

**BEFORE THE PUBLIC SERVICE COMMISSION
OF THE STATE OF MISSOURI**

In the Matter of Union Electric Company's)	
2011 Utility Resource Filing Pursuant to)	<u>Case No. EO-2011-0271</u>
4 CSR 240 – Chapter 22)	

INITIAL POST-HEARING BRIEF
OF THE OFFICE OF THE PUBLIC COUNSEL

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Introduction

With the IRP filing itself, the various reports responding to it, Ameren Missouri's response to those reports, then two more rounds of prefiled testimony, and finally an evidentiary hearing, there is a large volume of material in the record in this case. The intent of this brief is to attempt to distill this material into a more manageable volume. Because most of the information in the record is organized around the deficiencies identified by the parties, this brief will retain that organization.

In general terms, the deficiencies identified by Public Counsel can be grouped into four categories. First, the Company explicitly rejects the opportunities to reduce electricity costs, lower customer bills, and reduce environmental impacts through energy efficiency programs. Second, the Company is not taking the necessary steps within the Integrated Resource Planning (IRP) process to plan for and respond to expected future environmental constraints, either in terms of possible required environmental controls on fossil plants or in terms of requirements to address climate change. Third, the Company is ignoring or downplaying the opportunities available from renewable resources, especially wind. Finally, the Company demonstrates a preference towards using new nuclear plants to meet future electricity needs, despite the risks and potential high costs of nuclear power.

The first of these is the most significant, although all are important. When the company explicitly chose to make profitability more important than minimizing the present value of revenue requirement (PVRR), it ignored the central premise and main goal of integrated resource planning. This is what most of the parties consider to be the most important issue in the case: is a utility in compliance with the IRP rules if it rejects plans with relatively low PVRR and instead relies on an *ad hoc* group of "decision factors" grafted onto the end of the process? Put another

way: can Ameren Missouri ignore the results of its own analysis showing which plan results in low PVRR and instead choose a plan with a much higher PVRR because that plan produces more profits?

Public Counsel understands that the Commission will be reluctant to address shortcomings in Ameren Missouri's analysis of DSM because Ameren Missouri is expected to file its Missouri Energy Efficiency Investment Act application the same day this brief is being filed. And Public Counsel understands that the Commission, having recently modified its IRP rules, may view deficiencies in compliance in this case, the last processed under the "old" rules, to be less significant. But the deficiencies identified are significant, and the Commission must address them now.

The importance of addressing the deficiencies now is greatly compounded by the fact that the Commission chose not to address the deficiencies in Ameren Missouri's last IRP case in any effective way. In Case No. EO-2007-0409, the Commission found that Ameren Missouri did not comply with the IRP rules in many respects, but did not order any sort of remedy like ordering the filing of a new plan. If the Commission again allows Ameren Missouri to get away with incomplete planning and improperly manipulated results with nothing more than vague directives to try to do better next time, neither the Commission nor Ameren Missouri customers can have any confidence that Ameren Missouri's planning is resulting in safe and adequate service at just and reasonable rates. The Commission may understandably be overwhelmed with the large number of deficiencies that are in dispute in the current case – even more than in the last case. Even though the Commission ultimately found in Case No EO-2007-0409 that Ameren Missouri was not in compliance with the rule, it only directed the Company to work closely with stakeholders to resolve the deficiencies in this currently-pending IRP filing.

Unfortunately, the number of deficiencies in dispute has grown instead of being reduced in the current filing.

The Commission may be tempted to assume that the main area of deficiencies is related to Ameren Missouri's plans for energy efficiency offerings and that Ameren Missouri's MEEIA filing is where these issues can be resolved, leaving only a few lower priority issues remaining to be addressed in this IRP case. But such an assumption would ignore the cumulative impact of much of the harm caused by Ameren Missouri's IRP deficiencies. The main purpose of the integrated resource planning exercise is for the utility to make a comprehensive long-term assessment of how it can best serve customers by acquiring an optimal combination of supply and demand side resources that meets the main plan selection criteria of being least cost (minimizing PVRP) and contains the set of resources additions that over time is characterized by flexibility and robustness in light of anticipated future risks. Ameren Missouri's planning process contained a number of fatal flaws that kept it from achieving this purpose, including:

1. Inadequate analysis of the value of wind resources because of faulty assumptions such as coupling wind with gas CT additions even though Ameren Missouri's system already contains an abundance of peaking resources (gas CTs and pumped storage) and only adding wind in 800 MW additions instead of the more typical 50 – 200 MW wind additions.
2. Failure to properly model demand response resources by only adding demand response when a given resource plan had a capacity shortfall. Ameren Missouri should have used an optimization approach to create resource plans that minimize costs and risks by using optimization computer programs or basic "what if" analyses to determine the optimal

combination of supply and demand side resources to include in a range of plans in a portfolio of sufficiently differentiated alternative resource plans.

