ATTACHMENT B

AmerenUE 2011 Integrated Resource Plan
Waiver Requests

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4 CSR 240-22.010 – Policy Objectives

AmerenUE is not requesting any waivers at this time for 4 CSR 240-22.010.

4 CSR 240-22.020 – Definitions

AmerenUE is requesting the following additional definitions for 4 CSR 240-22.020:

(1) Candidate Resource Plans

Candidate Resource Plans will generally be the alternative resource plans based on better present value of revenue requirements results. Other alternative resource plans will likely be included in this list of candidate resource plans to ensure generally comparable representation of the original full population of alternative resource plans, and will likely include the best alternative resource plan within each scenario, so that each scenario would be represented by at least one alternative resource plan. Additional factors, including but not limited to credit metric performance, diversity, and risk, may influence which alternative resource plans are considered candidate resource plans.

(2) Dependent Uncertain Factor

Dependent uncertain factors are uncertain factors that have interrelated (or "dependent") impacts on multiple energy and environmental projections. Each of these dependent uncertain factors may have a range of possible values and associated probabilities.

(3) Independent Uncertain Factor

Independent uncertain factors are uncertain factors whose impacts on multiple energy and environmental projections are <u>not</u> regarded as interrelated (or "dependent"), thus the "independent" name. Independent uncertain factors may have a range of values and associated probabilities.

(4) Probability Tree

Probability Tree means a discrete summary of the range of all potential combinations of outcomes and their likelihoods for a set of critical dependent and independent uncertain factors, represented as a sequence of nodes with branches emanating from them. Each combination of critical dependent uncertain factors (scenarios) and each critical independent uncertain factor is represented by one node, with one or more branches reflecting different possible values or value ranges that the uncertain factor may take on, and the probability of each possible outcome.

The probabilities associated with each branch of a probability tree will be objectively based if the parameter is one that is subject to random variability, or it will be subjective in the case of future events that are

simply unknown at present. AmerenUE will document the decision process used in developing the probability tree.

(5) Scenarios

Scenarios are specific, mutually exclusive combinations of dependent uncertain factors

4 CSR 240-22.030 – Load Analysis and Forecasting

The Missouri Electric Utility Resource Planning 4 CSR 240-22.030 Load Analysis and Forecasting rule was established in 1993 when end-use forecasting was generally regarded as the best approach for generating long-term forecasts. AmerenUE proposes to continue to use the SAE modeling methodology, which has become the industry standard forecasting approach and which was used in the 2008 IRP filing, for the upcoming 2011 IRP filing.

AmerenUE has undertaken efforts to better understand SAE forecasting and its links to traditional end-use forecasting by joining the Energy Forecasting Group (EFG). EFG provides access to additional analysis and more frequently updated data from the forecasting consultant Itron and also hosts forums where members meet to discuss SAE issues with Itron experts and other utility forecasters. AmerenUE has also developed analytical framework to extract end use information from SAE models and perform scenario and sensitivity analysis. Based on these recent advances in AmerenUE's knowledge of SAE, several waivers previously identified are no longer required.

However, the current rules contemplate end use data for all major classes. AmerenUE just completed a thorough round of surveys for its service territory; however, AmerenUE will still need to rely on secondary data to support the SAE modeling approach. Secondary data is generally acceptable for residential and small commercial but due to the unique large commercial/industrial customer base of AmerenUE, it is believed that secondary data is not likely to be as accurate for these classes. In addition, for these large customer classes, usage patterns are closely tied to economic trends. Therefore, AmerenUE uses driver variables based on economics rather than end uses. For any forecasting model based on economics rather than end uses, AmerenUE will be requesting a waiver since the rules are written in such a way that end use data is required for all major classes.

AmerenUE is requesting the following waivers for 4 CSR 240-22.030:

(1) 4 CSR 240-22.030 (1)(D)1.

Current Requirement:

The development of actual and weather-normalized monthly class and system energy usage and actual hourly net system loads shall start from January 1982 or for the period of time used as the basis of the utility's forecast, whichever is longer.

Proposed Alternative:

The development of actual and weather-normalized monthly class and system energy usage and actual hourly net system loads shall start from January 2001 or for the period of time used as the basis of the utility's forecast, whichever is longer.

Rationale:
Actual hourly net system load data specific to AmerenUE's current service territory is available back to 2001; hourly system data going back to 1982 is available but will not be used in forecasting or DSM analysis as it includes Metro East (Illinois) and wholesale loads, which cannot be reasonably separated.

(2) 4 CSR 240-22.030 (1)(D)2.

Current Requirement:
Estimated actual and weather-normalized class and system monthly demands at the time of the system peak and weather normalized hourly system loads shall start from January 1990 or for the period of time used as the basis of the utility's forecast of these loads, whichever is longer.

Proposed Alternative:
Estimated actual and weather-normalized class and system monthly demands at the time of the system peak and weather normalized hourly system loads shall start from July 2003 or for the period of time used as the basis of the utility's forecast of these loads, whichever is longer.

Rationale:
Historical monthly class coincident demands (actual and weather normalized) back to 1990 are not available. As an alternative, AmerenUE has major class estimates of coincident monthly peak demand for actual and normal weather conditions back to July 2003, as prior to that load research sample included Metro East customers.

(3) 4 CSR 240-22.030 (3)

Current Requirement:
Analysis of Use Per Unit. For each major class, the utility shall analyze historical use per unit by end use.

Proposed Alternative:
Analysis of Use Per Unit. For each major class for which end-use information is available, including the Residential, and Commercial Small and Large General Service classes, the utility shall analyze historical use per unit by end use.

Rationale:
AmerenUE does not rely on end use data as driver variables for large commercial/industrial customer classes. These large customer classes are modeled using driver variables related to economic activity. Therefore, AmerenUE will comply with this rule when end uses are included as driver variables.

(4) 4 CSR 240-22.030 (3)(B)1.

Current Requirement:
Measures of the stock of energy-using capital goods. For each major class and end use, the utility shall implement a procedure to develop and maintain survey data on the energy-related characteristics of the building, appliance, and equipment stock including saturation levels, efficiency levels, and sizes where applicable. The utility shall update these surveys before each scheduled filing pursuant to 4 CSR 240-22.080.

