859	221,202
	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)		19,008	18,904	18,799	18,695	18,590	18,485	18,381	18,277	18,172	18,068	17,964	17,859	221,202
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)		$19,008	$18,904	$18,799	$18,695	$18,590	$18,485	$18,381	$18,277	$18,172	$18,068	$17,964	$17,859	$221,202

Notes:
(A) Applicable depreciable base for Big Bend; accounts 312.41 ($2,676,217) and 312.42 ($2,341,517)
(B) Line 6 x 6.0293% 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 1.7369% 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 2020 to December 2020

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	(597,605)	(599,915)	(602,225)	(604,535)	(606,845)	(609,155)	(611,465)	(613,775)	(616,085)	(618,395)	(620,705)	(623,015)	(625,325)	
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)	$268,606	266,296	263,986	261,676	259,366	257,056	254,746	252,436	250,126	247,816	245,506	243,196	240,886	
6.	Average Net Investment		267,451	265,141	262,831	260,521	258,211	255,901	253,591	251,281	248,971	246,661	244,351	242,041	
7.	Return on Average Net Investment														
	a. Equity Component Grossed Up For Taxes (B)		$1,344	$1,332	$1,321	$1,309	$1,297	$1,286	$1,274	$1,263	$1,251	$1,239	$1,228	$1,216	$15,360
	b. Debt Component Grossed Up For Taxes (C)		387	384	380	377	374	370	367	364	360	357	354	350	4,424
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)		4,041	4,026	4,011	3,996	3,981	3,966	3,951	3,937	3,921	3,906	3,892	3,876	47,504
	a. Recoverable Costs Allocated to Energy		4,041	4,026	4,011	3,996	3,981	3,966	3,951	3,937	3,921	3,906	3,892	3,876	47,504
	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)		4,041	4,026	4,011	3,996	3,981	3,966	3,951	3,937	3,921	3,906	3,892	3,876	47,504
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)		$4,041	$4,026	$4,011	$3,996	$3,981	$3,966	$3,951	$3,937	$3,921	$3,906	$3,892	$3,876	$47,504

Notes:
(A) Applicable depreciable base for Big Bend; account 315.44
(B) Line 6 x 6.0293% 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 1.7369% 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 2020 to December 2020

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	(374,626)	(379,749)	(384,872)	(389,995)	(395,118)	(400,241)	(405,364)	(410,487)	(415,610)	(420,733)	(425,856)	(430,979)	(436,102)	
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)	$122,952	117,829	112,706	107,583	102,460	97,337	92,214	87,091	81,968	76,845	71,722	66,599	61,476	
6.	Average Net Investment		120,391	115,268	110,145	105,022	99,899	94,776	89,653	84,530	79,407	74,284	69,161	64,038	
7.	Return on Average Net Investment														
	a. Equity Component Grossed Up For Taxes (B)		$605	$579	$553	$528	$502	$476	$450	$425	$399	$373	$347	$322	$5,559
	b. Debt Component Grossed Up For Taxes (C)		174	167	159	152	145	137	130	122	115	108	100	93	1,602
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)		5,902	5,869	5,835	5,803	5,770	5,736	5,703	5,670	5,637	5,604	5,570	5,538	68,637
	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		5,902	5,869	5,835	5,803	5,770	5,736	5,703	5,670	5,637	5,604	5,570	5,538	68,637
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)		5,902	5,869	5,835	5,803	5,770	5,736	5,703	5,670	5,637	5,604	5,570	5,538	68,637
14.	Total Jurisdictional Recoverable Costs (Lines 12 + 13)		$5,902	$5,869	$5,835	$5,803	$5,770	$5,736	$5,703	$5,670	$5,637	$5,604	$5,570	$5,538	$68,637

Notes:

(A) Applicable depreciable base for Big Bend; account 312.40
(B) Line 6 x 6.0293% 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 1.7369% x 1/12.
(D) Applicable depreciation rate is 12.4%
(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 2020 to December 2020

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	(616,174)	(624,600)	(633,026)	(641,452)	(649,878)	(658,304)	(666,730)	(675,156)	(683,582)	(692,008)	(700,434)	(708,860)	(717,286)	
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)	$202,227	193,801	185,375	176,949	168,523	160,097	151,671	143,245	134,819	126,393	117,967	109,541	101,115	
6.	Average Net Investment		198,014	189,588	181,162	172,736	164,310	155,884	147,458	139,032	130,606	122,180	113,754	105,328	
7.	Return on Average Net Investment														
	a. Equity Component Grossed Up For Taxes (B)		$995	$953	$910	$868	$826	$783	$741	$699	$656	$614	$572	$529	$9,146
	b. Debt Component Grossed Up For Taxes (C)		287	274	262	250	238	226	213	201	189	177	165	152	2,634
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)		9,708	9,653	9,598	9,544	9,490	9,435	9,380	9,326	9,271	9,217	9,163	9,107	112,892
	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		9,708	9,653	9,598	9,544	9,490	9,435	9,380	9,326	9,271	9,217	9,163	9,107	112,892
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)		9,708	9,653	9,598	9,544	9,490	9,435	9,380	9,326	9,271	9,217	9,163	9,107	112,892
14.	Total Jurisdictional Recoverable Costs (Lines 12 + 13)		$9,708	$9,653	$9,598	$9,544	$9,490	$9,435	$9,380	$9,326	$9,271	$9,217	$9,163	$9,107	$112,892

Notes:
(A) Applicable depreciable base for Big Bend; account 312.40
(B) Line 6 x 6.0293% 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 1.7369% x 1/12.
(D) Applicable depreciation rate is 12.4%
(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 2020 to December 2020

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	(1,027,160)	(1,031,548)	(1,035,936)	(1,040,324)	(1,044,712)	(1,049,100)	(1,053,488)	(1,057,876)	(1,062,264)	(1,066,652)	(1,071,040)	(1,075,428)	(1,079,816)	
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)	$289,097	284,709	280,321	275,933	271,545	267,157	262,769	258,381	253,993	249,605	245,217	240,829	236,441	
6.	Average Net Investment		286,903	282,515	278,127	273,739	269,351	264,963	260,575	256,187	251,799	247,411	243,023	238,635	
7.	Return on Average Net Investment														
	a. Equity Component Grossed Up For Taxes (B)		$1,442	$1,419	$1,397	$1,375	$1,353	$1,331	$1,309	$1,287	$1,265	$1,243	$1,221	$1,199	$15,841
	b. Debt Component Grossed Up For Taxes (C)		415	409	403	396	390	384	377	371	364	358	352	345	4,564
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)		6,245	6,216	6,188	6,159	6,131	6,103	6,074	6,046	6,017	5,989	5,961	5,932	73,061
	a. Recoverable Costs Allocated to Energy		6,245	6,216	6,188	6,159	6,131	6,103	6,074	6,046	6,017	5,989	5,961	5,932	73,061
	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)		6,245	6,216	6,188	6,159	6,131	6,103	6,074	6,046	6,017	5,989	5,961	5,932	73,061
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)		$6,245	$6,216	$6,188	$6,159	$6,131	$6,103	$6,074	$6,046	$6,017	$5,989	$5,961	$5,932	$73,061

Notes:
(A) Applicable depreciable base for Big Bend; account 312.41
(B) Line 6 x 6.0293% 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 1.7369% 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 2020 to December 2020

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	(751,734)	(754,770)	(757,806)	(760,842)	(763,878)	(766,914)	(769,950)	(772,986)	(776,022)	(779,058)	(782,094)	(785,130)	(788,166)	
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)	$233,060	230,024	226,988	223,952	220,916	217,880	214,844	211,808	208,772	205,736	202,700	199,664	196,628	
6.	Average Net Investment		231,542	228,506	225,470	222,434	219,398	216,362	213,326	210,290	207,254	204,218	201,182	198,146	
7.	Return on Average Net Investment														
	a. Equity Component Grossed Up For Taxes (B)		$1,163	$1,148	$1,133	$1,118	$1,102	$1,087	$1,072	$1,057	$1,041	$1,026	$1,011	$996	$12,954
	b. Debt Component Grossed Up For Taxes (C)		335	331	326	322	318	313	309	304	300	296	291	287	3,732
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)		4,534	4,515	4,495	4,476	4,456	4,436	4,417	4,397	4,377	4,358	4,338	4,319	53,118
	a. Recoverable Costs Allocated to Energy		4,534	4,515	4,495	4,476	4,456	4,436	4,417	4,397	4,377	4,358	4,338	4,319	53,118
	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)		4,534	4,515	4,495	4,476	4,456	4,436	4,417	4,397	4,377	4,358	4,338	4,319	53,118
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)		$4,534	$4,515	$4,495	$4,476	$4,456	$4,436	$4,417	$4,397	$4,377	$4,358	$4,338	$4,319	$53,118

Notes:
(A) Applicable depreciable base for Big Bend; account 312.42
(B) Line 6 x 6.0293% 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 1.7369% 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 2020 to December 2020

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	(58,915)	(59,207)	(59,499)	(59,791)	(60,083)	(60,375)	(60,667)	(60,959)	(61,251)	(61,543)	(61,835)	(62,127)	(62,419)	
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)	$61,822	61,530	61,238	60,946	60,654	60,362	60,070	59,778	59,486	59,194	58,902	58,610	58,318	
6.	Average Net Investment		61,676	61,384	61,092	60,800	60,508	60,216	59,924	59,632	59,340	59,048	58,756	58,464	
7.	Return on Average Net Investment														
	a. Equity Component Grossed Up For Taxes (B)		$310	$308	$307	$305	$304	$303	$301	$300	$298	$297	$295	$294	$3,622
	b. Debt Component Grossed Up For Taxes (C)		89	89	88	88	88	87	87	86	86	85	85	85	1,043
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)		691	689	687	685	684	682	680	678	676	674	672	671	8,169
	a. Recoverable Costs Allocated to Energy		691	689	687	685	684	682	680	678	676	674	672	671	8,169
	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)		691	689	687	685	684	682	680	678	676	674	672	671	8,169
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)		$691	$689	$687	$685	$684	$682	$680	$678	$676	$674	$672	$671	$8,169

