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March 26, 2021

VIA: ELECTRONIC FILING

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

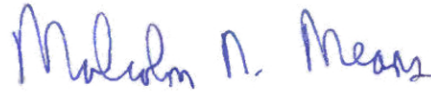
Re: Petition of Tampa Electric Company for approval of its 2020 Depreciation and Dismantlement Study and Capital Recovery Schedules
Docket No. 20200264-EI

Dear Mr. Teitzman:

Attached for filing in the above docket is Tampa Electric Company's Response to Staff's Second Data Request (Nos.1-30), propounded on February 24, 2021.

Thank you for your assistance in connection with this matter.

Sincerely,



Malcolm N. Means

MNM/bmp
Attachment

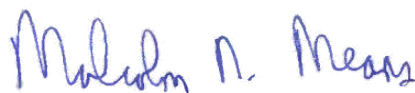
cc: All Parties of Record (w/attachment)
Suzanne Brownless, Special Counsel, FPSC (w/attachment)

CERTIFICATE OF SERVICE

I HEREBY CERTIFY that a true and correct copy of the foregoing Tampa Electric Company's responses to Staff's 2nd Data Request (Nos. 1-30), have been furnished by electronic mail on this 26th day of March, 2021 to the following:

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ATTORNEY

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Depreciation - Transmission, Distribution & General (Bates-stamped pages 1437-1630)

1. Please refer to Rule 25-6.0436(5)(e) and (f) for the questions below:
 - a. Please provide a narrative, consistent with the requirements of the cited rule, to explain and justify the Company's proposed depreciation parameters and rate for each transmission, distribution and general (including transportation and intangible) account.
 - b. Please summarize the statistical or mathematical methods of analysis or calculation, including the computing procedure and software, used in deriving the proposed rates and parameters.
- A. a. Tampa Electric Company is a regulated utility operating within the state of Florida. Through its Tampa Electric division, it is engaged in the generation, purchase, transmission, distribution, and sale of electric energy. As of December 2019, the company's retail territory served comprises an area of about 2,000 square miles in West Central Florida, including Hillsborough County and parts of Polk, Pasco, and Pinellas Counties. The principal communities served are Tampa, Winter Haven, Plant City, and Dade City. More than 779,000 residential, commercial, and industrial customers depend on Tampa Electric for reliable power.

The proposed rates for Transmission Plant reflect the change in remaining lives caused by incremental additions and retirements to plant in the nine years subsequent to 2011, the date of the last comprehensive depreciation study. The individual plant account details and related study changes are embedded in the Summary of TD&G Rates and Components. A common trend amongst structures, station equipment, towers, poles, and conductor is life lengthening.

The proposed rates for Distribution Plant reflect the change in remaining lives caused by incremental additions and retirements to plant in the nine years subsequent to 2011, the date of the last comprehensive depreciation study. The individual plant account details and related study changes are embedded in the Summary of TD&G Rates and Components. A common trend amongst structures, station equipment, line transformers, poles and conductor is life lengthening. The company made one significant change in this study related to AMR and AMI meters. The company is in the process of replacing AMR meter technology with AMI meter technology. The AMI Project will be placed in-service December 2021. The company will isolate AMI digital meter components in account 370.01, while the account 370.00 will contain the under-

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recovered remaining book value from AMR meter retirements and surviving analog equipment.

The proposed rates for General Plant reflect the change in remaining lives caused by incremental additions and retirements to plant in the nine years subsequent to 2011, the date of the last comprehensive depreciation study. The individual plant account details and related study changes are embedded in the Summary of TD&G Rates and Components. The current average service lives, curve types, net salvage factors, and level of reserves are still appropriate for general plant accounts.

The proposed rates for Transportation Plant reflect the change in remaining lives caused by incremental additions and retirements to plant in the nine years subsequent to 2011, the date of the last comprehensive depreciation study. The individual plant account details and related study changes are embedded in the Summary of TD&G Rates and Components. These transportation accounts have been impacted by vehicle leasing programs that terminated in 2016 and associated lease buyouts.

The proposed rates for General Plant Amortized are based on guidance under Rule 25-6.0142(3), the Commission's "List of Retirement Units (Electrical Plant) as of January 1, 2000"). For plant accounts or subaccounts within 391, 393, 394, 395, 397, and 398, the commission prescribes the amortizable lives. In addition, previous Commission approvals via depreciation study or other dockets further authorize the amortizable lives to be used. No changes in account parameters are being proposed other than notification of adding subaccount 394.01 ECCR Solar Car Port, which is an approved conservation program to be recovered using a 5-year amortizable life.

The proposed rates for Intangible Plant are derived from previous Commission orders regarding software amortizable lives for assets contained in account 303.15 Non-Solar (15 years) and account 303.99 Solar (30 years, matching the ASL for solar generating facilities).

- b. The company has implemented a new depreciation program solution called PowerPlan Depreciation Study Module. This software performs statistical mathematical calculations using Iowa Curve life analysis techniques for plant accounts that have Actuarial vintage asset records or Semi-Actuarial (SPR) using the history of annual additions and retirements.

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- 2.** Please provide, in MS Excel worksheet(s), TECO's actual (or estimate if the actual is not available) plant and reserve activities, in the same format as TDG Master, tabs "2019 B-7" and "2019 B-9" for the year ending December 31, 2020.

- A.** Please see electronic response MS Excel file, "(BS 4) 2020 Depr Study Life Analysis - TD&G Master File – v2.xlsx". This file includes tabs for the draft actual 2020 B-7, 2020 B-9, Proposed Accruals 2020 and projected budget 2021 B-7, 2021 B-9, Proposed Accruals 2021.

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- 3.** Please provide, in MS Excel worksheet(s), TECO's 2021 budget of plant and reserve activities, in the same format as TDG Master, tabs "2019 B-7" and "2019 B-9."

- A.** Please see Tampa Electric's response to Staff's Second Data Request, No. 2, above.

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4. Please refer to TDG Master, tab "PP DS Query" for the questions below:
- a. For Account 35200, Structures & Improvements, please elaborate on why there is a \$32,571.43 variance between the amount of surviving plant used in calculating the proposed rate and the amount reported in the 2019 Annual Depreciation Status Report.
 - b. Please explain what is mean by "Actual Reserve Spread" for an account, and whether it differs from the actual accumulated depreciation reserve of that account.
 - c. For the calculations that lead to the results presented in the tab, please clarify whether they were performed at the level of an account's total surviving plant, or at the level of the vintage of the account's surviving plant? Please explain your response.
 - d. Please complete Table 1 below [e.g., Avg Weighted Age Dollar (8) = (6) x (7)]:

Table 1: Formulas Used in Tab "PP DS Query"		
	Column Name	Formula Used for Calculation (If applicable)
(1)	B-7 Variance	
(2)	B-9 Variance	
(3)	Curve Id	
(4)	Curve Year	
(5)	Future Net Salvage Pct	
(6)	Surviving Plant	
(7)	Avg Weighted Age	
(8)	Avg Weighted Age Dollars	
(9)	Avg Service Life	
(10)	Avg Service Life Dollars	
(11)	Avg Remaining Life	
(12)	Avg Rem Life Dollars	
(13)	Depr Reserve Ratio	
(14)	Theoretical Reserve	
(15)	Est Future Net Salvage	
(16)	Actual Reserve Spread	

- e. It appears that different formulas were applied to different accounts in calculating the Avg Rem Life Dollars. Staff believes, by simulating the computation, that the formula "Avg Rem Life Dollars" = "Surviving Plant" x "Avg Remaining Life", or per the numbered rows in Table 1, (12) = (6) x (11), was used for Accounts 30315 –37300 and 39725; but different formula(s) were applied to the other accounts (e.g., Accounts 39000 – 39700 and 39800 – 39910) for deriving the "Average Rem Life Dollars." Please explain why and provide the details of every formula used.

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- A.**
- a. A transfer of asset record was posted in the financial system that was to move costs from FERC account 101 and to FERC account 105; however, the transfer did not post correctly in the financial system. As a result, the B-7 schedule was modified to reflect the transfer that did not occur; however, the depreciation study software recognized the cost transfer from the account. The company resolved this issue in December 2020.
 - b. For purposes of the TDG master file, Actual Reserve Spread equals the actual accumulated depreciation reserve for the account.
 - c. The tab PP DS Query is an extraction of the PowerPlan Depreciation Study Module results. The account details are calculated using the vintage level surviving plant. The PP DS Query tab is the outputted data set at the account level to facilitate the Excel file summarization of rates and accruals.
 - d. Please see the table below for formulas used in the PP DS Query tab.

