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April 6, 2016

VIA: ELECTRONIC FILING

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

Re: Fuel and Purchased Power Cost Recovery Clause with Generating Performance Incentive Factor; FPSC Docket No. 160001-EI

Dear Ms. Stauffer:

Attached for filing in the above docket on behalf of Tampa Electric Company is the Prepared Direct Testimony of J. Brent Caldwell and accompanying Exhibit No. ___ (JBC-1), identified as 2015 Hedging Activity True-Up.

Thank you for your assistance in connection with this matter.

Sincerely,

James D. Beasley

JDB/pp
Attachment

cc: All parties of record (w/attachment)

CERTIFICATE OF SERVICE

I HEREBY CERTIFY that a true and correct copy of the foregoing Testimony and Exhibit JBC-1 of Brent Caldwell has been furnished by electronic mail on this 6th day of April 2016 to the following:

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ATTORNEY

BEFORE THE

FLORIDA PUBLIC SERVICE COMMISSION

DOCKET NO. 160001-EI

IN RE: FUEL & PURCHASED POWER COST RECOVERY

AND

CAPACITY COST RECOVERY

2015 HEDGING ACTIVITY TRUE-UP

TESTIMONY AND EXHIBIT

J. BRENT CALDWELL

FILED: APRIL 6, 2016

BEFORE THE FLORIDA PUBLIC SERVICE COMMISSION

PREPARED DIRECT TESTIMONY

OF

J. BRENT CALDWELL

Q. Please state your name, address, occupation and employer.

A. My name is J. Brent Caldwell. My business address is 702 N. Franklin Street, Tampa, Florida 33602. I am employed by Tampa Electric Company ("Tampa Electric" or "company") as Director Fuels Planning & Services.

Q. Please provide a brief outline of your educational background and business experience.

A. I received a Bachelor's degree in Electrical Engineering from Georgia Institute of Technology in 1985 and a Master of Science degree in Electrical Engineering in 1988 from the University of South Florida. I have over 20 years of utility experience with an emphasis in state and federal regulatory matters, fuel procurement and transportation, fuel logistics and cost reporting, and business systems analysis. In October 2010, I assumed responsibility for long term fuel supply planning and

procurement for Tampa Electric's generating stations.

Q. Have you previously testified before the Florida Public Service Commission ("FPSC" or "Commission")?

A. Yes. I have submitted written testimony in the annual fuel docket since 2011. In 2015, I testified in Docket No. 150001-EI on the subject of natural gas hedging. I have also testified before the Commission in Docket No. 120234-EI regarding the company's fuel procurement for the Polk 2-5 Combined Cycle Conversion project.

Q. Please state the purpose of your testimony.

A. The purpose of my testimony is to present, for the Commission's review, information regarding the 2015 results of Tampa Electric's risk management activities, as required by the terms of the stipulation entered into by the parties to Docket No. 011605-EI and approved by the Commission in Order No. PSC-02-1484-FOF-EI.

Q. Do you wish to sponsor an exhibit in support of your testimony?

A. Yes. Exhibit No. ___ (JBC-1), entitled Tampa Electric's

2015 Hedging Activity True-up, was prepared under my direction and supervision. This report explains the company's risk management activities and results for the calendar year 2015.

Q. What is the source of the data you present in your testimony in this proceeding?

A. Unless otherwise indicated, the source of the data is the books and records of Tampa Electric. The books and records are kept in the regular course of business in accordance with generally accepted accounting principles and practices, and provisions of the Uniform System of Accounts as prescribed by this Commission.

Q. What were the results of Tampa Electric's risk management activities in 2015?

A. As outlined in Tampa Electric's 2015 Hedging Activity True-up, filed as an exhibit to this testimony, the company follows a non-speculative risk management strategy to reduce fuel price volatility while maintaining a reliable supply of fuel. In particular, Tampa Electric established a financial hedging program to limit customers' exposure to spikes in the price of

natural gas. Over time, this program has been enhanced as Tampa Electric's gas needs have evolved and grown. All enhancements have been reviewed and approved by the company's Risk Authorization Committee.

