Exhibit No.:	
Issue(s):	IRP Inputs, Integration and Preferred Plan Selection
Witness:	Matt Michels
Sponsoring Party:	Union Electric Company
Type of Exhibit:	Surrebuttal Testimony
Case No.:	EO-2011-0271
Date Testimony Prepared:	November 30, 2011

MISSOURI PUBLIC SERVICE COMMISSION

Case No. EO-2011-0271

SURREBUTTAL TESTIMONY

OF

MATT MICHELS

ON

BEHALF OF

UNION ELECTRIC COMPANY
d/b/a Ameren Missouri

Denotes Highly Confidential information

St. Louis, Missouri
November, 2011

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SURREBUTTAL TESTIMONY

OF

MATT MICHELS

CASE NO. EO-2011-0271

Q. Please state your name and business address.

A. My name is Matt Michels. My business address is One Ameren Plaza, 1901 Chouteau Avenue, St. Louis, MO 63103.

Q. By whom and in what capacity are you employed?

A. I am employed by Ameren Services Company as Managing Supervisor, Resource Planning.

Q. Please describe Ameren Services Company.

A. Ameren Services Company provides corporate, administrative and technical support for Ameren Corporation and its affiliates, including Union Electric Company d/b/a Ameren Missouri ("Ameren Missouri" or "Company").

Q. Please describe your employment history with Ameren Services Company.

A. I joined Ameren Services Company in 2005 as a Consulting Engineer in Corporate Planning. My responsibilities included coordination and monitoring of projects implemented in connection with the integration of processes and systems following the acquisition by Ameren Corporation of Illinois Power Company in October, 2004. I subsequently was involved in the integration of combustion turbine facilities acquired by Ameren Missouri in 2006. I later joined the Corporate Model team, also within Corporate Planning, where my duties included the development of special financial models for analyzing specific strategic and regulatory issues. In September, 2008, I was promoted to my current position as Managing

Supervisor of Resource Planning. Prior to joining Ameren Services, I worked for 15 years at Illinois Power Company and held positions of varying responsibility related to resource planning, strategic planning, and business and financial planning.

Q. Please describe your duties and responsibilities as Managing Supervisor of Resource Planning.

A. My primary responsibility as Managing Supervisor of Resource Planning is the development and preparation of Ameren Missouri's Integrated Resource Plan. In addition I am responsible for ongoing resource planning and economic analyses and modeling to support Ameren Missouri's business planning processes.

Q. Please describe your qualifications.

A. I earned a Bachelor of Science degree in Electrical Engineering from the University of Illinois at Urbana-Champaign in May of 1990. I have been employed by Ameren and one of its predecessor companies, Illinois Power, since June of 1990 in various positions related to resource and business planning. During most of that time, my responsibilities have included the development and use of various planning models for purposes such as production costing, acquisition evaluation, corporate restructuring, financial forecasting and resource planning.

Q. What is the purpose of your surrebuttal testimony?

A. The purpose of my surrebuttal testimony is to respond to the rebuttal testimony of witnesses for Missouri Public Service Commission Staff ("Staff"), Office of Public Counsel ("OPC"), Missouri Department of Natural Resources ("DNR"), and the parties appearing collectively as Natural Resources Defense Council ("NRDC").

Q. How is your testimony organized?

A. My testimony is organized as follows:

- Summary of Ameren Missouri's Integrated Resource Plan ("IRP") decision process;
- Satisfaction of the fundamental objective or resource planning
- Use of the Present Value of Revenue Requirement ("PVRR") as the primary selection criterion for preferred resource plan selection;
- Use of decision factors;
- General issues raised with Ameren Missouri's decision process;
- Integrated resource analysis;
- Coal resource analysis;
- Natural gas price assumptions;
- Renewable resource assumptions;
- Nuclear cost assumptions;
- Purchased power agreements; and
- Transmission and Distribution ("T&D") Avoided Cost

Q. Please summarize your surrebuttal testimony.

A. I will demonstrate that Ameren Missouri has complied with the Commission's IRP rules and has used a robust analysis and decision process that complies with those rules to arrive at its selection of a preferred resource plan and resource acquisition strategy. In doing so, I will point out that the arguments made by the other parties are based on arguable interpretations of technical issues, differences of opinion with respect to assumptions and analytical approach, and misperceptions that the IRP rules are intended to impose particular decisions on utility management.

I. SUMMARY OF AMEREN MISSOURI'S IRP DECISION PROCESS

Q. Why is it important that the Commission understand the process Ameren Missouri used to perform its IRP analysis?

A. It is important because the Commission has tasked itself, through its IRP rules, to determine whether utilities have complied with the IRP rules in conducting their planning. As the deficiencies alleged by the parties must be evaluated in the context of both the rules and what Ameren Missouri has done in performing its resource planning, an overview of the process provides a structure in which to make such an evaluation.

Q. Do the IRP rules require the Commission to determine on whether any particular input to the IRP process is the most correct input to use?

A. No. While reasonable assumptions are vital to good resource planning, the Commission has not sought to involve itself in the specific determination of the accuracy of assumptions. Clearly, assumptions must meet a threshold for credibility to demonstrate that a utility is not flouting the limited scope of the resource planning rules. Beyond that, the assumptions are those of the utility and, while others may have differing opinions, the Commission does not have the burden of determining which assumption is the most accurate or precise.

Q. Please summarize the process used by Ameren Missouri to arrive at the selection of its preferred resource plan.

A. Ameren Missouri first evaluated a wide range of supply and demand side resources. In narrowing the field of supply side resource to determine which were passed to integration analysis, cost was the primary screening criterion. Demand side resources were also evaluated on cost using the Total Resource Cost ("TRC") test, the primary measure of demand side measure cost effectiveness. Supply side resources were also screened based on other factors such as operating flexibility. The final set of supply and demand side resources passed to integration was then combined into different alternative resource plans.

At the same time alternative plans were being formulated, Ameren Missouri also evaluated potential uncertainties that might influence resource decisions. Certain of these uncertain factors were included in scenario modeling performed by Charles River Associates ("CRA") and labeled "dependent uncertain factors" as they were expected to have potentially significant interdependent relationships. The dependent uncertain factors included natural gas prices, economy-wide load growth, and federal greenhouse gas regulation. A list of potential uncertainties that were not expected to exhibit such interdependencies, labeled independent uncertain factors, was analyzed by evaluating the performance of alternative resource plans under a range of conditions for each uncertain factor. The analysis showed that of the uncertain factors tested, three were determined to be critical to the evaluation of resource plans. Those three independent uncertain factors were 1) Project Cost, 2) DSM Cost and Performance, and 3) Long-term Interest Rates and Allowed Return.

The final, but no less important, step toward setting up the analysis and decision-making process was the development of "Policy Objectives" and associated measures that would be used to evaluate the performance of alternative resource plans. Ameren Missouri's senior management established six such objectives, including cost as measured by PVRR, which was assigned the highest weight of any measure.

Ameren Missouri evaluated the performance of 216 alternative resource plans in its integration analysis, using the ten scenarios of dependent uncertain factors modeled by CRA. While a weighted scorecard approach based on the Policy Objective measures was used to evaluate the performance of these 216 alternative resource plans, direct evaluation of the results allowed Ameren Missouri to select and carry forward a robust set of candidate resource plans for risk analysis without relying on the weighted scorecard results. In doing so, several options were eliminated based primarily on cost (PVRR) performance.

Next, Ameren Missouri evaluated the 16 candidate resource plans under all of the uncertain factors, the ten planning scenarios made up of dependent uncertain factors and three independent uncertain factors. To this point, consideration of future environmental compliance other than for greenhouse gas regulation had not yet been reflected in resource plans. Ameren Missouri subsequently reformulated candidate resource plans to comply with two potential scenarios for environmental regulation – "moderate" environmental regulation and "aggressive" environmental regulation. At the same time, the initial risk analysis results showed that certain resource options were either not cost-effective, such as new coal or pumped hydro, or did not provided any cost advantage on a risk-adjusted basis, such as the Maximum Achievable Potential ("MAP") demand-side management ("DSM") portfolio. The resultant set of final candidate resource plans included both supply side resources (nuclear, combined cycle gas, simple cycle gas, and wind with simple cycle gas) and demand side resources (Realistic Achievable Potential ("RAP") DSM portfolio and a Low Risk DSM portfolio). The final candidate resource plans also included options for compliance with aggressive environmental regulation focused on Ameren Missouri's Meramec plant, including retirement, conversion to gas-fired boiler operation, and addition of pollution control equipment. Meramec was assumed to continue operating "as is" under moderate environmental regulation since no additional pollution control equipment would be required.

Following completion of further risk analysis of the final candidate resource plans as well as supplemental financial analysis of the plans, Ameren Missouri's senior management met several times over the course of two months to discuss and assess the results and select the preferred resource plan. To facilitate a robust discussion, the management team was presented with a range of analytical results for each of the 14 final candidate resource plans. This included a summary of results for each plan for the various performance measures that were identified to facilitate evaluation of how each plan satisfied the Policy Objectives set by management. It also included specific financial analysis of alternative resource plans to assess financing considerations and impacts of the throughput disincentive associated with demand-side resources. A scorecard representation of the Policy Objectives and measures was also developed and revised based on management discussions to its final form as shown in the IRP. The scorecard was not used as the final determinant of the preferred resource plan, but rather as a tool for discussion to facilitate a broad range of considerations, including emphasis on the desire to minimize cost, in the context of all the analysis and policy considerations.

After the lengthy analysis, review, and discussion, Ameren Missouri's senior management selected its preferred resource plan to balance the needs of both customers and investors in the context of potential future environmental regulation. As was presented in the Company's IRP filing, this decision was informed by a thorough examination of the cost and financial implications of each candidate resource plan. Contingency options were identified based on the full analysis conducted. That analysis determined that contingency options would not likely be triggered by changes in market conditions, but rather by changes in regulation. As such, the Company's contingency options are triggered by changes in "decision factors."

Q. Much has been made about the Company's use of "decision factors" by the other parties to this case – that the rules do not permit their use, that they must be evaluated in the same manner as uncertain factors, that they have been used as a substitute for the primary selection criterion of PVRR. How do you respond to these allegations?

A. The truth is that the IRP rules explicitly allow for the consideration of other factors that may constrain or limit the minimization of PVRR (4 CSR 240-22.010(2)(C)) in selecting the preferred resource plan, and that is exactly what Ameren Missouri has done with decision factors. As Ameren Missouri witness Warren Wood has testified, the IRP rules are not designed or intended to be a box in which utilities are systematically led to a mathematically-determined decision. Rather, they are a framework that provides for a transparent view into a utility's resource planning process, which must often consider factors that are not explicitly addressed in the rules. I address the specific concerns and allegations of the parties related to decision factors later in my testimony.

II. SATISFACTION OF THE FUNDAMENTAL OBJECTIVE OF RESOURCE PLANNING

Q. What is the fundamental objective of the electric utility resource planning process in Missouri?

A. The fundamental objective, as stated in the Chapter 22 IRP rules at the time of Ameren Missouri's IRP filing in this case, is, "to provide the public with energy services that are safe, reliable and efficient, at just and reasonable rates, in a manner that serves the public interest." It requires that the utility (1) treat demand side resources and supply side resources on an equivalent basis, (2) use minimization of PVRR as the primary preferred plan selection criterion, and (3) identify and quantitatively analyze any other considerations that are critical to meeting the fundamental objective but may constrain or limit the minimization of PVRR.

Q. Does Ameren Missouri's 2011 IRP satisfy this fundamental objective?

A. Yes. Ameren Missouri has selected a resource acquisition strategy that ensures that future load and reserve requirements of customers will be met over the planning horizon at rates that are just and reasonable and in a manner that serves the broad interests of the public it serves. This resource acquisition strategy provides for contingency options that offer the potential for significant benefits to customers should certain regulatory barriers be constructively addressed.

Q. Please summarize Staff's position with respect to Ameren Missouri's satisfaction of the fundamental objective.

A. Staff witness John Rogers asserts that Ameren Missouri's IRP fails to meet the fundamental objective of resource planning because Ameren Missouri has selected a plan that does not yield the lowest PVRR and has not specified the cost recovery it would need in order to commit to a resource plan with a DSM portfolio that is consistent with the MEEIA goal of achieving all cost-effective demand side savings.

Q. Do you agree with Mr. Rogers' assessment?

A. No. As demonstrated in Ameren Missouri's IRP filing and in its response to the reports filed by Staff and other parties in June, 2011, the Company has evaluated its resource options using measures designed to support several key Policy Objectives, with cost represented by PVRR minimization and assigned a substantially higher weight than any other measure. I address specific arguments with respect to the weight assigned to PVRR minimization later in my surrebuttal testimony. With respect to the alleged requirement to specify the cost recovery the Company would need to support the pursuit of all cost-effective demand side savings, I do not believe that such a requirement exists in the Commission's IRP rules and that such specification in the context of this IRP would have no effect. As Ameren Missouri witness Warren Wood states in his surrebuttal testimony, the Company has notified the Commission of its intent to make a filing under the Commission's MEEIA rules in the first quarter of 2012.

Q. You state that you do not believe that specification of cost recovery needed to achieve all cost-effective demand side savings is required by the IRP rules. What rule provision does Mr. Rogers cite as the basis for requiring the specification of cost recovery to achieve all cost-effective demand side savings?

A. Mr. Rogers cites 4 CSR 240-22.010(2)(C). This provision states that the utility shall, "Explicitly identify and, where possible, quantitatively analyze any other considerations which are critical to meeting the fundamental objective of the resource planning process, but which may constrain or limit the minimization of the present worth of expected utility costs."

Q. How has Ameren Missouri complied with this rule provision?

A. Ameren Missouri evaluated the potential financial harm to shareholders associated with the throughput disincentive inherent in utility implementation of DSM programs under traditional rate regulation. The analysis showed significant potential financial harm to shareholders in the form of ROE reductions of 20-75 basis points in the near term, depending on the frequency of rate cases. This represents a significant impairment to the ability of investors to realize the allowed return on equity established by the Commission for which Ameren Missouri must secure relief before committing to energy efficiency at such levels. As a result, Ameren Missouri has identified a contingency plan that includes the RAP DSM portfolio that would be triggered by approval of satisfactory cost recovery through a filing under the Commission's MEEIA rules.

Q. You mentioned that specifying in the IRP the cost recovery needed to pursue all cost-effective demand side savings would have no effect. Why?

A. There are two main reasons. First, such specification would not result in the approval of the needed cost recovery mechanism. The Commission has made clear that such approval can only be granted in the context of a filing by the Company under the Commission's MEEIA rules, as stated in their Report and Order in Case ER-2011-0028. Second, the Commission's MEEIA rules were officially adopted on May 30, 2011, over three months after Ameren Missouri filed its 2011 IRP and some six months after Ameren Missouri's senior management selected the preferred resource plan. During the time the Company was performing its analysis, selecting its preferred resource plan and documenting its analysis and decision for filing with the Commission, the MEEIA rules were being drafted and the nature of various key provisions was in a state of flux. As an example, the potential for lost revenue recovery under MEEIA was not clear at the time the Company was performing its analysis. If Ameren Missouri had proposed a lost revenue recovery mechanism, using the definition of lost revenue in the IRP rules, as the cost recovery needed to pursue all cost-effective demand side savings, it would have simply been rendered meaningless by the provisions of the MEEIA rules and would have left a void to be filled by a subsequent cost recovery proposal that complied with the MEEIA rules.

Q. But wouldn't evaluation of the plan with RAP DSM and the desired cost recovery be important in assessing its true cost to customers?

A. No. Since PVRR is determined by quantifying the revenue required to cover all utility costs, including the allowed rate of return, it reflects no impact from lost revenue.

Therefore, including a cost recovery mechanism to offset lost revenue would not result in any change in PVRR. While a modest performance incentive, through savings sharing or some other mechanism, may add slightly to total cost, it would not be expected to have a significant impact on overall costs.

Q. Mr. Rogers cites savings of $1.5 to 2.5 billion for the RAP DSM plans over the counterpart plans with Low Risk DSM and combined cycle gas resources. Doesn't this savings include lost revenue?

A. No. The additional savings associated with the RAP DSM plans are the result of the avoided cost savings generated by reductions in consumption. These include avoided energy costs valued at the market price of power, avoided capacity costs valued at the market price of capacity, and avoided T&D costs valued at the Company's estimated avoided cost of transmission and distribution infrastructure. Lost revenue, were it allowed to occur, would simply be a transfer of money from shareholders to customers through the imperfections of traditional ratemaking.

Q. Mr. Rogers indicates that there is no reason that Ameren Missouri could not indicate that it has selected Plan R0, the resource plan with RAP DSM and moderate environmental regulation, as its preferred resource plan conditioned on approval of programs and an appropriate DSIM pursuant to a MEEIA filing by the Company. Do you agree?

A. No. Selecting plan R0 as the preferred resource plan would require that the implementation plan include pursuit of levels of DSM that result in continued significant financial harm to shareholders while waiting for approval of a MEEIA filing. Beyond the issues of implementation, selecting plan R0 conditioned upon approval of a MEEIA filing is no different than establishing that plan as a contingency option that would be triggered by approval of a MEEIA filing.

Q. Mr. Rogers indicates in response to Ameren Missouri data request Ameren-MPSC-002 (attached as Schedule MM-E1) that selecting plan R0 conditioned on approval of a MEEIA filing would be different in that it would demonstrate a greater level of commitment on the part of the Company. Isn't that true?

A. No. While Mr. Rogers touts the goals of MEEIA to achieve all cost-effective demand side savings, any gesture on the part of the Company to indicate commitment to this goal is meaningless until the mandate of MEEIA, that is the alignment of utility incentives with the benefits of customer energy savings, is met. While the Commission's MEEIA rules provide an opportunity to realize this mandate, they do not provide a guarantee. The Company has indicated its intention to make a filing under the Commission's MEEIA rules in the first quarter of 2012. This will provide a real opportunity to establish cost recovery that aligns the interests of customers and shareholders and unlock the savings that Ameren Missouri has identified in its IRP analysis.

Q. Have any other parties made arguments similar to those of Staff?

A. Yes. DNR rebuttal witness John Noller indicates that the Company is not only required to specify the cost recovery needed to pursue all cost-effective demand side savings, but that it also must show outcomes for varying types of cost recovery and to varying degrees to demonstrate the points at which the constraints applied by the Company in selecting its preferred plan no longer apply. DNR rebuttal witness Robert Fratto also indicates that such an analysis is necessary.

Q. Is there a reason that such an evaluation was not performed?

A. There are two main reasons. First, as I mentioned previously, the rules implementing MEEIA were under development and in a state of flux at the time the Company was performing its analysis and documenting its decision. While it was certainly possible to conjure a host of potential cost recovery structures and analyze them, there was no assurance at all that any of the structures analyzed would comply with the rules that were ultimately adopted. Second, when it comes to cost recovery issues related to DSM, and particularly the throughput disincentive, it is not so important <u>how</u> they are addressed as it is <u>that</u> they are addressed. That is, unless the cost recovery framework fully mitigates the throughput disincentive, it will not meet the statutory requirement of aligning the utility's incentives with helping customers to use energy more efficiently. Therefore, there are no points on a continuum of cost recovery possibilities at which the constraint is removed – it is either addressed or it isn't. Establishing the need to address the disincentives is all the analysis that is required and all the analysis that can be meaningful as part of an IRP.

Q. Mr. Fratto also criticizes the Company for not having conducted any analyses, reports, or studies of DSM cost recovery, lost revenue recovery, and DSM incentive mechanisms in other states, implying that this indicates a lack of comprehensiveness in the Company's analysis. How do you respond?

A. There is enough information already available through ACEEE and other organizations about DSM cost recovery and incentives in other states that Ameren Missouri does not need to conduct its own independent analysis. Certainly there are many different approaches to addressing the various disincentives to utility energy efficiency programs. However, Missouri has its own set of rules about the kinds of cost recovery that may be allowed, so while a survey of what is being done in other states is informative and may spark ideas that can be applied to our situation, it is still more important <u>that</u> the disincentives be addressed than <u>how</u> they are addressed, and <u>how</u> they are addressed can only truly be established through a Missouri Energy Efficiency Investment Act ("MEEIA") filing.