Proposed Alternative:
Measures of the stock of energy-using capital goods. For each end use in the Residential and Small and Large Commercial classes, the utility shall acquire primary or secondary survey data on the energy-related characteristics of the building, appliance, and equipment stock including saturation levels, efficiency levels, and sizes. In its February 2011 filing AmerenUE will present a comparison of the survey data used in load analysis and forecasting to the results of AmerenUE's demand-side potential study.

Rationale:
Some utility-specific survey information will be available at the time of the 2011 filing. However, the data only represents one cross section of time. The SAE forecasting method requires a time series of end-use data. To construct a time series, AmerenUE will use utility specific survey data and secondary end use data; including the Missouri Statewide Residential Lighting and Appliance Saturation and Efficiency Study conducted by RLW Analytics, end-use data for the West North Central census region developed by the Energy Information Administration, and KCP&L's survey data available in their latest public IRP filing. AmerenUE will continue to explore the possibility of conducting ongoing surveys that meet both DSM and Load Analysis and Forecasting needs.

(5) 4 CSR 240-22.030 (4)(A)

Current Requirement:
Load profiles for each day type shall be developed for each end use, for each major class and for the net system load.

Proposed Alternative:
Load profiles for each day type shall be developed for each major class, for the net system load, and, for each end use in each major class for which end-use information is available, including the Residential, and Commercial Small and Large General Service classes.

Rationale:
AmerenUE does not rely on end use data as driver variables for large commercial/industrial customer classes. These large customer classes are modeled using driver variables related to economic activity. Therefore,

AmerenUE will comply with this rule when end uses are included as driver variables.

(6) 4 CSR 240-22.030 (4)(B)

Current Requirement:
For each day type, the estimated end-use load profiles shall be calibrated to sum to the estimated major class load profiles and the estimated major class load profiles shall be calibrated to sum to the net system load profiles.

Proposed Alternative:
For each day type, the estimated major class load profiles shall be calibrated to sum to the net system load profiles and for each major class for which end-use information is available, including the Residential, and Commercial Small and Large General Service classes, the estimated end use load profiles shall be calibrated to sum to the estimated major class load profiles.

Rationale:
AmerenUE does not rely on end use data as driver variables for large commercial/industrial customer classes. These large customer classes are modeled using driver variables related to economic activity. Therefore, AmerenUE will comply with this rule when end uses are included as driver variables.

(7) 4 CSR 240-22.030 (5)(B)2.B.

Current Requirement:
End-use detail. For each major class and for each end use, the utility shall forecast both monthly energy use and demands at time of the summer and winter system peaks.

Proposed Alternative:
End-use detail. For each end use for each major class for which end-use information is available, including the Residential, and Commercial Small and Large General Service classes , the utility shall forecast both monthly energy use and demands at time of the summer and winter system peaks.

Rationale:
AmerenUE does not rely on end use data as driver variables for large commercial/industrial customer classes. These large customer classes are modeled using driver variables related to economic activity. Therefore, AmerenUE will comply with this rule when end uses are included as driver variables.

(8) 4 CSR 240-22.030 (8)(B)2.

Current Requirement:
The plots for the forecast period shall show each end-use component of major class coincident demands per unit and total class coincident demands for the base-case forecast.

Proposed Alternative:
For each major class for which end-use information is available, including the Residential, and Commercial Small and Large General Service classes, the plots for the forecast period shall show each end-use component of major class coincident demands per unit and total class coincident demands for the base-case forecast.

Rationale:
AmerenUE does not rely on end use data as driver variables for large commercial/industrial customer classes. These large customer classes are modeled using driver variables related to economic activity. Therefore, AmerenUE will comply with this rule when end uses are included as driver variables.

(9) 4 CSR 240-22.030 (8)(E)1.

Current Requirement:
The plots shall show each end-use component of the hourly load profile.

Proposed Alternative:
For each major class for which end-use information is available, including the Residential, and Commercial Small and Large General Service classes, the plots shall show each end-use component of the hourly load profile.

Rationale:
AmerenUE does not rely on end use data as driver variables for large commercial/industrial customer classes. These large customer classes are modeled using driver variables related to economic activity. Therefore, AmerenUE will comply with this rule when end uses are included as driver variables.

4 CSR 240-22.040 – Supply-Side Resource Analysis

(1) 4 CSR 240-22.040 (2)(B)2.

Current Requirement:
For each pollutant identified pursuant to paragraph (2)(B)1., the utility shall specify at least two (2) levels of mitigation that are more stringent than existing requirements which are judged to have a nonzero probability of being imposed at some point within the planning horizon.

Proposed Alternative:
AmerenUE will provide at least two levels of mitigation where this approach is applicable. For probable environmental requirements that do not lend themselves to varying levels of mitigation, AmerenUE will include an explanation of why two levels of mitigation are not applicable.

Rationale:
In the case where Maximum Achievable Control Technology (MACT) is viewed as the only probable environmental requirement and the MACT levels will not be revised during the planning horizon then there is only one level of mitigation available. The determination of the number of mitigation levels for any pollutant identified will be made during the resource planning process.

(2) 4 CSR 240-22.040 (3)

Current Requirement:
The analysis of supply-side resource options shall include a thorough analysis of existing and planned interconnected generation resources. The analysis can be performed by the individual utility or in the context of a joint planning study with other area utilities. The purpose of this analysis shall be to ensure that the transmission network is capable of reliably supporting the supply resource options under consideration, that the costs of transmission system investments associated with supply-side resources are properly considered and to provide an adequate foundation of basic information for decisions about the following types of supply-side resource alternatives:
(A) Joint participation in generation construction projects;
(B) Construction of wholly-owned generation or transmission facilities; and
(C) Participation in major refurbishment, upgrading or retrofitting of existing generation or transmission resources.

Proposed Alternative:
AmerenUE will include generic projected transmission costs as a component of owner's cost, which is estimated as a percentage of the Engineering, Procurement, and Construction cost for each technology. AmerenUE will identify what components are included in the owner's cost estimate and seek a more specific transmission interconnection cost estimate for supply-side resources that are not generic. AmerenUE will include a generic assumption regarding the allocation of transmission interconnection costs for each technology.

