PRUDENCE REVIEW OF COSTS RELATED TO THE FUEL ADJUSTMENT CLAUSE FOR THE ELECTRIC OPERATIONS OF THE EMPIRE DISTRICT ELECTRIC COMPANY

March 1, 2011 through August 31, 2012

MISSOURI PUBLIC SERVICE COMMISSION

STAFF REPORT

FILE NO. EO-2013-0114

Jefferson City, Missouri
February 2013

****<u>Denotes Highly Confidential Information</u>****

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Prudence Review of Costs Report

I. Executive Summary

The Missouri Public Service Commission ("Commission") first authorized a Fuel Adjustment Clause ("FAC") for The Empire District Electric Company ("Empire" or "Company") in the Company's 2008 general rate case (Case No. ER-2008-0093). The Commission subsequently approved continuation of Empire's FAC with modifications in the Company's 2010 and 2011 general rate cases, File Nos. ER-2010-0130 and ER-2011-0004, respectively. In July 2012, Empire requested Commission approval for continuation of its FAC as a part of its 2012 general rate case filing. As of the date of this report, the Commission has not filed a Report and Order addressing Empire's FAC in that case, File No. ER-2012-0345.

Missouri statute Section 386.266.4(4) RSMo (Supp. 2009) and Commission Rule 4 CSR 240-20.090(7) require prudence reviews of an electric utility's FAC no less frequently than at eighteen-month intervals. In this prudence review, Staff analyzed items affecting Empire's fuel and purchased power costs for the sixth, seventh and eighth six-month accumulation periods of Empire's FAC. The sixth accumulation period began March 1, 2011, and ended August 31, 2011. The seventh accumulation period started September 1, 2011, and ended February 29, 2012. The eighth accumulation period began March 1, 2012, and ended August 31, 2012. Thus, the eighteen-month prudency review period that was reviewed and documented in this report is from March 1, 2011, to August 31, 2012.

In evaluating prudence, Staff reviews whether a reasonable person would find both the information the decision-maker relied on and the process the decision-maker employed when making the decision under review was reasonable based on the circumstances at the time the decision was made, i.e., without the benefit of hindsight. The decision actually made is disregarded, and the review is an evaluation of the reasonableness of the information the decision-maker relied on and the decision-making process the decision-maker employed. If either the information relied upon or the decision-making process employed was imprudent, then Staff examines whether the imprudent decision caused any harm to ratepayers. Only if an imprudent decision resulted in harm to ratepayers will Staff recommend a refund.

Staff analyzed a variety of items in examining whether Empire prudently incurred the fuel and purchased power costs associated with its FAC. Based on its review, Staff found no evidence of imprudence by Empire for the items it examined for the period of March 1, 2011, through August 31, 2012.

II. Introduction

A. General Description of Empire's FAC

Empire's Commission-approved FAC in effect during the review period allowed the Company to recover from its ratepayers 95% of its prudently incurred variable fuel and purchased power costs[1] above the base energy cost amount,[2] and to return to ratepayers 95% of any reduction of those costs below the base energy cost amount ("fuel cost recovery amount"). Empire accumulates costs during six-month accumulation periods. Each six-month accumulation period is followed by a six-month recovery period where 95% of the over/under fuel cost recovery amount during the six-month accumulation period relative to the base energy cost amount is recovered from or returned to ratepayers by an increase or decrease in the Cost Adjustment Factor ("CAF"). Adjustments to the CAF are designed to offset that over/under fuel cost recovery amount by the end of the six-month recovery period. Empire's FAC is also designed to true-up the difference between the revenues billed and the revenues authorized for collection during recovery periods with monthly interest applied. Any disallowance the Commission orders as a result of prudence reviews shall include interest at the Company's short-term interest rate[3] and will be accounted for as a true-up item in conjunction with a filing for an adjustment to the FAC.

Tables 1, 2 and 3 summarize the over/under fuel cost recovery amounts for accumulation periods 6 ("AP6"), 7 ("AP7") and 8 ("AP8"), respectively; true-up amounts for

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[1] Variable fuel and purchased power costs are defined on The Empire District Electric Company, P.S.C. Mo. No. 5, Sec. 4, Original Sheet No 17i as the costs for fuel including costs associated with the Company's fuel hedging program, purchased power energy charges, including applicable transmission fees, Southwest Power Pool variable costs, Air Quality Control System consumables, such as anhydrous ammonia, limestone, and powder activated carbon, and emission allowance costs, but not purchased power demand cost as off-set by off-system sales revenues, and emission allowance revenues, and renewable energy credit revenues in the accumulation period.

[2] The base energy cost amount is defined as factor B on: 1) 1st Revised Sheet No 17e for service on and after September 10, 2010, and prior to June 15, 2011, and 2) Original Sheet No 17i for service on and after June 15, 2011.

[3] 4 CSR 240-20.090(7)(A).

recovery periods 4 (“RP4), 5 (“RP5”) and 6 (“RP6”), respectively; and associated interest through August 31, 2012.

