Education and Work Experience Background of

Lena M. Mantle, P.E.

In my position as Senior Analyst for the Office of the Public Counsel ("OPC") I provide analytic and engineering support for the OPC in electric, gas, and water cases before the Commission. I have worked for the OPC since August, 2014.

I retired on December 31, 2012 from the Public Service Commission Staff as the Manager of the Energy Unit. As the Manager of the Energy Unit, I oversaw and coordinated the activities of five sections: Engineering Analysis, Electric and Gas Tariffs, Natural Gas Safety, Economic Analysis, and Energy Analysis sections. These sections were responsible for providing Staff positions before the Commission on all of the electric and gas cases filed at the Commission. This included reviews of fuel adjustment clause filings, resource planning compliance, gas safety reports, customer complaint reviews, territorial agreement reviews, electric safety incidents and the class cost-of-service and rate design for natural gas and electric utilities.

Prior to being the Manager of the Energy Unit, I was the Supervisor of the Engineering Analysis Section of the Energy Department from August, 2001 through June, 2005. In this position, I supervised engineers in a wide variety of engineering analysis including electric utility fuel and purchased power expense estimation for rate cases, generation plant construction audits, review of territorial agreements, and resolution of customer complaints all the while remaining the lead Staff conducting weather normalization in electric cases.

From the beginning of my employment with the Commission in the Research and Planning Department in August, 1983 through August, 2001, I worked in many areas of electric utility regulation. Initially I worked on electric utility class cost-of-service analysis, fuel modeling and what has since become known as demand-side management. As a member of the Research and Planning Department under the direct supervision of Dr. Michael Proctor, I participated in the development of a leading-edge methodology for weather normalizing hourly class energy for rate design cases. I took the lead in developing personal computer programming of this methodology and applying this methodology to weather-normalize electric usage in numerous electric rate cases. I was also a member of the team that assisted in the development of the Missouri Public Service Commission electronic filing and information system ("EFIS").

I received a Bachelor of Science Degree in Industrial Engineering from the University of Missouri, at Columbia, in May, 1983. I am a registered Professional Engineer in the State of Missouri.

Lists of the cases I have filed testimony as an OPC, the Missouri Public Service Commission rules in which I participated in the development of or revision to, the Missouri Public Service Commission Testimony Staff reports that I contributed to and the cases that I provided testimony in follow.

Office of Public Counsel Case Listing

Case	Filing Type	Issue
ER-2019-0355	Direct	Fuel Adjustment Clause
EO-2019-0067 & EO-2019-0068	Rebuttal	Prudence of GMO steam auxiliary costs and GMO and KCPL's wind PPAs
EA-2019-0010	Rebuttal, Surrebuttal	Energy Market Prices, Customer Protections
GO-2019-0058 & GO-2019-0059	Direct, Rebuttal	Weather
ER-2018-0145 & ER-2018-0146	Direct, Rebuttal, Surrebuttal	Purchased Power, Customer Bills, Crossroads, Resource Planning
EO-2018-0092	Rebuttal, Surrebuttal	OPC Opposition of Request for Approval of Changes to Resource Plan
WR-2017-0285	Direct, Rebuttal, Surrebuttal	Normalized base usage
GR-2017-0215 & GR-2017-0216	Direct, Rebuttal, Surrebuttal	Energy Efficiency and Low-Income Programs
EO-2017-0065	Direct, Rebuttal, Surrebuttal	Fuel Adjustment Clause Prudence Review
ER-2016-0285	Direct, Rebuttal, Surrebuttal	Fuel Adjustment Clause
ER-2016-0179	Direct, Rebuttal, Surrebuttal	Fuel Adjustment Clause,
ER-2016-0156	Direct, Rebuttal, Surrebuttal	Fuel Adjustment Clause, Resource Planning
ER-2016-0023	Direct, Rebuttal, Surrebuttal	Fuel Adjustment Clause
WR-2015-0301	Direct, Rebuttal, Surrebuttal	Revenues, Environmental Cost Recovery Mechanism
ER-2014-0370	Direct, Rebuttal, Surrebuttal	Fuel Adjustment Clause
ER-2014-0351	Direct, Rebuttal, Surrebuttal	Fuel Adjustment Clause
ER-2014-0258	Direct, Rebuttal, Surrebuttal	Fuel Adjustment Clause
EC-2014-0224	Surrebuttal	Policy, Rate Design

Missouri Public Service Commission Rules

4 CSR 240-3.130	Filing Requirements and Schedule of Fees for Applications for Approval of Electric Service Territorial Agreements and Petitions for Designation of Electric Service Areas
4 CSR 240-3.135	Filing Requirements and Schedule of Fees Applicable to Applications for Post-Annexation Assignment of Exclusive Service Territories and Determination of Compensation
4 CSR 240-3.161	Electric Utility Fuel and Purchased Power Cost Recovery Mechanisms Filing and Submission Requirements
4 CSR 240-3.162	Electric Utility Environmental Cost Recovery Mechanisms Filing and Submission Requirements
4 CSR 240-3.190	Reporting Requirements for Electric Utilities and Rural Electric Cooperatives
4 CSR 240-14	Utility Promotional Practices
4 CSR 240-18	Safety Standards
4 CSR 240-20.015	Affiliate Transactions
4 CSR 240-20.017	HVAC Services Affiliate Transactions

