MISSOURI PUBLIC SERVICE COMMISSION

STAFF REPORT

TENTH PRUDENCE REVIEW OF COSTS RELATED TO THE FUEL ADJUSTMENT CLAUSE FOR THE ELECTRIC OPERATIONS OF UNION ELECTRIC COMPANY, d/b/a AMEREN MISSOURI

FILE NO. EO-2024-0053

October 1, 2021 through May 31, 2023

Jefferson City, Missouri
February 28, 2024

** Denotes Confidential Information **

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I. Executive Summary

Commission Rule 20 CSR 4240-20.090(11)[1] and Missouri Revised Statute Section 386.266.5(4) require that the Commission's Staff ("Staff") conducts prudence reviews of an electric utility's FAC no less frequently than every 18 months. In this tenth prudence review of Ameren Missouri's FAC for the period October 1, 2021, through May 31, 2023, Staff analyzed items affecting Ameren Missouri's total fuel costs, purchased power costs, net emission costs, transmission costs, off-system sales revenues, and interest for the thirty-ninth, fortieth, forty-first, forty-second, and forty-third, four-month accumulation periods[2] of Ameren Missouri's FAC. Staff's previous Ameren Missouri FAC prudence reviews are listed in Table 1:

Table 1

Prudence Review	File Number	Review Period
First	EO-2010-0255	March 1, 2008 through September 30, 2009
Second	EO-2012-0074	October 1, 2009 through May 31, 2011
Third	EO-2013-0407	June 1, 2011 through September 30, 2012
Fourth	EO-2015-0060	October 1, 2012 through May 31, 2014
Fifth	EO-2016-0228	June 1, 2014 through September 30, 2015
Sixth	EO-2018-0067	October 1, 2015 through May 31, 2017
Seventh	EO-2019-0257	June 1, 2017 through September 30, 2018
Eighth	EO-2021-0060	October 1, 2018 through May 31, 2020
Ninth	EO-2022-0236	June 1, 2020 through September 30, 2021

[1] Effective January 30, 2019.
[2] Rate adjustments based on the five (5) four-month accumulation periods during this ninth prudence audit period were the subject of File Nos. ER-2022-0262, ER-2023-0031, ER-2023-0181, ER-2023-0338, and ER-2024-0028.

In evaluating prudence, Staff reviews whether a reasonable person making the same decision would find both the information the decision-maker relied on and the process the decision-maker employed to be reasonable based on the circumstances at the time the decision was made, *i.e.*, without the benefit of hindsight. 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 Ameren Missouri's customers, will Staff recommend a disallowance. However, if an imprudent decision did not result in harm to Ameren Missouri's customers, then Staff may further evaluate the decision-making process and may recommend changes to the company's business practices going forward.

Staff analyzed a variety of items in examining whether Ameren Missouri prudently incurred the fuel and purchased power costs associated with its FAC tariff sheets. Based on its review and the information provided to Staff, Staff identified no evidence of imprudence at this time by Ameren Missouri in the items it examined for the period of October 1, 2021, through May 31, 2023.

Table 2 identifies Ameren Missouri's Commission-approved FAC tariff sheets, which were applicable for service provided by Ameren Missouri to its customers during the period of October 1, 2021, through May 31, 2023, including the tariff sheets applicable to calculation of the Fuel Adjustment Rates for the five (5) accumulation periods covered by this same period:

Table 2

Ameren Missouri's Commission-approved FAC tariff sheets[3]

October 1, 2021 through May 31, 2023

April 1, 2020 through February 27, 2022	February 28, 2022 through July 8, 2023
1st Revised Sheet No. 71	Original Sheet No. 71.16
1st Revised Sheet No. 71.1	Original Sheet No. 71.17
1st Revised Sheet No. 71.2	Original Sheet No. 71.18
1st Revised Sheet No. 71.3	Original Sheet No. 71.19
1st Revised Sheet No. 71.4	Original Sheet No. 71.20
1st Revised Sheet No. 71.5	Original Sheet No. 71.21
1st Revised Sheet No. 71.6	Original Sheet No. 71.22
Original Sheet No. 71.7	Original Sheet No. 71.23

[3] Both sets of these tariff sheets can now be found under the "cancelled tariff sheets" in EFIS, as new tariff sheets were effective July 9, 2023, outside of this Review Period.

April 1, 2020 through February 27, 2022	February 28, 2022 through July 8, 2023
Original Sheet No. 71.8	Original Sheet No. 71.24
Original Sheet No. 71.9	Original Sheet No. 71.25
Original Sheet No. 71.10	Original Sheet No. 71.26
Original Sheet No. 71.11	Original Sheet No. 71.27
Original Sheet No. 71.12	Original Sheet No. 71.28
Original Sheet No. 71.13	Original Sheet No. 71.29
Original Sheet No. 71.14	Original Sheet No. 71.30

II. Introduction

A. Prudence Standard

In making its recommendation to the Commission, Staff must determine if the utility acted imprudently and if this imprudence resulted in harm to the utility's customers. This determination is based upon the information available to the utility, and under the circumstances prevailing, at the time when the decision was made or the action was taken. Staff's responsibility is to determine how a reasonable person would have performed the tasks that confronted a company. The determination is not based on hindsight or information that was not available at the time.

Staff Expert/Witness: Brooke Mastrogiannis

B. General Description of Ameren Missouri's FAC

Ameren Missouri's FAC requires that it accumulate its Actual Net Energy Cost ("ANEC");[4] defined generally as variable fuel, purchased power, transmission and net emissions and insurance recoveries costs less off-system sales revenue, during the four-month accumulation periods ("AP").[5] Each four-month accumulation period is followed by an eight-month recovery period ("RP")[6] during which ninety-five percent (95%) of the over- or under-recovery of ANEC during the previous four-month accumulation period relative to

[4] "Actual Net Energy Cost" (ANEC) is equal to fuel costs (FC) plus costs of purchased power (PP) plus net emissions allowances (E) plus or minus net (R) insurance recoveries minus off-system sales revenue (OSSR), as defined on Ameren Missouri's Original Sheet No. 71.17 through Original Sheet No. 71.21.
[5] Accumulation periods are: February through May, June through September, and October through January.
[6] Recovery periods are: October through May for each immediately preceding February through May accumulation period; February through September for each immediately preceding June through September accumulation period; and June through January for each immediately preceding October through January accumulation period.

the Base Energy Cost ("B") amount[7] is returned to or collected from customers as part of a decrease or an increase of the FAC Fuel and Purchased Power Adjustment ("FPA") per kWh rate, which is the Fuel Adjustment Rate ("FAR") for each accumulation period. Because the total amount charged through the FAR rarely, if ever, will exactly match the required offset, Ameren Missouri's FAC is designed to true-up[8] the difference between the revenues billed and the revenues authorized for collection during recovery periods including interest at Ameren Missouri's short-term interest rate. Any disallowance the Commission orders as a result of a FAC prudence review shall include interest at Ameren Missouri's short-term interest rate and will be accounted for as an adjustment[9] item when calculating the FPA for a future recovery period.

Staff Expert/Witness: Brooke Mastrogiannis

C. Staff Review and Reconciliation of FERC Accounts

Staff has reviewed all Federal Energy Regulatory Commission ("FERC") accounts related to Ameren Missouri's FAC for this review period. FERC accounts subject for this FAC review are: 411.8 Gains from Disposition of Allowances, 411.9 Losses from Disposition of Allowances, 447 Sales for Resale, 456 Other Electric Revenues,[10] 501 Fuel, 502 Consumables- Air Quality Control System ("AQCS"), 509 Allowances, 518 Nuclear Fuel Expense, 547 Fuel, 555 Purchased Power, and 565 Transmission by Others.

Staff created independent work papers to reconcile the General Ledger, the Monthly Reports, and the FAR Reports, which are based on three separate sources provided by Ameren Missouri. These work papers were created to review and reconcile the FERC Accounts listed in Table 3 and included in the calculation of the components of the ANEC presented in Table 4.

Ameren Missouri provides its monthly General Ledger to the Commission as ongoing surveillance data, which is a summary of all accounting transactions for the expenses and

[7] "Net Base Energy Cost" (B) as defined on Ameren Missouri's Original Sheet No. 71.22.
[8] True-up of FAC is defined on Ameren Missouri's Original Sheet No. 71.25.
[9] See line item 4.3 on Ameren Missouri's Sheet No. 71.31.
[10] Effective February 28, 2022, per Case No. ER-2021-0240, 1.84% of allowable transmission revenues residing in FERC Account 456.1 are includable in the FAC. For the Review Period prior to February 28, 2022, the rate was 1.44%.

revenues encompassed in the ANEC in Table 4. Staff sorted the General Ledger by each of these FERC accounts listed in Table 3:

Table 3

Account Name	FERC Account Number
Fuel[11]	501
Consumables-AQCS	502
Nuclear Fuel	518
Fuel/Natural Gas	547
Short-Term Energy Purchased Power Costs	555
Long-Term Purchased Power Contracts	555
Transmission Expense	565
Net Emission Allowances	411 and 509
Transmission Revenue	456.1
Net Insurance Recoveries	456
Off System Sales Revenue	447

The transactions and totals for each FERC account by month and year from the General Ledger were reviewed for the Review Period. In addition to verifying that the total dollar amounts from these two accounting sources are equal, Staff reviewed expense and revenue transactions to identify any unusual dollar amounts, improperly categorized amounts, or categories of cost or revenue which are not allowed in the FAC's definition of ANEC.

Staff Expert/Witness: Brooke Mastrogiannis

D. Staff Regulatory Accounting Summary

Staff analyzed the ANEC based on the transactions in the FERC accounts related to the calculation of the ANEC from three different sources: the General Ledger, the Monthly Reports, and the FAR work papers provided by Ameren Missouri. Staff analyzed, reviewed, and was able to reconcile these three individual sources to each other based on the individual line items categorized by Activity Code for the FERC accounts that captured Fuel Costs, Costs of

[11] Uniform System of Accounts, Account 501.000; this account shall include the cost of fuel used in the production of steam for the generation of electricity.

Purchased Power (including Transmission Costs and Revenues), Net Emissions Allowance Costs, Net Insurance Recoveries, and Off-System Sales Revenues for the ANEC.

