VOLUME 8

FILING SCHEDULE, FILING REQUIREMENTS, AND STAKEHOLDER PROCESS

KCP&L GREATER MISSOURI OPERATIONS COMPANY (GMO)

INTEGRATED RESOURCE PLAN

4 CSR 240-22.080

APRIL, 2018

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VOLUME 8: FILING SCHEDULE, FILING REQUIREMENTS, AND STAKEHOLDER PROCESS

This rule specifies the requirements for electric utility filings to demonstrate compliance with the provisions of this chapter. The purpose of the compliance review required by this chapter is not commission approval of the substantive findings, determinations, or analyses contained in the filing. The purpose of the compliance review required by this chapter 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.

SECTION 1: IRP REQUIREMENTS

(1) Each electric utility which sold more than one (1) million megawatt-hours to Missouri retail electric customers for calendar year 2009 shall make a filing with the commission every three (3) years on April 1. The electric utilities shall submit their triennial compliance filings on the following schedule:

(A) Kansas City Power & Light Company and KCP&L Greater Missouri Operations Company, or their successors, on April 1, 2012, and every third year thereafter;

GMO will file the required triennial compliance filing by April 2, 2018.

SECTION 2: TRIENNIAL COMPLIANCE REQUIREMENTS

(2) The utility's triennial compliance filings shall demonstrate compliance with the provisions of this chapter and shall include at least the following items:

(A) Letter of transmittal expressing commitment to the approved preferred resource plan and resource acquisition strategy and signed by an officer of the utility having the authority to bind and commit the utility to the resource acquisition strategy;

A Corporate Approval Statement signed by officers has been included in Volume 7, Resource Acquisition Strategy Selection per Rule 4 CSR 240-22.070(7).

(B) If the preferred resource plan is inconsistent with the utility's business plan, an explanation of the differences and why the differences exist;

The Preferred Resource Plan is not inconsistent with GMO's business plan.

(C) Technical volume(s) that fully describe and document the utility's analysis and decisions in selecting its preferred resource plan and resource acquisition strategy.

Volume 7, "Resource Strategy Selection Strategy" is included in this filing pursuant to 4 CSR 240-22.070.

1. The technical volume(s) shall include all documentation and information specified in 4 CSR 240-22.030–4 CSR 240-22.070 and any other information considered by the utility to analyze and select its resource acquisition strategy.

2. The technical volume(s) shall be organized by chapters corresponding to 4 CSR 240-22.030–4 CSR 240-22.070.

Volumes 3 through Volumes 8 correspond to 4 CSR 240-22.030 through 4 CSR 240-22.080.

3. A separate chapter shall be designated in the technical volume(s) to address special contemporary issues pursuant to 4 CSR 240-22.080(4) and input from the stakeholder group pursuant to 4 CSR 240-22.080(5). The chapter shall identify the issues raised, how the utility addressed them, and where in the technical volume(s) the reports, analyses, and all resulting actions are presented.

Volume 8 herein, addresses the special contemporary issues pursuant to rule 4 CSR 240-22.080(4).

(D) The forecast of capacity balance spreadsheet completed in the specified form, included herein, for the preferred resource plan and each candidate resource plan considered by the utility.

The capacity balance spreadsheet for the preferred resource plan and each candidate resource plan has been included in Volume 6 Rule (4)(B)9.

(E) An executive summary, separately bound and suitable for distribution to the public in paper and electronic formats. The executive summary shall be an informative non-technical description of the preferred resource plan and resource acquisition strategy. This document shall summarize the contents of the technical volume(s) and shall be organized by chapters corresponding to 4 CSR 240-22.030–4 CSR 240-22.070. The executive summary shall include:

1. A brief introduction describing the utility, its existing facilities, existing purchase power arrangements, existing demand-side programs, existing demand-side rates, and the purpose of the resource acquisition strategy;

2. For each major class and for the total of all major classes, the base load forecasts for peak demand and for energy for the planning horizon, with and

without utility demand-side resources, and a listing of the economic and demographic assumptions associated with each base load forecast;

3. A summary of the preferred resource plan to meet expected energy service needs for the planning horizon, clearly showing the demand-side resources and supply-side resources (both renewable and non-renewable resources), including additions and retirements for each resource type;

4. Identification of critical uncertain factors affecting the preferred resource plan;

5. For existing legal mandates and approved cost recovery mechanisms, the following performance measures of the preferred resource plan for each year of the planning horizon:

A. Estimated annual revenue requirement;

B. Estimated level of average retail rates and percentage of change from the prior year; and

C. Estimated company financial ratios;

6. If the estimated company financial ratios in subparagraph (2)(E)5.C. of this rule are below investment grade in any year of the planning horizon, a description of any changes in legal mandates and cost recovery mechanisms necessary for the utility to maintain an investment grade credit rating in each year of the planning horizon and the resulting performance measures of the preferred resource plan;

7. Actions and initiatives to implement the resource acquisition strategy prior to the next triennial compliance filing; and

8. A description of the major research projects and programs the utility will continue or commence during the implementation period; and

(F) Such other information or format as the commission may determine.

An Executive Summary has been included in this compliance filing and is entitled Volume 1 “Executive Summary”.

SECTION 3: ANNUAL UPDATE WORKSHOP

(3) Beginning in 2012, on or about April 1 of every year in which the utility is not required to submit a triennial compliance filing, each electric utility shall host an annual update workshop with the stakeholder group. The utility at its discretion may host additional update workshops when conditions warrant. Any additional update workshops shall follow the same procedures as the annual update workshop.

(A) The purpose of the annual update workshop is to ensure that members of the stakeholder group have the opportunity to provide input and to stay informed regarding the—

1. Utility's current preferred resource plan;

2. Status of the identified critical uncertain factors;

3. Utility's progress in implementing the resource acquisition strategy;

4. Analyses and conclusions regarding any special contemporary issues that may have been identified pursuant to 4 CSR 240-22.080(4);

5. Resolution of any deficiencies or concerns pursuant to 4 CSR 240-22.080(16); and

6. Changing conditions generally.

GMO will host an annual workshop with the Stakeholders in the years a triennial filing is not due.

(B) The utility shall prepare an annual update report with both a public version and a highly-confidential version to document the information presented at the annual update workshop and shall file the annual update reports with the commission no less than twenty (20) days prior to the annual update workshop. The depth and detail of the annual update report shall

generally be commensurate with the magnitude and significance of the changing conditions since the last filed triennial compliance filing or annual update filing. If the current resource acquisition strategy has changed from that contained in the most-recently-filed triennial compliance filing or annual update filing, the annual update report shall describe the changes and provide updated capacity balance spreadsheets required pursuant to 4 CSR 240-22.080(2)(D). If the current resource acquisition strategy has not changed, the annual update report shall explicitly verify that the current resource acquisition strategy is the same as that contained in the most-recently filed triennial compliance filing or annual update filing.

GMO will prepare a public and confidential annual update report documenting the information presented at an annual update workshop.

(C) The utility shall prepare a summary report that shall list and describe any action items resulting from the workshop to be undertaken by the utility prior to next triennial compliance filing or annual update filing. The summary shall be filed within ten (10) days following the workshop. If there are no changes as a result of the workshop, the utility is required to file a notice that it will not be making any changes to its annual update report.

GMO will prepare a summary report listing and describing any action items resulting from an annual update workshop.

(D) Stakeholders may file comments with the commission concerning the utility's annual update report and summary report within thirty (30) days of the utility's filing of the summary report.

SECTION 4: SPECIAL CONTEMPORARY ISSUES

(4) It is the responsibility of each utility to keep abreast of evolving electric resource planning issues and to consider and analyze these issues in a timely manner in the triennial compliance filings and annual update reports. An order containing a list of special contemporary issues shall be issued by the commission for each utility to analyze and document in its next triennial compliance filing or next annual update report. The purpose of the special contemporary issues lists is to ensure that evolving regulatory, economic, financial, environmental, energy, technical, or customer issues are adequately addressed by each utility in its electric resource planning. Each special contemporary issues list will identify new and evolving issues but may also include other issues such as unresolved deficiencies or concerns from the preceding triennial compliance filing. To develop the list of special contemporary issues—

(A) No later than September 15, staff, public counsel, and parties to the last triennial compliance filing of each utility may file suggested special contemporary issues for each utility to consider;

(B) Not later than October 1, the utilities, staff, public counsel, and parties to the last triennial compliance filings may file comments regarding the special contemporary issues filed on September 15; and

(C) No later than November 1, an order containing a list of special contemporary issues shall be issued by the commission for each utility to analyze and document in its next triennial compliance filing or annual update report. The commission shall not be limited to only the filed suggested special contemporary issues. If the commission determines that there are no special contemporary issues for a utility to analyze, an order shall be issued by the commission stating that there are no special contemporary issues.

Order EO-2018-0045 was received by GMO with an effective date of November 10, 2017 providing a list of special contemporary issues to be analyzed and documented: The following is the list of issues provided in the Order and GMO's responses:

A. When complying with 4 CSR 240-22.060(5)(M) include the following as uncertain factors that may be critical to the performance of alternative resource plans:

(i) Foreseeable demand response technologies, including but not limited to, integrated energy management control systems, linking smart thermostats, lighting controls and other load-control technologies with smart end-use devises;

(ii) Foreseeable energy storage technologies; and

(iii) Foreseeable distributed energy resources, including but not limited to, distributed solar generation, distributed wind generation, combined heat and power (CHP), and microgrid formation.

The Company has reviewed developing technologies such as integrated energy management control systems, energy storage technologies, and distributed resources and at this time they are not to the point where they would have a material impact on the selection of a preferred plan. This is particularly true as the Company's Preferred Plan does not include the addition of new generating resource over the 20-year planning period, absent those required by the Missouri Renewable Energy Standard and wind resources under contract. These emerging technologies will continue to be reviewed in future annual updates and triennial planning. The demand-side technologies are reviewed as part of the DSM potential evaluation process. Energy storage is reviewed as part of the technology screening process and the impact of distributed energy resources is reviewed and included in the load forecasting process.

B. When complying with 4 CSR 240-22.060(5)(A), analyze and document the impact of electric vehicle usage for the 20-year planning period upon the high-case load forecasts.

GMO response: The Electric Power Research Institute's ("EPRI"), tracks electric vehicle ("EV") sales and develops national and regional EV adoption projections. Through GMO's participation in the EPRI Transportation Electrification research program, EPRI developed Low, Medium, and High EV adoption scenarios for each KCP&L service territory. Each EV adoption scenario was incorporated into the corresponding Company low, base, and high energy and demand forecasts presented in Volume 3 of this report.