Q. What is the nature of OPC's assertion that Ameren Missouri's IRP has not satisfied the fundamental objective of resource planning?

A. OPC's assertion, as stated by rebuttal witness Ryan Kind, is that the Company has not met the requirements of 4 CSR 240-22.010(2)(C) because of the collective weight of the deficiencies alleged by OPC. The individual allegations of deficiency are addressed later in my surrebuttal testimony and in the surrebuttal testimony of Ameren Missouri witness Rick Voytas.

III. USE OF PVRR MINIMIZATION AS THE PRIMARY SELECTION CRITERION

Q. Please state the requirement in the IRP rules regarding the use of PVRR minimization as the primary preferred plan selection criterion.

A. The IRP rules in effect at the time Ameren Missouri filed its 2011 IRP state in 4 CSR 240-22.010(2)(B) that the utility shall, "Use minimization of the present worth of long-run utility costs as the primary selection criterion in choosing the preferred resource plan."

Q. How has Ameren Missouri complied with this rule requirement?

A. Ameren Missouri screened supply side resource options largely based on cost. Alternative resource plans were initially to be evaluated using a weighted scorecard in which PVRR was assigned 25% of the total weight with weights on five other measures ranging from 10% to 20% each. Alternative resource plans were actually evaluated based on a more critical review of the integration analysis results, with certain options excluded from further consideration based on cost performance, to select candidate resource plans for risk analysis and preferred plan selection. The candidate resource plans were further revised after an initial risk analysis, including the elimination of other options that did not provide advantages in terms of cost performance. The final candidate resource plans were evaluated using a scorecard in which PVRR was assigned a 30% weighting and four other measures were assigned weights from 10% to 20% each. Other considerations pursuant to 22.010(2)(C) were applied in selecting the preferred resource plan, which exhibited low cost relative to the other resource plans whose potential selection was not constrained by these other considerations.

Q. Doesn't the rule indicate that PVRR must be weighted at least 50%?

A. No. The IRP rules provide no elaboration on what constitutes "primary" as it refers to the selection criteria used to select the preferred resource plan. Absent such guidance, the Company relied on the plain and ordinary meaning of the word "primary", specifically that it means, "of first importance."

Q. Staff witness John Rogers indicates that PVRR must be assigned a "very high weight." Is this different from the position taken by Staff in its report of alleged deficiencies and concerns filed in this case?

A. Yes. Staff's prior position was that PVRR must be assigned at least a majority of the weight, meaning greater than 50%.

Q. Does Mr. Rogers define what is meant by "a very high weight"?

A. No. In response to Company data request Ameren-MPSC-013 (attached as Schedule MM-E2) Mr. Rogers indicates that Staff cannot identify a specific lowest value that would constitutes what he considers to be a "very high value" without assessing and understanding other risks involved. However, he does indicate in his rebuttal that it is Staff's position that minimizing PVRR is “the” objective of resource planning, which seems to imply that PVRR should be weighted at or near 100%.

Q. Is this interpretation of the IRP rules reasonable?

A. No. If what Mr. Rogers says is true, that minimizing PVRR is “the” objective of the resource planning process, then there is no room for any other consideration. This interpretation renders several provisions of the IRP rules meaningless. Specifically, it would make useless the identification of any other planning objectives pursuant to 4 CSR 240-22.060(1), which provides that, “The utility may identify additional planning objectives that alternative resource plans will be designed to serve.” It would remove any meaning from 4 CSR 240-22.070(6)(A), which requires that the preferred plan, “In the judgment of utility decision-makers… strikes an appropriate between the various planning objectives specified in 4 CSR 240-22.010(2).” It would also render the provisions of 4 CSR 22.070(11)(F) irrelevant. This section of the rules provides for the establishment of relative weights on performance measures as part of the process used to select the preferred plan. In addition to rendering certain rule provisions meaningless, this would effectively be a large step away from the planning rules as a framework for transparent utility resource planning and toward the establishment of resource planning by formula. Mr. Rogers, in response to Company data request Ameren-MPSC-013 also indicated that the weight used for PVRR must not be so high as to render other considerations meaningless, so it is not clear at all what it means to assign a “very high weight” to PVRR, as Mr. Rogers suggests, while still allowing for significant consideration of other objectives or factors.

Q. Mr. Rogers indicates that if the Company's interpretation of "primary" is correct then this could lead to a situation in which PVRR is assigned a weight only slightly higher than numerous other planning objectives. Is this concern valid?

A. It would be if that is what Ameren Missouri had done. Such an approach would clearly flout the provision of the rule to consider PVRR minimization as the primary selection criterion. However, this is not what Ameren Missouri has done. The use of such an extreme example simply establishes that the weighting used must be reasonable. In applying a 30% weight to PVRR and weights to other measures of 20% or less, Ameren Missouri has clearly established PVRR as the selection criterion that is of first importance while maintaining such weights on other objectives that they remain meaningful in supporting decisions.

Q. Mr. Rogers states that 4 CSR 240-22.010(2)(C) explains that minimization of PVRR should be the only criterion used to select the preferred resource plan unless other considerations would cause the utility decision makers to "constrain or limit" the use of minimization of PVRR when selecting the preferred resource plan. Do you agree?

A. No. This language does not appear in that section of the rule or anywhere else. If PVRR was intended to be the only criterion to be used, the rule would state that clearly instead of indicating that it be the "primary criterion" and elsewhere providing for the consideration of other planning objectives.

Q. Mr. Rogers contends that considerations pursuant to 4 CSR 240-22.010(2)(C) cannot be used to select a plan other than the one with the lowest PVRR. Is this correct?

A. No. Mr. Rogers is applying a constraint on that rule provision that is not listed in the rules. This assertion essentially renders 22.010(2)(C) meaningless, because consideration of rate impacts or risks, quantifiable or otherwise, would have no effect on plan selection. Using an extreme example, a plan with the lowest PVRR but an immediate 20% rate increase would have to be selected over a plan with higher PVRR and only a 5% rate increase

Q. Is it meaningful that rate increases is listed as one possible consideration under 22.010(2)(C)?

A. Yes. This indicates that consideration of rate impacts may be used to constrain the selection of the preferred resource plan to one other than that which exhibits the lowest PVRR. This is no different than considering the impact of alternative resource plans on shareholders, as the Company has done. . In response to Company data request Ameren-MPSC-028 (attached as Schedule MM-E3), Mr. Rogers indicates that it may be appropriate to constrain preferred plan selection based on consideration of rate impacts. If this is true for consideration of rate impacts then it is true for any other consideration pursuant to 22.010(2)(C). In response to Company data request Ameren-MPSC-021 (attached as Schedule MM-E4), Mr. Rogers agrees that the impact of candidate resource plans on investors is a valid consideration pursuant to that section of the rule.

Q. Mr. Rogers cites the Commission's order in KCPL's 1994 IRP as evidence that utilities must use minimization of PVRR as the primary selection criterion. Is this case relevant?

A. Not in any meaningful way. The Commission found in that case that KCPL had not used minimization of PVRR as a selection criterion <u>at all</u>. Clearly, not using PVRR as a selection criterion at all does not satisfy the requirement to use it as the primary selection criterion. This is not what Ameren Missouri has done. The order in the KCPL case provides no guidance as to what specifically constitutes treatment of PVRR as the "primary" selection criterion.

Q. Mr. Rogers notes that adding the weights applied to PVRR and average rates, which total 50%, is not an appropriate approach to satisfying the need to apply at least a 50% weight to PVRR. Do you agree?

A. Yes. Ameren Missouri simply pointed out in its August response that of the total weight, 50% was applied to measures that address customer cost. It was not meant to imply that if the requirement for PVRR is a weight of at least 50% that the combination would satisfy such a requirement.

Q. In making the argument against adding the weights for PVRR and average rates, Mr. Rogers indicates that average rates tend to increase when significant levels of DSM are implemented. Was this the case in Ameren Missouri's IRP analysis?

A. Yes. Average rates were shown to increase in plans with the RAP DSM portfolio relative to other alternative resource plans. While bills for program participants would decrease, bills for non-participants would increase. This illustrates the importance of considering objectives other than PVRR minimization.

Q. Mr. Kind makes some of the same arguments that Mr. Rogers has made. Specifically, Mr. Kind indicates that the importance of PVRR can be watered down by assigning it a weight only slightly higher than other objectives and that combining the weights of PVRR and average rates is inappropriate. Mr. Kind also cites the Commission's order in KCPL's 1994 IRP case. Do your responses to Mr. Rogers' similar assertions apply to Mr. Kind's as well?

A. Yes. In fact, Mr. Kind also pointed out the effect on rates of DSM programs, again illustrating the importance of considering factors and objectives other than PVRR minimization.

Q. Mr. Kind indicates that to be considered the "primary" selection criterion, PVRR must be assigned a weight of at least 50%. Do you agree?

A. No. As with Mr. Rogers' assertions, there is no language in the IRP rules that requires that a 50% weighting, or any specific weighting, be applied to PVRR minimization. The rule only requires that it be the "primary" selection criterion. Ameren Missouri's use of a weight of 30% with no greater than a 20% weight on any of the four other objectives clearly established PVRR minimization as the primary selection criterion.

Q. Mr. Kind asserts that Ameren Missouri's concern about the regulatory treatment of DSM was actually used as the primary selection criterion. Is that true?

A. No. Mr. Kind is confusing the selection criteria with other considerations applied pursuant to 4 CSR 240-22.010(2)(C). The company evaluated all candidate resource plans using the scorecard as described earlier in my testimony. Other considerations were then applied that limited the choices for preferred plan selection. The candidate resource plan selected as the preferred resource plan was at least cost competitive with all the other candidate resource plans that were not constrained by these other considerations.

Q. Mr. Kind and OPC witness Dr. Thomas Vitolo contend that PVRR only carried an effective weight of 7%, not the 30% claimed by the Company. Is this true?

A. No. Dr. Vitolo arrives at this conclusion based on an analysis of the screening scorecard that was initially used to assess the 216 alternative resource plans during the integration analysis. Dr. Vitolo presents his supporting analysis in Schedule TJV-3. In computing an "effective weight" for PVRR, he inexplicably ignores his own analysis on Schedule TJV-5, which shows general agreement between unitized scores and the scores assigned in the Company's preferred plan selection scorecard, in which PVRR was assigned a weight of 30%. As his argument with respect to effective weights is based on concerns with the use of unitized scores in the screening scorecard, it cannot be applied to the preferred plan selection scorecard.

Q. Mr. Kind asserts that Ameren Missouri has both downplayed its scorecard and used it as the sole source of evidence for compliance with the requirement to treat PVRR minimization as the primary selection criterion. How do you explain this apparent inconsistency?

A. Mr. Kind has simply mischaracterized the Company's statements with respect to the importance and role of the scorecard. The scorecard was, as Ameren Missouri has stated, one piece of information used to facilitate the selection of the preferred resource plan and was not in itself the final determinant of the preferred resource plan. This does not mean that it was not important. To the contrary, the scorecard provided a useful vehicle for considering the merits of all the candidate resource plans and emphasizing the weights that management assigned to each of the objectives on which the plans were assessed.

Q. Mr. Kind points out that in comments provided by Ameren Missouri in the rulemaking docket for revising the IRP rules, the Company includes alternative draft rules that remove the term "primary" in describing PVRR as a selection criterion. He goes on to note that the Commission retained the term, "primary". Is this relevant?

A. No. The draft rules to which Mr. Kind refers were those drafted jointly by the MEDA utilities as an alternative to the rules drafted primarily by Staff. The philosophy behind those draft rules was that the focus of IRP would be placed more on the result and less on the process and that the Commission would choose whether or not to acknowledge a utility's plan. In that context, the change in language was simply consistent with the elimination of various specified requirements and constraints in favor of a collaborative approach to IRP with a focus on the result. Certainly, if those rules had been adopted by the Commission they would still have the ability to indicate through granting or withholding acknowledgement a preference for plans that exhibit the lowest PVRR, but could also indicate a preference for plans that perform better on other measures without having to consider a revision of the rules. In short, the Commission would not be boxed in by its own rules. It is worth noting that in retaining the language requiring that minimization of PVRR be the primary selection criterion the Commission did not change it to indicate that minimization of PVRR is "the" objective of resource planning, as Mr. Rogers has asserted.

Q. Does DNR make any arguments similar to those made by Staff or OPC with respect to treatment of PVRR minimization as the primary selection criterion?

A. Yes. Mr. Fratto indicates that it is questionable as to whether the weight assigned by the Company satisfies the rule requirement, but does not indicate what weight would be sufficient.

Q. Does NRDC make any of the same arguments?

A. Yes. NRDC rebuttal witness Phil Mosenthal contends that the primary goal of the IRP is to minimize PVRR. This is similar to the new Staff position that minimizing PVRR is "the" objective of the resource planning process. As I've mentioned previously, there is no basis in the rules to support this assertion, and it would undermine several provisions within the rules that contemplate the need or flexibility to consider other objectives.

IV. USE OF DECISION FACTORS

Q. Please explain what decision factors are and how they were used by Ameren Missouri in the IRP.

A. Decision factors are those conditions under which a decision must be made based on adequate and complete information at the time of a decision. Said another way, certain decisions will be made based on the conditions in effect at the time of the decision. Ameren Missouri applied three decision factors in the IRP – DSM cost recovery, large plant investment financing, and environmental regulation and retirement. The DSM cost recovery decision factor reflects the need to base decisions regarding the pursuit of DSM portfolios on the cost recovery in place at the time of the decision – that is, the decision will be driven directly by the approved regulatory treatment. The large plant investment financing decision factor reflects the need to base decisions on large plant investments on the availability of alternative ratemaking and/or financing options at the time of the decision should such investments be expected to otherwise result in the inability of the Company to maintain adequate credit ratios. The environmental regulation and retirement decision factor reflects the need to base decisions regarding environmental compliance, and by implication potential retirements, on available information regarding environmental regulations at the time compliance decisions are made.

Q. Do the IRP rules provide for the consideration of decision factors?

A. Yes. 4 CSR 240-22.010(2)(C) provides for the identification and analysis of, "any other considerations which are critical to meeting the fundamental objective of the resource planning process, but which may constrain or limit the minimization of the present worth of expected utility costs." Decision factors are the vehicle by which Ameren Missouri has evaluated such other considerations.

Q. Is there any relationship between decision factors and uncertain factors?

A. No, although both can certainly have an impact on decision making. Uncertain factors are defined in 4 CSR 240-22.020(56) as "any event, circumstance, situation, relationship, causal linkage, price, cost, value, response or other relevant quantity which can materially affect the outcome of resource planning decisions, about which utility planners and decision makers have incomplete or inadequate information at the time a decision must be made." This means that the decision comes before more complete and adequate information is available. In contrast, the decision factors reflect the need for complete and adequate information regarding a particular condition or consideration before a decision is made.

Q. Why is it important to use decision factors for certain conditions or considerations?

A. It is important because the decisions at hand may only be appropriate for a given set of circumstances. For example, the Company evaluated two potential paths for environmental regulation focused on coal-fired resources – moderate environmental regulation, based primarily on existing regulations and modest changes in requirements for pending and proposed regulations, and aggressive environmental regulation, based on significant increases in emission reduction requirements for pending and proposed regulations. Suppose that the Company were to guess that the aggressive environmental regulation path was the one that was going to be in place, or assign it a very high probability if treated as an uncertain factor. The Company would therefore base its compliance decisions solely or largely on the requirements assumed for aggressive environmental regulation. Should it turn out that environmental regulation was much closer to that represented by the moderate regulation scenario; the

Company will likely have made investments that it didn't really need to make in order to comply.

Q. Do any of the other parties concur with Ameren Missouri's use of the environmental decision factor?

A. Yes. Mr. Rogers explains that environmental regulation is indeed a decision factor, indicating that, "the Company has quantitatively analyzed the impact on expected PVRR for aggressive environmental regulation."

Q. Does Mr. Rogers articulate a similar position with respect to the Company's large plant investment financing decision factor?

A. Yes. Mr. Rogers also indicates that large plant financing is a decision factor.

Q. You've explained the need to treat environmental regulation as a decision factor. Why should DSM cost recovery be treated as a decision factor?

A. While the vast majority of the IRP analysis focuses on assessing the total cost to customers, it is also important to consider the impacts on investors and the Company's ongoing ability to raise capital to fund necessary investments in resources and infrastructure. Because of the reality of the throughput disincentive associated with demand side resources, the Company must consider the financial harm to shareholders that would result from choosing a path that includes significant levels of energy efficiency as part of its decision making process.

Q. Does Mr. Rogers agree that DSM cost recovery is a decision factor?

A. No. Mr. Rogers contends that DSM cost recovery is not a decision factor, but that it is in fact, another consideration under 4 CSR 240-22.010(2)(C). Mr. Rogers further indicates that the Company can quantitatively analyze the DSM cost recovery solution through a filing under the MEEIA rules.

Q. You've said that decision factors are the vehicle for evaluating the kinds of other considerations contemplated by that same section of the rules. What is the nature of the distinction Mr. Rogers makes between decision factors and such "other considerations?"

A. Mr. Rogers argues that the difference is based on whether there is a relevant law already in effect. He states that future environmental regulations may be enacted by passage of new laws. He also states that the ability to fund large plant investments is dependent on passage of new legislation. He contrasts both of these with the MEEIA statute, which was passed in 2009, as the primary reason that DSM cost recovery is not a decision factor whereas large plant financing and environmental regulation are decision factors.

Q. Do you agree with this characterization?

A. No. In the case of environmental regulation, many of the new, pending and proposed federal regulations being evaluated are pursuant to the Clean Air Act, which has been on the books for years. In the case of large plant financing solutions, such a solution was achieved through regulation to support the construction of Iatan 2 without any new legislation. Both of these cases illustrate that while a relevant law may be on the books it often takes subsequent regulatory action to impose a requirement or enable a solution to a particular problem. This is the case with DSM cost recovery. Even though MEEIA has been passed and rules adopted, there must still be positive action on the part of regulators to enable a solution that allows the Company to pursue a more aggressive approach to DSM.

Q. Mr. Rogers also makes a distinction between the Company's analysis of decision factors, pointing to the fact that Ameren Missouri has analyzed the impact of PVRR associated with different paths for environmental regulation but has not analyzed the impact on PVRR of alternative solutions for plant financing or DSM cost recovery. Why were such analyses not performed?

A. In the case of large plant financing, Ameren Missouri performed supplemental financial analysis that showed that alternative ratemaking solutions could be needed and what the impact on revenue and credit ratios would be under both Construction Work in Progress ("CWIP") rate treatment and Credit Metrics Regulation ("CMR"). An explicit analysis of PVRR under these alternatives was not performed primarily because the need is well beyond the implementation period. In the case of DSM cost recovery, it is highly unlikely that a cost recovery solution would result in a significant change in PVRR. This is because the primary disincentive to pursuit of energy efficiency is the throughput disincentive, or "lost revenue" as defined in the IRP rules, which is not captured by an analysis of PVRR. As I've mentioned previously, it is much more important that this disincentive be addressed than how it is addressed. Mr. Rogers correctly points out that specific quantitative analysis of a DSM cost recovery solution can be performed in the context of a filing under the MEEIA rules.

Q. Mr. Rogers makes an additional argument regarding the Company's application of the DSM cost recovery decision factor, indicating that in using this decision factor the Company has actually elevated ROE to the role of "primary selection criterion" above PVRR. Is that correct?