Rationale:
The Midwest Independent System Operator ("MISO") process for providing transmission interconnection costs does not provide a final cost until a utility commits to a project. Furthermore, such detail is unwarranted considering data developed pursuant to 4 CSR 240-22.040(1) is ***generic***. For supply-side options that are site-specific, AmerenUE will attempt to provide a more site-specific estimate

(3) 4 CSR 240-22.040 (6)

Current Requirement:
For the utility's preferred resource plan selected pursuant to 4 CSR 240-22.070(7), the utility shall determine if additional future transmission facilities will be required to remedy any new generation-related transmission system inadequacies over the planning horizon. If any such facilities are determined to be required and, in the judgment of utility decision-makers, there is a risk of significant delays or cost increases due to problems in the siting or permitting of any required transmission facilities, this risk shall be analyzed pursuant to the requirements of 4 CSR 24022.070(2).

Proposed Alternative:
AmerenUE will include generic projected transmission costs as a component of owner's cost, which is estimated as a percentage of the Engineering, Procurement, and Construction cost. In addition, AmerenUE will be analyzing total project cost as an uncertain factor pursuant to 4 CSR 24022.070(2), which includes the transmission interconnection cost. AmerenUE will identify what components are included in the owner's cost estimate and seek a more specific transmission interconnection cost estimate for supply-side resources that are not generic. AmerenUE will include a generic assumption regarding the allocation of transmission interconnection costs for each technology.

Rationale:
The Midwest Independent System Operator ("MISO") process for providing transmission interconnection costs does not provide a final cost until a utility commits to a project. Furthermore, such detail is unwarranted considering data developed pursuant to 4 CSR 240-22.040(1) is ***generic***. For supply-side options that are site-specific, AmerenUE will attempt to provide a more site-specific estimate

4 CSR 240-22.050 – Demand-Side Resource Analysis

AmerenUE is requesting the following waivers for 4 CSR 240-22.050:

(1) 4 CSR 240-22.050 (2)

Current requirement:
Section 4 CSR 240-22.050(2) in its entirety specifies the required methods for calculating and allocating avoided costs.

Proposed Alternative:
As an alternative to the procedure outlined in subsections (A) – (D), AmerenUE will use a forecast of the market price of energy as avoided energy costs and use both (1) AmerenUE's forward view of the market for regulatory capacity in the first two or three years of the planning horizon and (2) MISO's Cost of New Entry (CONE) estimate as the bases for the avoided capacity costs. Values for the avoided cost of capacity in each year will be calculated by using AmerenUE's forward view of the market value of regulatory capacity in the initial two or three years and then using the CONE value beginning in the year when the MISO region is expected to become capacity constrained and new capacity must be built in the MISO region. Values for the avoided cost of capacity in the interval between the initial years and the year when the MISO region is expected to become capacity constrained will be estimated through linear interpolation. AmerenUE shall adjust the market price of energy to account for probable environmental costs pursuant to 4 CSR 240-22.040(2)(B). AmerenUE shall include an estimate of avoided transmission and distribution costs.

In addition, AmerenUE shall describe its method for (1) grouping hourly forecasted prices into avoided cost periods to reflect significant differences in the seasonal and/or hourly variation in prices, and (2) for allocating capacity costs to these periods, and (3) a description of the assumptions and procedures used for avoided capacity costs including AmerenUE's forward view of the market price of regulatory capacity, the MISO CONE, the development of avoided cost estimates for transmission and distribution facilities.

Rationale:
One of the primary requirements of the Electric Utility Resource Planning rule is to consider demand-side resources on an equivalent basis with supply-side alternatives. In this particular section of the rule, this requirement is manifested by requiring AmerenUE to calculate supply-side costs for use in the demand-side cost-effectiveness screening. This basic concept is still as valid today as it was when the rule was developed. However, the prescriptive method detailed in this section to achieve the "equivalent treatment" is outdated. In fact, the extremely prescriptive steps and the lack of flexibility could lead to the demand-side resources receiving a less than equal treatment during screening. This waiver request allows AmerenUE to use a method of calculating avoided costs that is

more reflective of modern wholesale markets and will further support the "equivalent treatment" requirement.

The market price of power better represents the value of an avoided kW or kWh in today's market. The two most important reasons that the forecast of power price methodology is superior are as follows:

1) Even if AmerenUE does not require additional capacity or energy in the near-term, thus suggesting that the value of DSM would be low, an avoided kWh or kW could have substantial value by enabling AmerenUE to sell the incremental load into the market. For both supply-side and demand-side resources, this value would be captured in the "Integrated Resource Analysis" (4 CSR 240-22.050). However, to the extent that the utilities avoided costs are less than the value received from market sales (both capacity and energy), potentially demand-side programs that could show cost-effective in integration might be screened out in the cost-effectiveness screening.
2) It is rare that an individual utility is neither long nor short on generation (i.e. generating resources) and if a utility's resources exactly meets its demand, the situation will change in the near future due to load growth. In fact, a particular utility's resource needs (or avoided capacity and energy costs) is somewhat dynamic due to changes in load and resources. These variations in resource needs can translate into varying avoided costs over time which in turn can cause vacillation in demand-side programs screening as cost-effective leading to fluctuations in demand-side spending. Since the wholesale markets (i.e. MISO) encompass numerous utilities, the market as a whole is subject to less resource fluctuations. Using the forecast for market power cost would facilitate more consistent investment in demand-side resources.

(2) 4 CSR 240-22.050 (3)(F)

Current requirement:
End-use measures that pass the probable environmental benefits test must be included in at least one (1) potential demand side program.

Proposed Alternative:
If AmerenUE does not include each end-use measure that passes the probable environmental benefits test in at least one potential demand-side program, it shall provide an explanation as to why that measure was not appropriate for inclusion.

