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TECO – Letter dated 7/22/22, with attached response to staff's second data request (Nos. 1-5)

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July 22, 2022

VIA ELECTRONIC FILING

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

RE: Petition for Limited Proceeding Rate Increase to Implement Return on Equity Provisions in 2021 Agreement, by Tampa Electric Company;
Docket No. 20220122-EI

Dear Mr. Teitzman:

Please find attached for filing Tampa Electric Company's response to Staff's Second Data Request (Nos. 1-5), propounded on July 18, 2022.

Thank you for your assistance in connection with this matter.

Sincerely,

Malcolm N. Means

MNM/bmp
Attachment
cc: All parties of record

CERTIFICATE OF SERVICE

I HEREBY CERTIFY that a true and correct copy of the response to Staff's Second Data Request filed on behalf of Tampa Electric Company, has been furnished by electronic mail on this 22nd day of July 2022 to the following:

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Florida Public Service Commission
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Malcolm N. Means

ATTORNEY

TAMPA ELECTRIC COMPANY
DOCKET NO. 20220122-EI
STAFF'S SECOND DATA REQUEST
REQUEST NO. 1
BATES PAGE(S): 1
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1. Refer to Exhibit 3 of the petition, Bate Stamp Page 26. Please provide TECO's proforma monthly weather normalization adjustments to revenues for the period January 2017 to date.

A. Tampa Electric does not make proforma monthly weather adjustments to revenues in its earnings surveillance reports in the ordinary course of business and does not have the requested data.

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REQUEST NO. 2
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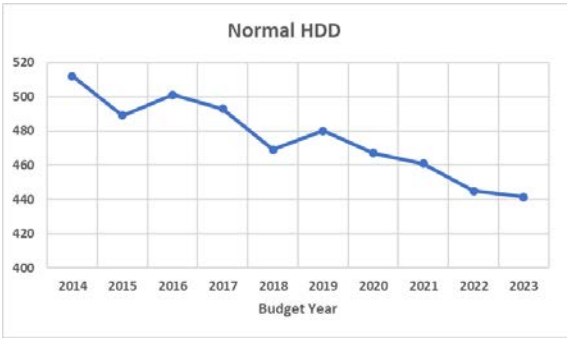
2. Refer to TECO's response to Staff Data Request 1, No. 5.c., the Petition Exhibit 2, Page 3 of 4, and TECO's response to Staff's First Data Request, No. 4.a. BSC_9Q4aMonteCarlo_DegreeDays.xlsx, tab "Data" and "Summary".

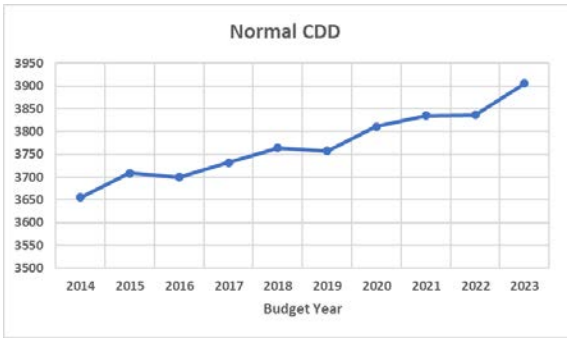
a. Has TECO determined whether the monthly normal CDD and HDD data appearing in Exhibit 2 reflects trend (increasing, decreasing) over the 20 year period of 2001 through 2020? Please explain.

b. Does TECO expect any historical trend identified in response to Question 2.a. to persist in future years?

c. How, if at all, did TECO's method of normalizing sales and revenues for weather take into account any trend identified in response to Question 2.a? If not, why not?

A. a. Yes, over the period 2001 through 2020, the total HDD normals have been decreasing and the total CDD normals have been increasing. Updating the rolling 20-year period used for determining normal weather each year involves dropping the oldest year and adding the most current year. By doing this, the normal degree-days begin to reflect more current trends. See the graphs below.





b. While it is possible these trends could persist into the future, it is unknown at what rate and for how long the trends could persist. Because of this uncertainty, Tampa Electric, as well as many other utilities, have chosen to continue with current methods of estimating future degree days. For short-term forecasting of energy sales and revenues for the next year, the current method is reasonable.

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c. Tampa Electric uses a rolling 20-year period to determine normal degree days, which results in decreasing normal HDD trends and increasing normal CDD trends. As older years are dropped out of the Monte Carlo simulations and the most current year is added, the degree-day normals begin to reflect the same trends seen in actual data.

