AUSLEY MCMULLEN

ATTORNEYS AND COUNSELORS AT LAW

123 SOUTH CALHOUN STREET
P.O. BOX 391 (ZIP 32302)
TALLAHASSEE, FLORIDA 32301
(850) 224-9115 FAX (850) 222-7560

February 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 First Data Request (Nos.1-14), propounded on January 28, 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 responses of Tampa Electric Company's to Staff's 1st Data Request (Nos. 1-14), have been furnished by electronic mail on this 26th day of February, 2021 to the following:

Suzanne Brownless
Attorney
Office of General Counsel
Florida Public Service Commission
Room 390L – Gerald L. Gunter Building
2540 Shumard Oak Boulevard
Tallahassee, FL 32399-0850
sbrownless@psc.state.fl.us

Ms. Patricia A. Christensen
Thomas A. (Tad) David
Mireille Fall-Fry
Stephanie A. Morse
Charles J. Rehwinkel
Office of Public Counsel
111 West Madison Street – Room 812
Tallahassee, FL 32399-1400
christensen.patty@leg.state.fl.us
david.tad@leg.state.fl.us
fall-fry.mireille@leg,state,fl.us
morse.stephanie@leg.state.fl.us
rehwinkel.charles@leg.state.fl.us

Malcolm N. Means

ATTORNEY

TAMPA ELECTRIC COMPANY
DOCKET NO. 20200264-EI
STAFF'S FIRST DATA REQUEST
REQUEST NO. 1
BATES PAGES: 1 - 2
FILED: FEBRUARY 26, 2021

Dismantlement Study (Bates-stamped pages 1128-1157)

1. Rule 25-6.04364(3) requires each utility's dismantlement study shall include:

(c) The dismantlement study methodology.

(d) A summary of the major assumptions used in the study.

(e) The methodology selected to dismantle each generating unit and support for the selection.

(l) A summary and explanation of material differences between the current study and the utility's last filed study including changes in methodology and assumptions.

Please provide the above-listed information.

A. The BS pages listed below are from the Depreciation and Dismantlement Study, filed December 30, 2020:

(c) The Dismantlement study methodology

Please see BS pages 1219 – 1273 for the Dismantlement Study prepared by 1898 & Co. The study includes a description of the study methodology on BS page 1225.

The Dismantlement Study prepared by Sargent & Lundy (S&L) for Big Bend Units 1-2 is included on BS pages 1274 – 1373. This study includes a description of the estimate approach on BS pages 1287 – 1288. The Dismantlement Study prepared by S&L for Big Bend Unit 3 included on BS pages 1374 – 1436. This study includes a description of the estimate approach on BS pages 1386 – 1387.

(d) A summary of the major assumptions used in the study

The assumptions for the 1898 & Co. study are presented on BS pages 1232 – 1235.

The assumptions for the S&L study or Big Bend Units 1,2 are presented on BS pages 1298 – 1299. The assumptions for the S&L study or Big Bend Unit 3 are presented on BS pages 1395 – 1397.

(e) The methodology selected to dismantle each generating unit and support for the selection. In addition to the 1898 & Co. assumptions are more site-specific methodologies for Bayside, Big Bend, Polk and the various Solar sites outlined on BS pages 1236 - 1237

The S&L methodology for dismantling Big Bend Units 1,2 are outlined on BS pages 1288 – 1294. The S&L methodology for dismantling Big Bend Unit 3 is outlined on BS pages 1387 – 1392.

(l) Summary and explanation of material differences between the current study and the last filed study

For the 1898 & Co dismantlement study, methodologies and assumptions are materially the same as the 2011 dismantlement study, with the following exceptions.

- A demolition contractor was retained as a subconsultant by Burns & McDonnell on the 2011 study and provided support in developing the quantities and costs. All quantities and costs in the 2020 study were developed internally by 1898 & Co. This resulted in some differences in quantity estimates from 2011 to 2020.

- Grading and seeding costs for site restoration were excluded from the 2011 dismantlement study but have been included in the current study.

- Removal of concrete beneath tanks was excluded from the 2011 dismantlement study but has been included in the current study.

- The 2011 study did not include costs for removing and disposing of pond liners, but they have been included in the 2020 study.

  The 2011 study assumed closure of the coal storage area by removing one foot of material, placing 6 inches of topsoil over the entire coal storage area and then seeding the area. The 2020 study includes costs for excavating the area underneath the coal pile to two feet below grade and covering with eighteen inches of soil and six inches of topsoil.

2. Please refer to Bates-stamped page 1129 for the questions below:

a. Please provide a summary of each of the site visits associated with the aforementioned cost estimates which includes: dates of the visits, findings and the participants.

b. When were the aforementioned cost estimates approved by TECO's management?

A. The BS pages listed below are from the Depreciation and Dismantlement Study, filed December 30, 2020:

a. Please see BS page 1226. Site visits were performed in 2017 by members of the 1898 & Co. team as part of a prior study. Site visits were not performed in 2020 due to COVID-19. The site visits that occurred in 2017, included a tour of the facilities, discussions with plant staff, and visual inspection of the facilities.

For the Big Bend Dismantlement project, S&L came onsite during October 2018. One site visit was conducted for Big Bend in 2018. Please see attached for the date of the visit, findings and the participants.

b. 1898 & Co. report was approved July 22, 2020. The S&L reports were approved on December 2, 2020.

TECO
Big Bend Dismantling Project
Units 1-3

Meeting Notes
October 16 & 17, 2018

October 23, 2018

Those present:

Name	Company	Name	Company
Paul Miner	S&L	Jessica Turgeon	TEC
Joanna Marszalek	S&L	Kevin Payne	TEC
John Dederich	S&L	Joe Legner	TEC
		Gary Grotecloss	TEC
		Raul Rivera	TEC
		Caesar Alfonso	TEC

Discussion from October 16, 2018, site meeting and walk down.

1. Structural Discussion Topics
    a. Elevators: TEC needs to review what projects are in planning for elevator replacement. Replacement of the freight elevator (rack-and-pinion) located between Units 2 and 3 is desired by the plant to relieve the main elevators from usage during an outage. It may be worth shifting the new elevator north to be adjacent to column line F.
        i. Re-evaluate number of elevators required once Units 1 - 3 are shut down.
        ii. Evaluate the number of stops required: operating, crane cab, tripper floor and tripper roof.
        iii. Include demolition of elevators in dismantling scope.
        iv. Contractor may need to plan on temporary elevator(s) during demolition.
        v. Discussion on 10/17 – Elevator replacement project is based on placing smaller rack-and-pinion elevators (approximately 3'x5' cars) within the existing elevator shafts. The project estimate is $1,200,000 for the elevator and $250,000 for removal of asbestos siding (transite). Pricing is for each elevator.
    b. Added vertical bracing to stabilize the Turbine Building:
        i. No vertical bracing at the base between column lines C and D (truck aisle).
        ii. TEC recommended considering chevron bracing at the base between column lines D and E since the existing columns most likely don't have shear lugs to transfer the shear into the foundation
        iii. If bracing goes between column lines D and E, then remove the ball mills first.
        iv. Alternative may be a single diagonal at the base out to column line G (currently has vertical bracing at base).
    c. Flood wall: maintain boiler area flood walls to avoid replacing at the Turbine Building and facilitate area drainage to the current floor drains. Moving of the wall may require additional height similar to the Modernization Project.
    d. Floor drains and flood wall will need to be protected during demolition (lesson learned from Gannon).
    e. Fill circulating water intake pipes and outlet pipes with flowable fill to prevent future collapse from deterioration. No other buried piping requires fill.

f. Use asphalt topping (assume 6" thick) in the back end areas to facilitate area drainage and avoid ponding in low spots.
g. Need to consider level of foundation removal beyond the boiler area. Foundations to remain in place, but depth of removal to below grade or cover with gravel to avoid site traffic from running over the foundations.
h. There are no known contamination areas for remediation. TEC to verify.
i. Intake demolition shall only include removal of the pumps and cover with grating. Other modifications may be required once 316B becomes enforced.
j. TEC is to verify that the old sewage treatment system, just east of the Unit 1/2 absorber, is no longer in service.
    i. Discussions with TEC on 10/17 revealed that the system is actually the Main Sewage Lift Station and is in service. This will need to be repowered.

2. Mechanical Discussion Topics
    a. Steam header: a steam header ties across Units 1 – 4, allowing auxiliary steam supply to any of the units provided at least one of the units is operating. There is currently no plan to tie the new Unit 1 steam into Unit 4; therefore, Unit 4 will not have auxiliary steam supply when the unit is not operating. An auxiliary boiler was mentioned as a possible new source of auxiliary steam. The Dismantling Project will consider the steam line to be cut and capped at Unit 4.
    b. Compressors: there are six unit compressors grouped in pairs that need to remain in service. The Modernization Project is evaluating the pair at Unit 1. Repowering the pair is part of their scope. The other two pairs will be repowered as part of the Dismantling Project.
        i. Detailed engineering will need to determine the four compressors east of Unit 1 are required after the elimination of Units 2 and 3.
        ii. Discussion on 10/17 indicates that Modernization is replacing the pair of compressors located at Unit 1.
    c. Cooling Towers: the cooling towers on Unit 2 and Unit 3 roof's will be demolished and an allowance for repair of the roof included. The Modernization Project is replacing the Unit 1 cooling tower.
        i. Detailed engineering will need to consider if two cooling towers are sufficient to maintain the required cooling water.
    d. Remove the ammonia, hydrogen and gas lines back as far as possible to avoid areas that could potentially leak in the future.
        i. A concern exists over removing and capping the gas line related to pressure testing requirements once new welding occurs on the line. The insurance carrier may dictate the type testing required (full pressure test, x-ray welds).
    e. Sumps: all sumps will remain and need to be repowered since they all play a role in area drainage. See detailed list of sumps in the electrical section.
        i. Settling basin sumps 1-3 need to be evaluated for removal.