Staff Expert/Witness: Brooke Mastrogiannis

E. Participation with Regional Transmission Organizations

As part of this review, Staff reviewed Ameren Missouri's participation in Regional Transmission Organizations ("RTOs"). Ameren Missouri participates directly with three RTOs, Midcontinent Independent System Operator ("MISO"),[12] Pennsylvania, New Jersey, and Maryland ("PJM") Interconnection,[13] and Southwest Power Pool[14] ("SPP"). Staff reviewed a wide variety of Ameren Missouri's practices and procedures related to the RTOs, specifically MISO. Ameren Missouri directly participates in MISO's Day-Ahead Market and Real-Time Energy Market. At a high level, these markets allow Ameren Missouri to offer-in and - if cleared in the market - to sell the energy it generates to MISO. In turn, Ameren Missouri must purchase back from MISO the energy needed to serve its native load. The practices and procedures related to these transactions are highly technical and complex. Ameren Missouri developed specialized front and back office[15] practices and procedures to manage the large amounts of data associated with its market participation. Ameren Missouri utilizes specialized software[16] to manage and analyze key components of the bid-to-settlement trading cycle and MISO activities for the Day-Ahead Market and Real-Time Energy Market. These processes and software include robust capabilities for settling and disputing a wide range of market transactions. Ameren Missouri uses this software to verify and shadow complex RTO charge codes and invoices, and customize contract settlements.

[12] MISO is a regional transmission organization that provides electric power across all or parts of 15 U.S. states and the Canadian province of Manitoba. MISO assures consumers have an unbiased regional grid management and open access to the transmission facilities under MISO's functional supervision.
[13] PJM Interconnection (PJM) is a regional transmission organization that coordinates the movement of wholesale electricity in all or parts of Delaware, Illinois, Indiana, Kentucky, Maryland, Michigan, New Jersey, North Carolina, Ohio, Pennsylvania, Tennessee, Virginia, West Virginia, and the District of Columbia.
[14] Southwest Power Pool is a regional transmission organization that manages the electric grid and wholesale power market for the central United States, with transmission lines spanning 14 states.
[15] Front Office**:** A blanket term that refers to the portion of a company that deals with outside entities in its daily functions of buying, selling and trading of energy. Back Office: A blanket term that refers to the portion of a company made up of administration, accounting and settlement functions in support of the selling, buying and trading of energy.
[16] Power Cost, Inc. (PCI), PCI GenManager®.

For this review, Staff sent several Data Requests to Ameren Missouri and requested, in detail, fuel procurement processes, MISO settlements/accounting practices and a variety of issues related to Ameren Missouri's FAC. As a result of Staff's understanding and experience with these practices and processes, Staff is reasonably assured that Ameren Missouri is managing its participation in these markets effectively and maintains appropriate procedures and processes to account for the results of such participation.

1. Documents Reviewed

a. Ameren Missouri's responses to Staff Data Request Nos. 0018, 0034, 0036, 0037, 0043 and 0048.

Staff Expert/Witness: Cynthia M. Tandy

III. ACTUAL NET ENERGY COSTS

The Ameren Missouri FAC definition of Actual Net Energy Costs includes three components of costs – fuel costs ("FC"), costs of purchased power ("PP"), and net emissions allowance costs ("E"), and two components of revenue – net insurance recoveries ("R")[17] and off-system sales revenues ("OSSR"). Table 4 is a breakdown of Ameren Missouri's fuel costs, costs of purchased power, net emissions allowance costs, and off-system sales revenues for the period of October 1, 2021, through May 31, 2023:

continued on next page

[17] According to the tariff, component R for net insurance recoveries could be an addition (cost) or subtraction (revenue) to the ANEC computation. Factor R includes net insurance recoveries and settlement proceeds related to costs/revenues included in the FAC, as well as the insurance premiums paid to maintain that insurance.

Table 4 – Confidential

** [redacted] **

A. Risk Management

1. Description

Ameren Missouri's risk management strategies encompass a wide range of activities. The *Ameren Missouri Commodity Risk Management Policy* ("CRMP")[18] identifies the following strategies Ameren Missouri will pursue to manage commodities' risks:[19]

Strategy Overview
Energy and Transmission Hedging
Asset Optimization
Capacity Transactions
Congestion Hedging

[18] Ameren Missouri Commodity Risk Management Policy, Versions: 2021.2, August 26, 2021; 2022.1, January 1, 2022; 2022.2, July 28, 2022; 2022.3, December 7, 2022; 2023.1, January 1, 2023; 2023.2, March 30, 2023, and 2023.3, July 5, 2023.
[19] Sections 2.1 through 2.16 in its CRMP.

Energy Arbitrage
Natural Gas LDC Supply and & Transportation Hedging
Natural Gas Generation Supply & Transportation Strategies
Coal Buy for Burn Procurement
Rail Fuel Surcharge Hedging
Fuel Oil Purchases
Nuclear Fuel Cycle Hedging
Renewable Energy Credits (RECs)
Emissions Hedging
Carbon Compliance Hedging
Portfolio Structure

Ameren Missouri's risk management strategies are directly controlled by the guidelines contained in its CRMP. A policy overview is given in the CRMP as follows:

> **1.1 Background, Purpose, and Scope of Policy**
>
> Ameren Corporation ("Ameren") has charged functional units within Union Electric Company d/b/a Ameren Missouri ("Ameren Missouri") with the responsibility of managing all of Ameren's generation, load, and other obligations in a manner consistent with the policy set forth herein. Ameren Missouri's Energy Management & Trading functional unit ("EM&T") manages generation assets, load and other obligations, and natural gas supply by engaging in wholesale energy, capacity, electricity, FTR/ARR, transmission, and natural gas transactions. EM&T also manages select power plant fuel supplies (e.g. coal, fuel oil), emissions requirements, and Ameren Missouri's Nuclear Fuel Cycle requirements through the purchase and sale of uranium, conversion services, enrichment services, and fabrication services.
>
> It is the intent of management that this Risk Management Policy ("this Policy") governs all financial risk taking and risk management/mitigation activities associated with the above activities. In order to fulfill the responsibilities described above in a financially disciplined manner, EM&T and NFCM may enter into transactions that are defined in this Policy as approved by the Risk Management Steering Committee ("RMSC"). The framework and responsibilities of the RMSC are discussed in Section 9.1 of the Ameren Corporation Commodity & Financial Markets Risk Management Policy.

2. Summary of Cost Implications

Ameren Missouri employs commodity risk management strategies in an attempt to mitigate the market volatility risk of fuel, energy, capacity, emissions, and transmission congestion prices. A discussion related to hedging strategy employed for various components

is contained in the sections of this report: Natural Gas Costs, Coal and Rail Transportation Costs, Fuel Oil Costs, Nuclear Fuel Costs, and Transmission Costs. If Ameren Missouri did not manage its risk management strategies prudently, it could result in an increase in fuel costs that are collected from customers through the Ameren Missouri FAC charge.

3. Conclusion

Staff reviews Ameren Missouri's CRMP for reasonableness and its adherence to the CRMP. As part of this review, Staff reviews a wide array of market conditions, which include: historic and future fuel commodity pricing, energy market forecasts,[20] US and global economic trends, and proposed environmental regulations. Staff did not find any evidence that Ameren Missouri acted imprudently in the administration of its risk management strategies during the prudence review period.

4. Documents Reviewed

a. Ameren Missouri's responses to Staff Data Request No. 0013; and

b. Market research: https://www.eia.gov/ and https://www.epa.gov/.

Staff Expert/Witness: Amanda C. Conner

B. Disaggregation of Commodity Fuel Cost

Table 5 represents all of the individual fuel components from each FERC Account as accounted for by Ameren Missouri for its FAC.[21]

Table 5 – Confidential

**

[redacted]

[20] https://www.eia.gov/outlooks/steo/.
[21] Information provided in Ameren Missouri's monthly FAC reports, tab 5D, as filed with the Commission.

**

C. FERC Acct 501 - Fuel

1. Description

Ameren Missouri is required to account for fuel costs used in the production of steam for the generation of electricity in FERC Account 501. For the review period, ** ** or ** ** of Ameren Missouri's total fuel costs are booked to FERC Account 501; *see* Table 5 for disaggregation of this account. Ameren Missouri generates the majority of its electricity with its coal-fired generation facilities, and, therefore, the majority of its fuel costs are related to cost of coal and the cost of transportation of coal to these facilities. The total amount of coal commodity costs is ** **; ** with ** ** directly for physical coal commodity, ** ** directly for the transportation/freight of the coal commodity, and ** ** directly for railcar expenses. During the review period Ameren Missouri burned ** ** tons of coal which translates to an average of ** ** per ton including transportation/freight and other rail charges. Staff reviews

public sources in an effort to determine the reasonableness of prices paid by Ameren Missouri for its coal supply. Staff monitors U.S. Energy Information Administration ("EIA") and future market prices, supply forecasts, and other market trends.

Also, contained within FERC Account 501 and reviewed during this review are fly ash[22] revenues of ** [redacted] **, fuel oil costs of ** [redacted] **, and natural gas costs of ** [redacted] **. These costs are included in FERC Account 501 as they are used as support fuels (startup and/or burn stabilization) in the production of steam with the coal fired generation facilities.

Ameren maintains ** [redacted] ** short and long-term coal purchase contracts, ** [redacted] ** rail transportation contracts, ** [redacted] ** rail lease contracts, and ** [redacted] ** rail storage contracts. The counterparties for the contracts are shown below in Table 6:

Table 6 - Confidential

**

[redacted]

**

Staff reviewed the six revised versions of Ameren Missouri's CRMP that were in effect during the review period. Ameren Missouri's coal procurement strategy is provided in the

[22] In Case No. ER-2019-0335 ash disposal costs and revenues were approved to be included in the FAC, effective as of April 1, 2020.

March 30, 2023, CRMP, pages 13 and 14, as part of Ameren Missouri's response to Staff Data Request No. 0013:

** [redacted] **

Staff has reviewed the various components of Ameren Missouri's coal supply strategy, and concludes that Ameren Missouri has complied with its stated parameters.

Ameren Missouri utilizes a rail fuel surcharge hedge program in an effort to minimize price volatility associated with rail transportation of its coal supply. Rail carriers require shipping customers to agree to price escalators (surcharge) as part of the coal transportation contracts whenever the price of fuel exceeds an agreed to price level. Ameren Missouri's rail fuel surcharge hedge program is summarized in the Ameren Missouri CRMP, page 14:

** [redacted]

[redacted] **

Staff has reviewed Ameren Missouri's rail fuel surcharge strategy and determined that Ameren Missouri has complied with these stated parameters.