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3. Refer to TECO's response to Staff's First Data Request, No. 5.c.

a. Is TECO aware of any electric utilities that use alternatives to simple averaging of historical CDD and HDD weather data to calculate weather normals (e.g. weighting, trending, etc.) in order to take into account weather trends? If so, please identify such utilities and describe the methods used.

b. Please explain methods known to TECO for historical trends in weather data (CDD and HDD) to be used to project future sales and revenues.

A. a. Calculations of weather normal degree days vary among utilities. Alternatives to simple averaging do exist; however, Tampa Electric cannot identify such utilities or describe the methodology employed.

b. Tampa Electric is not aware of any specific methods to reasonably continue the historical degree-day trends into the calculation of future degree days. The uncertainty of these trends makes it difficult to incorporate the historical trends into long-term forecasting. For short-term, or next year forecasting of energy sales, the current method is reasonable.

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4. Refer to TECO's Petition, Exhibit 2 and its response to Staff's First Data Request, No. 4.a., Excel File "BS_9Q4aMonteCarlo_DegreeDays.xlsx, tab "Summary", Columns P through AD. Please explain why TECO used Monte Carlo Simulations to adjust its historical monthly NOAA-sourced CDD and HDD data that was used to adjust sales and revenue in its Petition.

A. Tampa Electric did not use Monte Carlo Simulations to adjust its historical monthly NOAA-sourced CDD and HDD data. NOAA sourced CDD and HDD data, however, is converted from a calendar month basis to a billing period basis. The data in columns P through AD, and the data on the "DATA" tab is all billing period data. The billing period spans over the prior and current calendar months due to the meter reading schedule and requires calendar degree days to be converted to represent the billing period.

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5. Please refer to TECO's response to Staff's First Data Request, No. 4.a., Excel File "BS_9Q4aMonteCarlo_DegreeDays.xlsx", tab "DATA", and NOAA's historical climatological data for March 2010 the Company relied upon for calculating weather normals in this proceeding.

a. Please reconcile the apparent anomalies between the historical NOAA CDD and HDD values for March 2010 in the amount of 21.5 for CDDs and 125.5 for HDDs (calculated below in staff's Excel screenshot) and TECO's historical CDD and HDD values for that same time period (8 for CDD's and 62 for HDD's).

b. Please explain any other anomalies that may exist for monthly CDD and HDD data within the 20 year period used to calculate normal weather.

U.S. Department of Commerce
National Oceanic & Atmospheric Administration
National Environmental Satellite, Data, and Information Service
Current Location: Elev: 6 ft. Lat: 27.9633° N Lon: -82.5400° W
Station: **TAMPA INTERNATIONAL AIRPORT, FL US USW00012842**

Record of Climatological Observations
These data are quality controlled and may not be identical to the original observations.
Generated on 07/14/2022

National Centers for Environmental Information
151 Patton Avenue
Asheville, North Carolina 28801

Observation Time Temperature: Unknown Observation Time Precipitation: 2400

Year	Month	Day	Temperature (F)			Precipitation					Evaporation		Soil Temperature (F)					
			24 Hrs. Ending at Observation Time		At Obs.	24 Hour Amounts Ending at Observation Time				At Obs. Time	24 Hour Wind Movement (mi)	Amount of Evap. (in)	4 in. Depth			8 in. Depth		
			Max.	Min.		Rain, Melted Snow, Etc. (in)	Flag	Snow, Ice Pellets, Hail (in)	Flag	Snow, Ice Pellets, Hail, Ice on Ground (in)			Ground Cover (see *)	Max.	Min.	Ground Cover (see *)	Max.	Min.
2010	03	01	69	43		0.00		0.0		0.0								
2010	03	02	68	55		0.72		0.0		0.0								
2010	03	03	58	47		T		0.0		0.0								
2010	03	04	55	44		0.00		0.0		0.0								
2010	03	05	61	40		0.00		0.0		0.0								
2010	03	06	65	42		0.00		0.0		0.0								
2010	03	07	67	40		0.00		0.0		0.0								
2010	03	08	69	44		0.00		0.0		0.0								
2010	03	09	70	53		0.00		0.0		0.0								
2010	03	10	79	57		0.00		0.0		0.0								
2010	03	11	74	64		0.14		0.0		0.0								
2010	03	12	65	62		2.12		0.0		0.0								
2010	03	13	72	58		0.00		0.0		0.0								
2010	03	14	70	59		0.00		0.0		0.0								
2010	03	15	70	56		0.00		0.0		0.0								
2010	03	16	65	52		0.00		0.0		0.0								
2010	03	17	67	53		T		0.0		0.0								
2010	03	18	65	53		T		0.0		0.0								
2010	03	19	71	55		0.00		0.0		0.0								
2010	03	20	73	52		0.00		0.0		0.0								
2010	03	21	70	59		0.43		0.0		0.0								
2010	03	22	71	58		T		0.0		0.0								
2010	03	23	67	55		0.00		0.0		0.0								
2010	03	24	77	51		0.00		0.0		0.0								
2010	03	25	77	62		0.65		0.0		0.0								
2010	03	26	75	58		T		0.0		0.0								
2010	03	27	83	56		0.00		0.0		0.0								
2010	03	28	73	65		0.97		0.0		0.0								
2010	03	29	69	57		0.85		0.0		0.0								
2010	03	30	73	57		0.00		0.0		0.0								
2010	03	31	72	55		0.00		0.0		0.0								
		Summary	70	54		5.88		0.0										