TECO
Big Bend Dismantling Project
Units 1-3

Meeting Notes
October 16 & 17, 2018

October 23, 2018

f. Fire protection pumps: these are located in the water treatment area. Repowering will be part of the Modernization Project.
g. The Unit 1 hydrogen system vents on the north side of the Turbine Building; therefore, demolition does not affect the vent.
h. Modification to the natural gas common header vents is required. Gas line will be capped, and a new vent will need to be installed.
i. The ammonia loop from Unit 4 to Unit 1 may need to be reworked by the Modernization team.
j. Remove the Unit 3 FGD tanks and ductwork, but much of the steel may need to stay due to it being a common structure with Unit 4. The make-up water system is common an must stay in service.
k. The estimate needs to account for closing off the Unit 1 – 3 tripper chutes. Units 1 and 2 may already be closed.
l. The Unit 3 and 4 intake screen wash pumps may be powered from Unit 3.
m. The Unit 3 and 4 intake structure crane may be powered from Unit 3.
n. The clean & dirty oil tanks near Unit 4 may be powered from Unit 3.
o. The Unit 3 and 4 chimneys were switched as part of the FGD Integration effort. The current Unit 4 chimney and CEMS shelter that remains is powered from Unit 3.
p. The construction trailers complex may be powered from Unit 3.
q. TEC was not sure where the Administration Building between Units 3 and 4 is powered.
r. Slag dewatering system cost to demolish should be allocated to Unit 3 since it must remain in operation until Unit 3 is taken out of service.
s. Chimney lights will be required during demolition until the chimney is below 200 feet (or lower if dictated by the FAA).
    i. 10/18/18 update – There are no antennas that require relocation on the Unit 3 or Unit 1&2 stack.

Discussion from October 17, 2018, site meeting and walk down. We met with Raul Rivera to discuss repowering and Ceasar Alfonso to discuss controls revisions. Raul indicated that there are meetings scheduled for the coming weeks to consider how to power the loads remaining after Modernization.

3. Electrical Discussion Topics
    a. The Dismantling Project needs to put together a list of auxiliary equipment that needs to be repowered with the removal of Units 1 – 3 (Repowering Assumptions List), as well as a list of items that need to be verified with the Modernization team to ensure that they are handling new power to those items.
        i. Sumps
            - Sanitary Lift Station OPBS-STU15 (U2) Powered from Unit 2 MCC ZTZ monitored on common DCS highway. No motor data found.
            - Main Sanitary Lift station OPBS-STU6 located east of Unit 1-2 FGD system fed from MCC 4TSI. No motor data found.

- Floor Drain Sump, each unit located near FD fan room. All are unit powered and not reported to be on common DCS highway. Each sump has 2 – 20HP/460V motors and level instruments.
- Settling Basin Sumps, each unit located south of the precipitators. All are unit powered and not reported to be on common DCS highway. Each sump has 2 – 100 HP/460V pump motors and level instruments.
- Transfer Sumps, each unit located south of the precipitators. Basin is unit powered (likely from Unit 2) and not reported to be on common DCS highway. Each sump has 5 – 100 HP/460V pump motors and level instruments.
- Stormwater Sump located between Slag dewatering and the Unit1-2 FGD system is likely powered from Unit 1 and will need to be repowered from common power supply and controlled by common DCS highway.

ii. Unit 3&4 polishers at column row C-25. The Unit 3 polisher was expanded when Unit 4 was built. Power is likely on Unit 3. Controls are on Unit 3 and need to be moved to common.

iii. Unit 3 oxidation air compressors. Keep oxidation air compressors as back-up for Unit 4 FGD. Controls are on unit specific PLC's and unit specific powered. These will need to move to Unit 4.

iv. Station air compressors, Unit 2 (compressors #3 & 4) and Unit 3 (compressors # 5 & 6) all appear to have 800HP 4000V motors. While it is not clear if some or all will be retained an allowance for repowering should be a stated assumption. These station air compressors are controlled via a common plc.

b. DCS: some of the auxiliary items that must remain in place after demolition will need to be transferred from unit specific DCS system to a common DCS system. Known examples of equipment to be moved to the common DCS are:
   i. Sumps
   ii. U3/4 polishers
   iii. Unit 3 oxidation air blowers
c. Transformers: any demolition will stop at the bushings. TEC Energy Delivery will handle any overhead T-line work as necessary.
d. Fire protection: this system is currently on a unit specific PLC; ideally, the station would like to move this to a common PLC.
e. Battery rooms will be eliminated in Units 1 – 3. TEC will need to determine if batteries and chargers can be reused.
f. Unit 3 and 4 FGD: station wants to maintain all of the 8 oxidation air blowers once Unit 3 is removed.
g. Circulation water intake area fine mesh screens control and power will need to be determined.
h. Sanitary lift station in the Turbine Building will need to be repowered since it is currently on Unit 2 power. Main Lift station will need to be kept in service see details above.

TECO
Big Bend Dismantling Project
Units 1-3

Meeting Notes
October 16 & 17, 2018

October 23, 2018

i. The Turbine Building vent fans are powered by unit and will require repowering. Modernization Project is responsible for Unit 1. Units 2 and 3 are by the Dismantling Project. May want to consider replacing the fans.
j. The tripper room and turbine deck lighting was recently replaced with LED fixtures.
k. The Instrument and Electrical shops are powered from Unit 4.
l. The Turbine Shop requires repowering.
m. The Administration Building is powered from Unit 3 and will need to be repowered.
n. The Tagging Office is powered from Unit 3 and will need to be repowered.
o. The Dismantling Project should assume that a new CM Building is required to provide power distribution to the auxiliary equipment after demolition.
p. The Unit 3 and 4 chimneys do not have strobe lights on the adjacent faces due to their close proximity. Two new strobes (one at the top and on at mid-height) are required on the Unit 4 chimney once the Unit 3 chimney is removed.
q. Station service air compressors (3, 4, 5 & 6 for U2 and 3) are on a common control PLC.
r. The M-1 coal conveyor is being moved to common control highway.

Tampa Electric Company
Big Bend Station
Units 1 - 3 Dismantling Project

Repowering Assumptions List

October 23, 2018
Proj. 09476-073

Requires Repowering	DOR	
	BBDIS	BBMOD
Buildings		
Turbine Shop	X	
Construction Trailers	X	
Administration Building	X	
Warehouse 23		X
Tagging Office	X	
Blending Bin Building		X
Boiler Shop		X
Fuel Shop		X
Areas		
Coal Field		X
Tripper Room		X
Demineriliz er Water Treatment		X
U3&4 Intake Structure (Pumps, Cranes, screens, etc.)	X	
Equipment		
Sanitary lift station	X	
Turbine Building vent fans	X	
Floor Drain Sumps (1-3)	X	
Stormwater Sumps	X	
Settling Basin Sumps 1-3	X	
Main Transfer Sump	X	
U3&4 Polishers	X	
Unit 3 Oxidation Air Blower	X	
Main Transfer Lift Station	X	
Unit 4 Chimney & CEMS Shelter	X	
Air Compressors 1-2		X
Air Compressors 3-6	X	
U4 Clean & Dirty Oil Tanks	X	
U1 Clean & Dirty Oil Tanks		X

BBDIS = Dismantling Project
BBMOD = Modernization Project

3. Please refer to Bates-stamped page 1130 for the questions below:

a. Please provide a brief summary of the Big Bend (BB) Units 1 – 3 dismantlement including: major tasks, critical dates, and the associated cost estimates.

b. What entity will perform the physical tasks to dismantle the BB Units 1 – 3?

c. The 3rd paragraph of the page reads:

The company requests an amortization recovery schedule discussion for how these units can be effectively dismantled and how the company can recover projected reserve deficiencies.

Please identify from whom the discussion is requested, and summarize the outcome of the discussion provided.

A. The BS pages listed below are from the Depreciation and Dismantlement Study, filed December 30, 2020:

a. For a brief summary of Big Bend Units 1-2, please see BS pages 1274 to 1373 for BB Units 1, 2 details. BS Pages 1276 to 1286, a contains detailed summary, on the cost estimate summary, estimated schedule to complete, and major tasks that are organized into four phases: Engineering, Pre-Demolition Construction, Demolition and Post-Demolition.

For a brief summary of Big Bend Unit 3, please see BS pages 1374 to 1436. BS Pages 1376 to 1385 contains a detailed summary on the cost estimate summary, for estimated schedule to complete, major tasks that are organized into four phases: Engineering, Pre-Demolition Construction, Demolition and Post-Demolition.

b. The entity has not been identified. The dismantlement work will be issued for bid and awarded later.

c. We are requesting a 10-year accelerated recovery schedule that will be considered as part of the company's rate case.

4. Referring to Bates-stamped page 1131, please provide a detailed explanation to justify the proposed reduction in the maximum life span from 65 to 60 years for BB Unit 4.

A. There are three drivers for the reduction of life span for Big Bend Unit 4:

1. The company's goal to becoming cleaner and greener.

2. The fuel forecast projections revealed the Natural Gas commodity will remain the economic choice for fuel.

3. The company recognizes the impact on rates when assets retire before they are fully depreciated. The 5-year reduction represents the company's sensitivity to rate impact and signals that long term solid fuel assets do not achieve the company's strategy.