Rationale:
This section addresses the cost-effectiveness screening of end use measures. Typically several hundred measures are screened to determine which measures should be included in the energy efficiency programs that will be assessed in subsequent stages of the analysis. The objective of that program analysis step is to combine measures in such a way that the program represents a compelling program offering to a particular market segment. The initial list of measures can

include those that, while passing a simple cost-effectiveness test, are not easily or logically bundled with other measures as part of a program, and the design of a program solely to incorporate these measures may be inefficient and inconsistent with best practice program design. The intent of this waiver is to create the flexibility to exclude measures passing the cost-effectiveness screen if the projected impacts are extremely small, or if those measures cannot logically be bundled into programs or offered as a cost-effective stand-alone program. AmerenUE would be required to present the results of the full measure screening and a justification as to why any cost effective measures would be excluded from further analysis. Absent this waiver, there is a greater premium placed on a qualitative screening process that can eliminate measures expected to have little impact in the market due to applicability or feasibility.

(3) 4 CSR 240-22.050 (6)(D)

Current requirement:
Design a marketing plan and delivery process to present the menu of end-use measures to the members of each market segment and to persuade decision-makers to implement as many of these measures as may be appropriate to their situation.

Proposed Alternative:
Include a delivery strategy that outlines the anticipated approach to promotion and delivery of the programs to the target market segment. This delivery strategy shall include basic information regarding marketing and implementation strategy as an element of program design and will outline approach, channels, and incentive, outreach and administrative processes. The strategies should be detailed enough to provide the Company and the parties with a sense of the proposed approaches as a basis for: (1) estimating program costs and aggregate load impacts and (2) making a high level assessment of the reasonableness of the proposed marketing plan and delivery strategy.

The detailed delivery strategy will be available at the time of the appropriate proceeding before program implementation.

Rationale:
Typically, marketing and implementation plans are prepared following the finalization of the integrated plan. The marketing plan can and should be quite detailed with respect to marketing strategy, tactics, collateral and channels, and the "delivery process" typically is represented by an implementation plan that provides considerable detail on program processes and procedures pertaining to recruiting, technical services, incentive fulfillment, verification and quality control. The current Rule implies that such detail might be provided during the IRP development process. However, developing such detail would be inefficient since it is likely that some of the programs examined at this stage might never be implemented. AmerenUE is likely to develop several DSM portfolios with different program mixes, recognizing that only one such portfolio actually will be

implemented. More important, detailed marketing and implementation plans should be prepared by the entities actually implementing the programs to ensure that accountability and expertise are properly aligned. The alternative language calls for the preparation of basic marketing and delivery strategies for each program considered in the process.

(4) 4 CSR 240-22.050 (9)

Current requirement:
Evaluation of Demand-Side Programs. AmerenUE shall develop evaluation plans for all demand-side programs that are included in the preferred resource plan selected pursuant to 4 CSR 240-22.070(6). The purpose of these evaluations shall be to develop the information necessary to improve the design of existing and future demand-side programs, and to gather data on the implementation costs and load impacts of programs for use in cost-effectiveness screening and integrated resource analysis.

Proposed Alternative:
Evaluation of Demand-Side Programs. AmerenUE shall develop process and impact evaluation strategies for all demand-side programs that are included in the preferred resource plan. These strategies shall outline the proposed approach to the impact and process evaluation for the programs. Parts (A), (B) and (C) of the rule shall be considered advisory for purposes of developing these broad strategies. AmerenUE shall develop evaluation plans consistent with 4 CSR 240-22.050 (9) after final programs have been selected and detailed implementation plans have been prepared.

The detailed evaluation plans will be available at the time of the appropriate proceeding before program implementation.

Rationale:
As is the case with marketing plans and implementation processes, evaluation plans typically are developed only after a final set of programs have been adopted. Moreover, evaluation plans can only be prepared once detailed program implementation plans have been completed. Detailed evaluation plans should be developed consistent with the provisions of the rule, but not at this stage. Evaluation plan effectiveness also requires that the plans should be developed by the entities retained by the Company to perform the evaluation(s). The effect of this waiver is simply to defer the detailed plans required until after a final program set has been selected and detailed program designs have been prepared.

(5) 4 CSR 240-22.050 (11)(D)

Current requirement:
Documentation of the methods and assumptions used to develop the avoided cost estimates developed pursuant to section (2) including
1. A description of the type and timing of new supply resources, including transmission and distribution facilities, used to calculate avoided capacity costs;

2. A description of the assumptions and procedure used to calculate avoided running costs;

Proposed Alternative:
Per the waiver requested for 4 CSR 240-22.050 (2)(C), AmerenUE will forecast the market price of power and the following shall be substituted for this portion of the rule:

Documentation of the methods and assumptions used to develop the avoided cost estimates developed pursuant to section (2) including a description of the assumptions and procedure used to calculate market price of energy;

Rationale:
Consistent with waiver (1) proposed above.

(6) 4 CSR 240-22.050 (11)(J)

Current requirement:
A description of the process and impact evaluation plans for demand-side programs that are included in the preferred resource plan as required by section (9) of this rule and the results of any such evaluations that have been completed since the utility's last scheduled filing pursuant to 4 CSR 240-22.080.

Proposed Alternative:
A description of the process and impact evaluation strategies for demand-side programs that are included in the preferred resource plan as discussed in the proposed waiver of 4 CSR 240-22.050(9) and the results of any such evaluations that have been completed since AmerenUE's last scheduled filing pursuant to 4 CSR 240-22.080.

Rationale:
Consistent with waiver (4) proposed above.

4 CSR 240-22.060 – Integrated Resource Analysis

AmerenUE is requesting the following waivers for 4 CSR 240-22.030:

(1) 4 CSR 240-22.060 (4)

Current Requirement:
The utility shall assess the relative performance of the alternative resource plans by calculating for each plan the value of each performance measure specified pursuant to section (2). This calculation shall assume values for uncertain factors that are judged by utility decision-makers to be most likely.

Proposed Alternative:
The utility shall assess the relative performance of the alternative resource plans based on various performance measures deemed appropriate by utility decision-makers to satisfy the resource planning objectives from section (1). The utility shall indicate which alternative resource plans are considered to be candidate resource plans for purposes of 4 CSR 240-22.070. The utility shall also describe and indicate which plans are eliminated from further consideration on the basis of the screening analysis and shall explain the reasons for their elimination. The utility shall calculate for each of the candidate resource plans the value of each performance measure specified pursuant to section (2). The calculations shall be performed for each scenario in the probability tree. AmerenUE will fully describe and document the criteria, factors and decision process used to apply the performance measures and to select candidate resource plans from the alternative resource plans.