Notes:
(A) Applicable depreciable base for Big Bend; account 311.40
(B) Line 6 x 6.0293% 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 1.7369% x 1/12.
(D) Applicable depreciation rate is 2.9%
(E) Line 9a x Line 10
(F) Line 9b x Line 11

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<u>Tampa Electric Company</u>
Environmental Cost Recovery Clause (ECRC)
Calculation of the Projected Period Amount
January 2020 to December 2020

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	(61,360,265)	(61,622,184)	(61,884,103)	(62,146,022)	(62,407,941)	(62,669,860)	(62,931,779)	(63,193,698)	(63,455,617)	(63,717,536)	(63,979,455)	(64,241,374)	(64,503,293)	
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)	$33,894,977	33,633,058	33,371,139	33,109,220	32,847,301	32,585,382	32,323,463	32,061,544	31,799,625	31,537,706	31,275,787	31,013,868	30,751,949	
6.	Average Net Investment		33,764,017	33,502,098	33,240,179	32,978,260	32,716,341	32,454,422	32,192,503	31,930,584	31,668,665	31,406,746	31,144,827	30,882,908	
7.	Return on Average Net Investment														
	a. Equity Component Grossed Up For Taxes (B)		$169,644	$168,328	$167,013	$165,697	$164,381	$163,065	$161,749	$160,433	$159,117	$157,801	$156,485	$155,169	$1,948,882
	b. Debt Component Grossed Up For Taxes (C)		48,871	48,491	48,112	47,733	47,354	46,975	46,596	46,217	45,838	45,459	45,080	44,700	561,426
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)		480,434	478,738	477,044	475,349	473,654	471,959	470,264	468,569	466,874	465,179	463,484	461,788	5,653,336
	a. Recoverable Costs Allocated to Energy		480,434	478,738	477,044	475,349	473,654	471,959	470,264	468,569	466,874	465,179	463,484	461,788	5,653,336
	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)		480,434	478,738	477,044	475,349	473,654	471,959	470,264	468,569	466,874	465,179	463,484	461,788	5,653,336
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)		$480,434	$478,738	$477,044	$475,349	$473,654	$471,959	$470,264	$468,569	$466,874	$465,179	$463,484	$461,788	$5,653,336

<u>Notes:</u>
(A) Applicable depreciable base for Big Bend; accounts 312.45 ($105,398), 312.46 ($94,929,061) & 315.46 ($220,782)
(B) Line 6 x 6.0293% 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 1.7369% x 1/12.
(D) Applicable depreciation rates are 2.5%, 3.3% 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 2020 to December 2020

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		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)	$22,653,929	$22,653,929	$22,653,929	$22,653,929	$22,653,929	$22,653,929	$22,653,929	$22,653,929	$22,653,929	$22,653,929	$22,653,929	$22,653,929	$22,653,929	
3.	Less: Accumulated Depreciation	(9,917,006)	(9,964,653)	(10,012,300)	(10,059,947)	(10,107,594)	(10,155,241)	(10,202,888)	(10,250,535)	(10,298,182)	(10,345,829)	(10,393,476)	(10,441,123)	(10,488,770)	
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)	$12,736,923	12,689,276	12,641,629	12,593,982	12,546,335	12,498,688	12,451,041	12,403,394	12,355,747	12,308,100	12,260,453	12,212,806	12,165,159	
6.	Average Net Investment		12,713,100	12,665,453	12,617,806	12,570,159	12,522,512	12,474,865	12,427,218	12,379,571	12,331,924	12,284,277	12,236,630	12,188,983	
7.	Return on Average Net Investment														
	a. Equity Component Grossed Up For Taxes (B)		$63,876	$63,637	$63,397	$63,158	$62,918	$62,679	$62,440	$62,200	$61,961	$61,721	$61,482	$61,243	$750,712
	b. Debt Component Grossed Up For Taxes (C)		18,401	18,332	18,263	18,194	18,125	18,056	17,987	17,918	17,849	17,780	17,712	17,643	216,260
8.	Investment Expenses														
	a. Depreciation (D)		47,647	47,647	47,647	47,647	47,647	47,647	47,647	47,647	47,647	47,647	47,647	47,647	571,764
	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)		129,924	129,616	129,307	128,999	128,690	128,382	128,074	127,765	127,457	127,148	126,841	126,533	1,538,736
	a. Recoverable Costs Allocated to Energy		129,924	129,616	129,307	128,999	128,690	128,382	128,074	127,765	127,457	127,148	126,841	126,533	1,538,736
	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)		129,924	129,616	129,307	128,999	128,690	128,382	128,074	127,765	127,457	127,148	126,841	126,533	1,538,736
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)		$129,924	$129,616	$129,307	$128,999	$128,690	$128,382	$128,074	$127,765	$127,457	$127,148	$126,841	$126,533	$1,538,736

Notes:
(A) Applicable depreciable base for Big Bend; accounts 312.45 ($21,855,886), 311.45 ($40,016), 316.40 ($71,401), 315.45 ($594,901), 312.42 ($1,637), and 312.40 ($90,088)
(B) Line 6 x 6.0293% 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 1.7369% x 1/12.
(D) Applicable depreciation rates are 2.5%, 2.0%, 4.2%, 3.1%, 3.7%, 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 2020 to December 2020

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	1,627,563	1,617,379	1,607,195	1,597,011	1,586,827	1,576,643	1,566,459	1,556,275	1,546,091	1,535,907	1,525,723	1,515,539	1,505,355	
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)	$4,818,415	4,808,231	4,798,047	4,787,863	4,777,679	4,767,495	4,757,311	4,747,127	4,736,943	4,726,759	4,716,575	4,706,391	4,696,207	
6.	Average Net Investment		4,813,323	4,803,139	4,792,955	4,782,771	4,772,587	4,762,403	4,752,219	4,742,035	4,731,851	4,721,667	4,711,483	4,701,299	
7.	Return on Average Net Investment														
	a. Equity Component Grossed Up For Taxes (B)		$24,184	$24,133	$24,082	$24,031	$23,979	$23,928	$23,877	$23,826	$23,775	$23,724	$23,672	$23,621	$286,832
	b. Debt Component Grossed Up For Taxes (C)		6,967	6,952	6,937	6,923	6,908	6,893	6,878	6,864	6,849	6,834	6,819	6,805	82,629
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)		41,335	41,269	41,203	41,138	41,071	41,005	40,939	40,874	40,808	40,742	40,675	40,610	491,669
	a. Recoverable Costs Allocated to Energy		41,335	41,269	41,203	41,138	41,071	41,005	40,939	40,874	40,808	40,742	40,675	40,610	491,669
	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)		41,335	41,269	41,203	41,138	41,071	41,005	40,939	40,874	40,808	40,742	40,675	40,610	491,669
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)		$41,335	$41,269	$41,203	$41,138	$41,071	$41,005	$40,939	$40,874	$40,808	$40,742	$40,675	$40,610	$491,669

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 6.0293% 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 1.7369% 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 2020 to December 2020

Return on Capital Investments, Depreciation and Taxes
For Project: 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	(6,544,786)	(6,605,658)	(6,666,530)	(6,727,402)	(6,788,274)	(6,849,146)	(6,910,018)	(6,970,890)	(7,031,762)	(7,092,634)	(7,153,506)	(7,214,378)	(7,275,250)	
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)	$13,212,964	13,152,092	13,091,220	13,030,348	12,969,476	12,908,604	12,847,732	12,786,860	12,725,988	12,665,116	12,604,244	12,543,372	12,482,500	
6.	Average Net Investment		13,182,528	13,121,656	13,060,784	12,999,912	12,939,040	12,878,168	12,817,296	12,756,424	12,695,552	12,634,680	12,573,808	12,512,936	
7.	Return on Average Net Investment														
	a. Equity Component Grossed Up For Taxes (B)		$66,235	$65,929	$65,623	$65,317	$65,011	$64,705	$64,399	$64,094	$63,788	$63,482	$63,176	$62,870	$774,629
	b. Debt Component Grossed Up For Taxes (C)		19,081	18,993	18,904	18,816	18,728	18,640	18,552	18,464	18,376	18,288	18,200	18,111	223,153
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)		146,188	145,794	145,399	145,005	144,611	144,217	143,823	143,430	143,036	142,642	142,248	141,853	1,728,246
	a. Recoverable Costs Allocated to Energy		146,188	145,794	145,399	145,005	144,611	144,217	143,823	143,430	143,036	142,642	142,248	141,853	1,728,246
	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)		146,188	145,794	145,399	145,005	144,611	144,217	143,823	143,430	143,036	142,642	142,248	141,853	1,728,246
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)		$146,188	$145,794	$145,399	$145,005	$144,611	$144,217	$143,823	$143,430	$143,036	$142,642	$142,248	$141,853	$1,728,246

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 6.0293% 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 1.7369% 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 2020 to December 2020

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	(842,586)	(847,010)	(851,434)	(855,858)	(860,282)	(864,706)	(869,130)	(873,554)	(877,978)	(882,402)	(886,826)	(891,250)	(895,674)	
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)	$718,887	714,463	710,039	705,615	701,191	696,767	692,343	687,919	683,495	679,071	674,647	670,223	665,799	
6.	Average Net Investment		716,675	712,251	707,827	703,403	698,979	694,555	690,131	685,707	681,283	676,859	672,435	668,011	
7.	Return on Average Net Investment														
	a. Equity Component Grossed Up For Taxes (B)		$3,601	$3,579	$3,556	$3,534	$3,512	$3,490	$3,468	$3,445	$3,423	$3,401	$3,379	$3,356	$41,744
	b. Debt Component Grossed Up For Taxes (C)		1,037	1,031	1,025	1,018	1,012	1,005	999	993	986	980	973	967	12,026
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)		9,062	9,034	9,005	8,976	8,948	8,919	8,891	8,862	8,833	8,805	8,776	8,747	106,858
	a. Recoverable Costs Allocated to Energy		9,062	9,034	9,005	8,976	8,948	8,919	8,891	8,862	8,833	8,805	8,776	8,747	106,858
	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)		9,062	9,034	9,005	8,976	8,948	8,919	8,891	8,862	8,833	8,805	8,776	8,747	106,858
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)		$9,062	$9,034	$9,005	$8,976	$8,948	$8,919	$8,891	$8,862	$8,833	$8,805	$8,776	$8,747	$106,858

