BEFORE THE PUBLIC SERVICE COMMISSION
OF THE STATE OF MISSOURI

In the Matter of Union Electric Company d/b/a Ameren Missouri's 2023 Utility Resource Filing Pursuant to 20 CSR 4240 – Chapter 22	)))	**Case No. EO-2024-0020**

STAFF REPORT

COMES NOW the Staff of the Missouri Public Service Commission and, in response to Union Electric Company d/b/a Ameren Missouri's ("Ameren Missouri") 2023 Utility Resource Filing, September 26, 2023 triennial compliance filing, in accord with rule 20 CSR 4240-22.080(7)[1] files the attached report of its limited review of that filing. In its report, Staff identifies concerns with Ameren Missouri's analysis under 20 CSR 4240-22.050 Demand-Side Resource Analysis and 20 CSR 4240-22.060 Integrated Resource Analysis. However, Staff notes that other dockets, including one with a pending resolution, may be the appropriate venue to discuss and remedy Staff's concerns.

Respectfully submitted,

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[1] This rule requires Staff to file its report of its limited review within 150 days of when the compliance filing is made.

CERTIFICATE OF SERVICE

I hereby certify that a true and correct copy of the foregoing was served by electronic mail, or First Class United States Postal Mail, postage prepaid, on this 28th day of February 2024, to all counsel of record.

/s/ Nicole Mers

MISSOURI PUBLIC SERVICE COMMISSION

STAFF REPORT ON

UNION ELECTRIC COMPANY
d/b/a AMEREN MISSOURI

ELECTRIC UTILTY RESOURCE
PLANNING COMPLIANCE FILING

FILE NO. EO-2024-0020

Jefferson City, Missouri
February 28, 2024

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STAFF REPORT ON

ELECTRIC UTILITY RESOURCE PLANNING COMPLIANCE FILING

UNION ELECTRIC COMPANY, d/b/a AMEREN MISSOURI

FILE NO. EO-2024-0020

Executive Summary

On September 26, 2023,[1] Union Electric Company, d/b/a Ameren Missouri ("Ameren Missouri"), filed its 2023 Integrated Resource Plan ("IRP") triennial compliance filing ("Filing") in File No. EO-2024-0020, as required by 20 CSR 4240-22 Electric Utility Resource Planning. On November 9, 2022, the Missouri Public Service Commission ("Commission") issued its *Order Granting Variances* in File No. EE-2023-0021.[2]

> Commission Rule 20 CSR 4240-22.080(7) provides in part that:
>
> (7) The staff shall conduct a limited review of each triennial compliance filing required by this rule and shall file a report not later than one hundred fifty (150) days after each utility's scheduled triennial compliance filing date. The report shall identify any deficiencies in the electric utility's compliance with the provisions of this chapter, any major deficiencies in the methodologies or analyses required to be performed by this chapter, and any other deficiencies and shall provide at least one (1) suggested remedy for each identified deficiency. Staff may also identify concerns with the utility's triennial compliance filing, may identify concerns related to the substantive reasonableness of the preferred resource plan or resource acquisition strategy, and shall provide at least one (1) suggested remedy for each identified concern.

20 CSR 4240-22.010 Policy Objectives

20 CSR 4240-22.010 Policy Objectives has a stated purpose that "This rule states the public policy goal that this chapter is designed to achieve and identifies the objectives that the electric utility resource planning process must serve."

20 CSR 4240-22.010(1) and (2) state:

> (1) The commission's policy goal in promulgating this chapter is to set minimum standards to govern the scope and objectives of the resource planning process that is required of electric utilities subject to its jurisdiction in order to ensure that the public interest is

[1] On December 20, 2023, Ameren Missouri filed its *Supplemental IRP filing of Chapter 6 and Chapter 9.*

[2] Approved waivers include: 20 CSR 4240-22.040(3)(A); .045(1)(B) and (3)(C); .060(5)(E), (5)(F), (5)(K), (5)(L) and (7); and .080(2)(C)2 and (5)(A).

> adequately served. Compliance with these rules shall not be construed to result in commission approval of the utility's resource plans, resource acquisition strategies, or investment decisions.
>
> (2) The fundamental objective of the resource planning process at electric utilities shall be to provide the public with energy services that are safe, reliable, and efficient, at just and reasonable rates, in compliance with all legal mandates, and in a manner that serves the public interest and is consistent with state energy and environment policies. The fundamental objective requires that the utility shall —

It is important to note the use of the words "minimum standards" as mentioned in the rule language above. Ameren Missouri uses a number of generic assumptions, or minimum standards, in its resource planning modeling. Certain assumptions change between IRP Filings, sometimes annually. Reliance on a Company's IRP Filing for any specific project is inappropriate, as Staff views the function of the Chapter 22 rules as a roadmap in the sense that it points you in a general direction, but it should not be relied on for the determination of specific projects. Each individual project should stand on its own in demonstrating whether or not the project is in the public interest.

