

MDNR Company-Specific Contemporary Issues For Ameren Missouri

The following issues were deficiencies or concerns identified by MDNR or its consultant GDS, in comments filed on Ameren's 2011 compliance filing in File No. EO-2011-0271:

Company-Specific (IRP Deficiency) Issue 1: Clearly Define and Document Resource Planning Objectives.

What planning objectives guide Ameren's current resource planning and what are the preferred outcomes associated with each of these objectives? Clearly defined planning objectives are the foundation of effective ongoing resource planning as well as communication among the utility, Commission and stakeholders concerning the rationale for selecting or modifying a preferred resource plan. In its most recent compliance filing, Ameren Missouri identified six 2-word to 4-word categories into which its resource planning objectives fall and identified one or more performance measures for each category. However, Ameren Missouri has not explicitly stated the desired outcome corresponding to each of these categories. In both standard planning practice and common use, an objective is generally understood to be a desired outcome. Ameren Missouri has stated that the desired outcome for these categories and performance measures are "self-evident" but has not explicitly identified them.

1. Specific issues to address. Explicit statement of the desired outcome for each of the six categories with respect to the performance measures defined for each category - for example, is more better? Is less better? Is there a desired optimal point somewhere in the middle?
2. Clarification as to whether the six planning objectives and their desired outcomes guide Ameren's ongoing resource planning.

Company-Specific (IRP Concern and Deficiency) Issue 2: Clearly Define and Resolve Concept and Ground Rules for Identifying and Analyzing "Decision Factors".

If Ameren Missouri intends to rely on the concept of "decision factors" in its ongoing resource planning, the concept of "decision factor" should be clarified to resolve current ambiguities and internal inconsistencies. Ameren Missouri introduced the concept of "decision factors" during its IRP stakeholder process and relied on it as a central concept in its 2011 compliance filing. Several conceptual inconsistencies and ambiguities became apparent during this process. The role of "decision factors" is similar to the central role assigned to "critical uncertain factors" in the Chapter 22 rules. However no reference to or parameters (ground rules) applying to the definition or use of "decision factors" appear in the Chapter 22 rules or in Ameren's 2011 compliance filing.

Specific issues Ameren should address:

Clarification of the concept of "decision factor," including the following issues:

1. Inconsistencies between the concept as presented in the stakeholder process and the concept as presented in the compliance filing; and
2. Application of the concept in real-life situations in which one of the following conditions exist:
 - (a) a decision must be made before 100% certainty is attained;
 - (b) complete information cannot be attained; or
 - (c) the timing of the decision affects the range of outcomes so that they are indeterminate.

Ground rules that assure that decision factors are treated with the same level of rigor that is required in the Chapter 22 rules for critical uncertain factors are needed in each of the following areas:

- (a) for identification of decision factors and determination of the range of possible outcomes for decision factors parallel to the provisions of 4 CSR 240-22.060; and
- (b) for determining the range of values of the decision factors with which the preferred plan and contingency plans are consistent, and for identification of the point at which decision factors would trigger the utility to move to each contingency resource plan, parallel to the provisions of 4 CSR 240-22.070.

Company-Specific (IRP Deficiency) Issue 3: Review, Reassess and Document the Potential Contribution of Purchased Power.

Based on the results of previous research, Ameren Missouri screened out purchased power as a candidate supply side resource in its 2011 compliance filing. However, it has been several years since Ameren Missouri assessed the potential of purchased power to meet resource requirements.

Specific issues:

- (1) The company should provide a review of (a) relevant Ameren Missouri research and analysis including that completed during the planning process for the 2008 compliance filing, and (b) discussion of purchased power during the stakeholder process for Ameren's 2011 compliance filing.
- (2) The company should consider whether current market conditions are more favorable or less favorable to buyers than conditions at the time of Ameren's previous research.
- (3) The company should address methods that could be used to assess purchased power and potential and the costs and benefits of pursuing this assessment.

Company-Specific (IRP Deficiency) Issue 4: Analyze and Document Detailed Non-Generic Wind Analysis.

What additional analysis should Ameren Missouri pursue to assess wind resources on a non-generic basis? There has been and continues to be controversy over whether Ameren's assessment of wind potential is sufficiently detailed to identify the potential contribution of wind resources available during the planning horizon and over whether Ameren Missouri has provided the more detailed wind analysis to which it agreed in the Stipulation and Agreement for EO-2007-0409.

Specific issues Ameren should address:

- (1) Scenarios for acquiring wind resources that characterize the wind resource based on multi-county areas rather than the multi-state areas analyzed by Ameren;
- (2) Estimates at various turbine hub heights as opposed to the single hub height analyzed by Ameren;
- (3) Analysis of wind resource acquisition based on power purchase as well as the ownership arrangements analyzed by Ameren; and
- (4) Update on the status of transmission upgrades that could alleviate transmission constraints on wind acquisition.

Company-Specific (IRP Deficiency) Issue 5: Review, Reassess and Document Screening of Combined heat and power (CHP).

Ameren's stated reason for not including CHP as a candidate resource in any alternative resource plan analyzed in its 2011 compliance filing was that CHP does not count toward meeting RES requirements. The same statement could be made for many other supply side resources that Ameren Missouri did include in alternative resource plans.