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Year	Month	Day	Max temp	Min temp	Avg temp	CDD's	HDD's
2010	3	1	69	43	56	0	9
2010	3	2	68	55	61.5	0	3.5
2010	3	3	58	47	52.5	0	12.5
2010	3	4	55	44	49.5	0	15.5
2010	3	5	61	40	50.5	0	14.5
2010	3	6	65	42	53.5	0	11.5
2010	3	7	67	40	53.5	0	11.5
2010	3	8	69	44	56.5	0	8.5
2010	3	9	70	53	61.5	0	3.5
2010	3	10	79	57	68	3	0
2010	3	11	74	64	69	4	0
2010	3	12	65	62	63.5	0	1.5
2010	3	13	72	58	65	0	0
2010	3	14	70	59	64.5	0	0.5
2010	3	15	70	56	63	0	2
2010	3	16	65	52	58.5	0	6.5
2010	3	17	67	53	60	0	5
2010	3	18	65	53	59	0	6
2010	3	19	71	55	63	0	2
2010	3	20	73	52	62.5	0	2.5
2010	3	21	70	59	64.5	0	0.5
2010	3	22	71	58	64.5	0	0.5
2010	3	23	67	55	61	0	4
2010	3	24	77	51	64	0	1
2010	3	25	77	62	69.5	4.5	0
2010	3	26	75	58	66.5	1.5	0
2010	3	27	83	56	69.5	4.5	0
2010	3	28	73	65	69	4	0
2010	3	29	69	57	63	0	2
2010	3	30	73	57	65	0	0
2010	3	31	72	55	63.5	0	1.5
Source: NOAA Record of Climatilogical Observations – March 2010					TOTAL	CDD's **21.5**	HDD's **125.5**

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	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
1			JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	YTD
2		2020	59	91	54	2	0	0	0	0	0	0	0	73	279
3		2019	100	118	27	7	0	0	0	0	0	0	10	47	309
4		2018	165	81	41	32	0	0	0	0	0	0	7	83	409
5		2017	49	59	21	17	0	0	0	0	0	0	7	24	177
6	BILLING CYCLE	2016	76	164	76	11	0	0	0	0	0	0	2	21	350
7	HDD (NOAA)	2015	99	155	85	10	0	0	0	0	0	0	1	7	357
8		2014	139	182	68	27	0	0	0	0	0	0	35	104	555
9		2013	97	84	118	64	0	0	0	0	0	0	3	42	408
10		2012	98	61	27	1	2	0	0	0	0	0	18	36	243
11		2011	300	176	55	12	0	0	0	0	0	0	6	26	575
12		2010	302	234	62	42	0	0	0	0	0	0	16	155	1003
13		2009	80	196	86	10	3	0	0	0	0	4	10	68	457
14		2008	107	84	62	26	8	0	0	0	0	0	18	115	420
15		2007	44	158	93	30	9	0	0	0	0	0	12	35	381
16		2006	171	143	76	31	0	0	0	0	0	0	14	64	499
17		2005	147	142	95	37	8	0	0	0	0	1	15	89	534
18		2004	192	171	92	24	5	0	0	0	0	0	0	63	547
19		2003	250	198	24	22	2	0	0	0	0	0	2	107	605
20		2002	164	68	93	5	0	0	0	0	0	0	10	107	447
21		2001	312	157	52	29	4	0	0	0	0	0	10	8	572
22		2000	87	184	29	8	3	0	0	0	0	0	7	99	417
23		1999	114	52	89	16	9	0	0	0	0	1	13	48	342
24		1998	119	117	102	49	1	0	0	0	0	0	3	15	406
25		1997	116	101	13	2	4	0	0	0	0	0	22	85	343

