

MISSOURI PUBLIC SERVICE COMMISSION

STAFF REPORT ON

EMPIRE DISTRICT ELECTRIC COMPANY

**ELECTRIC UTILITY RESOURCE PLANNING
COMPLIANCE FILING**

FILE NO. EO-2011-0066

January 3, 2011

JEFFERSON CITY, MISSOURI

**** Denotes Highly Confidential Information ****

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Summary of Staff Review

On September 3, 2010, The Empire District Electric Company (“Empire” or “Company”) filed its 2010 Integrated Resource Plan (“IRP”) compliance filing (“Filing”) in File No. EO-2011-0066, as required by 4 CSR 240-22 Electric Utility Resource Planning. This report provides a summary of Empire’s Filing and its preferred resource plan, Staff’s overall view of Empire’s compliance filing, and a summary of the deficiencies and concerns identified by Staff along with Staff’s recommended remedy for each deficiency or concern.

On May 13, 2008, the Missouri Public Service Commission (“Commission”) approved the Unanimous Stipulation and Agreement concerning Empire’s previous IRP Filing in Case No. EO-2008-0069. The agreement required the signatory parties to hold annual resource planning meetings until Empire’s 2010 IRP was filed and required Empire to include specific information concerning Supply-Side Resource Analysis, Demand-Side Resource Analysis, Integrated Resource Analysis, and Risk Analysis and Strategy Selection in its 2010 IRP filing.

On February 26, 2010, Empire filed, in File No. EE-2010-0246, its request for variances and clarifications in connection with Empire’s 2010 IRP Filing, due in September. This filing included 18 requests for variances from requirements and four clarifications of requirements of the Load Analysis and Forecasting rule, 4 CSR 240-22.030; and 3 requests for clarification of requirements of the Supply-Side Resources Analysis rule, 4 CSR 240-22.040. All variances and clarifications requested by Empire were granted by the Commission in its order dated June 16, 2010. However, the Commission’s approval is subject to the conditions that: (1) Empire provide full disclosure of its load forecasting methodology; and (2) Empire provide a plan to study the usefulness of including economic variables, forecasting at the class cost-of-service level and the requirements in the Load Analysis and Forecasting rule that will be in place at the time of Empire’s next IRP filing. This plan must include a schedule and cost estimate to complete the study.

Per 4 CSR 240-22.080(5), Staff has conducted a limited review of Empire’s IRP compliance filing and reviewed and considered the following information during its limited review in this case:

1. Empire’s integrated resource plan documents (Volumes I through V and supporting Appendices and supporting workpapers);
2. Documents and discussion related to stakeholder meetings held on October 20 and 21, 2010, to review Empire’s compliance filing in this case;

3. Empire's responses to data requests of Staff and other parties;
4. Commission's *Order Granting Application for Variance* resulting from Empire's request for variances and clarifications in connection with its September 2010 IRP compliance filing in File No. EE-2010-0246;
5. Commission's *Order Approving Stipulation and Agreement and Accepting 2007 Integrated Resource Plan* in Empire's previous IRP compliance filing in Case No. EO-2008-0069;
6. The Missouri Energy Efficiency Investment Act, Section 393.1075, RSMo. Supp. 2009 (MEEIA); and
7. The May 12, 2010 Stipulation and Agreement in File No. ER-2010-0130.

Summary of Empire’s Preferred Resource Plan

Empire developed seventeen alternative resource plans, sixteen of which included demand-side resources and supply-side resources to meet Empire’s load forecasts, and renewable resources to meet the legal mandates of Proposition C. One alternative plan, Plan 3, contained no demand-side management (“DSM”). Each alternative resource plan was analyzed through integrated resource analysis to calculate values for specified performance measures. Empire did not conduct its electric utility resource planning with the goal of meeting all of the objectives that are included in 4 CSR 240-22.010(2).¹ While Empire’s 2010 IRP Filing has some of the same stated objectives as those included in 4 CSR 240-22.010(2), Empire does not include in its list of objectives: “consider and analyze demand-side efficiency and energy management measures on an equivalent basis with supply-side alternatives in the resource planning process.” Empire used the net present value of revenue requirements (“NPVRR”) over the 20-year planning horizon of each alternative resource plan as the primary criteria for selection of the preferred resource plan. The base assumptions and seventeen (17) alternative resource plans are summarized below.

The base assumptions are:

- The expiration of the Westar contract for 162 MW on May 31, 2010.
- An ownership share of 7.52% (approximately 50 MW) in the coal-fired Plum Point generating unit. The unit met in-service criteria on August 12, 2010.
- A 50 MW Plum Point purchased power agreement, with the option to convert to ownership in 2015.
- A 12% (approximately 102 MW) ownership share in Iatan 2, which began operation in the fall of 2010.
- The assumption that five percent of any new wind capacity would count towards the capacity reserve margin.

¹ 4 CSR 240-22.010(2) The fundamental objective of the resource planning process at electric utilities shall be 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. This objective requires that the utility shall—

(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 uncertain 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.

- ** _____

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The alternative resource plans are:

- (Plan 1) Base Assumptions (all resources)
- (Plan 2) Base Assumptions (no future coal)
- (Plan 3) Base Assumptions (no future coal and no DSM)
- (Plan 4) Preferred Plan ** _____
_____ **
- (Plan 5) ** _____ **
- (Plan 6) ** _____
_____ **
- (Plan 7) ** _____ **
- (Plan 8) ** _____ **
- (Plan 9) No CO₂ tax with correlated market and fuel prices
- (Plan 10) Low CO₂ tax with correlated market and fuel prices
- (Plan 11) High CO₂ tax with correlated market and fuel prices
- (Plan 12) High CO₂ tax with correlated market and fuel prices (no future coal)
- (Plan 13) Base Assumptions with high load
- (Plan 14) Base Assumptions with low load
- (Plan 15) High fuel and market prices – base CO₂
- (Plan 16) Low fuel and market prices CO₂
- (Plan 17) Base assumptions with no future coal option, all DSM programs passing base cost assumptions

In its final decision analysis process by Empire’s decision-makers, out of the 17 studied plans, Empire considered only the seven (7) alternative resource plans that included its base assumptions. These alternative resource plans and the NPVRR for each are listed below:

- (Plan 1) Base Assumptions (all resources), ** _____ **
- (Plan 2) Base Assumptions (no future coal), ** _____ **
- (Plan 3) Base Assumptions (no future coal and no DSM), ** _____ **
- (Plan 4) Preferred Plan ** _____
_____ **
- (Plan 5) ** _____
_____ **
- (Plan 6) ** _____
_____ **

- (Plan 17) ** _____ **

The next page contains the highly confidential Empire Capacity and Load Forecasts for 2009 – 2029 for the adopted preferred resource plan (Plan 4).