Notes:
(A) Applicable depreciable base for Polk; account 342.81
(B) Line 6 x 6.0293% 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 1.7369% x 1/12.
(D) Applicable depreciation rate is 3.4%
(E) Line 9a x Line 10
(F) Line 9b x Line 11

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DOCKET NO. 20190007-EI
ECRC 2020 PROJECTION, FORM 42-4P
EXHIBIT NO. PAR-3, DOCUMENT NO. 4, PAGE 13 OF 29

Tampa Electric Company
Environmental Cost Recovery Clause (ECRC)
Calculation of the Projected Period Amount
January 2020 to December 2020

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	(1,062,962)	(1,069,359)	(1,075,756)	(1,082,153)	(1,088,550)	(1,094,947)	(1,101,344)	(1,107,741)	(1,114,138)	(1,120,535)	(1,126,932)	(1,133,329)	(1,139,726)	
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)	$1,495,768	1,489,371	1,482,974	1,476,577	1,470,180	1,463,783	1,457,386	1,450,989	1,444,592	1,438,195	1,431,798	1,425,401	1,419,004	
6.	Average Net Investment		1,492,570	1,486,173	1,479,776	1,473,379	1,466,982	1,460,585	1,454,188	1,447,791	1,441,394	1,434,997	1,428,600	1,422,203	
7.	Return on Average Net Investment														
	a. Equity Component Grossed Up For Taxes (B)		$7,499	$7,467	$7,435	$7,403	$7,371	$7,339	$7,306	$7,274	$7,242	$7,210	$7,178	$7,146	$87,870
	b. Debt Component Grossed Up For Taxes (C)		2,160	2,151	2,142	2,133	2,123	2,114	2,105	2,096	2,086	2,077	2,068	2,059	25,314
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)		16,056	16,015	15,974	15,933	15,891	15,850	15,808	15,767	15,725	15,684	15,643	15,602	189,948
	a. Recoverable Costs Allocated to Energy		16,056	16,015	15,974	15,933	15,891	15,850	15,808	15,767	15,725	15,684	15,643	15,602	189,948
	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)		16,056	16,015	15,974	15,933	15,891	15,850	15,808	15,767	15,725	15,684	15,643	15,602	189,948
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)		$16,056	$16,015	$15,974	$15,933	$15,891	$15,850	$15,808	$15,767	$15,725	$15,684	$15,643	$15,602	$189,948

Notes:
(A) Applicable depreciable base for Big Bend; account 312.44
(B) Line 6 x 6.0293% 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 1.7369% 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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DOCKET NO. 20190007-EI
ECRC 2020 PROJECTION, FORM 42-4P
EXHIBIT NO. PAR-3, DOCUMENT NO. 4, PAGE 14 OF 29

Tampa Electric Company
Environmental Cost Recovery Clause (ECRC)
Calculation of the Projected Period Amount
January 2020 to December 2020

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	(797,557)	(803,054)	(808,551)	(814,048)	(819,545)	(825,042)	(830,539)	(836,036)	(841,533)	(847,030)	(852,527)	(858,024)	(863,521)	
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)	$851,564	846,067	840,570	835,073	829,576	824,079	818,582	813,085	807,588	802,091	796,594	791,097	785,600	
6.	Average Net Investment		848,816	843,319	837,822	832,325	826,828	821,331	815,834	810,337	804,840	799,343	793,846	788,349	
7.	Return on Average Net Investment														
	a. Equity Component Grossed Up For Taxes (B)		$4,265	$4,237	$4,210	$4,182	$4,154	$4,127	$4,099	$4,071	$4,044	$4,016	$3,989	$3,961	$49,355
	b. Debt Component Grossed Up For Taxes (C)		1,229	1,221	1,213	1,205	1,197	1,189	1,181	1,173	1,165	1,157	1,149	1,141	14,220
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)		10,991	10,955	10,920	10,884	10,848	10,813	10,777	10,741	10,706	10,670	10,635	10,599	129,539
	a. Recoverable Costs Allocated to Energy		10,991	10,955	10,920	10,884	10,848	10,813	10,777	10,741	10,706	10,670	10,635	10,599	129,539
	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)		10,991	10,955	10,920	10,884	10,848	10,813	10,777	10,741	10,706	10,670	10,635	10,599	129,539
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)		$10,991	$10,955	$10,920	$10,884	$10,848	$10,813	$10,777	$10,741	$10,706	$10,670	$10,635	$10,599	$129,539

Notes:
(A) Applicable depreciable base for Big Bend; account 312.41
(B) Line 6 x 6.0293% 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 1.7369% x 1/12.
(D) Applicable depreciation rate is 4.0%
(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 2020 to December 2020

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	(711,368)	(716,245)	(721,122)	(725,999)	(730,876)	(735,753)	(740,630)	(745,507)	(750,384)	(755,261)	(760,138)	(765,015)	(769,892)	
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)	$870,519	865,642	860,765	855,888	851,011	846,134	841,257	836,380	831,503	826,626	821,749	816,872	811,995	
6.	Average Net Investment		868,081	863,204	858,327	853,450	848,573	843,696	838,819	833,942	829,065	824,188	819,311	814,434	
7.	Return on Average Net Investment														
	a. Equity Component Grossed Up For Taxes (B)		$4,362	$4,337	$4,313	$4,288	$4,264	$4,239	$4,215	$4,190	$4,166	$4,141	$4,117	$4,092	$50,724
	b. Debt Component Grossed Up For Taxes (C)		1,256	1,249	1,242	1,235	1,228	1,221	1,214	1,207	1,200	1,193	1,186	1,179	14,610
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)		10,495	10,463	10,432	10,400	10,369	10,337	10,306	10,274	10,243	10,211	10,180	10,148	123,858
	a. Recoverable Costs Allocated to Energy		10,495	10,463	10,432	10,400	10,369	10,337	10,306	10,274	10,243	10,211	10,180	10,148	123,858
	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)		10,495	10,463	10,432	10,400	10,369	10,337	10,306	10,274	10,243	10,211	10,180	10,148	123,858
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)		$10,495	$10,463	$10,432	$10,400	$10,369	$10,337	$10,306	$10,274	$10,243	$10,211	$10,180	$10,148	$123,858

Notes:
(A) Applicable depreciable base for Big Bend; account 312.42
(B) Line 6 x 6.0293% 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 1.7369% 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 2020 to December 2020

Form 42-4P
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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	(1,023,074)	(1,031,027)	(1,038,980)	(1,046,933)	(1,054,886)	(1,062,839)	(1,070,792)	(1,078,745)	(1,086,698)	(1,094,651)	(1,102,604)	(1,110,557)	(1,118,510)	
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)	$1,683,433	1,675,480	1,667,527	1,659,574	1,651,621	1,643,668	1,635,715	1,627,762	1,619,809	1,611,856	1,603,903	1,595,950	1,587,997	
6.	Average Net Investment		1,679,457	1,671,504	1,663,551	1,655,598	1,647,645	1,639,692	1,631,739	1,623,786	1,615,833	1,607,880	1,599,927	1,591,974	
7.	Return on Average Net Investment														
	a. Equity Component Grossed Up For Taxes (B)		$8,438	$8,398	$8,358	$8,318	$8,278	$8,238	$8,199	$8,159	$8,119	$8,079	$8,039	$7,999	$98,622
	b. Debt Component Grossed Up For Taxes (C)		2,431	2,419	2,408	2,396	2,385	2,373	2,362	2,350	2,339	2,327	2,316	2,304	28,410
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)		18,822	18,770	18,719	18,667	18,616	18,564	18,514	18,462	18,411	18,359	18,308	18,256	222,468
	a. Recoverable Costs Allocated to Energy		18,822	18,770	18,719	18,667	18,616	18,564	18,514	18,462	18,411	18,359	18,308	18,256	222,468
	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)		18,822	18,770	18,719	18,667	18,616	18,564	18,514	18,462	18,411	18,359	18,308	18,256	222,468
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)		$18,822	$18,770	$18,719	$18,667	$18,616	$18,564	$18,514	$18,462	$18,411	$18,359	$18,308	$18,256	$222,468

Notes:
(A) Applicable depreciable base for Big Bend; account 312.43 ($1,995,677) and 315.43 ($710,830)
(B) Line 6 x 6.0293% 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 1.7369% 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

Tampa Electric Company
Environmental Cost Recovery Clause (ECRC)
Calculation of the Projected Period Amount
January 2020 to December 2020

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	
	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	(36,269,622)	(36,578,788)	(36,887,954)	(37,197,120)	(37,506,286)	(37,815,452)	(38,124,618)	(38,433,784)	(38,742,950)	(39,052,116)	(39,361,282)	(39,670,448)	(39,979,614)	
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)	$49,449,480	49,140,314	48,831,148	48,521,982	48,212,816	47,903,650	47,594,484	47,285,318	46,976,152	46,666,986	46,357,820	46,048,654	45,739,488	
6.	Average Net Investment		49,294,897	48,985,731	48,676,565	48,367,399	48,058,233	47,749,067	47,439,901	47,130,735	46,821,569	46,512,403	46,203,237	45,894,071	
7.	Return on Average Net Investment														
	a. Equity Component Grossed Up For Taxes (B)		$247,678	$246,125	$244,571	$243,018	$241,465	$239,911	$238,358	$236,804	$235,251	$233,698	$232,144	$230,591	$2,869,614
	b. Debt Component Grossed Up For Taxes (C)		71,350	70,903	70,455	70,008	69,560	69,113	68,665	68,218	67,770	67,323	66,875	66,428	826,668
8.	Investment Expenses														
	a. Depreciation (D)		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)		628,194	626,194	624,192	622,192	620,191	618,190	616,189	614,188	612,187	610,187	608,185	606,185	7,406,274
	a. Recoverable Costs Allocated to Energy		628,194	626,194	624,192	622,192	620,191	618,190	616,189	614,188	612,187	610,187	608,185	606,185	7,406,274
	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)		628,194	626,194	624,192	622,192	620,191	618,190	616,189	614,188	612,187	610,187	608,185	606,185	7,406,274
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)		$628,194	$626,194	$624,192	$622,192	$620,191	$618,190	$616,189	$614,188	$612,187	$610,187	$608,185	$606,185	$7,406,274

