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MAY 19 2006
Missouri Public Service Commission

Public Service Commission
Governor Hotel
Jefferson City, MO 65102

RE: Union Electric Company's 2005 Utility Resource Filing
Case No. EO-2006-0240

Dear Sir/Madam:

Enclosed for filing please find an original and 9 copies of *MDNR Comments on AmerenUE's 12/5/05 IRP Compliance Filing* and *MDNR Comments on AmerenUE's 12/5/05 IRP Compliance Filing-Public Version* in the above-styled matter. Please stamp "filed" on the extra copies of the first page for my files. Thank you.

Sincerely,

JEREMIAH W. (JAY) NIXON
Attorney General

SHELLEY A. WOODS
Assistant Attorney General

SAW:mf
Enclosure
c: Counsel of Record

BEFORE THE PUBLIC SERVICE COMMISSION
OF THE STATE OF MISSOURI

FILED[4]
MAY 19 2006

Missouri Public
Service Commission

In the Matter of Union Electric Company's 2005 Utility Resource Filing Pursuant to 4 CSR 240-Chapter 22.	)))))	Case No. EO-2006-0240

MDNR Comments on AmerenUE's 12/5/05 IRP Compliance Filing -Public Version

Executive Summary

On January 3, 2006, the Missouri Public Service Commission (MPSC) granted the Department of Natural Resources' (MDNR) application to intervene in AmerenUE's December 5, 2005 integrated resource planning (IRP) compliance filing.

MDNR is filing these comments under a provision of Missouri's integrated resource planning (IRP) rule that states that an intervenor may file comments that

> "identify any deficiencies in the electric utility's compliance with the provisions of this chapter, any deficiencies in the methodologies or analyses required to be performed by this chapter, and any other deficiencies which the intervenor believes would cause the utility's resource acquisition strategy to fail to meet the requirements identified in 4 CSR 240-22.010(2)(A)–(C)."[1]

The IRP rule requires the utility to demonstrate compliance with the IRP planning process prescribed in the rule and to submit a resource acquisition strategy that meets the following requirements of 4 CSR 240-22.010(2)(A)–(C).

> (A) Consider and analyze demand-side efficiency and energy management measures on an equivalent basis with supply-side alternatives in the resource planning process;
>
> (B) Use minimization of the present worth of long-run utility costs as the primary selection criterion in choosing the preferred resource plan; and
>
> (C) 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. The utility shall document the process and rationale used by decision-makers to assess the tradeoffs and determine the appropriate balance between minimization of expected utility costs and these other considerations in selecting the preferred resource plan and developing contingency options. These considerations shall include, but are not necessarily limited to, mitigation of—
>
> 1. Risks associated with critical factors that will affect the actual costs associated with alternative resource plans;
> 2. Risks associated with new or more stringent environmental laws or regulations that may be imposed at some point within the planning horizon; and
> 3. Rate increases associated with alternative resource plans.

MDNR is offering comments on two aspects of AmerenUE's December 5 filing:

(1) Deficiencies in satisfying 4 CSR 240-22.010(2)(A), which requires AmerenUE to treat demand side resources on an equivalent basis with supply-side resources. Section I of our Comments identify deficiencies in AmerenUE's screening analysis of energy efficiency demand side management (EE DSM) measures and programs required by 4 CSR 240-22.050. Section II identifies deficiencies in the methods used to integrate EE DSM

[1] 4 CSR 240-22.080(6)

resources into AmerenUE's resource acquisition strategy, required by 4 CSR 240-22.060 and 4 CSR 240-22.080. MDNR's comments consider both AmerenUE's failure to comply with the process and methodology prescribed by the rule and deficiencies in the process and methods that AmerenUE actually used.

(2) Deficiencies in satisfying 4 CSR 240-22.010(2)(C), which requires AmerenUE to take into account critical uncertain factors that could affect the adequacy of its resource acquisition strategy. Section III of our Comments identifies deficiencies in AmerenUE's analysis of uncertainty and contingency options, required by 4 CSR 240-22.070.

Recommendations are included in Sections I-III to address deficiencies identified. Section IV offers an additional recommendation for corrective action related to DSM and discusses AmerenUE's proposal for a statewide collaborative process.

Section I - Deficiencies in AmerenUE's screening analysis of EE DSM measures and programs

High quality DSM analysis and screening is an essential component of compliance with the IRP rule. Deficiencies in DSM analysis and screening are likely to result in the incorrect estimates of program benefits, costs and market potential and incorrect selection of candidate programs. Rule 4 CSR 240-22.050(7)(F) requires that each potential EE DSM program that passes screening "shall be considered as candidate resource options and must be included in at least one (1) alternative resource plan developed pursuant to 4 CSR 240-22.060(3)." Therefore, deficiencies in DSM analysis and screening ripple through all subsequent steps in the planning process and call into question the utility's compliance with the rule requirement to "consider and analyze demand-side efficiency and energy management measures on an equivalent basis with supply-side alternatives in the resource planning process."[2]

This section includes comments on deficiencies in the process and methods of EE DSM analysis and screening used by AmerenUE and its DSM consultant, [redacted] The deficiencies fall into two categories:

(1) The failure of the DSM analysis and screening to comply with the requirements of 4 CSR 240-22.050.

Rule 4 CSR 240-22.050 prescribes the process and methods by which the utility is required to identify and collect pertinent data about candidate energy efficiency resources that may be integrated into the utility's resource plan.

In the absence of a waiver, AmerenUE is required to comply with the IRP rule currently in place. On August 15, 2005, PSC staff asked AmerenUE whether the utility requested any waiver from the requirements of 4 CSR 240-22.050. AmerenUE replied that it did not require or request any such waiver.[3]

(2) The failure of the DSM analysis and screening to adhere to standard and reasonable practices.

MDNR is aware that the Commission and some stakeholders have expressed interest in modifying the provisions of 4 CSR 240-22.050 for a variety of purposes, including simplifying the process of DSM analysis and screening. The process that AmerenUE has followed in its filing does simplify the process of DSM screening analysis; however, simplicity is not sufficient reason to adopt an analytic process that is otherwise flawed. Taken on its own terms, AmerenUE's screening analysis contains deficiencies that adversely affect the integrity and value of the IRP planning process. These deficiencies could be corrected by adhering to standard and reasonable practices.

The following description of AmerenUE's DSM analysis relies primarily on Documents 6 through 8 of the compliance filing. It also relies on documents related to the contractual agreement between AmerenUE and its DSM consultant; documents related to AmerenUE's past

[2] 4 CSR 240-22.010(2)
[3] MPSC Data Request 0005

DSM programs and efforts; and statements made by AmerenUE and its DSM consultant during a stakeholder meeting held at AmerenUE's facilities on February 27, 2006.

Nomenclature

MDNR's comments focus on AmerenUE's analysis of demand side management (DSM) through energy efficiency (EE) programs.

Because the use of terms related to DSM is not always consistent between Missouri's IRP rule and AmerenUE's submittal, a review of nomenclature is needed. The IRP rule defines a demand-side measure as either an energy-efficiency (EE) measure or an energy-management measure. The rule defines demand-side program as an organized process for packaging and delivering a portfolio of demand-side measures to a target market segment.[4]

There are two inconsistencies in the use of terms in AmerenUE's submittal, as follows:

- AmerenUE refers to energy-management measures as "demand response" (DR) measures. This use of terms is subject to debate but in these Comments, MDNR follows the AmerenUE practice.
- AmerenUE's use of the term "demand-side management" (DSM) varies within the IRP. In some instances, AmerenUE uses the term to refer collectively to both EE and DR measures and programs; in other instances, notably in the Screening Analysis of Demand-Side Management (DSM) Programs," AmerenUE uses the term to refer exclusively to EE. .