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Results of Staff's Review

As a result of its limited review, Staff has identified eight deficiencies and three concerns regarding Empire's Filing in this case. Staff's identified deficiencies and concerns are discussed in more detail for each rule in later sections of this Report and are summarized in this section.

Regarding 4 CSR 240-22.030 Load Analysis and Forecasting. The lack of use of economic data weakens confidence in the load forecast. Empire sought and received a large total number of variances for the Load Analysis and Forecasting rule. Empire's energy and demand load forecasts' growth rates of 2.3% per year for energy and 2.0% per year for peak demand are very high compared to the energy and peak demand load forecasts of other Missouri electric utilities. To remedy these concerns Empire should commit to work with its stakeholder group prior to integrated resource analysis, risk analysis and strategy selection for its next 4 CSR 240-22 triennial compliance filing to assure that Empire performs a feasibility study to include economic variables and statistically adjusted end-use variables in Empire's future load analysis and load forecasts and to assure that Empire's energy and demand load forecasts' growth rates are reasonable.

Regarding 4 CSR 240-22.050 Demand-Side Resource Analysis. Empire did not develop its initial estimates of demand-side programs' load impacts for realistic achievable potential based on the best available information from in-house research, vendors, consultants, industry research groups, national laboratories, or other sources – 4 CSR 240-22.050(7)(A)1. Although Empire's technical and economic potential are reasonable, Empire's realistic achievable potential levels for energy savings and for demand savings are very low compared to realistic achievable potential levels for other market potential studies due to constraints placed by Empire on the number of participants and on spending levels for its DSM programs. Empire has not complied with the requirement in the May 12, 2010, Stipulation and Agreement in its most recent general rate case, File No. ER-2010-0130, to analyze a moderate (1%) DSM portfolio and an aggressive (2%) DSM portfolio in its 2010 IRP compliance filing. Empire did not identify, develop or screen the technical potential of end-use measures for residential and small commercial rate structures to achieve demand savings – 4 CSR 240-22.050(1). To remedy these deficiencies/concerns Empire should commit to work with its stakeholder group prior to integrated resource analysis, risk analysis and strategy selection for its next 4 CSR 240-22 triennial compliance filing to assure that: 1) Empire's DSM market potential study reflects all best available information and does not contain an unrealistic budget constraint for spending levels for its DSM programs, 2) Empire analyze a moderate (1%) DSM portfolio and an

aggressive (2%) DSM portfolio, and 3) Empire screen residential and small commercial rate structures during its demand-side resource analysis.

Regarding 4 CSR 240-22.060 Integrated resource analysis. Empire did not treat supply-side and demand-side resources on a logically consistent and economically equivalent basis. Also, Empire did not design its alternative resource plans to satisfy the objective to consider and analyze demand-side efficiency and energy management measures on an equivalent basis with supply-side alternatives in the resource planning process (4 CSR 240-22.010(2)(A)). Finally, Empire did not comply with the MEEIA, by not valuing demand-side investments equal to traditional investments in supply and delivery infrastructure and by failing to include a goal to achieve all cost-effective demand-side savings. To remedy these deficiencies Empire should commit to work with its stakeholder group prior to integrated resource analysis, risk analysis and strategy selection for its next 4 CSR 240-22 triennial compliance filing to assure that Empire meets all statutory requirements to value demand-side investments equal to traditional investments in supply and delivery infrastructure, to satisfy all requirements of the Integrated Resource Analysis rule, and to satisfy all requirements of MEEIA.

Regarding 4 CSR 240-22.070 Risk Analysis and Strategy Selection. Empire did not conduct a preliminary sensitivity analysis of the uncertain factors listed in the Risk Analysis and Strategy Selection rule. To remedy this deficiency Empire should commit to work with its stakeholder group prior to integrated resource analysis, risk analysis and strategy selection for its next 4 CSR 240-22 triennial compliance filing to assure that Empire conducts a preliminary sensitivity analysis of the uncertain factors.

Regarding 4 CSR 240-22.080 Filing Schedule and Requirements. Staff is concerned that Empire's IRP Filing is not organized around each of the rules, sections and subsections within 4 CSR 240-22, and that this approach makes it difficult for Staff, Office of Public Council and other stakeholders to review all filing requirements for compliance with the 4 CSR 240-22 rules. To remedy this concern Staff recommends that Empire organize its next IRP filing around each of the rules, sections and subsections within 4 CSR 240-22. Staff provides information concerning Empire's next IRP compliance filing date. The proposed revisions to 4 CSR 240-22.080(1) specifies that Empire's next IRP compliance filing date will be April 1, 2013, a full five (5) months prior to the current scheduled date of September 5, 2013.

Staff's recommended remedies are made with the objective of using a stakeholder process to help Empire better prepare the load analysis and load forecasts, demand-side resource analysis, integrated resource analysis, risk analysis, and strategy selection for its next IRP compliance filing, anticipated to be April 1, 2013. Staff is not recommending that Empire file a revision to its IRP Filing in this case, because to do so would result in Empire most likely making such a revised filing in this case under the current 4 CSR 240-22 rules in early 2012 and would result in Empire making its first IRP compliance filing under newly-effective 4 CSR 240-22 rules on April 1, 2013. Staff believes back-to-back IRP filings within such a short period of time is not necessary and is not an efficient use of time for Empire and its stakeholders.

Further, Staff recommends that Staff's recommended stakeholder process begin with a stakeholder process planning meeting to be held not later than April 1, 2011, to develop a detailed work plan and schedule to meet the objective of using a stakeholder process to help Empire better prepare the load analysis and load forecast, demand-side resource analysis, integrated resource analysis, risk analysis and strategy selection for its next IRP compliance filing, anticipated to be April 1, 2013.

List of Staff's Deficiencies

1. Empire did not develop its initial estimates of demand-side programs' load impacts for realistic achievable potential based on the best available information from in-house research, vendors, consultants, industry research groups, national laboratories or other credible sources – 4 CSR 240-22.050(7)(A)1.

2. Empire has not complied with the requirement in the May 12, 2010, Stipulation and Agreement in its most recent general rate case, File No. ER-2010-0130, to analyze a moderate (1%) DSM portfolio and an aggressive (2%) DSM portfolio in its 2010 IRP compliance filing.