4 CSR 240-20.090	Electric Utility Fuel and Purchased Power Cost Recovery Mechanisms
4 CSR 240-20.091	Electric Utility Environmental Cost Recovery Mechanisms
4 CSR 240-22	Electric Utility Resource Planning
4 CSR 240-80.015	Affiliate Transactions
4 CSR 240-80.017	HVAC Services Affiliate Transactions

Staff Direct Testimony Reports

ER-2012-0175	Capacity Allocation, Capacity Planning
ER-2012-0166	Fuel Adjustment Clause
ER-2011-0028	Fuel Adjustment Clause
ER-2010-0356	Resource Planning Issues
ER-2010-0036	Environmental Cost Recovery Mechanism
HR-2009-0092	Fuel Adjustment Rider
ER-2009-0090	Fuel Adjustment Clause, Capacity Requirements
ER-2008-0318	Fuel Adjustment Clause
ER-2008-0093	Fuel Adjustment Clause, Experimental Low-Income Program
ER-2007-0291	DSM Cost Recovery

Missouri Public Service Commission Staff Testimony

Case No.	Filing Type	Issue
ER-2012-0175	Rebuttal, Surrebuttal	Resource Planning Capacity Allocation
ER-2012-0166	Rebuttal, Surrebuttal	Fuel Adjustment Clause
EO-2012-0074	Direct/Rebuttal	Fuel Adjustment Clause Prudence
EO-2011-0390	Rebuttal	Resource Planning Fuel Adjustment Clause
ER-2011-0028	Rebuttal, Surrebuttal	Fuel Adjustment Clause
EU-2012-0027	Rebuttal, Surrebuttal	Fuel Adjustment Clause
ER-2010-0356	Rebuttal, Surrebuttal	Resource Planning Allocation of Iatan 2
EO-2010-0255	Direct/Rebuttal	
ER-2010-0036	Supplemental Direct, Surrebuttal	Fuel Adjustment Clause
ER-2009-0090	Surrebuttal	Capacity Requirements
ER-2008-0318	Surrebuttal	Fuel Adjustment Clause
ER-2008-0093	Rebuttal, Surrebuttal	Fuel Adjustment Clause Low-Income Program
ER-2007-0004	Direct, Surrebuttal	Resource Planning
GR-2007-0003	Direct	Energy Efficiency Program Cost Recovery
ER-2007-0002	Direct	Demand-Side Program Cost Recovery
ER-2006-0315	Supplemental Direct, Rebuttal	Energy Forecast Demand-Side Programs Low-Income Programs

Missouri Public Service Commission Staff Case Listing (cont.)

ER-2006-0314	Rebuttal	Jurisdictional Allocation Factor
EA-2006-0309	Rebuttal, Surrebuttal	Resource Planning
ER-2005-0436	Direct, Rebuttal, Surrebuttal	Low-Income Programs Energy Efficiency Programs Resource Planning
EO-2005-0329	Spontaneous	Demand-Side Programs Resource Planning
EO-2005-0293	Spontaneous	Demand-Side Programs Resource Planning
ER-2004-0570	Direct, Rebuttal, Surrebuttal	Reliability Indices Energy Efficiency Programs Wind Research Program
EF-2003-0465	Rebuttal	Resource Planning
ER-2002-424	Direct	Derivation of Normal Weather
EC-2002-1	Direct, Rebuttal	Weather Normalization of Class Sales Weather Normalization of Net System
ER-2001-672	Direct, Rebuttal	Weather Normalization of Class Sales Weather Normalization of Net System
ER-2001-299	Direct	Weather Normalization of Class Sales Weather Normalization of Net System
EM-2000-369	Direct	Load Research
EM-2000-292	Direct	Load Research
EM-97-515	Direct	Normalization of Net System
ER-97-394, et. al.	Direct, Rebuttal, Surrebuttal	Weather Normalization of Class Sales Weather Normalization of Net System Energy Audit Tariff
EO-94-174	Direct	Weather Normalization of Class Sales Weather Normalization of Net System
ER-97-81	Direct	Weather Normalization of Class Sales Weather Normalization of Net System TES Tariff
ER-95-279	Direct	Normalization of Net System
ET-95-209	Rebuttal, Surrebuttal	New Construction Pilot Program
EO-94-199	Direct	Normalization of Net System
ER-94-163	Direct	Normalization of Net System
ER-93-37	Direct	Weather Normalization of Class Sales Weather Normalization of Net System
EO-91-74, et. al.	Direct	Weather Normalization of Class Sales Weather Normalization of Net System
EO-90-251	Rebuttal	Promotional Practices Variance
ER-90-138	Direct	Weather Normalization of Net System
ER-90-101	Direct, Rebuttal, Surrebuttal	Weather Normalization of Class Sales Weather Normalization of Net System
ER-85-128, et. al.	Direct	Demand-Side Update
ER-84-105	Direct	Demand-Side Update

Electric Utility Fuel Adjustment Clause in Missouri: History and Application Whitepaper

Lena M. Mantle, P.E.
Senior Analyst
Office of the Public Counsel

Revised January 14, 2020

Electric Utility Fuel Adjustment Clause in Missouri: History and Application Whitepaper

Introduction

The purpose of this whitepaper is to provide a general description of the history of electric utility fuel adjustment clauses ("FACs") in Missouri prior to and after the passage of Section 386.266 Revised Missouri Statutes ("RSMo") in 2005[1] and provide an understanding of the functionality of the FACs currently implemented throughout the state of Missouri. This whitepaper is not an exhaustive description of the FAC in Missouri but is intended to provide a basic understanding of the history and application of Section 386.266 in a neutral and unbiased manner.