Table 1
Fuel Adjustment: AP6 File No. ER-2012-0098
Calendar Period: March 1, 2011 - August 31, 2011
True-Up: RP4 Ending: May 31, 2011

Cost Component	Amount
Over/Under Recovery	$8,254,744
True-Up	$236,340
Interest	$32,090
Total FPA	$8,523,174

Table 2
Fuel Adjustment: AP7 File No. ER-2012-0326
Calendar Period: September 1, 2011 - February 29, 2012
True-Up: RP5 Ending: November 30, 2011

Cost Component	Amount
Over/Under Recovery	($3,608,950)
True-Up	($230,875)
Interest	$29,016
Total FPA	($3,810,809)

Table 3
Fuel Adjustment: AP8 File No. ER-2013-0122
Calendar Period: March 1, 2012 – August 31, 2012
True-Up: RP6 Ending: May 31, 2012

Cost Component	Amount
Over/Under Recovery	($1,914,185)
True-Up	$1,157,848
Interest	($19,415)
Total FPA	($775,752)

The fuel and purchased power adjustment ("FPA") amount for an accumulation period is used to determine the current period CAF for the subsequent recovery period. An accumulation period CAF rate is calculated by dividing the FPA amount by forecasted retail net system input (kWh) for the recovery period, rounded to the nearest $0.00000. The annual CAF rate is the sum of the applicable current and previous period CAF rates. A separate line item appears on each retail customer's bill with the label "Fuel Adjust Charge." That line item represents the charge to that customer to recover from that customer the customer's share of the FPA for the applicable periods plus interest. Table 4 shows Empire's current period CAF rates for AP6, AP7 and AP8.

Table 4			
Current Period CAF Rates ($ per kWh)	CAF for AP6	CAF for AP7	CAF for AP8
Primary and Above	$0.00409	($0.00180)	($0.000038)
Secondary	$0.00417	($0.00183)	($0.00038)

B. Prudence Standard

In *State ex rel. Associated Natural Gas Co. v. Public Service Com'n of State of Mo.*,[4] the Western District Court of Appeals summarized the Commission's prudence standard by quoting the Commission as follows:

> [A] utility's costs are presumed to be prudently incurred… . However, the presumption does not survive "a showing of inefficiency or improvidence."…[W]here some other participant in the proceeding creates a serious doubt as to the prudence of an expenditure, then the applicant has the burden of dispelling these doubts and proving the questioned expenditure to have been prudent… .
>
> …[T]he company's conduct should be judged by asking whether the conduct was reasonable at the time, under all the circumstances, considering that the company had to solve its problem prospectively rather than in reliance on hindsight. In effect, our responsibility is to determine how reasonable

[4] 954 S.W.2d 520, 528-29 (Mo. App. W.D. 1997).

> people would have performed the tasks that confronted the company. (Citations omitted).

The Court did not criticize the Commission's definition of prudence. However, it added that, to disallow a utility's recovery of costs from its ratepayers based on imprudence, the Commission must determine the detrimental impact of that imprudence on the utility's ratepayers.[5]

This is the prudence standard Staff has followed in this prudence review.

The Staff reviewed for prudence the areas identified and discussed below for Empire's sixth, seventh and eighth accumulation periods.

III. Fuel and Purchased Power Costs

For the purpose of Empire's FAC, fuel and purchased power costs are comprised of five major components: fuel and air quality control systems ("AQCS") consumables consumed in Company electric generating plants; purchased energy; off-system sales revenue; emission allowance costs and revenues; and renewable energy credit revenues.

A. Financial Hedges

1. Description

Empire attempts to reduce the risk of operating its natural gas generation plants by hedging against the fluctuations of natural gas prices. Financial hedges can be described as:

> Making an investment to reduce the risk of adverse price movements in an asset. Normally, a hedge consists of taking an offsetting position in a related security, such as a futures contract. An example of a hedge would be if you owned a stock, then sold a futures contract stating that you will sell your stock at a set price, therefore avoiding market fluctuations. Investors use this strategy when they are unsure of what the market will do. A perfect hedge reduces your risk to nothing (except for the cost of the hedge).[6]

Staff has reviewed Empire's activities used to hedge against the fluctuations of natural gas prices. During the review period, the average monthly gas price at Henry Hub was $3.30/MMbtu.[7] While natural gas prices remained relatively low during the review period,

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[5] *Id*. at 529-30.
[6] www.investopedia.com
[7] http://www.eia.gov/naturalgas/monthly/

natural gas future prices are trending upward.[8] So, even with relatively low prices in today's natural gas market, it appears Empire will continue to experience natural gas commodity price risk in the future. Staff understands that Empire only uses NYMEX natural gas futures contracts to mitigate the spot market price of natural gas it uses to generate electricity for its customers.

2. Summary of Cost Implications

Empire employs hedging activities in an attempt to mediate the market swings in natural gas prices. For the prudency review period, Empire experienced a ** __________ ** loss associated with its hedging activities. This equates to a ** ______ ** premium to the actual natural gas commodity cost (excluding transportation expense) being paid by Empire's ratepayers.