It is also very important to note the rule language above that states that "Compliance with these rules shall not be construed to result in commission approval of the utility's resource plans, resource acquisition strategies, or investment decisions." For new Company-owned resources, the Company has to file with the Commission a Certificate of Convenience and Necessity ("CCN"). CCNs require Commission approval. Ameren Missouri has recently heavily relied on its IRP Filings as justification for specific projects in its CCN filings. However, while the Commission must determine whether the resource planning filing complies with the Chapter 22 rules, the Commission's finding of compliance does not constitute any kind of approval of the resource plans set out in IRP Filings or of any specific project within the utility's preferred plan.

Further, per 20 CSR 4240-22.080(7), a Staff report that finds an IRP Filing is in compliance with Chapter 22 shall not be construed as acceptance or agreement with the substantive findings, determinations, or analysis contained in the electric utility's filing.

Staff performed its review of Ameren Missouri's 2023 IRP Filing using the Commission's policy goal in promulgating this Chapter and the fundamental objective of the resource planning process as the foundation of its review.

Staff Expert Witness: Brad J. Fortson

20 CSR 4240-22.030 Load Analysis and Forecasting

Summary

20 CSR 4240-22.030, Load Analysis and Load Forecasting, has a stated purpose of setting:

> minimum standards for the maintenance and updating of historical data, the level of detail required in analyzing loads, and the purposes to be accomplished by load analysis and by load forecast models. The load analysis discussed in this rule is intended to support both demand-side management efforts of 20 CSR 4240-22.050 and the load forecast models of this rule. This rule also sets the minimum standards for the documentation of the inputs, components, and methods used to derive the load forecasts.

Further, 20 CSR 4240-22.030(1) requires the utility to "describe and document its intended purposes for load analysis methods, why the selected load analysis methods best fulfill those purposes, and how the load analysis methods are consistent with one another and with the end-use consumption data used in the demand-side analysis as described in 20 CSR 4240-22.050."

Accurate load forecasting models are essential to the operation and planning of a utility. Load forecasting helps a utility make important decisions including decisions on purchasing and generating electric power, load switching, and infrastructure development. The Load Analysis and Load Forecasting Rule allows the utility to use multiple analytical methods for performing its load

analysis and develop its forecasts, leaving it to the utility's discretion to choose the methods by which it achieves the stated purpose of the Rule.

Ameren Missouri has developed a range of load forecasts deploying the Statistically Adjusted End-use ("SAE") forecasting tools and methods used to develop the forecasts providing a solid analytical basis for testing and refining the assumptions used in the development of the potential demand-side resource portfolios.[3] Engineering models model energy sales with a bottom-up approach by building up estimates of end use energy consumption. Econometric models, however, are estimated against a relatively long period of time rather than calibrated to sales from a single year, and it is therefore easier to detect and correct any systematic errors or biases in the forecasting model. For that reason, a system that combines the bottom-up approach of engineering models with an econometric approach should produce forecasts that are more accurate.[4] The SAE approach combines engineering and econometric models and is what is used for residential and commercial class sales. For the industrial classes, Ameren Missouri used an econometric approach that was influenced by the SAE approach, which also uses engineering models.

As with any forecast of energy, there are several underlying assumptions. Expectations for economic growth underlying the load forecast are based on Moody's Analytics' forecast of economic conditions in the Ameren Missouri service territory. Historical sales were recorded through March of 2022 and any data presented for 2022 or beyond was forecasted data and data from 2021 and earlier is actual metered or weather normalized sales data.

[3] 20 CSR 4240-22.030(1)(A).
[4] 20 CSR 4240-22.030(5)(B).

Several economic indicators were used as independent variables (also referred to as "drivers")[5] for the energy forecasting process. These economic indicators are:

- For the residential class: Income, population, and the number of households ;
- For the four classes of commercial sales (small general service, large general service, small primary service, large primary service)[6] Gross Domestic Product (GDP) for one or more of six sectors of the economy were used: Retail Trade, Information Services, Financial Services, Education/Health Services, Leisure, and Other Services;
- For the four classes of industrial sales (same classes as in commercial listed above)[7] one or more of the following drivers were used: GDP, Manufacturing GDP, Employment, and Manufacturing Employment.