A. No. Just as Mr. Kind did, Mr. Rogers is confusing the use of selection criteria and the other considerations pursuant to 4 CSR 240-22.010(2)(C). He appears to make this link based on his view that an analysis of the impact on PVRR of DSM cost recovery solutions is necessary to satisfy the analysis required by the "other considerations" provision. As I've mentioned, a PVRR analysis of a DSM cost recovery solution is not useful in the way a PVRR analysis of environmental regulation or plant financing solutions would be, nor is such an analysis explicitly required by the IRP rules. Rather, the other consideration being evaluated by Ameren Missouri is the impact on shareholders of the approval or non-approval of a cost recovery solution that addresses the acknowledged disincentives to DSM implementation. As the rules indicate, it is the prerogative of utility decision makers to determine what other considerations are important to decision making, not Staff or any other party.

Q. In articulating Staff's issues with the Company's use of the DSM cost recovery decision factor, Mr. Rogers concludes that since MEEIA rules have been in place since May 30, 2011, and since in his view proper consideration of PVRR minimization and "other considerations" results in selection of Plan R0 (i.e. RAP DSM with moderate environmental regulation) as the preferred resource plan, Ameren Missouri should notify the Commission that it is changing its preferred resource plan to Plan R0 and pursue approval of programs and a DSIM under the Commission's MEEIA rules. How do you respond?

A. Mr. Rogers is certainly entitled to his opinion, but as I've pointed out, the Company has appropriately evaluated the DSM cost recovery issue as an "other consideration" focused on the impact on shareholders. I should also point out once again that the MEEIA rules were adopted several months after Ameren Missouri filed its IRP, which is the subject of this case, so it would have been fruitless at best to include an assessment of potential cost recovery solutions in the IRP. Once again, Ameren Missouri has made clear its intention to make a MEEIA filing in the first quarter of 2012.

Q. Has OPC raised any issues with the Company's use of decision factors similar to those raised by Staff?

A. Yes. Mr. Kind makes the same kind of comparison between decision factors that Mr. Rogers does, indicating that large plant financing requires new legislation and DSM cost recovery solutions do not. As I pointed out in my discussion of Mr. Rogers' points on this subject, such a distinction is without merit because large plant financing solutions have been achieved through regulatory action without the need for new legislation, and a DSM cost recovery solution still requires regulatory action even though the enabling law is already on the books. Mr. Kind and Dr. Vitolo also contend that the DSM cost recovery decision factor "over-rules" the minimization of PVRR and thus has been used as the primary selection criterion. As I've pointed out previously, this is based on an argument that confuses selection criteria with decision factors, or "other considerations" that constrain the minimization of PVRR as provided for in 4 CSR 240-22.010(2)(C).

Q. Mr. Kind contends, unlike Mr. Rogers, that decision factors are not at all provided for in the rules and that Ameren Missouri was required to seek a waiver to use them. Do you agree?

A. No. The "other considerations" provision in 4 CSR 240-22.010(2)(C) provides for just the kinds of considerations for which Ameren Missouri used its decision factors.

Q. Mr. Kind argues that the Company's concerns about DSM cost recovery are "premature" because the MEEIA rules have not yet been tested through a utility filing. Is this valid?

A. No. The fact that the MEEIA rules have not yet been tested, and more relevant to this case the fact that the MEEIA rules were not even in place at the time Ameren Missouri filed its IRP, is precisely why the Company is concerned. As I've stated previously, it is not reasonable to expect utilities to pursue the goals of MEEIA without first achieving the mandate of MEEIA to align utility incentives with helping customers use energy more efficiently. The primary reason the rules have not yet been tested is that they were officially adopted only six months ago. Ameren Missouri has indicated its intent to make a MEEIA filing in the first quarter of 2012 and has officially notified the Commission of its intent.

Q. OPC rebuttal witness Tim Woolf asserts that future environmental regulation is required by the IRP rules to be evaluated as an uncertain factor rather than as a decision factor. What is his basis for asserting this requirement?

A. Mr. Woolf relies on a reading of 4 CSR 240-22.010(2)(C), what I have referred to previously as the "other considerations" provision, and specific sub-parts in that section. He states that item 1 under this section provides for consideration of, "Risks associated with critical uncertain factors," and that item 2 provides for consideration of, "Risks associated with new or more stringent environmental regulations." He then makes a leap of logic to conclude that item 2 is necessarily a subset of item 1, stating that, "Among all the uncertain factors that utilities could consider, the IRP rule lists one in particular that must be considered."

Q. Do you agree with this reading of the IRP rules?

A. Not at all. The "other considerations" provision allows for consideration of a host of issues without limitation. The fact that uncertain factors and risks associated with new or more stringent environmental laws or regulations are listed as separate items in the same list actually reinforces the approach taken by the Company. In addition to the uncertain factors evaluated by Ameren Missouri, the IRP also includes analysis of risk associated with future environmental regulations. Mr. Rogers indicates support for this approach in his rebuttal testimony.

Q. Mr. Woolf further argues, based on his view that any environmental regulation must be evaluated as an uncertain factor, that the Company has not complied with the rules requiring that subjective probabilities must be assigned to the environmental regulation scenarios. Is it required or even useful to assign probabilities to the environmental regulation scenarios identified by the Company?

A. No. As I've pointed out, there is no requirement to treat these kinds of environmental regulations as an uncertain factor, even though environmental regulations can in general be considered as a possible uncertain factor. The kinds of environmental regulations considered in the Company's two scenarios do not lend themselves to evaluation as uncertain factors because it would not be reasonable to make compliance decisions with such regulations based on a probabilistic assessment of their likelihood. While assigning probabilities to the environmental scenarios may be interesting, it provides no benefit to the decision process.

Q. Mr. Woolf points out that Ameren Missouri modeled federal regulation of greenhouse gases as an uncertain factor and that other environmental regulations could have been treated in the same manner. Is this correct?

A. No. The potential greenhouse gas regulations modeled as an uncertain factor do not require explicit compliance on a fleet, plant, or unit basis to achieve desired emission reductions. Rather, they serve as factors that influence the performance of and preference for resources in the marketplace. Any of the alternative resource plans or candidate resource plans modeled by the Company would still be valid under all of the potential futures for greenhouse gas regulation. Some would simply perform better than others depending on the particular form of regulation. In contrast, evaluating plans that are specifically designed to comply with one environmental regulation regime under a completely different environmental regulation regime would not be valid.

Q. Mr. Woolf questions the Company's argument that such an evaluation would be invalid by asserting that it is perfectly reasonable to design plans to meet some set of criteria and that the Company's position implies that it is only valid to evaluate each resource under the specific probability tree branch for which it was designed. Is this an accurate characterization of the Company's position?

A. No. Mr. Woolf chooses to ignore the difference between assessing the performance of valid resource plans through probability tree analysis and the inconsistency of evaluating resource plans using probability tree branches for which certain resource plans may not even be valid. The Company is not suggesting that each plan can only be evaluated using one branch of the probability tree, and the Company has not performed its analysis in this manner. The question is one of simple validity and consistency between plans and the analytical context, not one of variation in performance of plans that are valid under a broad range of circumstances.

Q. Mr. Woolf also attempts to argue that the scorecard used by the Company to inform its preferred plan selection is invalid because it includes comparison of plans that are valid only for one environmental regulation scenario or the other. Is this a valid concern?

A. No. The fact that the plans appear on the same scorecard does not invalidate the scorecard. As demonstrated in the Company's decision roadmap in figure 1.15 in Chapter 1 of its IRP filing, Ameren Missouri has made clear distinctions between the plans under different environmental regulation scenarios in selecting its preferred resource plan and contingency plans. The scorecard shows all plans under moderate environmental regulation on the left and all plans under aggressive environmental regulation on the right for ease of valid comparisons. Putting them on a single page simply makes it easier to see all the candidate resource plans and scores.

Q. Is there any conflict between the arguments made by Mr. Woolf regarding the alleged scorecard issues and the evaluation of environmental regulation as a decision factor?

A. Yes. Mr. Woolf's argument regarding the need for bifurcation of the scorecard to avoid comparison of plans under mutually exclusive environmental scenarios is in direct conflict with his argument in favor of evaluating environmental regulation as an uncertain factor. He is correct that the two different environmental regulation scenarios are mutually exclusive and that plans under one scenario are not valid under the other. This is precisely why it is <u>not</u> appropriate to evaluate these particular environmental regulations as uncertain factors.

Q. Has DNR raised any issues with the Company's use of decision factors similar to those raised by Staff or OPC?

A. Yes. Mr. Noller argues, just as Mr. Rogers has for Staff, that Ameren Missouri is required to indicate the cost recovery treatment it would need in order to select a plan with the RAP DSM portfolio as its preferred resource plan, that the solution itself must be evaluated as an "other consideration" pursuant to 4 CSR 240-22.010(2)(C), and that evaluation of the impact of lost revenue on return on equity is insufficient to meet the analysis requirement of the "other considerations" provision. For reasons I've stated in response to Mr. Rogers' arguments, the evaluation of DSM cost recovery issues is appropriate and complies with the IRP rules.

Q. Mr. Noller further contends that Ameren Missouri must not only specifically evaluate explicit DSM cost recovery options, but that it also must identify just how much financial harm would be acceptable to the Company in making its preferred plan selection. Mr. Noller cites 4 CSR 240-22.010(2)(C) and asserts that this provision requires a quantitative analysis demonstrating the outcomes and tradeoffs under which it no longer applies. Is this required?

A. The IRP rule cited by Mr. Noller includes no language about demonstrating outcomes and tradeoffs for which the constraint applies. Furthermore, the Company is not inclined to inflict long-term harm upon its shareholders to any degree. Requiring the Company to specify how much financial harm it is willing to accept is like asking someone how much of their arm they would be willing to have cut off. The Company's analysis has established that there is significant financial harm that results from implementation of DSM under the existing regulatory treatment. As I've pointed out previously, it is more important that the disincentives associated with DSM implementation be addressed than how they are addressed. In that sense, the outcomes are essentially a binary choice – either they are addressed or they are not. Addressing the disincentive means the financial harm associated with lost revenue is fully mitigated and a modest incentive is in place to encourage aggressive pursuit of all cost effective demand side savings.

Q. Mr. Noller points out that the Company's preferred plan still results in some level of financial harm to the Company that did not preclude its selection as the preferred resource plan. How do you respond?

A. Mr. Noller is correct that the preferred resource plan still results in financial harm to the Company. This is the primary reason that Ameren Missouri has changed its preferred resource plan to further limit the short-term financial harm associated with the current regulatory treatment, while maintaining some level of infrastructure for DSM implementation, until a constructive solution can be achieved through a MEEIA. The preferred plan was selected because it was expected to produce the least financial harm of the choices under consideration - that is of the 14 candidate resource plans. The Company was also in the process of seeking relief from lost revenues in the rate case that was in progress at the time of the IRP filing. Such relief would have allowed the Company to continue implementation of programs at the level in the preferred plan until a longer term solution could be achieved through a MEEIA filing. The Company's request for that relief was denied.

Q. Mr. Noller argues that the requirements in the rule associated with analysis of uncertain factors are also required for decision factors. Is this the case?

A. No. Mr. Noller's arguments regarding the application of requirements for uncertain factors to decision factors is based solely on the superficial similarity of the terms. As I have noted, decision factors provided a vehicle by which the Company evaluated "other considerations" that may constrain the minimization of PVRR in selecting the preferred resource plan. The section of the rule that provides for evaluation of "other consideration" does not list any requirements that must be applied, much less that they be subjected to the same type of evaluation as critical uncertain factors.

Q. Mr. Noller expresses confusion as to how the Company determined whether a factor whose outcome is uncertain at the time of the analysis is a candidate critical uncertain factor or a candidate decision factor. Can you clear up this confusion?

A. Yes. The key point in time that establishes whether some consideration is an uncertain factor or a decision factor is the time of the <u>decision</u>, not the time of the analysis. As I've explained, for decision factors the condition drives the decision. For uncertain factors the condition follows the decision.

Q. Is a "systematic process" for identifying decision factors necessary, as Mr. Noller suggests, or useful?

A. No. The establishment of decision factors is a direct outcome of the implications of the analysis, whereas uncertain factors are inputs to the analysis. Since DNR raised this concern in its comments filed June 23, 2011, not one single other consideration has come to my attention from anyone else that could or should be considered a decision factor relevant to Ameren Missouri's 2011 IRP analysis and decision process.

Q. Mr. Noller further asserts that the Company should have requested a waiver that laid out the process by which decision factors are identified and screened. Is this correct?

A. No. For reasons I've already explained, a waiver is not required, and a process for identifying and screening decision factors is neither necessary nor useful.

Q. Mr. Noller contends, based on his argument that decision factors must meet the same requirements as uncertain factors, that the Company's evaluation and selection of the preferred resource plan and contingency plans has not included consideration of the, "ranges or combinations of outcomes for decision factors that 'define the limits within which the preferred resource plan is judged to be appropriate' and the ranges or outcomes for the decision factors that constitute 'extreme outcomes' triggering a move to a different plan." He goes on to state that the company would also be required to explain 'how these limits were determined' and why 'these options are judged to be appropriate responses to the specified outcomes'." Is he correct?

A. No. Ameren Missouri clearly considered the outcomes for decision factors in formulating its Decision Roadmap as presented in Figure 1.15 in Chapter 1 of the Company's IRP filing. As to the notion of "extreme outcomes" for decision factors, this concept does not apply since decision factors represent threshold considerations.

Q. Mr. Noller expresses concern over the whole concept of decision factors, noting that they play a central role in the Company's decision process while at the same time uncertain factors are assigned a "relatively peripheral role". Did the company give undue attention to decision factors at the expense of uncertain factors?

A. No. In fact, the analysis associated with decision factors was not performed until late in the process after all integration and risk analysis had been performed. The integration and risk analysis focused very sharply on identifying, characterizing, screening and employing uncertain factors to provide a robust evaluation of the alternative and candidate resource plans under uncertainty. The reason that uncertain factors play a less important role in the Company's preferred plan selection process is simply an outcome of all the analysis that was performed.

That analysis showed that uncertain factors had little influence on the performance of the preferred resource plan relative to the other candidate resource plans. At the same time, the role of the decision factors became central precisely because of the decisions under consideration and the specific conditions evaluated.

Q. Mr. Noller argues that while the Company has indicated that other parties appear to grasp the concept and role of decision factors and the decision process used by Ameren Missouri that these other parties have in fact expressed concerns with the Company's documentation of its decision process. Is this a valid characterization of the other parties' concerns regarding the Company's decision process?

A. No. The concerns expressed by Staff and OPC were specifically focused on documentation provided to the Ameren and Ameren Missouri Boards of Directors. Mr. Rogers has indicated in his rebuttal testimony that the Company's August response has adequately dissipated their concern. OPC continues to maintain their concern, which I address in the next section of my testimony. While other parties express specific concerns with decision factors and the decision process, no other parties have indicated that what the Company has done in selecting its resource acquisition strategy is not clear.

V. AMEREN MISSOURI'S DECISION PROCESS

Q. Please summarize the issues raised in Staff's rebuttal testimony with respect to Ameren Missouri's decision process.

A. Mr. Rogers maintains that Ameren Missouri's analysis of the Expected Value of Better Information ("EVBI") does not comply with the IRP rules, that Ameren Missouri's scorecard scores are not logically consistent, and that Ameren Missouri must consider the indirect economic development impacts in addition to the direct economic impacts.

Q. Mr. Rogers supports his assertion that the Company's EVBI analysis does not comply with the rules by indicating that exclusion of Plans R0 and B3 from the EVBI analysis is inappropriate because it would show that customers would realize hundreds of millions or billions in PVRR savings over the planning horizon. Is this correct?

A. It is correct that the analysis would show there is a tremendous savings opportunity represented by plans with the RAP DSM portfolio. However, this is established elsewhere in the Company's analysis, and the EVBI analysis the Company performs is more relevant to the rule requirement for EVBI.

Q. What is the relevant rule requirement and how has the Company met the requirement?

A. 4 CSR 240-22.070(8) states that, "The utility shall quantify the expected value of better information concerning at least the critical uncertain factors that affect the performance of the preferred resource plan, as measured by the present value of utility revenue requirements." Ameren Missouri performed an evaluation of EVBI that provides insights into the performance of the preferred plan relative to plans other than Plan R0, which was clearly shown to result in significantly lower PVRR than the preferred resource plan. Modifying the Company's analysis as Staff suggests would simply tell us something that we already know without highlighting the secondary considerations regarding the relative performance of the other resource plans. It is noteworthy that Staff used Ameren Missouri's workpapers to perform their revised EVBI analysis without changing any of the logic used. This implies that Staff believes the methodology is sound and that its only concern is with the exclusion of a single plan and the redundant and unremarkable conclusion that the RAP DSM plan would result in significant savings.

Q. Does Mr. Rogers present any new information with respect to Staff's concerns regarding the scorecard scores?

A. No. For that reason I will simply direct the Commission's attention to page 102 of the response Ameren Missouri filed in this case on August 22, 2011 rather than repeat those same arguments here.

Q. Does Mr. Rogers present any new information with respect to Staff's concerns regarding the Company's use of direct economic impacts in assessing the economic development merits of candidate resource plans?

A. No. He simply states that Staff disagrees with the Company's response and that, "it is the Company's responsibility to provide a complete and thorough analysis of economic development, if the Company is going to use economic development as a policy objective during its decision process." He does not directly respond to the Company's argument that the analytical scope of an economic development assessment could increase exponentially without adding significantly to the usefulness of the information.

Q. Please summarize the issues raised in OPC's rebuttal testimony with respect to Ameren Missouri's decision process.

A. OPC rebuttal witness Ryan Kind argues that Ameren Missouri's management has provided information to the Ameren and Ameren Missouri Boards of Directors that demonstrate a clear bias against energy efficiency. Dr. Vitolo argues that the scorecards used by Ameren Missouri to screen alternative resource plans and assess candidate resource plans for purposes of selecting the preferred resource plan are flawed.

Q. On what basis does Mr. Kind allege that misleading information was provided to the Ameren and Ameren Missouri Boards of Directors?

A. Mr. Kind relies on copies of presentations made to each Board in which the preferred resource plan and contingency plans selected by Ameren Missouri's senior management were presented.

Q. What does Mr. Kind allege is misleading in these presentations?

A. There are two items he alleges are misleading. He first alleges that presentations to the Ameren Corporation ("Ameren") and Ameren Missouri Boards of Directors incorrectly characterize the preferred resource plan as the "lowest cost resource plan" and that this language was chosen to bias plan selection against energy efficiency.

Q. Is Mr. Kind's characterization correct?

A. No. First, the Ameren Missouri Board presentation did not refer to the preferred resource plan as the "lowest cost resources plan"; it was simply called the "preferred resource plan." Second, the language used in the Ameren Board presentation was intended to characterize the preferred resource plan as the lowest cost plan available without changes in regulatory treatment. This same language was included in Ameren Missouri's public "Summary Document" on page 10, where the preferred resource plan was described as, "The lowest cost resource plan for our customers under Missouri's current regulatory framework."

Q. What was the second item identified by Mr. Kind?

A. The second item was a table in which four plans were compared. The preferred resource plan was listed as the base for comparison. This plan reflected compliance with the requirements of the moderate environmental regulation scenario. The other three plans reflected compliance with aggressive environmental regulation and included retirement of the Meramec coal plant. These plans were shown to illustrate the key options should environmental regulation tend toward the Company's aggressive scenario. The primary resources in the three plans were 1) RAP DSM, 2) Gas Combined Cycle (one each in service in 2016 and 2026), and 3) Gas Combined Cycle (in 2016) and 30% Owned Nuclear (in 2025). The characterization of these plans was presented in relation to the preferred resource plan, which exhibited lower cost due to the environmental regulation assumptions. This distinction was made clear on a prior slide in the same presentation which showed the preferred resource plan with moderate environmental regulation and the other three plans with aggressive environmental regulation. Mr. Kind's premise is that the presentation demonstrated a bias against energy efficiency, but the table he points to indicates that the energy efficiency plan under aggressive environmental regulation is <u>less</u> costly than the other two plans under the same environmental regulation.

Q. Mr. Kind mentions that Staff raised the same issue. Is Staff still concerned after reviewing the Company's August response?

A. No. Mr. Rogers indicates in his rebuttal testimony that the Company's response on this issue was acceptable to Staff and dissipates his concern.