Table 1: Formulas Used in Tab "PP DS Query"		
	Column Name	Formula Used for Calculation
(1)	B-7 Variance	vlookup
(2)	B-9 Variance	vlookup
(3)	Curve Id	Account Analysis Input
(4)	Curve Year	Account Analysis Input
(5)	Future Net Salvage Pct	Account Analysis Input
(6)	Surviving Plant	Vintage Level
(7)	Avg Weighted Age	(8) / (6)
(8)	Avg Weighted Age Dollars	Vintage Level
(9)	Avg Service Life	(10) / (6)
(10)	Avg Service Life Dollars	Vintage Level
(11)	Avg Remaining Life	(12) / (6)
(12)	Avg Rem Life Dollars	Vintage Level
(13)	Depr Reserve Ratio	(14) / (6)
(14)	Theoretical Reserve	Vintage Level
(15)	Est Future Net Salvage	(5) x (6)
(16)	Actual Reserve Spread	Account Level

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- e. There was a data extraction query sql code issue that caused the perceived formula difference. The items in question do not impact the original filing's calculation of the various accounts rates and components, theoretical reserves, nor the proposed accruals.

This has been corrected and an updated tab for the PP DS Query is provided in the company's response to Staff's Second Data Request No. 2.

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5. Referring to Bates-stamped page 1449, where the "Round Average Age" of Account 37001 AMI Meters is zero (0) years, and TDG Master, tab "PP DS Query," where the "Avg Weighted Age" for the same account is 4.3 years, please explain the difference. Please also explain how the 4.3 years average age was derived and support your response with an MS Excel Worksheet.
 - A. There were a few blanket work order meter assets placed in-service to the account 370.01 AMI Meters, along with some AMI meter asset transfers from account 370.00 AMR & Analog. These work order activities were not associated with AMI Project deferral of additions until completion of the AMI meter roll out will be placed in-service December 2021. As a result, the account 370.01 AMI Meters has asset and reserve balances temporarily assigned to the account 370.00 AMR & Analog on the annual status report B-7 and B-9. This causes a disconnect with the depreciation study software. The purpose of this instant depreciation study is to propose a rate for account 370.01 AMI Meters to coincide with AMI Project major additions going in-service December 2021. Therefore, the average age, average remaining service, theoretical reserve reflects zero. Please see Excel file, "(BS 10) 370.01 AMI Meters - Avg Age.xlsx"

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6. A portion of Bates-stamped page 1474 is shown below:

Broad Group Procedure January 1, 2020					
	Plant Amt	<u>Deprecation Reserve</u>		<u>Net Plant</u>	
		Amount	Ratio	Amount	Ratio
Recorded	\$318,281,546.97	\$69,030,066.22	0.2169	\$265,165,558.10	0.8331
Computed	\$318,281,546.97	\$73,365,345.24	0.2305	\$260,830,279.08	0.8195
Difference		<u>(\$4,335,279.02)</u>	<u>-0.0136</u>	<u>\$4,335,279.02</u>	<u>0.0136</u>

- a. Please indicate whether the “Computed” “Depreciation Reserve Amount” refers to the theoretical reserve. If not, please explain what it represents.
 - b. Please provide an MS Excel Worksheet to show how each of the amounts and the ratios appearing in the table are related to each other.
- A.**
- a. The Computed Depreciation Reserve Amount includes Net Salvage and refers to the Theoretical Reserve. The Recorded Depreciation Reserve Amount is the actual booked accumulated depreciation reserve as of December 31, 2019. Net Plant is not used for Commission purposes.
 - b. Please see the Excel file, “(BS 12) Example Account 353” for Bates Stamp pages 1471-1473, 1474, and 1475.

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7. A portion of Bates-stamped page 1475 is shown below:

Remaining Life Depreciation Accrual

Account : 353.00 Station
Equipment Scenario: TEC 2019
A - T&D 20200428
Dispersion: 45.00 • SO
Average Net Salvage Rate: -5.00 %
Future Net Salvage Rate: -5.00 %

Broad Group Procedure

January 1, 2020

	Plant Amt	Remaining Life	Accrual (Dollars)	Accrual Rate (Gross Plant)	Accrual Rate (Net Plant)
Pre- 2020 Additions	\$318,281,546.97	35.12	\$7,550,006.87	2.372116%	2.847280%
2020 Additions	\$0.00	0.00	\$0.00	0.000000%	
2020 Retirements	(\$3,311,001.97)	0.50	(\$38,628.36)	1.166667%	
Total:	\$318,281,546.97 •		\$7,511,378.51	2.359979%	2.832713%
Average:	\$316,626, 045.99		\$7,511,378.51	2.372319%	2.851405%

*Excluding 2020 Retirements

- a. Please define each of the following items as well as explain how each item was derived; and provide an MS Excel Worksheet to support your responses.
- (i) "Average Plant Amt" \$316,626,045.99;
 - (ii) "Pre-2020 Additions Accrual (Dollars)" \$7,550,006.87;
 - (iii) "2020 Retirements Accrual (Dollars)" (\$38,628.36);
 - (iv) "Total Accrual (Dollar)" \$7,511,378.51;
 - (v) "Total Actual Rate (Gross Plant)" 2.359979%;
 - (vi) "Average Actual Rate (Gross Plant)" 2.372319%;
 - (vii) "Pre-2020 Additions Accrual Rate (Net Plant)" 2.847280%;
 - (viii) "Total Accrual Rate (Net Plant)" 2.832713%; and
 - (ix) "Average Accrual Rate (Net Plant)" 2.851405%.

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b. Please explain how each of the rates discussed above relates to the Commission- approved depreciation/accrual rate.

A. a. For Commission purposes, only the row labeled Pre-2020 Additions is used. This study filing is as of December 31, 2019 and contains actual balances for assets and reserves, not a projected filing.

The following data points come from the Generation Arrangement Report referenced on Bates Stamp pages 1471-1473:

- "Pre-2020 Additions Plant Amt" \$318,281,546.97
- "Pre-2020 Additions Remaining Life" 35.12

The following data points are the results provided by the study software that support the Commission's remaining life formula technique:

- (ii) "Pre-2020 Additions Accrual (Dollars)" \$7,550,006.87;
- "Pre-2020 Additions Accrual Rate (Gross Plant)" 2.372116%;

Commission practice is to round the average remaining service life when greater than 20 years to zero decimal and rounding the remaining life depreciation rate calculation to 1 decimal causes a difference to the unrounded study software results.

All the other data points are provided by the study software to meet various needs of different software users. For example, Accrual Rate (Net Plant) has the ability to project future year additions and retirements or usage of plant amount averages.

Additionally, please see Tampa Electric's response to Staff's Second Data Request No. 6(b), above, for reperformance of Bates Stamp pages 1471-1473, 1474, and 1475.

b. Please see Tampa Electric's response to Staff's Second Set of Data Requests, No. 7(a) above.

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8. Please refer to Bates-stamped pages 1471-1477 and 1527-1533 for the questions below regarding Station Equipment Accounts 35300 (transmission) and 36200 (distribution).
- a. Please list the major items comprising the investment in Accounts 35300 and 36200, respectively.
 - b. Have there been any changes in the design and performance of equipment contained in Account 35300 and Account 36200 since TECO's last depreciation study? If affirmative, please detail the changes and explain how each is expected to impact the average life of the given account.
 - c. Have any operational procedures changed since the last depreciation study that would affect the average life of transmission and/or distribution station equipment? If affirmative, please explain what operational procedures changed, how they changed, and how the changes are expected to impact the life of Accounts 35300 and 36200.
 - d. Please explain TECO's replacement policy applicable to the power transformers contained in Accounts 35300 and 36200.
 - e. Referring to Bates-stamped page 1476, please explain the causes of the 2014 - 2017 peak for retirement amounts for Account 35300 relative to all other years since 1982.
- A. a. Below is a chart of the major property groups in the 353 and 362 accounts, the remainder are other items and unassigned (non-unitized) work order activities.