Recovery of Fuel and Purchased Power Costs Prior to Section 386.266 RSMo

In the 1979 Missouri Supreme Court opinion of *Utility Consumer Council of Missouri, Inc. v. P.S.C*,[2] the Court concluded FAC surcharges were unlawful because they allowed rates to go into effect without considering all relevant factors. The Court warned "to permit such a clause would lead to the erosion of the statutorily-mandated fixed rate system." [3] The Court further explained, "If the legislature wishes to approve automatic adjustment clauses, it can of course do so by amendment of the statutes and set up appropriate statutory checks, safeguards, and mechanisms for public participation."[4]

After this Supreme Court opinion, fuel and purchased power costs for Missouri investor-owned utilities were normalized in general rate proceedings and included in the determination of the utility's revenue requirement from which rates were set. This provided an incentive to the electric utility that, if it managed its activities in a manner that allowed it to reliably serve its customers at a cost lower than what was included in its revenue requirement in the last rate case, all the savings were retained by the electric utility. If actual fuel costs were greater than the normalized costs included in the revenue requirement, the electric utility absorbed the increased costs. When the electric utility believed that it could no longer absorb the increased

[1] Section 386.266 RSMo. was Truly Agreed To and Finally Passed by the Missouri House of Representatives and Senate on April 27, 2005. Governor Matt Blunt signed this legislation on July 14, 2005. http://www.senate.mo.gov/05info/BTS_Web/Actions.aspx?SessionType=R&BillID=5755

[2] State ex rel. Utility Consumers Council, Inc. v. P.S.C., 585 S.W.2d 41(MO. 1979).

[3] Id. at 57.

[4] Id.

costs, the electric utility would ask the Commission for an increase in its rates. This incentive worked well for the Missouri electric utilities and their customers for the next twenty-five years. The two largest investor-owned electric utilities, Union Electric Company ("Union Electric") and Kansas City Power & Light Company ("KCPL") went for a period of twenty years without a rate increase – not necessarily because fuel costs were over-estimated in revenue requirement but because their total costs were less than the revenue collected due to a variety of factors.

During this time, the investor-owned utilities built to meet their customers' needs. There were no centralized markets for electricity. If a utility had more generation than its customers needed, the excess capacity and generation were sold to neighboring utilities through long-term (10 to 20 years) contracts. This was the case in Missouri. Due to inaccurate forecasts that projected high growth of electricity demand, Union Electric and KCPL built excess generation in the 1970's and 1980's. Capital costs of these plants were included in the customers' rates of these electric utilities. Excess generation and capacity from these utilities and other regional providers that also over-built was sold through long-term contracts on a cost-plus basis to the smaller investor-owned electric utilities in the state. This resulted in minimal rate increase requests for these smaller investor-owned electric utilities and offset some of the capital costs of the excess generation built by Union Electric Company and KCPL. Eventually the large utilities' customers load requirements grew and these utilities needed the generation they had built in the 1970's and 1980's to meet their own customers' needs. With this excess generation no longer available, to meet their customers' needs, the smaller electric utilities began to build the least cost option - natural-gas fired generation plants. While these plants were inexpensive to build, the fuel cost was uncertain and in the late 1990's and early 2000's were very volatile.

In the early 1990's, restructuring of the electric utilities began occurring in other parts of the nation. In the mid-1990's the Missouri Legislature considered restructuring Missouri's investor-owned electric utility companies. At the end of 2000, after two months of extraordinarily cold weather and continued reports of extreme storage withdrawals, the commodity price of natural gas spiked to nearly $10 per thousand cubic feet ("Mcf") in late December after remaining consistently between $1/Mcf to $3/Mcf since the inception of the unregulated wholesale natural gas markets in the 1980s.[5] These wildly fluctuating natural gas prices had little impact on the total fuel costs of KCPL and Union Electric since most of their customers' needs were met through nuclear and coal generation. However, the fluctuating natural gas prices significantly impacted the smaller electric utilities' fuel and purchased power costs.

[5] Missouri Public Service Commission Case No. GW-2001-398, EFIS case GW201398xxx, Item no. 44, Final Report of the Missouri Public Service Commission's Natural Gas Commodity Price Task Force, August 29, 2001.

Overview of Section 386.266 RSMo

The provisions of Section 386.266 RSMo, also known as Senate Bill 179 ("SB 179"), took effect on January 1, 2006.[6] This section gives the Missouri Public Service Commission ("Commission"), among other things, the authority to approve rate schedules authorizing periodic rate adjustments outside of general rate proceedings to reflect increases and decreases in its prudently incurred fuel and purchased power costs, including transportation costs. An FAC is such a mechanism. The statute, in addition to requiring approval from the Commission before implementing an FAC, includes other provisions including some consumer protections. It requires the Commission to approve, modify, or reject FACs only as a part of a general rate case proceeding in which all costs and relevant factors are considered. It allows the Commission to include in an FAC features designed to provide incentives to improve the efficiency and cost-effectiveness of the electric utility's fuel and purchased-power procurement activities. If the Commission approves an FAC, the electric utility with the FAC must file a general rate case so that all rates are reviewed and reset no later than four years after the order implementing the FAC. Prudence reviews of the costs included in an FAC are to be conducted at least every eighteen months and true-ups to adjust for over and under recoveries are required at least annually. Amounts charged/refunded to the customers through an FAC are required to be separately disclosed on each customer's bill.