2. Summary of Cost Implications

If Ameren Missouri was imprudent in its purchasing decisions relating to the purchase of coal, transportation, and the handling of the rail fuel surcharge hedging policy, customer harm could result from such imprudence through an increase in Ameren Missouri customer FAC charges.

3. Conclusion

Staff identified no imprudence by Ameren Missouri in its purchase of coal, transportation, or other components contained in FERC Account 501 for the prudence review period.

4. Documents Reviewed

a. Ameren Missouri's response to Staff Data Request Nos. 0002, 0005, 0010, 0013, 0014, 0015, 0016, 0019, 0020, 0025, 0031, 0032, 0039, 0056, 0059, and 0066;

b. Market research: https://www.eia.gov/ and http://www.cmegroup.com/;

c. Ameren Missouri's FAC Monthly Reports during the review period;

d. Ameren Missouri's General Ledger during the review period; and

e. Ameren Missouri's work papers in File Nos. ER-2022-0262, ER-2023-0031, ER-2023-0181, ER-2023-0338, and ER-2024-0028.

Staff Expert/Witness: Amanda C. Conner

D. FERC Account 502 – AQCS

1. Description

On March 18, 2020, the Commission issued its *Order Approving Stipulation and Agreements* in Case No. ER-2019-0335, which contained Exhibit C, that included the updated base factor calculation. Within the updated base factor the Company included costs associated with FERC Account 502 for fuel carbon and limestone. Therefore, beginning April 1, 2020, FERC Account 502 costs were included for recovery in the FAC.

There were two tariff sheets that were in effect during this Review Period, 1st Revised Sheet No. 71.1 (Applicable to Service Provided April 1, 2020, through February 27, 2022), and Original Sheet No. 71.17 (Applicable to Service Provided February 28, 2022, through July 8, 2023). Ameren Missouri's MO P.S.C. Schedule No. 6 Original Sheet No. 71.17 defines FERC Account 502 as:

> The following costs and revenues reflected in FERC Account 502 for: consumable costs related to Air Quality Control System ("AQCS") operation, such as urea, limestone, and powder activated carbon.

Ameren Missouri uses FERC Account 502 costs described above as part of air quality control operations at the coal fired plants. The cost for limestone is ** [redacted] **, activated carbon is ** [redacted] ** and urea is ** [redacted] **. The Company uses Fuelworx accounting system, which computes the weighted average purchase and consumption amounts. Staff reviewed a sample of invoices for the November 2022 costs, which are then used as part of the weighted average computations.

2. Summary of Cost Implications

If Ameren Missouri was imprudent in purchasing carbon and limestone used as part of air quality control operations, customer harm could result from that imprudence through an increase in customer FAC charges.

3. Conclusion

Staff observed no indication of imprudence related to the purchase of carbon and limestone used as part of air quality control operations for the prudence review period.

4. Documents Reviewed

a. Ameren Missouri's response to Staff Data Request Nos. 0005, 0056, 0057, and 0059;

b. Ameren Missouri's FAC Monthly Reports during the review period;

c. Ameren Missouri's General Ledger during the review period; and

d. Ameren Missouri's work papers in File Nos. ER-2022-0262, ER-2023-0031, ER-2023-0181, ER-2023-0338, and ER-2024-0028.

Staff Expert/Witness: Amanda C. Conner

E. FERC Account 518 - Nuclear Fuel

1. Description

For the prudency review period, ** [redacted] **, or ** [redacted] **, of Ameren Missouri's cost of fuel is associated with nuclear fuel used in the generation of electricity at Ameren Missouri's Callaway facility. The nuclear fuel cycle requires several steps before the fuel is used in the generation of electricity. For the review period, Ameren Missouri generated from its Callaway facility ** [redacted] ** MWhs with an average cost of ** [redacted] ** per MWh for nuclear fuel.

Ameren Missouri had ** [redacted] ** nuclear fuel contracts, ** [redacted] ** conversion contracts, ** [redacted] ** enrichment contracts, and ** [redacted] ** fabrication contract that were in place during the review period. It should be noted that not all contracts had deliveries during the review period. Each contract provides terms and conditions for primary delivery locations and price. The nuclear fuel contracts in effect are either: fixed price, based on spot and/or long term market indices, base price with escalation factor, or a combination of these pricing scenarios. The counterparties and contract pricing terms are shown in Table 7 below:

continued on next page

Table 7 - Confidential

** [redacted] **

Ameren Missouri's response to Staff Data Request No. 0013 describes in detail Ameren Missouri's policies for the procurement of nuclear fuel. Staff reviewed the March 30, 2023, CRMP, which states on page 14 and 15:

** [redacted]

[redacted]

**

Ameren Missouri's CRMP is the controlling document for the acquisition and control of nuclear fuel for the Callaway facility. Staff has reviewed the various components of Ameren Missouri's nuclear fuel permitted pricing structures and determined that Ameren Missouri has complied with these stated parameters.

2. Summary of Cost Implications

If Ameren Missouri was imprudent in purchasing nuclear fuel, conversions, fabrication and storage, customer harm could result from that imprudence through an increase in customer FAC charges.

3. Conclusion

Staff observed no indication of imprudence related to the purchase of nuclear fuel, conversions, fabrication and storage for the prudence review period.

4. Documents Reviewed

a. Ameren Missouri's response to Staff Data Request Nos. 0002, 0011, 0013, 0017, 0019, 0020, 0025, 0032, and 0059;

b. Ameren Missouri's FAC Monthly Reports during the review period;

c. Ameren Missouri's General Ledger during the review period; and

d. Ameren Missouri's work papers in File Nos. ER-2022-0262, ER-2023-0031, ER-2023-0181, ER-2023-0338, and ER-2024-0028.

Staff Expert/Witness: Amanda C. Conner

F. FERC Account 547 - Fuel

1. Description

For the review period, ** [redacted] **, or ** [redacted] **, of Ameren Missouri's total fuel costs is associated with FERC Account 547. Ameren Missouri accounts for the majority of its natural gas and natural gas transportation capacity costs used in its generation facilities in FERC Account 547 because its natural gas generation fleet is made up of non-steam generation facilities. The total natural gas cost recorded in FERC Account 547 is comprised of several components. The natural gas commodity is ** [redacted] **, ** [redacted] ** for the capacity reservation fees, and ** [redacted] ** for the transportation of the natural gas

commodity. Other expenses related to Ameren Missouri's natural gas generation facilities are natural gas storage of ** [redacted] **, natural gas hedging (gains) of ** [redacted] **, and losses on gas sales of ** [redacted] **.

Ameren Missouri's natural gas generation facilities are combustion turbine generators ("CTGs"). Ameren Missouri's CTGs are used as peaking units which means they are used generally when demand for electricity increases to a point that baseload units cannot meet that demand. CTGs by nature are less efficient than baseload units in Ameren Missouri's generation fleet, and, therefore, are more expensive to operate. During the review period, Ameren Missouri's CTGs generated ** [redacted] ** MWhs which translates to an average of ** [redacted] ** per MWh for natural gas to fuel its CTG units.

MISO dispatches these units when needed in the market. However, Ameren Missouri must still ensure these CTGs have adequate fuel to operate and are maintained properly and reliably for when they are called upon by MISO.

The following table identifies Ameren Missouri's peaking generating units that burn natural gas and oil:

Table 8

Generating Unit	Primary Fuel
Audrain 1,2,3,4,5,6,7,and 8	Natural Gas
Fairground	Oil
Goose Creek 1,2,3,4,5,and 6	Natural Gas
Kinmundy 1 and 2	Natural Gas
Meramec 1	Natural Gas
Meramec 2	Natural Gas
Mexico	Oil
Moberly	Oil
Moreau	Oil
Peno Creek 1,2,3,and 4	Natural Gas
Pinckneyville 1,2,3,4,5,6,7, and 8	Natural Gas
Raccoon Crk 1,2,3, and 4	Natural Gas
Venice 2,3,4, and 5	Natural Gas

Staff reviewed the Ameren Missouri CRMP(s) that was in effect during the review period. Ameren Missouri's natural gas procurement strategy is summarized in the March 30, 2023, CRMP, page 13, as part of Data Request No. 0013:

**

[redacted] **

Ameren Missouri employs hedging activities in an attempt to mitigate the impacts of market volatility in natural gas prices and aid in providing a reliable fuel commodity.

Financial hedges can be described as:

> An investment that is made with the intention of reducing the risk of adverse price movements in an asset. Normally, a hedge consists of taking an offsetting position in a related security. Hedging is the process of offsetting the risk of price movements in the physical market by locking in a price for the same commodity in the futures market. A perfect hedge is one that eliminates all risk in a position or portfolio.[23]

For the prudency review period, ** [redacted] **, or ** [redacted] **, of Ameren Missouri's total fuel costs, cost of purchased power, transmission costs, and net emission costs is associated with the fuel oil used in generating electricity. The cost of fuel oil includes various other miscellaneous charges such as rail and/or ground transportation service charges and other various fuel handling expenses.

Ameren Missouri's response to Staff Data Request No. 0013 describes in detail Ameren Missouri's policies for the procurement of fuel oil. Staff reviewed the March 30, 2023, CRMP, which states on page 14:

** [redacted] **

Staff has reviewed the various components of Ameren Missouri's fuel oil procurement strategy, and determined that Ameren Missouri has complied with these stated parameters.

[23] www.investopedia.com.

Ameren Missouri includes fuel oil costs in FERC Accounts 501 and 547 as fuel oil is used as a support fuel[24] in Ameren Missouri's coal or natural gas generation facilities.

2. Summary of Cost Implications

If Staff determined that Ameren Missouri was imprudent in its purchasing decisions relating to natural gas commodity, reservation, transportation, storage, hedging, sales, and oil costs customer harm could result from that imprudence by an increase in FAC charges.

3. Conclusion

Staff observed no indication of imprudence associated with Ameren Missouri's natural gas commodity purchases for the prudence review period.

4. Documents Reviewed

a. Ameren Missouri's response to Staff Data Request Nos. 0002, 0005, 0009, 0013, 0019, 0020, 0025, 0032, 0054, 0056, and 0059;

b. Market research: https://www.eia.gov/ and http://www.cmegroup.com/;

c. Ameren Missouri's FAC Monthly Reports during the review period;

d. Ameren Missouri's General Ledger during the review period; and

e. Ameren Missouri's work papers in File Nos. ER-2022-0262, ER-2023-0031, ER-2023-0181, ER-2023-0338, and ER-2024-0028.