3. Empire's Natural Gas Hedging Policy

The treatment of natural gas hedging costs for Empire's FAC is detailed in Empire's Risk Management Policy ("RMP") dated November 12, 2008:

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[8] http://futures.tradingcharts.com/marketquotes/NG.html

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4. Conclusion

Staff has reviewed Empire's hedging activities as it relates to compliance with Empire's RMP. For the review period, Staff did not find that Empire had acted imprudently in the administration of its hedging policies.

5. Documents Reviewed

   a. Empire's responses to Staff Data Requests 1, 2, 46, 48, 50, 51, 52, 56, and 59 through 71.

Staff Expert: Dana Eaves

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B. Natural Gas Expense

1. Description

Staff determined that a total of ** __________ ** of Empire's fuel costs were associated with natural gas used in Empire's generation of electricity. This total includes various miscellaneous charges such as firm transportation service charges.

2. Summary of Cost Implications

If the Commission found Empire was imprudent in its purchasing decisions relating to natural gas, ratepayer harm could result from an increase in rates.

3. Conclusion

Staff found no indication of imprudence associated with Empire's purchases of natural gas for the sixth, seventh, and eighth accumulation periods reviewed in this case.

4. Documents Reviewed

a. Empire's responses to Staff Data Request No. 1 and 56;
b. Empire's General Ledger;
c. Cost adjustment factor calculation ("CAFC"); and
d. Other work papers from this case to determine the amount that Empire paid for natural gas as compared to the total cost of natural gas that Empire claims it incurred during its sixth, seventh, and eighth accumulation periods.

Staff Expert: Matthew J. Barnes

C. Coal and Pet Coke Expense

1. Description

Staff concluded that ** _________ ** of Empire's fuel cost was associated with the coal and pet coke used in the generation of electricity, including various miscellaneous charges such as rail and other ground transportation service charges and other fuel handling expenses. Empire's Riverton generating facility uses a blended coal mix (coal and pet coke) to achieve proper operational parameters.

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2. Summary of Cost Implications

If the Commission found Empire was imprudent in its purchasing decisions relating to coal and pet coke, ratepayer harm could result from an increase in rates.

3. Conclusion

Staff found no indication of imprudence by Empire for its purchase of coal and pet coke for the sixth, seventh, and eighth accumulation periods of Empire's FAC which cover the period March 1, 2011, to August 31, 2012.

4. Documents Reviewed

a. Empire's fixed coal contracts in place for the delivery of coal to each of its generating units;
b. Empire's responses to Staff Data Request No. 56; and
c. Empire's General Ledger, CAFC, and other work papers to determine the amount that Empire paid for coal and pet coke as compared to the total cost of coal and pet coke that Empire claims it incurred during its sixth, seventh, and eighth accumulation periods.

Staff Expert: Matthew J. Barnes

D. Fuel Oil

1. Description

For the three accumulation periods reviewed, March 1, 2011, to August 31, 2012, Staff concluded that ** ________ ** of Empire's cost of fuel was associated with fuel oil used in the generation of electricity. Empire's generating facilities use fuel oil for auxiliary boilers to produce steam, mostly during startups to achieve proper operational parameters.

2. Summary of Cost Implications

If the Commission found Empire was imprudent in its purchasing decisions relating to fuel oil, ratepayer harm could result from an increase in rates.

3. Conclusion

Staff found no indication of imprudence regarding Empire's decisions associated with its fuel oil contracts in place for March 1, 2011, to August 31, 2012, the review period in this case.

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4. Documents Reviewed

   a. Empire's General Ledger;
   b. Empire's responses to Staff Data Request No. 56; and
   c. CAFC and other supporting work papers in this case to determine the amount Empire paid for fuel oil as compared to the total cost of fuel oil Empire claims it incurred during its sixth, seventh, and eighth accumulation periods.

Staff Expert: Matthew J. Barnes

E. Tire Derived Fuel ("TDF")

1. Description

For the three accumulation periods reviewed, March 1, 2011, to August 31, 2012, the Staff concluded that ** _____ ** of the cost of fuel was associated with TDF used in the generation of electricity. The cost of TDF includes various miscellaneous charges such as rail and other ground transportation service charges and other miscellaneous fuel handling expenses.

2. Summary of Cost Implications

The cost of using TDF in this review period was not material and therefore cannot, by itself, affect rates.

3. Conclusion

Staff found no indication of imprudence related to the purchase of and miscellaneous charges for TDF for the sixth, seventh, and eighth accumulation periods of Empire's FAC, which cover March1, 2011, to August 31, 2012.

4. Documents Reviewed

   a. Empire's General Ledger;
   b. Empire's responses to Staff Data Request No. 56; and
   c. CAFC and other supporting work papers in this case to determine the amount Empire paid for TDF as compared to the total cost of TDF Empire claims it incurred during its sixth, seventh, and eighth accumulation periods.