Account 353	Amount	Ratio	Account 362	Amount	Ratio
Arrester	3,790,665	1%	Arrester	3,120,810	1%
Batteries	1,822,575	1%	Batteries	2,214,173	1%
Breaker	52,993,200	17%	Breaker	32,175,572	13%
Bus	7,007,444	2%	Bus	3,511,841	1%
Cable	10,704,121	3%	Cable	4,766,912	2%
Capacitor	6,495,478	2%	Capacitor	1,829,705	1%
Conduit	312,339	0%	Conduit	581,713	0%
Cutouts	22,045	0%	Cutouts	139,800	0%
Metering	3,693,401	1%	Metering	2,564,624	1%
Panels	9,863,612	3%	Panels	9,339,804	4%
Reactor	2,980,319	1%	Reactor	293,508	0%
Relay	26,620,767	8%	Relay	18,739,926	7%
RTU	8,164,708	3%	RTU	8,663,732	3%
Structure	23,602,979	7%	Structure	12,939,793	5%
Switch	15,563,247	5%	Switch	23,485,830	9%
Telemetry	836,851	0%	Telemetry	1,685,800	1%
Transformer	108,540,360	34%	Transformer	100,975,898	40%
Wire	2,074,620	1%	Wire	1,677,788	1%
	285,088,733	90%		228,707,231	91%

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- b. Regarding accounts 35300 and 36200, there have been no changes in design or performance of equipment.
- c. For account 353000, Tampa Electric has added predictive equipment that remotely monitors the online dissolved gas analyzer and is considered to help maintain the life of the equipment; however, it does not extend the life of the equipment. For account 36200, there have been no operational procedures changed since the last depreciation study that would affect the average life of distribution station equipment.
- d. Regarding accounts 35300 and 36200, the company replaces transformers upon failure, when the company deems them to be unsafe following an inspection, when an undersized condition is found, or when there is an increase in customer load growth.
- e. Please see the table below for the retirement accounts for Account 35300. Phillips Station GSU was retired in 2015, which resulted in approximately \$2M from sale of Phillips Station assets. The Polk CC non-recurring activity is tied to new generation. The company also made multiple auto transformer and GSU replacements in the normal course of business. The company also made substation asset retirements following substation audits. The tables below reflects those details.

	2014	2015	2016	2017
Misc plant adjustments due to spare equip audits/substation walk downs	\$ (3,328,200)	\$ -	\$ (2,813,947)	\$ (271,149)
Polk CC Conversion - ED		\$ (44,463)	\$ (3,180,762)	\$ (1,286,296)
Phillips Station GSU		\$ (1,924,293)		
BB3 GSU Transformer Replacement		\$ (845,120)	\$ (839,177)	
SR 60 N. Sub Auto Transformer Replacement		\$ (1,334,754)		
Gannon Auto Transformer Replacement				\$ (1,031,485)
	\$ (3,328,200)	\$ (4,148,630)	\$ (6,833,886)	\$ (2,588,929)

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9. Please refer to Bates-stamped pages 1449 and 1478-1489 for the questions below regarding Account 35400, Towers and Fixtures and Account 35500, Poles and Fixtures:
- a. Please confirm that all poles and towers contained in Account 35400 are comprised of steel. If not, please identify the portion of investment associated with wood or other materials.
 - b. Please identify the respective portions of the steel, concrete and wood poles contained in Account 35500.
 - c. Please explain the major causes for the transmission tower and pole retirements.
 - d. Is TECO experiencing any corrosion problems in Accounts 35400 and 35500? If affirmative, please explain.
 - e. Referring to Bates-stamped pages 1480-1481, please explain the cause of Account 35400 budgeted 2020 retirement, in the amount of \$341,869, given that the total retirements from 1982 – 2019 in the account was only \$220,010.
 - f. Referring to Bates-stamped pages 1449 and 1481-1482, please explain the basis for proposing to retain the average future net salvage (NS) percentage of (15) for Account 35400, given that TECO experienced a zero NS percentage each year since 2014 and the total average of the NS percentage experienced is (5) since 1982.
 - g. TECO proposed to increase the Average Service Life (ASL) of Accounts 35400 and 35500 by five and two years, respectively. Please explain the specific reasons justifying the proposed changes, other than it results from statistical analyses.
- A.
- a. The poles and towers in account 354 are comprised of steel.
 - b. The account 355 is mostly steel, some concrete and wood poles. The remainder are other items and unassigned (non-unitized) work order activities.

Account 355	Amount	Ratio
Pole Steel	241,552,778	69%
Pole Concrete	81,239,561	23%
Pole Wood	10,355,128	3%
	333,147,467	95%

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- c. Transmission towers and poles are retired for causes such as major deficiencies identified through structure inspection programs and system patrols, targeted replacement of the remaining wood transmission poles as part of the Storm Protection Plan, system upgrades, road improvement projects, developer projects, and damage, such as from vehicle collisions or wildfires.
- d. The company has identified corrosion problems in steel lattice transmission towers and tubular steel structures that have flanged connections and/or anchor-bolt foundations. Most of these structures have been in-service for many decades and are located in corrosive environments such as adjacent to Tampa Bay or near phosphate mining/processing operations. Some corrosion problems have been the result of designs where a complex shape held water or the intended drainage did not perform adequately.

In addition, the vibration common to power lines and lattice towers has worn out some of the connecting hardware and structural members. This has accelerated corrosion due to the premature wear of the protective galvanized coating.

Although there are exceptions, the company has standardized use of direct-embedded poles with slip joint connections and simple shape attachment points. This is expected to extend service-lives by reducing or eliminating areas where water could be held.

- e. For Commission purposes, only the row labeled Pre-2020 Additions is used. This study filing is as of December 31, 2019 and contains actual balances for assets and reserves, not a projected filing.

Remaining Life Depreciation Accrual

Account: 355.00 Poles and Fixtures
 Scenario: TEC 2019 A - T&D 20200428
 Dispersion: 40.00 - R2
 Average Net Salvage Rate: -40.00%
 Future Net Salvage Rate: -40.00%

Broad Group Procedure

January 1, 2020

	Plant Amt	Remaining Life	Accrual (Dollars)	Accrual Rate (Gross Plant)	Accrual Rate (Net Plant)
Pre- 2020 Additions	\$352,343,824.33	31.41	\$12,576,108.09	3.569272%	3.183700%

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- f. The company is re-filing each of the net salvage annual and 5-year average schedules to remove the allocation of un-unitized 108 Retirement Works in Progress ("RWIP") activity for cost of removal and salvage expenditures. The company is performing this RWIP Allocation for tax accounting purposes to have all 108 Accumulated Reserve activities assigned to a 300 Plant Account. The RWIP Allocation is a temporary accrual/reversal of information related to un-unitized work order activities for cost of removal and salvage that is embedded on the B-9 reserve schedule. The cumulative nature of the RWIP Allocation is acceptable, however, due to timing when viewed on an annual basis; RWIP tends to skew the COR percentage and Salvage percentage relationship to retirements for depreciation study purposes. Please see "(BS 21) Without RWIP Allo.xlsx" that contains the various accounts Excel files. This refiling will assist with other commission questions regarding Cost of Removal and Salvage activities.
- g. Tampa Electric took into consideration the other state IOU averages and compared them to where Tampa Electric falls into that range for that account to assist with the best fit possible.

The company is proposing a five-year increase in the ASL for Account 354.

The proposed 55-year service life (a five-year increase) and net salvage of (15) percent falls within the range of ASL utilized by other Florida investor-owned utilities, specifically between 52 and 65 years and NS between (15) and (25) percent. The company's proposed Average Remaining Life (ARL) based on vintage asset records for this account is only 8.7 years, compared to the ARL range between 27 and 34 years for other Florida investor-owned utilities. This difference implies Tampa Electric's towers are older and have been in-service longer and are approaching replacement sooner than the towers utilized by the other IOUs. The company, however, will not replace all towers within the next 8.7 years. As a result, life extension of the account is necessary. Upon replacement, net salvage will be incurred accordingly.

The proposed net salvage level does not represent the company's future expectation for net salvage requirements upon retirement of towers. The company's activity history for these retirements is limited. The level of cost of removal and salvage incurred related to future replacement activities will provide more activity history to analyze in future depreciation study filings.

The company proposes an ASL of 40 years for Account 355, which is a two-year increase. The proposed 40-year ASL and net salvage of (40) percent falls within the range of ASL utilized by other Florida investor-owned utilities,

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specifically between 38 and 44 years and NS between (25) and (75) percent. The company used statistical analysis by assigning 40-year ASL to concrete or steel poles and 30 to 35-year ASL to wood pole (hardened) asset costs.