  For the sake of clarity, these Comments will use terms that avoid this ambiguity. When using the terms DSM, MDNR will always modify it as appropriate - for example, "EE DSM," "DR DSM" or "EE and DR DSM."

MDNR recommendation: As a standard practice, utility IRP filings should use terms as defined in the IRP rule. If the utility finds it necessary to depart from IRP rule definitions, the utility should clearly explain the reasons for the departure from the rule. In the case of terms referring to demands side resources, the utility should use terms that distinguish clearly between energy efficiency (EE) and demand response (DR) categories of demand side resources.

Deficiencies in AmerenUE's compliance with 4 CSR 240-22.050 requirements for analysis and screening of DSM measures

Paragraphs (1) through (4) of 4 CSR 240-22.050 contain the IRP rule's requirements for analyzing and screening DSM measures. MDNR has identified several instances of non-compliance with these requirements. These instances are described in this section of the comments.

AmerenUE has not estimated current EE DSM measure costs and benefits

Rule 4 CSR 240-22.050(3) requires the utility to identify EE DSM measures and for each measure, estimate demand reduction for each demand period and energy savings per installation. Together with data on avoided cost, these are to be used to screen EE DSM measures using the probable environmental benefits (PEB) test.[5] Rule 4 CSR 240-22.050(3) (B) states that

[4] Missouri's IRP rule uses "end-use measure" as synonymous with "demand-side measure" and "demand-side resource" as synonymous with "demand-side program."

[5] The PEB test is required and described in DSM rule, section (3).

"Benefits per installation of each end-use measure in each avoided cost period shall be calculated as the demand reduction multiplied by levelized avoided demand cost plus the energy savings multiplied by the levelized avoided energy cost."

AmerenUE has responded to this requirement by reprinting its 1995 screening analysis of DSM measures in Document 8 of the compliance filing. The appendices in Document 8 duplicate tables that summarize the 1995 measure level screening analysis for the residential and commercial sectors. The tables characterize each potential end use measure and present an estimate of annual energy savings (MW), demand savings (MWh), cost and benefit/cost ratio per installation.

For its current compliance filing, AmerenUE made no effort to revise the 1995 data.

In response to a stakeholder question at the February 27 stakeholder meeting, DSM consultant staff stated that

MDNR agrees with this assessment. The DSM measure data included in AmerenUE's filing would require significant revision to be suitable for its prescribed use as the basis for screening EE DSM measures. In many end uses of electricity there have been technological advances during the past ten years such that current commercially available best technology is less expensive and/or more efficient than it was in 1995. These end uses include lighting, windows, air conditioning, refrigeration, clothes washers and dryers, computers and other miscellaneous electric appliances in the residential and commercial sectors and variable speed motors in the commercial and industrial sectors.

AmerenUE has not estimated the technical potential of EE DSM measures.

Rule 4 CSR 240-22.050(4) requires that "the utility shall estimate the technical potential of each end-use *measure* that passes the screening test." (Emphasis added) AmerenUE's filing includes no such estimate.

In 1993, AmerenUE requested a waiver to estimate technical potential for end-use *programs* rather than end-use measures.[6] However, MDNR is not aware of any waiver requested or granted for AmerenUE's 2005 filing.

AmerenUE has not identified a set of potential EE DSM programs based on screening of EE DSM measures.

Rule 4 CSR 240-22.050 prescribes a screening process based on a bottom-up approach that "shall begin with the development of a menu of energy efficiency and energy management measures" and proceeds to identifying potential EE DSM programs based on screening of the EE DSM measures. Rule 4 CSR 240-22.050(3)(F) requires that each end-use measure that passes the probable environmental benefits (PEB) test "must be included in at least one (1) potential demand-side program."

[6] "Filing Requirements," Document 2 of AmerenUE filing, p. 25

Rule CSR 240-22.050(6) includes specific procedures for developing and designing a set of potential DSM programs based on the menu of EE DSM measures that have passed the PEB screening test.

As previously noted, AmerenUE includes the results of the 1995 EE DSM measure screening as an appendix in its filing. However, neither AmerenUE nor its DSM consultant actually used the 1995 data to identify a set of potential demand-side programs.

The procedure actually used by AmerenUE and its DSM consultant to identify, analyze and screen a set of potential programs is described in the next subsection of these comments.

Deficiencies in AmerenUE's analysis and screening of EE DSM programs

Paragraphs (5) through (11) of 4 CSR 240-22.050 contain the IRP rule's requirements for analyzing and screening DSM programs and documenting and reporting DSM program analysis and results.

This section discusses deficiencies in AmerenUE's compliance with these requirements. These included deficiencies in the data that AmerenUE supplied to its EE DSM consultant and in the criteria used for EE DSM program screening. These deficiencies were compounded by AmerenUE's choice of a consultant who was relatively inexperienced in EE DSM program analysis and design.

The [redacted] for screening EE DSM programs

AmerenUE contracted with a consultant to analyze and screen potential EE DSM programs. The utility supplied its consultant with data and evaluations of AmerenUE's past and current EE DSM programs. In turn, the consultant conducted a screening analysis of potential EE DSM programs and provides AmerenUE with MIDAS input data for five candidate EE DSM programs that passed its screening tests. AmerenUE [redacted] included the other four in alternate resource plans using the input data supplied by the consultant.

[redacted]

(1) Step 1: Develop a list of DSM program categories.

As previously noted, 4 CSR 240-22.050 prescribes a 'bottom-up' approach to the task of developing a set of EE DSM programs from EE DSM measures, to be analyzed for possible inclusion in the utility's preferred resource plan.

Because AmerenUE omitted EE DSM measure screening for the 2005 IRP, the DSM consultant had to use an alternative method to develop a list of potential DSM programs. [redacted]

[7] *Screening Analysis of DSM Programs*, Document 7 of AmerenUE filing, Appendix 1, Document 1,cited hereafter as "the DSM consultant's *Screening Analysis* document."

[8] York, Dan and Martin Kushler, America's Best: Profiles of America's Leading Energy Efficiency Programs, ACEEE, Report U0-32, March 2003, cited hereafter as *ACEEE Best Practices*

[redacted]

Table 1, Column 1 lists residential program categories that ACEEE includes in its report.

Table 1 - Residential EE DSM program categories

Residential DSM program categories used by ACEEE in its "best practices" report	*Residential categories selected by consultant for DSM analysis*	*Programs included in AmerenUE resource plan integrated analysis*
Low-income weatherization (Wx) program	Not selected	[redacted]
HVAC programs	Not selected	[redacted]
Appliances program	Not selected	[redacted]
Appliance recycling program	Residential appliance buy-back	[redacted]
New construction program	Residential new construction	[redacted]
Lighting program	Residential lighting	[redacted]
Comprehensive program	Not selected	[redacted]

(2) [910]ep 2: Select a set of potential EE DSM programs.

The consultant accomplished this by [redacted]

Column 2 of Table 1 indicates the three generic residential DSM programs [redacted] selected for screening. Two of these three generic programs are represented by recent AmerenUE programs: the refrigerator rebate and recycling program is an example of a

[9] Established by Stipulation and Agreement in Case No. EO-2002-1.

[10] ACEEE lists these as "air conditioning programs" but DSM consultant lists them more generically as "HVAC programs." DSM consultant's characterization is used here because it more adequately describes the range of the best practice programs cited by ACEEE.

residential appliance buy-back program, and the rebate program to encourage residential use of compact fluorescent lighting is an example of a residential lighting program.[11]

In addition to the three residential generic programs, [redacted] two commercial/industrial (C/I) audit program categories, one directed at large and the other at small facilities. The small facility program was envisioned to operate similar to AmerenUE's existing commercial facility energy audit program.[12]

(3) Step 3: Develop input data.