3. Failure to perform an “apples to apples” analysis of the final set of alternative resource plans as required by the rule so that the expected value of each of the plans can be compared side by side when assessed against the risk of different values for critical uncertain factors. Instead of doing this apples to apples analysis, Ameren Missouri did an “apples to oranges” analysis where one group of plans was analyzed under the assumption of “moderate” future environmental regulations (the apples analysis) and another group of plans was analyzed under the assumption of “aggressive” future environmental regulations (the oranges analysis). The apples to oranges approach makes it meaningless to compare the expected values of PVRR and other performance measures for the entire final set of plans.

These three fatal flaws lead to an analysis that provides no guidance to the Commission, Ameren Missouri, or stakeholders about the optimal path that Ameren Missouri should take to acquire resources that minimize costs and risks over the planning horizon. Unfortunately, this failure extends the situation that has existed over the last three years during which Ameren Missouri has not been in compliance with the Commission’s IRP rule. There is no adequate remedy to this situation other than for the Commission to delve into the details of Ameren Missouri’s inadequate IRP analysis, make finding about the deficiencies and recommended remedies and order the Company to re-do its analysis promptly and properly so that consumers can receive the benefits and protections that the IRP rule is intended to provide.

The Commission should not assume that since Ameren Missouri has no immediate plans to acquire supply-side resources there will be no harm in once again telling Ameren Missouri to

get it done right in its next filing that will occur two years from now. There are any number of scenarios in which harm could occur, and occur quickly. A properly performed analysis might very well show that consumers could benefit from acquiring more wind resources right now instead of waiting for a proper analysis two years from now (possibly leading to acquiring new wind resources four years from now). It may be that there are a limited number of wind sites in MISO where wind can be delivered to Ameren Missouri's service territory without risk of high transmission congestion charges, and Ameren Missouri's failure to properly analyze wind would have prevented it from locking in options on such sites. Ameren Missouri may propose a shared savings incentive mechanism in its MEEIA application that vastly overstates the value of energy efficiency relative to supply side resources because Ameren Missouri has never done the proper analysis to determine an optimal supply-side-only plan. Ameren Missouri may move forward with additional environmental retrofit or life extension investments at some of its coal plants over the next few years even though the environmental retrofit and plant retirement analysis done in this IRP occurred in a planning framework that was rife with flawed assumptions and a lack of optimization analysis.

Public Counsel asks the Commission to order Ameren Missouri to immediately correct for the deficiencies identified by Public Counsel and re-run its analysis to select a Preferred Resource Plan and the other elements of a Resource Acquisition Strategy. The current IRP results are unreliable and insufficient for planning purposes and fail to achieve the fundamental objective of the resource planning process as set forth in 4 CSR 240-22.010(2). The only effective remedy for this failure is a corrected analysis and a new plan selection.

The remainder of this brief will address the deficiencies identified by Public Counsel in the order that they are set forth in the June 23, 2011 report.

Deficiencies

1. 4 CSR 240-22.010(2)(B) – Ameren Missouri failed to use the minimization of present value of revenue requirements (PVRR) as the primary selection criterion in choosing the preferred resource plan.

The Company's own analysis indicates that higher levels of efficiency savings in the Reasonably Achievable Potential Portfolio can reduce electricity costs by \$1.5 to \$2.5 billion relative to the portfolio chosen by the Company. Ameren Missouri's decision to select the Low Risk Portfolio is directly in conflict with the IRP regulations that require demand-side and supply-side resources to be evaluated on an equivalent basis and that the primary selection criterion be the minimization of the present worth of long-run utility costs. Ameren Missouri chose the Low Risk portfolio, even though it is not even close to the lowest PVRR because the Low Risk portfolio is more favorable to the Company's financial interests. This approach to limiting energy efficiency resources is directly in conflict with the Missouri IRP rules, and undermines the fundamental goal of IRP.

2. 4 CSR 240-22.010(2)(A) and 4 CSR 240-22.060(3) – Ameren Missouri failed to develop alternative resource plans that capture the full range of demand-side resources. Ameren Missouri also failed to comply with the Commission's order in Case No. EO-2007-0409 wherein the Commission states that it "directs AmerenAmeren Missouri to model an even more aggressive approach to encourage participation in demand-side management programs in its next filing."

The final candidate resource plans include only two levels of demand-side resources: the Low Risk Portfolio and the Reasonably Achievable Portfolio, and thus Ameren Missouri did not consider a sufficient range of demand-side resource portfolios to capture the full potential of demand-side resource options. The IRP does not appropriately develop and evaluate alternative plans that could result in the minimization of PVRR.