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) Line 6 x 6.0293% 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 1.7369% x 1/12.
(D) Applicable depreciation rate is 4.1%, 4.3%, 4.8% and 4.1%
(E) Line 9a x Line 10
(F) Line 9b x Line 11

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DOCKET NO. 20190007-EI
ECRC 2020 PROJECTION, FORM 42-4P
EXHIBIT NO. PAR-3, DOCUMENT NO. 4, PAGE 18 OF 29

Tampa Electric Company
Environmental Cost Recovery Clause (ECRC)
Calculation of the Projected Period Amount
January 2020 to December 2020

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		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)	$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	$96,538,133	
3.	Less: Accumulated Depreciation	(38,275,236)	(38,587,613)	(38,899,990)	(39,212,367)	(39,524,744)	(39,837,121)	(40,149,498)	(40,461,875)	(40,774,252)	(41,086,629)	(41,399,006)	(41,711,383)	(42,023,760)	
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)	$58,262,897	57,950,520	57,638,143	57,325,766	57,013,389	56,701,012	56,388,635	56,076,258	55,763,881	55,451,504	55,139,127	54,826,750	54,514,373	
6.	Average Net Investment		58,106,708	57,794,331	57,481,954	57,169,577	56,857,200	56,544,823	56,232,446	55,920,069	55,607,692	55,295,315	54,982,938	54,670,561	
7.	Return on Average Net Investment														
	a. Equity Component Grossed Up For Taxes (B)		$291,952	$290,383	$288,813	$287,244	$285,674	$284,105	$282,535	$280,966	$279,396	$277,827	$276,257	$274,688	$3,399,840
	b. Debt Component Grossed Up For Taxes (C)		84,105	83,652	83,200	82,748	82,296	81,844	81,392	80,940	80,488	80,035	79,583	79,131	979,414
8.	Investment Expenses														
	a. Depreciation (D)		312,377	312,377	312,377	312,377	312,377	312,377	312,377	312,377	312,377	312,377	312,377	312,377	3,748,524
	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)		688,434	686,412	684,390	682,369	680,347	678,326	676,304	674,283	672,261	670,239	668,217	666,196	8,127,778
	a. Recoverable Costs Allocated to Energy		688,434	686,412	684,390	682,369	680,347	678,326	676,304	674,283	672,261	670,239	668,217	666,196	8,127,778
	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)		688,434	686,412	684,390	682,369	680,347	678,326	676,304	674,283	672,261	670,239	668,217	666,196	8,127,778
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)		$688,434	$686,412	$684,390	$682,369	$680,347	$678,326	$676,304	$674,283	$672,261	$670,239	$668,217	$666,196	$8,127,778

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) Line 6 x 6.0293% 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 1.7369% x 1/12.
(D) Applicable depreciation rates are 3.5%, 4.0%, 4.1% 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 2020 to December 2020

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	(33,988,473)	(34,240,547)	(34,492,621)	(34,744,695)	(34,996,769)	(35,248,843)	(35,500,917)	(35,752,991)	(36,005,065)	(36,257,139)	(36,509,213)	(36,761,287)	(37,013,361)	
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)	$47,776,129	47,524,055	47,271,981	47,019,907	46,767,833	46,515,759	46,263,685	46,011,611	45,759,537	45,507,463	45,255,389	45,003,315	44,751,241	
6.	Average Net Investment		47,650,092	47,398,018	47,145,944	46,893,870	46,641,796	46,389,722	46,137,648	45,885,574	45,633,500	45,381,426	45,129,352	44,877,278	
7.	Return on Average Net Investment														
	a. Equity Component Grossed Up For Taxes (B)		$239,414	$238,147	$236,881	$235,614	$234,348	$233,081	$231,815	$230,548	$229,282	$228,015	$226,749	$225,482	$2,789,376
	b. Debt Component Grossed Up For Taxes (C)		68,970	68,605	68,240	67,875	67,510	67,145	66,780	66,416	66,051	65,686	65,321	64,956	803,555
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)		560,458	558,826	557,195	555,563	553,932	552,300	550,669	549,038	547,407	545,775	544,144	542,512	6,617,819
	a. Recoverable Costs Allocated to Energy		560,458	558,826	557,195	555,563	553,932	552,300	550,669	549,038	547,407	545,775	544,144	542,512	6,617,819
	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)		560,458	558,826	557,195	555,563	553,932	552,300	550,669	549,038	547,407	545,775	544,144	542,512	6,617,819
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)		$560,458	$558,826	$557,195	$555,563	$553,932	$552,300	$550,669	$549,038	$547,407	$545,775	$544,144	$542,512	$6,617,819

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 6.0293% 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 1.7369% 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 2020 to December 2020

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	$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)	$66,814,861	$66,814,861	$66,814,861	$66,814,861	$66,814,861	$66,814,861	$66,814,861	$66,814,861	$66,814,861	$66,814,861	$66,814,861	$66,814,861	$66,814,861	
3.	Less: Accumulated Depreciation	(27,075,687)	(27,268,155)	(27,460,623)	(27,653,091)	(27,845,559)	(28,038,027)	(28,230,495)	(28,422,963)	(28,615,431)	(28,807,899)	(29,000,367)	(29,192,835)	(29,385,303)	
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)	$39,739,174	39,546,706	39,354,238	39,161,770	38,969,302	38,776,834	38,584,366	38,391,898	38,199,430	38,006,962	37,814,494	37,622,026	37,429,558	
6.	Average Net Investment		39,642,940	39,450,472	39,258,004	39,065,536	38,873,068	38,680,600	38,488,132	38,295,664	38,103,196	37,910,728	37,718,260	37,525,792	
7.	Return on Average Net Investment														
	a. Equity Component Grossed Up For Taxes (B)		$199,183	$198,216	$197,249	$196,282	$195,314	$194,347	$193,380	$192,413	$191,446	$190,479	$189,512	$188,545	$2,326,366
	b. Debt Component Grossed Up For Taxes (C)		57,380	57,101	56,823	56,544	56,266	55,987	55,708	55,430	55,151	54,873	54,594	54,315	670,172
8.	Investment Expenses														
	a. Depreciation (D)		192,468	192,468	192,468	192,468	192,468	192,468	192,468	192,468	192,468	192,468	192,468	192,468	2,309,616
	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)		449,031	447,785	446,540	445,294	444,048	442,802	441,556	440,311	439,065	437,820	436,574	435,328	5,306,154
	a. Recoverable Costs Allocated to Energy		449,031	447,785	446,540	445,294	444,048	442,802	441,556	440,311	439,065	437,820	436,574	435,328	5,306,154
	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)		449,031	447,785	446,540	445,294	444,048	442,802	441,556	440,311	439,065	437,820	436,574	435,328	5,306,154
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)		$449,031	$447,785	$446,540	$445,294	$444,048	$442,802	$441,556	$440,311	$439,065	$437,820	$436,574	$435,328	$5,306,154

Notes:
(A) Applicable depreciable base for Big Bend; account 311.54 ($16,857,250), 312.54 ($38,069,546), 315.54 ($10,642,027), 316.54 ($687,934), and 315.40 ($558,103)
(B) Line 6 x 6.0293% 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 1.7369% x 1/12.
(D) Applicable depreciation rates are 2.4%, 3.8%, 3.9%, 3.3%, 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 2020 to December 2020

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)	$24,465,002	$24,465,002	$24,465,002	$24,465,002	$24,465,002	$24,465,002	$24,465,002	$24,465,002	$24,465,002	$24,465,002	$24,465,002	$24,465,002	$24,465,002	
3.	Less: Accumulated Depreciation	(5,834,851)	(5,886,427)	(5,938,003)	(5,989,579)	(6,041,155)	(6,092,731)	(6,144,307)	(6,195,883)	(6,247,459)	(6,299,035)	(6,350,611)	(6,402,187)	(6,453,763)	
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)	$18,630,151	18,578,575	18,526,999	18,475,423	18,423,847	18,372,271	18,320,695	18,269,119	18,217,543	18,165,967	18,114,391	18,062,815	18,011,239	
6.	Average Net Investment		18,604,363	18,552,787	18,501,211	18,449,635	18,398,059	18,346,483	18,294,907	18,243,331	18,191,755	18,140,179	18,088,603	18,037,027	
7.	Return on Average Net Investment														
	a. Equity Component Grossed Up For Taxes (B)		$93,476	$93,217	$92,958	$92,699	$92,440	$92,180	$91,921	$91,662	$91,403	$91,144	$90,885	$90,626	$1,104,611
	b. Debt Component Grossed Up For Taxes (C)		26,928	26,854	26,779	26,704	26,630	26,555	26,480	26,406	26,331	26,256	26,182	26,107	318,212
8.	Investment Expenses														
	a. Depreciation (D)		51,576	51,576	51,576	51,576	51,576	51,576	51,576	51,576	51,576	51,576	51,576	51,576	618,912
	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)		171,980	171,647	171,313	170,979	170,646	170,311	169,977	169,644	169,310	168,976	168,643	168,309	2,041,735
	a. Recoverable Costs Allocated to Energy		171,980	171,647	171,313	170,979	170,646	170,311	169,977	169,644	169,310	168,976	168,643	168,309	2,041,735
	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)		171,980	171,647	171,313	170,979	170,646	170,311	169,977	169,644	169,310	168,976	168,643	168,309	2,041,735
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)		$171,980	$171,647	$171,313	$170,979	$170,646	$170,311	$169,977	$169,644	$169,310	$168,976	$168,643	$168,309	$2,041,735

Notes:
(A) Applicable depreciable base for Big Bend; account 312.45 ($23,008,793) and 312.44 ($1,456,209).
(B) Line 6 x 6.0293% 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 1.7369% 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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Tampa Electric Company
Environmental Cost Recovery Clause (ECRC)
Calculation of the Projected Period Amount
January 2020 to December 2020