Staff Expert: Matthew J. Barnes

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F. Purchased Power Agreements

1. Description

Empire had three long-term Purchased Power Agreements ("PPAs") in effect for the accumulation periods reviewed. Staff reviewed the following PPAs for prudency:

a. A 20-year Renewable Resource Energy Purchase Agreement between The Empire District Electric Company and Elk River Windfarm, LLC (Empire began receiving power under this agreement in December 2005);
b. A 20-year Renewable Resource Power Purchase Agreement between Cloud County Wind Farm, LLC and The Empire District Electric Company (Empire began receiving power under this agreement in December 2008); and
c. A 30-year Purchased Power Agreement between Plum Point Energy Associates, LLC (coal-fired generating facility) and The Empire District Electric Company (Empire began receiving power under this agreement in September 2010).

2. Summary of Cost Implications

If the Commission found Empire was imprudent in entering into or administering its PPAs or in its purchases of additional power or capacity to meet its energy or demand requirements, ratepayer harm could result from an increase in rates. By entering into the renewable energy wind contracts that exceed the Renewable Energy Resource Standard Requirements[9] Empire is exempted from the renewable energy requirements regarding solar energy.

[9] CCS HCS SCS SBs 1181, 1100, 1262 & 1263 32; 5 701.500 to 701.515.
Section 1. Notwithstanding any other provision of law, any electrical corporation as defined by subdivision 15 of section 386.020, RSMo, which, by January 20, 2009, achieves an amount of eligible renewable energy technology nameplate capacity equal to or greater than fifteen percent of such corporation's total owned fossil-fired generating capacity, shall be exempt thereafter from a requirement to pay any installation subsidy, fee, or rebate to its customers that install their own solar electric energy system and shall be exempt from meeting any mandated solar renewable energy standard requirements. Any disputes or denial of exemptions under this section may be reviewable by the circuit court of Cole County as prescribed by law.

3. Conclusion

Staff found no evidence of imprudence related to Empire's long-term purchased power agreements.

4. Documents Reviewed

a. Empire's Responses to Staff Data Request No. 18, 20, 21, and 57 in File No. EO-2013-0114;
b. Empire's Responses to Staff Data Request No. 253 in File No. ER-2010-0130;
c. Staff Cost of Service Report in File No. ER-2012-0345; and
d. Empire Quarterly Report Form 10-Q September 30, 2012.

Staff Expert: David Roos

G. Purchased Power Energy Costs

1. Description

Staff reviewed both the prices and the amounts Empire paid for purchased power under the PPAs listed in Section H, and spot market purchases. Over the three accumulation periods, from March 1, 2011, to August 31, 2012, Empire's purchased power costs totaled ** __________ **. The two 20-year wind energy PPAs mentioned in the preceding section are "take or pay" contracts, (i.e., Empire has to pay for the energy whether it needs it or not), which is a standard component for wind PPA contracts, and in addition to the electricity, include the associated RECs. These wind PPAs are long-term contracts and must be viewed in light of the long-term needs of the Company and the fact that generation sources can only be added in amounts greater than what is needed in the short-term to minimize the costs and risks over the long-run. The energy from these wind contracts is used by Empire to comply with the requirements for renewable energy found in Commission Rule 4 CSR 240-20.100 Electric Utility Renewable Energy Resource Standard Requirements.

The 30-year Purchased Power Agreement between Plum Point Energy Associates, LLC is not a "take or pay" contract, so Empire pays only for the energy it buys. Plum Point is a coal-fired generating facility, and coal-fired generating facilities have been shown to provide low cost energy over the long term.

In addition to the long-term PPAs discussed above, Empire also purchases hourly energy from the Southwest Power Pool ("SPP") to meet its short term energy needs.

2. Summary of Cost Implications

If the Commission found Empire was imprudent in its long-term PPAs or by purchasing additional energy to meet its demand at a rate above which Empire could generate itself, ratepayer harm could result from an increase in rates.

3. Conclusion

Staff found no evidence Empire acted imprudently with regard to its PPAs and purchases of hourly energy from SPP during the period March 1, 2011, to August 31, 2012.

4. Documents Reviewed:

   a. Empire's responses to Staff Data Request Nos. 1, 2, 4, 10, 11, 12, 16, 18, 21, 24, 25, 40 and 57; and
   b. Purchased power data submitted by Empire in compliance with Rule 4 CSR 240-3.190.

Staff Expert: David Roos

H. Off-System Sales Revenue

1. Description

Off-system sales is a component of Empire's FAC, and is reflected as the "Actual total system off-system sales revenue," or "O," listed on Empire's FAC Original Sheet No. 17i.

For the accumulation periods reviewed, Staff concluded that the level of off-system sales revenues is ** __________ **.

2. Summary of Cost Implications

Empire's pursuit of off-system sales at a profit offsets total fuel and purchased power costs, although serving native load is a higher priority. If the Commission found Empire was imprudent in making off-system sales, ratepayer harm could result from an increase in rates.

3. Conclusion

Staff found no evidence Empire was imprudent with regard to off-system sales.

4. Documents Reviewed
   a. Monthly reports submitted in compliance with Rule 4 CSR 240-3.161(5);
   b. Empire's response to Staff Data Request Nos. 1, 2, and 57; and
   c. Monthly Outage data submitted by Empire in compliance with Rule 4 CSR 240-3.190.

Staff Expert: Dana Eaves

I. SO_2 Allowances

1. Description

There were no SO_2 allowances purchased or sold during the review period.