Cost effectiveness screening of DSM programs requires input data for a number of parameters such as program duration, measure life, program and measure costs, program participation and demand reduction and energy savings per participant.

The IRP rule assumes that much of the required data will be developed based on analysis of DSM measures required by 4 CSR 240-22.050(3) through (5). However, AmerenUE did no new EE DSM measure screening for its 2005 IRP [redacted]

Therefore, as the DSM consultant explains in its *Screening Analysis* document, the consultant [redacted]

(4) Step 4: Prepare cost effectiveness screening tests and load impact estimates for each potential EE DSM program identified in Step 2.

As required by 4 CSR 240-22.050(7) and (8), the DSM consultant calculated Total Resource Cost (TRC) test results and load impact estimates for each of the five [redacted]

The DSM consultant also calculated results for two other tests not required by 4 CSR 240-22.050, the Ratepayer Impact Measure (RIM) test and the DSM consultant's own Net Economic Benefit (NEB) test.

[redacted] the NEB test. However, this test appears to be primarily of academic interest. It is not used for resource planning decisions in Missouri or any other state and the results of the NEB test were not used for any decision contained in AmerenUE's compliance filing.

After receiving these results from its DSM consultant, AmerenUE further screened the potential EE DSM programs by eliminating appliance recycling programs from further inclusion in the integrated analysis of alternative resource plans.

[11] The Stipulation and Agreement in Case No. EO-2002-1 established a Residential and Commercial Energy Efficiency Fund and a collaborative committee to develop plans for the utilization of these funds totaling $4 million from 2002 through June 2006. The refrigerator rebate and recycling program was implemented in 2003 and the Change-a-Light Change-the-World program was implemented in 2003, 2004 and 2005 pursuant to the Stipulation and Agreement in Case No. EO-2002-1. Both programs were part of regional initiatives coordinated by the Midwest Energy Efficiency Alliance.

[12] The commercial energy audit and incentive program is an ongoing program that was initiated by the Collaborative in 2003 pursuant to the Stipulation and Agreement in EO-2002-1.

MDNR has identified the following deficiencies in EE DSM program analysis and screening.

AmerenUE has not developed and provided EE DSM program input data based on screening of current EE DSM measures.

[redacted] the bottom-up method for developing DSM program input data. Use of this method is implicit in the bottom-up approach to DSM analysis that is prescribed in 4 CSR 240-22.050. [redacted] AmerenUE's 1995 DSM screening, in compliance with the requirements of 4 CSR 240-22.05, used this bottom-up method to develop program input data.

By contrast, AmerenUE's current filing relies on a top-down approach for developing DSM program input data. [redacted]

AmerenUE's tabulation of data and evaluation of results from its past EE DSM programs is deficient

In its 1995 IRP filing with the Commission, AmerenUE listed EE DSM projects that it had implemented during the past several years and other pilot projects that it intended to implement. These included both residential and commercial/industrial (C/I) EE DSM pilot projects.

In Step 3 of its EE DSM screening process, the DSM consultant relied heavily on evaluations and data from AmerenUE's past EE DSM programs. These program results were a critical component in the consultant's analysis and assessment of the viability and technical potential of EE DSM programs.

Review of the evaluation and data that AmerenUE supplied to the consultant indicates that they do not comply with the evaluation and reporting requirements the IRP rule. These requirements are as follows:

> (1) Rule 4 CSR 240-22.050(5) requires the utility to conduct market research studies, customer surveys and pilot demand-side programs "to estimate the technical potential of end-use measures and to design and implement cost-effective demand-side programs."[15]
>
> (2) Rule 4 CSR 240-22.050(11) lists specific requirements for documenting research results and the evaluation of pilot projects conducted in compliance with 4 CSR 240-22.050(5):

[13] *Screening Analysis*, pp. 9-10
[14] *Screening Analysis*, p. 10
[15] Rule 4 CSR 240-22.050(5)

(E) Copies of completed market research studies, pilot programs, test marketing programs and other studies as required by section (5) of this rule and descriptions of those studies that are planned or in progress and the scheduled completion dates;

(H) A tabulation of the incremental and cumulative number of participants, load impacts, utility costs and program participant costs in each year of the planning horizon for each Demand-Side program developed pursuant to section (6) of this rule;

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

The following review is based on documents submitted by AmerenUE in its 2005 filing and in response to subsequent stakeholder data requests. [redacted] In response to Data Request MDNR-01, AmerenUE provided to MDNR all evaluation documents supplied to its DSM consultant that were not previously included in their compliance filing.[16]

This review focuses on programs initiated and evaluations completed prior to EE DSM programs implemented and funded through the Residential and Commercial Energy Efficiency Fund established by Case No. EO-2002-1. Since 2003, AmerenUE has supported three residential and four commercial EE DSM programs through the Collaborative.

Two of the residential programs selected by the Collaborative, a refrigerator buy-back program and a program to encourage use of compact fluorescent light bulbs, have been evaluated by the contractor, Midwest Energy Efficiency Alliance, chosen to implement the programs. However, AmerenUE did not provide these evaluations to its DSM consultant. The collaborative is issuing a request for proposals for evaluation of the third residential program, the Energy Toolkit program, as well as the four commercial EE DSM programs selected by the Collaborative. The evaluation studies agreed upon under the purview of the collaborative should meet the requirements of 4 CSR 24-22.050(11).

Evaluation studies of pre-collaborative residential EE DSM programs: [redacted]

[16] Data Request MDNR 01 requests AmerenUE to "list and provide copies of all documents and data (other than documents included in Ameren's December 2005 IRP filing) provided to [the DSM consultant] that quantify, describe or assess the program costs, customer participation, demand savings, energy savings and other results of demand side energy efficiency "pilot projects" conducted by AmerenUE between 1993-2000. This would include the following "pilot projects" listed in the "Demand Side Management Analysis" (Document 6) submitted by AmerenUE to PSC in June 1995 as part of an earlier IRP filing: Cold Cash Refrigerator Recycling Program, In Concert With The Environment, No Sweat Residential Energy Management Program, Energy Savings Partnership Program, Motor Miser Information Program, Customized Industrial Process Audits, Demand and Energy Control Information Program, Small Consumer Walk Through Audit, Green Key Program, and other "potential pilot projects" mentioned in this document such as a "residential new construction program" and a "commercial thermal storage" program.

[redacted]

AmerenUE's evaluation of its other pre-collaborative residential EE DSM programs has not been adequate to meet the requirements of 4 CSR 24-22.050(11). For the following residential EE DSM programs, AmerenUE does not provide and apparently did not complete an evaluation study. For these programs, the only information provided by AmerenUE is its program expenditures and in some cases a short summary of its conclusions about the program's success.

- HABI (Home Audits by Internet) was a residential do-it-yourself energy audit pilot program begun in 1997 as an outgrowth of In Concert with the Environment. None of the documents provided by AmerenUE indicate when or why it was terminated.
- Cold Cash was a pilot refrigerator recycling pilot program conducted for 5 months prior to AmerenUE's 1995 IRP filing. AmerenUE states that this pilot program suffered from excessive free ridership, but provides no details on how it reached this conclusion.
- Green Key was a residential new construction pilot program begun in 1996. It was terminated in 1998. AmerenUE states that this pilot program was suffered from excessive free ridership but provides no details on how it reached this conclusion.
- Energy Savers, a residential low-income program, was terminated in 1998. None of the documents provided by AmerenUE indicate why it was terminated.
- Energy Plus and Energy Savers Plus are residential EE DSM programs listed in a table on pages 9-10 of AmerenUE's *1997 Demand-Side Management Briefing.*[17] No other AmerenUE documents indicate when these programs took place or provide an evaluation of the programs. It is possible that these are alternative names used by AmerenUE to refer to the Energy Savers program.