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		$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)	$8,646,413	$8,646,413	$8,646,413	$8,646,413	$8,646,413	$8,646,413	$8,646,413	$8,646,413	$8,646,413	$8,646,413	$8,646,413	$8,646,413	$8,646,413	
3.	Less: Accumulated Depreciation	(1,687,707)	(1,710,301)	(1,732,895)	(1,755,489)	(1,778,083)	(1,800,677)	(1,823,271)	(1,845,865)	(1,868,459)	(1,891,053)	(1,913,647)	(1,936,241)	(1,958,835)	
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)	$6,958,706	6,936,112	6,913,518	6,890,924	6,868,330	6,845,736	6,823,142	6,800,548	6,777,954	6,755,360	6,732,766	6,710,172	6,687,578	
6.	Average Net Investment		6,947,409	6,924,815	6,902,221	6,879,627	6,857,033	6,834,439	6,811,845	6,789,251	6,766,657	6,744,063	6,721,469	6,698,875	
7.	Return on Average Net Investment														
	a. Equity Component Grossed Up For Taxes (B)		$34,907	$34,793	$34,680	$34,566	$34,453	$34,339	$34,226	$34,112	$33,999	$33,885	$33,771	$33,658	$411,389
	b. Debt Component Grossed Up For Taxes (C)		10,056	10,023	9,990	9,958	9,925	9,892	9,860	9,827	9,794	9,761	9,729	9,696	118,511
8.	Investment Expenses														
	a. Depreciation (D)		22,594	22,594	22,594	22,594	22,594	22,594	22,594	22,594	22,594	22,594	22,594	22,594	271,128
	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)		67,557	67,410	67,264	67,118	66,972	66,825	66,680	66,533	66,387	66,240	66,094	65,948	801,028
	a. Recoverable Costs Allocated to Energy		67,557	67,410	67,264	67,118	66,972	66,825	66,680	66,533	66,387	66,240	66,094	65,948	801,028
	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)		67,557	67,410	67,264	67,118	66,972	66,825	66,680	66,533	66,387	66,240	66,094	65,948	801,028
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)		$67,557	$67,410	$67,264	$67,118	$66,972	$66,825	$66,680	$66,533	$66,387	$66,240	$66,094	$65,948	$801,028

Notes:

(A) 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 ($16,035), 315.45 ($40,217) and 315.46 ($50,784), 311.40 ($13,216), 345.81 ($2,232), 312.54 ($210,295) and 395.00 ($60,018)
(B) Line 6 x 6.0293% 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 1.7369% x 1/12.
(D) 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%
(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 2020 to December 2020

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	(34,273)	(34,259)	(34,259)	(34,259)	(34,245)	(34,245)	(34,245)	(34,230)	(34,230)	(34,230)	(34,216)	(34,216)	(34,216)	
3.	Total Working Capital Balance	($34,273)	(34,259)	(34,259)	(34,259)	(34,245)	(34,245)	(34,245)	(34,230)	(34,230)	(34,230)	(34,216)	(34,216)	(34,216)	
4.	Average Net Working Capital Balance		($34,266)	($34,259)	($34,259)	($34,252)	($34,245)	($34,245)	($34,237)	($34,230)	($34,230)	($34,223)	($34,216)	($34,216)	
5.	Return on Average Net Working Capital Balance														
	a. Equity Component Grossed Up For Taxes (A)		($172)	($172)	($172)	($172)	($172)	($172)	($172)	($172)	($172)	($172)	($172)	($172)	(2,064)
	b. Debt Component Grossed Up For Taxes (B)		(50)	(50)	(50)	(50)	(50)	(50)	(50)	(50)	(50)	(50)	(50)	(50)	(600)
6.	Total Return Component		(222)	(222)	(222)	(222)	(222)	(222)	(222)	(222)	(222)	(222)	(222)	(222)	(2,664)
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		(4)	11	11	(4)	11	11	(4)	11	11	(4)	11	11	71
8.	Net Expenses (D)		(4)	11	11	(4)	11	11	(4)	11	11	(4)	11	11	71
9.	Total System Recoverable Expenses (Lines 6 + 8)		(226)	(211)	(211)	(226)	(211)	(211)	(226)	(211)	(211)	(226)	(211)	(211)	(2,593)
	a. Recoverable Costs Allocated to Energy		(226)	(211)	(211)	(226)	(211)	(211)	(226)	(211)	(211)	(226)	(211)	(211)	(2,593)
	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)		(226)	(211)	(211)	(226)	(211)	(211)	(226)	(211)	(211)	(226)	(211)	(211)	(2,592)
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)		($226)	($211)	($211)	($226)	($211)	($211)	($226)	($211)	($211)	($226)	($211)	($211)	($2,592)

Notes:
(A) Line 6 x 6.0293% 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 1.7369% 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

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DOCKET NO. 20190007-EI
ECRC 2020 PROJECTION, FORM 42-4P
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Tampa Electric Company
Environmental Cost Recovery Clause (ECRC)
Calculation of the Projected Period Amount
January 2020 to December 2020

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	(3,154,875)	(3,206,754)	(3,258,633)	(3,310,512)	(3,362,391)	(3,414,270)	(3,466,149)	(3,518,028)	(3,569,907)	(3,621,786)	(3,673,665)	(3,725,544)	(3,777,423)	
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)	$18,312,484	18,260,605	18,208,726	18,156,847	18,104,968	18,053,089	18,001,210	17,949,331	17,897,452	17,845,573	17,793,694	17,741,815	17,689,936	
6.	Average Net Investment		18,286,545	18,234,666	18,182,787	18,130,908	18,079,029	18,027,150	17,975,271	17,923,392	17,871,513	17,819,634	17,767,755	17,715,876	
7.	Return on Average Net Investment														
	a. Equity Component Grossed Up For Taxes (B)		$91,879	$91,619	$91,358	$91,097	$90,837	$90,576	$90,315	$90,055	$89,794	$89,533	$89,273	$89,012	$1,085,348
	b. Debt Component Grossed Up For Taxes (C)		26,468	26,393	26,318	26,243	26,168	26,093	26,018	25,943	25,868	25,792	25,717	25,642	312,663
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)		170,226	169,891	169,555	169,219	168,884	168,548	168,212	167,877	167,541	167,204	166,869	166,533	2,020,559
	a. Recoverable Costs Allocated to Energy		170,226	169,891	169,555	169,219	168,884	168,548	168,212	167,877	167,541	167,204	166,869	166,533	2,020,559
	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)		170,226	169,891	169,555	169,219	168,884	168,548	168,212	167,877	167,541	167,204	166,869	166,533	2,020,559
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)		$170,226	$169,891	$169,555	$169,219	$168,884	$168,548	$168,212	$167,877	$167,541	$167,204	$166,869	$166,533	$2,020,559

Notes:

(A) Applicable depreciable base for Big Bend; accounts 311.40
(B) Line 6 x 6.0293% 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 1.7369% x 1/12.
(D) Applicable depreciation rate is 2.9%
(E) Line 9a x Line 10
(F) Line 9b x Line 11

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DOCKET NO. 20190007-EI
ECRC 2020 PROJECTION, FORM 42-4P
EXHIBIT NO. PAR-3, DOCUMENT NO. 4, PAGE 25 OF 29

Tampa Electric Company
Environmental Cost Recovery Clause (ECRC)
Calculation of the Projected Period Amount
January 2020 to December 2020

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		$5,000	$5,000	$15,000	$15,000	$62,000	$33,657	$512,000	$361,300	$410,000	$653,043	$76,000	$10,000	$2,158,000
	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)	$961,676	$961,676	$961,676	$961,676	$961,676	$961,676	$961,676	$961,676	$961,676	$961,676	$961,676	$961,676	$961,676	
3.	Less: Accumulated Depreciation	(51,765)	(54,145)	(56,525)	(58,905)	(61,285)	(63,665)	(66,045)	(68,425)	(70,805)	(73,185)	(75,565)	(77,945)	(80,325)	
4.	CWIP - Non-Interest Bearing	400,233	405,233	410,233	425,233	440,233	502,233	535,890	1,047,890	1,409,190	1,819,190	2,472,233	2,548,232	2,558,232	
5.	Net Investment (Lines 2 + 3 + 4)	$1,310,144	1,312,764	1,315,384	1,328,004	1,340,624	1,400,244	1,431,521	1,941,141	2,300,061	2,707,681	3,358,344	3,431,963	3,439,583	
6.	Average Net Investment		1,311,454	1,314,074	1,321,694	1,334,314	1,370,434	1,415,882	1,686,331	2,120,601	2,503,871	3,033,012	3,395,154	3,435,773	
7.	Return on Average Net Investment														
	a. Equity Component Grossed Up For Taxes (B)		$6,589	$6,602	$6,641	$6,704	$6,886	$7,114	$8,473	$10,655	$12,580	$15,239	$17,059	$17,263	$121,805
	b. Debt Component Grossed Up For Taxes (C)		1,898	1,902	1,913	1,931	1,984	2,049	2,441	3,069	3,624	4,390	4,914	4,973	35,088
8.	Investment Expenses														
	a. Depreciation (D)		2,380	2,380	2,380	2,380	2,380	2,380	2,380	2,380	2,380	2,380	2,380	2,380	28,560
	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)		10,867	10,884	10,934	11,015	11,250	11,543	13,294	16,104	18,584	22,009	24,353	24,616	185,453
	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		10,867	10,884	10,934	11,015	11,250	11,543	13,294	16,104	18,584	22,009	24,353	24,616	185,453
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)		10,867	10,884	10,934	11,015	11,250	11,543	13,294	16,104	18,584	22,009	24,353	24,616	185,453
14.	Total Jurisdictional Recoverable Costs (Lines 12 + 13)		$10,867	$10,884	$10,934	$11,015	$11,250	$11,543	$13,294	$16,104	$18,584	$22,009	$24,353	$24,616	$185,453