The high cases estimate of electric vehicle MWh usage adds 24,763 MWh or 0.3% to annual MWh usage in 2022. The impact of electric vehicles is significantly higher after 2022 adding roughly 823,334 MWh or 7.3% to the high case forecast in 2037. File "GMO High Case EV.xlsx" provide annual impacts and growth rates. The analysis is based on the billed MWh sales in the high case scenario before the impact of DSM utilizing EPRI's preliminary electric vehicle high case forecast for the GMO region.

The Company modeled this additional load into the Preferred Plan (GAAGC) as an increase to off-peak load to assess the impact. Select performance measure effects and annual amount of unserved energy given high case electric vehicle usage forecasts are provided below. These results show that this while this additional load would increase the NPVRR over the planning horizon, it would decrease average rates as the load would be added in lower cost periods.

Chart 1: Preferred Plan Performance Measures - High Electric Vehicle Adoption

Year	Revenue Requirement ($MM) Preferred Plan	Revenue Requirement ($MM) - High EV	Levelized Annual Rates ($/kW-hr) - Preferred Plan	Levelized Annual Rates ($/kW-hr) - High EV	Rate Increase) - Preferred Plan	Rate Increase - High EV	Unserved Energy - High EV (Mwhr)
2018	812	812	0.093	0.093	0.00%	0.00%	0
2019	804	804	0.092	0.092	-1.00%	-1.01%	0
2020	818	818	0.094	0.094	1.94%	1.91%	0
2021	839	840	0.096	0.096	2.78%	2.72%	0
2022	843	844	0.096	0.096	0.05%	-0.03%	0
2023	868	869	0.099	0.098	2.42%	2.31%	0
2024	890	892	0.101	0.100	2.11%	1.97%	0
2025	901	903	0.102	0.101	1.02%	0.83%	0
2026	960	963	0.108	0.107	6.00%	5.77%	0
2027	981	986	0.110	0.108	1.65%	1.38%	0
2028	995	1,001	0.110	0.108	0.39%	0.08%	0
2029	1,018	1,026	0.112	0.110	1.56%	1.19%	0
2030	1,034	1,045	0.113	0.110	0.84%	0.45%	0
2031	1,056	1,070	0.114	0.111	1.41%	1.00%	0
2032	1,078	1,095	0.116	0.112	1.16%	0.74%	0
2033	1,106	1,127	0.118	0.114	1.98%	1.53%	0
2034	1,137	1,162	0.120	0.116	1.90%	1.47%	0
2035	1,169	1,199	0.122	0.117	1.88%	1.46%	0
2036	1,204	1,238	0.125	0.119	1.87%	1.47%	2
2037	1,232	1,272	0.127	0.120	1.66%	1.25%	0

C. Analyze and document the cost of any transmission grid upgrades or additions needed to address transmission grid reliability, stability, or voltage support impacts that could result from the retirement of any existing coal-fired generating unit in the time period established in the IRP process.

GMO response: There were no transmission grid upgrades or additions related to reliability, stability, or voltage support identified due to the retirements of Sibley Units 1, 2, and 3 and Lake Road Unit 4/6.

D. Identify and evaluate the quantifiable non-energy benefits (NEBs) that could be included GMO's utility's demand-side management (DSM) portfolio planning process for the purposes of IRP planning under the Commission's recently revised Missouri Energy Efficiency Investment Act (MEEIA) rules. Additionally, evaluate the impact of a NEBs percentage "adder" on GMO's demand-side management portfolio planning process for the purposes of IRP planning. Discuss GMO's preference for either a study to determine NEBs or the use of a NEBs percentage adder.

GMO response: Inclusion of NEBs in the utilities DSM planning are permitted under the MEEIA rule 4 CSR 240-20.092(1)(II) which states (emphasis added):

> (II) Non-Energy Benefits means—
>
> 1. Direct benefits to participants in utility demand side programs, including, but not limited to, increased property values, increased productivity, decreased water and sewer bills, reduced operations and maintenance costs, improved tenant satisfaction, and increases to the comfort, health, and safety of participants and their families;
>
> 2. Direct benefits to utilities, including, but not limited to, reduced arrearage carrying costs, reduced customer collection calls/notices, reduced termination/reconnection costs, and reduced bad debt write-offs; or
>
> 3. Indirect benefits to society at large, including, but not limited to, job creation, economic development, energy security, public safety, reduced emissions and emission related health care costs, and other environmental benefits;
>
> 4. Non-Energy Benefits *may be included in the total resource cost test (TRC) only if they result in avoided utility costs* that may be *calculated with a reasonable degree of confidence*. Non-energy benefits may always be considered in the societal cost test.

Paragraph 4 of the NEB definition limits NEBs that may be included in the TRC test to those "only if they result in avoided utility costs". Both the MEEIA rules and the IRP rules require the use of the TRC test for the evaluation of cost effectiveness of DSM programs. The MEEIA rules state that "[t]he commission shall consider

the TRC test a preferred cost-effectiveness test. …".[1] The IRP rules also state that "[t]he total resource cost test shall be used to evaluate the cost effectiveness of the potential demand-side programs and potential demand-side rates. …".[2] Thus, only NEBs that result in directly avoided utility costs can be included in the TRC.

Paragraph 2 of the NEB definition offers an initial list of potential NEBs that may be considered for this purpose. It lists 1) reduced arrearage carrying costs, 2) reduced customer collection calls/notices, 3) reduced termination/reconnection costs, and 4) reduced bad debt write-offs. GMO concurs that there are potential direct utility benefits in these four area, but GMO has not identified any additional NEBs that would result in direct avoided utility costs. GMO consulted with Applied Energy Group (AEG)—the consultant who performed GMO's most recent DSM potential study—to ascertain the level of effort that would be required to quantify the impact and the degree confidence that these could be calculated. AEG anticipates that quantifying the impacts of these NEBs would require a medium to high level of effort and would also have a high level of uncertainty.

The four potential NEBs listed above have a potential utility benefit associated with a decrease in utility costs due to customer investment in DSM. For example, a customer investment in DSM could reduce the incidence of customers not paying their bills and therefore reduce the cost to the utility of customer collection calls/notices. To estimate the utility benefit, GMO would first need to conduct research to determine if other utilities or organizations have estimated potential utility benefits associated with a customer investment in DSM. It is unclear what research is available and whether the research results are accurate and can be applied to GMO. There may also be a high level of uncertainty due to variability of utilities – such as geography, utility size, customer composition, etc. Paragraph 4 states that the NEBs must be able to be "calculated with a reasonable degree of

[1] 4 CSR 240-20.094(4)(I)
[2] 4 CSR 240-22.050(5)(B)

confidence". At this time GMO does not believe that these NEBs can be calculated "with a reasonable degree of confidence".

The question also suggests evaluating a "percentage adder" in lieu of a calculated value of NEBs. This was previously considered during the recent process for updating the MEEIA rules. In Comment #66 to subparagraph 20.094(9)(8)1.D in the Order of Rulemaking "Staff urge[d] the commission to delete the direction to pursue the development of a percentage adder." In the Response and Explanation to Comment #66, the Commission agreed with Staff that "[t]here is no need to specify the possible development of a percentage adder. …" The Response and Explanation to Comment #27, states that "[t]he Commission believes that non-energy benefits may be appropriately considered in the TRC, *but only if they are quantifiable*…" (emphasis added). GMO does not consider a percentage adder to be consistent with the requirement that the NEBs be *calculated* with a reasonable degree of confidence nor is it consistent with the Commission's direction to include NEBs in the TRC only if it is *quantifiable*. Therefore, GMO does not recommend the calculation of NEBs nor the use of a percentage adder for NEBs.

E. Evaluate, describe, and document the feasibility, cost-reduction potential, and potential benefits of joint DSM programs, marketing, and outreach with water utilities.

GMO response: On January 30, 2017, KCP&L contracted with Aiqueous, national subject matter expert consultants on the topic of Water Energy Nexus, to conduct research on this topic in their Missouri territories. This research was intended to identify potential energy savings that could be realized though water savings measures/strategies in three specific vertical market segments: water/wastewater treatment and distribution, irrigated agriculture and C&I water use. This research was conducted under the current the Missouri Energy Efficiency Investment Act (MEEIA) Cycle 2 Pilot and Research portion of the Commission approved Stimulation Agreement and was completed on September 15, 2017.

This study evaluated the water and energy consumption of three market segments: Water and wastewater treatment plants, commercial customers and industrial customers. Using market characterizations, the focus was narrowed to water/wastewater, restaurants, schools and colleges. The project team compiled a list of potential water and energy efficiency measures for these market segments and performed cost-effectiveness analysis. This research was supplemented with three site specific case studies to enhance the concreteness of the various measures.

The overall findings of this report indicate that there is some potential for efficiency measures that provide both water and energy savings. Specific recommendations are being reviewed for potential program design value for future MEEIA filings. The research team did recommend collaborating with water utilities to promote these measures. However, it was also noted that financial barriers exist for water utilities to execute conservation programs in our “water-rich” state. Primarily, a financial dis-incentive for water utilities without a mechanism like MEEIA in place to encourage such investments. Thus, joint programs, marketing and outreach are unlikely at this time.

F. Describe and document the benefits and detriments for integrated resource planning to require achievement of targets under MEEIA.