3. Empire did not identify, develop or screen the technical potential of end-use measures for residential and small commercial rate structures to achieve demand savings – 4 CSR 240-22.050(1)

4. Empire did not treat supply-side and demand-side resources on a logically consistent and economically equivalent basis – 4 CSR 240-22.060(4)(D).

5. Empire did not design its alternative resource plans to satisfy the 4 CSR 240-22.010(2)(A) objective to consider and analyze demand-side efficiency and energy management measures on an equivalent basis with supply-side alternatives in the resource planning process per 4 CSR 240-22.060(1).

6. Empire has not complied with MEEIA by not valuing demand-side investments equal to traditional investments in supply and delivery infrastructure.

7. Empire did not conduct a preliminary sensitivity analysis of the uncertain factors listed in the rule – 4 CSR 240-22.070(2).

8. Empire’s adopted preferred resource plan does not meet the MEEIA goal of achieving all cost-effective demand-side savings.

List of Staff’s Concerns

A. Lack of underlying economic data weakens confidence in the load analysis and load forecasts and is the primary driver for the total number of variances from 4 CSR 240-22.030.

B. Empire’s energy and demand load forecasts’ growth rates seem high when considering (1) expectations for the current economic recession, and (2) energy and demand load forecasts’ growth rates of other Missouri electric utilities.

C. Empire’s IRP Filing is not organized around each of the rules, sections and subsections within 4 CSR 240-22, which makes it difficult for Staff, Office of Public Council and other stakeholders to review all filing requirements for compliance with the 4 CSR 240-22 rules.

4 CSR 240-22.030 Load Analysis and Forecasting

Summary

Rule 4 CSR 240-22.030, Load Analysis and Forecasting, has a stated purpose of setting the “minimum standards for the maintenance and updating of historical data, the level of detail required in analyzing and forecasting loads, and for the documentation of the inputs, components and methods used to derive the load forecasts.”

Empire was granted variances from the requirements of 4 CSR 240-22.030, Load Analysis and Forecasting, pertaining to: (1) end-use methodology and end-use modeling; (2) the use of 10 years of historical data; and (3) restricting modeling to the major revenue classes of residential, commercial and industrial. The Commission granted these variances on the conditions described later in this section. These variances allowed Empire some flexibility in complying with all or part of the following sections of 4 CSR 240-22.030:

End-use methodology and end-use modeling:

- 4 CSR 240-22.030(3) Analysis of use per unit
- 4 CSR 240-22.030(3)(A) End-use detail
- 4 CSR 240-22.030(3)(A)1. Each major class end-use information
- 4 CSR 240-22.030(3)(A)3. Effect of weather on total load for space cooling and space heating
- 4 CSR 240-22.030(3)(A) . End-use for major class
- 4 CSR 240-22.030(3)(B) Data base and historical analysis for each end-use
- 4 CSR 240-22.030(3)(B) . Measures of the stock of energy-using capital goods
- 4 CSR 240-22.030(3)(B)2. Estimates of end-use energy and demand
- 4 CSR 240-22.030(4)(A) Load profiles for each day type
- 4 CSR 240-22.030(4)(B) Estimated end-use load profiles for each day type
- 4 CSR 240-22.030(5)(B)2. Use per unit forecast
- 4 CSR 240-22.030(5)(B)2.B. End-use detail for summer and winter energy and demand peaks
- 4 CSR 240-22.030(5)(B)2.C. Stock of energy using capital goods
- 4 CSR 240-22.030(8)(A)2.B. Plot for forecast period showing each end-use of major class
- 4 CSR 240-22.030(8)(B)2. Plots for forecast period showing end-use for each major class coincident demand
- 4 CSR 240-22.030(8)(E)1. Plots of each end-use component of hourly load profile

Length of data base:

- 4 CSR 240-22.030(1)(D)1. Historic hourly net system loads
- 4 CSR 240-22.030(1)(D)2. Estimated actual and weather-normalized class and system monthly peak demands

Clarification on the use of major revenue classes:

- 4 CSR 240-22.030(1)(A)1. Subclass detail for each major classes
- 4 CSR 240-22.030(1)(A)2. Categories for subclass detail for major classes
- 4 CSR 240-22.030(2)(C) Change in subclass shares of major class units
- 4 CSR 240-22.030(5)(C) Net system load forecast for summer and winter peaks for major classes

The Commission granted Empire the variances described above, subject to the condition that after the completion of its 2010 IRP, Empire will provide the Staff of the Commission with a plan that addresses the feasibility of changing the Company's forecasting method for its next IRP compliance filing. Empire must include in this plan a proposed timeline and cost estimate that can be used for further discussions. The plan must consider the use of economic variables, forecasting at the class cost-of-service level, and the requirements in the Load Analysis and Forecasting rule that will be in place at the time of the next IRP compliance filing. Staff notes that it is expected that the Commission will approve revisions to all rules in 4 CSR 240-22, in the first half of 2011, as a result of its formal rulemaking in File No. EX-2010-0254.

Empire also agreed to provide full disclosure of its IRP load forecasting methodology to include a description of all assumptions, equations, and the rationale for any decisions made concerning any adjustments made to the data used to develop the forecast. As one aspect of this disclosure, Empire will describe any assumptions concerning future economic conditions that can influence or were incorporated into the company's specification or assignment of values to variables, coefficients, or relationships in the equations used to forecast load over the 20-year planning horizon.

Staff did not find any deficiencies in Empire's Filing concerning compliance with 4 CSR 240-22.030, Load Analysis and Forecasting. However, Staff has two concerns with Empire's IRP Filing pertaining to this rule.

Concerns

A. Lack of underlying economic data weakens confidence in the load analysis and load forecasts and is the primary driver for the total number of variances from 4 CSR 240-22.030.

Staff recommended the Commission grant Empire's requested variances of 4 CSR 240-22.030, Load Analysis and Forecasting. Staff agreed that these variances were appropriate, because Empire did not have the data available to comply with the rule. While Empire was not

deficient in its IRP Filing in this regard, taken as a whole, the lack of the modeling and other details prescribed by the rule weaken the overall confidence Staff can place in the load analysis and load forecasts.

