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October 6, 2017

VIA: ELECTRONIC FILING

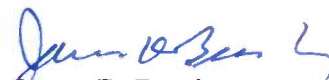
Ms. Carlotta S. Stauffer
Commission Clerk
Florida Public Service Commission
2540 Shumard Oak Boulevard
Tallahassee, Florida 32399-0850

Re: Docket No. 20170168-EI – Petition of Tampa Electric Company for Approval of
Second Phase of its CCR Program for Cost Recovery

Dear Ms. Stauffer:

Attached for filing in the above docket are Tampa Electric Company's Answers to Staff's
First Data Request (Nos.1-21) dated September 7, 2017.

Sincerely,


James D. Beasley

JDB/pp
Attachment

cc: Moniaishi Mtenga (w/attachment)

**TAMPA ELECTRIC COMPANY
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1. Please specify when TECO started, or will start, to actually incur the cost associated with the EAPP Closure project discussed in the Petition.
 - A. Tampa Electric currently expects that it will begin incurring O&M expenses related to excavation and disposal of Coal Combustion Residuals (“CCR”) in the Big Bend Economizer Ash & Pyrites Pond (“EAPP”) in the fourth quarter of 2017. Completion of engineering is not required to begin the removal and disposal of CCR.

2. In its New List, TECO indicated that the Company will incur compliance costs of the EAPP project in 2017 and beyond. In its Petition, Page 3, TECO indicated that it will include 2017 costs "in its actual/estimated forecast and final annual true-up for beginning cost recovery in 2018 factors."

- a. Please identify the amounts of O&M and capital costs, respectively, of each such project embedded in TECO's 2017 actual/estimated ECRC cost recovery filing.
- b. Please identify the amounts of O&M and capital costs, respectively, of each such project embedded in TECO's 2017 ECRC projection filing.
- c. Please confirm that the "final annual true-up" mentioned in Item 5 of the Petition, Page 3, refers to 2017 final annual true-up to be filed in 2018 in the ECRC proceeding.

A. a. After filing the EAPP petition in July 2017, Tampa Electric included in its 2017 actual/estimate filing approximately \$3.35 million in O&M costs for initiation of the EAPP closure disposal and transportation costs. The amount is included in the CCR Rule project costs, at line 1.x. on Form 42-5E. The 2017 actual/estimate also included \$150,000 in capital expenditures in 2017 for engineering of the EAPP closure. This amount is included in the CCR Rule project capital costs shown on Form 42-8E, Page 26 of 26.

- b. The company has been told by the Commission Staff that this question should read, "Please identify the amounts of O&M and capital costs, respectively, of each such project embedded in TECO's 2018 ECRC projection filing."

The company's 2018 ECRC projection filing includes \$4.6 million in O&M for EAPP disposal and transportation costs. The amount is included in the CCR Rule project costs, at line 1.x. on Form 42-2E. The 2018 projection also includes \$200,000 in capital expenditures during 2018 for engineering for the EAPP closure. This amount is included in the CCR Rule project capital costs shown on Form 42-8E, Page 26 of 26.

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- c. The "final annual true-up" mentioned in Item 5 of the Petition, Page 3, refers to the 2017 final annual true-up to be filed in 2018 in the ECRC proceeding.

3. Referring to witness Carpinone's direct testimony, Page 16, line 19 through Page 17, line 2, please explain in detail how the following three closures are related to each other:
 - a. The Big Bend Economizer Ash & Pyrites Pond (EAPP) closure discussed in the New List and the Petition;
 - b. The North and South Economizer Ash impoundments closure discussed in witness Carpinone's direct testimony. Page 16, line 20; and
 - c. The slag pond closure discussed in witness Carpinone's direct testimony. Page 16, line 21.