Staff Expert/Witness: Amanda C. Conner

G. FERC Account 555 - Purchased Power – Long Term Contracts and Short Term Energy

1. Description

During the Review Period of October 1, 2021, through May 31, 2023, ** [redacted] ** was attributed to MISO and Non-MISO purchased power costs[25]. The total purchased power costs related to long-term contracts and other Non-RTO costs for this review period are ** [redacted] ** which is comprised of the Pioneer Prairie Wind contract for ** [redacted] ** and the remaining balance of ** [redacted] ** to other boundary line

[24] Fuel oil that is used as a start-up and/or burn stabilization fuel.
[25] These purchased power costs are broken down as MISO and Non-MISO. The Non-MISO costs are broken down between RTO and Non-RTO in the Company's monthly reports, tab 5(D). RTO costs are SPP and PJM day-ahead markets, and non-RTO costs are for the Pioneer Prairie Wind PPA contract and other boundary line agreements.

agreements. Ameren Missouri also purchases short-term energy in the MISO and PJM day-ahead markets (hourly) and through bilateral agreements.[26] For this review period, the total amount attributable to short term purchased power expense in the MISO and PJM markets is ** [redacted] **. Typically, Ameren Missouri relies on these short-term energy sources to help meet its load during forced, planned, or derating[27] generation plant outages and when the market price for that short-term energy is both below the marginal cost of providing that energy from Ameren Missouri's generating units and below the cost of longer-term capacity purchases.

In addition to review of purchased power agreements, Staff requested the supporting documentation for the transactions found in the General Ledger for FERC Account 555 during this review period of October 1, 2021, through May 31, 2023. Invoices were requested and analyzed for transactions in this account with the following descriptions; ** [redacted] ** Staff was able to reconcile these invoices to the transactions located in FERC Account 555 Purchased Power.

Staff reviewed the Renewable Resource Power Purchase Agreement by and between Pioneer Prairie Wind Farm I, LLC, and Ameren Missouri ("Pioneer Prairie PPA").

The Pioneer Prairie PPA is a ** [redacted] ** that expires ** [redacted] **. It provides a capacity of ** [redacted] ** MW and estimated annual energy purchases of ** [redacted] ** MWhs. Its price per MWh is ** [redacted] **, of which ** [redacted] ** per MWh is for the purchase of energy which flows through the FAC and ** [redacted] ** per MWh is for the purchase of renewable energy attributes which may be used for compliance with 20 CSR 4240-20.100 Electric Utility Renewable Energy Standard Requirements and do not flow through the FAC. Total costs of electricity under the Pioneer Prairie PPA were ** [redacted] ** with revenue associated with sales of ** [redacted] ** which resulted in a net loss of ** [redacted] ** for the Review Period.

In Data Request No. 0006, Staff requested Ameren Missouri to provide a copy of all purchased power requests for proposals ("RFPs") sent by Ameren Missouri and

[26] Boundary line and bilateral agreements are in place to serve customers in rural areas when disruptions to certain areas of the distribution system occur and Ameren requires the load for emergency and other operational needs.
[27] *See* Section IX. Plant Outages section of this Prudency Review Report for definitions of forced, planned and derating outages.

executed purchased power contracts that were in effect during any part of the review period of October 1, 2021, through May 31, 2023. In Ameren Missouri's response to this Data Request, it stated, "Ameren Missouri did not issue any purchased power RFP's which had a proposed delivery period within the specified time period." However, Ameren Missouri's response to this same Data Request referred to a copy of the Pioneer Prairie Wind purchased power agreement that was initially referenced in response to Staff Data Request No. 0017 in File No. EO-2012-0074, which is still in effect.

When Ameren Missouri was asked[28] to provide a copy of all purchased power contracts that were in effect during the period October 1, 2021, through May 31, 2023, Mark J. Peters, Ameren Missouri's Manager, Market Analysis, responded as follows:

> Ameren Missouri is a party to large number of master enabling agreements, including various interconnection agreements and EEI Master Power Purchase and Sale Agreements. These agreements provide for the general terms and conditions under which Ameren Missouri and the counterparty may transact at points in the future. These agreements do not, in and of themselves, obligate the counterparty to sell power and energy to Ameren Missouri, nor do they specify the pricing, term and any special conditions of specific transactions. Transactions other than hourly transactions are normally confirmed with either a written confirmation or electronically. These confirmations contain the specifics regarding volume, price, delivery location and any special conditions. Ameren Missouri has contracts in conjunction with the operation of its Commission approved tariff providing for Electric Power Purchases from Qualifying Facilities.

2. Summary of Cost Implication

If Ameren Missouri was imprudent by purchasing energy to meet its demand at a cost that exceeded Ameren Missouri's cost to generate that energy itself, customer harm could result from that imprudence through an increase in FAC charges.

3. Conclusion

Staff identified no evidence of imprudence related to Ameren Missouri's long-term and purchased power agreements during the prudence review period.

[28] Staff's Data Request No. 0006 in File No. EO-2024-0053.

Staff identified no evidence that Ameren Missouri acted imprudently with regard to purchases of short-term energy in the MISO and PJM day-ahead markets or bilateral agreements during the prudence review period.

4. Documents Reviewed

a. Ameren Missouri's responses to Staff Data Request Nos. 0006, 0048, 0051, 0052, 0055, 0059, and 0065;

b. Ameren Missouri FAC Monthly Reports;

c. Ameren Missouri General Ledger;

d. Ameren Missouri 2021 Renewable Energy Standard Compliance Report, Case No. EO-2023-0359;

e. Ameren Missouri 2020 Renewable Energy Standard Compliance Report, Case No. EO-2022-0283; and

f. Ameren Missouri's work papers in File Nos. ER-2022-0262, ER-2023-0031, ER-2023-0181, ER-2023-0338, and ER-2024-0028.

Staff Expert/Witness: Teresa Denney

H. FERC Account 565 and 456.1 - Transmission Costs and Revenues

1. Description

For the period October 1, 2021, through May 31, 2023, ** [redacted] ** of Ameren Missouri's FAC costs were for MISO transmission costs associated with purchased power costs. As a result of Ameren Missouri's general rate case, Case No. ER-2012-0166, Ameren Missouri began flowing MISO transmission revenues through the FAC.

For the review period, ** [redacted] ** represents transmission revenues that off-set transmission costs. As a result of Ameren Missouri's 2019 general rate case, Case No. ER-2019-0335,[29] Ameren Missouri was ordered by the Commission to include 1.44 percent of Account 456.1 with specific activities transmission revenues and 1.44 percent of Account 565 with specific activities transmission costs in the FAC. The effective date of this modification to the FAC was April 1, 2020, which impacts part of the review period (up to February 28, 2022).

[29] Effective April 1, 2020, Ameren Missouri's MO.P.S.C. Schedule No. 6, 1st Revised Sheet No. 71.3.

Subsequently, as a result of Ameren Missouri's 2021 general rate case, Case No. ER-2021-0240[30], Ameren Missouri was ordered by the Commission to include 1.84 percent of Account 456.1 with specific activities transmission revenues and 1.84 percent of Account 565 with specific activities transmission costs in the FAC. The effective date of that order was February 28, 2022. This carried through the rest of the review period through May 31, 2023.

Ameren Missouri's response to Staff Data Request No. 0013 describes in detail Ameren Missouri's policies for hedging transmission costs. Staff reviewed Ameren Missouri's CRMP, Section 2.5 on page 10; this document describes Ameren Missouri's hedging strategy to mitigate transmission costs:

** [redacted] **

2. Summary of Cost Implications

If Ameren Missouri was imprudent in hedging transmission expense or in accounting for its transmission costs, customer harm could result from that imprudence through an increase in customer FAC charges.

[30] Effective February 28, 2022, Ameren Missouri's MO P.S.C. Schedule No. 6, Original Sheet No. 71.19.

3. Conclusion

Staff identified no indication of imprudence related to transmission costs, transmission revenues, and hedging transmission costs for the prudence review period.

4. Documents Reviewed

a. Ameren Missouri's response to Staff Data Request Nos. 0013, 0026, 0047, 0057, 0058, 0059, and 0062;

b. Ameren Missouri's work papers in File Nos. ER-2022-0262, ER-2023-0031, ER-2023-0181, ER-2023-0338, and ER-2024-0028;

c. Ameren Missouri's FAC Monthly Reports during the review period;

d. Ameren Missouri's General Ledger during the review period; and

e. Information from General Rate Case Nos. ER-2012-0166, ER-2019-0335, ER-2021-0240.

Staff Expert/Witness: Cynthia M. Tandy

I. Emission Allowances

1. Description

The Cross-State Air Pollution Rule ("CSAPR") is a ruling by the United States Environmental Protection Agency ("EPA") that requires a number of states, including Missouri, to reduce power plant emissions that contribute to ozone and/or fine particle pollution in other states. The CSAPR replaced EPA's 2005 Clean Air Interstate Rule ("CAIR"), following the direction of a 2008 court decision that required EPA to issue a replacement regulation. CSAPR implementation began on January 1, 2015.

The CSAPR requires Missouri to reduce its annual emissions of sulfur dioxide ("SO_2") and nitrous oxides ("NO_x") to help downwind states attain the 24-hour National Ambient Air Quality Standards ("NAAQS"). The CSAPR also requires Missouri to reduce ozone season emissions of NO_x to help downwind states attain the 8-hour NAAQS.

On September 7, 2016, the EPA revised the CSAPR ozone season NO_X program by finalizing an update to CSAPR for the 2008 ozone NAAQS, known as the CSAPR Update. The CSAPR Update ozone season NO_X program largely replaced the original CSAPR ozone season NO_X program on May 1, 2017. The CSAPR Update will further reduce summertime NO_X emissions from power plants in the eastern U.S.

The primary mechanism of CSAPR is a cap-and-trade program that allows a major source 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. Originally, the EPA issued a model cap-and-trade program for power plants, which could have been used by states as the primary control mechanism under CAIR. This model, with modifications, had continued under CSAPR.

Ameren Missouri established a plan to comply with the new CSAPR that was finalized by EPA in July 2011. Ameren Missouri's strategy for SO_2 compliance was to continue operation of the wet flue gas desulfurization ("FGD"), or "scrubber" systems at the Sioux Energy Center coupled with a purchase of ultra-low sulfur coal for the balance of its coal fired units at Labadie, Meramec and Rush Island. According to Ameren, there are no additional capital projects necessary or planned for SO_2 compliance over the next five (5) years.