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- 10.** Please refer to Bates-stamped pages 1534-1539 for the questions below regarding Account 36400, Poles Towers and Fixtures (distribution):
- a. Please explain the major causes of the retirement of distribution poles.
 - b. Please provide a percentage breakdown, by pole type, of the investment and the quantity, respectively, in Account 36400.
 - c. Please explain TECO's pole treatment program, if any.
 - d. Please explain TECO's pole replacement program, if any.
 - e. Is TECO's pole replacement performed by contract labor or in-house labor? Please provide the average cost rates per pole, identifying a breakdown of the labor costs and the overhead amount separately.
 - f. Please explain how TECO disposes of its retired distribution poles.
 - g. Please explain TECO's pole inspection program including what the program entails.
 - h. Please identify the estimates of each year's plant additions and retirements, if any, that are resulting from TECO's Storm Protection Plan for the period 2021 - 2025.
 - i. TECO proposed to increase the ASL of the account by one year. Please explain the specific reasons justifying the proposed change, other than it results from statistical analyses.
- A.**
- a. The major causes of distribution pole retirement are:
 - Line section relocation due to road relocations and property development.
 - Mechanical damage to pole.
 - Wood poles may also be retired due to:
 - Animal Damage including woodpeckers and ants.
 - Physical deterioration including pole top weathering, "wind shakes" and decay.
 - b. Please see the table below. The account 364 contains wood, concrete, and steel poles. The remainder are other items and unassigned (non-unitized) work order activities.

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Account 364	Quantity	Ratio	Amount (\$)	Ratio
Pole Concrete	6,385	2%	11,478,451	3%
Pole Steel	967	0%	5,235,881	2%
Pole Wood	325,635	98%	305,337,586	92%
	332,987	100%	\$322,051,917	97%

- c. Tampa Electric's Pole treatment is conducted as part of the Wood Pole Inspection Program. All wood poles receive a visual inspection and are sounded to detect internal voids and decay. When voids are detected, pole borings are used to determine the extents of the voids and an internal chemical treatment is applied. Bore holes are then plugged.

Additionally, all wood poles 16 years and older are subjected to an excavation inspection.

- o The pole is excavated to a depth of 18 inches.
- o All external decay is removed.
- o A wood preservative is applied from the bottom of the excavation to 6 inches above grade.
- o A protective wrap is applied to the pole and the excavation is then backfilled.

- d. Additionally, pole retirements are often a product of the Wood Pole Inspection Program, referenced in Tampa Electric's response to Staff's Data Request No. 10 (c), above. Poles may be retired due to physical damage or due to reduced capacity as a result of ground line decay. Once poles are identified through the inspection process as needing replacement, they are noted in our system and a crew is assigned to replace based on a prioritization schedule.

- e. Pole replacements are performed both by in-house and contract labor. The average labor costs (for internal labor) to replace a pole in 2020 was \$1,953 per pole, including supervision and support. The average internal overhead costs (including fringe and A&G) to replace a pole in 2020 was \$2,078 per pole. Labor and overhead information for contract labor is unavailable since pole replacement work is performed on a per unit costing basis.

- f. The TECO Investment Recovery department contracts with several companies to handle retired poles. Steel Poles are ultimately recycled. Concrete poles are ground up and the concrete and steel components are recycled. Wood poles are destroyed or recycled as conditions warrant.

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- g. The distribution pole inspection program is charged with inspecting wood poles on an eight-year cycle. The components of the Wood Pole Inspection Program are:
1. All poles, regardless of material, receive a visual inspection to uncover and evaluate damage to the pole and associated hardware. A pole may remain in service if the defects are considered to not jeopardize the structural integrity of the pole.
 2. Wood Poles are sounded to detect internal voids. Internal voids are chemically treated.
 3. Wood Poles 16 years old and older are bored at the groundline to detect sub-grade internal voids. Voids are treated chemically.
 4. Wood Poles 16 years and older are excavated to 18" below grade, any decay removed, wood preservative and protective wrap applied.
 5. Wood poles are measured at the groundline to establish remaining strength. Poles that do not meet the applicable NESC rule 250 B / 250C requirements are identified for replacement.
- h. Please see the table below for the total estimates, by year, for plant additions as well as retirements that are a result of the Storm Protection Plan.

	2021	2022	2023	2024	2025
Additions	115,916,460	158,160,178	152,901,453	160,480,758	169,947,560
Retirements	48,620,250	56,561,467	55,582,944	56,994,175	59,491,727

- i. Tampa Electric took into consideration the other state IOU averages and compared them to where Tampa Electric falls into that range for that account to assist with the best fit possible.

The company's ASL proposal for Account 364 of 35 years (for a one-year increase) and net salvage of (50) percent falls within range of ASL between 32 and 39 years and NS between (35) and (75) percent utilized by other Florida IOUs. The company used statistical analysis by assigning 40-year ASL to concrete or steel poles and 30 to 35-year ASL to wood pole (hardened) asset costs.

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11. The following questions refer to transmission and distribution conductors and devices, Accounts 35600, 35800, 36500, and 36700.
- a. Please identify any and all material changes, since TECO's last depreciation study, for each of these four accounts in terms of:
 - (i) equipment types,
 - (ii) percentage breakdown of the kinds of conductors,
 - (iii) conductors' quality and life resulting from the technology advance in material, design and manufacturing, and
 - (iv) TECO's reconductoring policy.
 - b. Please explain the causes of the retirement of conductors in each of these accounts.
 - c. Please explain any environmental impacts on the actual life expectancy of conductors in each account.
 - d. Please explain how retired overhead conductors and underground conductors are disposed of, respectively.
 - e. Referring to Bates-stamped pages 1510-1511, Account 35800, please explain the cause of the relatively high amount of retirement dollars budgeted for 2020 given the history of the account's retirement activities.
 - f. Referring to Bates-stamped pages 1544-1545, Account 36500, please explain the cause of the 2020 budgeted retirement amount of \$4,959,483, which is significantly higher than all other year's retirement amounts since 2009.
 - g. TECO proposed to increase the ASL of Accounts 35800, 36500 and 36700 by five, two, and five years, respectively. Please explain the specific reasons justifying the proposed changes, other than the increases are resulting from statistical analyses.
- A. a. (i) No major changes. See Tampa Electric's response to Staff's Second Set of Data Request No. 11(a)(ii), below.

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(ii) See the tables below for the breakdown of accounts 35600, 35800, 36500, and 36700. The remainder are other items and unassigned (non-unitized) work order activities.

Acct 356	2019 Quantity	2019 Ratio	2019 Amount	2019 Ratio	2012 Quantity	2012 Ratio	2012 Amount	2012 Ratio
Insulators	30,162	0%	43,024,407	28%	18,737	0%	23,890,313	20%
Static Wire	2,381,246	9%	7,442,060	5%	2,133,010	9%	3,154,997	3%
Switch	456	0%	5,381,798	3%	452	0%	3,851,821	3%
Wire ACSR	10,803,606	41%	56,025,223	36%	10,287,921	41%	37,557,030	32%
Wire AL	10,796,727	41%	30,382,586	20%	10,252,484	41%	33,112,977	28%
Wire CU	1,979,501	8%	1,253,983	1%	2,162,472	9%	1,401,202	1%
	25,991,699	99%	143,510,058	92%	24,855,076	100%	102,968,340	87%

Acct 358	2019 Quantity	2019 Ratio	2019 Amount	2019 Ratio	2012 Quantity	2012 Ratio	2012 Amount	2012 Ratio
Cable CU	156,384	99%	6,141,588	83%	236,688	100%	6,444,898	92%
Pothead	57	0%	223,427	3%	57	0%	223,427	3%
	156,441	99%	6,365,015	86%	236,745	100%	6,668,325	95%

Acct 365	2019 Quantity	2019 Ratio	2019 Amount	2019 Ratio	2012 Quantity	2012 Ratio	2012 Amount	2012 Ratio
Reclosers	47,822	0%	19,205,257	7%	47,563	0%	5,676,123	2%
RTU	1,445	0%	7,789,900	3%	1,431	0%	7,168,785	3%
Switch	23,153	0%	33,008,832	13%	17,507	0%	25,174,386	11%
Wire ACSR	43,138,412	27%	55,169,811	21%	42,016,023	27%	48,899,247	21%
Wire AL	79,400,410	51%	121,876,987	47%	80,327,560	51%	119,982,834	52%
Wire CU	34,264,880	22%	14,279,499	5%	34,417,878	22%	13,458,338	6%
	156,876,122	100%	251,330,286	96%	156,827,963	100%	220,359,713	96%

Acct 367	2019 Quantity	2019 Ratio	2019 Amount	2019 Ratio	2012 Quantity	2012 Ratio	2012 Amount	2012 Ratio
Cable AL	36,511,819	93%	165,249,248	56%	31,427,848	92%	125,176,812	57%
Cable CU	1,801,268	5%	10,872,172	4%	1,914,214	6%	8,120,784	4%
Pothead	125,991	0%	50,348,946	17%	96,432	0%	43,277,727	20%
Switchgear	5,610	0%	61,076,937	21%	4,957	0%	27,240,326	12%
	38,444,688	98%	287,547,304	97%	33,443,451	98%	203,815,650	93%

(iii) Tampa Electric updated material specifications to require the upgraded mischmetal coating on the steel core strands of 795, 954 and 1590 ACSR rather than the standard coating. The Transmission Department has also

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created a standard of using the use of cushion grip, armor grip and thermolign clamps for aluminum conductor and moved to a more traditional clamp for steel overhead ground (OHG) wires, also referred to as static or shield wires. The additional protection afforded by these upgraded clamps is expected to decrease premature failures and likely increase service-lives.