- A.
 - a. The Big Bend EAPP closure project discussed in the New List and the Petition are the same project. The EAPP closure project is also called the North and South Economizer Ash impoundments closure in witness Carpinone's direct testimony. The EAPP system consists of two ash ponds (North and South) and a water management pond. The EAPP project is related to the Slag Pond closure only in the respect that they are both required under the provisions of EPA's CCR Rule.
 - b. The EAPP closure project is the same project referred to as the North and South Economizer Ash impoundments closure on page 16, line 20 of witness Carpinone's direct testimony.
 - c. The slag pond closure discussed in witness Carpinone's direct testimony at page 16, line 21 is a completely separate project. However, since the area handles coalfield stormwater runoff which is pumped to the EAPP's water management pond for transfer to the station's recycle water system, the timing of the two projects must be coordinated.

4. Referring to witness Carpinone's direct testimony, Page 16, line 19 through Page 17, line 2, please identify:
 - a. The Commission order(s) by which the cost recovery associated with the North and South Economizer Ash impoundments closure is approved;
 - b. The total costs, in terms of the O&M and capital, respectively, associated with the North and South Economizer Ash impoundments closure;
 - c. The expected project milestones, as well as the associated costs, of the North and South Economizer Ash impoundments closure project.

- A.
 - a. The North and South Economizer Ash impoundments closure is the same project as the EAPP project. Tampa Electric's original petition for approval of its overall CCR program included cost recovery for engineering studies to evaluate alternatives for the EAPP Closure Project and was approved by Order No. PSC-2016-0068-PAA-EI dated February 9, 2016. The EAPP closure petition submitted by Tampa Electric in Docket No. 20170168-EI petition requests recovery for the engineering, remediation and construction of the selected alternative for the EAPP closure.
 - b. The total estimated costs for the project are \$28,583,200 in O&M and \$1,409,000 in capital for a total of \$29,992,200 over the period 2017 through 2022.
 - c. The requested information is provided in the following table.

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Milestone	Start	Finish	Cost (\$)
Engineering	November 2017	April 2018	400,000
Dewatering & Excavation*	November 2017	November 2020	2,714,800
CCR Transport and Disposal	November 2017	November 2020	25,752,000
Site Restoration (Restore adjacent berms and stormwater piping system)	November 2020	February 2021	1,009,000
Post Closure Groundwater Demonstration/Monitoring	March 2021	March 2025	116,400
Total			29,992,200

*Engineering not required to initiate excavation and disposal of temporary cap on south EAPP. Engineering required for removal of CCR under cap.

5. Referring to witness Carpinone's direct testimony. Page 16, line 19 through Page 17, line 2, please identify:
 - a. The Commission order(s) by which the cost recovery associated with the slag pond closure is approved;
 - b. The total costs, in terms of the O&M and capital, respectively, associated with the slag pond closure;
 - c. The expected project milestones, as well as the associated costs, of the slag pond closure project.

- A.
 - a. The "slag pond closure" was included in the company's petition in Docket No. 20150223-EI for approval of its CCR Rule program, as estimated costs of \$3,000,000 for the West Slag Disposal Pond ("WSDP") closure. It was approved by Order No. PSC-2016-0068-PAA-EI dated February 9, 2016.
 - b. The 2018 slag pond closure project O&M costs are estimated at \$1,275,000 for excavation and dewatering, CCR disposal, and post-closure groundwater monitoring. The 2018 capital costs for the slag pond closure are estimated to be \$1,000,000 for pond restoration, including engineering, grading, and liner installation. Total project cost estimates are shown in the response to subpart c.
 - c. The requested information is provided in the following table.