The requirements of CSAPR and CSAPR Update were in effect for the entire Review Period from October 1, 2021, through May 31, 2023. Missouri was part of the twenty-two (22) states that the Update affected and per Staff's review, Ameren Missouri units were in compliance with the CSAPR and CSAPR update limits for both SO_2 and NO_x.

According to Data Request No. 0029, there was an issue in regard to NO_x emissions that occurred in Illinois at the Pinckneyville Energy Center, which was concluded during the current review period. The Illinois Environmental Protection Agency issued a Notice of Violation in January 2022 related to a short excess emission of the NOx emission limit for Unit CT01 at the Pinckneyville Energy Center which occurred in August 2021. The issue was resolved with Ameren Missouri agreeing to and signing a Compliance Commitment Agreement which was finalized August 9th, 2022.

On April 21, 2022, the St. Louis County Department of Health Air Pollution Control Program issued a Notice of Violation for excess HCL emissions at the Meramec Energy Center Units 3 and 4 during 2020, 2021, and 2022. The issue was resolved with an Administrative Order on Consent agreed to and signed January 2023 which included a $10,500 penalty.[31]

On August 14, 2023, Ameren Missouri received a Referral Notice of Violation related to Hg CEMS downtime which occurred from early November 2022 to early February 2023 as

[31] Ameren Missouri Response to Data Request No. 0029.

a result of unknown damage to internal Hg CEMS system parts which occurred during preventative maintenance activities. The issue was exacerbated and hidden from CEMs maintenance personnel due to the system passing all ongoing quality assurance and quality control checks. Ameren Missouri has engaged and met with Missouri Department of Natural Resources ("MDNR") in September 2023 to discuss the event and next steps. Further follow up with MDNR is expected.[32]

For the Review Period, Ameren Missouri maintained all allocated SO_2 allowances in the various plant accounts. Ameren Missouri's inventory of SO_2 allowances consists of allowances that were granted by the EPA and therefore are valued at zero cost leaving no value of the SO_2 inventory in Account 158.001 or NO_x emissions under FERC Account 158.002, Clean Air Allowances. Over the Review Period of October 1, 2021, through May 31, 2023, Ameren Missouri's SO_2 and NO_x allowances were above the emissions produced.

Ameren Missouri, during this review period, did not sell emission allowances, due to need for its own generation. Staff verified the cost of emissions during the Review Period of October 1, 2021, through May 31, 2023, of ** [redacted] ** by reviewing the FAC monthly reports, and the FAR filings for AP39 through AP43 and confirming with Ameren's general ledger.

The management of emission allowances is described in Ameren Missouri's response to Staff's Data Request Nos. 0027, 0028, 0029, 0030, and 0061. Staff reviewed Ameren Missouri's Hedge plan and found that Ameren Missouri has appropriate practices and processes in place to effectively manage its emission allowances for this review period and sufficient allowances for their emissions

2. Summary of Cost Implications

If Ameren Missouri imprudently used, purchased, sold, or banked its SO_2 and NO_x allowances, customer harm could result from an increase in Ameren Missouri's FAC charges.

3. Conclusion

Staff observed no indication of imprudence associated with Ameren Missouri's management of its emission allowances during the prudence review period.

[32] *Ibid.*

4. Documents Reviewed

a. Ameren Missouri response to Staff Data Request Nos. 0008, 0027, 0028, 0029, 0030, 0059, and 0061;

b. Ameren Missouri Monthly Reports during the Review Period;

c. Ameren Missouri's work papers in File Nos. ER-2022-0262, ER-2023-0031, ER-2023-0181, ER-2023-0338, and ER-2024-0028; and

d. Ameren Missouri General Ledger during the Review Period.

Staff Expert/Witness: Teresa Denney

J. FERC Account 447 - Off-System Sales Revenue ("OSSR")

1. Description

Staff reviewed the off-system sales quantities and off-system sales revenues and costs (reduction due to power broker fees) in FERC Account 447 for the prudence review period. There were two tariff sheets that was in effect during this Review Period, 1st Revised Sheet No. 71.5 (Applicable to Service Provided April 1, 2020, through February 27, 2022), and Original Sheet No. 71.21 (Applicable to Service Provided February 28, 2022, through July 8, 2023).

Ameren Missouri's MO P.S.C. Schedule No. 6, Original Sheet No. 71.21 defines off-system sales revenue or "OSSR" as:

> OSSR = Costs and revenues in FERC Account 447 (excluding (a) amounts associated with portions of Power Purchase Agreements dedicated to specific customers under the Renewable Choice Program tariff or any subsequent renewable subscription program that is approved by the Commission in an order that acknowledges that such program's impacts should be excluded from Factor OSSR, (b) amounts associated with generation assets dedicated, as of the date BF was determined, to specific customers under the Renewable Choice Program tariff or any subsequent renewable subscription program that is approved by the Commission in an order that acknowledges that such program's impacts should be excluded from Factor OSSR, (c) amounts associated with generation assets that began commercial operation after the date BF was determined and that were dedicated to specific customers under the Renewable Choice Program tariff or any subsequent renewable subscription program that is approved by the Commission in an order that acknowledges that such program's impacts should be excluded from Factor

OSSR when it began commercial operation, or (d) for Renewable Energy Standard compliance included in Rider RESRAM) for:

1. **Capacity**;
2. **Energy**;
3. **Ancillary services**, including:
   A. Regulating reserve service (MISO Schedule 3, or its successor);
   B. Energy Imbalance Service (MISO Schedule 4, or its successor);
   C. Spinning reserve service (MISO Schedule 5, or its successor); and
   D. Supplemental reserve service (MISO Schedule 6, or its successor);
4. **Make-whole payments**, including:
   A. Price volatility; and
   B. Revenue sufficiency guarantee; and
5. **Hedging**.

For the review period Ameren Missouri's OSSR amount is ** [redacted] **.

With respect to **1. Capacity** and in reference to electricity, capacity transactions (sales) as defined by FERC are: "The acquisition of a specified quantity of generating capacity from another utility for a specified period of time. The utility selling the power is obligated to make available to the buyer a specified quantity of power." For the review period the total amount of revenue from capacity sales was ** [redacted] **.

With respect to **2. Energy** and as defined by FERC, Energy Sales are "The transfer of title to an energy commodity from a seller to a buyer for a price or the quantity transferred during a specified period". For the review period the total amount of revenue from energy sales was ** [redacted] **. In accordance with the MISO tariff and provided in Ameren Missouri's response to Staff Data Request No. 0049: "The dispatch of Ameren Missouri's generation is governed by the MISO Tariff, in particular Module C Energy and Operating Reserve Markets and Module F Coordination Services" and "Ameren Missouri's role in the dispatch decisions is to provide MISO with the necessary economic and operating parameters for each generation asset for inclusion in MISO's Security Constrained Economic Dispatch ("SCED") algorithm."

With respect to **3. Ancillary services** as defined by FERC: "Services that ensure reliability and support the transmission of electricity from generation sites to customer loads. Such services may include load regulation, spinning reserve, non-spinning reserve, replacement reserve, and voltage support." For the review period the total amount of revenue from Ancillary

Services including subsections a through d below was ** [redacted] **. The amount recorded as "Ancillary Services" for the Review Period was ** [redacted] **. Ancillary services also includes subsections a through d listed as follows:

a. Regulating reserve service is defined in FERC's Electric Tariff, Schedule 3:

> Regulating Reserve is necessary to i) continuously balance the total output of all Resources within the MISO Balancing Authority Area with the total demand of all loads (including losses) within the MISO Balancing Authority Area plus the Net Scheduled Interchange of the MISO Balancing Authority Area and ii) assist in maintaining the difference between scheduled Interconnection frequency and actual Interconnection frequency within acceptable limits based on Applicable Reliability Standards.

For the review period Ameren Missouri received ** [redacted] ** for regulating reserve services provided to MISO.

b. Energy Imbalance Service is described in FERC Electric Tariff, Schedule 4:

> Energy Imbalance Service is provided when a difference occurs between the Energy scheduled in the Day-Ahead Energy Market and the actual delivery of Energy to a Load located within the MISO Balancing Authority Area over a single hour in the Real-Time Energy Market.

For the review period Ameren Missouri received ** [redacted] ** for Energy Imbalance Services provided to MISO.

c. Spinning Reserve Service is described in FERC Electric Tariff, Schedule 5:

> Spinning Reserve is required to immediately offset deficiencies in Energy supply that result from a Resource contingency or other abnormal event. Spinning Reserve may be provided by Resources that are Spin Qualified Resources available to provide Spinning Reserve. The obligation to maintain this immediate response capability to contingency events lies with the MISO Balancing Authority.

For the review period Ameren Missouri received ** [redacted] ** for Spinning Reserve Services provided to MISO.

d. Supplemental Reserve Service is described in FERC Electric Tariff, Schedule 6:

> Supplemental Reserve is required to offset deficiencies in Energy supply that result from a Resource contingency or other abnormal event. Supplemental Reserve may be provided by Resources that are Supplemental Qualified Resources that are available to supply

> Supplemental Reserve. The obligation to maintain this response capability to contingency events lies with the MISO Balancing Authority.

For the review period Ameren Missouri received ** [redacted] ** for Supplemental Reserve Services provided to MISO.

With respect to **4. Make-Whole Payments** and as explained by MISO, make-whole payments are provided to generation or demand resources during certain market conditions to ensure that these resources do not operate at a loss when required to dispatch. MISO further explains: "Make-whole payments are needed to allow resources to recover their offer costs: to compensate resources committed by MISO when LMP payments do not cover resource start-up and no-load costs, and to compensate resources when intra-hour dispatch movement coupled with intra-hour price volatility causes under-recovery of offer costs." It provides a process to guarantee electric utilities the recovery of production offers for energy and ancillary services for resources committed by MISO. These revenue payments are a result of MISO's dispatch instructions given to Ameren Missouri and guarantees the generators do not incur additional costs related to MISO's operational decisions. Since Ameren Missouri has little or no control over this process, Staff only reviewed these transactions for accounting accuracy. For the review period Ameren Missouri received ** [redacted] ** in make-whole payments with that broken down by Price Volatility of ** [redacted] ** and Revenue Sufficiency Guarantees of ** [redacted] **.

5. Hedging (Financial Energy Swaps) are financial energy transactions related to the trading of power future contracts in organized markets. Per Ameren Missouri's CRMP, Section 2.2, page 8, ** [redacted]

[redacted] **
These results of the transactions are accounted for as off-system sales revenue.