In addition, vibration dampers have been made standard on OHG and optical ground wire (OPGW) which will mitigate some of the vibration-induced failures that have been experienced in recent years. This includes new construction as well as system maintenance. There have been no changes for distribution conductors.

(iv) Although not a specific policy change, the Transmission Department began installing aluminum conductor-composite core (ACCC) conductor in 2016. The ACCC provides high temperature-low sag performance and can provide the required increased current rating while being able to re-use a high percentage of the existing structures. When the ACCC performance cannot meet clearance requirements at the required new rating, TEC added 1158 ACSS/TW to our inventory. In addition to providing a continuous rating over 2,000 amperes, the trapezoidal design has a cross-sectional area very close to the 954 kcmil conductors which are widespread throughout the transmission system. This facilitates the possible re-use of some structures involved in a reconductor since the wind loading is virtually the same. There have been no changes for distribution conductors.

- b. Distribution Conductors are retired for end of life, failure, road widenings or load issues. Transmission conductors are retired with system upgrades such as reconductor projects.
- c. Major storms are the only environmental impacts effecting life expectancy of distribution conductors. The transmission over-head ground wire has experienced corrosion that may have been accelerated in some areas due to the corrosive environments. Also, in recent years, transmission created a standard on the use of a traditional trunnion clamp rather than the three-bolt clamp that had been used for decades. It was determined that the three-bolt clamp could hold water leading to corrosion under the clamp.
- d. Retired distribution and transmission overhead and underground conductors are brought to a Tampa Electric facility, sorted, and stored. A recycling company contracted by Tampa Electric periodically retrieves the conductor and recycles it.

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- e. For Commission purposes, only the row labeled Pre-2020 Additions is used. The study filing is as of December 31, 2019 and contains actual balances for assets and reserves, not a projected filing.
- f. For Commission purposes, only the row labeled Pre-2020 Additions is used. The study filing is as of December 31, 2019 and contains actual balances for assets and reserves, not a projected filing.
- g. Tampa Electric took into consideration the other state IOU averages and compared them to where Tampa Electric falls into that range for that account to assist with the best fit possible.

The company's proposed ASL of 50 years for Account 356 and net salvage of (40) percent falls within the range of ASL between 47 and 55 years and NS between (20) and (50) percent utilized by other Florida IOUs. The company used statistical analysis by assigning 50-year ASL to wire, insulators, and 30-year ASL to switch asset costs within the account.

The company's ASL proposal for Account 358 of 50 years (for a five-year increase) and net salvage of 0 percent falls within the range of ASL between 50 and 60 years and NS between 0 and (10) percent utilized by other Florida IOUs. The company used statistical analysis by assigning 50-year ASL to cable and 30-year ASL to pothead asset costs within the account.

The company's ASL proposal for Account 365 of 40 years (for a two-year increase) and net salvage of (20) percent falls within the range of ASL between 36 and 45 years and NS between (20) and (60) percent utilized by other Florida IOUs. The company used statistical analysis by assigning 40-year ASL to wire, 30-year ASL to switch and recloser asset costs within the account.

The company's ASL proposal for Account 367 of 40 years (for a five-year increase) and net salvage of (5) percent falls within the range of ASL between 35 and 50 years and NS between (0) and (15) percent utilized by other Florida IOUs. The company used statistical analysis by assigning 50-year ASL to cable and 30-year ASL to switchgear and pothead asset costs within the account.

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- 12.** Referring to Bates-stamped pages 1500-1501, please explain the cause of the 2020 budgeted retirement amount of \$96,777 for Account 35601, Clearing Rights of Way, given that this account has no retirement, except \$22,630 in 2007, since 1982.

- A.** For Commission purposes, only the row labeled Pre-2020 Additions is used. The study filing is as of December 31, 2019 and contains actual balances for assets and reserves, not a projected filing.

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13. The following questions regarding are related to transmission and distribution underground conduit, Accounts 35700 and 36600.
- a. Please explain the causes for the retirement of transmission and distribution underground conduit.
 - b. TECO proposed to increase the ASL of Account 35700 by five years. Please explain the specific reasons justifying the proposed change, other than it results from statistical analyses. Please also explain why TECO proposed to retain the existing ASL for Account 36600.
 - c. When an underground conduit is retired, is it cut and sealed, abandoned in place, or physically removed?
 - d. Referring to Bates-stamped page 1506, please explain the cause of the positive gross salvage amount in Account 35700, realized in 2017.
 - e. Referring to Bates-stamped pages 1551-1552, please explain the budgeted 2020 retirement amount of \$764,187 for Account 36600 which is the highest since 2010.
- A.
- a. Transmission underground conduits are retired when the underground infrastructure is no longer required or has reached end-of-life conditions, or if the underground transmission circuit is permanently placed out of service. There have been very few underground transmission conduits retired due to very limited use of underground facilities on the transmission system. The conduits most recently retired were due to a road improvement project that would have required relocation. The cables were decades old, and the area had experienced significant overhead transmission additions since the original in-service. It was determined they were no longer needed and subsequently retired. The distribution underground conduit is retired when a faulted cable cannot be removed from it or the distribution equipment serviced by the cable is no longer in use.
 - b. Tampa Electric took into consideration the other state IOU averages and compared them to where Tampa Electric falls into that range for that account to assist with the best fit possible.

The company's proposed ASL for Account 357 of 60 years (for a five-year increase) and net salvage of 0 percent falls within range of ASL between 55 and 60 years and NS between 0 and 0 percent utilized by other Florida IOUs.

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Statistical analysis was simply used by assigning 60-year ASL to conduit asset costs within the account. This was done to sync up with the Account 366 ASL of 60-years for underground conduit.

- c. When the underground transmission conduit is retired, the transmission cable and oil are removed and the conduit is cleaned, cut, sealed, and abandoned. When the underground distribution conduit is retired, it is cut and abandoned in place.
- d. The salvage of \$28,238 was related to the \$84,461 in retirements of manhole frames and covers. In addition, please see response to Staff's Second Set of Data Requests, No. 9 (f), above.
- e. For Commission purposes, only the row labeled Pre-2020 Additions is used. This study filing is as of December 31, 2019 actual balances for assets and reserves, not a projected budget filing.

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14. Please refer to Bates-stamped pages 1449, 1561-1566 for the questions below regarding Account 36800, Line Transformers.
- a. Please identify any large line construction projects, if any, by which this account was/will be affected for the period 2013 – 2019 and 2020 – 2025.
 - b. Referring to Bates-stamped pages 1564-1565, please explain the budgeted 2020 retirement amount of \$16,655,859, which is significantly higher than any other year's retirement since 1982.
 - c. Please explain the process involved in determining when a line transformer is replaced.
 - d. TECO proposes to increase the ASL of this account by five years. Please explain the specific reasons justifying the proposed change, other than it results from statistical analyses.
 - e. Referring to Bates-stamped page 1449, please explain the basis for the proposed significant reduction in NS percentage for the account, from 10 to (20).
 - f. Does TECO have an inspection and/or replacement program(s) for line transformers? Please explain.
 - g. Does TECO's Storm Protection Plan affect this account? Please explain.
 - h. Please explain when an overhead transformer was changed as a part of the pole replacement program, how the related COR was booked among the pole and transformer accounts.
 - i. For the transformers replaced during 2014 - 2019, what is the approximate percentage of replacements that were performed as part of the pole replacement program?
- A. a. Existing line Transformers may be impacted during large line projects if they need to be moved to accommodate construction activities. This impact would not be known for future dated projects not yet in construction. Tampa Electric's on-going work efforts on the existing Pole Replacement and Padmount Transformer Inspection Programs during the 2013-2019 period provide the largest impact to Account 36800, Line Transformers.