Evaluation studies of pre-collaborative C/I EE DSM programs: [redacted]

For the other pre-collaborative C/I EE audit and technical programs - the Energy Savings Partnership Program for large commercial customers and the Motor Miser, Demand & Energy Control, and Process Audit programs for industrial customers - AmerenUE did not submit any evaluation studies in its filing or in response to data requests. However, in contrast to its residential programs, it is possible that AmerenUE had a continuous commitment to C/I EE DSM programs throughout the period 1993-2003 and may have continued its internal evaluation and fine-tuning of these programs.

MDNR recommendation: Planning for EE DSM programs that result from the IRP process should include a clear evaluation plan that meets the requirements of 4 CSR 240-22.050(9) and 4 CSR 24-22.050(11)(J). As stated in 4 CSR 240-22.050(9), "the purpose of these evaluations shall be to develop the information necessary to improve the design of existing and future Demand-Side programs, and to gather data on the implementation costs and load impacts of programs for use in cost effectiveness screening and integrated resource analysis."

[17] Included as the first appendix in Document 8 of AmerenUE's filing.

AmerenUE and its DSM consultant used deficient criteria to select and screen EE DSM programs

The IRP rule states that the utility is to "evaluate the cost-effectiveness of each potential demand-side program... using the total resource cost test."[18]

AmerenUE's compliance filing presents the results of total resource cost (TRC) tests for a set of five potential EE DSM programs. However, during a stakeholder meeting held at AmerenUE's facilities on March 3, 2006, AmerenUE staff stated that [redacted]

Use of the first criterion is consistent with the letter and spirit of the IRP rule. However, use of the second criterion appears indefensible. Nothing in the letter or spirit of the IRP rule justifies eliminating from further consideration potential EE DSM programs that have been successfully implemented elsewhere in the U.S. [19] simply because the Missouri utility involved in the IRP has no previous experience with those programs.

After receiving its DSM consultant's results, AmerenUE further screened out the appliance recycling program from inclusion in the integrated analysis of alternative resource plans. The compliance filing does not specifically state that the appliance recycling program had been screened out or document the criteria used to screen it out. However the cost, energy savings and load impact data for appliance recycling is not included in AmerenUE's integrated analysis of resource plans.

[redacted]

[18] CSR 240-22.010(7)

[19] Exemplary residential HVAC programs documented in ACEEE's *Best Practices* report include New Jersey's "Cool Advantage" program and New York's "Keep Cool New York" program. The New Jersey program, a collaborative effort at market transformation, achieves annual energy savings of 14 million kwh. The New York program, a collaborative effort managed by the New York State Energy Research and Development Authority, achieves annual energy savings of 59 million kwh and annual peak reduction of 62 MW at a cost of about $323 per kw (2002 data).

[redacted]

The final report evaluating AmerenUE's 2003 refrigerator recycling program indicates substantial savings for consumers and the environment.[20] Moreover, ACEEE's *Best Practices* report indicates very favorable results for other exemplary residential refrigerator recycling programs.[21]

MDNR recommendation: As a standard practice, to comply with the intent of 4 CSR 240-22.010(2)(A), Missouri utilities should clearly document the criteria and data used to screen out potential EE DSM programs.

AmerenUE selected a relatively inexperienced consultant for EE DSM analysis

Identifying and planning for EE DSM programs that can meet the goals of the IRP rule requires the completion of a number of technically challenging tasks. Missouri utilities, including AmerenUE, have relatively little experience with successful implementation of EE DSM programs compared to many other electric utilities in the U.S.[22] Therefore, use of a consultant for the EE DSM analysis component of utility resource planning, while not required by the IRP rule, is generally appropriate.

A consultant with extensive experience in EE DSM analysis, planning and implementation probably could have overcome deficiencies in the data supplied by AmerenUE by supplementing it with a wide range of other sources for input data for EE DSM programs.

Unfortunately, AmerenUE selected a DSM consultant that had relatively little previous knowledge and experience with EE DSM program analysis and did not draw on a wide range of data sources to complement the data provided by AmerenUE.

- [redacted]
- [redacted]

[redacted]

[20] The estimated lifetime energy savings from AmerenUE's 2003 refrigerator recycling program were 24,466,579 kwh at a program cost of $373,276, resulting in a benefit/cost ratio of 4.50 and a calculated simple payback of 1.19 years. The estimated environmental savings were 54.5 million pounds of CO2, 142,000 pounds of NOx and 274,000 pounds of SO2 avoided over the remaining life of old units. MEEA, Final Report, p. 20.

[21] In 2002, residential refrigerator recycling programs conducted by Southern California Edison and the Sacramento Municipal Utility District reduced annual energy use by about 58 million kwh at a cost of about 1.7 cents per kwh on a life-cycle basis and reduced peak demand by about 9 MW at a cost of about $684 per kw.

[22] In 2003, utility EE DSM programs in the U.S. achieved average energy savings equal to about 1.9 percent of total kilowatt-hour sales. The corresponding percentage of sales for Missouri utilities was 0.01 percent, ranking Missouri forty-sixth of the 50 states. York, Dan and Martin Kushler, ACEEE's 3rd National Scorecard on Utility and Public Benefits Energy Efficiency Programs: A National Review and Update of State-Level Activity, 2005, Table B3.

[redacted]

MDNR recommendation: As a standard practice, to comply with the intent of CSR 240-22.010(2)(A), Missouri utilities that engage a consultant for EE DSM analysis should engage a consultant that has extensive knowledge of successful utility EE DSM implementation and extensive experience accomplishing the EE DSM analysis tasks required by the IRP rule. If the consultant might reasonably be considered lacking in these areas, the utility should provide for peer review of the consultant's work and require the consultant to submit sufficient work papers to allow for peer and stakeholder review.

Section II - Deficiencies in AmerenUE's integration of EE DSM and renewable resources into resource portfolio analysis

Rule 4 CSR 240-22.060 requires the utility to "develop alternative resource plans to meet the planning objectives identified in 4 CSR 240-22.010(2)." As defined in the rule, each alternative resource plan should consist of "a particular combination of Demand-Side and Supply-Side resources to be acquired according to a specified schedule over the planning horizon."[23]

Document 3 of AmerenUE's filing, titled *Integrated Resource Analysis*, describes the steps that AmerenUE took to comply with this requirement. AmerenUE defined 18 alternative resource acquisition plans (which in the filing are called "portfolios") and an acquisition schedule for each portfolio.

Twelve of the alternative resource plans consist only of generation resources that AmerenUE did not classify as "renewable," such as fossil fuel-fired generation, nuclear generation or pumped storage. Section 6 of the *Integrated Resource Analysis* describes how these particular generation resources were selected for integrated analysis and Section 7.2.1 describes the rationale for combining them into the 12 particular resource plans.

Three of the alternative resource plans consist of these generation resources plus DSM. Rule 4 CSR 240-22.050(7)(F) requires that each potential DSM program that passes the total resource cost (TRC) screening test "shall be considered as candidate resource options and must be included in at least one (1) alternative resource plan developed pursuant to 4 CSR 240-22.060(3)." AmerenUE chose to comply with this rule requirement by (1) combining five demand response (DR) programs and four energy efficiency (EE) programs into one aggregate implementation of DSM; and (2) combining this aggregate implementation of DSM with three different conventional supply-side options, yielding the following three resource plans:

- "DSM" plus purchase of 600 MW of gas-fired combustion turbines;
- "DSM" plus building of a pulverized coal plant; and
- "DSM" plus building of a new pumped storage facility.