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Milestone	Start	Finish	Cost(\$)
Excavation & Dewatering	November 2017	October 2018	720,000
CCR Disposal	November 2017	November 2018	555,000
Restoration – Grading, Install Liner & Stormwater Drainage Modifications	November 2017	December 2018	1,000,000
Groundwater Monitoring	December 2018	December 2021	116,400
		Total	2,391,400

6. Referring to witness Carpinone's direct testimony. Page 16, line 19 through Page 17, line 2, please identify:
 - a. The Commission order(s) which approved the cost recovery associate with the "additional work to be done at the North Gypsum Stack out area" discussed in witness Carpinone's direct testimony. Page 17, lines 1-2.
 - b. The total costs, in terms of the O&M and capital, respectively, associated with the "additional work" discussed in (a.) above;
 - c. The expected project milestones, as well as the associated costs, of the "additional work" discussed in (a.) above.

- A.
 - a. The company's original petition for approval of its overall CCR program included estimated costs of one million dollars for the North Gypsum Stackout Area Improvements and was approved by Order No. PSC-2016-0068-PAA-EI dated February 9, 2016. The "additional work to be done at the North Gypsum Stack out area" is this pre-approved project. A study is underway to finalize the scope of the needed improvements.
 - b. An engineering consultant is currently performing the study to determine the final scope and budget for this project. Updated cost estimates will be provided in the 2018 actual-estimate filing.
 - c. Tampa Electric has initiated the study that would provide the necessary modifications and the subsequent conceptual engineering, construction timeframes, and cost estimates. The study is scheduled to be completed and submitted for review to Tampa Electric in the fourth quarter of 2017.

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7. Referring to witness Carpinone's direct testimony. Page 16, line 19 through Page 17, line 2,, and the Petition:
- a. Please confirm that the cost recovery petitioned in Docket No. 20170168-EI is only related to the EAPP closure. If not, please provide a detailed explanation.
 - b. Please provide a table that separates the cost of TECO's previous CCR program in Docket 150223-EI from this current docket.
 - c. Please confirm that the EAPP closure project discussed in the Petition will also commence in 2018.
- A.
- a. The cost recovery petitioned in Docket No. 20170168-EI is related only to the EAPP closure.
 - b. As illustrated in the following table, the cost of the company's CCR Rule program in Docket No. 20150223-EI included costs for Tampa Electric's CCR Rule compliance activities anticipated or required at the time of filing, including Phase I engineering studies to evaluate future projects.

The cost recovery petitioned in Docket No. 20170168-EI includes costs to implement the EAPP closure, one of the future projects anticipated in the CCR Rule program in Docket No. 20150223-EI for which costs were not then known.

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Docket 20150223-EI			Docket No. 20170168-EI	
Project/Activity	O&M (\$000)	Capital (\$000)	O&M (\$000)	Capital (\$000)
Groundwater Monitoring Plan, Inspections, Signage	100/yr	N/A	N/A	N/A
Impoundment & Liner Evaluations	400/5yr	N/A	N/A	N/A
Slag Fines Pond Closure and Lining	50/yr	3,000	N/A	N/A
North Gypsum Stackout Enhancements	50/yr	1,000	N/A	N/A
Future Impoundment & Facility Improvements (Engineering)	N/A	600	0	400
Future Impoundment & Facility Improvements (Construction and Remediation)	TBD	TBD	28,583	1,009

- c. See the company's response to Data Request No. 1.

8. Referring to witness Carpinone's direct testimony. Page 17, lines 22 - 24, please identify each of the cost elements that TECO anticipates for the following:
- a. \$2,200,000 capital expenditures associated with the EAPP closure project in 2018;
 - b. \$6,125,000 for O&M expenses associated with the EAPP closure project in 2018.
- A.
- a. The \$2,200,000 figure includes capital expenditures for all of the company's CCR Rule projects during 2018, including the EAPP closure. The 2018 EAPP closure capital expenditures are estimated at \$200,000 for engineering. The other items included in the total 2018 CCR Rule project capital expenditures are \$1,000,000 for the West Slag Pond Disposal Project and \$1,000,000 for engineering and initial drainage modifications the North Gypsum Stackout Area, and these two items were previously approved by Order No. PSC-2016-0068-PAA-EI.
 - b. The \$6,125,000 figure includes O&M expenses for all of Tampa Electric's CCR programs in 2018. This figure includes \$4,600,000 for initiating CCR removal and disposal activities for the EAPP closure project in 2018. The other items included in the total CCR project costs are \$1,275,000 for West Slag Pond Disposal reconstruction work and \$250,000 for ongoing CCR inspections, maintenance and groundwater monitoring, as required by the CCR Rule, and these two items were previously approved by Order No. PSC-2016-0068-PAA-EI.