The Commission conditioned Empire's variances on Staff's recommended condition that Empire perform a study to analyze the feasibility and effectiveness of using statistically adjusted end-use variables and economic driving variables in Empire's load analysis and forecasting. Staff understands that in order to perform any analysis the underlying databases must be created and maintained. Staff also understands that economic variables may have limited value for Empire, because Empire's service territory contains many partial state counties. The economic data is provided on a county level basis so further steps are required to spatially correlate the economic data with the service territory. In addition, the rapidly changing economic conditions have increased the variability of the data used to derive the forecast. Therefore, current conditions may not be the best indicator of future conditions. For these reasons, a feasibility study to include economic variables and statistically adjusted end-use variables in Empire's future load analysis and forecasts is necessary prior to Empire's next IRP Filing.

To resolve this concern, Empire should commit to work with its stakeholder group prior to integrated resource analysis, risk analysis and strategy selection for its next 4 CSR 240-22 triennial compliance filing to assure that Empire performs a feasibility study to include economic variables and statistically adjusted end-use variables in Empire's future load analysis and forecasts.

B. Empire's energy and demand load forecasts' growth rates seem high when considering (1) expectations for the current economic recession, and (2) energy and demand load forecasts' growth rates of other Missouri electric utilities.

Staff's second concern with Empire's load forecast is the average annual load growth rates of ** ____ ** per year for annual energy growth and ** ____ ** per year for peak demand growth over the 20-year planning horizon seem high relative to the recent forecast of other Missouri electric utilities, as well as in light of uncertainty regarding the length and impact of the economic recession on future consumption of electricity. The Empire energy and demand load growth rates are significantly higher than the energy and demand load growth rates of other Missouri electric investor-owned utilities.

Staff does recognize that Empire's service territory contains some of the fastest growing counties in the state of Missouri, specifically Christian, Stone, Taney, and Polk counties. There

may be some underlying demographic and economic factors that intuitively support Empire’s 20-year growth rates, but Empire did not use that information in its energy and demand load forecasts.

Using county level population forecasts for Empire’s service territory, Staff performed a limited population analysis of Empire’s service territory. Given the projected county populations by five-year time periods, Staff calculated an average annual population growth rate for each five-year time period. The following table summarizes the results of Staff’s analysis.

5-year Period	Annual Population Growth
2000-2005	1.25%
2005-2010	1.53%
2010-2015	1.36%
2015-2020	1.22%
2020-2025	1.05%
2025-2030	0.87%

Empire’s base load forecasts depend upon an average annual customer growth rate of about ** _____ **. However, the results of Staff’s analysis indicate that it is unlikely that this growth rate will be sustained over a 20-year period.

To resolve this concern, Empire should commit to work with its stakeholder group prior to integrated resource analysis, risk analysis, and strategy selection for its next 4 CSR 240-22 triennial compliance filing to assure that Empire’s energy and demand load forecast growth rates are reasonable.

4 CSR 240-22.040 Supply Side Resource Analysis

Summary

Rule 4 CSR 240-22.040, Supply-Side Resource Analysis, requires Empire to review existing resources for opportunities to upgrade or retire and also review a wide variety of supply-side resource options to determine cost estimates for each type of resource. Resource options are to be ranked based upon their relative annualized utility costs, as well as based upon their probable environmental costs. Resources which do not have significant disadvantages pass this pre-screening process and are to be included in the integrated resource analysis process used to select a preferred resource plan.

Empire reviewed fossil fuel, renewable energy, and nuclear resource options, as well its transmission and distribution system options. Empire evaluated technologies based on capital, fixed and variable cost estimates from Energy Information Administration (“EIA”), projects in the region under construction, manufacturers’ data, responses to Empire-issued requests for proposals, consultants, various reports, and Empire’s in-house experts. Empire ranked these options to obtain a high, base, and low range of costs based on a broad range of technology development, probable environmental regulations and cost uncertainties. Empire excluded some technologies from its further review, because the technologies are in the developmental stage, or due to the absence of geological features required for their implementation or use by Empire.

Empire's supply-side resource screening analysis identified fourteen potential cost-effective options that it passed on to consider further in its integrated resource analysis. Empire evaluated the efficiency, life extension, environmental enhancements, and retirement scenarios of the existing facilities it relies upon for capacity and power. Empire also analyzed its transmission and distributions systems as required by the Commission’s Chapter 22 rules.

With respect to 4 CSR 240-22.040 Supply-Side Resource Analysis, Empire requested, and the Commission granted, in Docket No. EE-2009-0246, variances from and clarifications of the following specific provisions of that rule:

- 4 CSR 240-22.040(3) Analysis of existing and planned interconnected generation resources
- 4 CSR 240-22.040(6) Future transmission facilities required
- 4 CSR 240-22.040(7) Condition and efficiency level of existing transmission

Based on its limited review, Staff concludes Empire's Supply-Side Resource Analysis filing meets the requirements of 4 CSR 240-22.040, and Staff has identified no deficiencies or concerns.

4 CSR 240-22.050 Demand-Side Resource Analysis

Summary

As the purpose of 4 CSR 240-22.050, Demand-Side Resource Analysis, states, this rule “specifies the methods by which end-use measures and demand-side programs shall be developed and screened for cost-effectiveness. It also requires the ongoing evaluation of end-use measures and programs and the use of program evaluation information to improve program design and cost effectiveness analysis.”

Empire and its consultant, Applied Energy Group (AEG), investigated and evaluated a number of DSM programs which include energy efficiency, demand response, and affordability programs. This filing contains information regarding the cost effectiveness of the DSM programs in Empire’s Regulatory Plan as well as evaluation of expansion of existing DSM programs and implementation of planned new DSM programs in the manner required by the Demand-Side Resource Analysis rule.

Empire’s planned DSM programs are designed to encourage consumers to modify their level and pattern of electricity usage. Empire has a range of planned DSM programs for delivery to each customer classification.

Empire did not request any variances from this rule, 4 CSR 240-22.050.

In its limited review of Empire’s demand-side resource analysis, Staff has identified three deficiencies regarding Empire’s compliance with 4 CSR 240-22.050.

Deficiencies

1. Empire did not develop its initial estimates of demand-side programs’ load impacts based on the best available information from in-house research, vendors, consultants, industry research groups, national laboratories or other credible sources – 4 CSR 240-22.050(7)(A)1.