The report indicates that Tampa Electric's 2015 hedging activities resulted in a net mark-to-market loss of approximately $39.8 million. These results are due to the market conditions experienced in the past year. Natural gas prices decreased significantly in late 2014 and all of 2015 due to mild winters, abundant natural gas production and nearly full natural gas storage at the end of the summer injection season. The decrease in prices over the hedging time horizon resulted in a mark-to-market loss. However, the hedges were successful in achieving the plan objective of reducing price volatility while maintaining a reliable fuel supply.

Q. Does Tampa Electric implement physical hedges for natural gas?

A. No, Tampa Electric does not hedge natural gas pricing through physical gas supply contracts. Tampa Electric does hedge its natural gas supply through diversification. Tampa Electric also physically hedges

its supply through the use of a variety of sources, delivery methods, inventory locations and contractual terms to enhance the company's supply reliability and flexibility to cost-effectively meet changing operational needs.

Tampa Electric continually pursues new creditworthy counterparties and maintains contracts for gas supplies from various regions and on different pipelines. The company also contracts for pipeline capacity to access non-conventional shale gas production which is less sensitive to interruption by hurricanes. Additionally, Tampa Electric has storage capacity with Bay Gas Storage near Mobile, Alabama. All of these actions enhance the effectiveness of Tampa Electric's gas supply portfolio.

Q. Does Tampa Electric use a hedging information system?

A. Yes, until recently, Tampa Electric has used Sungard's Nucleus Risk Management System ("Nucleus"). In 2013, Tampa Electric initiated a project to replace Nucleus with Allegro. The natural gas portion of the Allegro project replaced Nucleus for all natural gas financial and physical transactions effective November 1, 2014. The wholesale power portion of the Allegro project

replaced the in-house system on October 1, 2015. Allegro supports sound hedging practices with its contract management, separation of duties, credit tracking, transaction limits, deal confirmation, risk exposure analysis and business report generation functions. The Allegro system records all financial natural gas hedging transactions, and the system calculates risk management reports.

Q. Did the company use financial hedges for commodities other than natural gas in 2015?

A. No. Tampa Electric did not use financial hedges for commodities other than natural gas in 2015.

Tampa Electric's generation comprises mostly coal and natural gas. The price of coal has historically been stable compared to the prices of oil and natural gas. In addition, there is not an organized, nor a liquid, market for financial hedging instruments for the high-sulfur Illinois Basin coal that Tampa Electric uses at Big Bend Station, its largest coal-fired generation facility.

Tampa Electric consumes a small amount of oil; however,

its low and erratic usage pattern makes price hedging impractical.

Similarly, Tampa Electric did not use financial hedges for wholesale power transactions because a liquid, published market does not exist for power in Florida.

Q. How does Tampa Electric assure physical supply of other commodities?

A. Tampa Electric assures sufficient physical supply of coal and oil through supply diversification, inventory sufficiency, and delivery flexibility. For coal, the company enters into a portfolio of contracts with differing terms and various suppliers to obtain the types of coal used in its electric generation system. Through a competitive bid process, supplier diversity and transportation flexibility, Tampa Electric is able to obtain competitive prices with valuable quality and transportation flexibility by selecting from a wide range of purchase options.

Q. What is the basis for your request to recover the commodity and transaction costs described above?

A. Tampa Electric requests cost recovery pursuant to the Commission Order No. PSC-02-1484-FOF-EI, in Docket No. 011605-EI:

> Each investor-owned electric utility shall be authorized to charge/credit to the fuel and purchased power cost recovery clause its non-speculative, prudently-incurred commodity costs and gains and losses associated with financial and/or physical hedging transactions for natural gas, residual oil, and purchased power contracts tied to the price of natural gas.

Q. Does this conclude your testimony?

A. Yes, it does.

Tampa Electric
2015 Hedging Activity True-up

Tampa Electric's Risk Management Plan identified the following objectives:

- Qualitative Objectives
  Tampa Electric's primary goal in managing risk associated with fuel or power purchases focuses on minimizing supply risk to ensure reliability of electric service to its customers at a reasonable price. To the extent that price risk can be mitigated without compromising supply reliability or imposing unreasonable costs on its customers, Tampa Electric is committed to executing strategies to accomplish its risk management goal.

- Quantitative Objectives
  Tampa Electric's quantitative objective is to prudently manage its fuel and wholesale energy procurement activities so as to minimize the variance from projected expenditures while taking advantage of cost-saving opportunities that do not result in increased supply risk. Tampa Electric has established a portfolio of fuel and purchased power products with creditworthy counterparties for known volumes and prices.