The final three alternative resource plans consist of wind plus generation resources that AmerenUE does not classify as "renewable."[24] Wind generation is included in the alternative resource plans because it passed the supply-side screening tests required by 4 CSR 240-22.040. AmerenUE modeled 100 MW of wind generation in northwest Missouri into the following three alternative resource plans:

- "Wind" plus purchase of 600 MW of gas-fired combustion turbines;
- " Wind " plus building of a pulverized coal plant; and
- " Wind " plus building of a new pumped storage facility.

[23] 4 CSR 240-22.020(48) .

[24] AmerenUE discusses a number of other resources that it classifies as "renewable" - for example, solar, biomass, and biogas from landfills or livestock operations. However, only wind passes AmerenUE's screening tests. AmereUE does not classify pumped storage as "renewable," presumably because pumped storage is a method of storing electricity from AmerenUE's overall system mix of generation resources.

AmerenUE does not adequately discuss its decision to combine all EE and DR programs into one aggregate DSM implementation.

AmerenUE's decision to combine all EE and DR programs into one aggregate DSM implementation has at least two disadvantages:

- It provides no basis for comparing the net benefits of different combinations of EE and DR DSM programs.
- It provides no basis for estimating the interaction of different combinations of EE and DR DSM programs. Rule 4 CSR 240-22.050(6)B requires the utility to analyze the synergistic effects and competitive effects from combining DSM programs. However, AmerenUE states in its response to Data Request MPSC 0012 that it has not analyzed these interactive effects.

AmerenUE does not adequately discuss its reasons for its decision or how it would address issues of coordinating and evaluating the results of multiple DSM programs.

AmerenUE has not selected the alternative resource plan with lowest PVRR as its preferred resource plan

As a basis for comparing the alternative resource plans and selecting a preferred plan, AmerenUE estimated each portfolio's present value of utility revenue requirements (PVRR). The following chart combines AmerenUE's PVRR estimates for its 18 portfolios -- shown in AmerenUE's filing as two separate charts (Figure 8.1 of traditional supply-side resources and Figure 8.2 of DSM and renewable portfolios) in Document 3, pp. 172 - 173 --- plus a nineteenth portfolio identified by MDNR. Acronyms used to label AmerenUE's 18 portfolios are those used in the AmerenUE filing.

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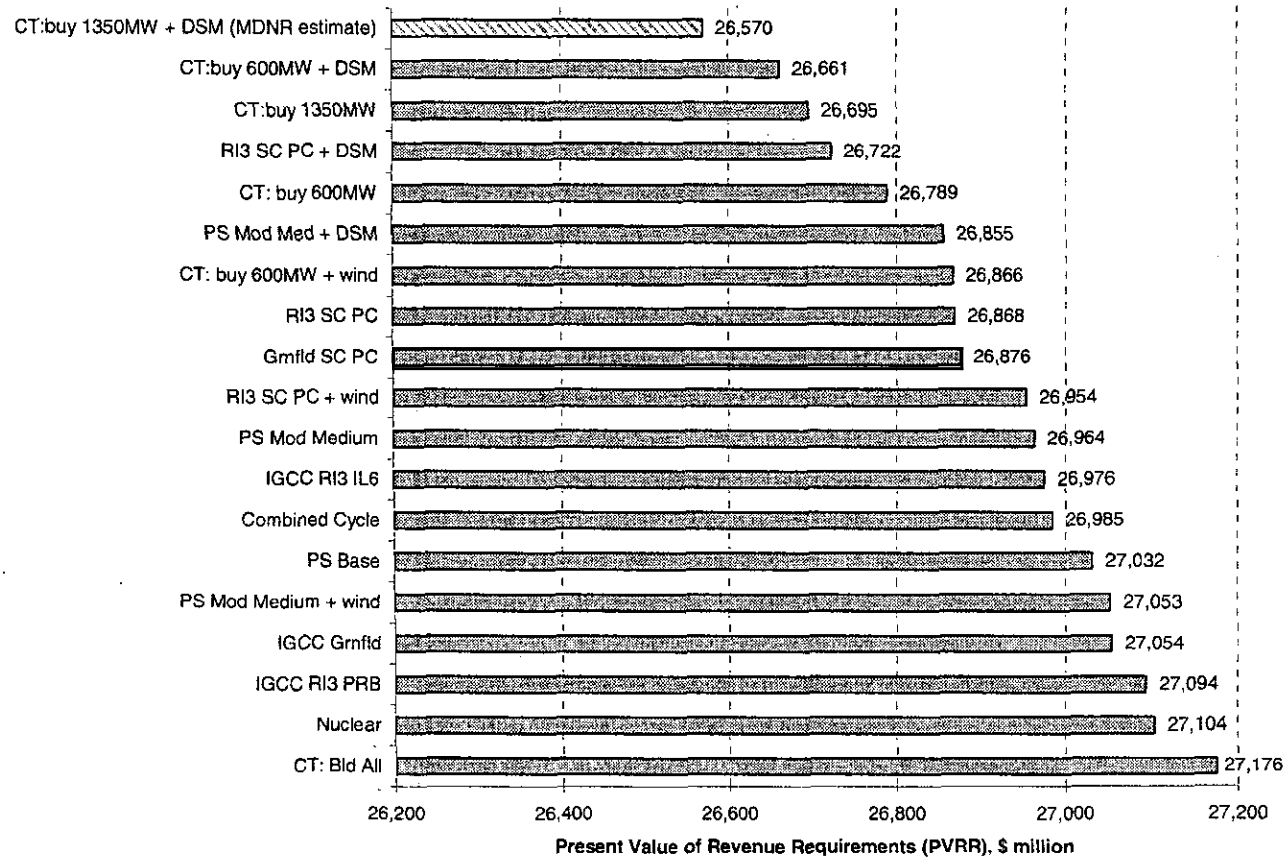

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555 AmerenUE chose as its preferred resource plan, the purchase of 1350 MW of gas-fired
556 combustion turbines (CTG) at an estimated PVRR of $26,695 million. However, one
557 alternative plan identified by AmerenUE has a lower PVRR -- the combination of 600MW of
558 CTGs with DSM. AmerenUE's *Integrated Resource Analysis* does not explain why this portfolio
559 was not selected as least costly of the 18 portfolios it defined.

560 The lowest-cost option in this chart (subject to verification) represented by the top bar, is a
561 proposed portfolio that was not included in AmerenUE's analysis. This portfolio would combine
562 DSM with the purchase of 1,350 MW of gas-fired combustion turbines.

563 AmerenUE provides no MIDAS-based estimate of PVRR for this particular portfolio but for
564 purposes of including it in the chart, MDNR estimated its PVRR as follows. AmerenUE states in
565 the *Integrated Resource Analysis*, p. 172, that inclusion of DSM lowers a supply-side portfolio's
566 PVRR by $100 to $150 million. For purposes of estimating PVRR for this portfolio, MDNR
567 subtracted the average value of this range ($125 million) from AmerenUE's PVRR estimate for
568 purchase of 1350 MW of existing peaking plants. However, MDNR recommends that
569 AmerenUE conduct a MIDAS-based estimate of this portfolio to accurately identify its PVRR.

570 AmerenUE's failure to include this portfolio in its analysis is, in MDNR's view, a major
571 deficiency in the utility's compliance with the requirement of 4 CSR 240-22.010(2) to "consider

and analyze demand-side efficiency and energy management measures on an equivalent basis with supply-side alternatives in the resource planning process."

By December 5, 2005, the date of AmerenUE's IRP filing, AmerenUE had made the decision to purchase 1350 MW of gas-fired combustion turbines (CGT), a purchase it announced that same week. Thus, AmerenUE filed an IRP analysis that considered DSM programs only in combination with supply side options that the utility had already decided to rule out at the time of its filing.