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- b. For Commission purposes, only the row labeled Pre-2020 Additions is used. This study filing is as of December 31, 2019 and contains actual balances for assets and reserves, not a projected filing.
- c. Line transformers, both underground and overhead style, are replaced upon failure or when external physical condition deteriorates enough to pose a hazard.
- d. In prior depreciation study filings, the company used a location-life based approach for this account, in conjunction with historical information where high salvage was recognized for the remanufacturing/repairing of the line transformer to be placed back into inventory for reissue. This led to a shorter average service expectation. Since the last depreciation study, the company made changes within the account to recognize higher levels of cost of removal and lower levels of salvage resulting from pole changeouts and stainless-steel transformer issues, moving this account to a cradle-to-grave approach like the other Florida IOUs.
- e. Please see Tampa Electric's response to Staff's Second Set of Data Requests No. 14 (e), above.
- f. Yes. For underground or pad-mounted transformers only. We proactively inspect a revolving 10 percent of our pad-mounted equipment each year and replace, repaint, or repair, as necessary.
- g. Yes, there are existing overhead transformers that will be removed/replaced based on the scope of the program. Additionally, new UG transformers will be installed as part of the Lateral Undergrounding program.
- h. Tampa Electric's work management software called WorkPro ("WP"), determines the percentage of work charged to install and COR based on the detailed design specifications.
- i. Approximately 30 percent of the transformers replaced during this time period were related to the pole replacement program.

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15. Please refer to Bates-stamped pages 1567-1578 for the questions below regarding Overhead and Underground Services, Accounts 36900 and 36902:
- a. Please provide a list of the major items that comprise the investment in each account.
 - b. Please explain the specific reasons justifying the change in the ASL for Account 35900, other than it results from statistical analyses.
 - c. Referring to Bates-stamped pages 1570-1571, please explain the cause of the 2020 budgeted \$1.85 million retirement for Account 36900, which is the highest in history since 1982 with every year's retirements being less than \$0.4 million since 2008.
 - d. Referring to Bates-stamped pages 1576-1577, please explain the cause of the 2020 budgeted \$1.80 million retirement for Account 36902, which is the highest in history with every year's retirements amount being less than \$0.3 million since 1982.
- A. a. The account 36900 and account 36902 is comprised of aluminum cable. The remainder are other items and unassigned (non-unitized) work order activities.

Overhead Service Account 36900			Underground Service Account 36902		
Amount	Ratio		Amount	Ratio	
Cable AL	76,790,444	99%	Cable AL	125,191,709	99%

- b. Tampa Electric took into consideration the other state IOU averages and compared them to where Tampa Electric falls into that range for that account to assist with the best fit possible.

The company's proposed ASL for Account 36900 40 years (for a five-year increase) and net salvage of (20) percent falls within the range of ASL between 34 and 48 years, but outside the range of NS between (40) and (85) percent utilized by other Florida IOUs. The company used statistical analysis by assigning 40-year ASL to service overhead cable costs within the account.

The company's proposed ASL for Account 36902 of 40 years (0-year increase) and net salvage of (10) percent falls within the range of ASL between 38 and 43 years and NS between (40) and (85) percent utilized by other Florida IOUs. The company used statistical analysis by assigning 40-year ASL to service Underground cable costs within the account.

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- c. For Commission purposes, only the row labeled Pre-2020 Additions is used. The study filing is as of December 31, 2019 and contains actual balances for assets and reserves, not a projected filing.

- d. For Commission purposes, only the row labeled Pre-2020 Additions is used. The study filing is as of December 31, 2019 and contains actual balances for assets and reserves, not a projected filing.

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16. Please refer to Bates-stamped pages 1449 and 1585-1591 for the questions below regarding Account 37300, Street Lighting and Signal Systems.
- a. Please identify the major categories of street lights contained in Account 373 and the percent of the account's December 31, 2020 investment associated with each.
 - b. Please explain the technology changes in last decade that have affected the life of street lighting and signal systems.
 - c. In Document No. 05429-2011, Docket No. 110131-EI, TECO noted:

LED lighting that provides energy and maintenance efficiency could increase the expected fixture life by 50 percent. There is induction lighting that provides energy and maintenance efficiency that could increase the expected fixture life by 75 percent. And there is remote detection that identifies component failures in progress, which might enable utilities to perform preventative maintenance extending the life of the unit.

Have the above envisioned life extensions been realized? If so, please explain why TECO proposed to retain the existing 20-year ASL of the account as shown on Bates-stamped Page 1449.
 - d. Does TECO have an inspection and/or replacement program(s) for street lighting and signal systems? Please explain.
 - e. Does TECO's Storm Protection Plan affect the activities of this account? Please explain.
 - f. Referring to Bates-stamped pages 1589-1590, please explain the cause of the 2020 budgeted \$10.5 million retirement, which is the highest since 1982.
- A. a. Please see the table below for the breakdown of Account 373 as of December 2019. The remainder are other items and unassigned (non-unitized) work order activities.

Account 373	Amount	Ratio
Luminaire LED	58,687,097	21%
Luminaire HPS	52,398,794	19%
Premium Fixtures	41,273,072	15%
Cable CU	36,675,133	13%
Conduit	26,550,772	10%
Pole Concrete	20,518,134	7%
Pole Wood	4,559,515	2%
Pole Aluminum	3,283,280	1%
Pole Fiberglass	1,784,436	1%
Cable AL	1,715,440	1%
	<u>247,445,673</u>	<u>90%</u>

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- b. Over the last 10 years, the transition from the older light delivery systems to LED has been the single largest technology transformation in the lighting industry. LEDs may provide a longer asset life as there are less components that can fail, however there is not enough long-term operational data to corroborate this claim. Tampa Electric began deploying LEDs in bulk in 2018 through the LED project, (Docket Nos. 20170199-EI & 20170198-EI) therefore, a sufficient data set to assess how this technology may impact the life of a lighting service is not available.
- c. It is inconclusive at this point to determine the life of an LED asset as compared to older technology, as the LED conversion project began in February 2018 and there is not sufficient LED data available. LEDs can potentially provide a longer service life since components (failure mechanisms) such as ballasts only exist in older non-LED technology. Most LED deployments across the industry have been deployed in recent years, therefore, there is insufficient data available. As of March 1st, 2021, Tampa Electric has deployed approximately 145,000 LEDs. Approximately 130,000 have been installed in the last three years through the LED conversion project. The data across the last three years is a sufficient sample set which demonstrates that the reliability of brand-new units which is better than the system average, however, is not reflective of reliability across the life of the asset.
- d. Tampa Electric's lighting replacement activities are driven by maintenance needs. Upon mobilization to a service, the technician will assess what activity is needed to restore the light to normal operation which may include replacement of the luminaire. Tampa Electric ceased group re-lamping and removed the activity from its tariff in 2009. Proactive replacement today is performed solely under the LED conversion project (Docket Nos. 20170198-EI & 20170199-EI).
- e. Tampa Electric's lighting service is unaffected by the storm hardening activities. Lighting on existing distribution poles will remain active and on the same poles to continue to support public safety. The pole where the distribution feed is transferred from overhead to underground will remain classified as a distribution pole in Account 364.
- f. For Commission purposes, only the row labeled Pre-2020 Additions is used. This study filing is as of December 31, 2019 and contains actual balances for assets and reserves, not a projected filing.

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17. The following questions related to Accounts 37000 and 37001, AMR Meters & Analog Equip and AMI Meters.

a. Referring to Bates-stamped page 1449, please explain the specific reasons justifying the proposed decrease in the ASL for Account 37001, AMI Meters, from 18 years to 15 years, given that (i) no historical data was provided to support this proposed change because "AMI meters additions will occur in January 1, 2022" as indicated on Bates-stamped page 1442 and (ii) the Commission approved ASL for the AMI account for the only Florida utility which maintains an AMI meters account is 20 years (as indicated in TDG Master File, tab "Comparison").

b. In Document No. 04177-2019, Docket No. 20190107-EI, TECO noted:

When the company prepares its next depreciation study, which could be after the AMI project is complete, the AMI meters statistics will be reflected in the life analysis of FERC Account – 370 – Meters based on their then existing remaining life.

Please provide the aforementioned AMI meters statistics, if available, to support the proposed decrease in the ASL of the AMI meters account.

c. Please provide a percentage breakdown of the investment by the type of meters in Account 37000, AMR Meters & Analog Equip. as of December 31, 2019 (actual), and as of January 1, 2022 (prospectively).

d. Please refer to Bates-stamped pages 30 and 1441. Assuming TECO's requested AMR Capital Recovery Schedule is approved, what is the expected remaining plant assets balance in Account 37000, as of January 1, 2022? Please provide a description of each major item and the net book value of its associated investment, as well as the total plant balance as of January 1, 2022.

e. TECO's instant Petition, Item 43, states:

Tampa Electric is in the process of a system-wide replacement of AMR meters and associated infrastructure with state-of-the-art AMI metering infrastructure. Over a four-year period, the company will replace its AMR meters with over 800,000 AMI meters, which will be part of a new, fully functional AMI system that will bring many new customer benefits and company efficiencies to Tampa Electric's service area in January 2022.