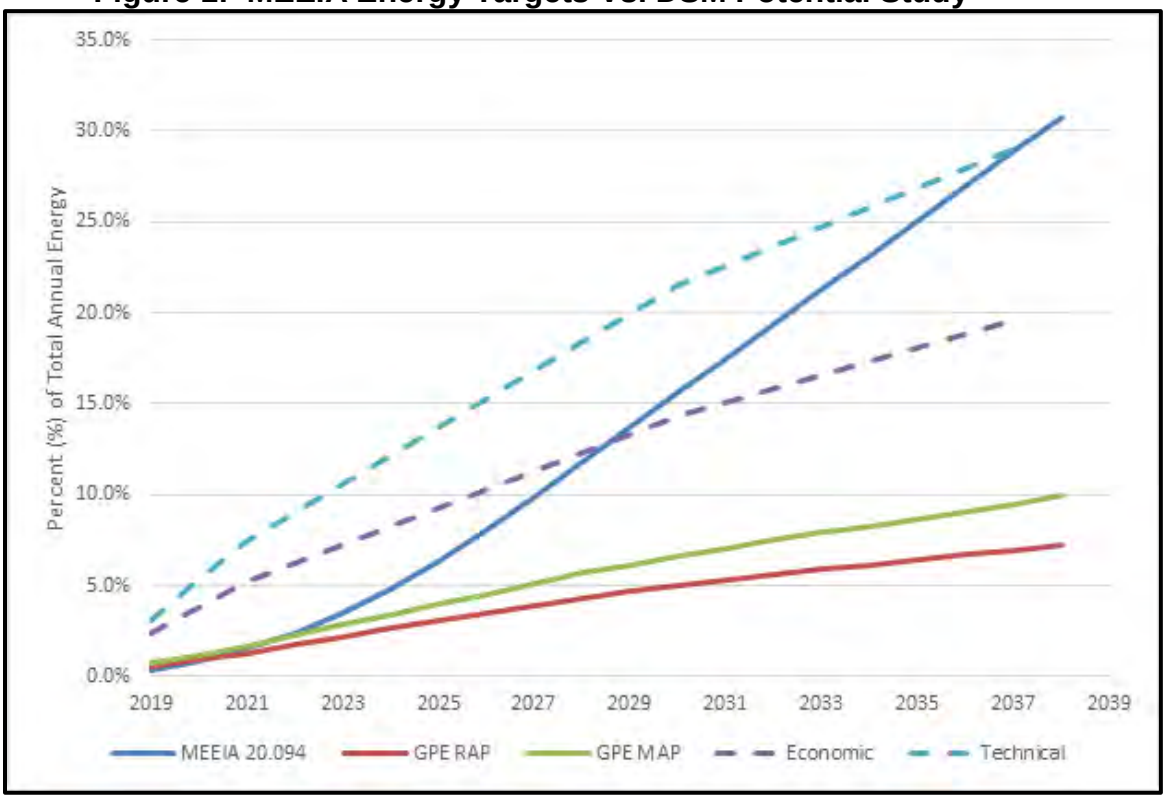
GMO response: The current IRP rules require GMO to identify the Realistic Achievable Potential and the Maximum Achievable Potential. To analyze the specific targets under MEEIA 20.094(2) would require that GMO include the achievement of the MEEIA targets as an additional scenario in the next DSM Potential Study. This would be necessary to determine the cost of a MEEIA target scenario. However, a comparison of the MEEIA targets to the results of the GMO 2017 DSM Potential Study shows that these targets are unrealistic 'and unachievable. The additional work to analyze the MEEIA targets would, however, add cost to the next DSM Potential Study.

As shown in Figure 1 below, the Company has compared the targets under MEEIA 20.094(2) to its Realistic Achievable Potential and the Maximum Achievable Potential that was determined in the 2017 DSM Potential Study. In the first few years, the MEEIA energy targets are relatively similar to the results of the most recent GMO DSM potential study. By the fifth year, however, the MEEIA 20.094(2) energy targets begin to diverge from the Realistic Achievable Potential and the Maximum Achievable Potential scenarios identified in the 2017 DSM Potential Study. In the tenth year, the MEEIA 20.094(2) energy targets are more than 2.7 times higher than the Realistic Achievable Potential and more than 2 times the Maximum Achievable Potential. By the eleventh year, the MEEIA 20.094(2) energy targets exceed the Economic Potential identified in the Potential Study, and in the twentieth year, the MEEIA 20.094(2) energy targets actually *exceed* the Technical Potential identified in the Potential Study. Given this comparison, the MEEIA 20.094(2) targets in the short term (three years or less) are at best equal to the results of the Potential Study but in the longer term are unrealistic and not economic or technically possible. The requirement to achieve the MEEIA 20.094(2) targets would result in a plan that is not cost effective and far from least cost plan. Thus, GMO concludes that there would be no benefit from the

requirement to achieve the targets established under MEEIA 20.094(2), instead, it would result in greatly increased cost to GMO's customers.

A requirement to achieve the MEEIA 20.094(2) targets without regard to cost would also violate the policy objectives of the IRP rules. First, 4 CSR 240-22.010(2)(B) states that the utility shall "[u]se minimization of the present worth of long-run utility costs as the primary selection criterion in choosing the preferred resource plan, …". Second, 4 CSR 240-22.010(2)(A) states that the utility shall "[c]onsider and analyze demand-side resources, renewable energy, and supply-side resources *on an equivalent basis*, …" (emphasis added). Finally, a requirement to achieve the MEEIA 20.094(2)targets without regard to cost does not "… ensure that the public interest is adequately served. …" which is set forth in the policy goal statement in 4 CSR 240-22.010(1).

Figure 1: MEEIA Energy Targets Vs. DSM Potential Study



G. Describe, document, and evaluate potential DSM programs which could address the needs of customers that might otherwise "opt out" of participation in MEEIA. In this evaluation, describe and document potential participation and savings (both energy and demand), as well as program costs and cost-effectiveness. Additionally, describe and document the impacts of additional customer "opt-outs" on the MEEIA charges to customer classes and the ability to achieve estimated savings targets.

GMO response: GMO as part of their MEEIA Cycle 2 filing implemented two programs; Strategic Energy Management and Block Bidding which address the needs of customers that might otherwise "opt out" of participation in MEEIA.

Strategic Energy Management described in Table 1 below, is designed for high energy usage customers with unique operational characteristics provides hands on training by aligning these customers with similar customers in a co-hort. The program offers in depth curriculum on a variety of different energy related topics over a two year period. During this span of time each customer develops models of their facilities to track their predicted usage based on weather or production against their actual usage as a result of the sustainability efforts initiated. Each organization has an executive sponsor and energy champion which are responsible for driving change management throughout their organization. The objective for this program is to not only impact change through capital side investments but through culture and behavioral modifications of those that utilize the systems.

Block Bidding described in Table 2 below, is a program that encourages the development and implementation of high volume energy savings projects. Local, regional and national third party suppliers are recruited through an RFQ to identify opportunities for customers and bid for incremental rebate incentives that exceed the programs annual cap at a reduced rate. Through this approach large customers are eligible for large incentive values that provide a compelling case for energy efficiency investments and participation in the utilities DSM programs.

In short the Strategic Energy Management and Block Bidding programs address the needs of customers that might not see the value or are able to make the financial case for participating in DSM programs. Strategic Energy Management offers a comprehensive educational and training engagement which provides a top down approach for sustainability within participating organizations and Block Bidding provides the incremental financial incentives to help projects which may not meet paybacks or hurdle rates by aligning cost effective incentives with energy savings which benefits all customers.

Table 1: Strategic Energy Management Program

Objective	· Provide energy education, technical assistance, and company-wide coaching to large commercial and industrial customers to drive behavioral change and transformation of company culture with respect to energy use and management.
Target Market	· Customers with high energy use and operational sophistication. The best candidates are likely to have the following attributes: - Large manufacturing companies or commercial facilities with >300 kW peak demand. - Companies and institutional customers with multiple sites (i.e. operations/offices in another state or country). - Customers with commitment to sustainability and environmental stewardship. - Customers in regulated industries. - Companies that have well established management systems like quality/safety or those using continuous improvement practices. - Companies in a stable or rapid growth mode.
Description	The Strategic Energy Management (SEM) Program is a systematic approach to delivering persistent energy savings to organizations by integrating energy management into regular business practices. The program involves appointment of an energy liaison(s) and a team within participating organizations who regularly correspond with program representatives. The program includes two program tracks that use different delivery mechanisms: - One on One Consultative Strategic Energy Management (Consultative SEM) provides the customer with access to an energy expert who works intensively with the customer to integrate energy management into the organization's business practices The participant receives frequent and personalized attention throughout the implementation period. Touch points and milestones are agreed upon between the two parties. - Strategic Energy Management Cohort (SEM Cohort) places companies into groups that work alongside each other for one year or longer, coming together in periodic workshops, approximately quarterly, and working on their own between the sessions. The group setting enhances participant action as they strive to perform in front of their peers. Structured groups are composed of 5 to 12 participants that are often located in the same geographical area, sharing best practices and learning together. The group is typically filled with participants from non competing industries; however, if mutual agreement is established, competitors may participate in the same group. A methodology is developed early in the engagement to forecast each participant's baseline energy consumption, from which savings goals are created and measured. To isolate energy savings attributable to SEM efforts, any savings from equipment measures installed under other programs in the portfolio can be netted out of these savings. SEM has been shown to produce larger and longer lasting energy savings when compared to other energy management offerings. Few customers, however, have the internal resources to pursue and sustain these initiatives on their own, without the support of a utility program.

Table 2: Block Bidding Program

Objective	- Encourage high volume energy savings projects from customers and third party suppliers working on behalf of customers at lower cost than traditional programs. This program provides an opportunity to organize and procure non conventional projects that may not be eligible or appropriately incentivized to participate in other programs.
Target Market	- Any commercial, industrial or municipal customer as well as third party suppliers, such as energy service companies, trade allies and performance contractors.
Description	- The Block Bidding Program seeks to purchase blocks of electric savings by issuing a Request For Proposal (RFP) to eligible customers and third party suppliers. The RFP details the proposal requirements as well as the electric savings that must be achieved. Customers and/or third parties submit proposals to deliver the requested block of cost effective electric savings. The electric savings may be achieved in a variety of ways; for example, one customer facility installing energy efficiency equipment or a bundle of projects across multiple sites and/or customers. - Bidder proposals are reviewed to: - Verify customer eligibility. - Ensure completeness and accuracy of proposed energy savings. - Screen the proposed measures for cost effectiveness. All projects must have a Total Resource Cost Test benefit cost ratio of greater than 1.0. - Qualifying and cost effective bidder proposals are ranked based upon the proposed cost per kWh saved ($/kWh). Program funds are awarded to bidders starting with the lowest $/kWh saved until the funding is depleted. KCP&L enters into contracts with the bidders that receive program funding. All projects must receive pre and post implementation inspections to verify the existing and upgraded equipment. The acquired savings may differ from the expected savings stated in the contract based upon actual performance and the post-implementation inspection. - This is a new program for the 2016 2018 implementation cycle.

H. Evaluate the potential demand and energy load associated with electric vehicles within GMO's service territory, discuss how the preferred plan addresses the additional demand and energy load requirements, and evaluate potential means for shifting the additional demand and energy load to off-peak periods. Describe all current and planned electric vehicle initiatives undertaken by GMO.

GMO response: In January 2015, the Company launched the Clean Charge Network ("CCN"), an initiative to install and operate just over 1,000 EV charging stations throughout the Greater Kansas City region and within the KCP&L and GMO service territories. As of January 2, 2018, the Company has installed 913 AC Level 2 charge stations and 16 DC fast charge ("DCFC") stations at 323 locations to support the growing market of electric vehicles ("EVs"). The Company has placed 270 stations in KCP&L-Kansas, 399 stations in KCP&L-Missouri, and 260 stations in GMO.