Notes:
(A) Applicable depreciable base for Big Bend; accounts 311.40 ($292,941), and 312.44 ($668,735).
(B) Line 6 x 6.0293% 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 1.7369% x 1/12.
(D) Applicable depreciation rate is 2.9%, and 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 2020 to December 2020

Return on Capital Investments, Depreciation and Taxes
For Project: Big Bend 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		$9,700	$9,800	$10,000	$10,200	$20,800	$21,500	$26,500	$32,000	$107,000	$22,000	$157,000	$157,000	$583,500
	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	621,678	631,378	641,178	651,178	661,378	682,178	703,678	730,178	762,178	869,178	891,178	1,048,178	1,205,178	
5.	Net Investment (Lines 2 + 3 + 4)	$621,678	631,378	641,178	651,178	661,378	682,178	703,678	730,178	762,178	869,178	891,178	1,048,178	1,205,178	
6.	Average Net Investment		626,528	636,278	646,178	656,278	671,778	692,928	716,928	746,178	815,678	880,178	969,678	1,126,678	
7.	Return on Average Net Investment														
	a. Equity Component Grossed Up For Taxes (B)		$3,148	$3,197	$3,247	$3,297	$3,375	$3,482	$3,602	$3,749	$4,098	$4,422	$4,872	$5,661	$46,150
	b. Debt Component Grossed Up For Taxes (C)		907	921	935	950	972	1,003	1,038	1,080	1,181	1,274	1,404	1,631	13,296
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)		4,055	4,118	4,182	4,247	4,347	4,485	4,640	4,829	5,279	5,696	6,276	7,292	59,446
	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		4,055	4,118	4,182	4,247	4,347	4,485	4,640	4,829	5,279	5,696	6,276	7,292	59,446
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)		4,055	4,118	4,182	4,247	4,347	4,485	4,640	4,829	5,279	5,696	6,276	7,292	59,446
14.	Total Jurisdictional Recoverable Costs (Lines 12 + 13)		$4,055	$4,118	$4,182	$4,247	$4,347	$4,485	$4,640	$4,829	$5,279	$5,696	$6,276	$7,292	$59,446

Notes:

(A) Applicable depreciable base for Big Bend; accounts TBD depending on type of plant added
(B) Line 6 x 6.0293% 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 1.7369% x 1/12.
(D) Applicable depreciation rate is TBD depending on type of plant added
(E) Line 9a x Line 10
(F) Line 9b x Line 11

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DOCKET NO. 20190007-EI
ECRC 2020 PROJECTION, FORM 42-4P
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Tampa Electric Company
Environmental Cost Recovery Clause (ECRC)
Calculation of the Projected Period Amount
January 2020 to December 2020

Return on Capital Investments, Depreciation and Taxes
For Project: Big Bend ELG 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		$50,000	$50,000	$300,000	$300,000	$300,000	$300,000	$600,000	$600,000	$600,000	$600,000	$400,000	$400,000	$4,500,000
	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	119,487	169,487	219,487	519,487	819,487	1,119,487	1,419,487	2,019,487	2,619,487	3,219,487	3,819,487	4,219,487	4,619,487	
5.	Net Investment (Lines 2 + 3 + 4)	$119,487	169,487	219,487	519,487	819,487	1,119,487	1,419,487	2,019,487	2,619,487	3,219,487	3,819,487	4,219,487	4,619,487	
6.	Average Net Investment		144,487	194,487	369,487	669,487	969,487	1,269,487	1,719,487	2,319,487	2,919,487	3,519,487	4,019,487	4,419,487	
7.	Return on Average Net Investment														
	a. Equity Component Grossed Up For Taxes (B)		$726	$977	$1,856	$3,364	$4,871	$6,378	$8,639	$11,654	$14,669	$17,683	$20,196	$22,205	$113,218
	b. Debt Component Grossed Up For Taxes (C)		209	282	535	969	1,403	1,837	2,489	3,357	4,226	5,094	5,818	6,397	32,616
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)		935	1,259	2,391	4,333	6,274	8,215	11,128	15,011	18,895	22,777	26,014	28,602	145,834
	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		935	1,259	2,391	4,333	6,274	8,215	11,128	15,011	18,895	22,777	26,014	28,602	145,834
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)		935	1,259	2,391	4,333	6,274	8,215	11,128	15,011	18,895	22,777	26,014	28,602	145,834
14.	Total Jurisdictional Recoverable Costs (Lines 12 + 13)		$935	$1,259	$2,391	$4,333	$6,274	$8,215	$11,128	$15,011	$18,895	$22,777	$26,014	$28,602	$145,834

Notes:
(A) Applicable depreciable base for Big Bend; accounts TBD depending on type of plant added
(B) Line 6 x 6.0293% 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 1.7369% x 1/12.
(D) Applicable depreciation rate is TBD depending on type of plant added
(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 2020 to December 2020

Return on Capital Investments, Depreciation and Taxes
For Project: Big Bend Unit 1 Sec. 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		$100,000	$100,000	$100,000	$100,000	$100,000	$100,000	$100,000	$100,000	$100,000	$100,000	$100,000	$100,000	$1,200,000
	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	932,323	1,032,323	1,132,323	1,232,323	1,332,323	1,432,323	1,532,323	1,632,323	1,732,323	1,832,323	1,932,323	2,032,323	2,132,323	
5.	Net Investment (Lines 2 + 3 + 4)	$932,323	1,032,323	1,132,323	1,232,323	1,332,323	1,432,323	1,532,323	1,632,323	1,732,323	1,832,323	1,932,323	2,032,323	2,132,323	
6.	Average Net Investment		982,323	1,082,323	1,182,323	1,282,323	1,382,323	1,482,323	1,582,323	1,682,323	1,782,323	1,882,323	1,982,323	2,082,323	
7.	Return on Average Net Investment														
	a. Equity Component Grossed Up For Taxes (B)		$4,936	$5,438	$5,940	$6,443	$6,945	$7,448	$7,950	$8,453	$8,955	$9,458	$9,960	$10,462	$92,388
	b. Debt Component Grossed Up For Taxes (C)		1,422	1,567	1,711	1,856	2,001	2,146	2,290	2,435	2,580	2,725	2,869	3,014	26,616
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)		6,358	7,005	7,651	8,299	8,946	9,594	10,240	10,888	11,535	12,183	12,829	13,476	119,004
	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		6,358	7,005	7,651	8,299	8,946	9,594	10,240	10,888	11,535	12,183	12,829	13,476	119,004
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)		6,358	7,005	7,651	8,299	8,946	9,594	10,240	10,888	11,535	12,183	12,829	13,476	119,004
14.	Total Jurisdictional Recoverable Costs (Lines 12 + 13)		$6,358	$7,005	$7,651	$8,299	$8,946	$9,594	$10,240	$10,888	$11,535	$12,183	$12,829	$13,476	$119,004

Notes:
(A) Applicable depreciable base for Big Bend; accounts TBD depending on type of plant added
(B) Line 6 x 6.0293% 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 1.7369% x 1/12.
(D) Applicable depreciation rate is TBD depending on type of plant added
(E) Line 9a x Line 10
(F) Line 9b x Line 11

Tampa Electric Company
Environmental Cost Recovery Clause
January 2020 through December 2020
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 2019 through December 2019, is $942,371 compared to the original projection of $932,808.

The actual/estimated O&M expense for the period January 2019 through December 2019 is $481,495 compared to the original projection of $709,500. 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 2020 through December 2020 is $925,246.

Estimated O&M costs for the period January 2020 through December 2020 are $390,754.

Tampa Electric Company
Environmental Cost Recovery Clause
January 2020 through December 2020
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 2019 through December 2019 is $235,507 compared to the original projection of $234,889.

There was no actual/estimated O&M expense projected, nor any original projection for the period January 2019 through December 2019.

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 2020 through December 2020 is $221,202.

There are no O&M costs projected for the period of January 2020 through December 2020.

Tampa Electric Company
Environmental Cost Recovery Clause
January 2020 through December 2020
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 2019 through December 2019 is $49,297 compared to the original projection of $48,959.

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 2020 through December 2020 is $47,504.

Tampa Electric Company
Environmental Cost Recovery Clause
January 2020 through December 2020
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 2019 through December 2019 is $76,749 compared to the original projection of $76,373.

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 2020 through December 2020 is $73,061.

Tampa Electric Company
Environmental Cost Recovery Clause
January 2020 through December 2020
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 2019 through December 2019 is $55,626 compared to the original projection of $55,324.

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 2020 through December 2020 is $53,118.

Tampa Electric Company
Environmental Cost Recovery Clause
January 2020 through December 2020
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 was 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 2019 through December 2019 is $5,852,617 compared to the original projection of $5,809,756.

The actual/estimated O&M expense for the period January 2019 through December 2019 is $134,789 compared to the original estimate of $680,000, resulting in a variance of -80.2 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 2020 through December 2020 is $5,653,336.

Estimated O&M costs for the period January 2020 through December 2020 are $250,146.

Tampa Electric Company
Environmental Cost Recovery Clause
January 2020 through December 2020
Description and Progress Report for
Environmental Compliance Activities and Projects

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 2019 through December 2019, is $8,361 compared to the original projection of $8,284.

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 2020 through December 2020 is $8,169.

Tampa Electric Company
Environmental Cost Recovery Clause
January 2020 through December 2020
Description and Progress Report for
Environmental Compliance Activities and Projects

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 2019 through December 2019 is $1,566,247 compared to the original projection of $1,576,840.

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 2020 through December 2020 is $1,538,736.

Tampa Electric Company
Environmental Cost Recovery Clause
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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 2019 through December 2019 is $1,767,965 compared to the original projection of $1,751,406.

The actual/estimated O&M expense for the period January 2019 through December 2019 is $307,226 compared to the original projection of $398,500, resulting in a variance of -22.9 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 2020 through December 2020 is $1,728,246.

Estimated O&M costs for the period January 2020 through December 2020 are $398,500.

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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 2019 through December 2019 is $495,092 compared to the original projection of $489,098.

The actual/estimated O&M expense for the period January 2019 through December 2019 is $9,306 compared to the original projection of $60,000, resulting in a variance of -84.5 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 2020 through December 2020 is $491,669.