5. Please refer to Bates-stamped page 1132 for the questions below:

a. Please identify all the plant assets that TECO expected to place in-service due to the Big Bend Modernization project discussed on this page, including the assets to be placed in-service resulting from the BB Unit 1 re-powering discussed in TECO's Petition, paragraph 21.

b. Does the "Company Proposed Accrual (01/01/2022)," shown on Bates-stamped page 1137 include the accrual amount associated with any of the plant additions discussed in Question No. 5(a)? If so, please explain in detail.

c. Please use a table to show the scheduled month/year for any major existing plant assets' respective retirement and dismantlement, as well as any major new plant assets' placing in-service that has/have resulted from the Big Bend Modernization Project.

d. Please provide a detailed explanation to justify the proposed reduction in the maximum life span from 40 to 35 years for Bayside Unit 1.

A. The BS pages listed below are from the Depreciation and Dismantlement Study, filed December 30, 2020:

a. The Big Bend Modernization project includes the construction of 2 new gas turbines that will be placed in-service December 2021 and 1 new combined cycle steam turbine that will be placed in-service December 2022. Please see below for all plant assets that Tampa Electric expects to place in service due to the Big Bend Modernization project.

- Two (2) new CTGs and auxiliary systems
- Two (2) new CTG step-up transformers and station service transformers
- Two (2) new bypass stacks with diverter dampers
- Two (2) new triple pressure reheat HRSGs w/ SCR systems
- Two (2) new boiler feed pumps (1x100% per HRSG)
- New pipe rack and pipe bridge over inlet canal
- Modernized STG and auxiliary systems
- New auxiliary cooling tower and closed loop cooling system for steam turbine auxiliary cooling
- Condenser transition modifications to support combined cycle operation
- Two (2) new condensate pumps (2 x 100%)

- Two (2) new circulating water pumps (2 x 50%)
- New condensate polishing system
- Repairs to existing Big Bend Unit 1 intake structure and outfall flume
- New Storm Hardened Engineering & Project Management office building
- Upgrade (23) breakers at Big Bend to 80 kA interrupting capability
- On-site transmission circuit reconfiguration

The extent of demolition included in the scope of this project is to remove current Big Bend Unit 1 equipment only within the turbine hall and which needs to be removed to accommodate installation and safe operation of the new combined cycle. Dismantlement of these specific systems will be taken to a safe termination point to include closing any openings created in the building envelope.

b. Yes, there is an accrual for the Big Bend Modernization project. BS page 1137 lists a line item called Big Bend GT's 5-6 that is for the Big Bend Modernization project plant assets listed in the company's response to Staff's First Data Request No. 5(a), above. The dismantlement cost estimate for the Big Bend Modernization project is included on BS Pages 1242 and 1243.

c. Please see Excel file, "(BS 14) 2022 CPR - Generating Unit Capital Recovery Dates - Filed.xlsx". This file utilizes data from the 10-Year Site Plan regarding each generating unit, reflecting the original in-service date and expected terminal date used for dismantlement study accrual modeling.

d. The company recognizes the impact on rates when assets retire before they are fully depreciated. The 5-year change represents the company's sensitivity to rate impact and reflects an expectation that new technology will emerge that will economically justify the replacement or removal of Bayside 1.

6. Referring to Bates-stamped page 1133, please provide a detailed explanation to justify the proposed reduction in the maximum life span from 40 to 34 years for Bayside Unit 2.

A. The company recognizes the impact on rates when assets retire before they are fully depreciated. The 6-year change represents the company's sensitivity to rate impact and reflects an expectation that new technology will emerge that will economically justify the replacement or removal of Bayside 2.

7. Please refer to Bates-stamped page 1137 for the questions below:

a. Referring to the top left portion of the page, please provide the "October 2020 Inflation Index" and explain how this index was used in deriving the "Summary of Dismantlement Accruals" presented on this page.

b. Please explain the differences, if any, among the "October 2020 Inflation Index," the "Moody's Analytics October 2020 delivery," and the "Escalation Factors" that are contained in "2020 Generation Dismantling Master File - Filed.xlsx."

c. Please provide a comparison between the inflation index used in TECO's instant and its last dismantlement study, and explain your response.

d. Rule 25-6.04364(7), F.A.C., requires that the annual dismantlement accrual shall be a fixed dollar amount and shall be based on a four-year average of the accruals related to the years between the dismantlement study reviews. Given a nine-year interval between TECO's last and the current study, please explain why the Company did not include a scenario of "Proposed Accrual" based upon nine-year accrual average in the current study.

A. The BS pages listed below are from the Depreciation and Dismantlement Study, filed December 30, 2020:

a. Please see Excel File, "(BS 18) October 2020 Inflation Index using Moodys Analytics.xlsx". BS Page 1137 is a summary of the various units' accrual modeling. BS Page 1138 is the dismantlement cost estimates to which an escalation factor is applied. There are three inflation escalation factors, one of which is assigned to each column of the dismantlement cost estimates on BS Page 1138. Labor is applied the Compensation Per Hour, Productivity and Costs (2012=100) escalation factor; Materials & Equipment is applied the Intermediate Goods, Producer Prices (1982=100) escalation factor; Environmental & Disposal is applied the GDP Chain Price Deflator (2012=100) escalation factor; and Salvage is applied the Intermediate Goods, Producer Prices (1982=100) escalation factor.

b. There is no difference. The escalation factors are derived from the Moody's Analytics October 2020 delivery update used by the accrual model.

c. The same Escalation Factors process for accrual modeling was used in the last

dismantlement study. The only difference was the Moody's Analytics data utilized was published in November 2011. Based on a comparison of the 2011 and the 2020 data provided by Moody's Analytics; the 2020 Compensation Per Hour, Productivity and Costs (2012=100) is trending higher than 2011 for the period 2022 and 2034; then lower for years after 2034. The 2020 Intermediate Goods, Producer Prices (1982=100) and the 2020 GDP Chain Price Deflator (2012=100) are trending higher than 2011 for all years after 2022.

d. The rule requires utilities to file a depreciation study and dismantlement study at least every four years. However, Tampa Electric entered into a settlement agreement to resolve the company's last rate case in 2013 and entered into another agreement in 2017 that amended and restated the 2013 agreement. These agreements relieved the company of the need to file depreciation and dismantlement studies every four years and directed the company to file its next depreciation study and dismantlement study no more than one year or less than 90 days before the filing of the company's next rate. As a result, it has been approximately nine-years since Tampa Electric's last depreciation study and dismantlement study. The dismantlement study is performed on a prospective basis where the next four-year average between 2022 and 2025 is used to set the accrual in this instant filing. The company does not anticipate another rate case stipulation to defer the filing of its next depreciation study and dismantlement study per rule compliance. The dismantlement model has sufficient details to where it can calculate the accrual amount using any number of averaging years. Since the model is calculating each year's annual accrual using a compounding growth rate, performing a nine-year average between 2022 and 2030 would result in an immaterial increase.

8. Please refer to Bates-stamped pages 1138-1139 for the questions below:

a. Please explain, with necessary supporting documentation and analyses, why TECO believes the 15 percent contingency factor level used to derive its 2020 dismantlement cost estimates is appropriate.

b. Is the 15 percent contingency factor used in TECO's 2020 Dismantlement Study comprised of pricing and scope of omission contingencies?

c. If your response to Question No. 8(b) is affirmative:

(i) Please elaborate on each of these two components of the contingency factor;

(ii) Please identify how the 15 percent is allocated to these two components with corresponding explanation.

d. If your response to Question No. 8(b) is negative, please explain in detail how TECO's contingency factor is determined.

A. a. The company has used contingency factors in prior dismantlement study filings. The 15 percent contingency factor is broken down into 3 components; 5 percent for pricing, 5 percent for scope and 5 percent for company internal resources to participate and supervise the external contractors during dismantlement activities. These components are a standard measure that the dismantlement estimators include in their cost profiles. Sometimes the dismantlement estimators use a higher contingency factor than the company's applied 15 percent.

b. Please see the response to Staff's First Set of Data Requests, No. 8(a), above.

c. Please see the response to Staff's First Set of Data Requests, No. 8(a), above.

(i) Please see the response to Staff's First Set of Data Requests, No. 8(a), above.

(ii) Please see the response to Staff's First Set of Data Requests, No. 8(a), above.

d. Please see the response to Staff's First Set of Data Requests, No. 8(a), above.

9. Please refer to Bates-stamped page 1140 for the questions below:

a. Please describe in detail how labor rates were determined for deriving the estimate of the dollar amounts associated with each dismantlement task and/or effort.

b. Please explain how TECO determined the scrap metal values for the instant Decommissioning Study, and provide a copy of supporting documentation and analysis.

c. Apart from the scrap metal values, what other cost components, if any, are included in the column titled "Salvage" reflected on this page?

d. Please clarify whether the "Total" column, net of salvage, reflected on this page includes scrap metal values and if not, please explain.

e. Please explain how TECO determined the environmental & disposal expenses for the instant Decommissioning Study, and provide a copy of supporting documentation and analysis.

A. The BS pages listed below are from the Depreciation and Dismantlement Study, filed December 30, 2020:

a. 2020 RS Means Labor Rates for a B-8 crew, non-union was the basis of the labor rates utilized in the 1898 & Co. Dismantlement Study .

For Big Bend Units 1, 2 and 3, S&L conducted a labor study to develop craft labor rates for Tampa Electric . The labor study base rates used in the 2018 cost estimates have been escalated for 2020. Costs have been added to cover social security, workmen's compensation, federal and state unemployment insurance. The resulting burdened craft rates were then used to develop typical crew rates applicable to the task being performed. No adjustments to labor rates or productivity have been accounted for in the estimate for long term COVID-19 impacts.

Demolition Estimates: Labor Work Schedule and Incentives – Assumed 5 days x 8 hour day work week.

Pre and Post Demolition Estimates: Labor Work Schedule and Incentives – Assumed 5 days x 10 hour day work week.