The Electric Power Research Institute ("EPRI"), tracks EV sales and develops national and regional EV adoption projections. Through the Company's participation in the EPRI's Transportation Electrification research program, EPRI developed Low, Medium, and High EV adoption scenarios for each Company service territory:

- Low Adoption: This scenario represents how EV adoption may grow if battery costs remain high, regulations that drive EV sales are canceled, and incentives are reduced.

- Medium Adoption: This scenario represents how EV adoption may grow if policies and incentives remain positive and a moderate level of charging infrastructure is deployed.

- High Adoption: This scenario represents how EV adoption may grow if policy drivers increase, battery and EV costs decline, and substantial incentives for support infrastructure.

With deployment of the Clean Charge Network, the EV sales in the Kansas City region are currently trending along EPRI's Medium scenario projection.

These EV adoption scenarios were incorporated into the GMO low, base, and high energy and demand forecasts presented in Volume 3 of this report. As the projected increase in electrical load, due to EV adoption, are incorporated in the load forecasts, they have been addressed in the selection of the Preferred Plan.

One of the objectives of the CCN Program was to gain a better understanding of EV driver charging patterns. CCN charging stations were installed at a wide variety of host site locations, but all host locations generally fall within three broad host classifications: 1) Workplace, 2) Retail/Public Venue, and 3) Multi-family. With the EV battery capacity and range increasing, most of the industry studies project that much of EV charging will occur where the EV resides for extended periods, primarily at the driver's home (single and multi-family dwellings) and workplace.

Figure 2 below, illustrates the aggregated daily charging pattern of workplace charging for the last two weeks in July 2017. The figure illustrates a very consistent weekday charging pattern that begins early in the morning, reaches a peak by mid-morning, and is significantly reduced by noon. This charging pattern is very complementary to both the system and commercial distribution feeder load profiles.

Figure 2: CCN Workplace Charging Load Profile – July 2017

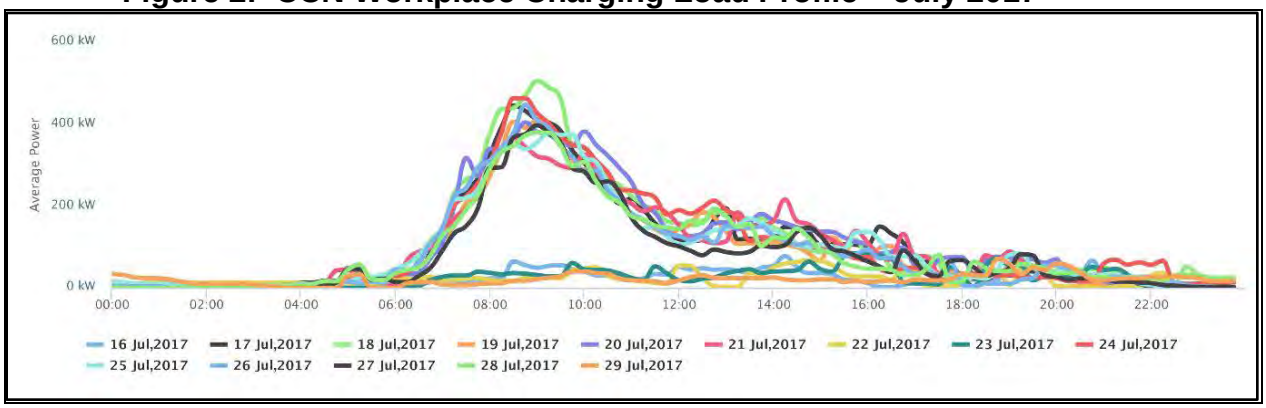


Figure 3 illustrates the aggregated daily charging pattern of retail/public venue charging for the same two weeks in July 2017. The figure illustrates a very random daily charging pattern that begins in the morning and continues through the remainder of the day. The figure illustrates some potential contribution to system peak during the 4-6 pm hours.

Figure 3: CCN Retail/Public Venue Charging Load Profile – July 2017

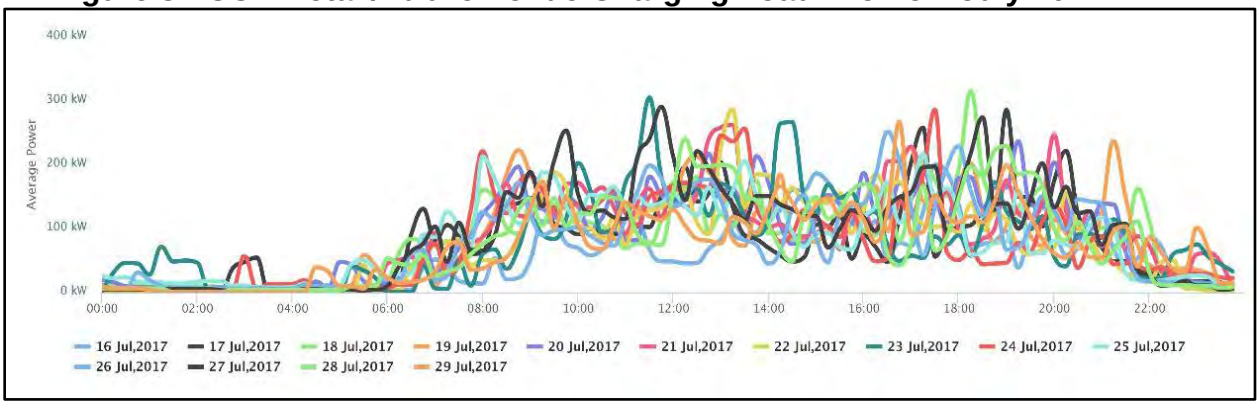
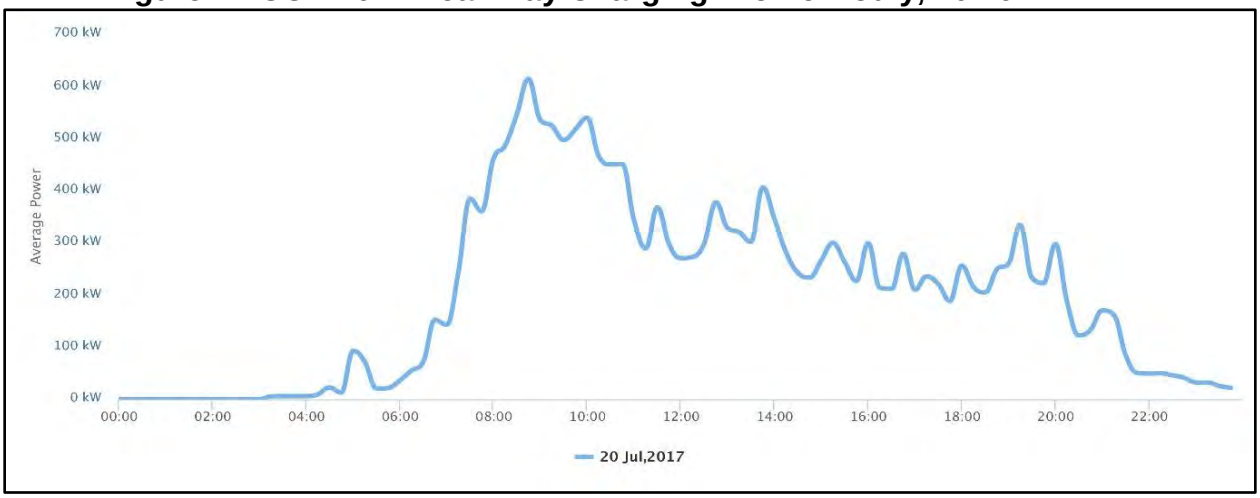


Figure 4 illustrates the 15-minute demand for all CCN charging stations on the 2017 system peak day, of which 92 percent are evenly split between workplace and retail/public venue. On this peak day, the CCN peak charging interval (614 kW) occurred during the 15-minute interval ending at 8:45 A.M. During the system peak hour (ending 6:00 P.M.) the maximum CCN charging (255 kW) occurred during the 15-minute interval ending 6:00 P.M., with the primary contribution due to the convenience charging at retail/public venue locations.

Figure 4: CCN 2017 Peak Day Charging Profile – July, 20 2017



The CCN is a managed network of charging stations and the ChargePoint station management system provides GMO the ability to reduce or eliminate charging during periods of peak demand. GMO will incorporate the CCN in the Company's demand response program and issue charge reduction events in conjunction with the other demand response programs. The station management platform also provides the capability to apply charge reduction events to the entire network, to a group of stations on a feeder that is at a critical load level, or to individual charging stations. GMO plans to evaluate and implement charge reduction in a manner that will continue to provide some level charge to the EV to minimize the impact on driver experience.

GMO is also addressing the potential system impact of EV drivers charging at home[3] by including a Residential TOU rate in the DSM portfolio. The DSM TOU rate is designed to incentivize EV drivers to charge their vehicles during off-peak periods during the late-night hours. With the GMO system peak occurring in the late afternoon, at home charging could have substantial system peak coincidence and cause localized overloading of the distribution grid. Figure 5 illustrates the result of EV charging at a residential home base with no price incentive to shift the charge times. This graphic clearly illustrates the home EV charging pattern that is coincident with the GMO residential daily peak usage times and a significant portion that is coincident with the Company's 4-6 P.M. system peak hours.