The U.S sulfur dioxide ("SO_2") emission allowance trading program was established by Title IV of the 1990 Clean Air Act Amendments ("CAAA"). The program is intended to reduce environmental and human health impacts associated with the release of sulfur emissions from coal-fired electric power plants. It requires electric utilities to reduce their SO_2 emissions by about fifty percent (50%) from 1980 levels or purchase allowances to meet this standard.

Under CAAA, power plants are allocated a 30-year stream of tradable allowances, each worth one ton of SO_2. The allocations are based on an average capacity factor from the period 1985 to 1987. Allowances are awarded by the United States Environmental Protection Agency ("EPA") every year and are designated by vintage year. The vintage year denotes the first year the allowances are usable for compliance. Unused allowances can be sold or kept for use in subsequent years.

The EPA's Clean Air Interstate Rule ("CAIR"), issued in 2005, was developed to address the transport of pollutants from upwind to downwind states. States in the eastern half of the country are required, over a six-year compliance period (2009-2015), to participate in a federal program intended to reduce emissions of SO_2 by 57 percent (57%) from 2003 levels and Nitrogen Oxides ("NO_X") by 61 percent (61%) from 2003 levels.

The primary mechanism of the rule is a cap-and-trade program that allows major sources of NO_x and/or SO_2 to trade excess allowances when its emissions of a specific pollutant fall below its cap for that pollutant. EPA issued a model cap-and-trade program for power plants, which could have been used by states as the primary control mechanism under the CAIR. Under the CAIR, starting in 2010, the power plants are required to submit two SO_2 allowances for each ton of SO_2 emitted. This ratio is further tightened in 2015 to 2.86 allowances for each ton of SO_2 emitted.

However, a number of petitions for judicial review of the CAIR were filed in the D.C. Circuit Court, and on July 11, 2008, the D.C. Circuit Court of Appeals vacated the CAIR, but later reversed the vacature. The CAIR was in effect during the prudence review period, and this report assumes that the CAIR will remain in effect in the future.

Empire receives its SO_2 allowances from the EPA on a yearly basis. These allowances have no cost, and, therefore, they are booked at zero cost. Gains from disposition of SO_2 allowances are credited to FERC account 254, with subsequent recognition of income in FERC 411. Since they are recorded at zero cost, there is no subsequent charge to expense, FERC account 509, as they are used. In addition, Empire did not purchase SO_2 allowances during the prudence review period.

Empire's Asbury, Riverton and Iatan I and II coal generating units collectively receive 11,723 SO_2 allowances per year. These units burn a blend of low sulfur Western coal (Powder River Basin), higher sulfur blend coal and/or petroleum coke and sometimes TDF at the Asbury unit. At the time of its last FAC prudence review, Empire found itself in a position where, although Empire receives allowances and continues to carry a surplus of allowances, that surplus had rapidly decreased in the previous five years and was projected to continue to decrease to exhaustion sometime in mid-2012; however, this did not occur, due to the following:

- Plum Point's allowances are now purchased/retired collectively by the Owner,[10] and Empire is billed its portion; and
- Fuel transition from coal to natural gas in September 2012 of Riverton Units 7 and 8.

[10] Owners: Plum Point Energy Associates, Missouri Joint Municipal Electric Utility Commission, The Empire District Electric Co., East Texas Electric Cooperative, and Municipal Energy Agency of Mississippi Operator: NAES Corp.

2. Summary of Cost Implications:

There were no purchases of SO_2 allowances during the review period. If the Commission found Empire was imprudent in its purchases of allowances, ratepayer harm could result from an increase in rates.

3. Conclusion

Based on the documents reviewed, Staff found no indication of imprudence. The variations of the number of allowances used during the accumulation periods are a function of the tons of coal burned during the accumulation periods and the sulfur content of the coal.

4. Documents Reviewed:

a. Empire response to Staff Data Request No. 41, 43, 44, 46, and 48.

Staff Expert: David Roos

J. Renewable Energy Credit Revenue

1. Description

Empire began receiving wind energy from the Elk River Windfarm in 2005. Additionally, Empire contracted to begin receiving wind energy from Cloud County Windfarm, LLC in 2009. As part of these contracts, Empire receives renewable energy credits ("RECs"), which are credits issued under the Center for Resource Solutions' "green-e" program that certify that one megawatt-hour of electricity has been generated by a facility engaged in the production of renewable energy, such as wind, solar or biomass. Empire is certified to sell its RECs through the Center for Resource Solutions. The Stipulation and Agreement in File No. ER-2010-0130 requires Empire to use revenues from selling RECs as an offset to its fuel and purchased power cost in its FAC. From the time period March 1, 2011, through August 31, 2012, Empire used ** ________ ** of REC revenue to offset its fuel and purchased power costs in its FAC.

2. Summary of Cost Implications:

If the Commission found Empire was imprudent by not selling RECs when it had the opportunity to do so, ratepayer harm could result from an increase in rates.

3. Conclusion

Staff did not find any evidence Empire imprudently sold RECs during the time period examined in this review.