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- (i) Please provide the number, and the associated dollar amount, of AMR meters to be replaced/retired in each of the aforementioned four years.
 - (ii) How many AMR meters will be remaining in service as of January 1, 2022, if any?
 - (iii) Does TECO have a plan to continuously replace the remaining AMR meters, if any, with AMI meters after January 2022? Please explain.
- f. With respect to the replaced AMR meters, are they junked for scrap salvage? Please explain and identify the impact to depreciation accounts.
- g. Please refer to TECO's instant Petition, items 44 – 47, and identify all the depreciation accounts that are affected by the implementation of the AMI system.
- A.**
- a. The 370.01 AMI Meter account was established for tracking AMI meter investment. The company determined it was necessary to create subaccounts within Account 370 and established Account 370.00, AMR & Analog, and Account 370.01, AMI Meters. When the company created Account 370.01, AMI Meters, it adopted the pre-existing Account 370.00, AMR & Analog depreciation rates. Account 370.00 blends the average service of digital meter components (15 years) with non-digital meter components (25 years). Account 370.01 would be comprised of only digital meter components with an ASL of 15 years to be consistent with the treatment of digital meter components in Account 370.00. In addition, please see Tampa Electric's response to Staff's Second Set of Data Request No. 17 (b), below.
 - b. Tampa Electric does not have any statistics available at this time.
 - c. Please see the table below for the summary of AMR meters and Other assets within Account 370.00. Additionally, please see Excel file, "(BS 42) labeled Breakdown of 370.00 NBV.xlsx". The company performed this analysis in September 2020 in preparation for filing the depreciation study. The purpose of the analysis was to identify the investment subject to capital recovery amortization of over the requested 10-year period.

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As of 9/30/2020		Estimated Dec-20	Estimated Dec-21	Estimated Dec-22
Assets	AMR Meters	\$64,265,481	-	-
Assets	Other Assets	\$13,585,951	\$13,585,951	\$13,585,951
Assets	Total	\$77,851,432	\$13,585,951	\$13,585,951
Reserves	AMR Meters	\$23,491,495	(\$36,146,871)	(\$32,532,184)
Reserves	Other Assets	\$5,283,261	\$6,261,450	\$7,334,740
Reserves	Total	\$28,774,757	(\$29,885,421)	(\$25,197,444)
NBV	AMR Meters	\$40,773,986	\$36,146,871*	\$32,532,184
NBV	Other Assets	\$8,302,689	\$7,324,501	\$6,251,211
NBV	Total	\$49,076,675	\$43,471,372	\$38,783,395

* NBV capital recovery amortization schedule over 10-years

- d. Please see Tampa Electric's response to Staff's Second Set of Data Requests, No. 17 (c), above.
- e. (i) Please see the table below for the number of meters and associated dollars for AMR meter replacement.

Year	# of Poles Replaced	Annual \$
2018	50,252	\$3,761,746
2019	312,582	\$6,754,291
2020	257,178	\$5,760,207
2021	95,000 (estimated)	\$2,200,000 (estimated)

(ii) As of January 1, 2022, no residential AMR meters are projected to be in-service. Approximately 750 commercial and/or industrial meters will remain in service with one-way communication for meter reading. However, these meters were not traditionally classified as "AMR" meters.

(iii) Tampa Electric Company is committed to providing accurate and reliable metering for our customers. Any meters that are not converted to AMI

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technology during the programmed deployment will be converted as technology provides solutions and AMI meters are available.

- f. For AMR meters, Tampa Electric scraps for salvage will no impact on the depreciation accounts.
- g. Please see the table below for the major additions to the AMI account as of December 2021.

303.15 Software (15-years)	124,068,012
370.01 AMI Meters	108,719,943
391.02 Computer Equipment	1,402,008
370.00 Communications Equipment	6,519,320
	<u>\$240,709,283</u>

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- 18.** Referring to Bates-stamped pages 1596-1597, please explain the cause of the 2020 budgeted \$2.2 million retirement for Account 39000, Structures and Improvements, which is significantly higher than any other year's retirement amounts since 2007.

- A.** For Commission purposes, only the row labeled Pre-2020 Additions is used. The study filing is as of December 31, 2019 and contains actual balances for assets and reserves, not a projected filing.

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19. Please refer to Bates-stamped pages 1599-1603 of the Study for the following questions related to Account 39725, Communication Equipment-Fiber:
- a. Please provide a list of the major items that comprise the investment in Account 39725 as of December 31, 2019 and December 31, 2021, respectively.
 - b. Referring to Bates-stamped pages 1602-1603, please explain the cause of the 2020 budgeted \$5.6 million retirements, given that all of the annual retirement amounts booked to the account were less than \$0.4 million since 1982 and zero retirements were booked to the account since 2010.
 - c. Will this account have any early retirements due to TECO's deployment and transition from AMR to AMI technology? If yes, please identify the related unrecovered net book value (NBV) of the investment, if any, and explain how the identified NBV will be treated.
- A. a. Please see the tables below for a list of the major items that comprise the investment in Account 39725.

The account 397.25 contains fiber cable and fiber equipment as of December 2019. The remainder are other items and unassigned (non-unitized) work order activities.

<u>Account 397.25</u>	<u>Amount</u>	<u>Ratio</u>
Fiber Optic Cable	25,136,062	83%
Fiber Optic Equip	4,325,545	14%
	<u>29,461,607</u>	<u>97%</u>

As of December 31, 2021, the estimated breakdown would be similar (B-7 prorated).

<u>Account 397.25</u>	<u>Amount</u>	<u>Ratio</u>
Fiber Optic Cable	29,661,506	83%
Fiber Optic Equip	5,104,307	14%
	<u>34,765,812</u>	<u>97%</u>

- b. For Commission purposes, only the row labeled Pre-2020 Additions is used. The study filing is as of December 31, 2019 and contains actual balances for assets and reserves, not a projected filing.
- c. There are no plans for any fiber retirement due to AMI.

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- 20.** Referring to Bates-stamped page 1450, Transportation Equipment accounts, please provide, in MS Excel worksheet, a list of each vehicle in-service as of December 31, 2019, by vehicle account, showing the associated vintage, original cost, and age.
- A.** Please see the Excel file, "(BS 46) labeled Vehicles 2019 CPR.xlsb", which includes the detailed request for each of the four vehicle accounts.

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- 21.** Referring to Bates-stamped page 1450, Transportation Equipment accounts, please provide, in MS Excel worksheet, a list of each vehicle retired by vehicle account with the associated in-service date, amount retired, salvage realized, and COR incurred for each of the years 2015 - 2019.
- A.** Revised net salvage schedules have been submitted in Tampa Electric's Response to Staff's Second Set of Data Requests, No. 9(f), above. The revised net salvage values removed the Tax RWIP Allocation.

Additionally, please see Excel file, "(BS 48) labeled Vehicles 2015-2019 Retirements and NS.xlsb, which includes the details requested for each of the four vehicle accounts.

In the file, each of the four 392 vehicle accounts are isolated for summarizing the annual asset retirement details and net salvage (NS) tab explanations. Negative cost of removal is due to an error in usage of cost element on the financial transaction posting; these would be classified as Salvage instead of Cost of Removal. Asset retirements are made upon notification; however, in some instances, blanket work orders posting the financial transactions for salvage were not unitized annually, causing the distortion of high salvage in some years and no salvage in other years

- 22.** Please describe TECO's vehicle retirement policy, e.g., based on vintage, mileage.
- A.** Fleet Services conducts an annual review of Tampa Electric's vehicles based on age, mileage, and maintenance expense to determine replacement. Internal customer feedback is also taken into consideration. They are then given a ranking and placed on the current year replacement schedule. Unplanned retirements occur in the event unforeseen circumstances dictate, such as accidents beyond repair, and repairs that outweigh the value of the asset.

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- 23.** Please describe TECO's vehicle leasing policy, if any, including the lease buyouts policy that would affect the retirement activities of the vehicle accounts.
- A.** Tampa Electric utilized leasing prior to 2016. The company determined it was more cost effective to own and operate its own fleet.