Q. In contrast, Mr. Kind raises additional concerns with the Company's response. What are they?

A. Mr. Kind expresses concern with the Company's characterization in its response that Ameren Missouri's senior management made the final decisions regarding the resource acquisition strategy. He questions why, if Ameren Missouri's senior management had already made these decisions, the resource acquisition strategy was reviewed with the Ameren Missouri Board and why the IRP included documentation of the Board's approval of the resource acquisition strategy. The answer is simple – management makes decisions and recommends them to the Board for approval. This is quite common in most corporations and companies, including Ameren Missouri.

Q. Mr. Kind also takes issue with Ameren Missouri's statement that, "most members of the Ameren Missouri Board were present at meetings of Ameren Missouri's Senior Leadership Team in which all candidate resource plans were discussed and final selection of the preferred resource plan was made," and asserts that the Company was not able to support this statement in responding to OPC DR No. 2034. How do you respond?

A. Mr. Kind relies on the Company's response to OPC DR No. 2034 (attached as Schedule MM-E5) as the basis for alleging that the Company "was unable to provide information that supported this assertion." However, in response to OPC DR No. 2035 (attached as Schedule MM-E6), which separately and specifically asked for documents demonstrating the Company's response to OPC DR No. 2034, the Company provided copies of emails sent to all invitees for the meetings in question and listing their names. The names of the members of the Ameren Missouri Senior Leadership Team and/or the Ameren Missouri Board of Directors listed in response to OPC DR No. 2034 all appear as addressees on the emails provided in response to OPC DR No. 2035. These emails demonstrate that meetings were held on October 25, November 8, and November 15, 2010, and that the objectives of these meetings were to review the results of analysis of the candidate resource plans and select the preferred resource plan.

Q. You mentioned that Staff's concern regarding information provided to the Ameren Missouri Board had dissipated. Did Staff indicate what in the Company's response was persuasive in addressing their concern?

A. Yes. In response to Ameren Missouri's data request Ameren-MPSC-0031 (attached as Schedule MM-E7) on this question, Mr. Rogers indicates specifically that it was the knowledge that members of the Ameren Missouri Board were directly involved in discussions of all the candidate resource plans and the selection of the preferred resource plan that addressed their concern.

Q. Mr. Kind charges that the Company's response to OPC DR No. 2034 was not fully responsive and that Public Counsel intended to follow up on this response and attempt to obtain a fully responsive answer. Has OPC requested additional information or clarification regarding the Company's response to OPC DR No. 2034?

A. No.

Q. Dr. Vitolo raises issues with the scorecards developed and used by Ameren Missouri for purposes of screening alternative resource plans and supporting selection of the preferred resource plan. Please summarize Dr. Vitolo's key concerns.

A. With respect to the Company's alternative resource plan screening scorecard, Dr. Vitolo asserts that the metrics selected by the Company and the scoring system used to assess them are flawed. With respect to the Company's preferred plan selection scorecard, Dr. Vitolo asserts that the use of integer-based scores is inappropriate, that the change in the weights assigned to some measures is inappropriate and that scores on the scorecard are inaccurate.

Q. Dr. Vitolo indicates that it is inappropriate to assess the economic development benefits of the nuclear resource evaluated by the company based on 100% of the jobs associated with construction and operation of such a facility. Do you agree?

A. No. The potential nuclear resource evaluated by Ameren Missouri represents a unique opportunity because Ameren Missouri owns the site at which the unit would be located. Clearly, siting a new nuclear generation facility is not a trivial matter, and there are clear advantages to siting new nuclear generators where one is already in operation. If not for Ameren

Missouri's participation and commitment, this resource could not be developed. Therefore, 100% of the economic impact was attributed to the plan including the nuclear plant.

Q. Dr. Vitolo argues that other potential partial owners could conceivably take credit for all the jobs created in the same way Ameren Missouri does, or take credit for some share of the jobs based on their potential ownership percentage. Are you aware of any claims by other potential owners to this effect?

A. No. Based on his response to Company data request Ameren-OPC-018 (attached as Schedule MM-E8), neither is Dr. Vitolo. While I understand Dr. Vitolo's concern, I maintain that the potential new nuclear resource evaluated in this IRP represents a unique opportunity and that Ameren Missouri's participation is a necessary condition to realizing that opportunity.

Q. Dr. Vitolo also criticizes the Customer Satisfaction metric used by the Company, indicating that using a combination of average rate increase and largest single rate increase may lead to nonsensical results and using a theoretical example to illustrate. How do you respond?

A. This was not a factor in selecting candidate resource plans from the alternative resource plans. Candidate resource plans were ultimately determined through a critical review of the detailed analysis results rather than through the screening scorecard's composite scores, as indicated in the Company's IRP filing in Chapter 9, pages 10 and 11. That said, the Company is aware that scoring results must be reviewed in light of the limitations of specific quantitative measures.

Q. Using his theoretical example as a basis, Dr. Vitolo concludes that, "A Customer Service metric that produces such nonsensical results must be revised." Did Dr. Vitolo present any information indicating that the scores shown by the Company for the Customer Satisfaction metric were unreasonable in the same way that he illustrates using his theoretical example?

A. No. Ameren Missouri did ask in Company data request Ameren-OPC-019 (attached as Schedule MM-E9) whether such an evaluation was performed using the actual IRP analysis results. Dr. Vitolo indicates in response that such an evaluation was performed. It is unclear as to why the results of this analysis were not presented, especially if they support his conclusion.

Q. Dr. Vitolo asserts that in changing the weights assigned to the different Policy Objectives between the screening phase and selection phase is inappropriate. What reasoning does he provide to support this assertion?

A. Dr. Vitolo provides an example in which runners are selected from a larger group, first by selecting the 14 tallest runners then by selecting the fastest among those. He indicates that the fastest runner from the original group has probably not been selected since the tallest runners selected in the first pass are not likely the fastest runners.

Q. Is such a comparison to Ameren Missouri's plan screening and selection valid?

A. No. In evaluating alternative resource plans, the Company sought to evaluate their performance on a range of metrics to support multiple Policy Objectives, which themselves are often in conflict with one another. One of the objectives of the alternative resource plan evaluation was to ensure a diverse set of plans and resource options would be passed on as candidate resource plans for risk analysis, which would consider a broader range of uncertainty than is practical when evaluating 216 alternative plans. This was the primary rationale for including the Energy Efficiency metric on its own with a 10% weighting in the screening phase. It was actually intended to bias the scoring toward energy efficiency to ensure consideration of plans with aggressive energy efficiency that might not score well on other measures such as average rates.

Q. Did Dr. Vitolo present any information beyond his, "admittedly silly example," that indicates that any of the alternative resource plans not carried forward by the Company into risk analysis as candidate resource plans should have been considered candidate resource plans?

A. No. He simply concludes based only on his theoretical example that the Company, "almost certainly selected a candidate resource plan that wasn't optimal under either of their scoring criteria."

Q. Dr. Vitolo asserts that the Company's use of unitized scores is flawed because the lowest score in each category is not zero. How do you respond?

A. This was not a factor in selecting candidate resource plans from the alternative resource plans. As I mentioned previously, candidate resource plans were ultimately determined through a critical review of the detailed analysis results rather than through the screening scorecard's composite scores. That said, the Company understands that efforts to create composite scores across a range of different metrics that cannot directly be compared can introduce potential issues that must be considered.

Q. Dr. Vitolo indicates that the issues he raises with the unitized scoring approach can easily be fixed and can provide, "correct and accurate measurement," on which decisions can be based. Do you agree?

A. No. While it may very well be preferable to implement unitized scoring in the way Dr. Vitolo suggests, it does not necessarily follow that such changes bring an absolute measure of correctness or accuracy. Suppose that the Company had included an alternative resource plan using utility-scale solar facilities built in Missouri as the primary resource option, and suppose those plans yielded results for PVRR that were significantly higher than all the other alternative resource plans. By including this plan, the results of the unitized scoring would necessarily change because this plan would now be assigned a score of zero, and the other plans would be scored relative to it and the top scoring plan. The Company has recognized that scorecards themselves are useful tools with limitations and has thus used them accordingly.

Q. Dr. Vitolo expresses concerns with the Company's final scorecard methodology as well. Please summarize these concerns.

A. Dr. Vitolo asserts that it is inappropriate to represent Policy Objectives using integer scores from 1 to 5, that certain scores are unreasonable, and that an appropriate scorecard which operates in a manner that he believes is correct can be the primary determinant for resource decisions.

Q. Dr. Vitolo argues that using an integer-based scoring approach, as Ameren Missouri did, unnecessarily sacrifices precision. Do you agree?

A. No. The integer-based scoring approach provides flexibility that the unitized scoring approach based on direct analysis results does not. For example, Ameren Missouri included a Policy Objective to assess financial and regulatory aspects of candidate resource plans. This included consideration not only of numerical financial measures but also subjective measures for considerations such as the potential for stranded cost, which might be a significant issue when considering pollution control retrofits at existing coal plants. Using a discrete, integer-based scoring approach allows for consideration of issues that cannot readily be quantified. Most people that have made a major purchase have probably seen or consulted sources such as Consumer Reports, which routinely rates various consumer products across a range of considerations. Scores are assigned based on a handful of discrete ratings, including an overall rating. The evaluation also typically includes a narrative description that elaborates on the ratings and provides qualitative discussion regarding the favorable and unfavorable aspects of the product. This approach provides easily digestible information for a decision maker without getting too bogged down in the numerical measurements that underlie the assessment. This rating system is not unlike the scoring approach the Company has taken.

Q. But doesn't the lack of precision mean that the scorecard will recommend the wrong resource plan?

A. The scorecard itself does not select the resource plan. It can only provide information to decision makers on which they can base their decision. For that reason, it is more important that the scorecard be comprehensive than that it be precise in the way Dr. Vitolo advocates. At the same time, the scorecard must be viewed in the context of precise information that supports the assessment represented in the scorecard. Ameren Missouri's senior management team was provided with a host of information, including dashboard representations of each candidate resource plan which present precise numerical information associated with each of the measures used to represent the Policy Objectives. Dashboard representations for each candidate resource plan are presented in Appendix B of Chapter 10 of the Company's IRP filing. This information was further supplemented with specific analysis of numerous quantitative measures of each plan and presented to Ameren Missouri's management during discussions of the candidate resource plans and selection of the preferred resource plan.

Q. If the scorecard wasn't used to directly and systematically select the preferred resource plan, what is its value?

A. The scorecard provided a useful vehicle for discussing the various performance attributes of each of the candidate resource plans and a for deeper discussion of analysis results and implications. Dr. Vitolo seems to imply that a scorecard can be constructed which flawlessly translates a multitude of information and analysis into a reasonable, considered decision. I contend that a scorecard can only inform a decision and that the reason and consideration to reach an appropriate decision comes with thorough consideration of all the relevant information, qualitative and quantitative, placed in proper context.

Q. Dr. Vitolo asserts that even under a scorecard approach that he considers inappropriate, Ameren Missouri's scores are not reasonable. He presents charts of scores for economic development and cost (PVRR) and raises concerns with particular scores. How do you respond?

A. Scorecards always have limitations, and one that thoroughly examines a wide range of quantitative and qualitative considerations, as the Company's does, will always reflect a certain degree of subjectivity. Regarding the economic development scores, I must point out that two of the scores shown in Schedule TJV-4 attached to Dr. Vitolo's rebuttal testimony are in error. Plan R1's score for economic development in the Company's scorecard was 4, not 3, and plan B4's score was 1, not 3. With those corrections, Schedule TJV-3 would show that the Company overstated the scores for the plans with RAP DSM (Plans R0, R1, R2, and R3), accepting Dr. Vitolo's approach to scoring. Similarly, Schedule TJV-5 appears to imply that the Company's scores for cost are overstated for plans R1, R2 and R3. Dr. Vitolo's evaluation of the scoring appears to support the notion that the Company's decision process was biased in favor of energy efficiency, rather than against it as Mr. Kind asserts in his discussion of materials presented to the Ameren and Ameren Missouri Boards.

Q. Dr. Vitolo claims that the effective weight assigned to PVRR was 7.1% rather than 30%, as the Company has stated. Is this true?

A. No. First, Dr. Vitolo has revised his estimated effective weight to 25.7%, as shown in the response he prepared to Company data request Ameren-OPC-021 (attached as Schedule MM-E10). Second, Dr. Vitolo's revised calculation of the effective weight is misleading because he applies a unitization methodology to the integer-based scores. As I mentioned previously, the integer-based scores provide a view of the relative advantages and disadvantages of the various candidate resource plans across the range of Policy Objectives and their associated metrics and considerations. Applying a unitization approach to the scores distorts the very meaning of the scores. Even so, his revised assessment shows that PVRR retains the highest weighting of all the measures used to assess the candidate resource plans, although by a slightly smaller margin.

Q. Has DNR raised issues with the Company's decision process?

A. Yes. Mr. Fratto contends that Ameren Missouri has not treated demand side and supply side options equally, as required by 4 CSR 240-22.010(2)(A), based on the level of DSM included in the Company's preferred resource plan. His arguments rely heavily on criticisms of the weighting the Company applied to PVRR and the use of the DSM Cost Recovery decision factor used by the Company as an "other consideration" pursuant to 4 CSR 240-22.010(2)(C). I've addressed those criticisms previously in my surrebuttal testimony.

Q. Does Mr. Fratto recognize that the Company evaluated multiple portfolios and carried forward plans into risk analysis that included both the RAP and MAP DSM portfolios?

A. Yes. Mr. Fratto contends that all of this analysis is meaningless because the Company selected a preferred resource plan with a level of DSM that is less than the RAP portfolio. Essentially, Mr. Fratto is saying that the only measure of equal treatment for demand side resources is that they be included in the preferred resource plan at levels that at least equal realistic achievable potential. In doing so, he ignores the fiduciary responsibility of the Company's management to its shareholders and the as yet unproven opportunity to achieve the core mandate of MEEIA, aligning utility interests with customer interests in energy efficiency.

Q. Mr. Fratto expresses frustration with the fact that the Company has not analyzed the impacts of specific cost recovery structures, quipping that Ameren Missouri, "apparently has no information regarding the DSM cost and lost revenue recovery mechanisms of utilities that operate in many of the states with the most successful DSM programs," based on the Company's responses to data requests DNR 0154 and 0155. Is this an accurate statement?

A. Not entirely, because it implies that Ameren Missouri is not aware of various cost recovery and incentive structures used in the U.S. Data request DNR 0154 (attach as Schedule MM-E11) asked if Ameren Missouri had itself conducted analyses, reports or studies of DSM cost recovery in other states. Data request DNR 0155 (attach as Schedule MM-E12) asked whether the Company had information specifically regarding the "top twenty" investor owned utilities in the U.S. that have saved the most kWh on an annual basis with DSM programs and whether they have certain cost recovery or incentives. While Ameren Missouri had not conducted its own studies or reports on this subject, the Company does have information regarding cost recovery structures available in different states, including surveys of state energy efficiency regulatory frameworks published and periodically updated by the Edison Foundation's Institute for Electric Efficiency. These and other assessments of regulatory frameworks to encourage utility energy efficiency programs are not always organized by utility with rankings that identify the top twenty based on some measure of savings.

Q. If Ameren Missouri has such information, then why didn't the Company evaluate specific cost recovery structures in its IRP?

A. There are three main reasons, which I've discussed previously in my surrebuttal testimony. First, it is more important that disincentives be addressed than how they are addressed. I have pointed out that PVRR analysis by its nature does not reflect the reality of the throughput disincentive and that the Company has performed specific quantitative analysis that demonstrates the real financial impact of the throughput disincentive on equity returns. Second, the rules implementing MEEIA were in a state of flux at the time the Company was performing its IRP analysis and were not finalized until several months after the IRP was filed. Therefore, coming up with potential structures that would satisfy the requirements of the rules that were later adopted would be like trying to hit a moving target. Third, and most importantly, specifying any cost recovery mechanism in the IRP would have no effect as the Commission has made it clear that the only avenue by which changes in DSM cost recovery can be pursued is through a filing under its MEEIA rules, which again only went into effect in May of this year.

Q. Does Mr. Fratto contend that the IRP rules require the Company to perform analysis of DSM cost recovery mechanisms?

A. No. In fact, Mr. Fratto states that, "GDS realizes that the IRP rules do not require consideration of DSM cost recovery mechanisms…"

Q. Mr. Fratto characterizes the Company's approach with respect to evaluation of DSM cost recovery by saying that, "Ameren Missouri is asking the Commission to approve a preferred IRP plan that does not represent the lowest PVRR until such time that it can decide if it will propose a DSM cost recovery mechanism in a MEEIA filing, and then determine after that process is completed and a cost recovery mechanism is possibly approved, how that will impact the preferred resource plan…" Is this a fair characterization?

A. No, for several reasons. First, it implies that Ameren Missouri is essentially dragging its feet in attempting to find a cost recovery solution that will support the pursuit of the MEEIA goal of achieving all cost-effective demand side savings. This is simply wrong. The rules implementing MEEIA were adopted in May of this year. These are new rules with very specific requirements and provisions that are unique to Missouri, so what works in other states may not be possible, and likely isn't possible, here. At the time the rules were adopted, Ameren Missouri had a pending rate case before this Commission in which it was requesting interim relief to continue its existing DSM programs until a filing under the MEEIA rules could be made. The Company indicated at that time that it could not continue funding its programs at or near their existing levels without such relief. The Company has recently officially notified the Commission of its intent to make a filing under the MEEIA rules for approval of programs and cost recovery. To argue as Mr. Fratto does is to ignore the specific history of the Company's efforts to find a solution to financial disincentives to DSM implementation. Second, he also mischaracterizes the Company's approach by suggesting that the Company intends to drag out the process by waiting until cost recovery is approved to begin determining how its plans will change. The Company intends, and the MEEIA rules actually require, that it will file for both approval of programs and cost recovery when it makes the filing it has notified the Commission it intends to make. After the conclusion of that case, and within 60 days of the decisions the Company makes as a result of that case, the Company will notify the Commission of any changes in its preferred resource plan and resource acquisition strategy. Finally, Mr. Fratto suggests that Ameren Missouri is asking the Commission to approve its preferred resource plan. It is not. In fact, the Missouri IRP rules (4 CSR 240-22.080(13)) provide only for findings by the Commission that Ameren Missouri's IRP filing, "either does or does not demonstrate compliance with the requirements of this chapter," and that Ameren Missouri's resource acquisition strategy, "either does or does not meet the requirements stated in 4 CSR 240-22.010(2)(A)-(C)."

Q. Has NRDC raised any concerns with the Company's decision process?

A. Yes. NRDC rebuttal witness David Schlissel asserts that the probabilities assigned by the Company's decision makers to the branches on the probability tree are, "based on speculation," and shouldn't be. Mr. Mosenthal asserts that the Company, "biased its analysis from the start," to select its preferred plan.

Q. Mr. Schlissel argues that the probabilities assigned to the branches on the probability tree by the Company's decision makers are, "based on speculation." Is he correct?

A. Of course. To assess the likelihood of some set of potential futures requires by its very nature that those making the decisions speculate. In fact, the IRP rules specify that risk analysis be performed based on, "subjective probabilities assigned by utility decision makers." It is not clear whether Mr. Schlissel is by implication proposing an alternative approach which may or may not require powers of absolute clairvoyance.

Q. Mr. Schlissel argues that the Company has claimed or implied that the Energy Bill Mandates the Company has represented in part of its probability tree are inconsistent with the Carbon Cap-and-trade regulation represented in another part of the probability tree. Is this true?

A. No. Ameren Missouri relied on its own experts who are directly involved in relevant policy issues to assess the potential paths and probabilities associated with its critical uncertain factors, including federal carbon policy. The scenarios presented by the Company necessarily represent the views of its experts and may simply be different that the views of others. Differences in viewpoints are not a deficiency under the Commission's IRP rules.

Q. Mr. Schlissel also argues that the carbon prices assumed by the Company under a cap-and-trade regime are too low, pointing to a report by Synapse Energy Economics. Isn't this a valid concern?