Empire’s consultant, AEG, describes on page ES-2 of Appendix D (*The Empire District Electric Company Demand-Side Resource Potential Study 2011 – 2013*) the process used to take economic potential and through consideration of budgets and market barriers develop the realistic achievable potential for DSM programs:

... The assessment of maximum achievable potential is based on the same savings estimates used for economic potential, with modifications residing in assumptions of market penetration on Empire’s programmatic successes, best practices studies, regulatory input and feedback from trade allies. Whereas economic potential

estimates assume 100% market penetration, the achievable potential estimates rely on these realistic penetration rates achieved from actual utility energy-efficiency programs. Achievable potential is further refined to reflect other considerations, such as budgets or market barriers. (The refined estimate of achievable potential is often referred to as realistic achievable potential.)

In Empire’s DSM market potential study, achievable potential is estimated for each program by assigning a number of participants and budget based upon the experience AEG gained while performing similar studies for other utilities in other states. However, Empire’s DSM market potential study includes significantly lower achievable potential when compared to other DSM potential studies. For example, Energy Center of Wisconsin and American Council for an Energy-Efficient Economy presents the summary results and comparisons based on their review of the Midwestern energy efficiency potential studies as shown Table 1.

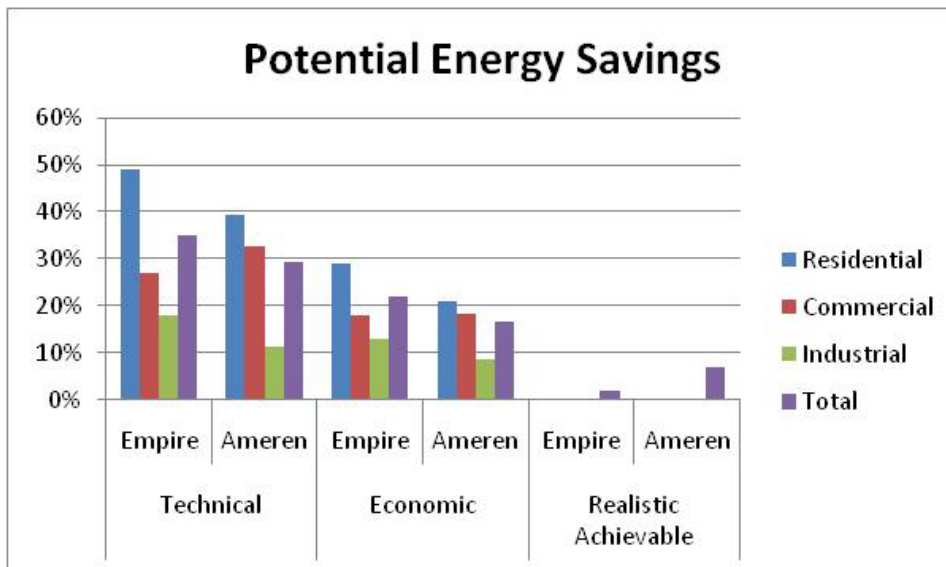
<Table 1> Summary of Midwestern Studies²

State (year completed)	Economic Potential (% total savings)		Achievable Potential (% saving/year)	
	Residential Sectors	All Sectors	Residential Sectors	All Sectors
Illinois (2003)			0.5%	
Indiana (2007)			0.8%	
Iowa, Investor-Owned (2008)	30%	17%		
Iowa, Municipal (2009)		22%	0.8%	1.2%
Kansas (2008)		35%	0.9%	1.1%
Midwest (2006)			0.5%	
Minnesota (2003)	14%			
Wisconsin (2009)		18%	1.0%	1.6%
Wisconsin (2005)				0.8%
Ontario (2005)	20%	20%		0.7%
Median	20%	20%	0.8%	1.1%
Empire District Electric		22%		0.2%

Table 1 presents the median economic potential of 20% and the median achievable potential of 1.1% per year for a number of market potential studies for Midwestern states, while Empire’s economic potential is 22% and achievable potential is 2% over the planning horizon which equates to only 0.2% per year over an assumed ten-year planning horizon.

² Energy Center of Wisconsin and American Council for an Energy-Efficient Economy, August 2009, “A Review And Analysis of Existing Studies of the Energy Efficiency Resource Potential In The Midwest,” p.13, Table 2. <http://www.ecw.org/ecwresults/247-1.pdf>

Staff also compared the results of the Empire market potential study to the results of the recently completed Ameren Missouri market potential study (see following chart). The Ameren Missouri market potential study was performed by Global Energy Partners using primary data for Ameren Missouri’s customers and service territory. Although Empire has technical and economic potential energy savings levels which are similar but somewhat greater than those of Ameren Missouri, Empire’s realistic achievable potential is only 2% compared to Ameren Missouri’s realistic achievable potential of 7%. Empire’s realistic achievable energy savings potentials for rate classes are: 2% for residential class, 1% for commercial class and 1% for industrial class. Empire’s realistic achievable energy savings potentials for rate classes are not included in the following chart because comparable data is not available from the Ameren Missouri market potential study.



Staff concludes from this limited analysis that AEG and Empire did not give adequate consideration to best available information including available information from DSM market potential studies performed for other Midwestern states and for Ameren Missouri.

To resolve this deficiency, Empire should commit to work with its stakeholder group prior to integrated resource analysis, risk analysis and strategy selection for its next 4 CSR 240-22 triennial compliance filing to help assure that its DSM market potential study reflects all best available information and does not contain an unrealistic budget constraint.

2. Empire has not complied with the requirement in the May 12, 2010, Stipulation and Agreement in its most recent general rate case, File No. ER-2010-0130, to analyze a

moderate (1%) DSM portfolio and an aggressive (2%) DSM portfolio in its 2010 IRP compliance filing.

In the Stipulation and Agreement filed May 12, 2010, in File No. ER-2010-0130, Empire agreed as follows:

7. Demand Side Management. There shall be no changes in Empire's demand side management ("DSM") programs in conformity with the *Empire Experimental Regulatory Plan Stipulation*. In its next Chapter 22 Resource Planning Filing ("IRP") due September of 2010, Empire agrees to model and fully analyze two demand-side management program portfolios (moderate and aggressive), with a goal of achieving annual electric energy (sales) and demand savings (peak) equivalent to 1% by 2015 and 2% by 2020. "Fully analyze" means the alternative portfolio(s) will be treated as resources available for selection in the determination of critical uncertain factors and in the identification of alternative resource plans and at least one of the alternative portfolios will be included in an alternative resource plan included in the integrated resource analysis. The aggressive portfolio (2%) shall be based on maximum achievable potential and the moderate portfolio (1%) shall be based on realistic achievable potential.