Section 386.266.1, which is the provision that grants the Commission the authority to approve, reject or modify FACs, applies only to investor-owned electric utilities in Missouri. At the time it became effective, there were four investor-owned electric utilities in Missouri – Union Electric, KCPL, Aquila, Inc. ("Aquila"), and the Empire District Electric Company ("Empire"). Union Electric subsequently did business as AmerenUE and is now doing business as Ameren Missouri. Aquila subsequently did business as KCP&L – Greater Missouri Operations Company ("GMO") and is now doing business as Evergy Missouri West ("Evergy West"). KCPL is now doing business as Evergy Missouri Metro ("Evergy Metro").

Development of Commission Rules Regarding FACs

Section 386.266.9 RSMo gives the Commission the authority to promulgate rules to govern the structure, content, and operation of FACs. The Commission is also given the authority to promulgate rules regarding the procedures for the submission, frequency, examination, hearing, and approval of FACs. Soon after Section 386.266 RSMo went into effect, the Staff of the Public Service Commission ("Staff") began the work of developing rules governing the

[6] Section 386.266.12 RSMo.

implementation of this section. Initially there were two rules: one rule provided the filing and information requirements necessary for requesting approval, continuation, modification, and discontinuation of an FAC along with filing and submission requirements for changes to the FAC rates and true-ups. It also provided the contents of quarterly surveillance reports and monthly reporting requirement for electric utilities that are allowed an FAC. A second rule provided the structure and governance requirements for an FAC.

In its development of the initial rules, Staff worked diligently with a broad group of stakeholders - including representatives from electric utilities, large customers, AARP, and the Office of the Public Counsel ("OPC") in the development of proposed rules to present to the Commission. Auditors, engineers, economists, and attorneys worked together in over fifteen workshops collaborating to develop specific language to propose rules to the Commission to implement the provisions of Section 386.266 RSMo pertaining to FACs. The Commission opened Case No. EX-2006-0472 on June 15, 2006 with a finding of necessity for rules to establish and implement an FAC and began the formal rulemaking process with the proposed rules developed through the collaborative workshop process. Public hearings regarding the proposed FAC rules were held in Kansas City, St. Louis, Overland, Cape Girardeau, Jefferson City and Joplin in late August 2006 and early September 2006. Written comments were received from seven individuals and fourteen groups or companies. The Commission issued its final orders of rulemaking on September 21, 2006.[7] The final order was published in the December 1, 2006 *Missouri Register* effective January 30, 2007. [8]

The Commission opened a working docket in November 2010 to assist in reviewing its FAC rules. Comments from interested parties were filed in this case in early 2011. Three workshops were held in the spring and summer of 2015 regarding these rules. An order with a finding of necessity was issued in Case No. EX-2016-0294 in November 2016 with a final order of rulemaking for a single rule, *4 CSR-240-20.090 Electric Utility Fuel and Purchased Power Cost Recovery Mechanisms*, that combined the previous two rules, being filed on October 4, 2018. This rule and the rescission of 4 CSR 240-3.161 became effective on January 30, 2019. With the transfer of the Commission from the Department of Economic Development to the Department of Commerce and Insurance on August 28, 2019, this rule is now 20 CSR 4240-20.090.

[7] Missouri Public Service Commission, Case No. EX-2006-0472, EFIS items 27 and 28
[8] http://s1.sos.mo.gov/CMSImages/adrules/moreg/previous/2006/v31n23/v31n23b.pdf

Key Provisions of the FAC Rule

Despite concerns that an FAC would contribute to over-earnings by electric utilities by the non-utility parties that participated in developing the proposed rules and those that provided comments in the formal rulemaking process, the resulting FAC rules, and the subsequent revised rule, do not contain an earnings test. In FAC proceedings, the Commission is only required to review the costs and revenues included in the FAC. Decreases in expenses and increases in revenues not included in the FAC are not considered by the Commission. However, utilities with an FAC are required by the Commission rule to submit quarterly surveillance reports to Staff, OPC, and other parties. These surveillance reports include rate base quantifications, capital quantifications and income statements for the electric utilities as a whole.[9] The information from these reports includes the earnings of the electric utility for the prior quarter and could be used in an over-earnings complaint case.[10]

Because the statute requires adjustments to FAC rates to reflect increases and decreases in prudently incurred costs, the rule requires that FAC recoveries be based on historical costs.[11] Therefore, before the electric utility can begin billing to recover FAC costs, the costs in the utility's FAC must be incurred and any revenues included in the FAC to offset those costs must be received. Interest at the utility's short-term debt rate is applied to the net of these costs and revenues and recovered or returned to the ratepayers through the FAC rate.

The rule is not prescriptive regarding the design of FAC rates. However, 20 CSR 4240-20.090(13) does require that FAC rates reflect differences in losses incurred in the delivery of electricity at different voltage levels for different rate classes based on system loss studies that must be conducted at least every four years.

While Section 386.266.1 allows the Commission to include features in an FAC designed to provide the electric utilities with incentives to improve the efficiency and cost-effectiveness of the utilities fuel and purchased-power procurement activities, the rule is not prescriptive regarding what such an incentive feature would look like. Instead it allows incentive features to be proposed in rate cases in which an electric utility requests the establishment, continuation or modification of an FAC.[12] Incentive features can be proposed for the Commission's consideration by any of the parties in rate cases in which the electric utility is proposing the establishment, continuation, or modification of an FAC.