Moreover, both alternatives significantly underweight demand response. The Low Risk Portfolio assumes that there will be no demand response programs before 2016, which

understates the potential for demand response. The Reasonably Achievable Portfolio only includes an extremely limited amount of demand response resources (except for Plan R3), significantly understating the potential benefits from this important resource.

3. 4 CSR 240-22.040(1) and 4CSR 240-22.060(3) – Ameren Missouri failed to properly characterize and model renewable resources, particularly wind resources.

There are three significant problems with the assumptions that Ameren Missouri used to model the potential for wind resources. First, Ameren Missouri assumes that 346 MWs of simple cycle gas turbines are built for every 800 MWs (nameplate capacity value) of wind turbines installed. Wind farms can add value simply by contributing energy, and there is no need to include additional capacity to support them. Furthermore, Ameren Missouri already has a robust fleet of peaking resources. Second, Ameren Missouri applied “build thresholds” to their generation resources, under the assumption that average wind farm capacity would be 800 MWs of name plate capacity. Even large utilities like Ameren Missouri often build or contract for wind in 50 – 100 MW increments as Ameren Missouri has already done. Third, Ameren Missouri assumed that all wind projects have an average cost of \$2,000/MW with no variation in capacity factors for the entire amount of wind capacity. Because some projects will cost less than the average and some will cost more, a more precise analysis should have been done so the model could choose the lowest cost options first and only pick the higher cost options if they turn out to be economic.

4. 4 CSR 240-22.040(8) and 4 CSR 240-22.070(2) – Ameren Missouri failed to properly identify the full range of likely construction times or project costs for its new nuclear units, and failed to conduct sensitivity analyses of these critical uncertain factors.

The IRP investigates a new nuclear generator as one of the primary resources needed to meet new load. The Company’s assumptions regarding nuclear unit construction times and cost are very optimistic, and the Company has not adequately addressed the financial and economic

risks associated with nuclear construction. Ameren Missouri conceded at the hearing that it is in the process of updating these cost estimates, and expects the increases to be “not insignificant.” (TR. 234)

5. 4 CSR 240-22.070(5), 4 CSR 240-22.070(2), and 4 CSR 240-22.070(2)(C) – Ameren Missouri failed to use an appropriate modeling technique to assess how future environmental scenarios for new EPA regulations affecting existing coal plants will influence the candidate resource plans.

One of the most significant problems with the Company’s integration and risk analysis and its Preferred Resource Selection Scorecard approach is that it is based on a direct comparison between two different, mutually exclusive futures: the moderate environmental scenario and the aggressive environmental scenario. The significance of this approach is explained in the Technical Report that Public Counsel filed on June 23, 2011:

Ameren’s decision to model the additional EPA regulations through specific scenarios (the moderate and aggressive environmental scenarios), as opposed to modeling them in the probability tree leads to some significant flaws in their its modeling approach and fails to comply with the requirement in 4 CSR 240-22.070(2)(C) to consider any major future changes in environmental laws, regulations or standards as an uncertain factor which could potentially be a critical uncertain factor. In sum, when the Company gets to its preferred plan selection process (described in Chapter 10 of the IRP), it compares 14 candidate resource plans, five of which are based on the moderate environmental scenario (Meramec continues as is and new EPA regulations affecting environmental retrofit costs for the entire coal fleet are moderate relative to the aggressive environmental scenario), and nine of them are based on the aggressive environmental scenario (Meramec is retired or somehow modified and new EPA regulations affecting environmental retrofit costs for the entire coal fleet are more costly and some occur sooner relative to the moderate environmental scenario). Consequently, the five moderate environmental scenario candidate plans cannot properly be compared to the nine aggressive environmental scenario candidate plans because they represent mutually exclusive futures having vastly different impacts on resource plan revenue requirements over the 20 year planning horizon. Yet the Company does make direct comparisons across all these candidate resource plans, which significantly skews its scorecard mechanism and leads to spurious results. (Exhibit 42, pages 15-16)

6. 4 CSR 240-22.060(4) and 4 CSR 240-22.070(6) and 4 CSR 240-22.080(6) – Ameren Missouri’s analysis of alternative resource plans and its selection of its Preferred Resource Plan contains several errors and flaws that lead to misleading and spurious results.