To resolve this deficiency, Empire should commit to work with its stakeholder group prior to integrated resource analysis, risk analysis and strategy selection for its next 4 CSR 240-22 triennial compliance filing to assure that appropriate moderate (1%) and aggressive (2%) demand-side portfolios are analyzed.

Staff is evaluating whether it will file a complaint based on Empire's failure to comply with this Commission-approved Stipulation and Agreement.

3. Empire did not identify, develop or screen the technical potential of end-use measures for residential and small commercial rate structures to achieve demand savings – 4 CSR 240-22.050(1).

To resolve this deficiency, Empire should commit to work with its stakeholder group prior to integrated resource analysis, risk analysis and strategy selection for its next 4 CSR 240-22 triennial compliance filing to assure that residential and small commercial rate structures are identified and screened for technical potential.

4 CSR 240-22.060 Integrated Resource Analysis

Summary

Rule 4 CSR 240-22.060, Integrated resource analysis, requires the utility to design alternative resource plans to meet the planning objectives identified in 4 CSR 240-22.010(2), to set minimum standards for the scope and level of detail required in resource plan analysis, and to be a logically consistent and economically-equivalent analysis of alternative resource plans.

In its filing in Volume V, Empire states that:

[b]oth DSM and supply-side resources were considered as available resources in this IRP. During Phase 1 of the integration and risk analysis (capacity expansion modeling), specific optimized resource plans that resulted in the lowest present value of revenue requirements (PVR) were developed for each of 17 different scenarios with a capacity expansion model. Each set of resources was developed specifically to perform the best under the assumptions for the possible future dictated by each plan. *These cases are not directly comparable since the base assumptions varied significantly between the plans.*" (emphasis added)

Empire developed seventeen alternative resource plans, sixteen of which included demand-side resources and supply-side resources to meet Empire's load forecasts, and renewable resources to meet the legal mandates of Proposition C. One alternative plan, Plan 3, contained no DSM. Each alternative resource plan was analyzed through integrated resource analysis required by this rule to calculate values for specified performance measures. The Midas™ model was used for the integrated resource analysis.

The base assumptions and the alternative resource plans are listed below.

The base assumptions are:

- The expiration of the Westar contract for 162 MW on May 31 2010.
- An ownership share of 7.52% (approximately 50 MW) in the coal-fired Plum Point generating unit. The unit met in-service criteria on August 12, 2010.
- A 50 MW Plum Point PPA, with the option to convert to ownership in 2015.
- A 12% (approximately 102 MW) ownership share in Iatan 2, which began operation in the fall of 2010.
- The assumption that 5% of any new wind capacity would count towards the capacity reserve margin.
- ** _____

_____ **
- ** _____
_____ **

- ** _____
_____ **

The 17 alternative resource plans are listed below

- (Plan 1) Base Assumptions (all resources)
- (Plan 2) Base Assumptions (no future coal)
- (Plan 3) Base Assumptions (no future coal and no DSM)
- (Plan 4) Preferred Plan ** _____
_____ **
- (Plan 5) ** _____ **
- (Plan 6) ** _____
_____ **
- (Plan 7) ** _____ **
- (Plan 8) ** _____ **
- (Plan 9) No CO₂ tax with correlated market and fuel prices
- (Plan 10) Low CO₂ tax with correlated market and fuel prices
- (Plan 11) High CO₂ tax with correlated market and fuel prices
- (Plan 12) High CO₂ tax with correlated market and fuel prices (no future coal)
- (Plan 13) Base Assumptions with high load
- (Plan 14) Base Assumptions with low load
- (Plan 15) High fuel and market prices – base CO₂
- (Plan 16) Low fuel and market prices CO₂
- (Plan 17) Base assumptions with no future coal option, all DSM programs passing base cost assumptions

Empire conducted a stochastic analysis of the seven alternative resource plans which are comparable and utilize the base case assumptions.³ It explained how in Figure S-3 on page S-5 of Volume V of its filing, “The risk profile for Plan 4 can be seen to be the left-most curve on the figure and the one with the steepest profile, which translates into the lowest risk. Plan 4 was selected by Empire as the [p]referred [resource] [p]lan as described in Section S.6.” Plan 3 with Base Assumptions but no future coal and no DSM, was configured to enable Empire to examine the buildout required in the case that DSM programs, although implemented, were not as successful in reducing peak demand as envisioned at the time of implementation and as a baseline case to see how optimizing DSM in other plans could potentially alter the timing of supply-side resources.

In its limited review of Empire’s integrated resource analysis, Staff found three deficiencies regarding compliance with 4 CSR 240-22.030.

³ A stochastic process is one whose behavior is non-deterministic, in that a system's subsequent state is determined both by the process's predictable actions and by a random element.

Deficiencies

4. Empire did not treat supply-side and demand-side resources on a logically consistent and economically equivalent basis - 4 CSR 240-22.060(4)(D).

Empire did not treat supply-side and demand-side resources on a consistent and economically equivalent basis due to budget constraints placed on demand-side resources by Empire's decision-makers. None of Empire's supply-side resources, including participation in a nuclear power plant, were economically constrained in its selection process. However, Empire placed economic constraints of \$2.68 million for 2011 on achievable potential for demand-side resources and a 2011 budget constraint of \$0.41 million for demand-side resources in the preferred resource plan

To resolve this deficiency, Empire should commit to work with its stakeholder group prior to integrated resource analysis, risk analysis and strategy selection for its next 4 CSR 240-22 triennial compliance filing to help assure that it has met the statutory requirement to treat supply-side and demand-side resources on a logically consistent and economically equivalent basis.

5. Empire did not design its alternative resource plans to satisfy the 4 CSR 240-22.010(2)(A) objective to consider and analyze demand-side efficiency and energy management measures on an equivalent basis with supply-side alternatives in the resource planning process per 4 CSR 240-22.060(1).

Empire's stated objectives for its 2010 IRP filing is found on page S-2 of Volume V:

Integrated resource planning for electric utilities has evolved considerably over the past twenty years and can no longer solely be used to identify the least cost resources; such a plan must explicitly consider risks and uncertainties. Empire's objectives in preparing the 2010 IRP reflect its commitment to provide cost-effective, safe, and reliable electric service to its customers and include:

- To provide reliable electricity while complying with all environmental requirements
- To minimize the cost of providing electric service
- To achieve and/or maintain investment grade ratings on its debt to provide corporate financial stability and minimize financing costs
- To accommodate and manage a broad range of industry uncertainties

However, 4 CSR 240-22.010(2) provides the fundamental objective of the resource planning process at electric utilities as follows:

(2) The fundamental objective of the resource planning process at electric utilities shall be 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. This objective requires that the utility shall -

(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 uncertain 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.