[9] 20 CSR 4240-20.090(6).
[10] However, the Commission, in File no. EC-2014-0223, stated that these surveillance reports alone do not provide a complete or accurate picture of earnings sufficient to reset the utility's rates.
[11] 20 CSR 4240-20.090(2)(F)
[12] 20 CSR 4240-20.090(14)

Section 386.266 is silent regarding the inclusion in an FAC of any fuel related type of revenues. The Commission rule does not require the inclusion of fuel related revenues, such as off-system sales revenues,[13] in an FAC. The rule does require that if an FAC includes revenues from off-system sales, the FAC include prudently incurred fuel and purchased power costs associated with off-system sales.[14]

History of Requests for FACs

Empire was the first electric utility to request cost recovery of fuel costs under Section 386.266 RSMo when it filed Case No. ER-2006-0315 on February 1, 2006. This case was filed while the Commission rules were being drafted. In this case, Empire did not request an FAC. Instead it requested an Energy Cost Rider ("ECR") to recover costs between rate cases. Due to a stipulation Empire had entered into in a prior rate case, the Commission required Empire to remove from its pleadings and other filings its request and support for an ECR.[15] Prior to Empire's next rate case, Case No. ER-2008-0093 filed on October 1, 2007, the Commission FAC rules had been finalized and were effective. The Commission granted Empire an FAC in its July 30, 2008, *Report and Order* in ER-2008-0093. The Commission has authorized continuation of an FAC with modifications in all general rate cases subsequently filed by Empire.

On July 3, 2006 two of Missouri's investor-owned electric utilities filed general rate increase cases in which they requested an FAC. Union Electric, then doing business as AmerenUE, requested the Commission grant it an FAC in Case No. ER-2007-0002 and Aquila requested an FAC in Case No. ER-2007-0004. While the FAC rules were not final at this time, the Commission had, just eighteen days earlier, sent proposed rules to the Missouri Office of the Secretary of State for publication in the Missouri Register. The Commission's determination of the final FAC rules occurred while these rate cases were pending.

In its May 22, 2007 *Report and Order* in the AmerenUE case ER-2007-0002, the Commission concluded:

> After carefully considering the evidence and arguments of the parties, and balancing the interests of ratepayers and shareholders, the Commission

[13] Off-system sales revenues are the revenues from sales of energy by the electric utility above what is needed by the utility's customers.
[14] 20 CSR 4240-20.090(1)(L).
[15] Case No. ER-2006-0315, EFIS item 57, *Order Clarifying Continued Applicability of the Interim Energy Charge*, effective May 12, 2006.

> concludes that AmerenUE's fuel and purchased power costs are not volatile enough [to] justify the implementation of a fuel adjustment clause at this time.

AmerenUE filed another general rate increase case on April 4, 2008, again seeking the Commission's approval of an FAC in Case No. ER-2008-0318. In its January 27, 2009 *Report and Order*[16] in this case, the Commission authorized AmerenUE to implement an FAC. The Commission has authorized continuation of an FAC with modifications in all general rate cases subsequently filed by Union Electric now doing business as Ameren Missouri.

The Commission authorized the first FAC for a Missouri investor-owned electric utility under Section 386.266 RSMo in its May 17, 2007 *Report and Order* in Aquila's general rate proceeding in case ER-2007-0004. FAC base rates were approved for each of Aquila's two rate districts, then designated as Aquila Networks-MPS and Aquila Networks-L&P. The actual effective date of Aquila's FAC was delayed when the Commission found that the proposed FAC tariff sheets filed by Aquila were not consistent with its *Report and Order*. Tariff sheets implementing the FAC consistent with the Commission's *Report and Order* were approved on June 29, 2007 effective July 5, 2007. Following this rate case, Great Plains Energy acquired Aquila and renamed it GMO. The Commission has authorized the continuation of an FAC with modifications in all general rate cases subsequently filed by GMO. When GMO combined the rates of Aquila Networks-MPS and Aquila Networks-L&P in case ER-2016-0156, a single FAC rate was applicable to all of GMO's customers regardless of which utility previously served the customers.

KCPL was the last Missouri electric utility to be granted an FAC. At the time that SB 179 was being debated at the Legislature, KCPL was negotiating a regulatory plan that would address financial considerations of KCPL's investment in the Iatan 2 Power Plant and other investments, and the timeliness of the recovery of the costs of these investments. As a part of the *Stipulation and Agreement*[17] in that case, KCPL agreed, among other items, that prior to June 1, 2015, it would not seek to utilize any mechanism authorized in SB 179. Therefore, KCPL did not request an FAC until the general rate case ER-2014-0370 it filed on October 30, 2014. The Commission granted KCPL an FAC in its September 2, 2015 *Report and Order*.[18] Tariff sheets implementing an FAC for KCPL became effective September 29, 2015. The Commission has authorized the continuation of an FAC with modifications in all general rate cases subsequently filed by KCPL.

[16] Case No. ER-2008-0318, EFIS item no. 589, page 70.
[17] Case No. EO-2005-0329, EFIS item no. 1.
[18] Case No. ER-2014-0370, EFIS item no. 592, page 30.

General Structure of FACs in Missouri

While there are some differences in the details of each electric utility's FAC, the general structure of the FACs of each of the electric utilities is the same. An estimate of the FAC costs and revenues, known as Net Base Energy Cost or NBEC, is identified and included in the permanent rates[19] of each electric utility. The FAC rate is based on the difference between the FAC costs included in permanent rates and the actual FAC costs incurred. FAC costs are tracked in a designated accumulation period and the difference between actual FAC costs and NBEC is recovered or returned in a designated recovery period.