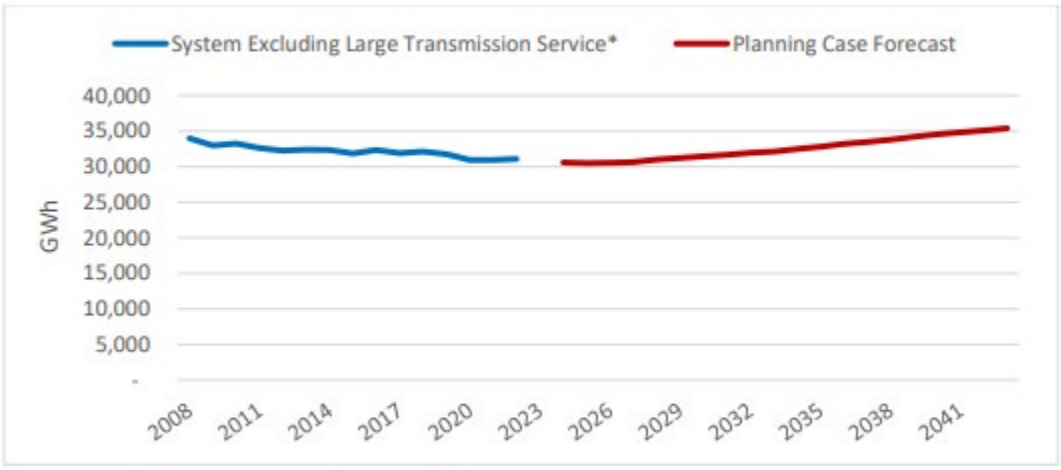
The nature of the forecasting models is that the dependent variable (energy sales) is sensitive to changes in the independent variables as well as to the parameter estimates used to represent elasticity. This is a feature of econometric and SAE models, but it is worth mentioning here because it means that the forecast of energy sales is sensitive to changes in any one of the driver variables. The forecast of residential sales is sensitive to changes in households, electricity prices, income, population, and changes in appliance saturation and efficiency. Commercial and industrial sales are sensitive to changes in service territory GDP, employment, and electricity prices.

The planning case forecast projects Ameren Missouri's retail sales to grow by 0.9% annually and peak demand to grow by 0.5% per year. The planning case forecast projects

[5] 20 CSR 4240-22.030(5)(A).
[6] Based on the applicable qualifications for each class from Ameren Missouri's currently effective tariff.
[7] Based on the applicable qualifications for each class from Ameren Missouri's currently effective tariff.

Ameren Missouri's retail sales to grow by 0.8% annually between 2024 and 2043, and retail peak demand to grow by 0.4% per year for the planning case over the next 20 years, including potential impacts from electrification and behind the meter solar generation, and including economic development additions. For the planning case, the peak load in 2024 is projected to be 7,049 MW, growing to 7,618 MW by 2043. The compound annual growth rates in the various scenarios range from a low of -0.1% (low growth scenario), to 0.8% (high growth scenario). Ameren has considered economic growth, naturally occurring energy efficiency, and customer adoption of distributed energy resources such as solar and efficient electrification of end-uses as key drivers of future growth in their base case forecast. These load forecasts provide the basis for estimating Ameren Missouri's future resource needs and provide hourly load information used in the modeling and analysis. Ameren Missouri observed that sales and peak demand in the 2023 IRP also saw a decrease due to the COVID-19 pandemic. Sales in 2020 decreased by ~3% compared to 2019, and have not yet fully recovered to pre-pandemic levels. Sales are not expected to return to 2019 levels until 2029. In the following figure, Ameren Missouri derived the "Planning Case Energy Sales Forecast" that is total retail energy sales are expected to grow at 0.8% compound annual rate between 2024 and 2043. Total annual sales growth is reported negative (-0.3%) until the year 2026. This is due to negative sales growth for the residential class (-1.0%) and lighting (-1.8%). Commercial and Industrial class sales growth are consistently positive.

Figure 3.15: Planning Case Energy Sales Forecast



**Historical sales have been adjusted to reflect that Ameren Missouri does not serve any customer in Large Transmission rate class at this time.*

Source: Adapted from Ameren IRP Report (Page: 32, Load Analysis and Forecasting)

Ameren Missouri states the forecasts of customers for the residential, commercial, and industrial classes are reasonable given the performance of customer growth over the prior decade. Ameren reports industrial customer growth would be negative (-0.2%) over the planning horizon (see below figure).

Table 3.6: Customer Growth Rates

Year	Residential	Commercial	Industrial
2009-2022	0.3%	0.7%	-1.8%
2024-2043	0.1%	0.7%	-0.2%

Source: Adapted from Ameren IRP Report (Page: 37, Load Analysis and Forecasting)

Residential weather normalization energy model coefficients are highly significant ($p = 0.00$), except for the binary response variable for the month of August, and the coefficient of determinations ($R^2 = 0.96$) represents that of the total variance of the model; 96% of the variance for a dependent variable is explained by those incorporated explanatory variables in the model. In all other weather normalization energy models, the model demonstrates a good fit ($R^2 \geq 95$) and most of the explanatory variables are statistically significant at 5% level of significance.

The direction and magnitude of the coefficient are reasonable; the standard error is consistent with other variables.

Energy sales forecasting regression models in all revenue and service classes show all variables are highly significant ($p = 0.00$) and the coefficient of determinations, (R^2) $\geq$90, having very few exceptions. The statistical models demonstrate strong statistical model fits and variable statistics. The SAE modelling approach for the residential, small commercial, and large commercial classes captures the improving efficiencies of existing end-use technologies. As with weather normalization econometric models, the direction and magnitude of the coefficient are reasonable; the standard error is consistent with other variables in all econometric model set up for the energy sales forecasting.