Per diem is not required.

For addition estimates only, a regional labor productivity multiplier of 1.1 is included based on Compass International Global Construction Yearbook. The use of this productivity factor is an approach to compare construction productivity in various locations in the USA to a known basis or benchmark of 1.00 for Texas, Gulf Coast productivity. The productivity multiplier does not include weather related delays.

b. The basis of the scrap metal values utilized in the 1898 & Co. Dismantlement Study is outlined on BS page 1235 of the Depreciation and Dismantlement study.

For Big Bend Units 1, 2 and 3, scrap metal values are based on published rates from American Recycler News, Inc., Scrap Metals Market Watch for Zone 5. Tables for June and October 2020 have been provided. Please see attached.

c. There are not any other costs components included in the salvage column.

d. The Total Column is net of Salvage (scrap metal credit).

e. Environmental costs for the Surviving Assets were provided by 1898 & Co. Those costs were developed in a bottom-up cost estimate, with assumptions outlined on BS pages 1232 – 1237. The results of those bottom-up cost estimates, including environmental costs, are presented on BS pages 1240 – 1256.

For Big Bend Units 1, 2 and 3, Tampa Electric's accounting has arranged the S&L cost estimates values to allocate the costs into the four categories shown on BS page 1140. These three categories, 'Labor', 'Materials & Equipment' and 'Environmental & Disposal' equal the total dismantlement cost without scrap value and then the scrap value credit is added to the 'Salvage' column for the net cost to dismantle. Please see response to Staff's First Set of Data Requests No. 11(b), below, for how all the cost estimates are traced to BS page 1140.

AR Scrap Metals MarketWatch

Commodity		Zone 1	Zone 2	Zone 3	Zone 4	Zone 5
#1 Bushelings	per gross ton	$261.00	245.00	251.00	262.00	273.00
#1 Bundles	per gross ton	254.00	233.00	235.00	252.00	270.00
Plate and Structural	per gross ton	248.00	223.00	232.00	241.00	269.00
#1 & 2 Mixed Steel	per gross ton	181.00	215.00	221.00	223.00	248.00
Shredder Bundles (tin)	per gross ton	121.00	124.00	150.00	128.00	129.00
Crushed Auto Bodies	per gross ton	121.00	124.00	150.00	128.00	129.00
Steel Turnings	per gross ton	78.00	82.00	86.00	131.00	140.00
#1 Copper	per pound	2.01	2.02	2.16	2.15	2.21
#2 Copper	per pound	1.89	1.90	2.07	2.05	2.08
Aluminum Cans	per pound	.47	.48	.47	.46	.45
Auto Radiators	per pound	1.28	1.19	1.29	1.36	1.35
Aluminum Core Radiators	per pound	.47	.45	.39	.47	.51
Heater Cores	per pound	.95	.94	.96	.98	1.09
Stainless Steel	per pound	.47	.44	.42	.44	.47

All prices are expressed in USD. Printed as a reader service only.

DISCLAIMER: American Recycler (AR) collects pricing and other information from experienced buyers, sellers and facilitators of scrap metal transactions throughout the industry. All figures are believed to be reliable and represent approximate pricing based on information obtained by AR (if applicable) prior to publication. Factors such as grades, quality, volumes and other considerations will invariably affect actual transaction prices. Figures shown may not be consistent with pricing for commodities associated with a futures market. While the objective is to provide credible information, there is always a chance for human error or unforeseen circumstances leading to error or omission. As such, AR is not responsible for the accuracy or completeness of the information provided, or for outcomes arising from use of this information. American Recycler disclaims any liability to any person or entity for loss or damage resulting from errors or omissions, including those resulting from negligence of AR, its employees, agents or other representatives.

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AR Scrap Metals MarketWatch

Commodity		Zone 1	Zone 2	Zone 3	Zone 4	Zone 5
#1 Bushelings	per gross ton	$264.00	256.00	252.00	263.00	289.00
#1 Bundles	per gross ton	253.00	235.00	231.00	255.00	262.00
Plate and Structural	per gross ton	254.00	228.00	225.00	251.00	275.00
#1 & 2 Mixed Steel	per gross ton	176.00	220.00	219.00	248.00	265.00
Shredder Bundles (tin)	per gross ton	121.00	125.00	165.00	140.00	135.00
Crushed Auto Bodies	per gross ton	121.00	125.00	165.00	140.00	135.00
Steel Turnings	per gross ton	81.00	88.00	83.00	128.00	149.00
#1 Copper	per pound	2.77	2.45	2.69	3.02	2.76
#2 Copper	per pound	2.64	2.34	2.52	2.84	2.56
Aluminum Cans	per pound	.46	.49	.47	.50	.50
Auto Radiators	per pound	1.32	1.20	1.53	1.49	1.48
Aluminum Core Radiators	per pound	.49	.50	.40	.45	.53
Heater Cores	per pound	1.01	1.00	1.07	1.02	1.10
Stainless Steel	per pound	.47	.47	.51	.52	.51

All prices are expressed in USD. Printed as a reader service only.

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10. Please refer to Bates-stamped page 1144 for the questions below:

a. Please explain why TECO's proposed dismantlement reserve transfers are separated into the cost categories of "Labor," "Materials & Equipment," "Environmental & Disposal," and "Salvage."

b. Please explain how TECO determined what dismantlement reserve to transfer from one cost category to another.

c. Please explain how TECO determined what dismantlement reserve to transfer from one plant unit to another, identifying the plant unit in each transfer with explanation.

A. a. The dismantlement study model has been maintained historically for the component columns of the accrual; expenditures posted against the reserves are mapped to the component columns. This is necessary to itemize the units reserves by the component columns. The cost estimates are also itemized by the component columns. Then different escalation factors are applied to each of the component column cost estimates. The model compares the escalated components to the reserve components to create an accrual per component.

b. The proposed reserve transfers stay within the component column cost category.

c. Gannon Power Station component columns were transferred to Bayside Common at 50 percent, Bayside Unit 1 at 25 percent and Bayside Unit 2 at 25 percent. This is because some of the Gannon assets were repowered into Bayside and the rest of Gannon's legacy assets have been dismantled, leaving a reserve surplus to be transferred. City of Tampa and Phillips Station assets were not dismantled but were sold after the 2011 filing. Since these units were approved to have a 2012 accrual, the 2020 filing is retiring the accrual requirement and the reserve surplus is being transferred to Big Bend Unit 1, Big Bend Unit 2 and Big Bend Unit 3 evenly at 33.3 percent. Regarding the reserve transfers from Polk Unit #2 and Polk Unit #3 to Polk 2-5 (4xGT - HRSG -ST), this is due to the line-item mapping format changes mentioned in the company's response to Staff's First Data Request No. 11(a), below.

11. Please refer to Bates-stamped pages 1149-1150 for the questions below:

a. Referring to Bates-stamped page 1149, please explain how the accrual amount presented on this page were derived.

b. It appears that "2020 Generation Dismantling Master File - Filed.xlsx" does not include worksheets/tabs corresponding to Bates-stamped pages 1149 and 1150 of the 2020 Dismantlement Study. Please provide these worksheets/tabs with formulas and links intact.

c. For Gannon Power Station dismantlement, please provide a chart to show: the respective commencement and completion date, the entity who performed the dismantlement, the total cost incurred, the reserve level at the retirement date and the dismantlement completion date, respectively.

A. The BS pages listed below are from the Depreciation and Dismantlement Study, filed December 30, 2020:

a. Please see the company's response to Staff's First Data Request No. 11(b). Additionally, please see tab titled "2012 FPSC Accruals". This tab shows the line-item format mapping changes from the 2011 dismantlement approval order to how the 2020 dismantlement cost estimates were provided by the vendors. BS Page 1149 then references the new line-item mapping on the "2012 FPSC Accruals" multiplied by the nine for the number of years from 2012 to 2020.

b. This has been corrected and provided for in the attached revised Excel file, "(BS 28) 2020 Dismantling Study - Generation Master File - v2.xlsx".

c. Please see the table below for the Gannon Power Station dismantlement.

Gannon Dismantlement

Commencement	2003
Completion	2017
Total Cost	$ 65,418,846
Impact to Reserve	$ 52,838,536
Reserve Balance	$ 58,640,177
Reserve Balance at 12/31/2020	$ 5,801,641

Vendors

Moretrench
Southeastern Mechanical
THE INDUSTRIAL COMPANY
TRC America
ECOR Solutions Inc.- Stack removal
Bay Area Wrecking
ENERGY SERVICE INSULATION INC

DH GRIFFIN WRECKING CO INC
WASHINGTON GROUP INT'L
VOLKERT INC
ANIXTER INC
APC WORKFORCE SOLUTIONS LLC
AVALOTIS PAINTING CO INC
BAY PORT VALVE & FITTING INC
BINGHAM ONSITE SEWERS INC
BRACE INTEGRATED SERVICES INC
CCC GROUP INC.
CE POWER SOLUTIONS OF FLORIDA
CLARK ENVIRONMENTAL, INC.
EATON CORPORATION
EE&G ENVIRONMENTAL SERVICES LLC
ELECTRIC SUPPLY OF TAMPA,INC.
ELECTRO DESIGN ENGINEERING INC
ENERGY SERVICE INSULATION INC
ENVIRONMENTAL CONSULTING
ESI GROUP INC
F & M MAFCO INC
FCC ENVIRONMENTAL
G4S SECURE INTEGRATION LLC
GAFFIN INDUSTRIAL SERVICES
GEORGE F. YOUNG, INC.
GEOSYNTEC CONSULTANTS
HATCH ASSOCIATES CONSULTANTS INC
HD SUPPLY
HDPE INC
HIGH DENSITY POLY ENTERPRISES INC
INDOFF INCORPORATED