Rationale:
First, this waiver is intended to support a screening process for alternative resource plans. The utility shall determine which performance measures are most appropriate for screening and the relative weight of each factor. Once the screening is complete the utility shall expand the measures to include any from section (2) that are not already calculated.
Second, this waiver describes the requirement to calculate the performance measures for each scenario, which is fundamental to the analysis described in the 4 CSR 240-22.070 Risk Analysis and Strategy Selection waiver requests. This means that AmerenUE will perform the analysis envisioned by this rule for far more combinations of events than just a “most likely” one. This is a superior approach to the use of just a single “most likely” value for uncertain factors that are associated with a single scenario.

(2) 4 CSR 240-22.060 (4)(C)

Current Requirement:
The modeling procedure shall include a method to ensure that the impact of changes in electric rates on future levels of demand for electric service is accounted for in the analysis; and

Proposed Alternative:
AmerenUE will account for the impact of changes in electric rates on future levels of demand for electric service in the load forecast developed pursuant to CSR 240-22.030. The Statistically Adjusted End-Use and econometric models utilized by AmerenUE for load forecasting employ a price term in their specification and a price elasticity parameter. To the extent that future rates change in either the base case or in any scenarios, the change in rates will result in a corresponding change in the forecasted demand. The change in retail rates used in load forecast modeling is based on application of the results of the integrated model runs of the energy and environmental system to AmerenUE's revenue requirement. The energy and environmental system model simultaneously simulates interactions in fuel markets, energy demands, electricity generation system operation, non-electricity sector outcomes, macroeconomic activity levels, and responses to emissions limits that may be applied to sources throughout the economy, and not just to electricity generators.

Rationale:
Including this impact in the integration analysis modeling procedure would be an iterative exercise by estimating changes in electric rates then for each alternative resource plan re-estimate electric rates and re-create alternative resource plans based on the impact on future levels of demand for electric service. This impact is adequately covered in the load forecast.

(3) 4 CSR 240-22.060 (6)(A)

Current Requirement:
A description of each alternative resource plan including the type and size of each resource addition and a listing of the sequence and schedule for retiring existing resources and acquiring each new resource addition;

Proposed Alternative:
A description of each candidate resource plan including the type and size of each resource addition and a listing of the sequence and schedule for retiring existing resources and acquiring each new resource addition;

Rationale:
Candidate resource plans emerge from the original population of all alternative resource plans because they are considered to be the better plans by a variety of measures, and they are generally comparable representatives of the original population of all alternative resource plans.

Thus reporting the required information for only the candidate resource plans focuses the reporting on the most relevant and most useful plans.

(4) 4 CSR 240-22.060 (6)(B)

Current Requirement:
A summary tabulation that shows the performance of each alternative resource plan as measured by each of the measures specified in section (2) of this rule;

Proposed Alternative:
A summary tabulation that shows the performance of each candidate resource plan as measured by each of the measures specified in section (2) of this rule;

Rationale:
Candidate resource plans emerge from the original population of all alternative resource plans because they are considered to be the better plans by a variety of measures, and they are generally comparable representatives of the original population of all alternative resource plans. Thus reporting the required information for only the candidate resource plans focuses the reporting on the most relevant and most useful plans.

(5) 4 CSR 240-22.060 (6)(C)

Current Requirement:
For each alternative resource plan, a plot of each of the following over the planning horizon:

Proposed Alternative:
For each candidate resource plan, a plot of each of the following over the planning horizon:

Rationale:
Candidate resource plans emerge from the original population of all alternative resource plans because they are considered to be the better plans by a variety of measures, and they are generally comparable representatives of the original population of all alternative resource plans. Thus reporting the required information for only the candidate resource plans focuses the reporting on the most relevant and most useful plans.

4 CSR 240-22.070 – Risk Analysis and Strategy Selection

Appendix 1 to this document contains a pictorial representation of the flow of analysis activity that will be used to capture the overall requirements for deterministic analysis, sensitivity analysis, and probabilistic analysis in 4 CSR 240-22.070, and which encompass the core elements of any classic decision analysis. For purposes of exposition, the total process is segmented into three steps. Steps 1 and 2 lie within the deterministic phase of the decision analysis cycle, and Step 3 comprises the probabilistic and informational phases of the decision analysis cycle.

Step 1

An important feature of the process outlined in Appendix 1 is its reliance on a set of scenarios that will each reflect an integrated, internally consistent set of energy and environmental input assumptions. This foundation is built in Step 1, where a probability tree is developed to describe multiple combinations of critical uncertain factors that have interrelated (or "dependent") impacts on multiple energy and environmental projections that are key to an IRP analysis. Thus these are called "Critical 'Dependent' Uncertain Factors." Each endpoint of the probability tree is an individual integrated scenario. One of the uncertain factors in the probability tree could be the future carbon policy outcome itself, and other uncertain factors in the tree could include other important modifiers of the impact of carbon policy, and/or other uncertain outcomes that also can have significant impacts on the interrelated set of energy and environmental projections that can affect resource plan performance and IRP decisions.

The probability tree shown in Step 1 is a device to describe a set of scenarios (and their associated likelihoods) that a robust IRP process should explicitly consider. A sound resource plan should chart a course from the present moment that balances the variety and range of risks reflected in the full set of scenarios. A sound resource plan also, to the extent possible, would be flexible to be adapted to any of the futures represented by any single branch of the probability tree (but with emphasis being given to adaptability to respond to the outcomes that otherwise would result in the more negative impacts to the company and its ratepayers). Thus, the most important feature for a sound IRP in the face of highly interrelated sources of uncertainty is to base the entire process of constructing and winnowing out alternate resource plans on a range of internally consistent scenarios. This contrasts to the approach prescribed in Chapter 22 rules that would incorporate the information in the probability tree only in the probabilistic phase.