Ameren Missouri should be cognizant to remodel permutations around its preferred plan (if it requires updating) considering certain dynamic variables such as alternative resource additions/removals, and optimization with established timelines. Recently, factors of energy production (fuels, high-tech labor, information access and other relevant accessories etc.) have become more volatile due to changing market forces. Ameren Missouri continues to explore additional data sources, and enhanced forecasting and analytical techniques. Among them, Ameren plans to utilize North American Industrial Classification System (NAICS) codes to its commercial and industrial accounts. This data system will help monitoring trends in usage by different types of businesses, and therefore give insights into the causes of changes in the energy intensity amongst the economic agents in the service territory.

In its limited review, Staff found no deficiencies concerning compliance with this rule and Staff has not currently identified any concerns.

Staff Expert Witness: Brad J. Fortson

20 CSR 4240-22.040 Supply-Side Resource Analysis

Summary

20 CSR 4240-22.040 Supply-Side Resource Analysis requires Ameren Missouri to review existing resources for opportunities to upgrade or retire existing resources and also review a wide variety of supply-side resource options to determine cost estimates for each type of resource.

Resource options are to be ranked based upon estimates of the installed capital costs plus fixed and variable operation and maintenance costs levelized[8] over the useful life of the potential supply-side resource option using the utility discount rate.[9],[10] Resources that do not have significant disadvantages and pass the pre-screening process are to be included in the integrated resource analysis process used to select a preferred resource plan.

Ameren Missouri owns and operates solar, wind, coal-fired, natural gas-fired, nuclear, hydroelectric and storage energy centers to serve the energy needs of its customers. Ameren Missouri regularly evaluates energy center performance and upgrades that are necessary to operate its plants in what it views as an efficient, safe, cost-effective and environmentally friendly manner. Ameren Missouri has recently completed Keokuk Energy Center upgrades on Units 5 and 15 (the last of 15 main hydro units) in 2021 and 2022 respectively. During the 20-year planning horizon, Ameren Missouri has planned upgrades on Osage Units 2 and 4, which will complete the upgrades for all 27 currently operating hydro units. This IRP's baseline assumptions include the retirement of all of its coal-fired energy centers by the end of 2042, four older and less efficient CTG units by the end of 2029, and all its CTGs in Illinois by the end of 2039.[11]

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[8] 20 CSR 4240-22.020(29) Levelized cost means the dollar amount of a fixed annual payment for which a stream of those payments over a specified period of time is equal to a specified present value based on a specified rate of interest.
[9] 20 CSR 4240-22.040(2)(A).
[10] 20 CSR 4240-22.020(64) Utility discount rate means the post-tax rate of return on net investment used to calculate the utility's annual revenue requirement.
[11] Ameren Missouri's 2023 IRP Filing, Chapter 4, pages 1-2

Staff has not identified any deficiencies or concerns related to Ameren Missouri's supply-side resource analysis.

Staff Expert Witness: Jordan Hull

20 CSR 4240-22.045 Transmission and Distribution Analysis

Summary

20 CSR 4240-22.045 Transmission and Distribution Analysis specifies minimum standards for the scope and level of detail required for transmission and distribution network analysis and reporting. 20 CSR 4240-22.045 does not prescribe how analyses are to be done, but rather allows a utility to conduct its own analysis or adopt the regional transmission operator ("RTO") or Independent Transmission System Operator ("ISO") transmission plans. 20 CSR 4240-22.045 requires analysis and documentation of the RTO/ISO transmission projects and requires the electric utility to review transmission and distribution for the reduction of power losses, interconnection of new generation facilities, facilitation of sales and purchases, and incorporation of advance technologies for the optimization of investment in transmission and distribution resources.

Since 2004, Ameren Missouri has been a member of the Midcontinent Independent System Operator, or MISO, a RTO. MISO was approved as the nation's first RTO in 2001 and is an independent nonprofit organization that supports the delivery of wholesale electricity and operates energy and capacity markets in 15 U.S. states and the Canadian province of Manitoba. A key responsibility of MISO is the development of the annual MISO Transmission Expansion Plan (MTEP). Ameren Missouri is an active participant in the MISO MTEP development process.[12]

[12] Ameren Missouri's 2023 IRP Filing, Chapter 7, page 1.

Ameren Missouri is continuously maintaining or replacing aging infrastructure in order to meet its obligation to provide safe and adequate service and to endeavor to meet its customers' reliability expectations. Rapid growth during the 1960s and 1970s, spurred by a housing boom and the proliferation of air conditioning, resulted in a replacement of the previous vintage infrastructure and an even larger, new system. As growth has slowed over time, the infrastructure has not experienced optimal turnover. This lack of asset turnover means the existing grid is heavily populated with 40 to 60-year-old equipment that is at risk of failure, obsolescence, and inefficiencies as compared to modern equipment. While the Company has always worked to improve its electric grid, the Smart Energy Plan ("SEP") has allowed Ameren Missouri to markedly increase its efforts in this area with its plans to make investments to replace its aging grid infrastructure so that it can continue to provide customers safe and adequate service. On the transmission side, a total of 26 transmission projects have been approved by the MISO Board of Directors for construction in Missouri for completion before 2026. Ameren Missouri will construct 19 of these projects. Ameren Missouri claims that the projects will mitigate future reliability issues and provide for continued safe and reliable service to customers.[13]

Staff has not identified any deficiencies or concerns related to Ameren Missouri's transmission and distribution analysis.