Based upon Ameren Missouri's power trading activities, Ameren Missouri had forward purchases in the amount of ** [redacted] ** and settlement swaps in the amount of ** [redacted] ** for a settlement loss of ** [redacted] ** related to its financial energy swaps. However, there were additional brokers fees in the amount of ** [redacted] ** and other accounting adjustments in the amount of ** [redacted] **, which increased costs, for a net trading loss of ** [redacted] **. Ameren Missouri provided the following detail in Data Request Response No. 0053.1 in reference to its hedging strategy. The losses have significantly increased during the review period, as they were executed in the year or two prior to the delivery timeframe. After the hedges were executed, spot electricity prices surged higher from their forecasted value. As reported by the EIA, "Natural gas prices rose from $3.70 per MMBtu in early January 2022 to almost $10.00/MMbtu in late August 2022." This was largely due to the war in Ukraine and because of railroad and coalmine labor shortages which constrained coal supply and delivery to power plants. The spike in spot natural gas prices to levels not seen since 2009 was the primary driver of the higher spot electricity prices, and therefore the hedge sales executed in advance of this spike incurred losses. Additionally, the value of the underlying commodity must also be linked in conjunction with these hedge losses. Every MWh that the Company generates is sold into the MISO market and was paid by the higher market prices, only a fraction of that volume also had financial hedges applied with the intention of locking a positive margin. So, while the spike in prices caused hedging losses not anticipated when the hedges were entered into, that same spike in prices also meant that those same MWhs that were sold into the market as they were generated also realized higher prices, thus returning the overall margin to the same positive amount that was originally contemplated with the hedge. During this review period, the off-system sales (not including ancillaries or capacity) to the MISO market received $439 million in revenue from the daily markets. This is roughly 258% more OSSR than that from the last prudence review period, which received $169 million in revenue from the daily markets.

The Company's hedge strategy has changed going forward. Due to the retirements of Meramec and Rush Island energy centers, the Company forecasts for excess generation have significantly reduced in volume. As a result, the Company does not anticipate executing a forward financial hedge strategy for excess generation given these reduced levels of expected excess generation. Some amount of financial energy price hedges were previously applied for the 2023 calendar year. Since the energy market pricing has declined from its peak value, the gains and losses on this hedged volume will be much less in magnitude than during the review period. Beyond 2023, no financial energy hedge positions have been entered.

2. Summary of Cost Implications

Ameren Missouri's revenues from off-system sales and ancillary services are offset against total fuel, purchased power, and net emissions allowance costs. If Ameren Missouri was imprudent, either because it did not maximize or did not make off-system sales and ancillary services, customers could be harmed by that imprudence through an increase in FAC charges.

3. Conclusion

Staff identified no incidents of imprudence related to off-system sales and ancillary services for the prudence review period.

4. Documents Reviewed

a. Ameren Missouri's response to Staff Data Request Nos. 0007, 0012, 0013, 0049, 0053, 0053.1, and 0053.2;

b. Ameren Missouri's work papers in File Nos. ER-2022-0262, ER-2023-0031, ER-2023-0181, ER-2023-0338, and ER-2024-0028;

c. Ameren Missouri's General Ledger during the review period;

d. Ameren Missouri's Monthly FAC Reports for the Review Period;

e. MISO Schedules and MISO Tariff Module C and F from https://www.misoenergy.org/; and

f. FERC Definitions from https://www.eia.gov/.

Staff Experts/Witnesses: Teresa Denney (Capacity, Energy, Ancillary Services and Make-Whole Payments) and Brooke Mastrogiannis (Hedging)

IV. Interest

1. Description

For each month of the FAC accumulation periods and recovery periods, Ameren Missouri is required to calculate the interest associated with the over- or under-recovered balances due to: 1) difference between ANEC and B, 2) refunds as a result of prudence reviews ("P"), and 3) amounts approved in true-up cases. Ameren Missouri applies its short-term interest rate to the over- or under-recovered balance and the interest is compounded on a monthly basis. This interest amount is component "I" of the FPA calculation 6th Revised Sheet No. 71.15; 1st, 2nd and 3rd Revised Sheet No. 71.31; and 1st Revised Sheet No. 71.32. The monthly short-term interest rate calculations are developed monthly by the Treasury Department. These schedules identify the short-term borrowing balance outstanding at month end, the average daily short-term borrowing balance for the month, the weighted average short-term borrowing rate for the month, and the peak short-term borrowing amount for the month.

For the review period, Ameren Missouri applied an interest amount of $3,897,757 to the over- or under-recovered balances for the FAC. Staff reviewed Ameren Missouri's monthly source data for short-term interest rates, calculation of its monthly weighted average interest rates, and calculations of the monthly interest amounts. Staff found all calculations to be correct.

2. Summary of Cost Implications

If Ameren Missouri was imprudent in its identification of monthly short-term interest rates and/or in its calculation of monthly interest amounts, customers could be harmed through increased FAC charges.

3. Conclusion

Staff observed no evidence of imprudence with regard to the Ameren Missouri's monthly short-term interest rates and the calculation of monthly interest amounts applied to the over- or under-recovered balances.

4. Documents Reviewed

a. Ameren Missouri Response to Staff Data Request No. 0038;

b. Ameren Missouri's work papers in File Nos. ER-2022-0262, ER-2023-0031, ER-2023-0181, ER-2023-0338, and ER-2024-0028;

c. Ameren Missouri's FAC Monthly Reports during the review period; and

d. Ameren Missouri's General Ledger during the review period.

Staff Expert/Witness: Cynthia M. Tandy

V. FERC ROE Cases/Entergy Dispute

1. Description

The two FERC Return on Equity ("ROE") cases that referenced potential regulatory liability were FERC Docket No. EL14-12-002, FERC ROE Impact Case/Entergy Dispute (the "First FERC ROE Case") and FERC Docket EL15-45-0000, FERC ROE Impact Case/Entergy Dispute (the "Second FERC ROE Case"). These two cases challenged the allowed base return on common equity for MISO Transmission Owners and resulted in a time period for which transmission rate refunds may be required to be paid to such owners.

In Case No. ER-2016-0179, the Signatories agreed[33] that the revenue requirement treatment of any refunds that Ameren Missouri receives as a result of the Second FERC ROE Case would be addressed in the next general rate proceeding, but Ameren Missouri agreed to defer any refunds from the Second FERC ROE Case to FERC Account 253. The Signatories further agreed in Case No. ER-2016-0179 that "no party shall argue that the fact that Ameren Missouri agreed to defer any such refunds, or that the FERC Account to which such a deferral was made, suggests how any such deferral should be treated for ratemaking purposes in a subsequent general rate proceeding."

In Ameren Missouri's next general rate case, Case No. ER-2019-0335, the corrected Non-Unanimous Stipulation and Agreement stated: "The Signatories agree that Ameren Missouri shall continue its regulatory liability for the first FERC ROE case refunds, except that amortization of the first FERC ROE case refunds' regulatory liability will not begin until the conclusion of the Company's next electric rate case assuming all litigation that may impact the

[33] The Commission filed an *Order Approving Unanimous Stipulation and Agreement* on March 8, 2017.

final first FERC ROE case refunds is completed. If said litigation is not completed, amortization will start after the conclusion of the first Company electric rate case concluding after those refunds are finalized. The Company will continue the treatment for refunds attributable to the second FERC ROE case that was agreed upon in File No. ER-2016-0179." The final FERC order for the first FERC ROE case resulted in Ameren Missouri recording an accrual and then establishing a regulatory liability, with actual refunds being returned to customers in two parts in 2017. On November 21, 2019, the FERC reached a decision on the second FERC ROE case, and Ameren Missouri is deferring all ROE refunds paid and received to FERC Account 253, until the next electric rate review.

In Ameren Missouri's most recent general rate case,[34] Case No. ER-2021-0240, the Unanimous Stipulation and Agreement stated:

> The Signatories agree that Ameren Missouri shall continue its regulatory liability for the first FERC ROE case refunds, except that amortization of the first FERC ROE case refunds regulatory liability will not begin until the conclusion of the Company's next electric rate case assuming all litigation that may impact the final first FERC ROE case refunds is completed. If said litigation is not completed, amortization will start after the conclusion of the first Company electric rate case concluding after those refunds are finalized. The Company will continue the treatment for refunds attributable to the second FERC ROE case that was agreed upon in File No. ER-2019-0335.

In response to Data Request No. 0049, the Company stated:

> Per the terms of the stipulation from ER-2016-0179, the net of these refunds paid and received has been deferred to FERC Account 253 (with corresponding offsets to FERC Accounts 456.1, 565, 419, and 431) until the next electric rate review. The refund/collection process began in February 2020 and continued through February 2022. As refunds are paid and received, the reserve liabilities and assets are relieved, and as any actual refunds received or paid are offset with entries to the reserve, there are no impacts to the FAC.

Staff has reviewed the Stipulation and Agreement, as well as responses to data requests, and has determined that Ameren Missouri is in compliance with the terms of the Stipulation.

[34] The most recent general rate case is ER-2022-0337, however the decision on FERC ROE in that case is not updated in this section because it was effective when the Commission approved the *Stipulation and Agreement*, on June 14, 2023, outside of this Review Period. The *Stipulation and Agreement* in the ER-2022-0337 rate case states, "The Company will continue the treatment for refunds attributable to the second FERC ROE case that was agreed upon in File No. ER-2021-0240."

2. Summary of Cost Implications

If Ameren Missouri was imprudent in its handling of the revenue requirement treatment of any refunds resulting from the FERC ROE cases, customers could be harmed through increased FAC charges.

3. Conclusion

Staff will continue to address any regulatory liability arising from the FERC ROE cases in Ameren Missouri's next general rate case.

4. Documents Reviewed

a. Unanimous Stipulation and Agreement, Case No. ER-2016-0179;

b. Staff's Cost of Service Report and Non-Unanimous Stipulation and Agreement, Case No. ER-2019-0335;

c. Staff's Cost of Service Report and Unanimous Stipulation and Agreement, Case No. ER-2021-0240;

d. Stipulation and Agreement, Case No. ER-2022-0337;

e. Ameren Missouri's responses to Staff Data Request Nos. 0379, 0380, and 0381 in Case No. ER-2021-0240; and

f. Ameren Missouri's responses to Staff Data Request No. 0049.