Step 1 begins with the development of a probability tree that will produce a set of future energy and environmental projections that are all mutually consistent with a particular set of future policy and technology developments. In the technical language of decision analysis, these scenarios will be used for joint sensitivity analysis during the deterministic phase of the analysis. All "sensitive" scenarios found in the joint sensitivity analysis will also be carried through to the probabilistic phase of Step 3. However, in Step 3, the probability tree would be enlarged to include any uncertain factors that are 'independent' of those affecting the scenarios but which are found to be critical uncertain factors in additional individual sensitivity analyses that occur in Step 2, in other words, "Critical 'Independent' Uncertain Factors." Thus Step 3's enlargement of the probability tree

consists of adding a set of "Critical 'Independent' Uncertain Factors" to the set of "Critical 'Dependent' Uncertain Factors" that were determined from a different step.

AmerenUE will develop mutually consistent sets of input assumptions for each scenario through the application of an integrated model of the energy and environmental system. Such a model needs to be able to simultaneously simulate interactions in fuel markets, energy demands, electricity generation system operation, non-electricity sector outcomes, macroeconomic activity levels, and responses to emissions limits that may be applied to sources throughout the economy, and not just to electricity generators. Thus, the scenarios in the probability tree in Step 1 will actually be analyzed as a set of model runs (e.g., eight runs, in the ***illustrative*** example of the attachment) using an integrated energy-environmental model with the above capabilities. The output of each model run (i.e., for each scenario in the tree) will be an integrated set of projections of key inputs to a standard analysis to select a resource plan. Each integrated set will include projections through the planning horizon for a variety of factors, for example, electricity load growth, changes in wholesale electricity prices, emissions allowance prices (for SO_2, NO_x, mercury, and CO_2) natural gas prices, coal prices, and AmerenUE's optimal emissions control retrofits (and their timing).

The development of a probability tree of interrelated energy and environmental critical uncertain factors by AmerenUE is thus a major modeling activity in its own right, although using national-scale models. In contrast, the modeling used for the analysis and selection of an acquisition resource strategy for AmerenUE is more local in scope, at the system and regional level, although this modeling exercise uses as inputs, results from the national-scale modeling. Thus, AmerenUE separates the development of the scenarios and associated integrated modeling of those scenarios into its own step (i.e., Step 1) of the IRP process that will precede the development of alternative resource plans on a deterministic basis (i.e., in Step 2). Additionally, AmerenUE recognizes that it cannot know *a priori* what types of uncertain events will have the most effect on the variation of integrated projections, although it is almost certain that one of these will be the carbon policy uncertainty. In Step 1, the sensitivity of the scenario outputs will be explored for a number of different uncertain factors that can affect integrated energy systems. The final probability tree will be developed to include the uncertain factors that have the most effect on the interrelated projections of resource plan performance. The tree shown in Appendix 1 is therefore merely ***illustrative*** of the general concept, and the final tree may have quite different branches.

Step 2

Once finalized, the integrated projections for each of the scenarios in the probability tree developed under Step 1 will be used in Step 2 (see Appendix 1) to identify candidate resource plans. Step 2 has two parts: Step2A consists of the modeling of alternative resource plans (for example, 110 plans in the IRP filed February 2008) and Step 2A also consists of the identification of the candidate resource plans (for example, 18 candidate resource plans in the IRP filed February 2008). These candidate resource plans from Step 2A are carried forward in two directions: (1) they are carried forward to Step 2B (assessing the sensitivity of the candidate resource plans to candidate independent uncertain factors as a means of identifying which of these factors are truly critical

independent uncertain factors, (2) the candidate resource plans are also carried forward to Step 3's risk analysis of candidate resource plans. Candidate resource plans will generally be the alternative resource plans based on better present value of revenue requirements results. Other alternative resource plans will likely be included in this list of candidate resource plans to ensure generally comparable representation of the original full population of alternative resource plans, and will likely include the best plan within each scenario, so that each scenario would be represented by at least one alternative resource plan. Additional factors, including but not limited to credit metric performance, diversity, and risk, may influence which plans are considered candidate resource plans. Thus, the deterministic analysis process in Step 2 is expected to be fully consistent with the IRP Chapter 22 rules. The only new aspect of this process is the iterative use of each of the scenarios and associated inputs for critical 'dependent' and 'independent' uncertain factors to select a set of candidate resource plans for probabilistic evaluation (i.e., for the risk analysis). This is an enhancement to the currently prescribed process because it performs joint as well as individual sensitivity analysis, and it does so for a more comprehensive set of uncertain factors than those specifically identified in the rules.

Step 3

Step 3 starts at the point where probabilistic analysis is initiated. This is the analysis that helps a decision maker choose among the candidate resource plans by balancing their risks (i.e., the potential downside due to uncertainties) against maximizing their expected outcomes on multiple IRP objectives. Chapter 22 rules specify that this be done using a sequential decision tree in which resource decisions at each time step into the future are interleaved analytically with potential new information on the critical uncertain factors. However, under the scenario-based approach described here, each of the candidate resource plans going into Step 3 will be defined as a sequence of resource investments over the full modeling horizon into the future. That is, each candidate to assess is already a full "plan" and not a single resource acquisition at a single point in time. The set of these resource plans will have been created in Step 2 to include entire sequences of resource acquisitions throughout the planning horizon that each makes sense in at least one of the potential future scenarios. The task in Step 3 is thus to choose which candidate plan is the best plan for the company to select as its working vision of the resource acquisitions that are expected to best satisfy its future resource needs.

In Step 3, the expected benefits and the probability distribution of the benefits of each of these candidate resource plans will be assessed probabilistically using the probability tree from Step 1, but now expanded to include any other 'independent' uncertain factors identified as critical in Step 2. This probabilistic evaluation will provide company decision makers with information to help them identify which future course of investments appears to be the best path given present uncertainties. Certainly, as the subjective assessments by AmerenUE's decision-makers of probabilities of the future scenarios evolve, the company's management may wish to change its plan. The likelihood of needing to shift to a new plan at a future time, and the most likely plans that might be shifted to, can be assessed by considering which plans are preferred under each of the different scenarios. The analysis will therefore also highlight the alternative best options contingent on different future outcomes of the uncertain factors. As a result, the probabilistic analysis conducted in Step 3 will support not only an explicit determination

by AmerenUE of what it considers its preferred resource plan; it will also support decisions regarding (1) what activities AmerenUE needs to initiate today to enable it to follow the preferred resource plan, and (2) what activities AmerenUE needs to engage in to preserve its options to shift to any of the other resource plans that the analysis finds to have a significant chance of later emerging as a preferred plan.