A. No. Mr. Schlissel continues to argue that the Synapse report shows that the Company's carbon price assumptions are unreasonable in spite of the fact that the report filed by OPC and co-authored by representatives of Synapse indicated that the assumptions were in a reasonable band. Mr. Schlissel does not explain why the "speculation" employed by Synapse in determining its forecasts for carbon price is acceptable while "speculation" by Ameren Missouri decision makers is not. Regardless, the Company's views are necessarily its own and provide a reasonable basis on which to assess potential resource options and plans.

Q. Mr. Mosenthal argues that the Company has not treated demand side resources on an equivalent basis with supply side resources because it did not evaluate all of its existing resources in the same manner in which it evaluated new demand or supply side resources. Do you agree?

A. No. Ameren Missouri's IRP analysis has evaluated demand side resources on an equivalent basis with supply side resources as described in its IRP filing and in its August response to the concerns raised by the other parties. Mr. Mosenthal presents an extreme approach to resource planning that the Company believes is both highly impractical and not intended by the IRP rules. I would expect that such an approach would be unduly burdensome and not result in any further substantive conclusions beyond those drawn from the analysis the Company performed.

Q. Mr. Mosenthal argues that demand side resources were also treated on a non-equivalent basis because Ameren Missouri did not include all demand side resources even if they were not needed to meet peak load and reserve requirements. Did the Company include new supply side resources that were not needed to meet peak load and reserve requirements?

A. No. The Company only included the resources needed, demand side or supply side, to meet peak load and reserve requirements in constructing its alternative and candidate resource plans. Mr. Mosenthal's argument in this regard is an extension of his premise that all existing supply side resources should be evaluated and compete for a place in the Company's resource portfolio as though they did not already exist.

Q. Mr. Mosenthal argues that Ameren Missouri's selection criteria and analysis were designed to bias the selection of the preferred plan against energy efficiency. How do you respond?

A. This is simply not the case. The Company's analysis was conducted in compliance with the IRP rules and specifically in a manner that treats demand side resources on an equivalent basis with supply side resources. The Company's approach in this specific regard is laid out in detail in its August response. Mr. Mosenthal indicates that the Company has argued that changes in its scoring approach would not result in a change in the preferred plan and charges that this is evidence of the bias he imagines. This too is not the case. The Company's response merely reflects the fact that changes in scoring would not address the concerns represented by the DSM Cost Recovery decision factor, an "other consideration" the Company evaluated in making its decision, which was applied after all of the other analysis was completed.

Q. Mr. Mosenthal asserts that the Company's emphasis on DSM cost recovery in selecting its preferred plan demonstrates, "Ameren's view of the impossibility of achieving a satisfactory DSM cost recovery framework." Is this a fair characterization?

A. No. Ameren Missouri not only believes it is possible to achieve a satisfactory cost recovery framework for DSM, the Company has previously indicated its intent to make a filing under the MEEIA rules for approval of programs consistent with its RAP DSM portfolio and supportive cost recovery and incentives and has officially notified the Commission of this intent. In its IRP filing and then in its August response, Ameren Missouri has simply indicated that appropriate cost recovery is a necessary condition to a commitment on the part of the

Company to pursue all cost-effective demand side savings. As I've mentioned before, and as Ameren Missouri witness Warren Wood has stated in his surrebuttal testimony, the core mandate of MEEIA must be achieved in order to achieve its primary goal.

Q. Mr. Mosenthal characterizes the Company's view of lost revenues as a, "risk for stockholders," that represents the Company's primary concern. Is this an accurate characterization?

A. No. Calling lost revenues a "risk" as if they may not occur and then dismissing them if they do ignores both the reality of the existing regulatory treatment for DSM and the critical need for capital to fund utility investment. Lost revenues are a certainty under the existing rate treatment under which Ameren Missouri operates. The amount of lost revenue is dependent on a number of factors including the frequency of rate cases, but it is a reality that it will occur. Mr. Mosenthal's dismissal of shareholder concerns ignores the very real need to ensure fair returns and attract future capital to fund resource and infrastructure investments.

Q. Mr. Mosenthal contends that the Missouri IRP rules set out a clear role for the IRP to be an objective analysis of options that minimize PVRR and that Ameren Missouri admits this is not how it conducted its IRP. How do you respond?

A. This view of the IRP rules is neither accurate nor complete, and the "admission" that Mr. Mosenthal attributes to the Company is false. The IRP rules provide a framework that supports transparency in utility resource planning and includes both objective and subjective evaluation of resource options to meet future needs. It recognizes that objective analysis is needed, that subjectivity must be applied in setting a context for the objective analysis, and that utility decision makers must often consider issues and constraints that cannot be forseen and addressed explicitly within the rules. What Ameren Missouri admits to is complying with the rules, conducing its planning in a way that is both comprehensive and transparent, and presenting the rationale for its decision in a way that clearly defines the issues that must be addressed to meet the fundamental objective of resource planning. If the IRP process were nothing more than an, "objective analysis of options that minimize PVRR," then what place is there for the utility decision makers to which the IRP rules repeatedly refer?

VI. COAL RESOURCE ANALYSIS

Q. Please summarize OPC's concerns regarding Ameren Missouri's analysis of existing coal resources.

A. Mr. Woolf contends that Ameren Missouri inappropriately analyzed environmental regulations affecting coal resources as a decision factor rather than as an uncertain factor, that the Company inappropriately compared scorecard results for plans under mutually exclusive environmental scenarios, and that it should have fully investigated the potential for retirement of all of its existing coal units. I have addressed the first two points previously in my surrebuttal testimony.

Q. What basis does Mr. Woolf provide for concluding that the Company should have analyzed retirement options at plants other than Meramec?

A. Mr. Woolf's argument includes both a general basis and a specific one. The general basis he provides is that the Company's IRP cannot be relied upon because of the deficiencies that OPC has alleged. These alleged deficiencies are addressed elsewhere in my surrebuttal testimony and in the surrebuttal testimony of Company witnesses Warren Wood and Rick Voytas. The specific basis he provides is his view that EPA environmental regulations are expected to impose requirements that must be met through significant capital investment.

Q. Doesn't the possibility of significant capital investment warrant analysis by the Company?

A. The possibility of significant capital investment associated with environmental regulations does indeed warrant thorough analysis in a timely fashion – the question is how much and when. Many of the environmental regulations proposed in recent years were still under review and revision at the time the Company conducted its IRP analysis, and many of those are not yet finalized. The Company sought to begin its evaluation of the impact of these regulations by focusing on the Meramec plant for several reasons. It is the oldest coal plant in Ameren Missouri's fleet, it is less efficient than the Company's other coal plants, and it carries a higher marginal operating cost than the other unscrubbed coal plants in the Company's fleet. As the other unscrubbed plants exhibit cost and performance characteristics that are better than those of Meramec plant, it is logical to rely on a thorough analysis of Meramec as a test case for the other plants. The Company's analysis showed that under the aggressive environmental scenario the cost results for Meramec represented a virtual toss-up when evaluating pollution control retrofits, conversion to gas-fired boiler operation, and retirement. It is expected that the Labadie and Rush Island units would fare better in such an evaluation.

Q. The Company indicated that under the aggressive environmental scenario it would retire the Meramec plant. Doesn't that mean that the other units need to be evaluated for potential retirement now?

A. No. The basis for indicating retirement of Meramec under aggressive environmental regulation was based on factors other than cost, which again did not provide a clear distinction between the options evaluated. These factors included portfolio diversity and environmental attributes that favored retirement of the plant. Further applying these same factors to other plants, even if the cost analysis results yielded similar conclusions, would not likely result in a decision to retire since such decisions would be made from a different starting point – specifically from the starting point of a fleet that did not include the Meramec plant.

Q. Is Ameren Missouri evaluating compliance options to meet the requirements of new and pending EPA regulations?

A. Yes. The Company continues to monitor and assess the new and proposed environmental regulations and options for compliance as part of its ongoing planning efforts. In fact, in late October of this year, executives from Ameren Missouri attended a Commission sponsored workshop and presented the Company's current views on these environmental regulations and actions the Company is taking to comply with their requirements.

Q. Has DNR presented any arguments in its rebuttal testimony regarding the Company's evaluation of coal resources?

A. Yes. DNR witness Brian Smith questions the Company's consideration of forecast accuracy in relying on the scenario modeling performed for the Company by Charles River Associates ("CRA"). Mr. Noller asserts that the Company did not appropriately evaluate coal price uncertainty.

Q. Mr. Smith argues that the Company's discussion of CRA's modeling credentials is insufficient to demonstrate that the Company has considered the accuracy of CRA's, contending that the Company has not provided any discussion of how or whether it considered the accuracy of previous forecasts. Is this a fair characterization?

A. No. By including the discussion of CRA's modeling credentials and specifically identifying in footnotes that this consideration was intended to satisfy the requirement to consider forecast accuracy, the Company has indeed demonstrated that it has considered forecast accuracy in selecting CRA to perform the scenario modeling on which the Company relied. As one example, footnote 20 on page 25 of Chapter 2 of the Company's IRP filing explicitly notes that the relevant rule citation is 4 CSR 240-22.040(8)(A)2.

Q. Mr. Smith infers from the Company's argument in its August response, that a single forecast is not available that can be directly compared to historic prices, that the Company has not considered historic forecast accuracy. Is this an accurate portrayal?

A. No. In making this argument in its August response, the Company was responding to what it believed to be a contention on the part of DNR that such a comparison must be made to demonstrate that forecast accuracy had been considered. The rule, 4 CSR 240-22.040(8)(A)2 simply requires that, "The utility shall consider the accuracy of previous forecasts as an important criterion in selecting providers of fuel price forecasts." The Company has done that, has indicated in its IRP filing that it has done that, and has provided the information that it relied on in making such consideration.

Q. Please summarize the issues raised by Mr. Noller with respect to coal price uncertainty.

A. Mr. Noller asserts that the Company has not adequately considered uncertainty with respect to coal prices and that adequate consideration entails not only a full analysis and description of uncertainties reflected in the modeling of the consultant working directly for the Company, but also a full analysis and description of the consideration of uncertainty with respect to any source of information on which the consultant relied. Mr. Noller also asserts that the Company has therefore not evaluated what he calls, "the upper boundary of future cost," related to the Company's existing coal fleet.

Q. What rule does Mr. Noller cite as his basis for alleging that the Company has not adequately considered coal price uncertainty?

A. Mr. Noller cites two rule provisions as the basis for his concerns. The first is 4 CSR 240-22.040(8)(C)2, which has to do with O&M forecast uncertainty. I believe the intent was to cite 4 CSR 240-22.040(8)(A)3, which requires that, "The provider of each fuel price forecast shall be required to identify the critical uncertain factors that drive the price forecast and to provide a range of forecasts and an associated subjective probability distribution that reflects this uncertainty." The second is 4 CSR 240-22.070(2)(D), which lists "relative real fuel prices" as an uncertain factor for which preliminary sensitivity analysis must be performed to determine whether certain factors are "critical" to resource plan performance.

Q. How has the Company satisfied the first requirement?

A. The Company's IRP filing included a thorough and detailed description of the models used by CRA and the key uncertain variables that define the scenarios that were modeled – load growth, natural gas prices, and federal greenhouse gas policy – in Chapter 2. These are the variables that drive the commodity prices that result from the scenario modeling, including coal prices. A different coal price forecast was supplied for each of the ten scenarios modeled by CRA, which each carried an associated probability based on the subjective probabilities assigned to the three critical uncertain factors that define them. In doing so, the Company has presented exactly the information contemplated by the rule.

Q. What has Mr. Noller asserted that the Company is required to do beyond what you've described to satisfy the rule requirement?

A. Mr. Noller contends that the Company is required to identify and analyze every possible uncertainty that might influence prices, not just critical uncertain factors, as is clearly stated in the rule provision he cites. He also contends that not only must the provider of the fuel price forecast used by the Company provide such information, discussion and analysis, but that anyone who provides information to the provider of the price forecast information must provide all this as well. Norwest was not a consultant retained by Ameren Missouri for its IRP, nor were they retained by CRA for the explicit purpose of supplying information for the IRP. Norwest is simply a source of information relied upon by CRA for certain very detailed assumptions used in their sophisticated modeling work. If the Company were able to extract from Norwest, or some other secondary information source, the proprietary knowledge on which these certain assumptions were based, would that then be enough? Although Mr. Noller does not explicitly carry his misinterpretation of the rule requirement further, one might assume based on his logic that the organizations that were the original source of information three, four, five or more steps removed must also provide this information for an IRP filing.

Q. Mr. Noller indicates that the Company's August response on this matter is insufficient because it does not address specific issues raised by DNR. Are these issues relevant to a determination of the Company's compliance with the IRP rules?

A. No. The specific issues raised are based on a combination of a misinterpretation of the rules, as I've described above, and a heavy reliance on the very detailed description of CRA's model assumptions and logic described in Chapter 2 of the Company's IRP filing. Mr. Noller takes numerous such assumptions and expands them into further separate considerations that must be specifically addressed. I expect that further expansion of any such issue would then in turn inspire more questions to be answered.

Q. Can you address Mr. Noller's specific issues nonetheless?

A. Yes. Mr. Noller asserts that CRA's provision of single-point estimates for each scenario means that coal prices did not reflect uncertainty. As I've described, there were separate coal price forecasts for each scenario consistent with the values for critical uncertain factors that define each scenario and carrying with them the associated probabilities for each scenario. Therefore, the range of forecasts with associated probabilities define a probability distribution. Mr. Noller asserts that by assuming away several barriers to efficient fuel strategy, CRA's model ignores potential real-world drivers of price. The alternative would be to explicitly assume such temporary barriers appear, in one of a variety of combinations and frequencies with separate consideration regarding the extent to which firm contracts might be in place, and then are resolved by a reaction of the market – this would be a needless detail that would introduce inordinate complexity into the modeling. Mr. Noller asserts that by relying on fixed supply curves provided by Norwest, that CRA's modeling does not fully capture the dynamics of coal markets and therefore does not determine coal prices in a purely endogenous manner. I can only say that a model can only go so far in modeling issues as complex as the U.S. economy and electric production sector. CRA's modeling credentials give me confidence that their methods are appropriate and their results accurate. Mr. Noller asserts that by relying on internal transportation cost information that the Company has introduced additional uncertainty in delivered coal prices. **____ _______.** In his rebuttal testimony, Mr. Noller delves still deeper into the potential for uncertainty in the models of Norwest, the organization on which CRA separately relied for information regarding coal supply curves and questions why certain details were not addressed in the IRP filing. They were not included because the Company sought to provide enough detail to indicate the degree of rigor applied in the first-level modeling performed by CRA, not the level of rigor employed in developing information two or more steps removed. Mr. Noller laments in his rebuttal testimony the inability to review information from either CRA or Norwest regarding their proprietary assumptions or methods. The Company is also prevented from viewing such information but believes that the credentials of CRA are sufficient to ensure confidence in their approach and results.

Q. Mr. Noller argues that the Company has not evaluated coal price as a potential critical uncertain factor. Is this correct?

A. Ameren Missouri included coal price uncertainty in its analysis by determining a range of coal prices through the scenario modeling performed by CRA. Therefore, the Company has included coal price uncertainty without first testing it. Inclusion of coal price uncertainty in the full risk analysis essentially serves as a test of the influence of coal prices on plan performance in a way that is more rigorous than if it had been separately tested during the sensitivity analysis.

Q. Mr. Noller argues that by not explicitly calling out coal prices as a separate uncertain factor the Company has not tested the limits of its preferred resource plan with respect to uncertainty in coal prices. Is this an accurate characterization?

A. No. By including coal prices based on the ten scenarios modeled by CRA in its analysis of risk associated with candidate resource plans, the Company has considered the effects of coal price uncertainty on the performance of candidate resource plans.

Q. Mr. Noller notes that the Commission has ordered the Company, in Case No. EO-2012-0039, to evaluate coal price uncertainty as an independent uncertain factor in its upcoming IRP annual update. Is this correct?

A. Yes. DNR and NRDC proposed certain evaluations of coal price uncertainty for Commission consideration in its "Special Contemporary Issues" docket in that case. In response, the Company indicated that it might be reasonable to evaluate coal price uncertainty as an independent uncertain factor to generally reflect coal price uncertainty. The Commission agreed and included this issue in its order in that case. The Company's IRP annual update is due in early March, 2012. The Company's agreement to do this analysis for the update does not mean it failed to do anything required by the IRP rules in its February filing.

Q. Mr. Noller argues that the Company should evaluate the impact of the "upper boundary of future cost" of generation at the Company's existing coal-fired plants. Please summarize Mr. Noller's key points and your response.

A. Mr. Noller first acknowledges that this term or phrase cannot be found in the IRP rules and indicates that it is based on DNR's reading of requirements for contingency planning and DNR's alleged deficiencies regarding coal price uncertainty, which are addressed above. Mr. Noller's assertion is based on his premise that the Company has not considered uncertainty with respect to coal prices and has therefore not evaluated the associated effects on candidate resource plans for purposes of determining the preferred resource plan and selecting contingency resource plans. As I've described above, the Company has considered coal price uncertainty through the use of scenarios modeled by CRA and has reflected this uncertainty in its risk analysis of candidate resource plans. Mr. Noller delves into the technical considerations of probability distributions and the need for a "sufficiently wide range of values to assure robust contingency analysis." He does not indicate in his rebuttal that the Company's range of coal prices is inappropriate and does not explicitly acknowledge that in developing ranges for uncertain factors that the range must be considered probable by utility decision makers as described in the IRP rules. Ameren Missouri maintains that its probability distributions for critical uncertain factors are reasonable and appropriately reflect the judgment of its decision makers.

Q. Please summarize the arguments made by NRDC with respect to the Company's evaluation of its existing coal fleet.

A. Mr. Schlissel argues that it is inappropriate to rely on evaluation of the retirement, retrofit or conversion of the Company's Meramec plant as a basis for assessing the viability of its coal fleet in general. I have addressed this issue and most of the arguments made by Mr. Schlissel in response to the same concerns expressed by Mr. Woolf. Mr. Schlissel also argues that the Company has simply and inappropriately assumed that Meramec would operate beyond a reasonable retirement date, that the Company has simply and inappropriately assumed that Meramec would operate at a high capacity factor, that the operating costs assumed for Meramec are too low, and that the Company has not adequately considered options for gas-fired generation to replace coal generation.

Q. Mr. Schlissel contends that, in addition to the arguments made by Mr. Woolf, Ameren Missouri's reliance on a chart of coal plant operating costs cannot be used to justify the Company's premise that Meramec is the most likely candidate for retirement, and therefore an appropriate test case for the coal fleet, because the chart does not include the cost of potential environmental controls. Do you agree?

A. No. The chart was not presented as evidence of the cost of coal plants including costs for environmental retrofits. As I've explained in response to Mr. Woolf's arguments, this chart simply establishes that the operating costs of Labadie and Rush Island are much lower than those of Meramec, and are in fact lower than most of the other coal units in the United States, and therefore would present a much higher hurdle for retirement when coupled with potential environmental retrofit costs.

Q. Mr. Schlissel contends that Ameren Missouri has simply assumed that the Meramec units would operate beyond the retirement date identified in the study performed by Black and Veatch on life expectancy of the Company's coal units. Is this a valid characterization?

A. No. The Company has conducted a thorough evaluation of major options for Meramec and has used a thorough condition assessment analysis performed by Burns and McDonnell to specifically evaluate the long-term viability of the plant in a way that incorporates all the considerations included in the IRP, which cannot be, and was not, performed in conjunction with the Black and Veatch life expectancy study. Simply accepting the conclusions of the life expectancy study without testing them through rigorous analysis of options based on specific estimates of future plant costs would not provide a reasonable basis on which to make key decisions. In the executive summary of the Black and Veatch life expectancy report, on page 1-2, the basis for the 2022 retirement date for Meramec is cited as Ameren Missouri's 2008 IRP filing. The Company cannot be permanently bound to conclusions it has drawn from a particular IRP and avoid evaluating the key considerations necessary in validating or revising such conclusions. The Company has therefore conducted the comprehensive analysis it has included in this IRP and drawn its conclusions accordingly.