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9. Please refer to Item 11 of the Petition, Page 5, for the questions below:
- a. Please provide a detailed breakdown of the component activities that comprise the estimated \$2,714,800 of O&M costs associated with "Dewatering& Excavation."
 - b. Please provide a detailed breakdown of the component activities that comprise the estimated \$25,752,000 of O&M costs associated with "CCR Transport & Disposal."
 - c. Please provide a detailed breakdown of the component activities that comprise the estimated \$116,400 of O&M costs associated with "Post Closure Groundwater Demonstration/Monitoring."
 - d. Please provide a detailed breakdown of the component activities that comprise the estimated \$400,000 of capital costs associated with "Engineering."
 - e. Please provide a detailed breakdown of the component activities that comprise the estimated \$1,009,000 of capital costs associated with "Site Restoration."
 - f. When does TECO expect each of the five types of works listed in Table 1 of the Petition to commence?
 - g. Will each of the five types of works listed in Table 1 be completed in-house, or, by outside contractors? If a work type to be contracted out, will TECO be soliciting bids?
- A.
- a. Dewatering was estimated by Tampa Electric's engineer at approximately \$1,015,600, and excavation was estimated at \$1,699,200 for a total of \$2,714,800.
 - b. Tampa Electric's current estimate of the total amount of CCR to be disposed from the EAPPs is approximately 740,000 *tons*. (Note: An approximate figure of 700,000 *cu. yds.* was provided in the petition, but a calculation of tonnage is being used for estimating disposal costs.) Although variable, Tampa Electric's current average transportation rates are \$10/ton, and average landfill tipping fees are \$19/ton. Therefore, the transportation cost for 740,000 tons is calculated to be approximately \$7,400,000 and disposal fees equate to approximately \$14,060,000 for a subtotal of \$21,460,000. Applying a contingency factor of 20 percent yields the total of \$25,752,000.

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- c. The estimate provided in the petition for post-closure care and monitoring includes up to four years of monitoring at \$22,000 annually, for a total of \$88,000, to verify that groundwater standards or background levels of contaminants have been achieved by the remediation and \$9,000 for a small amount of post-closure care (mowing, etc.) for the remediated area to enable ongoing monitoring, for a subtotal of \$97,000. Applying a contingency factor of 20% yields a total cost of \$116,400.
- d. The estimate of engineering costs for the EAPP closure is based on Tampa Electric's experience with similar earthworks and infrastructure projects previously performed at the site. The project will require separate engineering efforts for various phases, including:
- Certified Engineered Final Closure Plan as required by CCR Rule section "257.102 Criteria for conducting closure or retrofit of CCR units" which must include Engineered Dewatering, Removal and Remediation Plans certified by a professional engineer - \$200,000
 - Long Term Fly Ash Stormwater Pond Restoration Engineering Plan (see subpart e below) - \$150,000
 - Plant Stormwater System Modification Engineering Plan – \$50,000
- e. The southern Economizer Ash Pond shares a common berm with the Big Bend Long Term Fly Ash Pond ("LTFAP"). Therefore, the remediation of this portion of the EAPP requires the removal of some LTFAP berm material, liner and interconnect piping between these units. The northern Economizer Ash Pond also includes a water management pond and piping to receive and return water to the site recycle water system. The site restoration will consist of re-grading the EAPP, replacing the LTFAP berm and replacing the water management piping for an estimated cost of \$810,833. The replacement of the LTFAP berm liner was estimated by Tampa Electric based on the area of liner and length of anchor trench to be replaced in the LTFAP at a total estimated cost of \$30,000. Applying a contingency of 20% to the subtotal of \$840,833 yields a total of \$1,009,000.
- f. See the response to subpart 4.c.
- g. All work will be performed by contractors, and bids will be solicited under Tampa Electric's procurement practices.