In this way, the IRP process would be adapted to incorporate the important new challenge of addressing interrelated ("joint") uncertainties while remaining consistent with the goals of accomplishing a sound decision-analytic approach to managing uncertainty and risk. AmerenUE has identified each waiver request that it believes is needed to implement this approach. In addition, AmerenUE has provided a definition for the term "probability tree." This term does not appear in 4 CSR 240-22.020 but is used in several of the waiver requests. AmerenUE also makes waiver requests that will allow it to apply the scenario-based approach consistently throughout the IRP process, thus resulting in a more streamlined overall approach to management of uncertainties in its IRP.

AmerenUE is requesting the following waivers for 4 CSR 240-22.070:

(1) 4 CSR 240-22.070 (1)

Current Requirement:
The utility shall use the methods of formal decision analysis to assess the impacts of critical uncertain factors on the expected performance of each of the alternative resource plans developed pursuant to 4 CSR 24022.060(3), to analyze the risks associated with alternative resource plans, to quantify the value of better information concerning the critical uncertain factors and to explicitly state and document the subjective probabilities that utility decision-makers assign to each of these uncertain factors. This assessment shall include a decision-tree representation of the key decisions and uncertainties associated with each alternative resource plan.

Proposed Alternative:
The utility shall use the methods of formal decision analysis to assess the impacts of critical uncertain factors on the expected performance of each of the candidate resource plans developed pursuant to 4 CSR 24022.060(3), to analyze the risks associated with candidate resource plans, to quantify the value of better information concerning the critical uncertain factors and to explicitly state and document the subjective probabilities that utility decision-makers assign to each of these uncertain factors. This assessment shall include a probability-tree representation of the key decisions and uncertainties associated with each resource plan.

Rationale:
See 4 CSR 240-22.070 discussion above.

(2) 4 CSR 240-22.070 (2)

Current Requirement:
Before developing a detailed decision-tree representation of each resource plan, the utility shall conduct a preliminary sensitivity analysis to identify the uncertain factors that are critical to the performance of the resource plan.

Proposed Alternative:
Before developing a detailed probability tree analysis of each resource plan, AmerenUE will conduct a preliminary sensitivity analysis using the candidate resource plans to identify the uncertain factors that are critical to the performance of the resource plan.

Rationale:
See 4 CSR 240-22.070 discussion above.

(3) 4 CSR 240-22.070 (2)(E)

Current Requirement:
Siting and permitting costs and schedules for new generation and generation-related transmission facilities;

Proposed Alternative:
Total project cost for new generation and generation-related transmission facilities;

Rationale:
A total project includes siting, permitting, and construction activities. Thus it is more practical to evaluate an uncertain factor like schedule across the entire span of a project, or to evaluate the separate uncertain factor of cost across the entire span of a project. This waiver captures the uncertain factor of cost for the entire span of a project while waiver (4) captures the uncertain factor of scheduling referenced in the original rule.

(4) 4 CSR 240-22.070 (2)(F)

Current Requirement:
Construction costs and schedules for new generation and transmission facilities;

Proposed Alternative:
Total project schedule for new generation and generation-related transmission facilities;

Rationale:
A total project includes siting, permitting, and construction activities. Thus it is more practical to evaluate an uncertain factor like schedule across the entire span of a project, or to evaluate the separate uncertain

factor of cost across the entire span of a project. This waiver captures the uncertain factor of scheduling for the entire span of a project while waiver (3) captures the uncertain factor of cost referenced in the original rule.

(5) 4 CSR 240-22.070 (3)

Current Requirement:
For each alternative resource plan, the utility shall construct a decision-tree diagram that appropriately represents the key resource decisions and critical uncertain factors that affect the performance of the resource plan.

Proposed Alternative:
AmerenUE will construct a probability-tree diagram that appropriately represents the dependent and independent critical uncertain factors that affect the performance of the resource plans.

Rationale:
See 4 CSR 240-22.070 discussion above.

(6) 4 CSR 240-22.070 (4)

Current Requirement:
The decision-tree diagram for all alternative resource plans shall include at least two (2) chance nodes for load growth uncertainty over consecutive subintervals of the planning horizon. The first of these subintervals shall be not more than (10) years long.

Proposed Alternative:
AmerenUE will include load growth as a critical dependent uncertain factor.

Rationale:
Under the proposed approach, AmerenUE would seek a waiver from this requirement in its entirety, as it would not be relevant given the waiver sought under 4 CSR 240-22.070(3). Load growth uncertainty would, however, still be represented in the scenarios, and so it would be included in the probabilistic assessment under 4 CSR 240-22.070(5).

(7) 4 CSR 240-22.070 (5)

Current Requirement:
The utility shall use the decision-tree formulation to compute the cumulative probability distribution of the values of each performance measure of each of the alternative resource plans …

Proposed Alternative:
AmerenUE will use the probability-tree formulation to compute the cumulative probability distribution of the values of the 'present value of revenue requirements' performance measure of each of the candidate resource plans… For each of the other performance measures specified in

4 CSR 240-22.060(2), AmerenUE will compute a cumulative probability distribution of its values if inspection of the summary tabulation required by 4 CSR 240-22.06(6)B indicates that the rankings of candidate plans by this performance measure substantially differs from the ranking based on present value revenue requirements.

Rationale:
The IRP rules in 4 CSR 240-22.070(5) require AmerenUE to compute the cumulative probability distribution of the value of 5 performance measure specified in another section of the rule, 4 CSR 240-22.060(2). These 5 performance measures are: (1) present value of revenue requirements, (2) present worth of probable environmental costs, (3) present worth of out-of-pocket costs to participants in demand-side programs, (4) levelized annual average rates, and (5) maximum single-year increase in annual average rates.

Another section of the IRP rules, 4 CSR 240-22.060(6)B, requires provision of a summary tabulation that shows the performance of each alternative resource plan as measured by each of the measures specified in section (2) of this rule (each of those measures are cited in the paragraph above).