Even though the rule is not prescriptive regarding the design of the FAC rate, in practice, all of the electric utility's FAC rates are volumetric rates based on customer energy usage. A base factor is calculated in each general rate proceeding as the NBEC divided by the rate case normalized kilowatt-hours ("kWh").[20]

To derive a rate to be charged the customers after FAC costs have been incurred, the difference between the actual costs incurred (actual net energy cost or ANEC) and the costs already included in the permanent rates (NBEC), either positive or negative, is divided by the expected energy use of the utility's customers over the recovery period. Because the FAC rule requires voltage losses to be taken into account in the FAC, a fuel adjustment rate (FAR) is calculated for each of the voltage levels that the utility provides service at based on loss factors derived in the last rate case. These loss-adjusted FARs are the rates used to bill the FAC to the customers.

Accumulation and Recovery Periods

An accumulation period is the time over which the electric utility incurs the ANEC. Commission rule allows up to four accumulation periods a year but requires at least one accumulation period a year. The Recovery Period is the time period over which the difference between the accumulation period ANEC and NBEC is billed to the utility's customers.

[19] Permanent rates are only set in rate cases. There are typically 2 sets of permanent rates for each customer class – a rate for the four summer months and a rate for the other eight months.

[20] The base factor is typically thought of as the portion of the permanent rates that is recovering the FAC costs and revenues.

The accumulation periods and recovery periods for the electric utilities are shown in the table below.

Electric Utility	Accumulation Periods	Recovery Periods
Ameren Missouri	February through May June through September October through January	October through May February through September June through January
Evergy Metro	January through June July through December	October through September April through March
Evergy West	June through November December through May	March through February September through August
Empire	September through February March through August	June through November December through May

The recovery periods are twice as long as the accumulation periods for Ameren Missouri, Evergy Metro, and Evergy West. The purpose of having recovery periods longer than the accumulation periods is to reduce the FAR and minimize the impact of the change in rates on the customers' bills. Ameren Missouri's accumulation periods are four months and the costs from the four month accumulation period are billed (recovered or returned) over eight months. The accumulation periods of Evergy Metro and Evergy West are six months while the recovery periods are twelve months. Empire is the only utility where the recovery period is the same length as the accumulation period - both are six months.

The timing of recovery periods for Ameren Missouri, Evergy Metro, and Empire were set to minimize the number of times during a year that changes in rates impact bills. The FAC base rates for all of the electric utilities change twice a year. FAC base rates are higher in the summer months of June through September for Ameren Missouri, Evergy Metro, and Every West because the cost to provide electricity is higher in these summer months for these utilities. The lower, non-summer FAC base rates are billed in October through May.

The timing of the recovery periods of Ameren Missouri means that customers see both permanent rates and FAR changes in June and October and then see another rate change, due to the change in the FAR, in February. Without alignment of the timing of recovery periods,

customers of Ameren Missouri could be impacted by changes in rates up to five times a year – twice in permanent rates and three times for the FAC rates.

Similarly, one of the FAC recovery periods for Evergy Metro occurs in October when permanent rates also change. One of Empire's recovery periods begins in the same month that the permanent rates change for summer resulting in rates changing for Empire's customers only three times a year. The timing of FAC rate changes for Evergy Metro and Empire results in their customers seeing changes in rates just three times a year.

Calculation of Fuel Adjustment Rates

At the end of the accumulation period, the NBEC is calculated for the accumulation period based on the FAC Base Rate set in the rate case ($/kWh) and the actual energy consumed (kWh) by the electric utility's customers in the accumulation period. This NBEC is compared to the Actual Net Energy Costs (ANEC) incurred during that accumulation period. The FAR for the accumulation period is then calculated based on the difference between the actual historical costs incurred (ANEC) and the FAC costs billed in the permanent rates (NBEC) divided by the expected usage of the utility's customers over the recovery period and then adjusted for delivery losses.

This is the FAR that the customer is billed for Empire since the recovery period is the same length as the accumulation period. For the other three electric utilities that have recovery periods that are twice as long as the accumulation periods, the FAR that is billed the customer is actually the sum of the loss adjusted FARs for two consecutive accumulation periods.

Price Signal Resulting From FACs

There is a common misconception that FACs provide customers more accurate price signals than the permanent rates. There are several reasons Missouri's FAC does not provide accurate price signals to customers. Timing is essential to provide an accurate price signal. Missouri's FAC is based on historical costs so customers are not billed the difference in the FAC costs until months after the costs are incurred. For example, fuel costs incurred in January for Evergy Metro are not billed to its customers until the recovery period that begins in October. At the time that a change in fuel costs is seen on the customers' bills, it is no longer an accurate representation of the fuel cost the utility is experiencing at that time.

Another reason that FACs in Missouri do not provide accurate price signals is that the accumulation periods bill costs or return savings to customers aggregated over several months. Increases in FAC costs in one month may be offset by decreases in FAC costs in the next month. In addition, the accumulation periods cross seasons of the year when FAC costs typically vary because the load requirements of the customers vary. For these reasons, the length of the accumulation period mutes any price signal.

Long recovery periods designed to reduce FAC rate volatility to customers also mutes the price signal to customers. For example, for Evergy Metro any increase in costs in January is recovered over the time period of October of that same year through September of the next year. An increase in January is spread out over the twelve months of the recovery period so an increase in January combined with changes for all the months in the accumulation period and then spread over twelve months of estimated usage. This is the price signal that the customer is reacting to – not the actual increase in costs that occurred in January. In addition, the customer would not even be billed for the increase in costs in January until the October billing month. If FAC costs are volatile, the customer may be reacting to an increase in cost in the previous year during a time period when costs are actually decreasing. In this instance, the FAC is sending the wrong price signal to the customer.