While Empire's 2010 IRP Filing has some of the same stated objectives as those included in 4 CSR 240-22.010(2), it does not include in its list of objectives: "consider and analyze demand-side efficiency and energy management measures on an equivalent basis with supply-side alternatives in the resource planning process."

Further, the budget constraint placed on Empire's DSM programs in the *Company's Demand-Side Resource Potential Study 2011 – 2013* has resulted in alternative resource plans which do not consider and analyze demand-side efficiency and energy management measures on an equivalent basis with supply-side alternatives in the resource planning process.

To resolve this deficiency, Empire should commit to work with its stakeholder group prior to integrated resource analysis, risk analysis and strategy selection for its next 4 CSR 240-22 triennial compliance filing to help assure alternative resource plans in Empire's next IRP compliance filing consider and analyze demand-side resource and energy management measures on an equivalent basis with supply-side alternatives in the resource planning process.

6. Empire has not complied with MEEIA by not valuing demand-side investments equal to traditional investments in supply and delivery infrastructure.

MEEIA became law on August 28, 2009. With the enactment of MEEIA, the State of Missouri has declared and directed the following:

3. It shall be the policy of the state to value demand-side investments equal to traditional investments in supply and delivery infrastructure and allow recovery of all reasonable and prudent costs of delivering cost-effective demand-side programs. In support of this policy, the commission shall:

- (1) Provide timely cost recovery for utilities;
- (2) Ensure that utility financial incentives are aligned with helping customers use energy more efficiently and in a manner that sustains or enhances utility customers' incentives to use energy more efficiently; and
- (3) Provide timely earnings opportunities associated with cost-effective measurable and verifiable efficiency savings.

4. The commission shall permit electric corporations to implement commission-approved demand-side programs proposed pursuant to this section with a goal of achieving all cost-effective demand-side savings. Recovery for such programs shall not be permitted unless the programs are approved by the commission, result in energy or demand savings and are beneficial to all customers in the customer class in which the programs are proposed, regardless of whether the programs are utilized by all customers. The commission shall consider the total resource cost test a preferred cost-effectiveness test. Programs targeted to low-income customers or general education campaigns do not need to meet a cost-effectiveness test, so long as the commission determines that the program or campaign is in the public interest. Nothing herein shall preclude the approval of demand-side programs that do not meet the test if the costs of the program above the level determined to be cost-effective are funded by the customers participating in the program or through tax or other governmental credits or incentives specifically designed for that purpose.

Because of the relatively low levels of energy and demand savings resulting from Empire's planned demand-side resources for the 20-year planning horizon of Empire's adopted preferred resource plan, Empire's approach to developing its demand-side resources does not satisfy requirements of 4 CSR 240-22.050 or the statutory requirement of MEEIA to value demand-side investments equal to traditional investments in supply and delivery infrastructure.

To resolve this deficiency, Empire should commit to work with its stakeholder group prior to integrated resource analysis, risk analysis and strategy selection for its next 4 CSR 240-22 triennial compliance filing to help assure that it has met the statutory requirement of MEEIA

to value demand-side investments equal to traditional investments in supply and delivery infrastructure.

4 CSR 240-22.070 Risk Analysis and Strategy Selection

Summary

Rule 4 CSR 240-22.070, Risk Analysis and Strategy Selection, requires the utility to identify the critical uncertain factors that affect the performance of resource plans, establishes minimum standards for the methods used to assess the risks associated with these uncertainties, and requires the utility to specify and officially adopt a resource acquisition strategy. Empire states that after consideration of its situation, industry best practices, and key factors that impact its operation, Empire selected four key uncertainties: (1) environmental costs; (2) market/natural gas prices; (3) load forecast; and (4) capital costs/transmission costs/interest rates. Empire determined that the primary risk driver is environmental costs, which is represented primarily by CO₂ regulation. Empire stated that “[d]ue to the filing requirements associated with an IRP in Missouri, Empire is scheduled to complete another IRP filing (in 2010 – based on a three-year cycle) prior to the initiation of substantive expenditures related to any uncommitted future capacity additions.” Empire outlined several tasks that it will be doing in the next three years, but these tasks primarily monitor, track and evaluate developments. Empire’s implementation plan for its resource acquisition strategy is included on pages 50 through 52 of Volume V of its filing.

Deficiencies

7. Empire did not conduct a preliminary sensitivity analysis of the uncertain factors listed in the rule - 4 CSR 240-22.-70(2).

Empire states that after consideration of its situation, industry best practices, and key factors that impact its operation, Empire selected four key uncertainties: (1) environmental costs; (2) market prices/fuel prices; (3) load forecast; and (4) capital costs/transmission costs /interest rates. No documentation was provided regarding the sensitivity analysis of the 12 uncertainties listed in this section of the rule. Although the four key uncertainties selected by Empire are related to some of the 12 uncertainties listed in this section of the rule, the goal of the required sensitive analysis is to identify the critical uncertain factors. If Empire considered the uncertainties in the rule and determined that they were not critical, then a description of its analysis and why uncertainties listed in the rule were considered not critical should have been documented in Empire’s filing.

To resolve this deficiency, Empire should commit to work with its stakeholder group prior to integrated resource analysis, risk analysis and strategy selection for its next 4 CSR 240-22 triennial compliance filing to help assure that it conducts a preliminary sensitivity analysis of the uncertain factors.

8. Empire's adopted preferred resource plan does not meet the MEEIA goal of achieving all cost-effective demand-side savings.

Because of the relatively low levels of energy and demand savings reflected in Empire's adopted preferred resource plan, Empire has not satisfied the statutory requirement to achieve a goal of achieving all cost-effective demand-side saving contained in Section 393.1075 4., RSMo, Supp. 2009.

To resolve this deficiency, Empire should commit to work with its stakeholder group prior to integrated resource analysis, risk analysis and strategy selection for its next 4 CSR 240-22 triennial compliance filing to help assure that it is in full compliance with MEEIA.

4 CSR 240-22.080 Filing Schedule and Requirements

Summary

Chapter 4 CSR 240-22 Electric Utility Resource Planning sets minimum standards to govern the scope and objectives of the integrated resource planning process of the electric utilities regulated by the Commission. The focus of 4 CSR 240-22 is on the planning process used to determine the utility's preferred resource plan, not the outcome of that process, i.e., the adopted preferred resource plan. 4 CSR 240-22.080 identifies minimum reporting requirements concerning who is to file, when to file, what to file, the review process and the Commission's authority with respect to compliance filings.