Figure 5: Unmanaged Home EV Charging

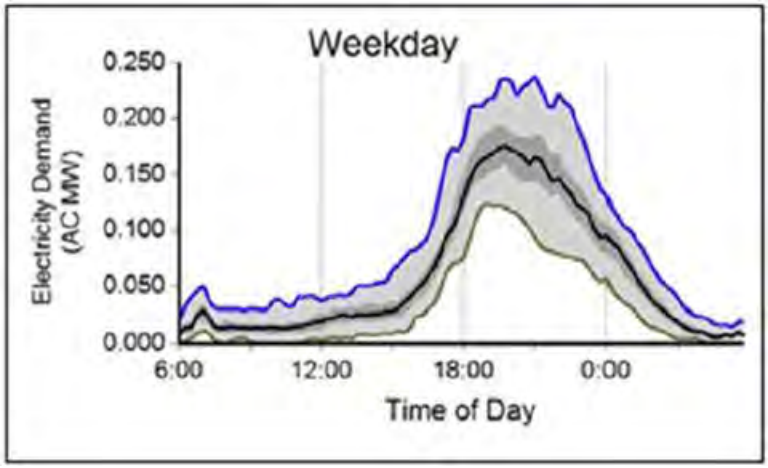
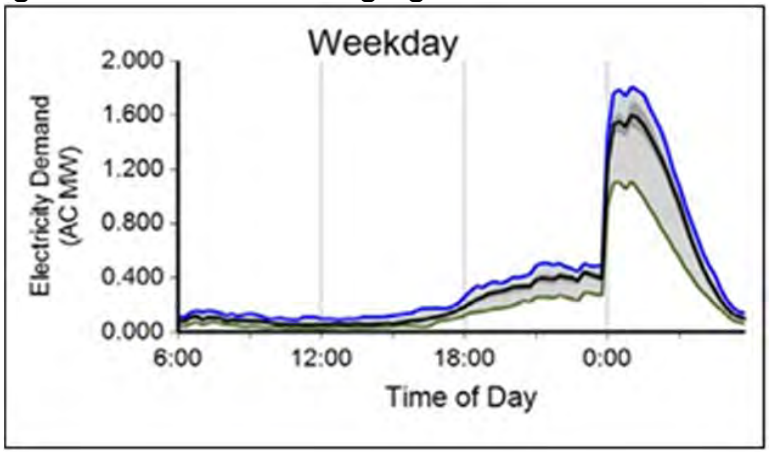


Figure 6 shows the effectiveness of a properly designed three-time-period TOU rate to shifting EV charging load to super off-peak time periods.

[3] Home charging refers to charging that occurs at the EV drivers' residence which may be at single family or multi-family dwellings.

Figure 6: Home EV Charging with 3-Period TOU Rate



I. Describe and document the roles that energy storage and conservation voltage reductions could play in GMO's system planning, particularly with regard to DSM and distributed energy resources.

GMO response: Energy storage (Storage) and conservation voltage reduction (CVR) can play roles in GMO's system planning. With regard to DSM, both Storage and CVR can provide Demand Response (DR) in a manner to reduce peak loading. Storage can accomplish this by shifting load from peak periods to non-peak periods. This is simply accomplished by "charging" the storage mechanism during non-peak periods and then "releasing" the stored energy into the system during peak periods, thus shaving the peak load. Storage can be either be connected to GMO's distribution system or on the customer side of metering and accomplish load shifting.

Storage can also be aligned with Distributed Energy Resources (DER) to provide non-traditional mechanisms to "charge" the storage. For example, Storage connected to solar generation can charge during the solar generation peak and "release" during the utility load peak. In GMO territory, the solar generation peak occurs earlier in the day than GMO's peak hours. This load shifting can shave the utility peak demand.

DER technologies can cause power quality issues, particularly in areas of high concentration (e.g., a subdivision with solar generation on all the homes on a single distribution feeder). Storage could play a role in mitigating power fluctuations caused by DERs by providing an instantaneous source or load and by assisting in managing reactive power needs.

CVR can play a role GMO's capacity planning as well. However, GMO has relatively long distribution feeders and this presents a challenge. CVR requires the ability to maintain a fairly level voltage profile along the entire distribution feeder. This is technologically challenging for long feeders, and particularly for feeders with line regulators. Stand-alone distribution equipment responds to local conditions. When capacitors and regulators respond to local voltage conditions, a great deal of hysteresis is introduced (they "fight" each other). In simple terms, the equipment continuously responds to changes caused by other equipment on the distribution feeder creating near continuous undesired voltage fluctuations along the feeder. This "chattering" also reduces the operating life of the equipment. If capacitors are merely "forced" to turn on, high voltage may be an undesirable result.

Implementing CVR on distribution feeders with high concentration of DERs can contribute to the equipment chatter and the DERs may also respond to voltage fluctuations.

GMO can be better served by a Volt-VAr control schema. CVR only requires the ability to lower voltage at the feeder source. Volt-VAr requires a central controller that knows the condition of the capacitors and regulators all along the distribution feeder. It requires a closed feedback loop to monitor and control the equipment and maintain acceptable voltage and reactive power. This is a very complex system and GMO does not currently possess systems capable Volt-VAr control at present.

GMO takes safety, service reliability and power quality seriously. Storage options in GMO's territory consist of several evolving technologies not yet proven to have

high-availability. Until these technologies reach acceptable levels of availability, GMO would prudently need to provide appropriate capacity contingency to cover cases when the storage is not available.

Storage, CVR and Volt-VAr solutions can be evaluated against alternative solutions through the process described in paragraph J (immediately following this section).

J. Evaluate the need to upgrade and enhance GMO's delivery infrastructure to ensure and advance system resiliency, reliability and sustainability. In this evaluation, describe and document the potential job growth which utility investments in delivery infrastructure could create.

GMO response: As outlined in Volume 4.5 of the IRP filing (Section 1.1.2) GMO's Distribution Planning continues to utilize an annual scope of work approach to identify and document the type and number of studies needed to determine weaknesses or risks to reliability and to assess the overall adequacy of our distribution system. Much of the work focuses on increasing reliability and prioritizing work based upon cost, scope, impact and effectiveness. The work that is ultimately identified through this process is centered around four (4) specific areas which include capacity, contingency, voltage and condition. The work identified in these areas results in the recommendation of specific capital projects. These projects are designed and constructed using both company and contract labor utilizing materials manufactured and supplied by a list of approved vendors, which directly impacts job creation/growth.

Resiliency is also achieved through a component by component inspection and remediation plan as noted in IRP Section s 4 CSR 240-22.045 section 1.1.2.4 Condition.

K. Separately describe and document how GMO's investments in grid modernization, DSM (as evaluated in the current or most recent IRP) and renewable energy will ensure the public interest is adequately served and

other policy objectives of the state are met (see 4 CSR 240-22.010). For example, please describe and document the potential for job creation and economic development.

GMO response: All GMO investments are evaluated to ensure the public interest is adequately served. Investments are selected based on how the investment meets criterial for safe, reliable and cost-effective energy delivery to GMO customers. GMO (in conjunction with KCP&L), routinely utilizes proof-of-concept pilots prior to system-wide deployment for new technologies. This includes EM&V analysis for DSM initiatives. Pilots enable GMO to evaluate the effectiveness of the new technology or approach in the "real world" as well as gain the ability to assess the true cost of the particular solution in the "real world." Pilots also enable the first steps of continuous improvement from lessons learned that will be applied to solutions selected for system-wide deployment. The knowledge from pilots are incorporated into business cases for technologies for alternative comparisons and selection purposes. This pilot and business case process ensures that the public interest is served prior to deploying a technology on a system wide basis.

The potential for job creation and economic development are largely dependent on the level of funding/spending committed to these initiatives. System-wide deployments have the potential for job creation, both for design and installation labor as well as materials manufacturing and supply chain activity. Deployment labor may occur in "spikes" and be provided by contract resources. Additionally, labor will be required to monitor and maintain system-wide deployments, possibly resulting job creation.

Grid modernization and DSM are intended to produce a more reliable grid at lower costs to utility customers. These features are attractive to business and have the potential drive economic development within GMO. System-wide deployments also produce economic development for suppliers of materials and services to GMO in these arenas.

GMO is in full compliance with the Electric Utility Renewable Energy Standard (RES) Requirements as described in 4 CSR 240-20.100 and reported in the annual report filed with the MPSC Commission. Additionally, GMO has invested in renewable energy projects above the prescribed amount mandated in the RES requirements due to the economic benefits of wind facilities.

The Company's investment in DSM insures that the public interest is served because DSM is evaluated on an equivalent basis to other supply-side and renewable resources in choosing the preferred resource plan. The potential demand-side resources are identified and the potential demand-side programs developed in accordance with 4 CSR 240-22.050 and can be found in Volume 5 of the Company's filing. The potential demand-side programs that pass the total resource cost test are then advanced for consideration in the integrated resource analysis as described in 4 CSR 240-22.060 which is detailed in Volume 6 of the Company's filing.

L. Describe and document GMO's coordination with the State Emergency Management Agency to ensure readiness for physical and cybersecurity threats.

GMO response: Corporate Security is currently working with the MO Air National Guard (MOANG) to revise the POP or "Power Outage Plan" that includes both Physical and Cyber components.

- The MOANG is performing this task at the direction of the Governor.

- The MOANG coordinates directly with SEMA in a disaster scenario, such as a Physical or Cyber attack on the power grid that would cause large scale outages and/or damage to the grid.

- SEMA works with KCP&L personnel directly in a normal outage scenario (such as weather-related outages).

M. Describe and document GMO's efforts to address the corporate social responsibility and renewable energy purchasing goals of commercial, industrial, institutional, and public-sector customers for increased access to renewable energy and distributed generation resources.

GMO response: GMO is aware of goals expressed by customers concerning renewable energy, both locally and nationally, and has proposed to increase customer access to renewable energy through a Solar Subscription Pilot Rider and a Renewable Energy Rider filed as part of the current general rate proceeding (ER-2018-0146). These programs will provide customers direct access to renewable energy beyond that already provided through renewables in our generation fleet and portfolio of power purchase agreements. Please see the direct testimony of Kimberly H. Winslow and Bradley D. Lutz filed in that proceeding for further details.

N. Describe and document how GMO's standby rates, cogeneration tariffs, and interconnection standards facilitate the development of customer-owned distributed generation resources and microgrids.

GMO response: The Company's rate tariffs as well as its Rules & Regulations serve to provide specific guidance on how customer-owned generation of any form might be deployed on the Company system. In addition to setting the conditions for interconnection, these documents serve to provide information about the cost and compensation associated with the type of service. More specifically, interconnection standards provide detailed information concerning the metering requirements, safety standards, and electrical connections required to ensure the customer-owned system interacts properly with the Company system. The generally available retail rate tariffs provide information concerning the terms and rates associated with full-requirement service to customers. Special service tariffs, such as cogeneration tariffs, net-metering tariffs, or standby tariffs, provide more detailed information concerning the terms and conditions for service to customer-generators. As appropriate, these tariffs also define rates for energy delivered to the Company or for partial requirement service received by this type of customer.

Customers seeking to deploy customer-owned distributed generation resources and microgrids may use this information to support planning and economic modeling efforts. Further, consultation with Company personnel will help provide any other required information or support needed for customers to consider these alternatives.

GMO does not currently offer a Standby Service tariff. A new Standby tariff has been proposed in the Company's current general rate proceeding (ER-2018-0146). If approved, the tariff will cover all customer generators exceeding the limitations of the Net Metering tariff and will define specific terms for backup, maintenance, and supplemental service.

O. Describe and document the extent to which federal investment, production, and other tax credits reduce the costs for utility plant.