Staff Expert/Witness: Brooke Mastrogiannis

VI. Failure to Follow Dispatch Instructions

1. Description

In its operating procedure MS-OP-031-r35 (effective December 7, 2021), MISO defines the Failure to Follow Dispatch Flag ("FFDF") as an "hourly flag which is set for any Resource that has Dispatch Interval Excessive Energy ("EXE") or Dispatch Interval Deficient Energy ("DFE") in four or more consecutive Dispatch Intervals in a given Hour."

As a member of MISO, Ameren Missouri is provided, and expected to follow, electronic dispatching instructions as directed by MISO. These dispatch instructions are tailored to each generation resource based upon a specific set of operational characteristics predefined for each generation resource as well as the type of service being offered. Periodically, Ameren Missouri is unable to meet these specific instructions due to equipment operational issues, hold points for starting or stopping equipment (such as coal mills), units ramping downward faster than

anticipated for nightly deslagging of boilers, real-time price volatility, and limited time in communicating changes to unit capability. When these deviations occur, MISO charges Ameren Missouri for each specific occurrence. These occurrences do not happen at a single location or at a single generation facility because MISO provides dispatch instructions for each of Ameren Missouri's generation units for each hour of every day. For this Review Period, MISO charged Ameren Missouri an additional $186,941.55 for a 20-month period in total Excessive/Deficient Energy Deployment charges. However, Ameren Missouri explained that the failure to follow dispatch flag occurred only 1.60% of the total hours in question during this review period.

Staff notes that this Review Period was a 20-month review compared to the last Review Period for a 16-month review, and there was a 22%[35] increased number of occurrences for the failure to follow dispatch flag overall for Ameren Missouri from the prior review. There were decreases in occurrences for both plants at Rush Island and Meramec, but increases in occurrences at Osage, Labadie and Sioux 1 & 2 plants.

2. Summary of Cost Implications

If Ameren Missouri was imprudent in its management of MISO's dispatch instructions, customers could be harmed through increased FAC charges.

3. Conclusion

Staff is not recommending a disallowance for this review period related to Ameren Missouri's failure to follow dispatch instructions. Staff feels the increased occurrences are largely due to this review period being 20 months instead of 16 months. Staff will continue to monitor Ameren Missouri's situation in this area. Staff reserves the right to review the Company's failure to follow dispatch instructions in future FAC prudence reviews and/or general rate cases.

4. Documents Reviewed

a. Ameren Missouri's responses to Staff Data Request Nos. 0036 and .0036.1; and

b. MISO Operating Procedure MS-OP-031-r35.

Staff Expert/Witness: Cynthia M. Tandy

[35] The calculations were converted for each review period to a per month number of occurrences and then calculated the percentage of increase or decrease from current review to prior one.

VII. Utilization of Generation Capacity

1. Description

Ameren Missouri's generation consists of a mixture of Nuclear, Coal, Natural Gas, Solar, Methane Gas, #2 Fuel Oil, Wind, and Hydro generating stations as indicated in Table 9. Table 10 contains the net-generation and reported nameplate capacity rating for Ameren Missouri's fleet. Table 11 contains the net-generation broken down by unit type for Ameren Missouri's fleet. These tables illustrate how Ameren Missouri's generation fleet is being called upon by MISO in actual operation throughout the period from October 1, 2021, through May 31, 2023.

Table 9[36] - Confidential

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[redacted]

[36] Ameren response to Staff Data Request No. 0020.
[37] Data Request No. 0020 response listed the Meramec CT 2 unit as suspended for this Review Period.

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Table 10 – Confidential

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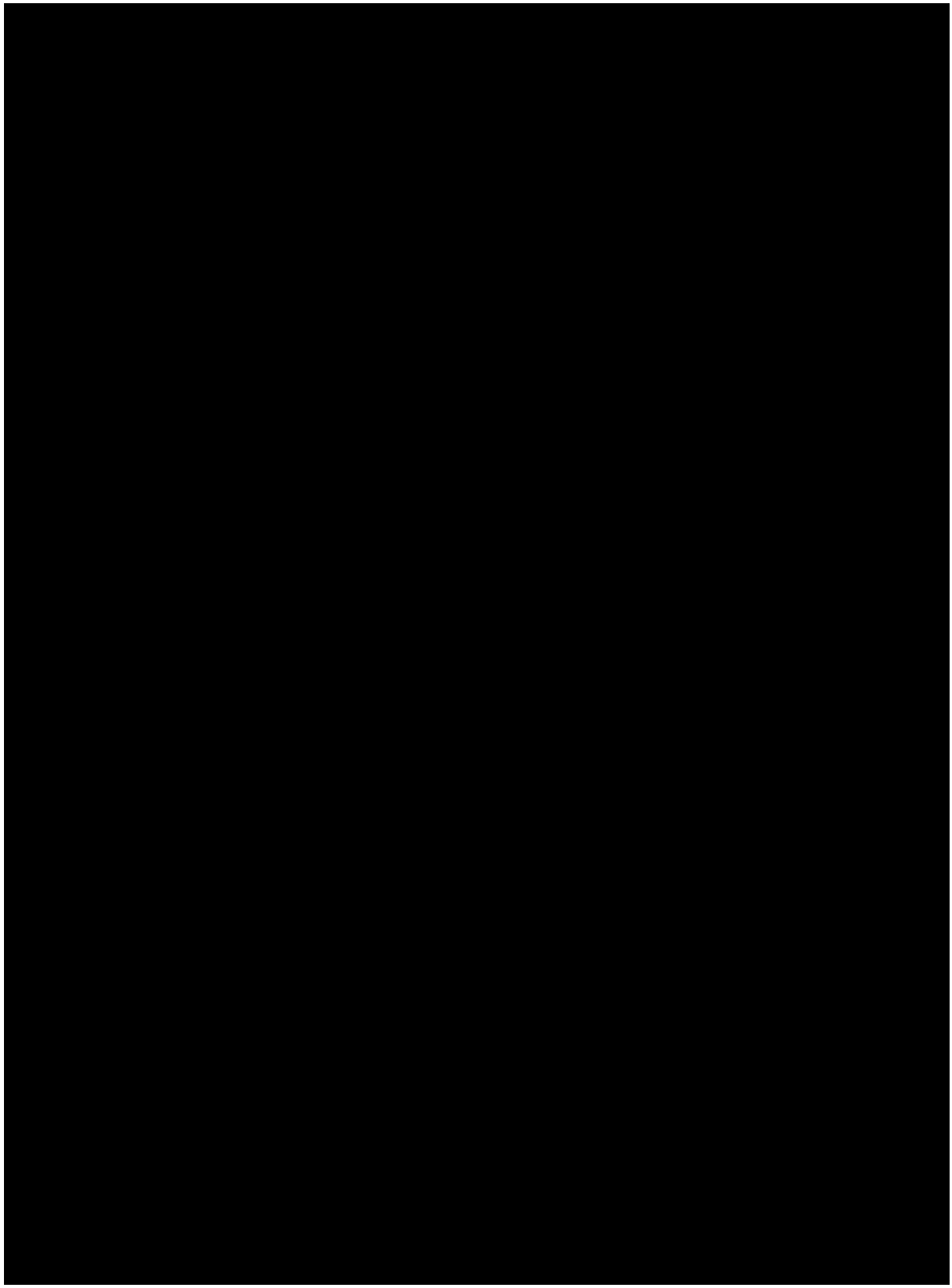

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Table 11 – Confidential

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2. Self – Commitment of Baseload Generation Facilities into MISO

During this FAC prudence review, Staff conducted a review of commitment status of Ameren Missouri's electric generation facilities into MISO in an effort to determine any negative impacts that might be occurring because of such actions. Ameren Missouri has large and varied electric generation facilities that are designed to provide varying types of services to its customers. These generation facilities include nuclear, coal, natural gas, hydro, PV solar, and wind turbines. Each one of Ameren Missouri's generation facilities has its own distinct operating characteristics and requires specific operational guidelines to be followed to maintain the reliability of the units as determined by Ameren Missouri's plant operations team to determine optimal plant reliability and manufacturer operational guidelines.

MISO utilizes five resource offer commitment status designations[38] for its market participants ("MP"):

- **Outage** – Designates the Resource is not available for consideration in Energy and Operating Reserve Markets commitment because the Resource is on a Generator Planned Outage or Generator Forced Outage.
- **Emergency** – Designates the Resource is available for commitment in Emergency situations only.
- **Economic** – Designates the Resource is available for commitment by MISO.

[38] MISO, Energy and Operating Reserve Markets, Business Practices Manual, BPM-002-r19, 4.2.3.4.6, Page 93.

- **Must-Run (self-commit)** – Designates the Resource as committed per MP request and is available for dispatch by MISO.
- **Not Participating** – Designates that the Resource will not participate in the Day-Ahead and/or Real-Time Energy and Operating Reserve Market but is otherwise available.

A "self-commit" status designates that the MP itself is committing the resource at its unit minimum generation level and any dispatch above its unit minimum generation level would be determined by MISO, based on Location Marginal Pricing ("LMP") nodal pricing scenarios. There are three main operating characteristics that determine why Ameren Missouri would place a unit in self-commit status; 1) high cost of restart, 2) increases in operation & maintenance ("O&M") and capital costs due to unit cycling outside of design parameters and 3) to avoid increases in plant outages. Ameren Missouri's generation units that meet all or some of these criteria and are designated "must-run" are Callaway (nuclear), Labadie, Rush Island, Sioux, and Meramec 3 & 4. These units were designed to provide large quantities of base load power at low costs to Ameren Missouri customers prior to the development of the RTO markets.

3. Summary of Cost Implications

In response to Staff's Data Request No. 0054, Ameren provided the following about making these dispatch decisions:

> In making its commit status decisions, the Company's guiding principle is to clear (i.e., sell energy from) its units in the market when doing so benefits customers. Given that the current MISO algorithm for unit commitment only analyzes the 24-hour period of the next calendar day, Ameren Missouri looks past the next 24 hours to make this assessment. This process takes into consideration the costs associated with de-committing a unit, including: total of the expected foregone margins, the cost to restart the unit and the risk of significant maintenance and capital expenses arising from cycling the unit if it is committed and then de-committed and then committed again. Consideration is also given to unit downtime minimums. That is, if a unit downtime minimum is for more than one day, de-committing the unit based only on the next day's MISO model results could mean that the unit will forego margins for the following days when it remains shut-down. Ameren Missouri utilizes a combination of quantitative and qualitative analysis to inform its unit commitment decisions. Each day it performs two separate economic analyses. First, Ameren Missouri makes an assessment of "generation in the money", by unit, by hour, for each of the next 10 days, utilizing the PCI tool to perform a simulated unit dispatch of each unit Page 3 of 4 based on its incremental production cost, unit characteristics and a

> forecast of LMPs. The model provides an indication of the level of generation that is "in the money" for a given hour (that is to say that the LMP is in excess of the incremental production cost). Hours for which the unit is not "in the money" do not have values in them. Additionally, a projection of each unit's energy margin for the next 10 days is separately calculated. This is accomplished by first estimating that amount of energy which could be expected to clear in the MISO energy market, for each hour, based upon each units then current as-offered production cost and a forecasted estimated of LMPs. The difference between these LMPs and as offered production costs are then applied to the projected level of unit output to provide an estimate of each unit's energy margin, by hour. This process is repeated by adjusting LMPs up and down by 5%.