2015 Risk Management Activities
The company's activities in 2015 that supported the objectives listed above are described in the following section.

- Coal Purchases
  Tampa Electric maintains a portfolio of short-term (also called spot market), medium-term and long-term coal contracts with the goal of minimizing fuel costs and price risk while maintaining reliability of supply. The company procured all of its 2015 coal needs from suppliers with known, established pricing. Thus, the cost for the commodity was known. Tampa Electric continued to monitor deliveries and volume commitments in contracts as the pricing in the coal market changed. Tampa Electric takes advantage of favorable spot market pricing when the coal supply is needed. Coal was used to produce approximately 48 percent of the electricity the company generated in 2015.

- Coal Risk Management Activities
  Tampa Electric's long-established policy of using physical hedges within its portfolio of different term coal supply contracts continued to help protect ratepayers from coal price volatility.

- Natural Gas Purchases

  In 2015, approximately 52 percent of the electricity Tampa Electric generated was produced using natural gas. Tampa Electric's risk management strategy continues to focus on supply reliability and price volatility reduction. The components critical to the success of the natural gas purchasing strategy are as follows:

  - Execution of the natural gas hedge plan approved by the Risk Authorizing Committee;
  - Maintaining liquidity by contracting with numerous qualified counterparties;
  - Time horizon for natural gas hedging activity that allows the company to hedge natural gas prices into the future;
  - Maintaining a minimum and maximum hedge volume percentage by month into the future;
  - Maintaining physical natural gas storage capacity near Mobile Bay, Alabama;
  - Diversifying interstate pipeline receipt points;
  - Expanding access to additional interstate pipelines;
  - Maintaining databases and reports to monitor activity;
  - Maintaining coordination between power plant operations and natural gas scheduling;
  - Maintaining separation of duties and installation of controls consistent with current industry practices.

- Natural Gas Hedging Activities

  Natural gas prices historically have been more volatile than coal prices. Natural gas prices are more volatile due to the significant variations in natural gas consumption by natural gas fired power plants that increase and decrease generation to follow changes in demand. Additionally, hurricane activity and other weather-related production reductions or demand increases have a significant impact on the natural gas market. Therefore, Tampa Electric continued to use financial instruments to hedge the price of a portion of the natural gas consumed in 2015 to reduce customers' exposure to the volatility of natural gas prices. Tampa Electric used financial floating-price-to-fixed-price swaps to hedge natural gas prices. The costs associated with these instruments are embedded in the price of the instruments and are included in the fuel commodity costs reported by the company. The hedges are described in the following table.

Tampa Electric Company
Natural Gas Hedging Activities
January 1, 2015 through December 31, 2015

	Type of Hedge	Mark-to-Market Saving/(Loss)	Hedged Volume (MMBTU)	Consumption (MMBTU)	Percent Hedged	Budget Price	Hedge Price	Settle Price
Jan-15	Swaps	($2,576,655)	[redacted]	4,459,415	[redacted]	[redacted]	[redacted]	$3.189
Feb-15	Swaps	($3,450,145)	[redacted]	4,073,535	[redacted]	[redacted]	[redacted]	$2.866
Mar-15	Swaps	($3,338,845)	[redacted]	6,272,889	[redacted]	[redacted]	[redacted]	$2.894
Apr-15	Swaps	($3,428,830)	[redacted]	5,842,268	[redacted]	[redacted]	[redacted]	$2.590
May-15	Swaps	($4,357,580)	[redacted]	7,263,430	[redacted]	[redacted]	[redacted]	$2.517
Jun-15	Swaps	($3,356,285)	[redacted]	8,097,636	[redacted]	[redacted]	[redacted]	$2.815
Jul-15	Swaps	($3,627,895)	[redacted]	8,092,380	[redacted]	[redacted]	[redacted]	$2.773
Aug-15	Swaps	($2,610,980)	[redacted]	8,045,798	[redacted]	[redacted]	[redacted]	$2.886
Sep-15	Swaps	($3,571,100)	[redacted]	7,453,216	[redacted]	[redacted]	[redacted]	$2.638
Oct-15	Swaps	($3,488,100)	[redacted]	6,996,753	[redacted]	[redacted]	[redacted]	$2.563
Nov-15	Swaps	($3,288,730)	[redacted]	5,773,557	[redacted]	[redacted]	[redacted]	$2.033
Dec-15	Swaps	($2,747,180)	[redacted]	4,259,752	[redacted]	[redacted]	[redacted]	$2.206
Total		**($39,842,325)**	[redacted]	**76,630,630**	[redacted]			