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- 24.** Please refer to Bates-stamped pages 1607-1608 for the following questions related to Account 39202, Energy Delivery Light Trucks:
- a. In general, please explain why there is removal cost incurred when retiring a vehicle. Please also explain in what situation a positive, or a negative, amount of removal cost will be booked.
 - b. In general, please explain the logic and general causes of the negative Gross Salvage associated with the retirement of a vehicle.
 - c. Please explain why this account incurred negative Gross Salvage in 2016.
- A.**
- a. Please see Tampa Electric's Response to Staff's Second Data Request, No. 21, above. Any costs that are associated with retiring a vehicle are related to the preparation for disposal which could include removing logos, devices, and equipment. Additional costs could be associated with transport and fees associated by the auction.
 - b. Please see Tampa Electric's Response to Staff's Second Data Request, No. 21, above.
 - c. Please see Tampa Electric's Response to Staff's Second Data Request, No. 21, above.

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- 25.** Please refer to Bates-stamped pages 1612-1613 for the questions below related to Account 39203, Energy Delivery Heavy Trucks:
- a. Please explain the causes of the relatively high amount of retirements for the year 2019 and 2020 compared to 2015-2018.
 - b. Please explain the cause and logic of the negative CORs recorded in 2018 and 2019.
 - c. In 2016, this account retired \$0.43 million investments, but the related cost of removal was more than \$1.2 million. Please explain the specific reasons associated with these account activities.
 - d. Please explain the causes and logic of the negative Gross Salvage recorded in 2016 and 2019, respectively.
- A.**
- a. For Commission purposes, only the row labeled Pre-2020 additions is used on Bates Stamped page 1612. This study filing is as of December 31, 2019 and contains actual balances for assets and reserves, not a projected filing. Please see the table below for Bates Stamped page 1613 as two large bucket trucks were retired in 2019.

Description	Amount (\$)
VEH# 02868 2009 INT'L MODEL 7300 & (1) TELECECT MODEL SML55 W/TELELECT BODY PURCHASED FROM TEREX UTILITIES VO#138531	228,268
VEH# 02867 2009 INT'L MODEL 7300 & (1) TELELECT MODEL SML55 W/TELELECT BODY PURCHASED FROM TEREX UTILITIES VO#138533	<u>228,471</u>
	<u><u>\$456,739</u></u>

- b. Please see Tampa Electric's Response to Staff's Second Data Request, No. 21, above.
- c. Please see Tampa Electric's Response to Staff's Second Data Request, No. 21, above.
- d. Please see Tampa Electric's Response to Staff's Second Data Request, No. 21, above.

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- 26.** Please refer to Bates-stamped pages 1617-1618 for the questions below related to Account 39212, Energy Supply Light Trucks:
- a. Please explain the cause of the 2020 budgeted retirement which is the highest retirement amount since 2011.
 - b. In 2015, this account retired a \$46,124 investment but incurred a negative \$99,959 COR and a negative \$53,162 Gross Salvage. Please explain the causes and logic
 - c. behind these account activities.
 - d. Please explain the logic and causes of the negative Gross Salvage recorded in 2016.
- A.**
- a. For Commission purposes, only the row labeled Pre-2020 additions is used on Bates Stamped page 1617. This study filing is as of December 31, 2019 and contains actual balances for assets and reserves, not a projected filing.
 - b. Please see Tampa Electric's Response to Staff's Second Data Request, No. 21, above.
 - c. Please see Tampa Electric's Response to Staff's Second Data Request, No. 21, above.
 - d. Please see Tampa Electric's Response to Staff's Second Data Request, No. 21, above.

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- 27.** Please refer to Bates-stamped pages 1622-1623 for the questions below related to Account 39213, Energy Supply Heavy Trucks:
- a. Please explain the logic and cause of the negative COR recorded in 2019.
 - b. Please explain the logic and cause of the negative Gross Salvage recorded in 2019.
 - c. For 2013 – 2015, this account had zero retirement but incurred relatively high amount of negative COR each year. Please explain the reasons behind.
- A.**
- a. Please see Tampa Electric's Response to Staff's Second Data Request, No. 21, above.
 - b. Please see Tampa Electric's Response to Staff's Second Data Request, No. 21, above.
 - c. Please see Tampa Electric's Response to Staff's Second Data Request, No. 21, above.

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28. The following questions are related to Accounts 39315 and 39399, Software.
- a. Please provide a list of the major items that comprise the investment in Accounts 39315 and 39355, respectively.
 - b. Please explain whether each of these accounts will be affected by deployment and transition from AMR to AMI technology. If yes, please provide details.
- A. a. We interpret this question to refer to Accounts 303.15 and 303.99.

Please see the tables below for the major items that comprise the software investment in accounts 30315 and 30399.

Account 303.99 Software 30-year amortization

<u>Software Description</u>	<u>Amount (\$)</u>
ABB Portfolio Optimization	387,444
Planning & Fuels Data Warehouse System	27,715
Total	\$415,159

Account 303.15 Software 15-year amortization major items below. The remainder are other items and unassigned (non-unitized) work order activities.

<u>Software Description</u>	<u>Amount (\$)</u>	<u>Ratio</u>
SAP Customer Relations and Billing	104,597,041	44%
SAP Enterprise Resource Planning (GL)	34,077,026	14%
Corporate Enterprise Network	18,694,483	8%
EMS	12,251,179	5%
ETRM (Fuels Accounting)	11,761,239	5%
GIS	10,527,524	4%
PowerPlan (Fixed Assets & Tax Accounting)	6,169,452	3%
<u>OMS</u>	6,125,556	3%
Total	\$204,203,500	87%

- b. The AMI Project in-service date is December 2021 and will result in approximately \$124,000,000 of asset additions in Account 303.15 Software 15-year amortization. The 30-year amortization rate from Account 303.99, Software is specifically used for Solar Site operating software.

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29. Please refer to Bates-stamped page 1450 for the questions below regarding the general amortizable accounts:

- a. Please explain the Company's policy of retirements of investments in the amortizable accounts. As investments are fully amortized, are they retired regardless of whether or not the related equipment has retired? If no, how do retirements affect the amortization expenses? Please explain.
- b. For each of these amortizable accounts, please identify the Commission Order with which the amortization year is prescribed.

A. a. Amortizable accounting relieves the company of asset tagging and tracking each piece of equipment and notification of retirement to the Finance Department. The financial system is configured one of two ways; accounts that are group depreciated (gross plant balance times depreciation rate) or amortized (where individual asset records are individually amortized to the account's reserve). The formula used for amortization of individual asset records is as follows:

$$\frac{\text{Net Book Value (Cost - Reserve)}}{\text{Remaining Number of Months}}$$

This formula technique prevents over depreciation (reserve surplus) situations whether or not the asset cost is retired. The company does monitor when amortizable assets have been fully depreciated and retires the asset record soon after its net book value = \$0.

- b. The proposed rates for General Plant Amortized are based on guidance under Rule 25-6.0142(3), F.A.C., the Commission's "List of Retirement Units (Electrical Plant) as of January 1, 2000". For plant accounts or subaccounts within 391, 393, 394, 395, 397, and 398, the Commission prescribes the amortizable lives. In addition, previous Commission approvals via depreciation study or other dockets further authorize the amortizable lives to be used. The company is not proposing any changes in account parameters other than notification of adding subaccount 394.01 ECCR Solar Car Port, which is an approved conservation program, to be recovered using a five-year amortizable life.

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- 30.** Please refer to Petition, pages 7 – 15, for the questions below:
- a. Please identify all of the transmission, distribution and general accounts, if any, that will be affected by the Big Bend Modernization Project (Project) for the period 2022 – 2025 during which TECO's proposed new depreciation rates applicable to the accounts will be effective if approved by the Commission.
 - b. For all of the accounts identified above, if any, please explain how each of the account will be affected by the Project, e.g., expecting large amount of plant addition.
- A.**
- a. Big Bend Modernization is a two-phase project. Phase 1's in-service date is December 2021, when Big Bend CT 5 and Big Bend CT 6 will be operational. Phase 2's in-service date is December 2022, when the two CTs' combined cycle steam turbine will be operational. Phase 1 also includes transmission lines and substation equipment buildout for grid connection.
 - b. Phase 1 production other costs (Accounts 341 to 346) are approximately \$355,000,000 and the transmission (Accounts 352, 353, 355 and 356) costs are approximately \$28,000,000. Phase 2 production other (Accounts 341 to 346) costs are approximately \$446,000,000 in 2022 and \$37,000,000 to be spent in 2023 to complete the project.