Staff reviewed Ameren Missouri's "Must Run" hourly commitment status transactions from Data Request No. 0054, and did not observe any evidence of imprudent actions.

4. Conclusion

Staff did not observe any evidence of imprudent utilization of generation resources during this prudence review.

5. Documents Reviewed

a. Ameren Missouri's responses to Staff Data Request Nos. 0015, 0020, 0035, and 0054;

b. MISO, Energy and Operating Reserve Markets, Business Practices Manual; and

c. EW-2019-0370.

Staff Experts/Witnesses: Jordan T. Hull and Amanda C. Conner (Tables 9, 10, and 11)

VIII. Heat Rates

1. Description

Heat rates of generating units are an indicator of unit performance. A heat rate is a calculation of total volume of fuel burned for electric generation multiplied by the average heat content of that volume of fuel divided by the total net generation of electricity in kilowatt hours (kWh) for a given time period.

2. Summary of Cost Implications

Heat rates are inversely related to the efficiency of the generating unit. Increasing heat rates of specific units over time may be an indication that a specific unit's efficiency is declining. Heat rates can vary greatly depending on operating conditions, including but not limited to, load, hours of operation, shut downs and startups, unit outages, derates,[39] and weather conditions. Therefore, a good indication of unit performance for those units that are utilized frequently is an analysis of the trend of heat rates over time. A permanent increase in monthly heat rates is commonly the result of a decrease in a generating unit's efficiency whenever additional emissions reduction equipment is added to the backend of the generating unit. Continued utilization of units with sustained elevated heat rates could result in Ameren Missouri incurring higher fuel costs per unit of electricity generated than it would otherwise have incurred.

If Ameren Missouri was imprudent in response to the ongoing trend of a unit's heat rate, customer harm could result from an increase in the fuel costs that are collected through Ameren Missouri's FAC charges.

3. Conclusion

In reviewing the monthly heat rates of Ameren Missouri's generating units dating back to May 31, 2018, Staff found no indication that Ameren acted imprudently during the Review Period.

4. Documents Reviewed

a. Ameren Missouri's responses to Staff Data Request Nos. 0044 and 0046; and

b. Monthly Outage data submitted by Ameren Missouri in compliance with Rule 20 CSR 4240-3.190.

Staff Expert/Witness: Jordan T. Hull

[39] Derate-to reduce the power rating of a component or device.

IX. Plant Outages

1. Description

Outages occurring at any of the generating units can have an impact on how much Ameren Missouri pays for fuel and purchased power and could result in Ameren Missouri paying more for fuel and purchased power cost than is necessary. Ameren Missouri is required by the North American Electric Reliability Corporation ("NERC") to submit data for every outage in accordance with Generating Availability Data System ("GADS") data reporting instructions effective January 2012. Generating unit outages generally can be classified as scheduled outages, forced outages, or partial outages (derating).

Staff examined the outages of Ameren Missouri's generation fleet and the timing of these outages to determine if the outages were imprudently taken. Any planned outage during peak load demand times or a period of high replacement energy prices has the potential result of Ameren Missouri paying more for fuel and purchased power costs than it would have paid if the outage was 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 prices. Ameren Missouri has little or no control over the timing of maintenance or forced outages of the generating stations it owns and operates when such outages are the result of unforeseen events. These types of outages are not included as a part of this prudence review.

2. Summary of Cost Complications

An imprudent outage could result in Ameren Missouri purchasing expensive spot market energy or running its more expensive units to meet demand and could result in customer harm through an increase in customer FAC charges.

3. Conclusion

Staff did not observe any evidence of imprudent outages during the time period examined in this prudence review.

4. Documents Reviewed

a. Ameren Missouri's responses to Staff Data Request Nos. 0023, 0024, 0041, 0042, and 0045.

Staff Expert/Witness: Jordan T. Hull

BEFORE THE PUBLIC SERVICE COMMISSION
OF THE STATE OF MISSOURI

In the Matter of the Tenth Prudence Review of Costs Subject to the Commission-Approved Fuel Adjustment Clause of Union Electric Company d/b/a Ameren Missouri	))))	File No. EO-2024-0053

AFFIDAVIT OF AMANDA C. CONNER

STATE OF MISSOURI)
) ss
COUNTY OF COLE)

COMES NOW, Amanda C. Conner, and on her oath declares that she is of sound mind and lawful age; that she contributed to the attached *Staff Report*; and that the same is true and correct according to her best knowledge and belief.

Further the Affiant sayeth not.

Amanda C. Conner
AMANDA C. CONNER

Subscribed and sworn before me, a duly constituted and authorized Notary Public, in and for the County of Cole, State of Missouri, at my office in Jefferson City, on this 27th day of February 2024.

DIANNA L. VAUGHT
Notary Public - Notary Seal
State of Missouri
Commissioned for Cole County
My Commission Expires: July 18, 2027
Commission Number: 15207377

Dianna L. Vaught
Notary Public

BEFORE THE PUBLIC SERVICE COMMISSION
OF THE STATE OF MISSOURI

In the Matter of the Tenth Prudence Review of Costs Subject to the Commission-Approved Fuel Adjustment Clause of Union Electric Company d/b/a Ameren Missouri	))))	File No. EO-2024-0053

AFFIDAVIT OF TERESA DENNEY

STATE OF MISSOURI)
) ss
COUNTY OF COLE)

COMES NOW, Teresa Denney, and on her oath declares that she is of sound mind and lawful age; that she contributed to the attached *Staff Report*; and that the same is true and correct according to her best knowledge and belief.

Further the Affiant sayeth not.

Teresa Denney
TERESA DENNEY

Subscribed and sworn before me, a duly constituted and authorized Notary Public, in and for the County of Cole, State of Missouri, at my office in Jefferson City, on this 27th day of February 2024.

DIANNA L. VAUGHT
Notary Public - Notary Seal
State of Missouri
Commissioned for Cole County
My Commission Expires: July 18, 2027
Commission Number: 15207377

Dianna L. Vaught
Notary Public

BEFORE THE PUBLIC SERVICE COMMISSION
OF THE STATE OF MISSOURI

In the Matter of the Tenth Prudence Review of Costs Subject to the Commission-Approved Fuel Adjustment Clause of Union Electric Company d/b/a Ameren Missouri	))))	File No. EO-2024-0053

AFFIDAVIT OF JORDAN T. HULL

STATE OF MISSOURI)
) ss
COUNTY OF COLE)

COMES NOW, Jordan T. Hull, and on his oath declares that he is of sound mind and lawful age; that he contributed to the attached *Staff Report*; and that the same is true and correct according to his best knowledge and belief.

Further the Affiant sayeth not.

Jordan Hull
JORDAN T. HULL

Subscribed and sworn before me, a duly constituted and authorized Notary Public, in and for the County of Cole, State of Missouri, at my office in Jefferson City, on this 26th day of February 2024.

DIANNA L. VAUGHT
Notary Public - Notary Seal
State of Missouri
Commissioned for Cole County
My Commission Expires: July 18, 2027
Commission Number: 15207377

Dianna L. Vaught
Notary Public

BEFORE THE PUBLIC SERVICE COMMISSION
OF THE STATE OF MISSOURI

In the Matter of the Tenth Prudence Review of Costs Subject to the Commission-Approved Fuel Adjustment Clause of Union Electric Company d/b/a Ameren Missouri	))))	File No. EO-2024-0053

AFFIDAVIT OF BROOKE MASTROGIANNIS

STATE OF MISSOURI)
) ss
COUNTY OF COLE)

COMES NOW, Brooke Mastrogiannis, and on her oath declares that she is of sound mind and lawful age; that she contributed to the attached *Staff Report*; and that the same is true and correct according to her best knowledge and belief.

Further the Affiant sayeth not.

Brooke Mastrogiannis
BROOKE MASTROGIANNIS

Subscribed and sworn before me, a duly constituted and authorized Notary Public, in and for the County of Cole, State of Missouri, at my office in Jefferson City, on this 21st day of February 2024.

DIANNA L. VAUGHT
Notary Public - Notary Seal
State of Missouri
Commissioned for Cole County
My Commission Expires: July 18, 2027
Commission Number: 15207377

Dianna L. Vaught
Notary Public

BEFORE THE PUBLIC SERVICE COMMISSION
OF THE STATE OF MISSOURI

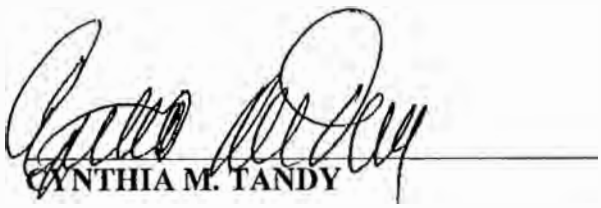
In the Matter of the Tenth Prudence Review of Costs Subject to the Commission-Approved Fuel Adjustment Clause of Union Electric Company d/b/a Ameren Missouri	))))	File No. EO-2024-0053

AFFIDAVIT OF CYNTHIA M. TANDY

STATE OF MISSOURI)
) ss
COUNTY OF COLE)

COMES NOW, Cynthia M. Tandy, and on her oath declares that she is of sound mind and lawful age; that she contributed to the attached *Staff Report*; and that the same is true and correct according to her best knowledge and belief.

Further the Affiant sayeth not.



CYNTHIA M. TANDY

Subscribed and sworn before me, a duly constituted and authorized Notary Public, in and for the County of Cole, State of Missouri, at my office in Jefferson City, on this 26th day of February 2024.

DIANNA L. VAUGHT
Notary Public - Notary Seal
State of Missouri
Commissioned for Cole County
My Commission Expires: July 18, 2027
Commission Number: 15207377

Dianna L. Vaught
Notary Public