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- 10.** Referring to the Petition, Page 5, Item 11, please provide response to the following questions:
- a. Has TECO finalized the landfill which can accept the 700,000 cu. yds. of excavated coal combustion residuals (OCRs)? If yes, please identify the landfill. If not, when does TECO expect to enter into a contract for CCR disposal depository (landfill)?
 - b. When does TECO plan to discontinue disposing CCR in EAPP?
 - c. Please explain how the Company will dispose of the CCRs after the time identified in Question 10.b.
- A.**
- a. Tampa Electric could send the 740,000 tons (see response to Data Request 9.b. above) of CCR to the Waste Management, Inc.'s North Manatee Recycling & Disposal Facility ("NMRDF"). Tampa Electric has an existing contract with Waste Management which allows for disposal of CCR at this landfill and has confirmed with the company that capacity for this quantity CCR is available at NMRDF or another of Waste Management's sites. However, Tampa Electric will request verified quotes from potential suppliers for actual disposal costs near the time of disposal and will select the most cost-effective contractors for disposal services.
 - b. Tampa Electric discontinued disposing of ash in the EAPP in April 2017.
 - c. The Big Bend Unit 4 economizer ash piping system has been reconfigured to allow this CCR to be rerouted to the bottom ash system.

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11. Referring to the Petition, please provide the expected customer bill impacts that will result from the recovery of the total costs of \$30 million associated with the EAPP closure project annually in 2018 through 2022.

A. The year-by-year change and cumulative residential customer bill impacts of the project are shown in the following table.

Residential Customer Monthly Bill Impact (1,000 kWh Bill)		
Year	Annual Impact (\$)	Cumulative Impact (\$)
2018	0.41	0.41
2019	0.20	0.61
2020	(0.19)	0.43
2021	(0.41)	0.02
2022	(0.02)	0.01

12. Please refer to the Petition, Page 6, Item 13, for the following questions:
- a. Please explain whether the first phase of TECO's CCR Program has been completed.
 - b. For each activity not completed, please identify TECO's estimate of the associated costs and the completion time.
- A.
- a. The first phase of Tampa Electric's CCR Program is nearing completion. Most of the work, including the slag pond closure and the North Gypsum Stackout Improvements, is expected to be completed and associated costs incurred by the end of 2018. However, the North Gypsum Stackout study is still ongoing to refine the engineering scope for the expected improvements and determine if there is a need for additional work required by the CCR Rule. In addition, the company will incur ongoing monitoring costs for the first phase of the CCR Rule project beyond 2018.
 - b. The scope study for the North Gypsum Stack out area described in the response to Data Request No. 6.c. is nearing completion. The company's best estimates of the remaining costs and completion dates for the first phase of its CCR Rule Program are described in the company's responses to Data Request No. 5.c. (slag pond) and 8.a. and 6.c. (North Gypsum Stackout).

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- 13.** Please provide a timeline of the events leading to TECO's determination that the Big Bend Economizer Ash and Pyrites Ponds (EAPP) must be closed?
- A.** The requested information is provided in the following table.

Event	Date
Final CCR Rule	April 17,2015
CCR Rule Effective Date	October 19, 2015
Begin Groundwater Monitoring	June 24, 2016
Interim Evaluations of Groundwater Data reveal elevated levels for constituents and water level within 5 feet of bottom liner	6/24/16, 7/27/16, 8/26/16, 10/28/16, 11/10/16, 1/26/16, 4/13/17
File Petition	July 28, 2017

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- 14.** Please refer to paragraph 6 of the Petition. When was the engineering study completed?
 - A.** The EAPP engineering study (approved by Order No. PSC-2016-0068-PAA-EI) was completed on October 27, 2016.