GMO response: The Company has generated the following federal tax credits which have reduce the costs for utility plant. A brief explanation of each credit and how the credits have reduced cost is provided below:

Research and Development Tax Credit – IRC Section 41 allows for a federal tax credit for a portion of research and experimentation costs by a taxpayer. The computation is complex and depends on the amount of qualifying expenses a taxpayer has generated in the past and for any given tax year. GMO has many projects at its generating facilities that include costs that are considered qualified research and experimentation costs. All research and development tax credits generated by GMO have been included as a reduction of cost of service income tax expense in the year generated.

Solar Energy Investment Tax Credit – IRC Section 48 allows for a 30% credit of the costs for qualified solar facilities. The credit also reduces the tax basis of the property by 50% of the credit. This credit is considered an investment tax credit subject to the IRS normalization requirements under IRC Section 46(f). Thus, the credits generated by GMO have been deferred and will be amortized over the book

life of the solar assets back to customers through cost of service income tax expense once used to offset tax liability owed to the IRS.

Alternative Fuel Vehicle Refueling Property Tax Credit - IRC Section 30C allows for a credit for up to 30% of the costs incurred for qualified alternative fuel vehicle refueling property. Qualified costs include "electricity" refueling property and must not exceed $100,000 per location and must be incurred at the location where a motor vehicle is recharged. This credit was only available for qualified costs incurred and placed in service by December 31, 2017. The credit also reduces the tax basis of the property by 100% of the credit. These credits are not considered investment tax credits and are not subject to the IRS normalization requirements under IRC Section 46(f). Since the charging stations have not been included in rate base or cost of service for customers, these credits have also been excluded.

Alternative Motor Vehicle Tax Credit - IRC Section 30B allows for a credit for qualified fuel cell motor vehicles determined to meet the requirements in Section 30B and certified by the IRS. The amount of the credit varies depending on the vehicle and is also computed and certified by the IRS. This credit was only available for qualified vehicles purchased and placed in service by December 31, 2017. The credit also reduces the tax basis of the property by 100% of the credit. These credits are not considered investment tax credits and are not subject to the IRS normalization requirements under IRC Section 46(f). All alternative motor vehicle tax credits generated by GMO have been included as a reduction of cost of service income tax expense in the year generated.

P. In addition to the exercise prescribed in 4 CSR 24-22.045, analyze integrated distribution planning as a way to manage the distribution grid in a manner that reduces peaks and fills valleys in load profiles, and lowers overall system costs with a combination of energy efficiency, demand response, electric vehicles, distributed generation, storage, advanced metering, and pricing strategies such as time-of-use rates (TOU) and inclining block rates (IBR).

GMO response: The GMO Distribution Planning group is evaluating the analysis software we currently use to study the impacts of DER while also evaluating other technologies/software to determine potential benefits and to compare capabilities. While we can evaluate some of the impacts of existing forms of DER such as PV, we cannot do real time analysis. To leverage many of the benefits of additional investments in AMI and better evaluate the impact of DER on our current distribution system in real time, investments will be needed in our existing GIS system to incorporate more of these technologies into our distribution planning process.

Q. Analyze and assess the use of mechanisms such as green tariffs and community solar to increase the availability of distributed generation for large and small customers.

GMO response: Mechanisms such as green tariffs and community solar will increase the availability of renewable energy for customers; it is not as certain that these mechanisms will increase the availability of distributed generation as that would be driven by the design of those mechanisms. Many green tariffs and community solar tariff designs rely on utility scale resources to help keep the costs low and the potential benefits to customers as high as possible. Further, increasing distributed generation alone is seldom the primary goal of those mechanisms.

Increased utilization of distributed generation owned by the utility will be driven by economic and operational considerations, independent of green tariff and community solar mechanisms.

Mechanisms to facilitate the utilization of distributed generation owned by customers already exist. As documented in the Company response to Item N, standby rates, cogeneration tariffs, and interconnection standards provide specific guidance on how customer-owned generation of any form might be deployed.

R. Analyze and document the prospects for using securitization to advance the retirement of coal generation assets, and channel the savings into more economical investments such as demand-side management, building wind and solar generation, and satisfying corporate renewable energy goals to attract new businesses to the service territory.

GMO response: Securitization is a financial tool that would create customer-backed commercial bonds through state legislative actions. These bonds would carry a AAA rating. Given such bonds could lower a utility's debt service costs, savings would be created relative to the utility's traditional debt financing. These bonds could be used to recover the remaining net book value of retired generating assets.

With the planned retirement of Sibley 2 and 3, GMO is no longer in a position to retire additional coal generation. GMO is a minority owner in the remaining coal generation in its fleet, Iatan and Jeffery, and these facilities are unlikely to be retired anytime soon.

S. Provide an explanation for stranded costs and ratepayer impact for the premature retirement of the Sibley coal plant:

(i) The total cost of all stranded assets, who will pay the stranded costs, and, if GMO expects the customers to pay the stranded costs, the impact on customer rates;

GMO response: Tables 3 and 4 below include the net book value for Sibley and Lake Road 4/6 as of 12/31/17. The 2018 IRP analysis assumes that these costs will continue to be recovered from customers as they are today. There would be no incremental rate impact as these costs are already included in customer rates.

Table 3: Sibley Station Net Book Value

Utility Account - Sibley-1	Book Value	Allocated Accumulated Depreciation	Net Book Value
31000-Stm Pr-Land-Elec	$265,963	$0	$265,963
31100-Stm Pr-Structures-Elec	$3,800,101	$3,076,105	$723,996
31200-Stm Pr-Boiler Plt Equip-Elec	$28,697,418	$16,556,280	$12,141,138
31202-Stm Pr-Boiler AQC Equip-Elec	$2,422,671	$178,696	$2,243,976
31400-Stm Pr-Turbogenerator-Elec	$3,448,571	$1,855,146	$1,593,424
31500-Stm Pr-Accessory Equip-Elec	$2,058,365	$1,757,931	$300,434
31600-St Pr-Misc Pwr Plt Equip-Elec	$150,041	$23,350	$126,691
Total	$40,843,130	$23,447,508	$17,395,622
Utility Account - Sibley-2	Book Value	Allocated Accumulated Depreciation	Net Book Value
31000-Stm Pr-Land-Elec	$0	$0	$0
31100-Stm Pr-Structures-Elec	$1,459,259	$1,014,768	$444,491
31200-Stm Pr-Boiler Plt Equip-Elec	$20,594,023	$11,106,189	$9,487,835
31202-Stm Pr-Boiler AQC Equip-Elec	$2,396,208	$175,967	$2,220,241
31400-Stm Pr-Turbogenerator-Elec	$12,085,047	$7,406,946	$4,678,101
31500-Stm Pr-Accessory Equip-Elec	$1,914,618	$1,593,513	$321,104
31600-St Pr-Misc Pwr Plt Equip-Elec	$104,265	$39,635	$64,630
Total	$38,553,420	$21,337,019	$17,216,402
Utility Account - Sibley-3	Book Value	Allocated Accumulated Depreciation	Net Book Value
31000-Stm Pr-Land-Elec	$108,657	$0	$108,657
31100-Stm Pr-Structures-Elec	$15,453,911	$10,007,671	$5,446,240
31200-Stm Pr-Boiler Plt Equip-Elec	$140,593,488	$48,807,897	$91,785,591
31202-Stm Pr-Boiler AQC Equip-Elec	$94,704,268	$5,395,752	$89,308,516
31400-Stm Pr-Turbogenerator-Elec	$41,679,229	$22,460,834	$19,218,396
31500-Stm Pr-Accessory Equip-Elec	$9,843,381	$6,365,138	$3,478,243
31600-St Pr-Misc Pwr Plt Equip-Elec	$686,094	$259,633	$426,460
Total	$303,069,027	$93,296,925	$209,772,103
Utility Account - Sibley Common	Book Value	Allocated Accumulated Depreciation	Net Book Value
31000-Stm Pr-Land-Elec	$22,086	$0	$22,086
31100-Stm Pr-Structures-Elec	$41,058,201	$14,048,036	$27,010,165
31200-Stm Pr-Boiler Plt Equip-Elec	$42,255,480	$15,760,786	$26,494,695
31202-Stm Pr-Boiler AQC Equip-Elec	$2,713,539	$171,899	$2,541,640
31400-Stm Pr-Turbogenerator-Elec	$817,161	$259,741	$557,420
31500-Stm Pr-Accessory Equip-Elec	$5,420,243	$3,298,492	$2,121,751
31600-St Pr-Misc Pwr Plt Equip-Elec	$2,702,497	$320,944	$2,381,554
Total	$94,989,208	$33,859,897	$61,129,311
Grand Total	$477,454,785	$171,941,349	$305,513,437

Table 4: Lake Road 4/6 Net Book Value

Utility Account - Lake Road 4/6	Book Value	Allocated Accumulated Depreciation	Net Book Value
31000-Stm Pr-Land-Elec	$0	$0	$0
31100-Stm Pr-Structures-Elec	$3,802,902	$1,794,655	$2,008,247
31200-Stm Pr-Boiler Plt Equip-Elec	$21,513,165	$5,184,002	$16,329,163
31202-Stm Pr-Boiler AQC Equip-Elec	$1,178,849	$202,770	$976,079
31400-Stm Pr-Turbogenerator-Elec	$11,290,213	$5,921,557	$5,368,656
31500-Stm Pr-Accessory Equip-Elec	$3,942,747	$1,563,621	$2,379,126
31600-St Pr-Misc Pwr Plt Equip-Elec	$21,443	$3,024	$18,420
Total	$41,749,320	$14,669,629	$27,079,691

(ii) All "cost of removal" considerations (dismantle, demolition) for plants that are retired early;

GMO response: GMO currently estimates the net cost to dismantle Sibley at $27.4 to $50.9 million. The current estimated cost to retire Lake Road 4/6 in place is $3.7 to $6.2 million.

(iii) Costs associated with transmission upgrades or additions necessary for transmission grid reliability, stability, or voltage support affected by retirement.

GMO response: There were no transmission grid upgrades or additions related to reliability, stability, or voltage support identified due to the retirements of Sibley Units 1, 2, and 3 and Lake Road Unit 4/6.

T. Model scenarios that examine the impact of the retirement of 10% and 25% of all of the coal generation of Southwest Power Pool (SPP) members and replacement with wind generation energy and capacity including:

(i) The effect on reliability of energy availability on an hourly basis;

GMO response: For both the 10% and 25% retirement scenarios, there was no unserved energy for the Kansas/Missouri region (SPP_KSMO) in the power

market pricing model. There was also no unserved energy in the IRP Integrated Analysis model when applying the new power price curves.