INTERCITY LUMBER CO
KATPIL ENTERPRISES II LLC
KIMMINS CONTRACTING CORP
K-TECH SOLUTIONS LLC
LIBERTY WASTE & RECYCLING
LVI ENVIRONMENTAL SERVICES,
MARKAIR INC
MORETRENCH INDUSTRIAL INC
MORROW STEEL
NCM DEMOLITION AND REMEDIATION LP
PEPE & ASSOCIATES INC
PETROTECH SOUTHEAST, INC.
PORTER PAINT CO
PREFERRED MAINT & CONSTRUCTION INC
PREMIER CORROSION PROTECTION
PRO SERV INDUSTRIAL
PROGRESSIVE WASTE SOLUTIONS OF FL
RESOLITE FRP COMPOSITES
SARGENT & LUNDY ENGINEERS
SERVICE WORKS OF TAMPA INC
SOUTH-CO BUILDING CONTRACTORS, INC.
SOUTHEASTERN CONSTR & MAINT
STANTEC CONSULTING SERVICES,
STRUCTURAL PRESERVATION
TAMPA BAY STEEL CORP.
TANK TEK INC
TEAM TECHNICAL SERVICES, INC.
TRANSDOR CORP.
TRUE LINE CORING & CUTTING
URS CORPORATION SOUTHERN
VALLEN DISTRIBUTION INC
VEOLIA ES TECHNICAL
WASTE MANAGEMENT
WEIMER MECHANICAL SERVICES
ZACHRY INDUSTRIAL INC

12. Please refer to "2020 Generation Dismantling Master File - Filed.xlsx," tab titled "Cost Estimates in 2020," for the questions below:

a. Please explain how the dollar amounts presented in the embedded chart titled of "Cost Estimate Summary for BB Units 1 - 3," shown on (73:H) to (109:O) of the tab, were derived.

b. What are the respective projected commencement and completion dates used in deriving the cost estimate associated with BB Units 1, BB SCR 1, BB Unit 2, BB SCR2, and BB FGD 1-2 dismantlement discussed in Question No. 12(a)?

c. Please define the "Direct Cost," "General Conditions," and "Project Indirect Costs" shown within the aforementioned chart, and explain the difference among these three cost categories.

d. Please explain how each of the cost categories discussed in Question No. 15(c) is related to the cost categories "Labor," "Materials & Equipment," "Environmental & Disposal" and "Salvage" that are used in the 2020 Dismantlement Study.

A. a. Please see the company's response to Staff's First Data Request, No. 11 (b), above. The revised excel file now includes the detail cost estimate sheets that support each power stations units. The 1898 & Co. cost estimate summary sheets fit the design of the model's four columns for Labor, Material & Equipment, Environmental & Disposal and Salvage (Scrap Metal). The cost estimate summary sheets provided by S&L for Big Bend Units 1-3 are not in alignment with the four columns and some of the underlying details are mapped accordingly to derive the cost estimates for the columns Labor, Materials & Equipment, Environmental & Disposal and Salvage (scrap metal only). Big Bend Units 1, 2 and 3 each have their own tab that describes how the details were used to derive the four columns. The details for Material Costs and Equip Amount map to the column Material & Equipment, the details for Asbestos Removal and Civil Work map to the column Environmental & Disposal, the summary for scrap value maps to the column Salvage and the rest falls under the column Labor.

b. A level 1 schedule was developed for Big Bend Units 1 and 2. The schedule is attached.

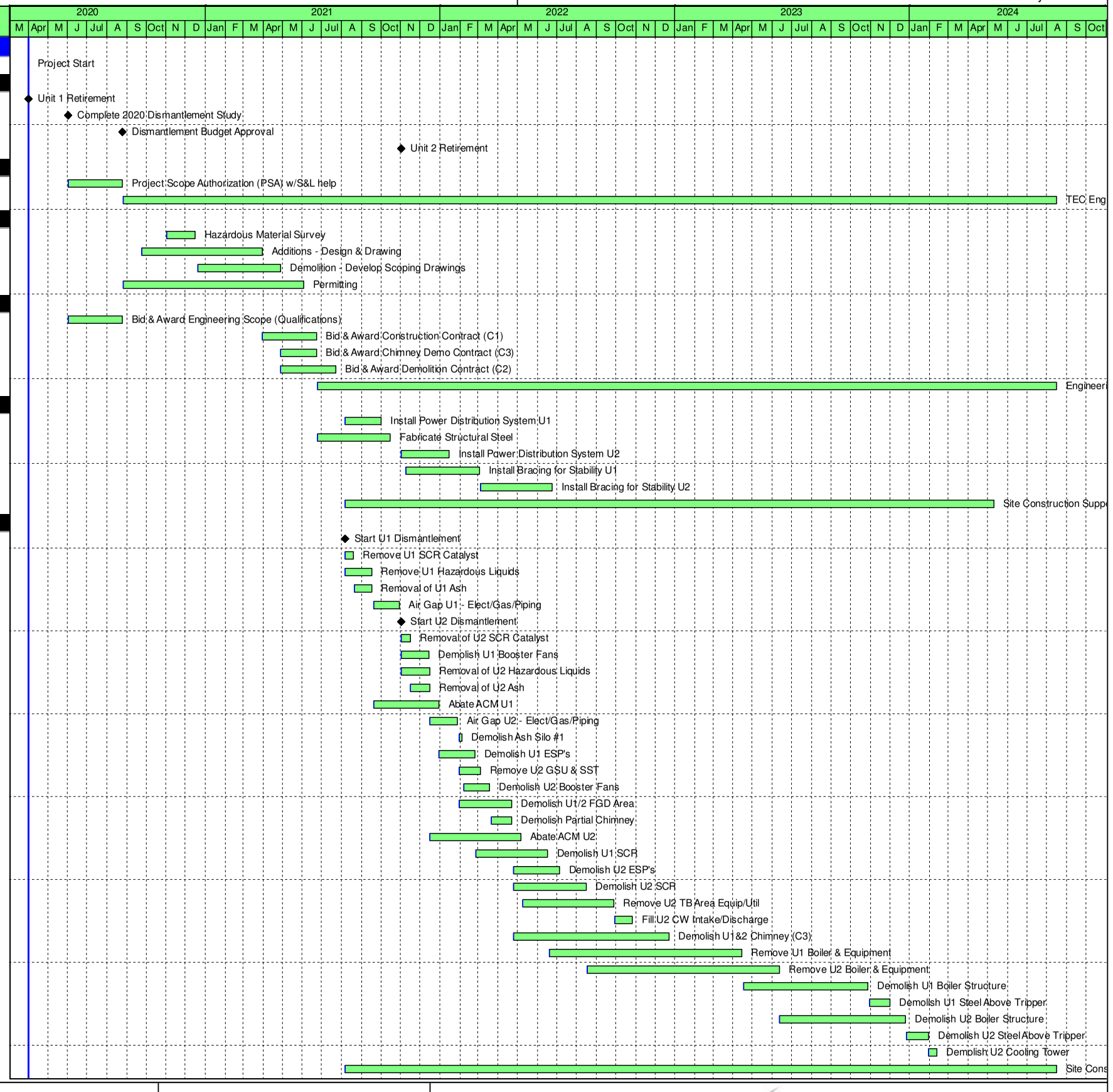
c. DIRECT COSTS are the costs of completing work that is directly attributable to its performance and are necessary for its completion. In construction: it is the cost of installed equipment, material, labor, and supervision directly or immediately involved in the physical construction of the permanent facility. Examples of direct costs include material, labor, subcontracts, construction Equipment, and process equipment.

GENERAL CONDITIONS are direct project overhead costs and include costs incurred at the jobsite for supervision and administration of the overall contract but that are not ascribable to any onsite physical construction activity. Examples of general conditions are per diem, overtime, site services, temporary facilities, mobilization, small tools, general liability insurance, sales tax, and contractor's general and administrative cost.

PROJECT INDIRECTS are costs not directly attributable to the completion of an activity. Indirect costs are typically allocated or spread across all activities on a predetermined basis. In construction, all costs which do not become a final part of the installation, but which are required for the orderly completion of the installation. Examples of project indirects are engineering services, construction management support, start-up and commissioning, start-up parts, excess liability insurance, and owner's cost.

d. Please see the company's response to Staff's First Set of Data Requests, No. 12 (a), above.