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15. Please refer to paragraph 6 of the Petition. Please provide a list of the alternatives considered and the estimated costs of each of the alternatives.
- A. The requested information is provided in the following table.

EAPP Closure Options		
Option	Cost (\$000)	Rationale for Acceptance or Rejection
1 - Pond Closure by Removal (Preferred Option)	29,992	Meets all rule requirements, moderate cost
2 - Construct Off Site landfill	42,700	Environmental risk, permitting risk, higher cost
3 - Cap & Close with enhanced bottom liner	16,900	Environmental risk (CCR remain in sensitive location), does not meet rule requirements (water table separation not met)
4 - Cap & Close w/o enhanced bottom liner	7,100	Environmental risk (CCR remain in sensitive location), does not meet rule requirements (water table separation not met)
5 - Closure by Removal, Barge out of state for disposal	40,600	Environmental risk (marine transport of CCR across Gulf of Mexico), higher cost

- 16.** Please refer to paragraph 9 of the Petition. Please explain what groundwater standards the existing CCR measures violate? What are the estimated costs of the violations?
- A.** The CCR groundwater monitoring program has revealed elevated levels of Arsenic, Boron, Molybdenum and Radium 226/228. Additionally, the program has demonstrated that the bottom of the EAPP frequently does not meet the CCR Rule criteria for a 5-foot separation from the water table. Since the current groundwater monitoring program is still ongoing and the CCR Rule groundwater monitoring provisions are intended to trigger closure and corrective action, there are no fines associated with these results. However, the results stated above have triggered closure and corrective action for this unit.

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- 17.** Please refer to paragraph 9 of the Petition. Please provide an estimate of the avoided 30 year post-closure care and monitoring and associated O&M expenses.
- A.** Post-closure care and monitoring for the cap and close option were estimated in Tampa Electric's Phase I Engineering Study (approved by Order No. PSC-2016-0068-PAA-EI) at approximately \$1.7 million for the minimum required thirty-year period. The closure by removal option avoids not only this O&M expense but also the capital expense of liner and cap installation, estimated at \$3.1 million.

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18. Please refer to paragraph 10 of the Petition. Please provide the estimates of the cost to bring the unit into compliance.

A. To bring the unit into compliance for continued operation, Tampa Electric would need to remove and dispose of the CCR and then rebuild the EAPP to meet the rule's design criteria for new CCR units. This would result in disposal costs of \$25,752,000 (as stated in the response to Data Request No. 9.b.) and construction costs of approximately \$13,600,000.¹ Therefore, bringing the impoundment into compliance for purposes of continued operation would easily exceed the cost of the proposed closure option.

Furthermore, as described in the response to Data Request No. 10.c., the unit is no longer needed for disposal of economizer ash.

¹ Cost of Closure Option 3 cost from response to Data Request No. 15 minus closure expenses for top liner and cap not applicable for continued operation (\$16.9 million - \$3.3 million = \$13.6 million).

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- 19.** Please refer to paragraph 11 of the Petition. Do any of the materials removed have any beneficial reuse? And if so, what is their value?
- A.** Tampa Electric has investigated potential reuse options for the EAPP material. The material has been evaluated by the company's existing ash customers for use in cement or concrete manufacture. These customers have declined to take the material, mainly because of the presence of pyrites, which would have to be removed to make this reuse option feasible. Tampa Electric will continue to evaluate beneficial reuse options and report any reductions in estimated CCR disposal costs to the Commission in future filings if additional options are identified and determined to be feasible.

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- 20.** Please provide the estimated duration of activities associated with the program.
- A.** See the response to Data Request Nos. 4.c., 5.c., and 6.c.

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21. Please provide the estimated annual ECRC and rate impacts that would occur from this closure.

A. See the response to Data Request No. 11.