(ii) The effect on SPP monthly market prices, taking into account the impact of the reliability of energy availability;

GMO response: Monthly market prices are included in workpapers in Monthly SPP_KSMO MIDAS market prices.xlsx.

(iii) The expected impact on the amount of energy purchased from the SPP Integrated Marketplace;

GMO response: The increase in energy purchases for the Preferred Plan is shown in the select performance measures presented in Table 5 and Table 6 below.

(iv) The effect on GMO's customers' rates (including FAC rates) by season; and

GMO response: As rates by season are not calculated as part of the Integrated Analysis, and the model output for revenue requirement is at an annual level reporting, those have not been calculated in this analysis. The annual rate impact for the Preferred Plan is shown in the performance measures presented in Table 5 and Table 6 below.

(v) The effect of inclusion of Mountain West Transmission into the SPP.

Discussed in the section below.

Approach to SPP Coal-to-Wind retirement analysis:

Targeted SPP coal units to be retired in the market to reach 10% and 25% goals.

Coal capacity retired for wind units using a capacity planning factor of 30%.

10% coal retirements target to be achieved by the end of 2019.

25% target achieved in additional 5% increments over the next 3 years.

Generated 6 price curves (each for 10% and 25% targets) representing gas and CO_2 uncertainty.

Re-ran the Alternative Resource Plans using these new price curves.

Power Price Results:

Chart 2 compares the annual SPP_KSMO market prices for the base case and the 10% coal plant retirements. These represent the 6 price curves used for the Integrated Analysis and the corresponding prices generated to simulate the 10% coal reduction target. Solid lines represent the base case prices used in the Integrated Analysis, lines with markers are the new prices representing the 10% SPP coal retirements. The letters beginning descriptions in the legend signify the uncertainty combinations for gas prices (H = High, M = Mid, L = Low) and CO_2 state (Y = Yes CO_2, N = No CO_2).

Chart 2: SPP Market Prices Vs 10% Coal Retirements ** Confidential **

Chart 3 compares the annual SPP_KSMO market prices for the base case and the 25% coal plant retirement. Solid lines represent the base case prices used in the Integrated Analysis, lines with markers are the new prices representing the 25% SPP coal retirements. The letters beginning descriptions in the legend signify the uncertainty combinations for gas prices (H = High, M = Mid, L = Low) and CO_2 state (Y = Yes CO_2, N = No CO_2).

Chart 3: SPP Market Prices Vs 25% Coal Retirements ** Confidential **

Based on the GMO Preferred Plan (GAAGC) Results:

For the 10% SPP coal reductions scenario, select performance measures results are shown in Table 5 below:

Table 5: Preferred Plan Performance Measures - 10% SPP Coal Reductions

Year	Revenue Requirement ($MM)	Revenue Requirement ($MM) - SPP10	Levelized Annual Rates ($/kW-hr)	Levelized Annual Rates ($/kW-hr) - SPP10	Rate Increase	Rate Increase - SPP10	Unserved Energy - SPP10 (Mwhr)	Increase in Purchases MWh
2018	812	812	0.09	0.09	0.00%	0.00%	0	0
2019	804	804	0.09	0.09	-1.00%	-1.02%	0	0
2020	818	813	0.09	0.09	1.94%	1.94%	0	2,107
2021	839	834	0.10	0.10	2.78%	2.62%	0	3,207
2022	843	843	0.10	0.10	0.05%	-0.08%	0	4,941
2023	868	861	0.10	0.10	2.42%	2.20%	0	17,077
2024	890	882	0.10	0.10	2.11%	1.73%	0	35,712
2025	901	896	0.10	0.10	1.02%	0.47%	0	60,266
2026	960	951	0.11	0.11	6.00%	5.49%	0	115,739
2027	981	970	0.11	0.11	1.65%	1.09%	0	120,606
2028	995	986	0.11	0.11	0.39%	-0.11%	0	115,726
2029	1,018	1,007	0.11	0.11	1.56%	1.06%	0	95,550
2030	1,034	1,023	0.11	0.11	0.84%	0.23%	0	82,019
2031	1,056	1,048	0.11	0.11	1.41%	0.88%	0	83,197
2032	1,078	1,070	0.12	0.11	1.16%	0.54%	0	94,605
2033	1,106	1,098	0.12	0.11	1.98%	1.31%	0	92,481
2034	1,137	1,131	0.12	0.11	1.90%	1.17%	0	97,424
2035	1,169	1,163	0.12	0.11	1.88%	1.16%	0	92,442
2036	1,204	1,196	0.12	0.11	1.87%	1.08%	0	83,243
2037	1,232	1,226	0.13	0.12	1.66%	0.99%	0	58,979

For the 25% SPP coal reductions scenario, select performance measures results are shown in Table 6 below:

Table 6: Preferred Plan Performance Measures - 25% SPP Coal Reductions

Year	Revenue Requirement ($MM)	Revenue Requirement ($MM) - SPP25	Levelized Annual Rates ($/kW-hr)	Levelized Annual Rates ($/kW-hr) - SPP25	Rate Increase	Rate Increase - SPP25	Unserved Energy - SPP25 (Mwhr)	Increase in Purchases MWh
2018	812	812	0.09	0.09	0.00%	0.00%	0	0
2019	804	804	0.09	0.09	-1.00%	-1.02%	0	0
2020	818	818	0.09	0.09	1.94%	1.91%	0	4,242
2021	839	838	0.10	0.10	2.78%	2.49%	0	39,481
2022	843	843	0.10	0.10	0.05%	0.06%	0	34,348
2023	868	862	0.10	0.10	2.42%	1.69%	0	109,279
2024	890	882	0.10	0.10	2.11%	1.62%	0	120,070
2025	901	892	0.10	0.10	1.02%	0.70%	0	126,391
2026	960	950	0.11	0.11	6.00%	5.59%	0	193,040
2027	981	970	0.11	0.11	1.65%	1.10%	0	198,280
2028	995	983	0.11	0.11	0.39%	-0.13%	0	169,388
2029	1,018	1,005	0.11	0.11	1.56%	0.95%	0	147,387
2030	1,034	1,021	0.11	0.11	0.84%	0.24%	0	136,092
2031	1,056	1,043	0.11	0.11	1.41%	0.85%	0	145,236
2032	1,078	1,066	0.12	0.11	1.16%	0.53%	0	157,372
2033	1,106	1,094	0.12	0.11	1.98%	1.30%	0	174,438
2034	1,137	1,126	0.12	0.11	1.90%	1.22%	0	159,674
2035	1,169	1,157	0.12	0.11	1.88%	1.10%	0	158,080
2036	1,204	1,192	0.12	0.11	1.87%	1.19%	0	129,961
2037	1,232	1,220	0.13	0.12	1.66%	0.93%	0	114,750

MWTG/SPP Analysis:

The effect of including Mountain West Transmission Group (MWTG) into the Southwest Power Pool (SPP) will be determined by the timing and conditions currently being negotiated. To estimate the effect, based upon current knowledge, the Company utilized the market power pricing model to compare these 3 scenarios:

Scenario 1: Base Case IRP pricing This is the standard IRP price run used in the Integrated Analysis. Only the eastern interconnect is active. The DC ties are not active, thus, the western interconnect is not run in this scenario.

Scenario 2: DC ties activated All DC ties between the eastern and the western interconnect were activated thus allowing the eastern and western interconnect to interact and operate simultaneously. This included activating 4 ties between SPP and Mountain West Transmission. In this scenario, the Lamar tie was activated at its current 210 MW rating. No additional changes were made from Scenario 1.

Scenario 3: DC ties activated and Lamar tie transfer capability doubled The Lamar tie rating was doubled from 210 MW to 420 MW. No additional changes were made from Scenario 2.

The 4 DC ties between SPP and Mountain West along with their respective transfer capability are shown in Table 7 below:

Table 7: DC Interties - Western Interconnect to SPP

Name	Transfer Capability (MW)
Rapid City	200
Stegall	110
Sidney	200
Lamar	210
Total	720

MWTG/SPP Price Impacts:

Chart 4 illustrates prices based on mid gas price and no CO_2 emission costs:

Chart 4: SPP Market Prices - Mid-Gas and No CO_2 Market ** Confidential **

Overall, the effect of activating the ties is minimal. The effect is virtually negligible on the wrap price.

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Chart 5 reflects prices based on mid gas prices plus CO_2 emission costs starting in 2026:

Chart 5: SPP Market Prices - Mid-Gas and CO_2 Market ** Confidential **

Once again, the overall effect of activating the ties is minimal and is virtually negligible on the wrap price.

Given the minimal impact on wholesale energy market prices, this change would not impact the Preferred Plan selection.

U. For the upcoming energy efficient potential study, include adoption (or "take") rate considerations that are modified (+/-) with the following elements:

(i) Modified rate design scenarios (Inclining Block Rates, Time of Use, fluctuations in fixed charges +/- at $2, $5 and $10); and

(ii) Increase in volatile weather (additional Heating Degree Days and Cooling Degree Days).

GMO response: In the next DSM potential study RFP GMO will engage the stakeholders to consider this in the scope of the next potential study and to clarify the objective and outcomes desired from the additional scope.

SECTION 5: STAKEHOLDER GROUP MEETINGS

(5) Each electric utility shall convene a stakeholder group to provide the opportunity for public input into electric utility resource planning in a timely manner that may affect the outcome of the utility resource planning efforts. The utility may choose to not incorporate some, or all, of the stakeholder group input in its analysis and decision-making for the triennial compliance filing.

(A) The utility shall convene at least one (1) meeting of the stakeholder group prior to the triennial compliance plan filing to present a draft of the triennial compliance filing corresponding to 4 CSR 240-22.030–4 CSR 240-22.050 and to present an overview of its proposed alternative resource plans and intended procedures and analyses to meet the requirements of 4 CSR 240-22.060 and 4 CSR 240-22.070. The stakeholders shall make a good faith effort to provide comments on the information provided by the utility, to identify additional alternative resource plans, and to identify where the utility's analyses and intended approaches may not meet the objectives of the rules.

GMO presented draft information corresponding to Rules 4 CSR 240-22.030 through 4 CSR 240-22.050 on February 16, 2018 at the Governor's Office Building, 200 Madison, Room 110, Jefferson City, Missouri. The material presented at the stakeholder meeting is attached as Appendix 8A.

(B) Within thirty (30) days of the last stakeholder group meeting pursuant to subsection (5)(A) of this rule, any stakeholder may provide the utility and other stakeholders with a written statement summarizing any potential deficiencies in or concerns with the utility's proposed compliance with the electric resource planning rules. The utility has the opportunity to address the potential deficiencies or concerns identified by any stakeholder in its preparation of the triennial compliance filing.