Q. Mr. Schlissel argues that the Company acknowledges that, "the Burns & McDonnell study did not evaluate whether it is technically feasible to operate the Meramec units that long," and that it therefore cannot be relied upon as a basis for determining a different retirement date for Meramec. Is this a valid criticism?

A. No. First, it mischaracterizes the Company's statements regarding the Burns & McDonnell study. In its August response, the Company indicated that the Burns & McDonnell study did not evaluate the economics of whether investments should be made in the plant to address environmental regulations. Second, the specific analysis of the economics of retrofits, retirement, or conversion was addressed explicitly in the Company's IRP analysis. The Burns & McDonnell study provided estimates of the costs to maintain the existing plant in a way that sustains its current level of reliability. The costs of the specific options evaluated in the IRP were then included in addition to the costs estimated by Burns & McDonnell.

Q. Mr. Schissel states that the Company has provided no evidence to support assumptions of capacity factors that are greater than 60 percent and then concludes that the Company's analysis is therefore biased in favor of continued operation of Meramec. How do you respond?

A. This statement is incorrect in two ways. First, the Company has not simply *assumed* that capacity factors will be greater than 60 percent. The capacity factors are a result of the detailed chronological dispatch modeling performed by the Company in compliance with the requirements of 4 CSR 240-22.060(4), which requires the use of, "computer models that are capable of simulating the total operation of the system on a year-by-year basis." The modeling explicitly reflects the evaluation of a range of prices for fuel, power, and emissions through the market scenarios modeled by CRA. This is vastly different than simply assuming a capacity factor for a particular unit or plant. Second, the evidence of this modeling has been clearly presented in the Company's IRP filing and supporting workpapers, so the assertion that the Company has not presented any such evidence supporting its modeling analysis and results is just plain wrong.

Q. Mr. Schlissel notes that the capacity factors presented in the Company's IRP analysis are much greater than the 30 percent capacity factor assumed by Burns & McDonnell in their condition assessment study. Does this raise any concerns?

A. No. In fact, it provides an additional measure of confidence in the analysis results. The assumption used in the Burns & McDonnell study was made to reflect the potential for the kind of aggressive greenhouse gas policies being considered at the federal level at the time the study was conducted. As a result, the cost estimates for future capital and O&M to maintain the plant in a reliable state are based on the wear and tear associated with cycling operation and may therefore be conservative. It does not mean, as Mr. Schlissel suggests, that the Company has simply assumed a capacity factor for Meramec's units with no basis.

Q. Mr. Schlissel argues that the Company's evidence of recent operating costs and performance do not ensure that future cost and performance will not degrade. Do you agree?

A. That was not the point of presenting the cost and operating performance information that appears on the charts on pages 49-52 of the Company's August response. What those charts show is that O&M costs have been steady, or declining in the case of Labadie, in real terms for the past 20 years and that availability has improved over that same time. This directly refutes Mr. Schlissel's contention that plant cost and performance will necessarily degrade with age. As I mentioned previously, the cost estimates for O&M and capital provided by Burns & McDonnnell were based on the assumption that the current level of reliability must be maintained. NRDC provides no evidence to refute the expert opinion of Burns & McDonnell regarding the specific maintenance needs or the associated estimated costs.

Q. Mr. Schlissel contends that the Company should fully evaluate the technical and economic feasibility of converting CTG units at Audrain, Goose Creek, Pinckneyville and Kinmundy to combined cycle operation. How do you respond?

A. Such a broad analysis is unnecessary. The Company has evaluated several options for combined cycle resources, including conversion of its Venice CTG units. The IRP analysis has shown that combined cycle generators are very competitive resource options regardless of whether they are new or based on conversion of existing CTG's. As there is no reasonable constraint on the number of new combined cycle units the Company could pursue, considering conversions that, based on the analysis of Venice conversion, would result in essentially the same impact on total costs adds nothing to the IRP analysis or conclusions.

Q. Mr. Schlissel argues that converting existing CTG's to combined cycle operation would lower the heat rates of those units and therefore allow the Company to, "generate more energy in a combined cycle unit while still using the same amount of natural gas as might otherwise be burned in a CTG." Do you agree?

A. No. Conversion will result in much higher operating hours and therefore use significantly more gas in combined cycle operation than would be used in simple cycle operation. This is precisely because the conversion would result in a lower heat rate, which in turn would result in significantly more hours in which the operating cost of the plant would be competitive in the market.

Q. Mr. Schlissel contends that the Company has not evaluated the feasibility of purchasing excess capacity from existing combined cycle facilities and has not supported its statement that existing gas-fired plants are most likely fully utilized during times of peak demand. How do you respond?

A. The Company's statement regarding peak-time utilization of combined cycle facilities is simply a market reality. Efficient gas-fired generation will dispatch to the market during peak load hours as long as it is available. If there are combined cycle units that are available but are not dispatched during times of peak load, then one would have to question their viability in the market as a significant energy resource. The Company's statement regarding the utilization of gas resources in its August response was in response to NRDC's assertion that there was ample excess capacity available from combined cycle units. This assertion was based on a study attached to NRDC's June comments that showed capacity factors for combined cycle units in various regions in the U.S. In its August response, the Company simply pointed out that capacity factors are not a measure of available peak capacity, but rather indicate the number of hours resources operate and that this operation virtually always includes peak load hours to the extent units are available and are dispatched at all. Mr. Schlissel does not appear to continue to rely on the report attached to NRDC's June comments, but rather just asserts that the Company must comb the countryside in search of underutilized combined cycle generators until it proves there aren't any.

VII. NATURAL GAS PRICES

Q. Mr. Schlissel contends that the Company's plan to monitor gas prices is insufficient. What is his basis for this conclusion and what is your response?

A. Mr. Schlissel states that the gas prices used by the Company are too high and that the resultant analysis should not be used to support major investments in the Company's existing coal plants. He does not indicate why the Company's plans to monitor gas prices, including plans to update gas prices for analysis in support of the Company's 2012 IRP annual update, is insufficient.

VIII. RENEWABLE RESOURCE ASSUMPTIONS

Q. Mr. Woolf criticizes the Company's modeling of wind resources. Please summarize his concerns.

A. Mr. Woolf argues that the Company has inappropriately included CTG units along with wind resources when considered as supply side resources beyond compliance with RES requirements, that the Company has modeled wind in increments that are too large, and that the Company has inappropriately used average cost and performance characteristics for its wind resource option.

Q. Why did the Company include CTG resources with wind for evaluation as a supply side resource?

A. This was done to ensure reliability while adding reasonable amounts of wind capacity. Part of constructing alternative resource plans is ensuring that the plans meet reliability requirements. This is done by adding resources to ensure that peak load and reserve requirements are met without undue reliance on the market to make up shortages in the Company's capacity position in the form of capacity purchases or absorb long positions in the form of capacity sales. In establishing its criteria for resource additions, Ameren Missouri determined that it would add supply resources when the capacity shortfall would exceed half the capacity of the supply resource being evaluated or 500 MW, whichever is less. The other supply side resources evaluated by the Company ranged in size from 346 MW (Simple Cycle CTG's) to 834 MW (Meramec Combined Cycle Conversion). The options included in the final candidate resource plans ranged from 346 MW to 600 MW (Greenfield Combined Cycle CTG's). At the time the Company performed its analysis, MISO credited wind generation at 8% of its nameplate rating. This means that to provide 400 MW of regulatory capacity for resource adequacy in MISO, the Company would need 5,000 MW of nameplate wind capacity. To avoid assuming such an enormous amount of wind capacity, Ameren Missouri decided to model only 800 MW of wind. As this would provide only 64 MW of regulatory capacity, other supply side resources would be needed to satisfy the peak load and reserve requirements. Of the other supply side resources considered, simple cycle CTG's provide capacity at the lowest capital cost. Therefore, the remaining shortfall was covered with 346 MW of simple cycle CTG's.

Q. Doesn't inclusion of the cost of CTG's unnecessarily burden the economics of wind resources?

A. No. Reliability requirements must still be met, and as I mentioned, adding only wind to meet this need would require roughly 5,000 MW of nameplate wind generation. It is a virtual certainty that this amount of wind could not be added all at once. If instead this amount of wind were added in only 50-200 MW increments in any given year, as Mr. Woolf argues is appropriate, it would take 25-100 years to reach this level of wind capacity. That would be unreasonable as well. The remaining need must be met with some other supply side resource. As CTG's provide capacity in relatively small increments at a low capital cost, the Company determined that they represented the best option to meet the remaining need.

Q. Mr. Woolf claims that the Company's premise in modeling wind resources in this manner is that capacity is the only benefit of wind resources. Is this accurate?

A. No. The Company has made no such statement. In fact, the energy benefits of wind are included in the Company's modeling just as the energy benefits of any other supply side resource options are included. However, one of the primary goals of resource planning is to ensure reliability by acquiring resource to meet peak load and reserve requirements. Ameren Missouri chose to include wind resources as one such option for meeting this need. Mr. Woolf even states that, "Of course, all resource plans must have sufficient capacity to meet reliability requirements."

Q. Mr. Woolf contends that wind resources should be added to lower PVRR. Did the Company evaluate this possibility?

A. Yes, although not specifically for this purpose. The candidate resource plans included plans with only simple cycle CTG's as new supply side resources and plans with both

CTG's and wind, one plan each for each of the two environmental regulation scenarios evaluated. For each pair of plans under the two different environmental regulation scenarios, the CTG-only plans result in lower PVRR than do the plans with both CTG's and wind. This demonstrates that adding wind resources in the Company's IRP analysis results in an increase in PVRR, not a decrease. This is also consistent with the analysis the Company performed with respect to Missouri RES compliance, which showed that addition of wind resources to meet the RES energy requirements was constrained by the 1% rate impact cap.

Q. Does this mean that the Company would not consider opportunities to add cost-effective wind resources to its portfolio?

A. No. It simply means that in the context of a 20-year resource analysis, adding generic wind resources does not reduce PVRR.

Q. Mr. Woolf notes that cost-effective wind resources would provide benefits in other ways, such as generation diversity. Shouldn't that be taken into consideration by evaluating resource plans that only add wind resources?

A. No. Cost-effective wind resources could be added to any given plan that already includes resources to meet peak load and reserve requirements, so there is no need to create a special plan to evaluate such a consideration, and the potential for adding cost-effective wind to the resource portfolio, whatever form it takes, is not precluded.

Q. Mr. Woolf argues that the Company should have modeled various tranches of wind resources at different costs and capacity factors. Is such an approach necessary?

A. No. The IRP rules call for an evaluation of "generic" resources as described in 4 CSR 240-22.040(1). By characterizing generic resources, the IRP analysis establishes reasonable benchmarks on which specific resource decisions can be based.

Q. Has the Company considered ranges of costs or capacity factors for wind resources in any way?

A. Yes. Ameren Missouri reflected an uncertain range for project costs for wind from $1710/kW to $2400/kW as shown in table 9.9 on page 17 of Chapter 9 of the Company's IRP filing. The Company also evaluated wind capacity factor as a candidate uncertain factor with a range of 31.4% to 43.5% as shown in table 9.10 on page 18 of Chapter 9. Wind capacity factor was determined not to be a critical uncertain factor based on the results of the sensitivity analysis performed and described in Chapter 9.

Q. Mr. Woolf contends that by assuming that wind is installed in a single 800 MW block and that wind resources are coupled with simple cycle CTG's and only installed together when the Company's capacity shortfall exceeds 205 MW, the Company's analysis, "limits the ability of wind to play a role on its system for over 12 years." Is this true?

A. No. Ameren Missouri's determination of resource requirements to meet the Missouri RES show that wind would be added beginning in 2019. As I've mentioned previously, the addition of wind resources as energy resources to meet the RES requirements is constrained by the 1% rate impact limit. Ameren Missouri's evaluation of wind as a supply side resource in competition with resources like gas and nuclear is above and beyond the satisfaction of the RES requirement. As I've also mentioned, assuming wind resources as part of a capacity expansion plan to meet load and reserve requirements in no way precludes the potential to consider adding cost-effective wind resources as such opportunities are identified.

Q. Would including additional wind resources only for energy benefits beyond those subject to the 1% rate impact limit in the RES result in a violation of the 1% limit?

A. I submit that it would since, based on the Company's analysis, adding more wind resources results in an increase in cost. If it is not a violation of the 1% rate impact limit, then what effect does that provision really have?

Q. Mr. Woolf also implies that the Company's approach to adding wind resources, in a single 800-MW block, yields significantly different results than if the wind additions were added over a period of years in 50-200 MW blocks. He states that the Company has provided no evidence to support its claim that the IRP results would be largely the same under either approach. Can you explain why this would be the case?

A. Yes. Suppose that instead of modeling 800 MW of wind in 2025 the Company modeled 200 MW of wind in each of 2023, 2024, 2025 and 2026. The costs of 200 MW added in 2025 would be the same as it would be if added as part of an 800 MW block. The costs of the 200 MW added in 2023 would be less by two years of inflation, and by one year of inflation for the 200 MW added in 2024. Conversely, the cost of the 200 MW added in 2026 would be higher by one year of inflation. At the same time, the costs for the 2023 wind would now be discounted by two fewer years when determining the PVRR impact, one fewer year for 2024 and one more for 2026. The Company's discount rate used in the IRP, 7.67%, is greater than the inflation rate of 3% that was assumed. This means that moving 200 MW from 2025 to 2023 or 2024 has resulted in an increase in PVRR associated with the costs of the resource, and that moving 200 MW from 2025 to 2026 has resulted in a decrease in PVRR. The same is true of the market capacity and energy benefits associated with the wind resources – the PVRR benefits are increased by building earlier and decreased by building later. The Company's analysis has shown that in general adding wind resources results in higher PVRR. Therefore, advancing wind resources increases PVRR and deferring them reduces PVRR, and spreading out the modeled wind build across several years on either side of the Company's assumed install date results in both increases and decreases in PVRR that essentially offset.

Q. Staff witness Leon Bender comments on some of the concerns raised by OPC. Please summarize his conclusions and offer your reaction to them.

A. Mr. Bender indicates that Staff has concerns that Ameren Missouri did not model smaller increments of wind, but indicates that Staff does not consider this concern to necessitate rerunning the IRP analysis at this time. I have addressed this concern directly above. Mr. Bender also indicates that Ameren Missouri has a robust fleet of peaking capacity but may need additional peaking capacity at some point in the future. I have addressed the inclusion of CTG's with wind resources in alternative and candidate resource plans above. On the point of future needs for peaking capacity, Mr. Bender expresses a level of certainty regarding such a need that I cannot support. As I've described previously, the inclusion of CTG's in the wind plans is based purely on the need for additional capacity in general and the low-capital-cost characteristics of simple cycle CTG's, not on any assessment of a specific need for peaking capacity.

Q. Mr. Bender also implies that retiring Meramec would necessitate full replacement of the energy that would otherwise be generated by the plant and that such replacement would have to be met with new Company-owned resources. Is this necessarily the case?

A. No. Ameren Missouri has typically been a net seller of electric energy, and as a member of MISO the Company participates in a robust energy market. Therefore, it is probable that while the capacity of Meramec would have to be replaced in some manner, it isn't necessarily the case that all of its energy will have to be replaced.

Q. DNR witness Richard Hasselman contends that Ameren Missouri has not met the requirements of the Stipulation and Agreement in Case EO-2007-0409. He first indicates that the Company has "somewhat" demonstrated that its assumptions regarding wind capacity factors are consistent with the most recent data for the best commercially available wind sites. What is his basis for this conclusion?

A. Mr. Hasselman notes that Ameren Missouri's base assumption of a 37.5% capacity factor is above the 33% average capacity factor reported by Berkeley Labs for the Heartland region. He also notes that the high end of the uncertain range considered by the Company, 43.5%, is supported by analyses by the National Renewable Energy Laboratory. His only concern appears to be that the Berkeley Labs report does not differentiate between performance of older and newer wind turbines.

Q. Mr. Hasselman contends that the Company has not demonstrated that its assumptions regarding the timing of transmission upgrades and the allocation of associated costs are based on the most recent system planning studies and currently effective transmission cost allocation principles. Do you agree?

A. No. The Company clearly indicated in Chapter 6 of its IRP filing that the Company has relied on the planning performed in support of MISO's most recent Transmission Expansion Plan (MTEP10) at the time the IRP analysis was prepared and documented. Chapter 6 also clearly describes the Multi-Value Projects (MVP's) proposed by Ameren Missouri as part of MTEP10 and indicates that the Company has included in its modeling assumptions the costs associated with MISO-wide MVP initiatives over the planning horizon based on ongoing planning discussions within MISO at that time. Specifically, the Company included its cost-allocated share of $25 billion in MVP investments within MISO that would be expected to resolve broad issues regarding the integration of wind and other renewable resources. This particular discussion is found in section 6.1.4 of the Company's filing. That section is devoted to a discussion of the cost-allocation method assumed in the Company's planning and notes that, 1) analysis was based on the most recent information regarding cost allocation available at the time analysis was performed, 2) the final cost allocation method approved by FERC was slightly different, 3) the change in the cost allocation method does not significantly impact allocated costs, and 4) the assumptions of cost allocation for MVP projects in MISO were the same for all the plans the Company analyzed and therefore do not contribute to any relative differences between plans.

Q. Mr. Hasselman criticizes the Company's statement in its August response that "It is highly impractical to first develop a detailed transmission expansion plan over the 20 year planning horizon and then determine precisely how that plan will affect specific wind resources." He indicates that the Stipulation does not require a precise analysis and that a relatively simple analysis can be performed using the existing and planned transmission system overlaid with publicly available wind maps. How do you respond?

A. The point is that transmission and generation plans are interdependent and iterative in nature to some degree – transmission plans influence generation plans and generation plans influence transmission plans – not that some initial guess can't be made. However, the simple analysis Mr. Hasselman describes would be just that, an initial guess. I agree that the Stipulation does not require a precise analysis. Ameren Missouri has relied on the analysis of transmission expansion that supported MISO's MTEP10 and has discussed this in its IRP filing as I've mentioned. The Company's August response further noted that, 1) its assumptions with regard to cost allocation were based on available information regarding MISO's requested allocation method at the time analysis was performed, 2) by reflecting full allocation of MVP project costs to MISO members based on their relative share of load and generation was favorable to wind resources in that these costs were not directly attributed to the wind projects the Company modeled, and 3) the MVP projects assumed were intended to alleviate relevant transmission constraints for <u>all</u> potential wind projects. Therefore, the Company has relied on more than just a simple analysis for its transmission planning assumptions.

Q. Mr. Hasselman contends that the Company's consideration of a multi-state region does not satisfy the requirement of the Stipulation to consider multi-county regions. Has the Company misinterpreted the Stipulation?

A. I don't believe so, but it does appear we have a different interpretation than DNR. Mr. Hasselman notes that, "One could argue that multi-state regions are inclusive of multi-county regions." This is the interpretation the Company has made. Notwithstanding possible differences in interpretation, the Company has considered areas that are very favorable to wind resources in developing its assumptions for performance. The multi-state region considered by Ameren Missouri includes North Dakota, South Dakota, Nebraska, Kansas, Oklahoma, Minnesota, Iowa, Missouri, Wisconsin, Illinois, and Indiana. Figure 5.7 in Chapter 5 of the Company's IRP filing shows a map of wind resources in the United States and indicates that the states included in the Company's multi-state region collectively demonstrate the best wind resources in the country.

Q. Mr. Hasselman suggests that the Company could overlay wind maps and transmission maps to identify potentially favorable wind sites. Is this possible or useful?

A. It is possible and certainly useful when the time comes to perform more detailed planning for implementation of such resources. I don't believe that it is useful or necessary for a

20-year IRP analysis in which wind resources are not needed beyond the three-year implementation period. The Company would likely undertake similar analysis for any generating resources and include consideration of transmission access, fuel supply, water resources and environmental impacts, to name a few. That too would be premature in the context of an IRP analysis in which no associated implementation steps are necessary during the implementation period.