Activity ID	Activity Name	Rem Dur	Start	Finish
BB1-3 Dismantling Sequence		1123	01-Apr-20	16-Aug-24
A1000	Project Start	0	01-Apr-20	01-Apr-20
Milestones		404	01-Apr-20	01-Nov-21
A1020	Unit 1 Retirement	0		01-Apr-20
A1030	Complete 2020 Dismantlement Study	0		01-Jun-20*
A1040	Dismantlement Budget Approval	0		25-Aug-20*
A1050	Unit 2 Retirement	0		01-Nov-21*
TEC Activities		1080	02-Jun-20	16-Aug-24
A1070	Project Scope Authorization (PSA) w/S&L help	60	02-Jun-20	25-Aug-20
A1080	TEC Engineering Staff	1020	26-Aug-20	16-Aug-24
Engineering		195	26-Aug-20	02-Jun-21
A1120	Hazardous Material Survey	30	02-Nov-20*	15-Dec-20
A1110	Additions - Design & Drawing	130	24-Sep-20	30-Mar-21
A1130	Demolition - Develop Scoping Drawings	90	21-Dec-20	27-Apr-21
A1100	Permitting	195	26-Aug-20	02-Jun-21
Procurement		1080	02-Jun-20	16-Aug-24
A1150	Bid & Award Engineering Scope (Qualifications)	60	02-Jun-20	25-Aug-20
A1160	Bid & Award Construction Contract (C1)	60	31-Mar-21	23-Jun-21
A1180	Bid & Award Chimney Demo Contract (C3)	40	28-Apr-21	23-Jun-21
A1170	Bid & Award Demolition Contract (C2)	60	28-Apr-21	22-Jul-21
A1190	Engineering Home Office Support	810	24-Jun-21	16-Aug-24
New Construction (Additions) (C1)		740	24-Jun-21	10-May-24
A1270	Install Power Distribution System U1	40	06-Aug-21	01-Oct-21
A1220	Fabricate Structural Steel	80	24-Jun-21	15-Oct-21
A1300	Install Power Distribution System U2	50	02-Nov-21	14-Jan-22
A1230	Install Bracing for Stability U1	80	08-Nov-21	03-Mar-22
A1290	Install Bracing for Stability U2	80	04-Mar-22	24-Jun-22
A1210	Site Construction Support (Additions)	710	06-Aug-21	10-May-24
Dismantling (C2 unless noted)		780	06-Aug-21	16-Aug-24
A1370	Start U1 Dismantlement	0	06-Aug-21	
A1390	Remove U1 SCR Catalyst	10	06-Aug-21	19-Aug-21
A1380	Remove U1 Hazardous Liquids	30	06-Aug-21	17-Sep-21
A1400	Removal of U1 Ash	20	20-Aug-21	17-Sep-21
A1410	Air Gap U1 - Elect/Gas/Piping	30	20-Sep-21	29-Oct-21
A1420	Start U2 Dismantlement	0	02-Nov-21	
A1440	Removal of U2 SCR Catalyst	10	02-Nov-21	15-Nov-21
A1510	Demolish U1 Booster Fans	30	01-Nov-21	14-Dec-21
A1430	Removal of U2 Hazardous Liquids	30	02-Nov-21	15-Dec-21
A1450	Removal of U2 Ash	20	16-Nov-21	15-Dec-21
A1460	Abate ACM U1	70	20-Sep-21	29-Dec-21
A1480	Air Gap U2 - Elect/Gas/Piping	30	16-Dec-21	28-Jan-22
A1550	Demolish Ash Silo #1	5	31-Jan-22	04-Feb-22
A1520	Demolish U1 ESP's	40	30-Dec-21	24-Feb-22
A1530	Remove U2 GSU & SST	25	31-Jan-22	04-Mar-22
A1560	Demolish U2 Booster Fans	30	07-Feb-22	18-Mar-22
A1540	Demolish U1/2 FGD Area	60	31-Jan-22	22-Apr-22
A1570	Demolish Partial Chimney	25	21-Mar-22	22-Apr-22
A1470	Abate ACM U2	100	16-Dec-21	06-May-22
A1590	Demolish U1 SCR	80	25-Feb-22	17-Jun-22
A1580	Demolish U2 ESP's	50	25-Apr-22	05-Jul-22
A1600	Demolish U2 SCR	80	25-Apr-22	16-Aug-22
A1490	Remove U2 TB Area Equip/Util	100	09-May-22	28-Sep-22
A1500	Fill U2 CW Intake/Discharge	20	29-Sep-22	26-Oct-22
A1640	Demolish U1&2 Chimney (C3)	170	25-Apr-22	23-Dec-22
A1610	Remove U1 Boiler & Equipment	210	20-Jun-22	14-Apr-23
A1650	Remove U2 Boiler & Equipment	210	17-Aug-22	12-Jun-23
A1620	Demolish U1 Boiler Structure	140	17-Apr-23	27-Oct-23
A1630	Demolish U1 Steel Above Tripper	25	30-Oct-23	01-Dec-23
A1660	Demolish U2 Boiler Structure	140	13-Jun-23	25-Dec-23
A1670	Demolish U2 Steel Above Tripper	25	26-Dec-23	29-Jan-24
A1680	Demolish U2 Cooling Tower	10	30-Jan-24	12-Feb-24
A1360	Site Construction Support (Demolition)	780	06-Aug-21	16-Aug-24



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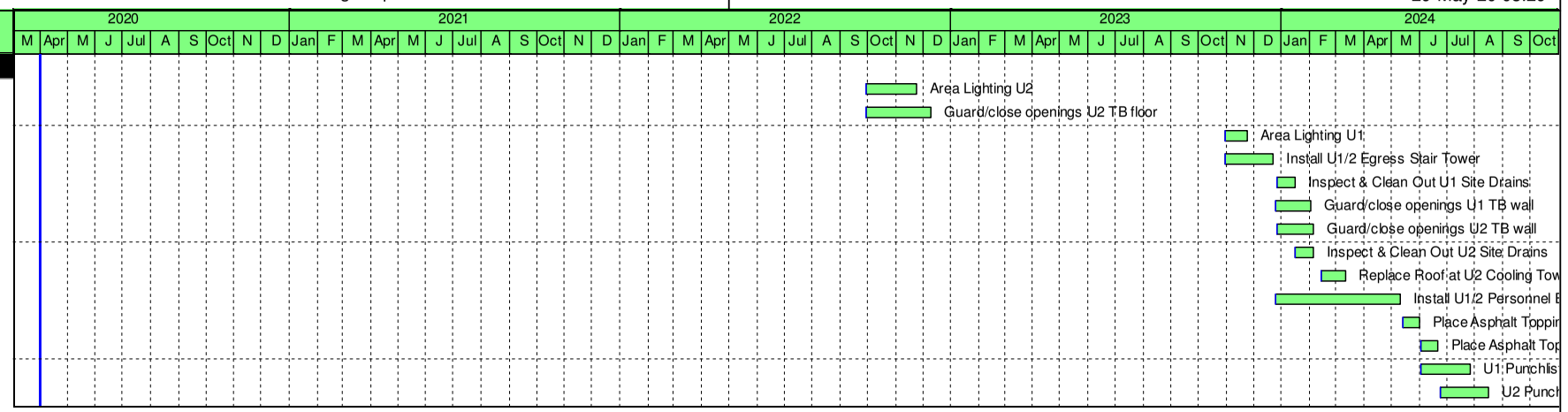
Activity ID	Activity Name	Rem Dur	Start	Finish
Post Demolition Activities		489	29-Sep-22	16-Aug-24
A1310	Area Lighting U2	40	29-Sep-22	23-Nov-22
A1330	Guard/close openings U2 TB floor	50	29-Sep-22	09-Dec-22
A1280	Area Lighting U1	20	30-Oct-23	24-Nov-23
A1240	Install U1/2 Egress Stair Tower	40	30-Oct-23	22-Dec-23
A1700	Inspect & Clean Out U1 Site Drains	15	26-Dec-23	15-Jan-24
A1250	Guard/close openings U1 TB wall	30	25-Dec-23	02-Feb-24
A1340	Guard/close openings U2 TB wall	30	26-Dec-23	05-Feb-24
A1710	Inspect & Clean Out U2 Site Drains	15	16-Jan-24	05-Feb-24
A1320	Replace Roof at U2 Cooling Tower	20	13-Feb-24	11-Mar-24
A1260	Install U1/2 Personnel Elevator	100	25-Dec-23	10-May-24
A1720	Place Asphalt Topping U1 Drainage	15	13-May-24	31-May-24
A1730	Place Asphalt Topping U2 Drainage	15	03-Jun-24	21-Jun-24
A1740	U1 Punchlist	40	03-Jun-24	26-Jul-24
A1750	U2 Punchlist	40	24-Jun-24	16-Aug-24



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TAMPA ELECTRIC COMPANY
DOCKET NO. 20200264-EI
STAFF'S FIRST DATA REQUEST
BATES PAGES: 29-32
FILED: FEBRUARY 26, 2021

13. For the 2020 Dismantlement Study, please provide a summary table to show:

a. Each plant addition investment from which the increase in dismantlement accruals has resulted when compared with TECO's last Dismantlement Study, and in total.

b. The corresponding increased accrual amount associated with each plant addition, and in total.

c. Each plant's retirement amount from which the decrease in dismantlement accruals has resulted when compared with TECO's last Dismantlement Study, and in total,

d. The corresponding decreased accrual amount associated with each plant retirement, and in total.

A. a. Please refer to Excel file, "(BS 34) Comparison 2012 to 2022 for Plant and Accruals.xlsx"

b. Please see response to Staff's First Set of Data Requests, No. 13 (a), above.

c. Please see response to Staff's First Set of Data Requests, No. 13 (a), above.

d. Please see response to Staff's First Set of Data Requests, No. 13 (a), above.

14. Through reviewing TECO's instant and last studies, significant differences in dismantlement cost estimates are noticed as shown in Table 1 below. Please provide a detailed summary to explain the cause(s) of these changes.

Table 1: Comparison of TECO's Generation Plant Dismantlement Cost Estimates (Contingency @ 15%)

Account	2011 Study	2020 Study	Change ($)	Change (%)
Bayside Power Station	$7,506,000	$14,575,850	$7,069,850	94.2%
Big Bend Power Station	$58,809,000	$80,772,550	$21,963,550	37.3%
Polk Power Station	$37,600	$15,229,450	$15,191,850	40403.9%
City of Tampa Station	$204,050			
Gannon Power Station	$18,596,550			
Phillips Station	$2,082,400			
Surviving Fossil Plant Subtotal	$87,235,600	$110,577,850	$23,342,250	26.8%
Surviving Solar Plants		$81,786,195	$81,786,195	
Retired Fossil Plant		$119,390,795		
Total	$87,235,600	$311,754,840	$224,519,240	257.4%

A. Regarding the City of Tampa Station and Phillips Station, these units were sold after the 2011 study filing and were not dismantled. Regarding the Gannon Power Station, which was partially repowered into the Bayside Power Station, dismantlement is complete. No cost estimates nor reserve accruals are necessary in the 2020 study filing. Any remaining dismantlement reserves for those stations are being transferred in the 2020 study filing. Regarding the various Solar Plants, these units were placed in-service after the 2011 study filing and the 2020 study filing is the first time an accrual would be established.