Staff Expert Witness: Jordan Hull

[13] Ameren Missouri's 2023 IRP Filing, Chapter 7, page 2.

20 CSR 4240-22.050 Demand-Side Resource Analysis

Summary

20 CSR 4240-22.050, Demand-Side Resource Analysis, specifies the principles by which potential demand-side resource options shall be developed and analyzed for cost-effectiveness, with the goal of achieving all cost-effective demand-side savings. It also requires the selection of demand-side candidate resource options that are passed on to integrated resource analysis.

Ameren Missouri documented and described various demand-side management ("DSM") portfolios it included as a part of its IRP. The DSM portfolios passed on for further integrated analysis are based on its 2023 DSM market potential study ("2023 MPS"). Each DSM portfolio includes the total resource potential from the residential, business, demand response, and distributed energy resource ("DER") sectors.

Ameren Missouri commissioned GDS Associates ("GDS") to serve as the lead author of the 2023 MPS. GDS also completed the 2016 and 2020 MPS. GDS partnered with Brightline Group for technical expertise and modeling of emerging distributed energy resources.

The 2023 MPS was composed of four distinct areas of study: 1) Residential and business sector market-rate energy efficiency; 2) Demand response peak load reduction potential; 3) DER potential; and 4) Sensitivity and scenario analysis. The four distinct areas are investigated separately, however the overall effect is aggregated for the purposes of integration into the IRP and reported as such.

The 2023 MPS also included a risk and uncertainty analysis that was analyzed for both the maximum achievable potential ("MAP") and realistically achievable potential ("RAP") scenarios. Scenarios for the residential and business sectors included:

1) Avoided Costs: Avoided costs represents the primary benefit within the Total Resource Cost ("TRC") test, and higher/lower avoided costs will lead to greater/lesser potential. Included two sensitivities for:

a) an increase in avoided energy and capacity costs of +30%/-50%; and

b) change in transmission and distribution (T&D) costs by 200%/$0, with no change in avoided energy and capacity;

2) Prolonged Economic Downturn: A reduction in load forecast and customer adoption rates, reflecting negative impacts of economic conditions;

3) COVID-19 Short/Long-Term Impacts: A reduction in load forecast and customer adoption rates, with a focus in pre/post COVID customer usage and impacts due to supply-chain concerns;

4) Volatile Weather: Assume heating and cooling degree days increase by 25%, which affects both the load and sales forecast and measure level savings and cost-effectiveness;

5) High Touch Marketing: Assume additional marketing raises program awareness and reduces non-financial barriers to adoption;

6) Large Customer Opt-Out: Estimates potential, both including and excluding all eligible opt-out customers in the analysis, for both a higher and lower estimate of business potential;

7) Utility Attribution (NTG uncertainty): Net to gross factors affect total program potential and the cost-effectiveness of each program; sensitivities assessed a 15% increase and 30% decrease to the Net to Gross factors used in the base case analysis;

8) Universal Time of Use (TOU) Rates: Assumes all customers are immediately converted to a TOU rate, with a decrease in annual consumption of 1.2% across all household and small/medium business. TOU rates are assumed to offset other existing behavior programs;

9) Improved Technology Savings/Costs: Assumes program participation is moved to the most efficient technology with a 35% decrease in costs and incentives over the study period;

10) Additional Income-Qualified-Funding: Assumes increased adoption rates with 100% of full measure cost incentivized;

11) PAYS Sensitivity: Assumes the financing adoption rates of measures, equals similar level as covering 100% of measure cost;

12) Summer Planning Reserve Margin: Assesses the impact of transitioning from MISO Planning Reserve Margin (PRM) Installed Capacity (ICAP) to Unforced Capacity (UCAP), with reducing planning reserve margin to 7.4%.

Based on its limited review, Staff has a number of concerns as it relates to the IRP and a MEEIA application. The Company's avoided capacity, energy, and T&D costs, assumed supply-side deferral, budget and savings levels, third-party aggregation assumptions, and program design to name a few. However, on January 25, 2024, Ameren Missouri filed its *Amended and Supplemental Application to Approve DSIM and Demand-Side Management Portfolio and Plan, and Request for Variances* and associated direct testimony of Ameren Missouri witnesses in Case No. EO-2023-0136, its MEEIA Cycle 4 case. Staff continues to have concerns, but believes the MEEIA Cycle 4 docket is the most appropriate case to address its MEEIA related concerns in.