Empire filed its IRP Filing on September 3, 2010. The normal three-year cycle for preparing and filing IRP compliance filings results in a date of September 5, 2013, for Empire's next IRP compliance filing. However, the Commission has filed with the Missouri Secretary of State proposed revisions to all rules contained in 4 CSR 240-22 Electric Utility Resource Planning. The Commission's formal rulemaking process for revisions to 4 CSR 240-22 is File No. EX-2010-0254. Parties are to file formal comments concerning the proposed revisions to 4 CSR 240-22 by January 3, 2011, and a public hearing is scheduled for January 6, 2011, at which time the Commission will receive additional comments and input for its consideration. Staff anticipates that the Commission will adopt revisions to 4 CSR 240-22 early in 2011.

The proposed revisions to 4 CSR 240-22.080(1) provide as follows concerning filing dates of compliance filing for all electric utilities:

(1) Each electric utility which sold more than one (1) million megawatt-hours to Missouri retail electric customers for calendar year 2009 shall make a filing with the commission every three (3) years on April 1. Companies submitting their triennial compliance filings on the same schedule may file them jointly. The electric utilities shall submit their triennial compliance filings on the following schedule:

(A) Kansas City Power & Light Company and KCP&L Greater Missouri Operations Company, or their successors, on April 1, 2012, and every third year thereafter;

(B) The Empire District Electric Company, or its successor, on April 1, 2013, and every third year thereafter; and

(C) Union Electric Company d/b/a Ameren Missouri, or its successor, on April 1, 2014, and every third year thereafter.

Therefore, it is expected that Empire's next triennial compliance filing will be on April 1, 2013, which is five months sooner than its currently scheduled triennial compliance filing date of September 5, 2013.

Based on its limited review, Staff has identified one concern related to 4 CSR 240-22.080.

Concerns

C. Empire's IRP Filing is not organized around each of the rules, sections and subsections within 4 CSR 240-22, which makes it difficult for Staff, Office of Public Council and other stakeholders to review all filing requirements for compliance with the 4 CSR 240-22 rules.

To resolve this concern, Staff recommends that Empire organize its next IRP compliance filing around each of the rules, sections and subsections within 4 CSR 240-22.

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

In the Matter of Empire District Electric)
Company's 2010 Utility Resource Filing) File No. EO-2011-0066
Pursuant to CSR 240-22)

AFFIDAVIT OF MATTHEW J. BARNES

STATE OF MISSOURI)
) ss
COUNTY OF COLE)

Matthew J. Barnes, employee of the Staff of the Missouri Public Service Commission, being of lawful age and after being duly sworn, states that he has participated in the preparation of the accompanying Staff Report on pages 22 - 29, and the facts therein are true and correct to the best of his knowledge and belief.

Matthew J. Barnes

Matthew J. Barnes

Subscribed and sworn to before me this 3 day of January, 2011.

SUSAN L. SUNDERMEYER Notary Public - Notary Seal State of Missouri Commissioned for Callaway County My Commission Expires: October 03, 2014 Commission Number: 10942086
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Susan L. Sundermeyer

Notary Public

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

In the Matter of Empire District Electric)
Company's 2010 Utility Resource Filing) File No. EO-2011-0066
Pursuant to CSR 240-22)

AFFIDAVIT OF LEON C. BENDER

STATE OF MISSOURI)
) ss
COUNTY OF COLE)

Leon C. Bender, employee of the Staff of the Missouri Public Service Commission, being of lawful age and after being duly sworn, states that he has participated in the preparation of the accompanying Staff Report on pages 16-17, and the facts therein are true and correct to the best of his knowledge and belief.

Leon C. Bender

Leon C. Bender

Subscribed and sworn to before me this 3 day of January, 2011.



Susan L. Sundermeyer

Notary Public

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

In the Matter of Empire District Electric)
Company's 2010 Utility Resource Filing) File No. EO-2011-0066
Pursuant to CSR 240-22)

AFFIDAVIT OF HOJONG KANG

STATE OF MISSOURI)
) ss
COUNTY OF COLE)

Hojong Kang, employee of the Staff of the Missouri Public Service Commission, being of lawful age and after being duly sworn, states that he has participated in the preparation of the accompanying Staff Report on pages 18 - 21, and the facts therein are true and correct to the best of his knowledge and belief.



Hojong Kang

Subscribed and sworn to before me this 3 day of January, 2011.

SUSAN L. SUNDERMEYER
Notary Public - Notary Seal
State of Missouri
Commissioned for Callaway County
My Commission Expires: October 03, 2014
Commission Number: 10942086



Notary Public

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

In the Matter of Empire District Electric)
Company's 2010 Utility Resource Filing) File No. EO-2011-0066
Pursuant to CSR 240-22)

AFFIDAVIT OF JOHN A. ROGERS

STATE OF MISSOURI)
) ss
COUNTY OF COLE)

John A. Rogers, employee of the Staff of the Missouri Public Service Commission, being of lawful age and after being duly sworn, states that he has participated in the preparation of the accompanying Staff Report on pages 1-10 and 30-31, and the facts therein are true and correct to the best of his knowledge and belief.


_____ John A. Rogers

Subscribed and sworn to before me this 3 day of January, 2011.

SUSAN L. SUNDERMEYER
Notary Public - Notary Seal
State of Missouri
Commissioned for Callaway County
My Commission Expires: October 03, 2014
Commission Number: 10942086


Notary Public

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

In the Matter of Empire District Electric)
Company's 2010 Utility Resource Filing) File No. EO-2011-0066
Pursuant to CSR 240-22)

AFFIDAVIT OF DAVID C. ROOS

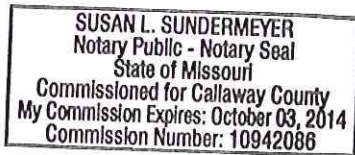
STATE OF MISSOURI)
) ss
COUNTY OF COLE)

David C. Roos, employee of the Staff of the Missouri Public Service Commission, being of lawful age and after being duly sworn, states that he has participated in the preparation of the accompanying Staff Report on pages 3-6 and 11-15, and the facts therein are true and correct to the best of his knowledge and belief.

David C. Roos

David C. Roos

Subscribed and sworn to before me this 3 day of January, 2011.



Susan Sundermeyer

Notary Public