For the other plants, please see the attached memorandum from 1898 & Co. dated June 26, 2020 with the subject, "Cost Comparison for 2011 and 2020 Decommissioning Studies."

The following are the key factors that resulted in changes to the portions of the dismantlement costs prepared by 1898 & Co.

a. Grading and seeding costs for site restoration were excluded from the 2011 dismantlement study; but have been included in the current study.
b. Removal of concrete beneath tanks was excluded from the 2011 dismantlement study; but has been included in the current study.
c. The 2011 study did not include costs for removing and disposing of pond liners; however, they have been included in the 2020 study.

d. Scrap values have decreased from the time of the 2011 study to the time of the 2020 study. Steel decreased by approximately 32%, copper by approximately 24%, and Inconel by approximately 65%. This decrease in scrap value accounts for an increase of nearly $9 million in the costs of the surviving fossil plants.

e. Labor rates and equipment rental costs increased on average by approximately 13%.

f. Since the time of 2011 study, the company has retired a number of the plants previously considered and has added a number of solar projects. This attributes to a change in the overall portions of the dismantlement cost estimates prepared by 1898 & Co.

g. In addition, changes to the scope of demolition due to changes at the plants, resulted in further changes to the dismantlement cost estimates as discussed below.

h. Bayside

   i. Asbestos abatement has occurred since the 2011 study, which decreased costs by approximately $1.3 million

   ii. Common facility costs increased by approximately $2.1 million due to changes in pond closure methodology and additional removal of concrete beneath tanks.

   iii. Grading and seeding costs resulted in an increase of approximately $1.957 million.

   iv. The remaining difference is due to higher labor rates and lower scrap values as discussed above.

i. Big Bend

   i. Estimates for the Retired Assets were prepared by S&L in the current study

   ii. For the Surviving Assets, the following differences apply to the 1898 & Co. prepared estimates

   iii. Since the time of the prior study, changes have been made to the plants that have impacted the scope of demolition activities. These changes resulted in an overall increase of approximately $17.8 million.

j. Costs were not included for the following items in the 2011 Study, but are included in the 2020 Study:

   i. The northern gypsum storage area (commonly known as the East 40),

   ii. The dredge area to the west of the Suncoast Youth Center,

   iii. The helicopter pad, comprised of slag, located to the east of the slag dewatering pond, and

   iv. A small pond to the southwest of the coalfield.

   v. Gas turbines 5 and 6 were added to the site since the time of the 2011 study

   vi. Additional coal pile remediation costs were included for a deeper depth of removal below the coal pile

k. The following items were included in the 2011 Study, but have not been included in the 2020 Study for the reasons listed:

   i. A bottom ash pond has been filled by the modernization project,

   ii. The closing of the three fly ash disposal ponds are set to be completed by 2021,

   iii. The residuals of the Slag Dewatering Pond were to be removed as part of the 2020 project,

   iv. The southern gypsum storage area was closed and the reclaim completed in 2019,

   v. The area of spray fields to be remediated decreased from approximately 45 acres in the 2011 Study to 12 acres in the 2020 Study, and

   vi. The area of the settling ponds to be remediated decreased from approximately 27 acres in the 2011 Study to 16 acres in the 2020 Study

   vii. Grading and seeding costs resulted in an increase of approximately $5.19 million.

viii. The remaining difference is due to higher labor rates and lower scrap values as discussed above.

l. Polk

i. Since the time of the 2011 Study, the combustion turbine units were converted to combined cycle configuration, resulting in significant additions of equipment. The 2011 Study did not include costs for removal of the steam turbine, SCR, cooling towers and basin, or the stacks, for example. This resulted in an increase of approximately $4 million to account for this new equipment.

ii. Costs for common facilities have increased approximately $1.3 million in the 2020 Study due to the addition of costs for the cooling water intakes and circulating water piping and roads, which were not included in the 2011 study.

iii. Costs for pond closure have increased by approximately $300,000 due to updates to the pond closure methodology.

iv. Grading and seeding costs resulted in an increase of approximately $4.36 million.

v. The remaining difference is due to higher labor rates and lower scrap values as discussed above.

Memorandum

Date: June 26, 2020

To: Joe Legner, TECO

From: Jeff Kopp, 1898 and Co.

Subject: Cost Comparison for 2011 and 2020 Decommissioning Studies

BACKGROUND

1898 & Co. part of Burns & McDonnell Engineering Company, Inc. of Kansas City, Missouri, was retained by Tampa Electric Company ("TECO") to conduct a Decommissioning Cost Study ("Study") for power generation assets located in Florida. The assets include natural gas-fired, coal-fired, and solar generating facilities. The purpose of the Study was to review the facilities and to make a recommendation to TECO regarding the total cost to decommission the facilities at the end of their useful lives. A similar decommissioning study was prepared by Burns & McDonnell in 2011. This memo serves to provide an explanation for the difference in costs between the 2011 Study and the 2020 Study.

UPDATES AFFECTING ALL PLANTS FROM 2011 TO 2020

The following updates from 2011 to 2020 are applied to all plants.

Inflation

Using the Consumer Price Index Data provided by the US department of Labor, Bureau of Labor Statistics, all costs provided in the 2011 Study were adjusted to 2020 dollars for purposes of comparing costs in this memo. These costs are provided in the following tables.

Environmental

Material changes have been made to the plants since the 2011 Study. For example, new ponds and material storage areas have been built and prior areas have been reclaimed. These changes have been accounted for in the 2020 Study, as discussed in the following sections.

Scrap Pricing

1898 & Co. estimated weights for salvageable materials of power plant assets based on nameplate data and in-house historical data available to 1898 & Co. The scrap pricing for both studies was based on costs reported by American Metals Market. The following table includes market scrap values used in each study, showing how the scrap market has changed from the 2011 Study to the 2020 Study.

Table 1: Net Project Cost Summary

Site	2011 Study	2020 Study
Steel	$265/gross ton	$232/gross ton
Copper	$2.50/lb	$1.91/lb
Inconel	$6.50/lb	$2.18/lb

Indirect Costs

In the 2011 Study, indirect costs were excluded from Burns & McDonnell's scope of work. For the 2020 Study, indirects were included as 5 percent of the direct costs.

Memorandum *(cont'd)*

Contingency

Contingency was excluded from the 2011 Study as it was to be determined by TECO. The 2020 Study included a contingency of 20 percent.

Scope Changes

Additional changes made to the Plants since the time of the 2011 Study have been accounted for in the 2020 Study. These changes are discussed in more detail below. In addition to the changes to the Facilities, the list of sites included in the Study have changed. J.H Phillips and City of Tampa Partnership Station sites have been retired since the 2011 Study and 12 solar sites have been added. These sites were excluded in the comparison of the total changes in cost since the 2011 Study.

SUMMARY OF COST COMPARISONS

The following section outlines the total costs for the 2011 Study and the 2020 Study. The estimated total for the 2011 Study in 2020 dollars is $61,442,000 while the estimated total of the 2020 Study includes an increase of $183,091,900 total or $90,596,000 excluding the sites added or removed from the scope.

Table 2: Net Project Cost Summary

Site	2011 Study (2011$)	2011 Study (2020$)	2020 Study (2020$)	Difference (2020$)
Bayside	$4,674,000	$5,363,000	$16,846,000	$11,483,000
Big Bend	$48,480,000	$55,622,000	$115,687,000	$60,065,000
Polk	($1,472,000)	($1,690,000)	$17,344,000	$19,034,000
J.H. Phillips	$1,702,000	$1,953,000	$ -	($1,953,000)
City of Tampa Partnership Station	$170,000	$195,000	$ -	($195,000)

Table 3: Solar Project Cost Summary

Site	Net Project Cost ($2020)	$/kW-AC
Balm Solar	$ 19,194,400	$ 206
Big Bend Solar	$ 3,989,600	$ 184
Bonnie Mine Solar	$ 5,815,400	$ 159
Grange Hall Solar	$ 8,609,100	$ 145
Lake Hancock Solar	$ 6,740,800	$ 140
Legoland Solar	$ 146,700	$ 94
Lithia Solar	$ 10,511,600	$ 144
Little Manatee River	$ 11,035,000	$ 152
Payne Creek Solar	$ 10,425,300	$ 151
Peace Creek Solar	$ 7,470,700	$ 137
Tampa Intl Solar	$ 647,600	$ 338
Wimauma Solar	$ 11,616,200	$ 153

COST ESTIMATE COMPARISON

The following sections outline updates in the 2020 Study that create differences between the estimates from 2011 and 2020 specific to each plant.

Bayside

The overall cost to decommission Bayside increased from the 2011 Study. Table 4Table 4 presents the breakout of pricing by major category for the 2011 Study and 2020 Study in 2020 dollars.

Table 4: Bayside Cost Estimates Summary

Category	2011 Study (2020$)	2020 Study (2020$)
Power Block Structures & Equipment	$ 16,213,000	$ 15,469,000
Asbestos	$ 1,287,000	$ -
Common Facilities	$ 4,161,000	$ 5,273,000
Grading & Seeding	$ -	$ 1,957,000
Indirects	$ -	$ 1,135,000
Contingency	$ -	$ 4,540,000
Scrap	$ (16,299,000)	$ (11,528,000)
Total Net Cost	$ 5,362,000	$ 16,846,000

The following reasons are the major contributors to the difference in pricing:

1. Since the time of the 2011 Study, asbestos abatement has occurred. Asbestos abatement at Bayside occurred as part of the Gannon decommissioning project and

the turbine building transite paneling was replaced with steel. As such, costs for abatement were excluded from the 2020 Study, accounting for a decrease of $1,287,000.