Staff Expert Witnesses: Brad J. Fortson

20 CSR 4240-22.060 Integrated Resource Analysis

Summary

This rule, 20 CSR 4240-22.060, requires the utility to design alternative resource plans ("ARPs") to meet the planning objectives identified in Rule 20 CSR 4240-22.010(2), and sets minimum standards for the scope and level of detail required in resource plan analysis and for the logically consistent and economically equivalent analysis of alternative resource plans. This rule also requires the utility to identify the critical uncertain factors that affect the performance of alternative resource plans and establishes minimum standards for the methods used to assess the risks associated with these uncertainties.[14]

The goal is to develop a set of alternative plans based on substantively different mixes of supply-side resources and demand-side resources and variations in the timing of resource acquisition to assess their relative performance under expected future conditions as well as their robustness under a broad range of future conditions.[15]

Ameren Missouri developed, considered, and analyzed the present worth of long-run utility costs for 23 alternative resource plans by calculating the present value of revenue requirements ("PVRR") for each plan. While Ameren Missouri has selected the minimization of PVRR as the primary selection criterion for the preferred plan in accordance with 20 CSR 4240-22.010(2)(B), Ameren Missouri does not use minimization of PVRR as the only selection criterion. In addition to calculating the PVRR for each plan, Ameren Missouri considered the performance of each plan when compared to five other planning objectives. These planning objectives are Portfolio Transition (formerly Environmental/Renewable/Resource Diversity), Financial/Regulatory,

[14] 20 CSR 4240-22.060 *PURPOSE*.
[15] 20 CSR 4240-22.060(3).

Customer Satisfaction, Economic Development, and Cost. The alternative resource plans include various levels of demand-side programs and rates, renewable resources, new supply-side resources, and coal retirements.

All 23 ARPs modeled by Ameren Missouri included 800 MWs of simple cycle gas-fired combustion turbine ("CT") generators to be in-service at the end of 2027. Ameren Missouri states this was done for reliability needs. Nineteen of the 23 ARPs included a combined cycle ("CC") to be in-service by 2033. Sixteen of the 23 ARPs included a CC in 2040. Nineteen of the 23 ARPs included a CC in 2043. Seventeen of the 23 ARPs included a renewable expansion portfolio, with one additional ARP including a renewable expansion plus portfolio. Thirteen of the 23 ARPs included RAP energy efficiency and demand response ("DR") DSM, with two additional ARPs including RAP with demand response load flexibility for winter, one additional ARP including 80% of RAP energy efficiency, and one additional ARP with RAP energy efficiency and maximum achievable potential DR with load flexibility in the winter.

Staff mentions the aforementioned ARPs since they may not be consistent with the rule's goal of developing ARPs based on substantively different mixes of supply-side resources, demand –side resources and variations in the timing of resource acquisitions. However, Staff references stipulation and agreement language below in the 20 CSR 4240-22.070 section that may alleviate some of Staff's concern in this regard.

Based on Staff's limited review, and with the stipulation and agreement language referenced below in 20 CSR 4240-22.070, at this time Staff has not identified any deficiencies or concerns related to Ameren Missouri's integrated resource analysis.

Staff Expert Witness: Brad J. Fortson

20 CSR 4240-22.070 Risk Analysis and Strategy Selection

Summary

Rule 20 CSR 4240-22.070, Risk Analysis and Strategy Selection, requires the utility to select a preferred resource plan, develop an implementation plan, and officially adopt a resource acquisition strategy. The rule also requires the utility to prepare contingency plans and evaluate the demand-side resources that are included in the resource acquisition strategy.

Ameren Missouri's decision-makers chose to use a scorecard approach to evaluate its 23 candidate resource plans during their strategy selection process to adopt a resource acquisition strategy and a preferred resource plan for Ameren Missouri. Ameren Missouri created a scorecard that embodies its planning objectives mentioned above in section 20 CSR 4240-22.060 Integrated Resource Analysis to evaluate the performance of alternative resource plans.

Addendum A includes Ameren Missouri's preferred plan, which illustrates its planned supply-side resource additions and retirements.

Ameren Missouri did not apply for any waivers from the requirements of this rule.

Based on its limited review, Staff continues to have the concern it has expressed in the past. Staff is concerned about the risk potentially borne by ratepayers from Ameren Missouri's shift toward new renewable wind and solar generation. This is potentially exacerbated with the inclusion of an 800 MW CT by the end of 2027 and a 1,200 MW CC in 2033. However, on February 23, 2024, Staff and Ameren Missouri filed a *Stipulation and Agreement* in Case No. EA-2023-0286 that included the following language:

m. The following process shall apply to Ameren Missouri's next two triennial Integrated Resource Plan ("IRP") filings pursuant to 20 CSR 4240-22.080(1):[16]

[16] Ameren Missouri's next two triennial IRP filings are expected by October 1, 2026, and 2029, respectively.