So one section of the rule requires cumulative probability distributions of these 5 measures, and another section requires summary tabulations of these 5 measures, which is simply another form of the same information.

The primary decision criterion is just one of these 5 measures, namely the present value of revenue requirements. The ranking of plans on this measure is consistent with the ranking of plans on the other 4 measures. Thus once the cumulative probability distribution has been provided for the plans for the present value of revenue requirements measure, it is redundant and adds little to no value to additionally provide cumulative probability distributions for the other 4 measures. This is particularly true since summary tables for these other 4 measures are provided per another section of the IRP rules as mentioned in the second paragraph above.

When AmerenUE's February 2008 IRP filing was challenged on the lack of provision of cumulative probability distributions for the other 4 measures beyond the present value of revenue requirements performance measure, AmerenUE explained in a filed response that (1) a cumulative probability distribution was not needed since the primary conclusion was based on the present value of revenue requirements performance measure for which a cumulative probability distribution was provided, (2) that the same conclusions were evident from the summary tables which were provided for all 5 performance measures, and (3) results on the other 4 measures in the summary tables were consistent with the results of the present value of revenue requirement measure in its summary table.

In the Missouri Public Service Commission's "Final Order Regarding AmerenUE's 2008 Integrated Resource Plan," the commission reviewed claims that this particular issue regarding 4CSR 240-22.070(5) was an alleged deficiency, and stated: "The IRP rule does not require an electric utility to perform useless calculations simply to satisfy the letter of the regulation. AmerenUE adequately explained why it did not perform the additional calculations and no party has disputed that explanation. There is no deficiency with regard to this section of the regulation."

(8) 4 CSR 240-22.070 (6)(B)

Current Requirement:
The trend of expected unserved hours for the preferred resource plan must not indicate a consistent increase in the need for emergency imported power over the planning horizon.

Proposed Alternative:
AmerenUE is requesting a complete waiver from the requirement of section 4 CSR 240-22.070 (6)(B).

Rationale:
AmerenUE believes this section and other directly related sections reflect the energy market structure of the time period in which the rules were written. These rules were written before the existence of mature energy markets that are centrally dispatched over a much larger geographic footprint than just the AmerenUE service territory. Now that AmerenUE is a participant in the Midwest Independent System Operator (MISO) market, the modeling used in integration analysis assumes electric energy can be bought and sold within this MISO market. Because of this ability, any energy unable to be served with AmerenUE resources is served with other MISO market resources; therefore, due to this very large pool of resources the unserved hours will always be zero. Even though imports can be used to serve the load, those imports are not emergency related; but rather a regular function of market participation. Beyond the .1-day-per-year Loss of Load Expectation event used as the basis for MISO's Planning Reserve Margin requirement, AmerenUE cannot foresee any realistic long term modeling scenario in which neither AmerenUE nor MISO resources would be available to serve AmerenUE load.

(9) 4 CSR 240-22.070 (7)

Current Requirement:
The impact of the preferred resource plan on future requirements for emergency imported power shall be explicitly modeled and quantified. The requirement for emergency imported power shall be measured by expected unserved hours under normal-weather load conditions.

Proposed Alternative:
AmerenUE is requesting a complete waiver from the requirement of section 4 CSR 240-22.070(7) and accompanying subcomponents.

Rationale:
See rationale in waiver request (6).

(10) 4 CSR 240-22.070 (11)(A)

Current Requirement:
As part of its reporting requirements, the utility is required to furnish:
A decision-tree diagram for each of the alternative resource plans along with narrative discussions of the following aspects of the decision analysis:

1. A discussion of the sequence and timing of the decisions represented by decision nodes in the decision tree; and
2. An explanation of how the critical uncertain factors were identified, how the ranges of potential outcomes for each uncertain factor were determined and how the subjective probabilities for each outcome were derived.

Proposed Alternative:
AmerenUE will furnish a probability-tree diagram applied to each of the candidate resource plans along with narrative discussions of the following aspects of the decision analysis:

1. A discussion of the sequence and timing of the decisions represented by each of the candidate resource plans, and how the set of resource plans was developed to be responsive to the range of uncertainties in the probability tree; and
2. An explanation of how the critical uncertain factors were identified, how the ranges of potential outcomes for each uncertain factor were determined and how the subjective probabilities for each outcome were derived.

Rationale:
See 4 CSR 240-22.070 discussion above.

4 CSR 240-22.080 – Filing Schedule and Requirements

AmerenUE is not requesting any waivers at this time for 4 CSR 240-22.080.

Other

(1) 4 CSR 240-22.040(1)(K) - Commission Order in Case EO-2007-0409

Current Requirement:
This section of the Supply-Side Resource Analysis provisions of the IRP rule requires AmerenUE to evaluate the environmental impacts of the various supply-side resource options. The Sierra Club alleges this portion

of the IRP filing is deficient because it fails to evaluate the environmental impacts associated with the release of radioactive tritium and noble gases (krypton and xenon) from the Callaway I nuclear plant. The Sierra Club agrees with AmerenUE that the company is not currently required to take any action regarding the release of these materials. However, the Sierra Club speculates the NRC may at some time in the future require AmerenUE to take steps to process and isolate these materials, potentially at a significant cost. The Sierra Club has identified an area of concern that could affect the cost of operating the Callaway Nuclear Plant as a supply-side resource in the future. The Commission directs AmerenUE to consider these potential costs in its next IRP filing.

Proposed Alternative:
AmerenUE is requesting a complete waiver from the requirement.

Rationale:
At this time AmerenUE decision-makers conclude, relating to this issue, there is a zero probability of change to the existing environmental laws or regulations that may be imposed within the planning horizon. AmerenUE fully complies with the existing regulations associated with releases of these materials with large margins to the release limits. As delineated in the Commissions Final Order, this is a regulation change Sierra Club *speculates* is in the planning horizon. There are no proposals from US EPA, NRC, or legislature to change the regulations associated tritium or other noble gases releases. With no guidance of a regulatory regime, there is little value in considering these potential costs at this time.

Appendix 1.

ILLUSTRATION OF SCENARIO-BASED PROCESS FOR HANDLING ENVIRONMENTAL AND OTHER RISKS IN IRP