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4. Documents Reviewed:
    a. Staff COS Report from Case No. ER-2012-0345;
    b. Empire FAC work papers; and
    c. Empire's response to Staff Data Request No. 1.

Staff Expert: David Roos

IV. Interest

1. Description

Empire is required to calculate the amount of monthly interest based on Empire's short-term debt borrowing rate that is applied monthly to the under-recovered or over-recovered fuel and purchased power costs. The short-term debt borrowing rate is the interest rate for Empire's $150 million revolving credit facility that had a Commercial Paper credit rating of A-3 by Standard and Poor's[11] during the period March 1, 2011, to August 31, 2012. For the period March 1, 2011, to August 31, 2012, Empire's short-term borrowing rate averaged ** _________________ **. The interest amount is component "I" of the CAFC.

2. Summary of Interest Implications

If the Commission found Empire imprudently calculated the monthly interest amounts or imprudently used a short-term debt borrowing rate that did not fairly represent the actual cost of Empire's short-term debt, ratepayer harm could result from a CAF that is too high.

3. Conclusion

Staff found no evidence Empire acted imprudently with regard to the monthly interest rates applied to the under-recovered or over-recovered fuel and purchased power costs.

4. Documents Reviewed
    a. Empire's interest calculation work papers in support of the interest calculation amount on the under-recovered or over-recovered balance; and
    b. Empire's Standard and Poor's credit rating report.

Staff Expert: Matthew J. Barnes

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[11] Standard and Poor's Global Credit Portal® RatingsDirect, Empire District Electric Co., March 23, 2012.

V. Generating Station Dispatch and Outages

1. Description

The purpose of this section is to provide an overview of Empire's available supply-side and demand-side resources and of the process Empire used to determine which generating units are selected to satisfy its load requirements and to present Staff's prudency review of Empire's planned outages during the review period.

Empire has a total of 10.7 megawatts of demand response or load curtailment resources from four customers.[12]

Empire generates most of its energy with its own generating stations and jointly owned generating stations. Empire's principal electric base-load generating station is the coal-fired Asbury station which has 207 megawatts of capacity.

Empire operates and jointly owns with Westar the State Line gas-fired combined cycle unit that provides Empire with 295 megawatts of capacity (60% of the unit). Empire also owns and operates the State Line Unit 1 combustion turbine, which provides it with 94 megawatts of capacity. Empire has four combustion turbine peaking units at the Energy Center station, with an aggregate capacity of 262 megawatts.

The Empire Riverton station, located in Riverton, Kansas, consists of two coal-fired units (Units 7 and 8), that provide an aggregate capacity of 92 megawatts, and four gas-fired combustion turbines (Units 9-12), that have an aggregate capacity of 187 megawatts. The Empire Ozark Beach hydroelectric generating station provides 16 megawatts of capacity at a ** _____ ** capacity factor based upon minimum water conditions. Empire owns a 12% undivided interest in the coal-fired Iatan 1 and Iatan 2 generating stations that are operated by Kansas City Power & Light Company for 187 megawatts of capacity for Empire. Empire owns a 7.25% undivided interest in the coal-fired Plum Point generating station located in Osceola, Arkansas, for 50 megawatts of capacity to Empire. That station is operated by Plum Point Energy Associates.

Empire has long-term "must take or pay" PPAs with the 150 megawatt capacity Elk River wind farm (Empire forecasts a ** _____ ** capacity factor) and the 105 megawatt

[12] This resource is available through The Interruptible Service Rider Program that is intended as a load shedding strategy to be used where system peak demand exceeds available capacity or extreme energy prices are expected.

capacity Meridian Way wind farm (Empire forecasts a ** _____ ** capacity factor). These wind farms historically have provided more energy than the 15 megawatts of forecasted aggregated capacity per the Southwest Power Pool ("SPP") capacity rating guidelines for an intermittent, non-firm resource. Empire is required by the SPP to maintain a 12% capacity margin over its peak forecasted load, and Empire is currently forecasting to exceed that capacity margin.

Empire participates in the SPP Energy Imbalance Service ("EIS") market, which dispatches generation to meet forecasted load and capacity requirements per the SPP and National Energy Reliability Council ("NERC") guidelines. Typical economic dispatch[13] order of Empire's supply-side generation units is Iatan 2 (base load), Iatan 1 (base load), State Line Combined Cycle (intermediate based upon gas prices), Plum Point (base load), Asbury 1 (base load), Riverside 8 (peaking), Riverside 7 (peaking), Riverside 12 (intermediate/peaking), Energy Center 1 and 2 (peaking), Riverside 10 (peaking), Riverside 9 (peaking) and Riverside 11 (peaking).

The economic dispatch order is primarily determined by selecting the units that produce energy at the lowest overall cost. The order changes depending on the relative costs of fuel—generally gas prices versus coal process. Thus, lower or higher natural gas prices may move the gas-fired plants up and down the economic dispatch order.[14]

The actual dispatch order is determined based upon the economic dispatch order and other factors, which include actual plant output (derating,[15] wind farm output, etc.), whether the plant is a base load or a peaking unit, SPP and NERC guidelines, ancillary services requirements, reliability considerations, environmental conditions, plant ramp rates and outages. Ozark Beach output is dependent upon water availability, and the wind farms' production is not subject to dispatch except for times of curtailment based upon transmission congestion.