For these reasons the design and application of FACs in Missouri do not send accurate price signals to customers.

True-Up of FACs

SB 179 requires that true-ups of FACs occur at least annually.[21] The purpose of a true-up is to make sure that the electric utility recovers all the costs that it is entitled or all amounts due to the customers are refunded. Section 386.266 requires the true-up amount include interest at the electric utility's short-term interest rate.

In practice, true-ups occur after the end of each recovery period. Because Evergy Metro, Evergy West, and Empire have two recovery periods a year, there are two FAC true-ups a year for these electric utilities. There are three FAC true-ups a year for Ameren Missouri since it has three recovery periods a year. A true-up is simply a comparison of the actual FAC billed the customers in the recovery period to the difference between the actual FAC costs and NBEC in the corresponding accumulation period. This difference, either negative or positive, is added as a true-up amount, including interest, to the FAC costs to be billed in the next recovery period.

[21] Section 386.266.4(2)

The true-up amount is keyed off of the FAC billed not the FAC revenues recovered. This is to reduce complexity of how to deal with under-paid bills. While the FAC amount is separately identified on the customer's bill, the customer that only pays a portion of their bill does not designate what portion of the bill they are paying. The unpaid portion of the bill is treated as uncollectible. The rate case treatment for uncollectibles is determined in the rate case and is not dealt with in the FAC.

Prudence Reviews

Section 386.266.4(4) requires prudence reviews of the costs in the FAC to occur at least every eighteen (18) months. Since the first FAC under section 386.266 was approved for GMO, the first prudence audit was conducted on GMO's FAC, followed by prudence audits on Empire's, Ameren Missouri's, and KCPL's FACs. [22] In Ameren Missouri's first prudence audit case, EO-2010-0255, the Commission determined that Ameren Missouri "acted imprudently, improperly and unlawfully when it excluded revenues" derived from power sales agreements from its FAC.[23] Because these power sales agreements crossed over two prudence review time periods, the Commission, in Ameren Missouri's second prudence audit, EO-2012-0074, made the same finding.[24]

Imprudence has been alleged in four additional cases – EO-2011-0390,[25] EO-2017-0065,[26] EO-2019-0067,[27] and EO-2019-0068.[28] The Commission, in its *Report and Orders* in these cases found no imprudence.

Incentive Mechanism

SB 179 allows the Commission to include, in an FAC, incentives to improve the efficiency and cost-effectiveness of the electric utilities' fuel and purchased power procurement.[29] The Commission, for each of the electric utilities, found that allowing the utility to have one hundred percent recovery of its FAC costs through an FAC would act as a disincentive for the utility to control FAC costs. The Commission determined that recovering a share of the difference between the NBEC and ANEC allows the electric utility a sufficient opportunity to earn a fair return on equity while protecting customers by providing an incentive to control costs. The Commission has set that sharing percentage, for all of the electric utilities, to be

[22] Case Nos. EO-2009-0115, EO-2010-0084 and EO-2010-0255 for GMO, Empire and Ameren Missouri respectively.
[23] Case No. E0-2010-0255, *Report and Order,* page 2.
[24] Case No. EO-2012-0074, *Report and Order,* page 2.
[25] Hedging practices of GMO.
[26] Hedging practices of Empire.
[27] Allocation of GMO steam auxiliary power costs and wind purchased power agreements.
[28] KCPL allowing RECs to expire and wind purchased power agreements.
[29] Section 386.266.1.

95%/5%, i.e. 95% of any increase in FAC costs above the NBEC would be billed to the customers and the electric utility absorbs 5%, while 95% of a decrease in FAC costs below the NBEC would be credited to customers and the electric utility retains 5% of the decrease.[30]

Given this incentive mechanism, the amount to be billed through the FAC is 95% of the difference between the ANEC and the NBEC. The result of this incentive mechanism is that, when costs are above the amounts included in permanent rates, the electric utility recovers almost 100% of the FAC costs. If FAC costs are below the amounts included in permanent rates, the utility recovers greater than 100% of its FAC costs. The table below shows examples of what occurs when actual costs are greater, equal to, and less than what is in the NBEC.