Specific issues Ameren should address:

- (1) Analysis of the potential contribution from CHP installations utilizing the two CHP technologies that were not addressed in the 2009 Navigant study
- (2) Analysis of the critical uncertain factors that affect the cost-effectiveness of CHP and the conditions favoring integrating CHP into Ameren's resource plan over the 20-year planning horizon. These factors should include:
 - (i) Future natural gas prices
 - (ii) Future electric rates
 - (iii) Future "spark spread" (derived from natural gas prices and electric rates)
 - (iv) Tariff provisions such as standby charges
 - (v) Federal provisions favoring CHP including not only tax credits but other favorable treatment that may be extended under a federal RES or federal energy efficiency standard

Company-Specific (IRP Deficiency) Issue 6: Review, Reassess and Document Potential Contribution of Small-scale Renewable Resources (less than 2MW)

Ameren Missouri's most comprehensive assessment of renewable resources, a 2009 study by Black and Veatch, considered only utility-scale resources, defined by Black and Veatch as greater than 2MW capacity.

In the past, Ameren Missouri has not considered or screened renewable resources from independent power producers (IPPs) with less than utility-scale capacity, relying on a provision of 4 CSR 240-22.040(1) requiring screening only of supply side resources "which the utility can reasonably expect to develop and implement solely through its own resources or for which it will be a major participant." However, this limitation does not appear in the current rule.

Specific issues Ameren should address:

- (1) Plans for considering these resources in Ameren's ongoing resource planning and future compliance filings; and
- (2) The recommendations for considering these resources that were provided by GDS, Inc. filed on behalf of MDNR in its comments on Ameren Missouri's 2011 compliance filing in File No. EO-2011-0271, p. 31.

Company-Specific (IRP Deficiency) Issue 7: Review, Analyze and Document a Wider Range of Future Coal Prices

Ameren should review, analyze and document a wider range of future coal prices through the 20-year horizon and consider whether coal price is a critical uncertain factor affecting continued operation or retirement of coal-fired power plants. Coal is a uniquely significant fuel source for Ameren's power generation fleet. Ameren's 2011 compliance filing did not identify the critical uncertain factors that its consultants considered when developing the high, midrange and low prices for coal on which Ameren Missouri relied in its filing and did not test coal price as a critical uncertain factor affecting contingency planning.

Specific issues: Ameren should address:

- (1) Ameren should review the critical uncertain factors (including physical production factors) that affect future mine mouth cost of coal. The mine mouth price and production capability estimates used for Ameren's 2011 compliance filing were provided by the Norwest consulting firm. The filing does not identify critical uncertain factors considered by Norwest and does not indicate whether Norwest provided upper and lower bounds for its estimates.
- (2) Ameren should review the critical uncertain factors that affect the upper and lower boundaries of future coal prices. The coal price estimates used for Ameren's 2011 compliance filing were provided by the CRA consulting firm. It appears that the only uncertain factors that CRA considered when estimating future coal prices were the three factors (carbon policy, natural gas prices and load growth) that CRA relied on to determine scenarios for Ameren's uncertainty analysis. The filing does not indicate that CRA analyzed uncertainty with respect to mine mouth price or coal transportation cost, two factors that significantly influence delivered coal price.
- (3) Ameren should consider what steps should be taken to revise projected coal price for Ameren's ongoing resource planning if this review indicates that Norwest or CRA overlooked factors that should have been considered.
- (4) Ameren should conduct a sensitivity analysis of coal-fired plant retirement if coal prices reach high-end "extreme outcomes" [4 CSR 240-22.070(10)(D)]. Rather than limit testing of the "extreme outcomes" to the range of prices provided by CRA, the analysis should seek to determine what level of coal price (if any) would trigger retirement of Meramec or other legacy coal-fired plants, under the base and aggressive environmental regulatory scenarios identified by Ameren.

MDNR General Contemporary Issues

General Issue 1: Coal Plant Retirements

Analyze, rank and document existing coal plant fleet as retirement candidates. This is an important contemporary issue in light of environmental regulation, rising coal prices and maintenance costs.

General Issue 2: Aggressive Demand Side Management (DSM) Portfolios without Constraints

Analyze and document aggressive DSM portfolios without constraints. Include analysis and documentation of demand side investment mechanisms necessary to implement each DSM portfolio.

General Issue 3: DSM, Combined Heat and Power (CHP) and Distributed Generation (DG)

Analyze and document the impacts of opportunities to implement distributed generation, DSM programs and CHP projects in collaboration with municipal water treatment plants and other local waste or agricultural/industrial processes with on-site electrical and thermal load requirements, especially in targeted areas where there may be transmission or distribution line constraints.

General Issue 4: Low Probability Risk Assessment

Analyze and document low probability outcomes with extremely high or low values (such as natural or man-made disasters which would result in energy emergency events including significant loss of load and equipment outages) as a part of risk assessment.

General Issue 5: Interdependence of Uncertain Factors

Analyze and document relationships between uncertain factors when making a determination of whether uncertain factors are entirely independent or if they should be analyzed with covariant risk analysis.

General Issue 6: Agricultural DSM

Analyze and document analysis of DSM programs targeted to achieve energy efficiency savings in the agricultural sector. Based on MDNR's experience in administering American Recovery and Reinvestment Act funding for energy projects, energy efficiency in the agriculture sector is an area of emerging interest and importance.

General Issue 7: Customer Information/Behavior Modification DSM Programs

Analyze and document alternative customer information/behavior modification program options to increase customer awareness and encourage more efficient use of energy.