i. If the Staff, within ninety (90) days after Ameren Missouri makes the subject triennial IRP filing, provides a resource addition timeline(s) alternative to the resource addition timeline reflected in Ameren Missouri's preferred resource plan ("PRP") adopted in its triennial IRP filing, Ameren Missouri shall, within ninety (90) days after the Staff provides timeline alternative(s), produce an alternative resource plan reflecting the timeline alternative(s) and provide the performance metrics and annual revenue requirements that result from its modeling of that alternative resource plan. For each such triennial IRP, the Staff may provide up to three (3) resource timeline alternatives and if provided, the Company shall produce up to three (3) alternative resource plans based thereon and provide the performance metrics and annual revenue requirements that result from its modeling for each such alternative resource plan. All modeling inputs and assumptions shall be held constant except as requested by Staff in its request for alternative modeling. "Performance metrics" for purposes of this item shall be the performance metrics identified by the Company in the triennial IRP filing immediately preceding the Staff's request. All workpapers, documents, reports, data, computer model documentation, analysis, letters, memoranda, notes, test results, studies, recordings, transcriptions, and any other supporting information, consistent in type and depth with information required by 20 CSR 4240-22.080(11), relating to the alternative resource plans within the electric utility's or its contractors' possession, custody, or control shall be obtained, preserved,

and provided for the alternative resource plans within two (2) business days of that plans' submission to Staff and all spreadsheets shall have all formulas intact. Such information shall include at a minimum (1) the calculation of the annual revenue requirement separately for each year of the planning horizon, (2) the annual load by hour for each year modeled, and (3) generation by unit by hour for each year modeled. For purposes of this provision, the information to be provided shall be understood to mean that information produced in conjunction with the analysis performed in satisfaction of the requirements of this provision, and not the specific information required by 4 CSR 4240-22.080(11). Ameren Missouri agrees to comply with reasonable discovery related to the modeling of alternative plans.

ii. If the Staff, within ninety (90) days after Ameren Missouri makes the subject triennial IRP filing, provides a resource sizing alternative(s) to the size of resource additions reflected in Ameren Missouri's PRP adopted in its triennial IRP filing, Ameren Missouri shall, within 90 days after the Staff provides such sizing alternative(s), produce alternative resource plans reflecting the sizing alternative(s) and provide the performance metrics and annual revenue requirements that result from its modeling of that alternative resource plan. For each such triennial IRP, the Staff may provide up to three (3) resource additional sizing alternatives and if provided, the Company shall produce up to three alternative resource plans based thereon and provide the performance metrics and annual revenue requirements that

result from its modeling for each such alternative resource plan. "Performance metrics" for purposes of this item shall be the performance metrics identified by the Company in the triennial IRP filing immediately preceding the Staff's request. The information required by 20 CSR 4240-22.080(11) shall be preserved and provided for the alternative resource plans within two (2) business days of that plans' submission to Staff and with respect to any spreadsheets included in such information, with spreadsheet formulas intact.

iii. If the Staff, within ninety (90) days after Ameren Missouri makes the subject triennial IRP filing, provides varied assumption values on the items listed below, which are to be provided in a format that can be used in the Company's IRP models, the Company shall use the varied assumptions for its PRP and for the alternative resource plans produced under sub-paragraphs 5.k.i and 5.k.ii, provided that the combinations of the below four (4) assumptions shall result in no more than six (6) additional analysis endpoints. The items for which assumption values may be varied are as follows:

- Market price changes for key components by resource type,
- Energy pricing, capacity pricing, load assumption, fuel assumption scenarios,
- Changes to tax incentives, and
- Ongoing litigation regarding existing resources.

iv. The Company shall include an alternative plan that complies with the bare minimum of legal mandates and Midcontinent Independent Operator System, Inc. requirements.

n. By March 15, 2024, Staff shall provide input to Ameren Missouri necessary to allow Ameren Missouri to produce three alternative resource plans to the PRP adopted in its 2023 triennial IRP filing that will vary the resources, size of resources, and/or timing of resource additions based on the Staff's designation of how each such variable should be varied. Ameren Missouri shall produce such three alternative resource plans in response to Staff's input and will provide the same to the Staff (including the workpapers underlying them) prior to Ameren Missouri's next request for a certificate of convenience and necessity ("CCN") for a generation resource, other than an additional Community Solar Program resource, or within 90 days whichever comes sooner.

o. Ameren Missouri shall include in any future generation CCN filing (except for generation CCNs related to Community solar or any other resource that Staff and Company mutually agree are exempt) that occurs prior to 2030; or if the contemplated 2029 triennial IRP filing is for any reason delayed, filed prior to the date of its filing, the following:

i. A re-run of its then-existing PRP using project-specific characteristics of the project(s) at issue in the applicable CCN case, in replacement of generic assumptions contained in the then-existing PRP for the project(s).