[13] Based upon current natural gas prices at the time of this report.
[14] For example, spot prices for natural gas below $3/MMBtu will make Riverton 12 and Energy Centers 3 & 4 lower cost energy suppliers than Riverton 7 & 8 and prices below $2.50/MMBtu will make these units more economical that Asbury.
[15] Actions taken by generating station operators to reduce the electrical energy output to a value below the rated nameplate maximum output.

NP

When it is available, Empire's wind energy has proven to be a more economical source of energy than Empire's peaking units. Empire's supply-side generation is achieved by utilizing various fuel sources and typically consists of ** _____ ** coal powered steam units, ** _____ ** combustion gas turbines, ** ____ ** hydroelectric, ** _____ ** wind and ** _____ ** purchased power. As stated previously, Empire has long-term "must take or pay" purchased power contracts with the 150 megawatt capacity Elk River wind farm and the 105 megawatt capacity Meridian Way wind farm. These wind farms typically provide more, but also highly variable, energy than the forecasted aggregate capacity of 15 megawatts per the SPP capacity rating guidelines.[16] The wind farm megawatt output is directly dependent on the wind speed, which varies normally from highs during the night time to lows during the day. This supply profile is troublesome, because it is not in alignment with typical electrical load profiles that peak during the day and are at their lowest at night. For electric utilities with a high percentage of base load "must run" units, this can result in situations of negative energy cost. But on the other hand, during periods of normal load or high load, the wind energy is very price-competitive.

Empire has been successful in integrating this wind energy, due to accurate and timely weather forecasts that are used to predict in advance wind farm output and the availability of gas-fired generation that can be quickly brought on line to compensate for any decrease in wind farm energy production.

Empire is a market participant ("MP") in the SPP and actively participates in the SPP EIS market. This provides Empire an option to meet peak energy demands with the most economical choice of either an Empire peaking unit or purchased power from SPP at Locational Imbalance Prices ("LIP"). SPP requires market participants to have enough capacity to meet their load demands and to maintain a 12% capacity margin over their forecasted peak load.

MPs can take full control of their generating resources by indicating they are self-scheduled or make these resources available for SPP market dispatch. The SPP performs a security constrained economic dispatch of the units that are on line and made available. Empire provides key generating station information that includes current unit performance

[16] SPP guidelines classifies wind power as an intermittent, non-firm resource and therefore Empire forecasts 7 megawatts of capacity for Elk River and 8 megawatts of capacity for Meridian way.

and conditions to the SPP. The SPP uses all the information from the generation suppliers and information of current transmission and distribution congestion to provide dispatch instructions to Empire every five minutes. If Empire generation is more expensive than the LIP, Empire will reduce its dispatched generation, and SPP will deliver the imbalance energy to Empire from lower cost units.

Generating station outages are classified as either scheduled outages, forced outages or partial outages (derating). Both planned outage and maintenance outages are scheduled. A planned outage is scheduled well in advance, being a predetermined duration and occurring only once or twice a year.

A maintenance outage is an outage that could be deferred beyond the end of the next weekend, but which must be taken before the next planned outage. A forced outage is an outage that cannot be deferred beyond the next weekend. A partial outage or derating is a condition that exists that requires the station or unit to be limited to an energy output below its maximum capacity.

Outages taken at any of the generating units have an impact on how much Empire will pay for fuel and purchased power and, if planned during peak load demand times, has the potential result of Empire paying more for fuel and purchased power cost than it would have paid if the outage were planned during forecasted low load times. Periodic planned outages are required to maintain each generating unit in peak operating condition to minimize forced or maintenance outages that could occur during peak load demand or periods of high replacement energy costs, typically in the summer months of June through August.

As an example, the planned outage for the Asbury generating station is scheduled annually for approximately three to four weeks in the spring to coincide with mild or moderate weather conditions and low energy load forecast to minimize the amount of replacement power required. Every fifth year, the planned outage is extended to six weeks to allow boiler and turbine inspections. When the Asbury station is out of service, the Company typically experiences increased purchased power and fuel expenditures associated with the replacement power that flows through its FAC.

Staff examined the planned outages and their timing to determine if they were prudent. An example of an imprudent outage would be scheduling a planned outage of a large base loaded coal unit during a time of peak load. Empire has little or no control over the timing of maintenance or forced outages of the generating stations it owns and operates, which are the result of unforeseen events. The Company has no control over the timing of outages to generating stations it does not operate, and, therefore, these units are excluded from Staff's review for planned outages.

2. Summary of Cost Implications

An imprudent planned outage could result in Empire purchasing expensive spot power or running its more expensive gas units to meet demand. Thus, Empire may purchase more natural gas than necessary and, consequently, have higher fuel costs. Staff notes that Iatan Units 1 and 2 experienced partial outages or deratings (to conserve fuel and keep the units on line) from early July to October 13, 2011, due to the suspension of coal deliveries as a result of the Missouri River flooding.