Q. Mr. Hassleman indicates that the Company has not appropriately considered the potential for wind turbine hub heights greater than the 80 meters reflected in the Company's wind resource assumptions. How do you respond?

A. The Company included a discussion of hub-height considerations on page 33 in Chapter 5 of its IRP filing. This discussion included an assessment of the levelized cost of energy ("LCOE") for wind at 100 meter turbine heights and compare that to the LCOE at 80 meters using the Company's wind resource assumptions. That comparison shows that the LCOE for wind at 100 meters may be 5% to 12% lower than that at 80 meters. The Company's uncertain range regarding the installed cost of wind turbines reflected a low value of $1710/kW, or about 15% lower than the base cost assumed. As Mr. Hasselman notes, towers with 100 meter hub heights are much less common. As Ameren Missouri has no near-term need for wind resources, either for RES compliance or as new supply side resources for meeting peak load and reserve requirements, there is time to continue to monitor technology developments that may improve the cost and performance of wind resources.

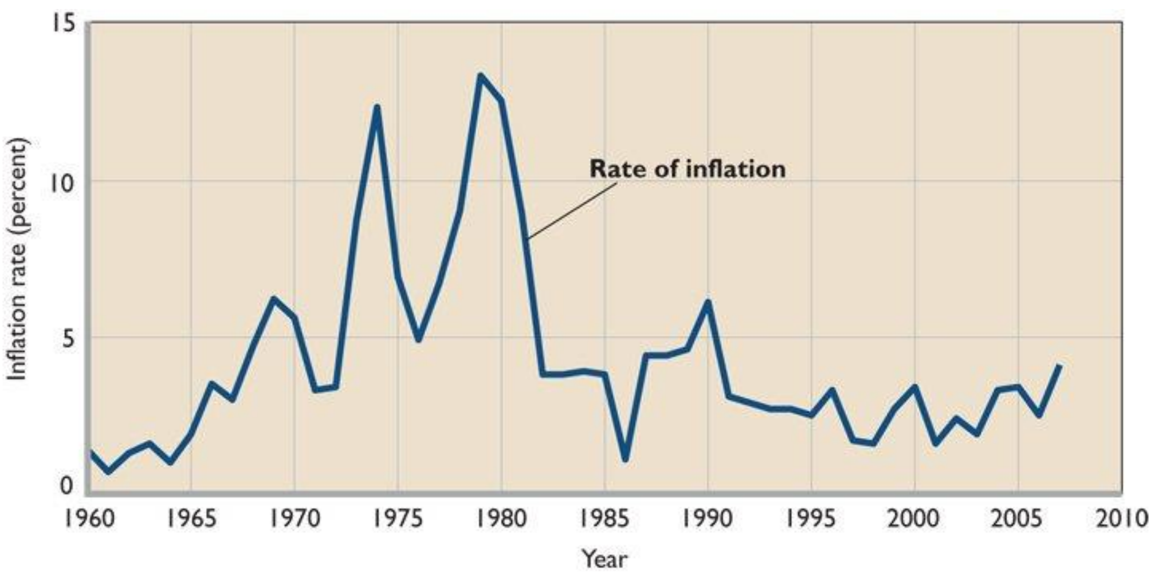
IX. NUCLEAR COST ASSUMPTIONS

Q. Please describe the issues raised by OPC with respect to the Company's assumptions for nuclear resource costs and summarize your response.

A. Mr. Woolf contends that the Company's estimates for capital cost for new nuclear resources are too low and that the Company has not appropriately reflected the potential for cost overruns. I maintain that the Company's estimates for the cost of new nuclear plants are consistent with the most recent actual experience for similar projects under construction and with the most recent information published by the U.S. Department of Energy's Energy Information Administration ("EIA") in its 2011 Annual Energy Outlook ("AEO"). I also note that the probability distributions used for the costs of all resources are distributions of final cost and cannot be used as distributions of cost overruns compared to an eventual budget. Finally, I contend that future nuclear projects will not be subject to the same kinds of uncertainty that the industry faced in the 1960's and 1970's precisely because of the lessons learned during that period and since.

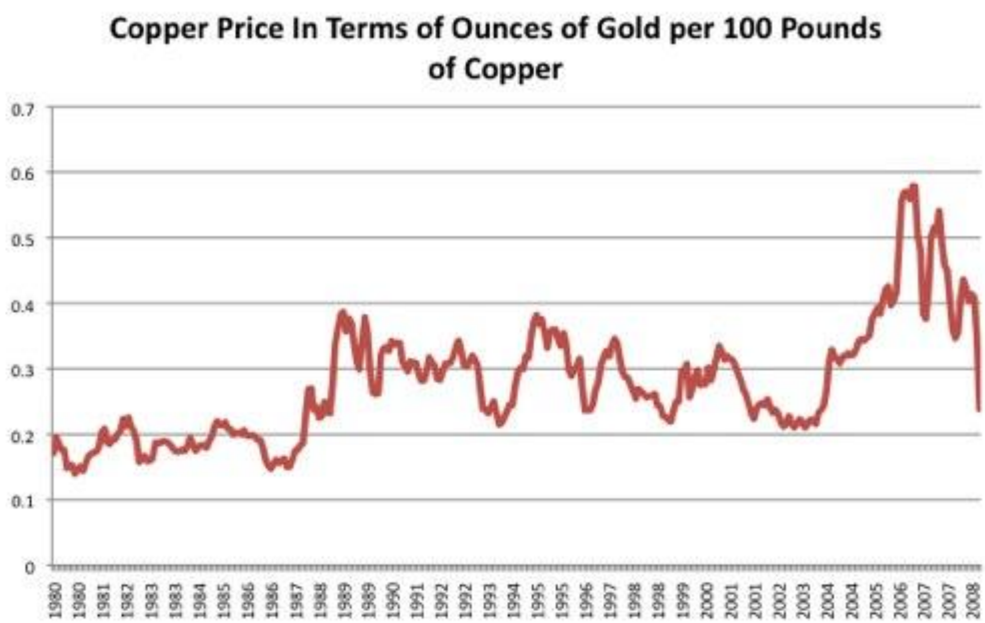
Q. Mr. Woolf points to the experience of cost overruns in the period 1966-1977 as evidence that future nuclear projects will be subject to the same issues. Why isn't this a valid conclusion?

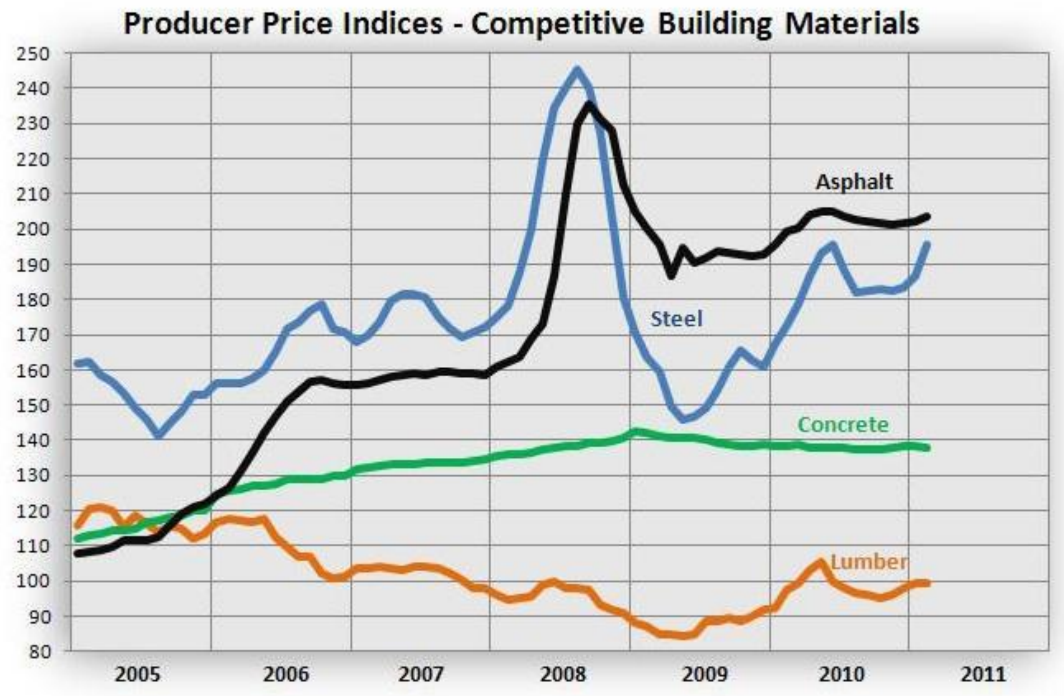
A. Nuclear projects licensed and constructed in that period were subject to several key factors that contributed to significant cost uncertainty. First, plant designs were highly customized and therefore did not benefit from the standardization that characterizes the designs that are now being considered and built. This also meant that a significant amount of engineering design was not completed at the time construction commenced, which sometimes resulted in rework to incorporate updated engineering as project construction proceeded. With the new standard designs most engineering work is completed before major construction work begins, so potential rework is minimized. Second, projects were subject to a regulatory regime that was at first not fully developed and under which operating licenses were later granted by the Nuclear Regulatory Commission ("NRC") after construction was complete. The process of NRC review of applications for operating licenses sometimes resulted in recommendations for design changes that had to be worked into a plant that was already completed, thus resulting in additional cost that may have been avoided if those design changes had been identified before construction commenced. Today, the NRC uses a combined construction and operating license application process which results in approval of the operating license before significant construction is underway. This change in the licensing process coupled with the use of standard designs which are certified in advance by the NRC results in greater certainty with respect to project scope. This is not to say that it addresses all cost risk, but it does address key risks that were faced by the nuclear projects built during the 1960's, 1970's and 1980's. This period was also marked by the onset of runaway inflation, which affected costs of construction materials, not only for nuclear construction but for all types of construction. The chart below shows inflation for the period 1960-2007 and indicates that the inflation rate in 1966 was about 2% and that it increased to over 12% by 1974.



Q. Mr. Woolf points to increases in cost estimates in more recent planned utility nuclear projects. What is the relevance of these examples?

A. The examples cited by Mr. Woolf illustrate the effects of two key factors – 1) changes in new standard designs resulting from the NRC's design certification process, and 2) a sharp increase in the global cost of construction materials driven in large part by high demand in China. As standard designs continue to be reviewed and certified by the NRC, this factor will cease to be a significant driver in new cost estimates. As for the cost of construction materials, the charts below show the sharp increase in prices for copper, steel and concrete due largely to a sharp increase in Chinese demand.





While global demand for construction materials cannot be predicted with certainty, it is not expected that prices will climb further in the same manner that they have in recent years. In fact, as current construction in China stabilizes these prices could decline.

Q. Does Mr. Woolf compare the Company's estimated range to the most recent range of estimated costs for new nuclear plants?

A. Yes. Mr. Woolf indicates that the most recent estimates are in the range of $3000/kW to $5500/kW and indicates that the Company's estimates are roughly in line with this range.

Q. Mr. Woolf also takes issue with the Company's uncertain range for nuclear costs, indicating that it is too narrow and does not provide a reasonable representation of the potential for cost overruns. How do you respond?

A. First, it is not appropriate to consider the distributions for project cost uncertainty to be distributions of potential cost overruns or underruns with the base value representing a budgeted amount. The distributions are ranges for the final cost. Second, the potential for cost overruns compared to a budget is mitigated by the same factors I previously described – changes in the licensing process and the use of standardized designs, so the history that Mr. Woolf points to does not reflect comparable conditions. Cost overruns can be, and in some current cases are, further mitigated through fixed-price contracts with the EPC contractor. For example, according to a September, 2010, article by the Atlanta Journal Constitution, Georgia Power is using a fixed price contract with a predefined inflation allowance to control the costs of construction of two new nuclear units at its Vogtle facility.

Q. Even if Mr. Woolf's premise that cost estimates will continue to rise as they have in the past is correct, what is the urgency in recommending that the Company rerun its analysis with different cost estimates that suit OPC?

A. There is no urgency. The Company's preferred resource plan does not include a new nuclear plant, and the earliest in service date reflected in the Company's candidate resource plans was 2025 based on retirement of Meramec in response to aggressive environmental regulation. The Company's high estimate for construction time is 9 years, meaning that the earliest any implementation steps would have to be carried out is 2016, two years after the Company's next triennial IRP filing in early 2014.

Q. Do you expect the quality of information available regarding costs for new nuclear to improve significantly during that time?

A. Yes. According to another article by the Atlanta Journal Constitution, in September, 2011, the two new AP1000 units at Vogtle are expected to be completed in 2016 and 2017. NRC approval of the construction and operating license is expected in early 2012. Having actual units constructed in the U.S. during the next several years will provide a strong indication of the potential for further construction and the costs to carry it out. Ameren Missouri will be watching closely the development of these and other planned units as it continues to consider future resource options.

Q. Has Staff presented rebuttal testimony with respect to the Company's assumptions for the cost of new nuclear generation?

A. Yes. Staff witness Leon Bender presents Staff's position. Specifically, he states that Staff believes that the Company has complied with 4 CSR 240-22.040(8) by using information as outlined in the Company's response and that there is no urgent need to revisit such cost estimates based on the fact that the preferred plan does not include new nuclear and the contingency plans presented by the Company include nuclear late in the planning horizon. He concludes that, "no rework of this triennial compliance filing is necessary."

Q. Please summarize the arguments made by NRDC with respect to the Company's cost estimates for new nuclear construction.

A. Mr. Schlissel argues that the Company's estimates are too low based on the history of cost increases for nuclear plant construction and that the Company's probabilities for its range of costs are inappropriate. I have addressed the first point in response to the comments of Mr. Woolf.

Q. Mr. Schlissel contends that the probabilities for the range of nuclear costs "could easily be 0 percent for the low estimate, 25 percent for the base estimate, 25 percent for the high estimate and 50 percent as the probability that actual overnight construction cost will be above $8 billion." What evidence does Mr. Schlissel present to support this statement?

A. None. He simply indicates that, "no one knows what it will cost to build a new nuclear power plant," and that the Company's estimated construction costs are, "based on speculation." Future cost estimates are necessarily subjective, and the IRP rules specifically call for utility decision makers to assign subjective probabilities, which is what Ameren Missouri has done using reliable sources for informaiton. If the Company knew with certainty what a new plant would cost, there would be no need for an uncertain range.

Q. Mr. Schlissel argues that the EIA projections of nuclear costs cited in the Company's response are unreliable. What support does he provide for this statement?

A. He simply cites the information regarding historical cost overruns presented in NRDC's June comments, which are similar to the arguments made by Mr. Woolf and addressed previously in my testimony. He does not offer a specific basis for alleging that the EIA's estimates of costs for new designs under current regulations are inappropriate.

Q. Have either Mr. Woolf or Mr. Schlissel presented sources of information for ranges of future nuclear construction cost estimates over the planning horizon that they do believe are reliable?

A. No. They simply allege that the Company's estimates are too low, that current estimates for projects both planned and under construction are too low, and that estimates published by the U.S. Department of Energy are too low. If they can point to comprehensive sources of such information that they consider reliable, Ameren Missouri can consider such sources when preparing its 2014 triennial IRP filing.

X. PURCHASED POWER AGREEMENTS

Q. Mr. Smith asserts that the Company's exclusion of PPA's from consideration in its supply side resource analysis is inappropriate. What is his basis for this conclusion and what is your response?

A. Mr. Smith argues that the Company has not presented any real information to support its decision to exclude PPA's and that the Company only provides a high level discussion that "provides no assurance that, in fact, there are no reasonable opportunities available for consideration in the IRP supply-side analysis." The point the Company makes in its IRP and in its August response is that it cannot get reliable information in the first place because parties are not willing to respond to a general solicitation for information that they cannot reasonably expect to result in an agreement, and the Company had no pending offers to consider based on internal discussions with Ameren Missouri's trading organization. It is illogical to demand information to prove that you can't get it.

Q. DNR rebuttal witness Richard Hasselman more specifically criticizes the Company for insufficient consideration of PPA's as a means of acquiring renewable resources. What are his key arguments and how do you respond?

A. Mr. Hasselman asserts that the Company should have considered PPA's for renewable resources of less than 2 MW. He argues that the Company's exclusion inappropriately relies on the language in 4 CSR 240-22.040(1), which says in relevant part that the Company must consider, "resource options which the utility can reasonably expect to develop and implement solely through its own resources or for which it will be a major participant." I maintain that Ameren Missouri simply would not chase after projects of less than 2 MW, that such small projects tend to exhibit higher costs due to their small scale, and that even if the Company did pursue all such projects they would not add up to a significant share of the Company's resource portfolio or significantly affect the need for other resources. Mr. Hasselman charges that the Company's statements regarding the unavailability of pending PPA offers in Chapter 4 conflicts with its statement that the Company has received unsolicited offers for wind PPA's in Chapter 5. The fact is, there were no pending offers to consider at the time the Company initiated its development of primary resource options for consideration in alternative resource plans as the Company has stated based on discussions with Ameren Missouri's trading organization. At the same time, the Company has relied on prior information received for purposes of characterizing wind resources.

Q. Mr. Hasselman discusses the benefits of scale economies for acquiring renewable resources, the potential to acquire very small renewable resources in "batches", and the potential benefits of public debt financing. Are such considerations useful?

A. They are when it comes to implementation of resource options. When it comes to a 20-year resource evaluation these are unnecessary details. These same considerations could be applied to fossil-fueled resources as well, so they offer no advantages that are unique to renewable resources and thus add nothing to the comparison of resource options. As I've pointed out elsewhere, excluding very small resources or excluding consideration of projects that may exhibit costs below a reasonably expected range does not at all preclude consideration of such resources if such opportunities are identified. The IRP provides a reasonable view of expected resource needs and options based on reasonable ranges of assumptions and thus establishes a benchmark for consideration of other resource opportunities.

XI. T&D AVOIDED COST

Q. Mr. Fratto criticizes the Company's use of certain adjustment factors it applied in determining the avoided T&D cost used for evaluation of DSM resources. Please discuss his key arguments and provide your response.

A. Mr. Fratto contends that the adjustment factors used by the Company to assess factors that limit the potential for deferral of T&D investments through DSM load reductions are unsubstantiated and are not supported by sufficient documentation. The Company maintains that these considerations are important to a true assessment of the potential for T&D investment deferrals and that without detailed data that specifically address these considerations it is better to apply engineering judgment to assess them than to simply ignore them. For example, one such consideration is that to the extent load reductions diminish the need to upgrade T&D infrastructure for capacity reasons there will be some added need for replacement of infrastructure due to reliability or equipment condition that might have been replaced earlier for capacity reasons. Said another way, removing or deferring one consideration for replacing infrastructure means that other considerations become the constraining factors.

Q. Does this conclude your surrebuttal testimony?

A. Yes, it does.

BEFORE THE PUBLIC SERVICE COMMISSION
OF THE STATE OF MISSOURI

In re: Union Electric Company's 2011 Utility Resource Filing Pursuant To 4 CSR 240 – Chapter 22.	)))	Case No. EO-2011-0271

AFFIDAVIT OF MATT MICHELS

STATE OF MISSOURI)
) ss
CITY OF ST. LOUIS)

Matt Michels, being first duly sworn on his oath, states:

1. My name is Matt Michels. I am employed by Ameren Services Company as Managing Supervisor, Resource Planning.

2. Attached hereto and made a part hereof for all purposes is my Surrebuttal Testimony on behalf of Union Electric Company, d/b/a Ameren Missouri, consisting of 98 pages (and Schedules MM-E1 through MM-E12 if any), all of which have been prepared in written form for introduction into evidence in the above-referenced docket.

3. I hereby swear and affirm that my answers contained in the attached testimony to the questions therein propounded are true and correct.

Matt Michels

Subscribed and sworn to before me this 30th day of November, 2011.