The one real possibility for inclusion of DSM programs - an alternative resource plan that combined DSM with the 1350 MW CGT purchase upon which AmerenUE had already decided - was never submitted to analysis and therefore had no opportunity to be selected or rejected.

Similarly, the only viable opportunity for inclusion of wind generation would have been an alternative resource plan that combined wind with the 1350 MW CGT purchase upon which AmerenUE had already decided. However such an alternative resource plan was not submitted to analysis and therefore had no chance to be accepted or rejected.

MDNR recommendation: AmerenUE should conduct a MIDAS-based estimate of PVRR for an additional portfolio that combines DSM with the purchase of 1,350 MW of gas-fired combustion turbines and should reconsider its preferred resource plan in light of the results of this analysis.

Section III - Deficiencies in AmerenUE's analysis of uncertainty

The core requirement of 4 CSR 240-22.070 is that the utility must identify the "critical uncertain factors" that could affect the performance of resource plans and adopt a resource acquisition strategy that consists of the following five elements:

(1) a preferred resource plan;
(2) an implementation plan;
(3) "specification of the ranges or combinations of outcomes for the critical uncertain factors that define the limits within which the preferred resource plan is judged to be appropriate";
(4) "contingency options" in case the critical uncertain factors fall outside this range; and
(5) a process for monitoring the critical uncertain factors on a continuous basis.[25]

The IRP rule defines "contingency option" as

> "an alternative choice, decision or course of action designed to enhance the utility's ability to respond quickly and appropriately to events or circumstances that would render the preferred resource plan obsolete."[26]

AmerenUE divides its analysis of random factors into two distinct parts, analysis of uncertainty and analysis of risk. The scope of MDNR's comments in this section is limited to deficiencies in AmerenUE's analysis of uncertainty and in its use of two tools - scenario analysis and sensitivity analysis - for this analysis.[27]

In general, AmerenUE understates the potential impact of uncertainty on its preferred resource plan and largely ignores the rule's requirement to provide contingency options in its resource acquisition strategy. One consequence of these deficiencies is that AmerenUE's resource acquisition strategy does not acknowledge the potential contribution of DSM and renewable resources to the flexibility required to respond to contingencies and unanticipated events.

Nomenclature

AmerenUE analysis of uncertainty is presented in the following documents:

- Chapters 7-8 of Document 9 of its filing, *Risk and Uncertainty Analysis Briefing*
- Sections 8.4 and 8.5 of Document 3 of its filing, *Integrated Resource Analysis*

Comments on AmerenUE's analysis of uncertainty must begin with its use of the term. AmerenUE's use of the terms "uncertainty" and "risk" is not standard and differs significantly from the usage found in the IRP rule. However, for the sake of simplicity, our comments will adopt AmerenUE's definitions.

The IRP rule defines the term "uncertain factor" broadly 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

[25] CSR 240-22.070(10)
[26] CSR 240-22.020(6)
[27] The scope of MDNR's comments does not extend to AmerenUE's analysis of risk. MDNR does not have in-house expertise on use of the MIDAS model for simulation analysis, the technique that AmerenUE uses to analyze risk.

decision-makers have incomplete or inadequate information at the time a decision must be made."[28]

AmerenUE defines "uncertainty" as "situations when randomness cannot be expressed in terms of specific mathematical probabilities." By contrast, AmerenUE defines "risk" as a situation in which a mathematical probability can be assigned to the randomness of the outcomes faced.

Thus, it appears that an "uncertain factor" as used in the IRP rule could be an example of either uncertainty or risk as defined by AmerenUE in its filing.

AmerenUE uses scenario analysis and sensitivity analysis to analyze uncertainty. AmerenUE's use of these terms also requires definition. Sensitivity analysis differs from scenario analysis in that "sensitivities represent discrete changes to individual variables." Scenario analysis, by contrast, "represents the assessment of exposure based upon the discrete outcome of a particular world state, such as carbon legislation...[in which] more than one variable is perturbed...[and] the random variable move in a correlated fashion."[29]

The IRP rule does not provide a definition for "risk" but appears to use this term as synonymously with AmerenUE's use of the term "exposure." AmerenUE defines exposure as the extent to which a set of risk or uncertainties can bring harm.

MDNR recommendation: As a standard practice, utility IRP filings should use terms related to risk and uncertainty as defined in the IRP rule. If the utility finds it necessary to depart from IRP rule definitions, the utility should clearly explain the reasons for the departure from the rule.

Deficiencies in AmerenUE's Scenario Analysis

The purpose of scenario analysis is to provide an opportunity to consider how the utility's resource acquisition strategy would fare if there is a significant shift in the world in which the utility operates, and to consider how to provide for contingency options related to these possible shifts.

Examples of events that could cause such a "world shift" include the following:

- political consensus on the need to control greenhouse gases that lead to carbon regulation
- terrorist attacks that affect energy supplies and economic growth
- disruptions of transmission systems that lead to tightening of reliability requirements such as reserve margins
- new federal provisions that lead to a nuclear resurgence

As AmerenUE states in its *Risk and Uncertainty Analysis Briefing* document, such shifts have two common features that indicate scenario analysis is the correct analytic technique. First, they result in multiple factors changing in a correlated fashion, putting them beyond the scope of sensitivity analysis. Second, the probability of these shifts cannot be expressed mathematically, putting them beyond the scope of simulation analysis. These shifts do not need to be probable; they only need to be plausible.

MDNR identifies two general deficiencies in AmerenUE's scenario analysis:

(1) AmerenUE limits its use of scenario analysis to just one possible "world shift" - a "CO_2 scenario" based on potential carbon regulation. AmerenUE should have

[28] 4 CSR 240-22.020(56)
[29] Document 9, page 6.

considered additional scenarios that are given serious consideration by energy economists and the utility industry.

(2) AmerenUE's CO_2 scenario analysis overlooks significant "big picture" aspects of carbon regulation. For example, carbon regulation is likely to result in accelerated development and implementation of energy efficient and renewable generation technologies. AmerenUE's CO_2 scenario does not include these significant demand-side and supply-side technology changes.

By limiting scenario analysis to carbon regulation, AmerenUE overlooks other critical uncertainties that should be subjected to scenario analysis

The most significant omission from AmerenUE's scenario analysis is the failure to consider scenarios under which there might be a significant disruption in the supply or price of natural gas.

AmerenUE's CO_2 scenario analysis does envision that a carbon tax would result in upward pressure on [redacted], with the increase in prices depending on the severity of the tax. However, AmerenUE should extend its scenario analysis to consider other scenarios that envision a "world shift" that might disrupt the natural gas market and that have received serious attention from energy economists or the utility industry. These scenarios are particularly relevant because AmerenUE's acquisition of additional CGTs increases the utility's exposure to such disruptions.

The natural gas market is in transition and several dynamic factors that affect future natural gas supply and price are subject to failure or disruption. EIA's 2005 *Annual Energy Outlook* identifies several dynamic factors that must transpire if natural gas supplies are to remain stable. These include increased liquefied natural gas (LNG) imports, construction of an Alaskan natural gas pipeline, improvements in production technology and increased availability of Rocky Mountain natural gas supplies.

All of these dynamic factors are subject to failure or disruption. For example, Global Energy has sponsored a number of forums in which electric utilities discuss possible "world shifts" that should be subjected to scenario analysis. One possible scenario that these forums have identified for serious consideration is the possibility that domestic or global terrorist attacks might severely disrupt LNG supplies. Terrorist or other events that affected two factors, such as LNG and pipelines, would lead to very severe disruption.