Estimated O&M costs for the period January 2020 through December 2020 are $12,000.

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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 2019 through December 2019 is $73,205 compared to the original projection of $73,033.

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 2020 through December 2020 is projected to be $68,637.

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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 2019 through December 2019 is $120,399 compared to the original projection of $120,117.

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 2020 through December 2020 is $112,892.

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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 2019 through December 2019 is ($2,622) compared to the original projection of ($2,616).

The actual/estimated O&M for the period January 2019 through December 2019 is ($22) compared to the original projection of $0. 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 2020 through December 2020 is ($2,664).

Estimated O&M costs for the period January 2020 through December 2020 are $71.

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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 2019 through December 2019 is $34,500 compared to the original projection of $34,500. There is no variance.

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

Projections: Estimated O&M costs for the period January 2020 through December 2020 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 within 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 2019 through December 2019.

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 2020 through December 2020.

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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 2019 through December 2019 is $110,041 compared to the original projection of $109,135.

The actual/estimated O&M for the period January 2019 through December 2019 is $0 compared to the original projection of $5,000. 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 2020 through December 2020 is $106,858.

There are no O&M costs projected for the period of January 2020 through December 2020.

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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 2019 through December 2019 is $126,480 compared to the original projection of $119,000. The variance is not material.

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 2020 through December 2020 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 2019 through December 2019 is $193,988 compared to the original projection of $192,117.

There was no actual/estimated O&M expense projected, nor any original projection for the period January 2019 through December 2019.

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 2020 through December 2020 is $189,948.

There are no O&M costs projected for the period of January 2020 through December 2020.

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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 2019 through December 2019 is $133,545 compared to the original projection of $132,473.

The actual/estimated O&M expense for this project for the period January 2019 through December 2019 is $9,757 compared to the original projection of $6,000. 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 2020 through December 2020 is $129,539.

Estimated O&M costs for the period of January 2020 through December 2020 are $10,800.

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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 2019 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 2019 through December 2019 is $127,276 compared to the original projection of $126,179.

The actual/estimated O&M expense for this project for the period January 2019 through December 2019 is $5,260 compared to the original projection of $6,000. 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 2020 through December 2020 is $123,858.

Estimated O&M costs for the period of January 2020 through December 2020 are $10,800.

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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 2019 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 2019 through December 2019 is $227,710 compared to the original projection of $225,602.

The actual/estimated O&M for the period January 2019 through December 2019 is $17,525 compared to the original projection of $6,000. 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 2020 through December 2020 is $222,468.

Estimated O&M costs for the period of January 2020 through December 2020 are $12,000.

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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 meet 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 2019 through December 2019 is $30,286 compared to the original projection of $90,000, resulting in a variance of -66.3 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.

Projections: Estimated O&M costs for the period January 2020 through December 2020 are $40,000.

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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 2019 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 2019 through December 2019 is $7,629,840 compared to the original projection of $7,567,577. The variance is due to the change in the weighted average cost of capital applied for the July 2019 to December 2019 period, from 7.5190 percent to 7.7662 percent, as required by Order No. PSC-2012-0425-PAA-EI, issued on August 16, 2012.

The actual/estimated O&M for the period January 2019 through December 2019 is $93,819 compared to the original projection of $167,240, resulting in a variance of -43.9 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 2020 through December 2020 is $7,406,274.

Estimated O&M costs for the period January 2020 through December 2020 are $164,668.

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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 2019 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 2019 through December 2019 is $8,343,405 compared to the original projection of $8,288,466. The variance is due to the change in the weighted average cost of capital applied for the July 2019 to December 2019 period, from 7.5190 percent to 7.7662 percent, as required by Order No. PSC-2012-0425-PAA-EI, issued on August 16, 2012.

The actual/estimated O&M for the period January 2019 through December 2019 is $165,455 compared to the original projection of $261,200, resulting in a variance of -36.7 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 2020 through December 2020 is $8,127,778.

Estimated O&M costs for the period January 2020 through December 2020 are $329,616.

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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 2019 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 2019 through December 2019 is $6,790,879 compared to the original projection of $6,730,895. The variance is due to the change in the weighted average cost of capital applied for the July 2019 to December 2019 period, from 7.5190 percent to 7.7662 percent, as required by Order No. PSC-2012-0425-PAA-EI, issued on August 16, 2012.

The actual/estimated O&M for the period January 2019 through December 2019 is $496,632 compared to the original projection of $396,460, resulting in a variance of 25.3 percent. This variance is due to greater use of coal as fuel in Big Bend Unit 3, 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 2020 through December 2020 is $6,617,819.

Estimated O&M costs for the period January 2020 through December 2020 are $716,027.

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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 2019 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 2019 through December 2019 is $5,433,692 compared to the original projection of $5,379,650. The variance is due to the change in the weighted average cost of capital applied for the July 2019 to December 2019 period, from 7.5190 percent to 7.7662 percent, as required by Order No. PSC-2012-0425-PAA-EI, issued on August 16, 2012.

The actual/estimated O&M for the period January 2019 through December 2019 is $1,387,011 compared to the original projection of $2,135,100, resulting in a variance of -35.0 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 2020 through December 2020 is $5,306,154.

Estimated O&M costs for the period January 2020 through December 2020 are $968,634.

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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: The actual/estimated O&M for the period January 2019 through December 2019 is $4,511 compared to the original projection of $0. The variance is not material.

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 2020 through December 2020.

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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 2019 through December 2019 is $2,065,157 compared to the original projection of $2,030,219.

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 2020 through December 2020 is $2,041,735.

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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 2019 through December 2019 is $808,174 compared to the original projection of $802,679.

The actual/estimated O&M for the period January 2019 through December 2019 is $7,633 compared to the original projection of $74,878, resulting in a variance of -89.8 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 2020 through December 2020 is projected to be $801,028.

Estimated O&M costs for the period January 2020 through December 2020 are projected to be $27,000.

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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 2019 through December 2019 is $93,149 compared to the original projection of $93,149.

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 2020 through December 2020 are $93,150.

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January 2020 through December 2020
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 2019 through December 2019 is $2,045,696 compared to the original projection of $2,022,870.

The actual/estimated O&M for the period January 2019 through December 2019 is $1,262,594 compared to the original projection of $1,320,000, resulting in a variance of -4.3 percent. The variance is due to a delay in the receipt of a vendor invoice, compared to the original projection.

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 2020 through December 2020 is $2,020,559.

Estimated O&M costs for the period January 2020 through December 2020 are $947,064.

Tampa Electric Company
Environmental Cost Recovery Clause
January 2020 through December 2020
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 2019 through December 2019 for Phase I and Phase II is $111,772 and $41,119 compared to the original projections of $241,100 and $24,047 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 2019 through December 2019 for Phase I and Phase II is $3,949 and $4,401,681, respectively, compared to the original projections of $0 and $6,000,000. The variance for Phase II is due to timing differences in the project schedule when compared to the original projection. The projected expenditures are expected to be incurred in the future. The variance for Phase I is not material.

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 2020 through December 2020 for Phase I and Phase II is $185,453 and $59,446, respectively.

Estimated O&M costs for the period January 2020 through December 2020 for Phase II are $4,916,092. There are no O&M costs projected for Phase I.

Tampa Electric Company
Environmental Cost Recovery Clause
January 2020 through December 2020
Description and Progress Report for
Environmental Compliance Activities and Projects

Project Title: Big Bend ELG Compliance

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, completed in 2018, that concluded with a determination of the most appropriate ELG compliance measures identified.

Project Accomplishments:

Fiscal Expenditures: The actual/estimated depreciation plus return for the period January 2019 through December 2019 for Big Bend ELG Compliance is $7,519 compared to the original projection of $11,280.

The actual/estimated O&M for the period January 2019 through December 2019 for Big Bend ELG Compliance is $30,601, compared to $0 in the original projection. The variance is due to timing differences in the project schedule when compared to the original projection.

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 Compliance Project was approved by the Commission in Docket No. 2018007-EI, Order No. PSC-2018-0594-FOF-EI, issued December 20, 2018.

Projections: The ELG Rule Compliance program estimated depreciation plus return for the period January 2020 through December 2020 is $145,834.

There are no O&M costs projected for the period of January 2020 through December 2020.

Tampa Electric Company
Environmental Cost Recovery Clause
January 2020 through December 2020
Description and Progress Report for
Environmental Compliance Activities and Projects

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

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 2019 through December 2019 is $11,910, compared to the original projection of $298,882, a difference of -96.0 percent. The variance is due to timing differences in the project schedule when compared to the original projection.

There are no actual/estimated O&M costs for the period January 2019 through December 2019, nor was there an original projection.

Progress Summary: This project was approved by the Commission in Docket No. 2018007-EI, Order No. PSC-2018-0594-FOF-EI, issued December 20, 2018.

Projections: Estimated depreciation plus return for the period January 2020 through December 2020 is $119,004.

There are no O&M costs projected for the period of January 2020 through December 2020.