As a result of these units operating below rated capacity, the amount of energy provided to Empire was reduced; and, therefore, Empire was forced to compensate for the lower Iatan output by obtaining energy from more expensive sources. Kansas City Power & Light Company operates both Iatan units.

3. Conclusion

Staff did not find any evidence of imprudent planned outages by Empire during the time period examined in this review.

4. Documents Reviewed

a. Empire's responses to Staff Data Requests 3, 4, 5, 6, 7, 11, 12, 13, 17, 23 and 48;
b. Monthly Outage data submitted by Empire in compliance with Rule 4 CSR 240-3.190;
c. Empire's 2011 Annual Report;
d. Empire's SEC Form 10-Q submitted for the period ending September 30, 2012;
e. Staff's Report Cost of Service for the Empire rate case, Case No. ER-2012-0345;

f. Direct Testimony of Todd W. Tarter, July 2012, Empire Rate Case No. ER-2012-0345;

g. NERC Generating Availability Data System (GADS) Data Reporting Instructions; January 2011;

h. The Southwest Power Pool website; http://www.spp.org/.

5. Site visits and Meetings.

a. January 22, 2013, meeting with Empire employees Tim Wilson, Shaen Rooney and Jared Wicklund to discuss and expand upon Empire's responses to Staff data requests;

b. January 23, 2013, meeting with Empire employees Kristy Tackett and Rick McCord on SPP Settlements;

c. January 23, 2013, meeting with Jared Wicklund contract reviews; and

d. January 24, 2013, meeting with Empire employees Greg Sweet and David Pham discussing trading, generating station dispatch, interfaces with SPP for both generation, transmission and distribution.

Staff Expert: Randy S. Gross

BEFORE THE PUBLIC SERVICE COMMISSION

OF THE STATE OF MISSOURI

In the Matter of the Third Prudence Review of Costs Subject to the Commission-Approved Fuel Adjustment Clause of The Empire District Electric Company	)))))	File No. EO-2013-0114

AFFIDAVIT OF MATTHEW J. BARNES

STATE OF MISSOURI)
) ss
COUNTY OF COLE)

Matthew J. Barnes, of lawful age, on his oath states: that he has participated in the preparation of the foregoing Staff Report in pages 8-10 & 17; that he has knowledge of the matters set forth in such Report; and that such matters are true to the best of his knowledge and belief.

Matthew J. Barnes
Matthew J. Barnes

Subscribed and sworn to before me this 25th day of February, 2013.

Susan L Sundermeyer
Notary Public

SUSAN L. SUNDERMEYER
Notary Public - Notary Seal
State of Missouri
Commissioned for Callaway County
My Commission Expires: October 03, 2014
Commission Number: 10942086

BEFORE THE PUBLIC SERVICE COMMISSION

OF THE STATE OF MISSOURI

In the Matter of the Third Prudence Review of Costs Subject to the Commission-Approved Fuel Adjustment Clause of The Empire District Electric Company	)))))	File No. EO-2013-0114

AFFIDAVIT OF DANA E EAVES

STATE OF MISSOURI)
) ss
COUNTY OF COLE)

Dana E. Eaves, of lawful age, on his oath states: that he has participated in the preparation of the foregoing Staff Report in pages 5-7 & 13-14; that he has knowledge of the matters set forth in such Report; and that such matters are true to the best of his knowledge and belief.

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Dana E. Eaves
Dana E. Eaves

Subscribed and sworn to before me this 25th day of February, 2013.

SUSAN L. SUNDERMEYER
Notary Public - Notary Seal
State of Missouri
Commissioned for Callaway County
My Commission Expires: October 03, 2014
Commission Number: 10942086

Susan L. Sundermeyer
Notary Public

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AFFIDAVIT OF RANDY S. GROSS

STATE OF MISSOURI)
) **ss**
COUNTY OF COLE)

Randy S. Gross, of lawful age, on his oath states: that he has participated in the preparation of the foregoing Staff Report in pages 18-23; that he has knowledge of the matters set forth in such Report; and that such matters are true to the best of his knowledge and belief.

Randy S. Gross

Subscribed and sworn to before me this 25th day of February, 2013.

SUSAN L. SUNDERMEYER
Notary Public - Notary Seal
State of Missouri
Commissioned for Callaway County
My Commission Expires: October 03, 2014
Commission Number: 10942086

Susan L Sundermeyer
Notary Public

BEFORE THE PUBLIC SERVICE COMMISSION

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AFFIDAVIT OF DAVID C. ROOS

STATE OF MISSOURI)
) **ss**
COUNTY OF COLE)

David C. Roos, of lawful age, on his oath states: that he has participated in the preparation of the foregoing Staff Report in pages 1-5, 11-13, & 14-17; that he has knowledge of the matters set forth in such Report; and that such matters are true to the best of his knowledge and belief.

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David C. Roos

David C. Roos

Subscribed and sworn to before me this 25th day of February, 2013.

SUSAN L. SUNDERMEYER
Notary Public - Notary Seal
State of Missouri
Commissioned for Callaway County
My Commission Expires: October 03, 2014
Commission Number: 10942086

Susan L. Sundermeyer

Notary Public