2. Costs for common facilities have increased by $1,112,000 due to an increase in pond costs and additional concrete removal costs. For example, the removal of concrete underneath tanks was not included in the 2011 Study but has been accounted for in the 2020 Study. Additionally, the 2020 Study includes costs for backfilling the ponds, whereas the 2011 Study assumed ponds would be filled with crushed concrete and berm material.
3. The 2011 Study did not include costs for grading and seeding the site area. These costs were included in the 2020 Study, which accounts for an increase of $1,957,000.
4. Costs for indirects and contingency were not included in the 2011 Study. This difference accounts for approximately $5,675,000 increase in costs.
5. Additionally, market changes with scrap pricing and labor rates, contribute to the overall increase of $11,484,000.

Big Bend

The overall cost to decommission Big Bend increased from the 2011 Study. Table 5Table 4 presents the breakout of pricing by major category for the 2011 Study and 2020 Study in 2020 dollars.

Table 5: Big Bend Cost Estimates Summary

Category	2011 Study (2020$)	2020 Study
Power Block Structures & Equipment	$ 20,773,000	$ 39,898,000
Asbestos	$ 3,011,000	$ 3,138,000
Coal and Limestone Handling	$ 8,417,000	$ 10,243,000
Common Facilities	$ 46,803,000	$ 46,260,000
Grading & Seeding	$ -	$ 6,409,000
Indirects	$ -	$ 5,297,000
Contingency	$ -	$ 21,190,000
Scrap	$ (23,382,000)	$ (16,748,000)
Total Net Cost	$ 55,622,000	$ 115,687,000

The following reasons are the major contributors to the difference in pricing:

1. Costs for Power Block Structures and Equipment have increased approximately $19,125,000 in the 2020 Study. Part of this increase is a result of the addition of the Gas Turbine Units 5 and 6, which were not included in the 2011 Study and increased costs by approximately $7 million. Portions of the 2011 Study were performed by a

demolition contractor, but the entire 2020 Study was performed by 1898 & Co. These changes to our study methodology resulted in cost increases, which we believe are due to improved quantity estimates.

2. Costs for environmental remediation of the following items were included in the 2011 Study, but have not been included in the 2020 Study for the reasons listed:
    - A bottom ash pond has been filled by the modernization project,
    - The closing of the three fly ash disposal ponds are set to be completed by 2021,
    - The residuals of the Slag Dewatering Pond will be removed as part of the 2020 project,
    - The southern gypsum storage area was closed and the reclaim completed in 2019,
    - The area of spray fields to be remediated decreased from approximately 45 acres in the 2011 Study to 12 acres in the 2020 Study, and
    - The area of the settling ponds to be remediated decreased from approximately 27 acres in the 2011 Study to 16 acres in the 2020 Study.
3. Since the 2011 Study the following additions have been made. As such, costs were not included for these items in the 2011 Study, but are included in the 2020 Study:
    - The northern gypsum storage area,
    - The dredge area to the west of the Suncoast Youth Center,
    - The helicopter pad, comprised of slag, located to the east of the slag dewatering pond, and
    - A small pond to the southwest of the coalfield.
4. The 2011 Study did not include costs for grading and seeding the site area. These costs were included in the 2020 Study, which accounts for an increase of $6,409,000.
5. Costs for indirects and contingency were not included in the 2011 Study. This difference accounts for approximately $26,487,000 increase in costs.
6. Additionally, market changes with scrap pricing and labor rates, contribute to the overall increase of $60,078,000.

Polk

The overall cost to decommission Polk increased from the 2011 Study. Table 6Table 4 presents the breakout of pricing by major category for the 2011 Study and 2020 Study in 2020 dollars.

Table 6: Polk Cost Estimates Summary

Category	2011 Study (2020$)	2020 Study
Power Block Structures & Equipment	$ 7,440,000	$ 11,040,000
Common Facilities	$ 4,106,000	$ 5,741,000
Grading & Seeding	$ -	$ 4,362,000
Indirects	$ -	$ 1,057,000
Contingency	$ -	$ 4,229,000
Scrap	$ (13,236,000)	$ (9,085,000)
Total Net Cost	$ (1,690,000)	$ 17,344,000

The following reasons are the major contributors to the difference in pricing:

1. Costs for Power Block Structures and Equipment have increased approximately $3,600,000 in the 2020 Study. Since the time of the 2011 Study, the combustion turbine units were converted to combined cycle configuration, resulting in significant additions of equipment. The 2011 Study did not include costs for removal of the steam turbine building, SCR, cooling towers and basin, or the stacks. This increase is a result of the addition of these costs to the 2020 Study.
2. Costs for common facilities have increased approximately $1,635,000 in the 2020 Study. The 2011 Study did not account for the costs for removal of the cooling water intakes and circulating water piping, roads, balance of plant buildings, and tanks other than fuel tanks. This increase is a result of the addition of these costs to the 2020 Study.
3. Costs for indirects and contingency were not included in the 2011 Study. This difference accounts for approximately $5,286,000 increase in costs.
4. Additionally, market changes with scrap pricing and labor rates, contribute to the overall increase of $19,034,000.

SOLAR COST ESTIMATES

The following section discusses the solar estimates of the 2020 Study. The costs for dismantling the solar sites were prepared according to the following categories of decommissioning activities.

1. Battery Removal
2. Solar Panel Removal
3. Panel Supports and Racking
4. Electrical and Wiring
5. Site Restoration
6. Concrete Debris

It should be noted that individual solar projects often have unique features that can affect costs, such as location, size, equipment, environmental concerns, land restoration requirement, and more. As shown in the table below, the majority of the solar sites have comparable cost estimates on a $/kW basis; however, there are a few outliers. Further discussion is provided below identifying the drivers of the cost differentials for each category.

Table 7: Solar Site Cost by Category ($/kW)

Site	Battery Removal	Solar Panel Removal	Panel Supports/ Racking	Electrical & Wiring	Site Restoration	Concrete/ Debris
Balm Solar	$ -	$ 55	$ 127	$ 2	$ 23	$ 0.10
Big Bend Solar	$ 12	$ 95	$ 45	$ 9	$ 22	$ 0.35
Bonnie Mine Solar	$ -	$ 50	$ 76	$ 2	$ 32	$ 0.09
Grange Hall Solar	$ -	$ 54	$ 71	$ 1	$ 18	$ 0.05
Lake Hancock Solar	$ -	$ 51	$ 69	$ 1	$ 20	$ 0.05
Legoland Solar	$ -	$ 37	$ 16	$ 31	$ 9	$ 1.36
Lithia Solar	$ -	$ 55	$ 60	$ 2	$ 26	$ 0.16
Little Manatee River	$ -	$ 55	$ 68	$ 2	$ 26	$ 0.17
Payne Creek Solar	$ -	$ 55	$ 67	$ 3	$ 26	$ 0.14
Peace Creek Solar	$ -	$ 52	$ 63	$ 3	$ 20	$ 0.13
Tampa Intl Solar	$ -	$ 32	$ 279	$ 3	$ 14	$ 10.05
Wimauma Solar	$ -	$ 55	$ 62	$ 1	$ 36	$ 0.08

Balm Solar

The following reasons are the major contributors to the difference in costs developed for the Balm Solar site:

1. The cost for removal of panel supports and racking for the Balm Solar Site is higher than the majority of the other sites. This is due to the larger amount of rack posts to be removed.

Big Bend Solar

The following reasons are the major contributors to the difference in costs developed for the Big Bend Solar site:

1. Big Bend Solar is the only site with battery storage. As such, it is the only site with costs for battery removal.

2. The modules installed at the Big Bend Solar site are heavy relative to their output, resulting in higher costs for solar panel removal than the majority of the other sites.
3. The Big Bend Solar site has a smaller number of rack posts, contributing to the cost for removal of panel supports and racking at Big Bend Solar being lower than the majority of the other sites.
4. Costs are included for removal of the substation at the Big Bend Solar site. The substation equipment and concrete removal costs contribute to the costs for electrical/wiring and concrete/debris at Big Bend being higher than the majority of the other sites.

Legoland Solar

The following reasons are the major contributors to the difference in costs developed for the Legoland site:

1. The cost for solar panel removal at Legoland is lower than the majority of the other sites, because of the type of panel installed at the site. The panels installed have a higher power output than the majority of the other sites and therefore not as many are installed on a per kW basis.
2. The Legoland site has a smaller number of rack posts, contributing to the cost for removal of panel supports and racking at Legoland being lower than the majority of the other sites.
3. The Legoland Solar project is installed over a parking lot. As such, grading and seeding are not required, which contributes to the cost for site restoration at Legoland being lower than the majority of the other sites.
4. Costs are included for removal of the substation at the Legoland Solar site. The substation equipment and concrete removal costs contribute to the costs for electrical/wiring and concrete/debris at Legoland being higher than the majority of the other sites.

Tampa International Solar

The following reasons are the major contributors to the difference in costs developed for the Tampa International site:

1. The cost for solar panel removal at Tampa International is lower than the majority of the other sites, because of the type of panel installed at the site. The panels installed have a higher power output than the majority of the other sites and therefore not as many are installed on a per kW basis.

Memorandum *(cont'd)*

2. The Tampa International Solar site is a rooftop array installed above a parking garage. As such, grading and seeding are not required, which contributes to the costs for site restoration being lower than the majority of the other sites.
3. The columns supporting the panels are made of concrete. The costs for removal of the concrete columns contributes to the higher costs for removal of panel supports and racking as well as for removal of concrete and debris.

JTK