Consistent with Tampa Electric's non-speculative risk management plan objective, Tampa Electric's natural gas hedging plan provided price stability and certainty during 2015. For 2015, the calendar year net position for natural gas hedges was higher than the closing price of natural gas, resulting in a mark-to-market net loss of $39.8 million. Natural gas prices dropped significantly in 2015 due to an abundance of natural gas production and nearly full storage at the end of the summer injection season.

Tampa Electric maintains natural gas storage capacity of 1,500,000 MMBtu in order to enhance its physical reliability of gas supply. The storage provides Tampa Electric with improved access to "intraday" natural gas when an operational need arises, provides improved hurricane coverage, and can be used to cost-effectively manage swings in gas supply needs during extreme weather conditions, weekends, holidays and unplanned power plant outages.

Tampa Electric also continues to improve its physical access to natural gas supply by diversifying its receipt points along the Gulf Coast and other areas when opportunities arise.

In summary, financial hedging activities for natural gas resulted in a net loss of approximately $39.8 million in 2015; more importantly, Tampa Electric was

successful in reducing price uncertainty and maintaining fuel supply reliability for customers for both its physical and financial hedges.

2015 Market Pricing

Tampa Electric provides a comparison of 2015 fuel prices to the market price for the respective commodity in the following section.

- Coal

  Coal is a commodity with a great range of quality characteristics. Market indexes provide a guide to current market pricing but are not specific enough to always accurately demonstrate the market price of a particular coal. Market prices for coal are most accurately determined by competitive bid solicitations that specify the required coal quality or characteristics. With the exception of purchases for reliability reasons, short-term purchases for changing plant operation needs and spot market purchases to take advantage of favorable pricing, Tampa Electric purchases coal at prices determined by competitive bid solicitations; therefore, the company's purchases are at market. A comparison of coal contract prices for 2015 to the average acceptable bid price or index price is provided in the following table. Unless otherwise stated, the prices represent the market at the time each contract was entered into and are not representative of today's market. Any comparison to current market prices overlooks the market conditions that existed at the time the coal was procured.

Tampa Electric
Coal Contract to Market Indicator Price Comparisons

Supplier	Contract ($ / MMBtu)	Market Indicator ($ / MMBtu)	Difference	Market Indicator Source	Note
Knight Hawk Coal LLC	[redacted]	$3.39	[redacted]	Gen 2014-01 (RFP issued 11/5/13)	1
Glencore Ltd.		$3.60		Gen- 2015-01-LS (email issued April 2014)	1
Alliance Coal (Warrior) LLC.		$3.39		Gen 2014-01 (RFP issued 11/5/13)	1
COALSALES LLC		$3.50		Gen 2015-03 (email issued Sept 2014)	1
CMC - Coal Marketing Company LTD.		$2.65		GEN-2016-02 (Phone solicitation May 2015)	1
Valero Marketing and Supply Company		$2.78		Gen 2015-04-PC (phone solicitation for 2015 Petcoke supply Sept 2014)	1,2
Valero Marketing and Supply Company		$2.78		Gen 2015-04-PC (phone solicitation for 2015 Petcoke supply Sept 2014)	1,2
Armstrong Coal Company Inc.		$3.30		Gen 2015-02 (email issued 6/10/14)	1
Trafigura AG Branch Office Stamford		$3.30		Gen 2015-02 (email issued 6/10/14)	1