GMO presented draft information corresponding to Rules 4 CSR 240-22.030 through 4 CSR 240-22.050 on February 16, 2018 at the Governor's Office Building, 200 Madison, Room 110, Jefferson City, Missouri. To date, GMO has not received any notices of potential deficiencies or concerns from any stakeholder.

(C) Any stakeholder input through the process described in section (5) of this rule does not preclude the stakeholder from filing reports in accordance with section (7) or (8) of this rule.

SECTION 6: COMMISSION DOCKETS

(6) The commission will establish dockets for the purpose of receiving the triennial compliance filings. Unless the commission specifies otherwise, the docket of the triennial compliance filing of each affected utility shall remain open to receive annual update reports including workshop summary reports, notifications of changes to the preferred plan, and other relevant documents submitted between triennial compliance filings. The commission will issue orders that establish an intervention deadline and provide for notice.

SECTION 7: TRIENNIAL COMPLIANCE FILING - STAFF REVIEW

(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. Staff shall provide its workpapers related to each deficiency or concern to all parties within ten (10) days of the date its report is filed. If the staff's limited review finds no deficiencies or no concerns, the staff shall state that in the report. A staff report that finds that an electric utility's filing is in compliance with this chapter shall not be construed as acceptance or agreement with the substantive findings, determinations, or analysis contained in the electric utility's filing.

SECTION 8: TRIENNIAL COMPLIANCE FILING - OTHER PARTIES REVIEW

(8) Also within one hundred fifty (150) days after an electric utility's triennial compliance filing pursuant to this rule, the public counsel and any intervenor may file a report or comments. The report or comments, based on a limited review, may 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. The report may also identify concerns with the utility's triennial compliance filing and may identify concerns related to the substantive reasonableness of the preferred resource plan or resource acquisition strategy. Public counsel or intervenors shall make a good faith effort to provide at least one (1) suggested remedy for each identified deficiency or concern. Public counsel or any intervenor shall provide its workpapers, if any, related to each deficiency or concern to all parties within ten (10) days of the date its report is filed.

SECTION 9: JOINT AGREEMENT TIMELINE

(9) If the staff, public counsel, or any intervenor finds deficiencies in or concerns with a triennial compliance filing, it shall work with the electric utility and the other parties to reach, within sixty (60) days of the date that the report or comments were submitted, a joint agreement on a plan to remedy the identified deficiencies and concerns. If full agreement cannot be reached, this should be reported to the commission through a joint filing as soon as possible but no later than sixty (60) days after the date on which the report or comments were submitted. The joint filing should set out in a brief narrative description those areas on which agreement cannot be reached. The resolution of any deficiencies and concerns shall also be noted in the joint filing.

SECTION 10: ESTABLISHMENT OF HEARING

(10) If full agreement on remedying deficiencies or concerns is not reached, then, within sixty (60) days from the date on which the staff, public counsel, or any intervenor submitted a report or comments relating to the electric utility's triennial compliance filing, the electric utility may file a response and the staff, public counsel, and any intervenor may file comments in response to each other. The commission will issue an order which indicates on what items, if any, a hearing will be held and which establishes a procedural schedule.

SECTION 11: SUBMISSION OF DOCUMENTATION

(11) All workpapers, documents, reports, data, computer model documentation, analysis, letters, memoranda, notes, test results, studies, recordings, transcriptions, and any other supporting information relating to the filed resource acquisition strategy within the electric utility's or its contractors' possession, custody, or control shall be preserved and submitted within two (2) days of its triennial compliance or annual update filings in accordance with any protective order to the staff and public counsel, and to any intervenor within two (2) days of the intervenor signing and filing a confidentiality agreement, for use in its review of the periodic filings required by this rule. All information shall be labeled to reference the sections of the technical volume(s) to which it is related, and all spreadsheets shall have all formulas intact. Each electric utility shall retain at least one (1) readable copy of the officially adopted resource acquisition strategy and all supporting information for at least the prior three (3) triennial compliance filings.

GMO will submit workpapers, documents, reports, data, computer model documentation, analysis, letters, memoranda, notes, test results, studies, recordings, transcriptions, and any other supporting information within two days of submitting the triennial filing.

SECTION 12: NOTICE OF CHANGE TO PREFERRED PLAN

(12) If, between triennial compliance filings, the utility's business plan or acquisition strategy becomes materially inconsistent with the preferred resource plan, or if the utility determines that the preferred resource plan or acquisition strategy is no longer appropriate, either due to the limits identified pursuant to 4 CSR 240-22.070(2) being exceeded or for other reasons, the utility, in writing, shall notify the commission within sixty (60) days of the utility's determination and shall serve notice on all parties to the most recent triennial compliance filing. The notification shall include a description of all changes to the preferred plan and acquisition strategy, the impact of each change on the present value of revenue requirement, and all other performance measures specified in the last filing pursuant to 4 CSR 240-22.080 and the rationale for each change.

(A) If the utility decides to implement any of the contingency resource plans identified pursuant to 4 CSR 240-22.070(4), the utility shall file for review a revised resource acquisition strategy. In this filing, the utility shall specify the ranges or combinations of outcomes for the critical uncertain factors that define the limits within which the new alternative resource plan remains appropriate.

(B) If the utility decides to implement a resource plan not identified pursuant to 4 CSR 240-22.070(4) or changes its acquisition strategy, it shall give a detailed description of the revised resource plan or acquisition strategy and why none of the contingency resource plans identified in 4 CSR 240-22.070(4) were chosen. In this filing, the utility shall specify the ranges or

combinations of outcomes for the critical uncertain factors that define the limits within which the new alternative resource plan remains appropriate.

SECTION 13: GRANTING OF WAIVER OR VARIANCE

(13) Upon written application made at least twelve (12) months prior to a triennial compliance filing, and after notice and an opportunity for hearing, the commission may waive or grant a variance from a provision of 4 CSR240-22.030–4 CSR 240-22.080 for good cause shown. The commission may grant an application for waiver or variance filed less than twelve (12) months prior to the triennial compliance filing upon a showing of good cause for the delay in filing the application for waiver or variance.

A variance was requested regarding Rule 4 CSR 240-22.045(3)(B)2 and Rule 4 CSR 240-22.045(3)(B)3 requiring a Regional Transmission Organizations (RTO) expansion plan analysis specific to its Missouri customers. The Commission granted the variance.

(A) The granting of a variance to one (1) electric utility which waives or otherwise affects the required compliance with a provision of this chapter does not constitute a waiver respecting, or otherwise affect, the required compliance of any other electric utility with a provision of these rules.

(B) The commission will not waive or grant a variance from this chapter in total.

SECTION 14: WAIVER FOR ANNUAL UPDATE WORKSHOP

(14) An electric utility which sells less than seven (7) million megawatt-hours to Missouri retail electric customers for the previous calendar year may apply for a waiver allowing it to conduct an annual update workshop pursuant to section (3) of this rule in place of its scheduled triennial compliance filing pursuant to section (1) of this rule, if the utility has no unresolved deficiencies or concerns from its prior triennial plan filing or

annual update filing that materially affect its resource acquisition strategy. Upon written application made at least twelve (12) months prior to a triennial compliance filing, and after notice and an opportunity for hearing, the commission may allow the utility to conduct the annual update workshop process in lieu of submitting its triennial compliance filing. No more than one (1) such waiver may be granted consecutively between triennial compliance filings.

SECTION 15: EXTENDING OR REDUCING TIME PERIODS

(15) The commission may extend or reduce any of the time periods specified in this rule for good cause shown.)

SECTION 16: COMMISSION ISSUED ORDER

(16) The commission will issue an order which contains its findings regarding at least one (1) of the following options:

(A) That the electric utility's filing pursuant to this rule either does or does not demonstrate compliance with the requirements of this chapter, and that the utility's resource acquisition strategy either does or does not meet the requirements stated in 4CSR 240-22.

(B) That the commission approves or disapproves the joint filing on the remedies to the plan deficiencies or concerns developed pursuant to section (9) of this rule;

(C) That the commission understands that full agreement on remedying deficiencies or concerns is not reached and pursuant to section (10) of this rule, the commission will issue an order which indicates on what items, if any, a hearing(s) will be held and which establishes a procedural schedule; and

(D) That the commission establishes a procedural schedule for filings and a hearing(s), if necessary, to remedy deficiencies or concerns as specified by the commission.

SECTION 17: COMMISSION ACKNOWLEDGEMENT OF PREFERRED RESOURCE PLAN

(17) If the commission finds that the filing achieves substantial compliance with the requirements outlined in section (16), the commission may acknowledge the utility's preferred resource plan or resource acquisition strategy as reasonable at a specific date. The commission may acknowledge the preferred resource plan or resource acquisition strategy in whole, in part, with exceptions, or not at all. Acknowledgment shall not be construed to mean or constitute a finding as to the prudence, pre-approval, or prior commission authorization of any specific project or group of projects. In proceedings where the reasonableness of resource acquisitions are considered, consistency with an acknowledged preferred resource plan or resource acquisition strategy may be used as supporting evidence but shall not be considered any more or less relevant than any other piece of evidence in the case. Consistency with an acknowledged preferred resource plan or resource acquisition strategy does not create a rebuttable presumption of prudence and shall not be considered to be dispositive of the issue. Furthermore, in such proceedings, the utility bears the burden of proof that past or proposed actions are consistent with an acknowledged preferred resource plan or resource acquisition strategy and must explain and justify why it took any actions inconsistent with an acknowledged preferred resource plan or resource acquisition strategy.

(A) The utility shall notify the commission pursuant to 4 CSR 240-22.080(12) in the event there is material reason why any plan acknowledged by the commission is no longer viable.

(B) Any interested stakeholder group may file a notice in the utility's most recent Chapter 22 compliance file with the commission if a substantial change in circumstances has occurred that it believes may result in the invalidation of any aspect of a preferred resource plan or portion of a resource acquisition strategy previously acknowledged by the commission.

(C) The utility about which a stakeholder group files a notice described in the previous section may file its response within fifteen (15) working days of the date the notice is filed.

SECTION 18: CERTIFICATION OF CONSISTANCY OF PREFERRED PLAN TO FUTURE CASE

(18) In all future cases before the commission which involve a requested action that is affected by electric utility resources, preferred resource plan, or resource acquisition strategy, the utility must certify that the requested action is substantially consistent with the preferred resource plan specified in the most recent triennial compliance filing or annual update report. If the requested action is not substantially consistent with the preferred resource plan, the utility shall provide a detailed explanation.