Under such a scenario, one could expect increased prices for coal and oil as well as natural gas, higher reserve margins and slow growth in electricity demand. It might result in increased policy emphasis on energy efficiency. Extreme supply disruption could choke off supply for gas-fired generating facilities or in policy decisions that assign winter heating needs the highest priority for natural gas supply.

AmerenUE may also wish to consider scenarios in which a variety of natural or geopolitical events could lead to disruptions in oil price and supply because such disruptions could spill over to the natural gas market. Statistics from the past 1-2 decades support the thesis that world oil and natural gas prices are increasingly coupled. The linkage between the two markets is a

complex topic on which there is a variety of viewpoints, but a number of analysts expect the linkage to persist.[30]

Recently, U.S. DOE Secretary Bodman requested the National Petroleum Council (NPC) to prepare a study on "the point in time at which global oil production will plateau and then begin to decline ('peak oil'), the implications these may have for the U.S. and world economy and what steps should be taken to achieve more positive outcomes." Future planning should probably include a "peak oil" scenario if the NPC report or other studies indicate that the "peak oil" thesis is credible.

Prudent contingency planning should include measures to assure that the utility is well prepared to reduce exposure to the scenarios discussed above by putting into place effective energy efficiency DSM programs and generation from renewable resources.

MDNR recommendation: AmerenUE should extend its scenario analysis to consider the full range of relevant and plausible "world shifts" being considered by energy economists and the utility industry. In particular, AmerenUE should consider contingency options for scenarios that envision a significant disruption in the supply and price of natural gas. The contingency options considered should include renewable generation and EE DSM.

AmerenUE's approach to scenario analysis fails to consider "big picture" issues such as supply- and demand-side technology changes under a carbon scenario

AmerenUE contracted with ICF Consulting to provide analysis of a scenario in which CO_2 emissions are regulated. Section 7 of the *Risk and Uncertainty Analysis Briefing* documents the ICF analysis.

ICF assumes cap-and-trade regulation of CO_2 emissions with three levels of CO_2 allowance prices - mild, moderate and stringent. [redacted]

ICF's approach to scenario formulation appears to be significantly more limited than the approach taken by Global Energy. In addition to providing the MIDAS tool universally used by Missouri utilities for simulation modeling, Global Energy annually develops scenarios for shifts in the state of the world that could affect electric utilities.[31] Its 2005 effort includes a scenario called "Green World" that assumes carbon legislation. Its "Green World" scenario projects significant increases in energy efficiency, renewable generation and clean coal technologies such as IGCC.

The ICF scenario analysis limits consideration of technology changes under a CO_2 scenario to [redacted]

AmerenUE should broaden the scope of the CO_2 scenario analysis to potential technology changes on both the supply side and the demand side. If the recommended analysis is beyond the capability of ICF's modeling tools, it should be pursued using a more flexible tool. This tool

[30] The topic was a focus of the 2006 EIA Energy Outlook and Modeling Conference, Washington, DC, March 27, 2006. See particularly Petak, "Oil and Gas Prices: Will They Stay Linked?" and Schlesinger, "Market Update: Time to Rewrite the Models Again?"

[31] Global Energy Advisor, *Electric Power Horizons: Scenarios of the Global Energy Future*, 2005

744 could be decision tree analysis, prescribed in 4 CSR 240-22.070, or an alternative tool that
745 overcomes the limits of decision tree analysis identified by AmerenUE in its *Risk and*
746 *Uncertainty Analysis Briefing* document.

747 On the demand side, a significant increase in energy efficiency research and incentives is an
748 integral component of the carbon cap-and-trade proposals reviewed in Section 7 of Document 9.
749 It is likely that similar incentives for energy efficiency will be included in any future carbon
750 legislation. CO_2 scenario analysis should take account of the impact of energy efficiency
751 improvements on load requirements and load growth.

752 On the supply side, studies of a carbon tax impact by the U.S. Department of Energy's Energy
753 Information Administration (EIA)[32] have projected a significant increase in renewable
754 generation. ICF's analysis fails to identify or discuss this result.

755 AmerenUE fails to integrate the conclusions of its own analysis of IGCC with its CO_2 scenario
756 analysis. The CO_2 carbon scenario extends to [redacted], well within the timeframe in which
757 AmerenUE might decide to build an IGCC plant. Section 6.6.2 of the *Integrated Resource*
758 *Analysis* document (Document 3) discusses the opportunities that IGCC offers for carbon
759 sequestration. Section 5.4 of the *IGCC Technology Assessment Report*, Document 17 of
760 AmerenUE's filing, [redacted]
761 [redacted]
762 [redacted]

763 Another clean coal technology that should be considered is fluidized bed combustion (FBC)
764 technology. Document 3 Section 6.6.2 briefly reviews FBC, essentially dismissing it as a viable
765 option on the basis of high heat rate and high capital costs. By contrast, data available from the
766 National Energy Technology Lab (NETL) and other sources indicates that some configurations
767 of FBC achieve favorable heat rates. NETL projects significant improvements in FBC heat rates
768 and capital costs within the timeframe of the CO_2 scenario.

769 The advantages of FBC technology under a carbon regime include its adaptability to retrofit and
770 hybrid configurations; fuel flexibility, which allows the use of low-cost opportunity fuels and
771 low-carbon biomass fuels; and the potential to reduce CO_2 emissions through fuel efficiency.

772 In conclusion, prudent contingency planning for possible carbon regulation should include
773 measures to assure that the utility is well prepared to reduce exposure by putting into place
774 effective EE DSM programs, renewable generation and clean coal technologies.

775 *MDNR recommendation*: AmerenUE should broaden the scope of its approach to scenario
776 analysis. In particular, AmerenUE should broaden the scope of its CO2 scenario analysis to
777 include potential supply-side and demand-side technology changes.

[32] EIA has completed several studies that project an increase in renewable generation in response to a carbon tax. The most recent study is *Analysis of S.1844, the Clear Skies Act of 2003; S.843, the clean Air Planning Act of 2003; and S.366, the Clean Power Act of 2003*, Washington DC, 2004.

Deficiencies in AmerenUE's use of sensitivity analysis or other tools to analyze environmental costs that are subject to uncertainty

Two examples of potentially significant environmental costs not included in AmerenUE's uncertainty analysis are (1) future costs of mercury emission controls or allowances that might be required to comply with the U.S. Environmental Protection Agency's (EPA) Clean Air Mercury Rule (CAMR), and (2) future costs of nuclear waste disposal.

Document 3, Section 4.2.3, states that AmerenUE has not incorporated any costs of mercury emission limits into its simulation modeling because "it would be too speculative to assume price points for mercury allowances at this time." However, 4 CSR 240-22.070 does not limit its requirement to consider "critical uncertain factors" to factors that can be analyzed through a chosen methodology, such as simulation analysis.

Waste disposal is widely recognized to be the most important uncertainty affecting the viability of nuclear power. [redacted]

Both of these environmental costs are probably candidates for sensitivity analysis. For example, it should be possible to test different mercury control price levels to determine the sensitivity of the preferred resource plan to mercury control prices and whether contingency options are required.

However, AmerenUE does not include them in the sensitivity analysis presented in Chapter 8 of its *Risk and Uncertainty Analysis Briefing*. AmerenUE limits the sensitivity analysis in that chapter to four sets of factors: off-system market depth, technology parameters, end effects and environmental compliance. "Environmental compliance" includes neither mercury controls nor nuclear waste disposal.

MDNR recommendation: AmerenUE should not limit its consideration of environmental costs to those that can be analyzed using chosen tools such as simulation or scenario analysis. In the case of environmental cost factors that are highly uncertain, such as nuclear waste disposal or compliance with mercury regulations, AmerenUE should analyze potential impacts on its preferred resource plan using some other tool such sensitivity analysis or decision tree analysis and should consider possible contingency options such as EE DSM or renewable resources.