Tampa Electric
Coal Contract to Market Indicator Price Comparisons

Supplier	Contract ($ / MMBtu)	Market Indicator ($ / MMBtu)	Difference	Market Indicator Source	Note
Trafigura AG Branch Office Stamford	[redacted]	$3.50	[redacted]	Gen 2015-03 (email issued Sept 2014)	1
Trafigura AG Branch Office Stamford		$2.88		Spot Purchase Q1-2, 2015 - Indices analysis/ Coal Daily 10/10/14 - Coaldesk 10/09/14	3
Consol Pennsylvania Coal Company LLC		$3.65		Gen 2014-01 (RFP issued 11/5/13) - Indices analysis	1,7
Consol Pennsylvania Coal Company LLC		$3.65		Gen 2014-01 (RFP issued 11/5/13) - Indices analysis	1,7
Consol Pennsylvania Coal Company LLC		$2.81		Spot Vessel Tons - Indices analysis/ Coal Daily - Coaldesk 4/15/15	4
Consol Pennsylvania Coal Company LLC		$3.12		Spot Rail Tons - Indices analysis/ Coal Daily - Coaldesk 5/1/15	5
White Oak Resources LLC		$2.83		Coaldesk (formally ICAP) / Argus Coal Daily 1/15/15 - 1/30/15	6
White Oak Resources LLC		$2.82		Coaldesk (formally ICAP) / Argus Coal Daily 11/19/14 - 11/21/14	8
Vitol, Inc.		$2.83		Coaldesk (formally ICAP) / Argus Coal Daily 11/19/14 - 11/21/14	8
Peabody Coal Trade LLC		$2.85		Argus Coal Daily, FOB Vessel Now Orleans, Hampton Rds, 3/6/2015	9
Koch Carbon LLC		$1.98		Argus/Pace Petroleum Coke Indexes (June 2015)	10
Koch Carbon LLC		$1.03		Argus/Pace Petroleum Coke Indexes (October 2015)	11

Notes: The contract $/MMBTU refers to the initial price of the contract at its inception. This price could be subject to escalation per the terms of
the contract. All prices are determined on a fully delivered basis. Index values have also been calculated on a delivered basis for comparison purposes.

1. Market Indicator price is the average price submitted of all acceptable coal bids.
2. Market Indicator price is the average price submitted of all acceptable petcoke bids.
3. Coal Pricing based on average of two Indices. Argus 11,500 5.0lb SO_2, ICAP 11,500 5.2 Lb SO_2 (10/10/2014).
4. Coal Pricing based on average of two Indices, Coal Daily Atlantic Basin, US East Coast, FOB Hampton Rd 12,000 <1%, Coaldesk API 2 (4/15/15).
5. Coal Pricing based on average of two Indices. Argus Pittsburg Seam 13,000 3.50lb SO_2, Coaldesk MGA Rail 12,900 4.2 Lb SO_2 (5/1/15).
6. Index based purchase, pricing based on average of two Indices, Coaldesk (formally ICAP) / Argus Coal Daily (1/15/15 - 1/30/15).
7. Indicative pricing based on Argus Coal Daily and ICAP NAPP pricing (11/8/2013).
8. Index based purchase, pricing based on average of two Indices. Argus 11,800 4.5.0lb SO_2, Coaldesk, LLC 11,800 4.5 Lb SO_2 (11/19/14-11/21/14).
9. Index based purchase, pricing based on average of two Indices. FOB Vessel New Orleans and Hampton Rd, (3/6/2015).
10. Index based purchase, pricing based on average of two Indices. Argus and Pace Petroleum Coke Indexes (June 2015).
11. Index based purchase, pricing based on average of two Indices. Argus and Pace Petroleum Coke Indexes (October 2015).

- Natural Gas

  Tampa Electric purchases natural gas at prices that are set by published indexes that reflect the market price. Most of the monthly baseload gas is purchased at a price relative to the New York Mercantile Exchange natural gas futures last day settlement price. Tampa Electric purchases additional baseload gas at monthly index prices published in *Inside FERC, Gas Market Report*. Tampa Electric uses the indexes representing market prices for natural gas on the Gulf Coast that can be transported to Tampa Electric's service area: Henry Hub, Mobile Bay, or Florida Gas Transmission ("FGT") Zone 1, Zone 2 or Zone 3. For daily and short-term natural gas, Tampa Electric typically purchases natural gas based on the FGT index price published in *Gas Daily*. In rare instances, Tampa Electric also purchases small volumes of spot natural gas needed for short durations at fixed prices. Since the price of natural gas Tampa Electric purchases is based upon a published market index, the company's natural gas purchases are at market.

- No. 2 Oil

  Tampa Electric purchases No. 2 oil for combustion turbines at Polk Station and for Big Bend Station. The purchase price is based upon the daily index price published in Platt's *Oilgram* for Gulf Coast Waterborne spot purchases of ultra-low sulfur No. 2 oil. Since the price is determined by the published market index, the price paid by Tampa Electric is at market.