The IRP scenario modeling starts with a large number of scenarios, and reduces this number to a much smaller set of semi-finalists by using a “scorecard” approach. There are a number of problems with this initial scorecard approach. They are identified in the List of Deficiencies and Remedies filed by Public Counsel on June 23, 2011:

- The metric used to measure customer satisfaction is overly simplistic and can potentially lead to illogical results, where scenarios with delayed rate impacts can be considered worse than those with constant rate impacts or equal to those with accelerated rate impacts.
- The metric to account for employment impacts assumes that Ameren Missouri will own 100 percent of the new nuclear unit, when it is planning to actually own only 30 percent or 50 percent.
- The probability distribution used to assess the likely costs of the nuclear plant does not sufficiently account for the likelihood of significant cost overruns.
- The scorecard uses a “unitized” scoring system where a scenario is given a score ranging from 0.000 to 1.000, for each metric. However, the Company does not apply this approach equally across the metrics in that they do not always score the lowest case at 0.000. Because of the math behind the scoring, this results in “effective weights” that are considerably different than the weights the Company claims it is using.

(Exhibit 41, page 8)

The problems with the scorecards are not limited to the initial application of the scorecard approach. To determine its Preferred Resource Plan from the 14 finalists, Ameren Missouri used a slightly different scoring approach, which suffered from its own flaws:

- The Company applies scores based on whole numbers between one and five. In several cases, this requires using judgment about just what the score should be. In some cases the judgments do not make sense or are in error. In particular, (a) the RAP efficiency plan does not get a high score for environmental diversity based on the questionable logic that reducing demand does not increase resource diversity; (b) the RAP efficiency plans do not get the highest score for efficiency savings, apparently through an error; and (c) the economic development scores do not correspond to the economic development estimates associated with the different plans, with the energy efficiency plans being underscored.

- In applying the scorecard Ameren Missouri used different weights across the six categories than the weights they presented in Chapter 9 of the IRP. The weight of the energy efficiency metric was reduced from 10 percent to zero, and the customer satisfaction and cost metrics were each increased by five percent. It is not clear why the Company shifted these weights, but it results in a blatant reduction in score for the energy efficiency plans.
 - The Company applied a weight of 25 percent (or 30 percent in the actual scoring) to the cost metric. The IRP regulations require this metric to be weighted at greater than 50 percent, as the primary criterion for selecting the preferred resource plan.
- (Exhibit 41, page 8)

7. Ameren Missouri failed to comply with the Commission’s order in Case No. EO-2007-0409 wherein the Commission states that it “directs AmerenAmeren Missouri to more realistically evaluate its IDR [Industrial Demand Response] programs in its next filing.”

On page 46 in Chapter 7, Ameren Missouri states that “Non-Dispatchable Demand Response (NDDR) link prices in retail and wholesale markets.” Ameren Missouri’s IRP filing does not show that it has used NDDR types of demand response programs in the alternative resource plans that were developed and instead relied only on dispatchable demand response programs that are also referred to as direct load control (DLC) programs (See Table 7.17 on page 53 in Chapter 7). By modeling only DLC programs for industrial customers and ignoring the enormous potential of NDDR programs, Ameren Missouri has failed to realistically evaluate its IDR programs as directed by the Commission.

8. 4 CSR 240-22.080(6) - Ameren Missouri provided insufficient and inaccurate information to critical decision makers in selecting and approving the Preferred Resource Plan.

In presentations¹ to the Union Electric Board of Directors and the Ameren Board of Directors, the Company refers to the Low Risk Portfolio of energy efficiency programs as the “Lowest Cost Resource Plan,” even though the Company’s own analyses indicate that the RAP Portfolio results in lower costs than the Low Risk Portfolio. In addition, in both of those

¹ These presentations are part of the record in this case as Attachment B to Exhibit 41.

presentations the Company inaccurately claims that the RAP Portfolio has a “moderate disadvantage” in terms of the cost criteria relative to the Low Risk Portfolio.

Conclusion

Public Counsel asks the Commission to note carefully what then-Chairman Clayton and then-Commissioner Gunn concluded in their dissent in Case No. EO-2007-0409:

All of the parties in this case spent countless hours reviewing Ameren’s IRP filing and, along with the majority, found that filing to be deficient. This deferral of compliance sends the wrong message to not only the parties interested in these issues in this case, but in all current and future IRP dockets. These Commissioners would require Ameren to correct the deficiencies in its 2008 IRP now, rather than allow the company until its next IRP filing to get it right.

Like the dissenters in that case, Public Counsel urges this Commission to “require [Ameren Missouri] to correct the deficiencies in its ... IRP now, rather than allow the company until its next IRP filing to get it right.”

WHEREFORE, Public Counsel respectfully offers this Initial Post-hearing Brief and prays that the Commission conform its decision in this case to the arguments contained herein.

Respectfully submitted,

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CERTIFICATE OF SERVICE

I hereby certify that copies of the foregoing have been emailed to all parties this 20th day of January 2012.