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
38			JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	YTD
39		2020	144	102	171	200	342	507	620	630	579	504	279	165	4518
40		2019	94	80	183	207	391	552	576	556	624	522	370	108	4263
41		2018	85	54	190	206	339	493	579	566	655	571	332	142	4292
42		2017	165	100	148	245	407	511	574	578	607	535	298	181	4349
43	BILLING CYCLE	2016	75	35	83	235	332	482	581	580	595	522	318	195	4152
44	CDD (NOAA)	2015	82	18	145	309	407	513	577	520	567	478	401	134	4290
45		2014	82	43	75	130	312	465	559	555	563	423	188	89	3484
46		2013	95	89	69	163	320	477	527	562	565	464	278	171	3780
47		2012	93	88	190	318	364	490	513	560	555	458	219	96	3944
48		2011	11	33	115	221	386	501	575	611	589	435	210	157	3844
49		2010	36	17	8	110	337	533	580	603	569	456	272	120	3641
50		2009	93	36	78	229	340	456	563	553	548	489	307	131	3823
51		2008	115	71	94	182	308	501	503	483	513	445	232	76	3523
52		2007	75	37	88	192	301	432	555	566	612	494	232	158	3849
53		2006	27	30	69	172	312	449	525	543	528	456	253	149	3513
54		2005	60	28	55	138	196	429	530	583	602	498	245	105	3469
55		2004	34	31	86	117	283	512	549	509	529	435	280	125	3490
56		2003	13	17	166	201	360	501	549	551	521	424	322	111	3736
57		2002	79	104	80	275	337	485	534	553	553	529	301	54	3982
58		2001	38	70	136	152	261	479	551	540	564	375	234	213	3613
59		2000	71	32	132	220	322	535	531	530	550	437	233	96	3689
60		1999	94	118	48	187	308	479	519	599	553	445	242	127	3719
61		1998	91	42	70	182	311	545	621	552	581	476	291	249	4011
62		1997	78	75	242	252	281	467	568	533	556	437	189	76	3754

A. a. The values calculated by staff are correct for the calendar period; however, to align degree-days with the energy sales billing period, the company's meter reading schedule is used to convert calendar degree-days to billing period degree days. An example of this conversion can be seen in Tampa Electric's response to Staff's First Data Request, No. 4 (b), Excel File "BS_10 Q4b_2021 Daily Degday Check.xlsx" and "BS_11 Q4b_2022 Actual Billing Degree Days.xlsm". In addition to the timing difference, the HDD value for March 2010 was omitted from the Monte Carlo Simulation. Please see Tampa Electric's response to 5 (b).

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b. Anomalies were statistically identified by using the upper/lower bounds of two standard deviations from the monthly mean. Based on this method, the following months fell out of the upper bounds and were excluded from the Monte Carlo simulation. As the Monte Carlo software does not accept a blank value for a monthly data point and a zero would skew the results, the 20-year average for the month was used to replace the original values, which is essentially the same as omitting the data point. The anomalies are listed below.

Jan 2016 CDD
Jan 2007 CDD
Feb 2018 CDD
Mar 2010 HDD
April 2020 CDD
May 2002 CDD
Nov 2020 CDD
Dec 2015 CDD

AFFIDAVIT

STATE OF FLORIDA)
)
COUNTY OF HILLSBOROUGH)

Before me the undersigned authority personally appeared Lorraine L. Cifuentes who deposed and said that she is Director, Load Research & Forecasting, Tampa Electric Company, and in Tampa Electric Company's response to Staff's 2nd Data Request (Nos. 1-5), she prepared or assisted with the responses to this request to the best of her information and belief.

Dated at Tampa, Florida this 22 day of July, 2022.

Sworn to and subscribed before me this 22 day of July, 2022.

Notary Public State of Florida
Brenda L Irizarry
My Commission
HH 270246
Exp. 6/1/2026

My Commission expires _____