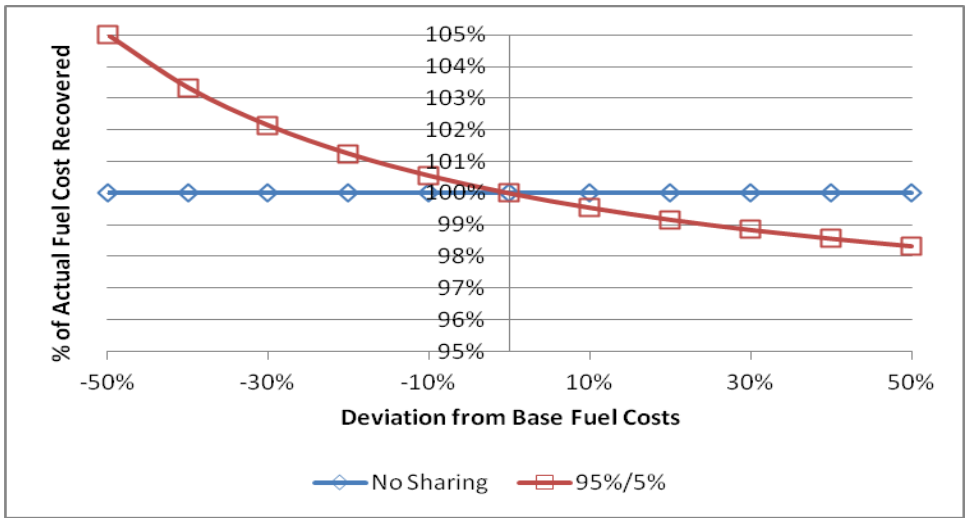
Impact of 95%/5% Sharing Mechanism

NBEC	ANEC	Diff	FAC Amt Billed to Customers	Amt Absorbed/ (Retained) by Company	Total billed to Customers	% FAC Costs Billed
$100	$150	$50	$47.50	$2.50	$147.50	98.3%
$100	$110	$10	$9.50	$0.50	$109.50	99.5%
$100	$100	$0	$0	$0	$100.00	100.0%
$100	$90	($10)	($9.50)	($0.50)	$90.50	100.6%
$100	$50	($50)	($47.50)	($2.50)	$52.50	105%

This table shows the incentive mechanism allows the utility to bill its customers for 98.3% of its FAC costs when its ANEC is 50% higher than what is included in permanent rates, i.e., if the actual FAC costs incurred are 50% higher than what was included in the permanent rates, the electric utility recovers 98.3% of its actual FAC costs.[31] Likewise, if actual fuel costs are 50% lower than what is included in permanent rates, the utility will recover 105% of its actual FAC costs. If the utility manages to reduce its actual FAC costs any amount below the NBEC, it will recover more than 100% of its FAC costs. This relationship is shown in the graph below.

[30] While parties in rate cases have proposed different sharing percentages and/or different incentive mechanisms, the only incentive mechanism implemented has been a 95%/5% sharing of the difference between ANEC and NBEC.

[31] For a utility to bill only 95% of its actual costs, the actual FAC costs would need to be over 1,000 times greater than the costs included in permanent rates.



These relationships hold true regardless of the magnitude of the NBEC.

Importance of Correct NBEC

Because Missouri's FAC is based on the difference between a subset of normalized costs and revenues set in a rate case and actual costs and revenues, it is important that the costs and revenues included in the NBEC of the FAC are the same as the costs and revenues included in permanent rates. The table below shows three different scenarios. To simplify the example, in these scenarios there is no sharing of the difference between ANEC and NBEC. All of the difference between the ANEC and NBEC is billed or returned to the customers.

Net Base Energy Cost (NBEC)	FAC Costs in Permanent Rates	Actual Net Energy Cost (ANEC)	Billed FAC Costs	Total FAC Costs Billed	Total billed as % of ANEC
Scenario 1 - NBEC Equal FAC Costs in Rates					
$100.00	$100.00	$110.00	$10.00	$110.00	100.00%
$100.00	$100.00	$100.00	$0.00	$100.00	100.00%
$100.00	$100.00	$90.00	-$10.00	$90.00	100.00%
Scenario 2 - NBEC Lower than FAC Costs in Rates					
$100.00	$110.00	$110.00	$10.00	$120.00	109.09%
$100.00	$110.00	$100.00	$0.00	$110.00	110.00%
$100.00	$110.00	$90.00	-$10.00	$100.00	111.11%
Scenario 3 - NBEC Higher than FAC Costs in Rates					
$100.00	$90.00	$110.00	$10.00	$100.00	90.91%
$100.00	$90.00	$100.00	$0.00	$90.00	90.00%
$100.00	$90.00	$90.00	-$10.00	$80.00	88.89%

The first scenario is a correct treatment of NBEC and FAC costs in rates. NBEC is equal to the FAC costs included in permanent rates. In this scenario, when ANEC is higher than NBEC, the total FAC costs billed the customer is the $100 billed in the permanent rates and $10 billed through the FAC for a total of $110. When the ANEC is the same as the NBEC, the customers are billed nothing through the FAC and the utility recovers all of its FAC costs through its permanent rates. Lastly, when the actual costs are less than the NBEC, the customers' bills are reduced and the utility recovers all of its actual fuel costs.

In Scenario 2, the NBEC designated in the FAC is less than the FAC costs in permanent rates. In this scenario, the customers always pay more than intended. Even when ANEC is the same as the FAC costs included in permanent rates, the customer pays for the difference between the ANEC and NBEC. In this scenario, the customers always pay more than the actual FAC costs because the fuel costs included in the permanent rates is greater than the costs used to calculate the NBEC.

In Scenario 3, the NBEC is set higher than the FAC costs included in rates. In this scenario, the electric utility does not collect the actual energy costs because the amount of FAC costs included in rates is less than the NBEC set in the FAC. The amount recovered is the lower FAC costs included in rates and the difference between the higher NBEC and ANEC. In this scenario, the company does not receive the revenues that are intended with an FAC.

These scenarios show the importance of insuring that the FAC costs included in permanent rates are the same as the FAC NBEC. If they are not set correctly, either the customers overpay or the company is not afforded the opportunity to recover its costs as intended.

Conclusion

The FAC in Missouri is continually being refined and defined. The design of the FAC is considered and typically modified slightly in each rate case. There have been instances where a utility came in for a general rate case only because it was required to do so by Section 386.266. And there have been many cases that were filed before the general rate case required by 386.266. It is the intent of this whitepaper to give the reader a basic understanding of the working of the FAC in Missouri.

Questions and suggestions for improvement of this white paper may be directed to its author, Lena Mantle at lena.mantle@opc.mo.gov

Case No. ER-2019-0374

Schedule LMM-D-3 to Lena M. Mantle's Direct Testimony has been deemed "Highly Confidential" in its entirety