ii. An alternative plan to model as though the CCN is not granted, in which the Company "does nothing," i.e., includes no such project, during the same specific horizon in which such a project would become operational,. Such a project-specific model and the alternative "do nothing" model shall be fully explained, including the modeled year-by-year revenue requirement and projected energy and capacity values.

iii. Testimony regarding what needs are being addressed, whether qualitative or quantitative, as well as the timing of the needs identified.

iv. Testimony explaining what regulatory treatments are implicated by the CCN filing.

v. Testimony that addresses the following questions:

1. Does the Commission have jurisdiction over the Applicant?
2. Very specifically, what authority is requested, and does the Commission have jurisdiction to grant the authority requested?
3. Has the Applicant met all CCN rule requirements?
4. Has the Applicant met all other filing requirements of an applicable Commission order or rule?
5. Does the Applicant have the financial ability to construct (or purchase), own, operate, and maintain each project?
6. Does the Applicant have the operational capability to construct (or purchase), own, operate, and maintain each project?
7. Separately for each project, is the project both important to the public convenience and desirable for the public welfare? Or, is the project effectively a necessity because the lack of the service is such an inconvenience?
8. Separately for each project, is the project of sufficient importance to warrant the expense of making it? Or, is the project such an improvement as to justify or warrant the expense of making the improvement?
9. If applicable, are there conditions or mechanisms that can be imposed to overcome any deficits in the answers to the prior questions?

10. Has the Applicant presented an adequate direct case to demonstrate each question enumerated?

Staff is hopeful that the language agreed to and included above helps alleviate Staff's concerns.

Staff Expert Witnesses: Brad J. Fortson

20 CSR 4240-22.080 Filing Schedule and Requirements

Summary

This rule specifies the requirements for electric utility filings to demonstrate compliance with the provisions of Chapter 22. The purpose of the compliance review required by Chapter 22 is not Commission approval of the substantive findings, determinations, or analyses contained in the filing. The purpose of the compliance review required by Chapter 22 is to determine whether the utility's resource acquisition strategy meets the requirements of Chapter 22. However, if the Commission determines that the filing substantially meets these requirements, the Commission may further acknowledge that the preferred resource plan or resource acquisition strategy is reasonable in whole, or in part, at the time of the finding. This rule also establishes a mechanism for the utility to solicit and receive stakeholder input to its resource planning process.

The Filing Schedule, Filing Requirements, and Stakeholder Process rule establish a filing deadline for all electric utilities on April 1 of each year.[17] A triennial compliance filing is due every third year with more informal annual update filings during the years between the full triennial compliance filings. The annual updates are coupled with a stakeholder workshop to communicate changing conditions and utility plans and to seek comments and suggestions from stakeholders

[17] Ameren Missouri filed its *Request for Variance From 20 CSR 4240-22.080(1)(C) and Waiver of 60-Day Notice in 20 CSR 4240-4.017(1)* on March 10, 2022, in File No. EE-2022-0243. The Commission granted Ameren Missouri's request in its *Order Granting Variance and Waiver* issued on May 4, 2022.

during the planning process. Preliminary plans are reviewed with stakeholders to receive input regarding potential concerns and deficiencies. However, once plans are filed, stakeholders again have the opportunity to identify potential concerns and deficiencies. The Commission, with input from stakeholders, will identify special contemporary issues each year for each utility to analyze during its planning process. To make the resource planning process more meaningful, the Rule requires action from the utility if its business plan or acquisition strategy becomes inconsistent with the latest adopted preferred resource plan filed by the utility. The Rule also requires certification that any request of action from the Commission is consistent with the utility's adopted preferred resource plan.

Based on its limited review, Staff has not identified any deficiencies or concerns related to the Filing Schedule and Requirements.

Staff Expert Witnesses: Brad J. Fortson

Attachments:

Addendum A – Preferred Resource Plan

BEFORE THE PUBLIC SERVICE COMMISSION

OF THE STATE OF MISSOURI

In the Matter of Union Electric Company d/b/a Ameren Missouri 2023 Utility Resource Filing Pursuant to 20 CSR 4240 – Chapter 22	))))	File No. EO-2024-0020

AFFIDAVIT OF BRAD J. FORTSON

STATE OF MISSOURI)
) ss.
COUNTY OF COLE)

COMES NOW BRAD J. FORTSON and on his oath declares that he is of sound mind and lawful age; that he contributed to the foregoing *Staff Report;* and that the same is true and correct according to his best knowledge and belief.

Further the Affiant sayeth not.

BRAD J. FORTSON

JURAT

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

Notary Public

BEFORE THE PUBLIC SERVICE COMMISSION

OF THE STATE OF MISSOURI

In the Matter of Union Electric Company d/b/a Ameren Missouri 2023 Utility Resource Filing Pursuant to 20 CSR 4240 – Chapter 22	))))	File No. EO-2024-0020

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 foregoing *Staff Report;* and that the same is true and correct according to his best knowledge and belief.

Further the Affiant sayeth not.

JORDAN T. HULL

JURAT

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
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Figure 10.22 Preferred Resource Plan