Section IV - Proposals for future action

Rule 4 CSR 22-240.080(6) provides that if an intervenor finds deficiencies, "it shall work with the electric utility and the other parties to reach, within forty-five (45) days of the date that the report or comments were submitted, a joint agreement on a plan to remedy the identified deficiencies."

MDNR's comments conclude with suggestions for corrective actions for consideration in working toward a joint agreement or plan to correct the deficiencies noted. In addition, MDNR comments on AmerenUE's proposal for a statewide collaborative process to plan and implement demand response, energy efficiency and renewable energy.

Proposals for corrective action -- DSM

In addition to the recommendations identified in Sections I to III of these comments, MDNR believes the following course of action should be considered by AmerenUE and the other parties to this case as part of a joint agreement to remedy the identified deficiencies in the area of DSM.

MDNR recommendation: Establish a structured planning process and collaborative for the identification, development, screening, implementation, monitoring and evaluation of cost-effective DSM programs that are consistent with the IRP rule objective of providing the public with energy services that are safe, reliable and efficient, at just and reasonable rates, in a manner that serves the public interest (4 CSR 240-22.010).

Until there is a Commission-approved revision of the IRP rule, there is an apparent need for discussion and agreement on standard and reasonable practices to be used in analyzing and approving EE DSM programs in compliance with 4 CSR 240-22.010(2)(A). The collaborative and structured planning process could address some of these practices and we suggest including the following proposals related to EE DSM that we recommended in Sections I and II of our comments:

- The utility should engage a consultant that has extensive knowledge of successful utility EE DSM implementation and extensive experience accomplishing the EE DSM analysis tasks required by the IRP rule. If the consultant might reasonably be considered lacking in these areas, the utility should provide for peer review of the consultant's work and require the consultant to submit sufficient work papers to allow for peer and stakeholder review.
- The utility should clearly document criteria and data used to screen out potential EE DSM programs.
- For each EE DSM program resulting from this structured planning process, the parties should agree on an evaluation plan that meets the requirements of 4 CSR 240-22.050(9) and 4 CSR 24-22.050(11)(J). As stated in 4 CSR 240-22.050(9), "the purpose of these evaluations shall be to develop the information necessary to improve the design of existing and future Demand-Side programs, and to gather data on the implementation costs and load impacts of programs for use in cost effectiveness screening and integrated resource analysis."

A similar planning process and collaborative group were included in the stipulation and agreement in Case No. EO-2005-0263 for Empire District Electric Company. MDNR believes

the components of the DSM planning process established in this case would also be appropriate for AmerenUE:

- selection of a DSM consultant;
- design, screening and pre-implementation evaluation of potential programs (including cost-effectiveness tests and PVRR);
- development of a DSM program portfolio;
- implementation of cost-effective DSM programs; and
- post-implementation evaluations.

MDNR believes it is appropriate to proceed with this structured planning process for EE DSM for the following reasons: AmerenUE's screening analysis of EE DSM measures and programs was deficient; AmerenUE's IRP did not analyze EE DSM and supply-side alternatives on an equivalent basis as required by 4 CSR 240-22.010(2); and AmerenUE has already implemented its preferred resource plan that consisted only of supply-side resources, based on its deficient analysis.

There is also economic value from EE DSM that benefits both AmerenUE and its customers. Implementation of DSM could:

- Reduce service territory demand resulting in additional opportunities to sell power to the competitive market.
- Serve as a buffer for uncertainty of gas supply.
- Reduce congestion and maintenance costs on limited transmission and distribution (T&D) resources and potentially defer the need for new investments in T&D.
- Reduce peak and baseload demand and defer the need for new investments in generation. This would allow more time for advanced baseload technologies such as IGCC to mature before an investment decision must be made.

It is important for AmerenUE to continue to build experience as a basis for successful EE DSM. There are lessons to be learned. Appendices to the *ACEEE Best Practices* report describe several dozen exemplary EE DSM programs. Results from these examples indicate that success is possible if programs are well conceived and executed. This process would also provide additional opportunities to document AmerenUE's EE DSM experience.

It is also essential to have continued utility commitment to DSM programs at levels sufficient to realize energy and demand savings. Stopping or starting DSM efforts from one IRP planning cycle to the next will doom the utility's DSM effort.

The *ACEEE Best Practices* report also emphasizes the need for consistent commitment to DSM programs for several reasons:

- Good marketing is essential in achieving the high participation rates that mark exemplary DSM programs and good training and technical assistance are needed to achieve high savings.

DSM programs sell more than energy efficiency. The products and services of DSM offer other attributes that meet customer needs. For residential customers, these include comfort, enhanced home value, convenience, and superior product performance.

The customer education and support infrastructure required for good marketing and good technical assistance can only be built through an ongoing DSM effort.

- Market transformation is a significant program objective and program model. The ACEEE report documents market transformation efforts that have a significant impact on markets and products such as new homes, compact fluorescent lights, clothes washers, commercial heating, ventilation and air conditioning (HVAC) systems and commercial lighting, industrial compressed air systems and commercial/industrial building operations and design. Market transformation programs require an ongoing commitment until they attain their objectives.

- An ongoing commitment is necessary to build and maintain effective partnerships. Partnerships that bring together a wide variety of market actors are keys to achieving significant market impacts. ACEEE observed that such partnerships are a common trait of all highly successful DSM programs.

Comments on AmerenUE's proposal for a Stakeholder Collaborative and/or Statewide Policymaking Forum

In the *Executive Summary* (Document 1) of its compliance filing, AmerenUE proposes that "stakeholder collaborative processes be established to create the vision and strategies, evaluate opportunities, identify barriers and develop action and implementation plans to achieve meaningful levels of cost effective demand response, energy efficiency and renewable energy." AmerenUE further proposes "a regulatory compact where AmerenUE, the Missouri Public Service Commission and all stakeholders collaborate to design program parameters and agree on cost recovery mechanisms."

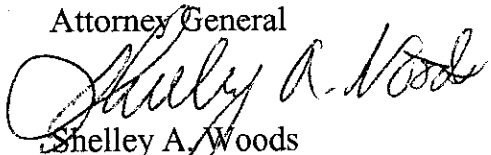
In its *DSM Briefing* (Document 6), AmerenUE presents a different but apparently related proposal that the PSC "establish a statewide policymaking forum to develop demand response (DR) and energy efficiency (EE) as resources to meet capacity and energy needs of Missouri investor owned electric utilities (IOUs)." This proposal omits any reference to renewable energy but includes some elements not in the *Executive Summary* such as a "potential operating model consisting of three working groups" and the proposed role of the Public Service Commission.

On the basis of these proposals for a statewide collaborative process, AmerenUE's *Executive Summary* states that "AmerenUE's preferred plan includes a significant component to implement meaningful levels of renewable energy resources and sustainable cost-effective demand response and energy efficiency initiatives." However, as discussed in Section II of these Comments, MDNR does not agree with this statement. AmerenUE's preferred plan *Integrated Resource Analysis* considers the inclusion of renewable energy resources (100 MW of wind turbines) and EE DSM only in combination with supply-side alternatives that AmerenUE had already rejected at the time of the IRP filing. The preferred resource plan selected by AmerenUE contains no specific commitment to renewable energy or EE DSM.

MDNR supports the concept of statewide action on sustainable energy issues and would like to participate in such a process; however, participation in a statewide collaborative to determine energy efficiency and renewable energy policies should not substitute for individual utility action or compliance with existing IRP requirements.

Respectfully submitted,

JEREMIAH W. (JAY) NIXON
Attorney General



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946 **Certificate of Service**
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948 I hereby certify that copies of the foregoing have been mailed, hand-delivered,
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