Form 42 - 6P

Tampa Electric Company
Environmental Cost Recovery Clause (ECRC)
Calculation of the Energy & Demand Allocation % By Rate Class
January 2020 to December 2020

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	54.99%	9,587,607	9,587,607	1,990	1.08045	1.05238	10,089,768	2,150	49.24%	56.98%	56.38%
GS, CS	62.24%	984,036	984,036	180	1.08045	1.05236	1,035,556	195	5.05%	5.17%	5.16%
GSD, SBF	75.47%	8,146,327	8,132,232	1,233	1.07575	1.04878	8,543,735	1,326	41.69%	35.14%	35.64%
IS	79.71%	649,419	637,599	93	1.02851	1.01705	660,489	96	3.22%	2.54%	2.59%
LS1	333.63%	154,170	154,170	5	1.08045	1.05238	162,245	6	0.79%	0.16%	0.21%
TOTAL *		19,521,559	19,495,644	3,501			20,491,793	3,773	100.00%	100.00%	100.00%

Notes:
(1) Average 12 CP load factor based on 2020 Projected calendar data
(2) Projected MWh sales for the period January 2020 to December 2020
(3) Effective sales at secondary level for the period January 2020 to December 2020.
(4) Column 2 / (Column 1 x 8760)
(5) Based on 2020 projected demand losses.
(6) Based on 2020 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

Form 42 - 7P

Tampa Electric Company
Environmental Cost Recovery Clause (ECRC)
Calculation of the Energy & Demand Allocation % By Rate Class
January 2020 to December 2020

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	49.24%	56.38%	23031377	405,674	23,437,051	9,587,607	9,587,607	**0.244**
GS, CS	5.05%	5.16%	2,362,073	37,128	2,399,201	984,036	984,036	**0.244**
GSD, SBF	41.69%	35.64%	19,499,961	256,443	19,756,404	8,146,327	8,132,232	
Secondary								**0.243**
Primary								**0.241**
Transmission								**0.238**
IS	3.22%	2.59%	1,506,114	18,636	1,524,750	649,419	637,599	
Secondary								**0.239**
Primary								**0.237**
Transmission								**0.234**
LS1	0.79%	0.21%	369,512	1,511	371,023	154,170	154,170	**0.241**
TOTAL *	100.00%	100.00%	46,773,714	719,536	47,493,250	19,521,559	19,495,644	**0.244**

* 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. 20190007-EI
ECRC 2020 PROJECTION, FORM 42-7P
EXHIBIT NO. PAR-3, DOCUMENT NO. 7

Form 42 - 8P

Tampa Electric Company
Environmental Cost Recovery Clause (ECRC)
Calculation of the Projected Period Amount
January 2020 to December 2020

Calculation of Revenue Requirement Rate of Return
(in Dollars)

	(1)	(2)	(3)	(4)
	Jurisdictional Rate Base *Actual May 2019* ($000)	Ratio %	Cost Rate %	Weighted Cost Rate %
Long Term Debt	$ 1,897,597	31.57%	4.89%	1.5435%
Short Term Debt	211,895	3.52%	2.97%	0.1047%
Preferred Stock	0	0.00%	0.00%	0.0000%
Customer Deposits	94,966	1.58%	2.38%	0.0376%
Common Equity	2,598,065	43.22%	10.25%	4.4297%
Accum. Deferred Inc. Taxes & Zero Cost ITC's	1,125,550	18.72%	0.00%	0.0000%
Deferred ITC - Weighted Cost	83,633	1.39%	7.98%	0.1110%
Total	$ 6,011,707	100.00%		6.23%

ITC split between Debt and Equity:

Long Term Debt	$ 1,897,597	Long Term Debt	46.00%
Equity - Preferred	0	Equity - Preferred	0.00%
Equity - Common	2,598,065	Equity - Common	54.00%
Total	$ 4,495,662	Total	100.00%

Deferred ITC - Weighted Cost:

Debt = 0.1110% * 46.00%	0.0511%
Equity = 0.1110% * 54.00%	0.0599%
Weighted Cost	0.1110%

Total Equity Cost Rate:

Preferred Stock	0.0000%
Common Equity	4.4297%
Deferred ITC - Weighted Cost	0.0599%
	4.4896%
Times Tax Multiplier	1.34295
Total Equity Component	6.0293%

Total Debt Cost Rate:

Long Term Debt	1.5435%
Short Term Debt	0.1047%
Customer Deposits	0.0376%
Deferred ITC - Weighted Cost	0.0511%
Total Debt Component	1.7369%
	7.7662%

Notes:

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

BEFORE THE
FLORIDA PUBLIC SERVICE COMMISSION

DOCKET NO. 20190007-EI

ENVIRONMENTAL COST RECOVERY FACTORS

PROJECTIONS

JANUARY 2020 THROUGH DECEMBER 2020

TESTIMONY
OF
PAUL L. CARPINONE

FILED: AUGUST 30, 2019

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 2020 through December 2020 projection period are activities related to programs previously approved by the Commission for recovery through the ECRC.

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 2020 through December 2020.

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 2020; 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 2020 through December 2020.

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 2020; however, the company will perform maintenance on the previously approved and installed NO_x reduction equipment. This activity is expected to result in approximately $12,000 of O&M expenses during 2020.

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 2020 through December 2020.

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 2020 through December 2020, 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 $10,800 for Big Bend Unit 1 Pre-SCR, $10,800 for Big Bend Unit 2 Pre-SCR, and $12,000 for Big Bend Unit 3 Pre-SCR for equipment maintenance. There are not any anticipated capital expenditures for Big Bend Units 1 through 4 SCRs. The O&M expenses are projected to be $164,668 for Big Bend Unit 1 SCR, $329,616 for Big Bend Unit 2 SCR, $716,027 for Big Bend Unit 3 SCR, and $968,634 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") Rule
12) Big Bend Unit 1 Section 316(b) Impingement Mortality
13) Big Bend Effluent Limitations Guidelines ("ELG") Rule Compliance

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 2020 through December 2020.

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 2020 through December 2020 for the Big Bend Unit 3 FGD Integration project; however, O&M expenses are projected to be $390,754 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 2020 through December 2020; however, the O&M expenses are projected to be $250,146 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 2020 through December 2020.

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 2020 through December 2020, 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 the permit is still pending. 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 2020 through December 2020.

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 2020 through December 2020, 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 activities and provide the estimated O&M expenditures for the period of January 2020 through December 2020.

A. The Clean Water Act Section 316(b) ("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 Station 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. Estimated O&M expenses for the period January 2020 through December 2020 are $40,000.

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 impingement mortality controls as part of the Big Bend Unit 1 Modernization. Therefore, in Order No. PSC-2018-0594-FOF-EI, issued on December 20, 2018, the Commission approved cost recovery for the Big Bend Unit 1 Section 316(b) Impingement Mortality project.

The biological, financial, and technical study elements have been identified for Bayside Power Station and submitted with the station’s NPDES permit renewal application in February 2018. Retrofits could include the installation of cooling towers or screening facilities.

Estimated O&M expenses for the period January 2020 through

December 2020 are $40,000 for additional study-related information to be provided to the regulatory agencies.

Q. Please describe the 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 2020 through December 2020.

A. The Big Bend Unit 1 Section 316(b) Impingement Mortality project was approved by the Commission in Docket No. 20180007-EI, Order No. PSC-2018-0594-FOF-EI, issued December 20, 2018. 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. For the period of January 2020 through December 2020, Tampa Electric projects capital expenditures for the Big Bend Unit 1 Section 316(b) Impingement Mortality Project to be $1,200,000. There are no O&M expenses anticipated during 2020.

Q. Please describe the Big Bend FGD System Reliability program activities and provide the estimated capital expenditures for the period of January 2020 through December 2020.

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 2020 through December 2020, 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 2020 through December 2020.

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 2020 through December 2020, there are no anticipated O&M expenses at Bayside or Polk

Power Stations. At the time the budget was prepared, no O&M expenses were anticipated for Big Bend Power Station in 2020. A detailed plan of study was submitted to the FDEP, and after reviewing the study, FDEP requested a site wide groundwater evaluation. Additional costs may be incurred for this evaluation and would be included for Commission review in future true-up filings.

Q. Please describe the MATS program activities.

A. The MATS program was approved by the Commission in Docket No. 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 approval for cost recovery of 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 2020 through December 2020.

A. For 2020, Tampa Electric does not anticipate capital expenditures under the MATS program in 2020. O&M expenditures are projected to be approximately $27,000 for testing requirements and maintenance of equipment.

Q. Please describe the GHG Reduction program activities and provide the estimated O&M expenditures for the period of January 2020 through December 2020.

A. Tampa Electric's GHG Reduction program, which 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 GHG 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 GHG Mandatory Reporting Rule will continue in 2020. For 2020, 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 2020 through December 2020.

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 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 2020, Tampa Electric does not anticipate any capital expenditures; however, the projected O&M expenses for this program during 2020 are $947,064.

Q. Please describe the company's EPA CCR Rule compliance activities and provide the estimated capital and O&M expenditures for the period of January 2020 through December 2020.

A. On April 17, 2015, the EPA issued a final rule to regulate CCR 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 CCR 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 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 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 CCR Rule – Phase I 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 Rule program was approved by the Commission in Docket No. 20170168-EI, Order No. 2017-0483-PAA-EI, issued 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 Economizer Ash Pond System Closure project, which includes removal and offsite disposal of all CCR and restoration of the area to original grade, were approved by the Commission's Order.

The Economizer Ash Pond System Closure began in the fourth quarter of 2018 with initial dewatering and removal of CCR for disposal. Due to the large amount of CCR 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 was originally scheduled to begin in 2019 but has been delayed due to unusually high rainfall amounts. The project is now scheduled to begin and be completed in 2020. The North Gypsum Stackout Area Drainage Improvements project began in 2019 and is expected to be completed in 2020.

Tampa Electric expects to incur $2,158,000 and $583,500 in 2020 capital expenditures for CCR Rule - Phase I and Phase II projects, respectively. The company expects to incur $4,916,092 for O&M expenses for the CCR Rule - Phase II program. There are no O&M expenses projected for the CCR Rule – Phase I program during 2020.

Q. Please describe Tampa Electric's ELG Rule activities, both study and compliance related, and provide the estimated capital and O&M expenditures for the period of January 2020 through December 2020.

A. On November 3, 2015, the EPA published the final Steam Electric Power Generating ELG Rule, 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, and 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 by the Commission in Docket No. 20160027-EI, Order No. PSC-2016-0248-PAA-EI, issued June 28, 2016, and confirmed in

Consummating Order No. PSC-2016-0290-CO-EI issued July 25, 2016 in the same docket.

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.

The Big Bend ELG Compliance project was approved by the Commission in Docket No. 20180007-EI, Order No. PSC-2018-0594-FOF-EI, issued December 20, 2018. 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.

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 waste streams 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. For the year January 2020 through December 2020, Tampa Electric projects capital expenditures to be $4,500,000. The company does not currently project any O&M expenditures for this project for the period.

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 2020. Additionally, my testimony identified other projects that are required for Tampa Electric to meet environmental requirements, and I provided the associated 2020 activities and projected expenditures.

Q. Does this conclude your direct testimony?

A. Yes, it does.