Mary Hoyt
Notary Public

My commission expires: 4-11-2014

Mary Hoyt - Notary Public
Notary Seal, State of
Missouri - Jefferson County
Commission #10397820
My Commission Expires 4/11/2014

No. Ameren-MPSC-002

Data Information Request
From Union Electric Company d/b/a Ameren Missouri
MPSC Case No. EO-2011-0271

Requested From: Missouri Public Service Commission Staff – John Rogers

Requested By: Wendy Tatro

Date of Request: 11/04/2011

Information Requested:

What does Staff believe is the practical difference between Ameren Missouri selecting a RAP DSM plan as its Preferred Resource Plan contingent on approval of an appropriate DSIM and showing the same plan as a contingency plan that would be pursued on approval of an appropriate DSIM?

Response:

The former is a commitment by Ameren Missouri to pursue the RAP DSM plan strategy, while the latter is not a commitment by Ameren Missouri to pursue the RAP DSM plan strategy.

Response Provided By: John Rogers Date: November 23, 2011

No. Ameren-MPSC-013

Data Information Request
From Union Electric Company d/b/a Ameren Missouri
MPSC Case No. EO-2011-0271

Requested From: Missouri Public Service Commission Staff– John Rogers

Requested By: Wendy Tatro

Date of Request: 11/04/2011

Information Requested:

Staff indicates that minimizing PVRR must be assigned a "very high weight during the preferred resource plan selection process". 1) What percentage does Staff believe reflects the lowest value that could be considered a "very high weight"? 2) Does Staff believe that assigning such a weight should ensure that the plan with the lowest PVRR is selected regardless of the consideration of other selection criteria?

Response:

1) Staff is not able to identify a specific "lowest value" without assessing and understanding the risk associated with: 1) critical uncertain factors that will affect the actual costs associated with alternative resource plans, 2) new or more stringent environmental laws or regulations that may be imposed at some point within the planning horizon, and 3) any other considerations which are critical to meeting the fundamental objective of the resource planning process, but which may constrain or limit the minimization of the present worth of expected utility costs.

2) No.

Response Provided By: John Rogers Date: November 23, 2011

No. Ameren-MPSC-028

Data Information Request
From Union Electric Company d/b/a Ameren Missouri
MPSC Case No. EO-2011-0271

Requested From: Missouri Public Service Commission Staff– John Rogers

Requested By: Wendy Tatro

Date of Request: 11/04/2011

Information Requested:

Can Staff think of any examples in which it would be appropriate to consider rate impacts as more important to plan selection than minimizing PVRR? Please explain.

Response:

Yes. Consider the following example: Two candidate resource plans have PVRR values which are very close with Plan A having a slightly higher PVRR than that of Plan B. If Plan A has a series of relatively small rate increases in the latter years of the planning horizon and the Plan B has one large rate increase in the early years of the planning horizon. In this case selection of Plan A would be prudent even though it has a slightly higher PVRR to avoid the more certain single large rate increase in Plan B.

Response Provided By: John Rogers Date: November 23, 2011

No. Ameren-MPSC-021

Data Information Request
From Union Electric Company d/b/a Ameren Missouri
MPSC Case No. EO-2011-0271

Requested From: Missouri Public Service Commission Staff– John Rogers

Requested By: Wendy Tatro

Date of Request: 11/04/2011

Information Requested:

Does Staff believe that the impact of Preferred Resource Plan selection on investors a valid consideration under 22.010(2)(C)? If not, why not?

Response:

Yes.

Response Provided By: John Rogers Date: November 23, 2011

Ameren Missouri
Response to OPC Data Request
MPSC Case No. EO-2011-0271
Union Electric Company d/b/a Ameren Missouri's 2011 Utility Resource Filing pursuant to 4 CSR 240 - Chapter 22

Data Request No.: OPC 2034 – Ryan Kind

On page 108 in Section 11.6 of UE's 8/22/11 response, UE refers to "the the fact that most members of the Ameren Missouri Board were present at meetings of Ameren Missouri's Senior Leadership Team in which all candidate resource plans were discussed and final selection of the preferred resource plan was made." Please specify each of the dates of all of the "meetings of Ameren Missouri's Senior Leadership Team in which all candidate resource plans were discussed and final selection of the preferred resource plan was made." For each meeting date that is specified, identify all of the individuals who are members Ameren Missouri's Senior Leadership Team that were present at the meeting. Also, for each meeting date that is specified, identify all of the individuals who are members Ameren Missouri Board that were present at the meeting. If UE is not able to separately identify each member of the Ameren Missouri Senior Leadership Team and each member of the Ameren Missouri Board who were present at each of the specified meetings, please provide a statement to that effect.

RESPONSE

Prepared By: Matt Michels
Title: Managing Supervisor Resource Planning
Date: October 24, 2011

The Ameren Missouri Senior Leadership Team met on the following dates to review all candidate resource plans and/or select the preferred resource plan:

October 25, 2010
November 8, 2010
November 15, 2010

For each meeting, materials were provided in advance to all of the following people

Warner Baxter – Ameren Missouri Senior Leadership Team / Ameren Missouri Board of Directors
Lynn Barnes – Ameren Missouri Senior Leadership Team
Mark Birk – Ameren Missouri Senior Leadership Team
Adam Heflin – Ameren Missouri Senior Leadership Team / Ameren Missouri Board of Directors
Richard Mark – Ameren Missouri Senior Leadership Team / Ameren Missouri Board of Directors
Warren Wood – Ameren Missouri Senior Leadership Team
Dan Cole – Ameren Missouri Board of Directors
Marty Lyons – Ameren Missouri Board of Directors

All those listed above attended one or more of the meetings listed above, either in person or by phone.

Ameren Missouri
Response to OPC Data Request
MPSC Case No. EO-2011-0271
Union Electric Company d/b/a Ameren Missouri's 2011 Utility Resource Filing pursuant to 4 CSR 240 - Chapter 22

Data Request No.: OPC 2035 – Ryan Kind

Please provide a complete copy of each of the documents that were relied upon by UE in providing the information requested in OPC DR No. 2014. If no documents were relied upon by UE in providing the information requested in OPC DR No. 2034, please provide a statement to that effect.

RESPONSE

Prepared By: Matt Michels
Title: Managing Supervisor Resource Planning
Date: October 24, 2011

Please see attached emails in which meeting materials were provided to the invitees for each meeting of the Ameren Missouri Senior Leadership Team listed in the response to OPC 2034. The materials themselves were previously provided in response to OPC 2005 and OPC 2006.

Michels, Matt R

From:	Michels, Matt R
Sent:	Friday, November 05, 2010 2:34 PM
To:	Baxter, Warner L; Barnes, Lynn M; Birk, Mark C; Heflin, Adam C; Kidwell, Steve M; Mark, Richard J; Moehn, Michael; Varel, Ken P; Diya, Fadi M; Reasoner, Cleveland O; Wakeman, David N; Schepers, David J; Schukar, Shawn E; Byrne, Thomas M; Tatro, Wendy K; Cole, Dan F; Knowles, Susan B; Lyons, Marty J; Wood, Warren
Cc:	Arora, Ajay K; Davis, Bill R
Subject:	Ameren Missouri IRP Update Meeting Materials for 11/8
Attachments:	AMOSLT Nov 8 2010 IRP Discussion FINAL.pptx; AMOSLT Nov 8 2010 IRP Discussion FINAL - Appendices.pptx

All,

Attached are materials for the November 8th Ameren Missouri IRP Update discussion. The focus of the discussion is on the selection of Ameren Missouri's Preferred Resource Plan. In the attached materials you will find a slide deck to guide our discussion and a set of appendices with information that may be useful to the discussion. The discussion deck has been crafted to focus on a handful of key plans that represent preferred options under different circumstances with respect to environmental regulation and cost recovery treatment. As such, the critical information for a thorough discussion of these plans has been included in the discussion deck itself, so I don't expect to need to refer to the appendices as much as we did in our last discussion.

The goal of the discussion is to select the Preferred Resource Plan and define the conditions under which we would likely choose an alternative plan. We will then be able to finalize selection on **November 15th** and also define/refine review materials for discussion with the ELT on **November 18th**.

As you review the materials for the discussion, please do not hesitate to contact me with questions. I can be reached via email or by phone at either of the numbers below. I will bring copies of the materials to the meeting.

Thanks,
Matt

:::::::::::::::::::::::::

MATT MICHELS
Managing Supervisor, Resource Planning
Corporate Planning
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E mmichels@ameren.com

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1901 Chouteau Ave.
St. Louis, MO 63103
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Michels, Matt R

From:	Michels, Matt R
Sent:	Sunday, November 14, 2010 1:17 PM
To:	Baxter, Warner L; Barnes, Lynn M; Birk, Mark C; Heflin, Adam C; Kidwell, Steve M; Mark, Richard J; Moehn, Michael; Varel, Ken P; Diya, Fadi M; Reasoner, Cleveland O; Wakeman, David N; Schepers, David J; Schukar, Shawn E; Byrne, Thomas M; Tatro, Wendy K; Cole, Dan F; Knowles, Susan B; Lyons, Marty J; Wood, Warren
Cc:	Arora, Ajay K; Davis, Bill R
Subject:	Materials for 11/15 IRP Update
Attachments:	2011 Ameren Missouri IRP -- Preferred Plan Selection Overview v3.pptx

All,

Attached is a brief slide deck for our discussion on Monday afternoon. The purpose of the discussion is twofold. The first objective is to finalize selection of the preferred plan and messaging around alternative plans and the key issues around them. The second objective is to determine any revisions or additions to the discussion materials for purposes of review with the ELT on November 18th and with the Board of Directors at their December meeting. As always, if you have questions about this or anything we've done for the IRP, please do not hesitate to call me.

Thanks,
Matt

P.S. The materials from our 11/8 meeting reflect the most recent analysis results and can be used to support discussion of any additional analytics that may be relevant to the ELT and Board discussions. I will have a few copies with me on Monday in case they are needed.

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MATT MICHELS
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Michels, Matt R

From:	Michels, Matt R
Sent:	Friday, October 22, 2010 12:04 PM
To:	Baxter, Warner L; Barnes, Lynn M; Birk, Mark C; Heflin, Adam C; Kidwell, Steve M; Mark, Richard J; Moehn, Michael; Varel, Ken P; Diya, Fadi M; Reasoner, Cleveland O; Wakeman, David N; Schepers, David J; Schukar, Shawn E; Byrne, Thomas M; Tatro, Wendy K; Cole, Dan F; Knowles, Susan B; Lyons, Marty J; Wood, Warren
Cc:	Arora, Ajay K; Davis, Bill R
Subject:	Ameren Missour IRP Update Meeting Materials for 10/25
Attachments:	AMOSLT Oct 25 2010 IRP Discussion FINAL.pptx; AMOSLT Oct 25 2010 IRP Discussion FINAL - Appendices.pptx; Preferred Plan Selection Scorecard FINAL.xlsx

All,

Attached are materials for the October 25th Ameren Missouri IRP Update discussion. The focus of the discussion is on the selection of Ameren Missouri's Preferred Resource Plan. In the attached materials you will find a slide deck to guide our discussion, a set of appendices with information relevant to the discussion and a Preferred Plan Selection Scorecard with scores for each plan based on Ameren Missouri's IRP Policy Objectives. These materials will aid in our discussion and resolution of the following key questions:

- How aggressive should Ameren Missouri be in the pursuit of energy efficiency and what kind of rate treatment is needed to provide additional incentive?
- What is the best path for Meramec in the context of potential environmental and climate regulations and the available options to replace it?
- What are the best options for supply side generation when needed?
- What changes in regulation, market conditions, or other critical factors might lead us to select a different path?

This is obviously a critical stage in the IRP process. While we likely will not settle on the Preferred Resource Plan during this discussion, I expect we will be in a good position to finalize plan selection by our **November 15th** target date.

As you review the materials for the discussion, please do not hesitate to contact me with questions. I can be reached via email or by phone at either of the numbers below. I will bring copies of the materials to the meeting.

Thanks,
Matt

::::::::::::::::::::::::

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Please consider the environment before printing this e-mail.

No. Ameren-MPSC-031

Data Information Request
From Union Electric Company d/b/a Ameren Missouri
MPSC Case No. EO-2011-0271

Requested From: Missouri Public Service Commission Staff– John Rogers

Requested By: Wendy Tatro

Date of Request: 11/04/2011

Information Requested:

You indicate that Ameren Missouri's response with respect to Staff's Concern B, which involves the appropriateness of information shared with Ameren Missouri's Board of Directors, has dissipated Staff's concern. What portion or portions of the Ameren Missouri response did Staff find compelling in this regard?

Response:

The portion of the Company's *Response to Comments of Parties* document on pages 108 and 109 which states: "It also misses the fact that most members of the Ameren Missouri Board were present at meetings of Ameren Missouri's Senior Leadership Team in which all candidate resource plans were discussed and final selection of the preferred resource plan was made. … Ameren Missouri presented its resource acquisition strategy for Board approval, documented in Appendix D of Chapter 10, as evidence that the Company officially adopted it resource acquisition strategy."

Response Provided By: John Rogers Date: November 23, 2011

No. Ameren-OPC-018

Data Information Request
From Union Electric Company d/b/a Ameren Missouri
MPSC Case No. EO-2011-0271

Requested From: Office of Public Counsel – Dr. Thomas Vitolo

Requested By: Wendy Tatro

Date of Request: 11/04/2011

Information Requested:

You indicate that Ameren Missouri should only take credit for its fractional share of jobs created through construction of a potential nuclear plant because if others take credit as well it would double count the job impacts. Is OPC aware of any other utilities in or near Missouri that use such a measure for plan selection? Does OPC believe that another utility could take such credit if the proposed plant is to be located on a site that the other utility does not own whether or not the owner of the site intends to pursue construction? If so, please explain.

Response:

In fact, I indicated the potential for more than double counting – I stated that "if four companies were to co-own the plant and they each used the Company's metric, commissioners would expect four times the number of full time equivalent (FTE) job years that the project would actually generate." I am not aware of other utilities in or near Missouri that use such a measure, perhaps because doing so is flawed. Of course another utility could take such credit; perhaps they are to own as much of the plant as Ameren, a plurality, or even a majority of the hypothetical nuclear plant. However, even if were to also claim 100% of the jobs, their claim would be just as flawed as Ameren's claim on 100% of the jobs despite only 30% of the investment.

Response Provided By: Thomas Vitolo Date: November 23, 2011

No. Ameren-OPC-019

Data Information Request
From Union Electric Company d/b/a Ameren Missouri
MPSC Case No. EO-2011-0271

Requested From: Office of Public Counsel – Dr. Thomas Vitolo

Requested By: Wendy Tatro

Date of Request: 11/04/2011

Information Requested:

On page 6 of your rebuttal testimony, you create a fictional example to demonstrate potential issues with using a combination of average rate increases and single-year rate increases as a measure of customer satisfaction. Did OPC perform this kind of comparison with real data from Ameren Missouri's IRP filing and/or workpapers? If not, why not? If OPC believes it did not have the data to perform such a comparison, did it request the information? If not, why not?

Response:

Yes, OPC performed this comparison with real data from Ameren Missouri's IRP filing and/or workpapers.

Response Provided By: Thomas Vitolo Date: November 23, 2011

Data Information Request
From Union Electric Company d/b/a Ameren Missouri
MPSC Case No. EO-2011-0271

Requested From: Office of Public Counsel – Dr. Thomas Vitolo

Requested By: Wendy Tatro

Date of Request: 11/04/2011

Information Requested:

You provide an example of final candidate resource plan scoring in Exhibit TJV-3 to support the assertion that the effective weight placed on PVRR using the unitized scoring approach from the screening phase is 7.1%. Does OPC believe this is how final scoring was performed? If so, how does this relate to the comparison of unitized PVRR and final scorecard values shown in Exhibit TJV-5? If not, what is the relevance of the comparison in Exhibit TJV-3?

Response:

OPC does not believe that final scoring was done with unitized scores. Final scoring was done on a simple 1-5 scale for three of the five categories, and 2-5 for two of the five categories. A sixth category found in the initial screening (Energy Efficiency) was eliminated from the final scorecard.

As a result of Ameren's simplified metric for the final scorecard, the cost category (defined as PVRR) had an effective weight of 25.7%, as shown in the table below.

--- Final Screening ---						
Policy Objective	Absolute Min	Absolute Max	Score Range	Nominal Weight	Effective Weight	Notes
Environmental/Diversity	1	5	[1, 5]	20%	22.9%	1,2
Energy Efficiency	--	--	--	0%	0%	--
Financial/Regulatory	1	5	[1, 5]	20%	22.9%	1,2
Customer Satisfaction	2	5	[2, 5]	20%	17.1%	1,2
Economic Development	1	5	[1, 5]	10%	11.4%	1,2
Cost	2	5	[2, 5]	30%	25.7%	1,2
Total					100%	100%

Notes
1. From Ameren Missouri Integrated Resource Plan Chapter 10, p. 13
2. Ameren does not consider Nominal Weight to be HC. See email from Wendy Tatro 31/Oct/2011 approximately 3:00 pm

Exhibit TJV-3 demonstrates the flaw in Ameren's improperly formed unitized scores, used by Ameren in their initial screening process. By not ensuring that plans in each score ranged from 0.000 to 1.000, Ameren's effective weights aren't consistent with their nominal rates.

Exhibit TJV-5 demonstrates that the assignment of scores in the 1-5 range was, in some instances, not based on the underlying data. For example, R1, R2, and R3 all have relative PVRRs which, when transformed to unitized scores, put their score closer to 3 than 4, but were scored a 4. C1 was closer to a 3 but was scored a 2. Additionally, the final scorecard suggests that, when measured by cost, plans B1, B2, B3, B4, R1, R2, and R3 are all equivalent, despite having PVRRs which differ by as much as 2.2 billion dollars. I would also note that this isn't OPC's only concern with the final scorecard methodology. For example, Mr. Woolf describes additional concerns in his Rebuttal testimony, beginning at line 21 on page 11.

In preparing to answer this question, I have discovered an error in my analysis, and must correct my testimony. On page 5, line 13, "10" should be replaced with "26." Additionally, on page 10, lines 12-18, the two sentences beginning with "Because the Company" and concluding with "percent" should be replaced by the sentence "Because the Company used 1-5 and 2-5 scales in the final scorecard, the effective weighing of PVRR in the final scorecard is 25.7%." Finally, the Final Screening table shown in TJV-3 should be replaced with the table found earlier in this response. These corrections to my testimony will be made at the hearing.

Response Provided By: Thomas Vitolo Date: November 23, 2011

Ameren Missouri
Response to DNR Data Request
MPSC Case No. EO-2011-0271
Union Electric Company d/b/a Ameren Missouri's 2011 Utility Resource Filing pursuant to 4 CSR 240 - Chapter 22

Data Request No.: DNR 0154 – Adam Bickford

Please provide any analyses, reports, or studies that Ameren-Missouri has conducted of DSM cost recovery, lost revenues recovery, and DSM incentive mechanisms in other states.

RESPONSE

Prepared By: Bill Davis
Title: Sr. Load Research Specialist
Date: 4/25/2011

Ameren Missouri has not conducted any analyses, reports, or studies of DSM cost recovery, lost revenues recovery, and DSM incentive mechanisms in other states.

Ameren Missouri
Response to DNR Data Request
MPSC Case No. EO-2011-0271
Union Electric Company d/b/a Ameren Missouri's 2011 Utility Resource Filing pursuant to 4 CSR 240 - Chapter 22

Data Request No.: DNR 0155 – Adam Bickford

Please provide any information that Ameren Missouri has on the top twenty investor-owned utilities in the US that have saved the most kWh on an annual basis with DSM programs (as a percent of total annual kWh sales), and provide whether these investor-owned utilities have any kind of recovery of lost revenues due to DSM programs or DSM incentives.

RESPONSE

Prepared By: Bill Davis
Title: Sr. Load Research Specialist
Date: 4/21/2011

Ameren Missouri does not have any information on the top twenty investor-owned utilities in the US that have saved the most kWh on an annual basis with DSM programs.