

**MISSOURI PUBLIC SERVICE COMMISSION**

**STAFF REPORT ON**

**AMERENUE'S**

**INTEGRATED RESOURCE PLANNING**

**COMPLIANCE FILING**

**CASE NO. EO-2007-0409**

**June 19, 2008**

**JEFFERSON CITY, MISSOURI**

**\*\*Denotes Highly Confidential\*\***

**NP**  
**Appendix A**

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## **Summary of Staff Review**

In the Non-Unanimous Stipulation And Agreement in Union Electric Company, d/b/a AmerenUE's (AmerenUE or the Company) previous 4 CSR 240-Chapter 22 Electric Utility Resource Planning compliance filing (Case No. EO-2006-0240), AmerenUE agreed to, among other things, file its next Chapter 22 filing on February 5, 2008. This Staff Report reviews AmerenUE's February 5, 2008 filing for compliance with Chapter 22 and with the Non-Unanimous Stipulation And Agreement approved by the Commission in Case No. EO-2006-0240.

AmerenUE and the parties to Case No. EO-2006-0240 began meeting regarding AmerenUE's electric resource planning process soon after the Commission issued its Order on February 8, 2007 approving the Non-Unanimous Stipulation And Agreement. During the next year, the parties met with AmerenUE more than 20 times as AmerenUE developed its preferred resource plan that it filed in this case, Case No EO-2007-0409. AmerenUE did encourage and take input regarding the resource planning process from the parties in those meetings. Even so, this preferred resource plan is AmerenUE's preferred resource plan and not the preferred resource plan of the parties. The decisions regarding resources that should be added and the implementation of the preferred resource plan are decisions entirely made by AmerenUE.

On April 19, 2007, AmerenUE filed its request for and later received waivers from portions of the Load Analysis and Forecasting rule, 4 CSR 240-22.030; the Demand-Side Resource Analysis rule 4 CSR 240-22.050; the Integrated Resource Analysis rule 4 CSR 240-22.060; and the Risk and Strategy Selection rule 4 CSR 240-22.070. AmerenUE discussed all of the waiver requests with the parties to Case No. EO-2006-0240 prior to the filing of the waiver request. AmerenUE also filed for a waiver request from the Non-Unanimous Stipulation And Agreement requirement respecting analysis with and without the Callaway Nuclear Plant concurrent with AmerenUE's Chapter 22 compliance filing on February 5, 2008.

What follows in this Report is a summary of AmerenUE's preferred resource plan, the Staff's overall view of AmerenUE's filing, and a summary of the deficiencies along with the Staff's proposed remedies to these deficiencies. The remainder of the

Report details areas of concern respecting AmerenUE's filing relating to the major components of resource planning that generally correspond with the requirements of rules 4 CSR 240-22.020 through 22.070 of the Electric Utility Resource Planning chapter.

### **Summary of AmerenUE's Preferred Resource Plan**

As set out in its filing, AmerenUE's preferred resource plan includes the implementation of customer energy efficiency programs and demand response programs along with wind energy power purchases, a renewable portfolio, Taum Sauk returning as an energy source, the renewal of the license for the existing Callaway unit and the addition of \*\*\_\_\_\_\_\*\*. The preferred plan also shows the \*\*\_\_\_\_\_\*\*  
\_\_\_\_\_\*\*. AmerenUE's analyses shows that this plan performs the best given AmerenUE's quantification and evaluation of future risks.

A summary of AmerenUE's preferred resource plan is shown in Table 1. This table shows AmerenUE's preferred plan results in excess capacity of varying amounts 17 of the next 20 years. AmerenUE did include sales of this excess capacity to other utilities in its analysis.

President Dwight Eisenhower once said "planning is everything and plans are nothing." There is great value in the resource planning process. The planning process requires the utility to look at their future and evaluate how to best meet an unknown future taking into account the risks and aversion to risk of the utility. This gives the utility information and tools it would not otherwise have to meet the unknown future. The only thing that is certain about resource planning is that the resources used to meet customer's needs in 2026 will not be the same as are shown in AmerenUE's preferred plan in this filing.

NP

TABLE 1-1

HAS BEEN DEEMED

HIGHLY CONFIDENTIAL

IN ITS ENTIRETY

TABLE 1-2

HAS BEEN DEEMED

HIGHLY CONFIDENTIAL

IN ITS ENTIRETY

### **Results of Staff's Review**

Due to the numerous meetings with AmerenUE while it was developing its preferred resource plan and AmerenUE's commitment to the planning process, the Staff's review of this filing only found a few concerns and deficiencies. This filing was well organized and structured and attention was paid to presenting the filing in a manner that made the review much easier than AmerenUE's previous filing. Workpapers were submitted at the time of the filing so the parties had access to information earlier in the process than previously.

A summary rule by rule of the Staff's review of AmerenUE's Chapter 22 compliance filing for rules 4 CSR 240-22.030 through 4 CSR 240-22.070 follows the brief description of Staff concerns with the filing and where Staff believes the filing does not meet the requirements of the rule or the Non-Unanimous Stipulation And Agreement in Case No. EO-2006-0240.

### **List of Concerns**

- A. AmerenUE's plan regarding serving wholesale customers.**
- B. Gaps and inconsistencies in databases.**
- C. Derivation of the exponents on "Heat Use" variables.**
- D. Lack of quantification of energy efficiency improvements effect on forecasts.**

### **List of Deficiencies**

- 1. AmerenUE has not provided an explanation or the assumptions necessary for including in some forecasting models driver variables that are shown to be statistically insignificant. 4 CSR 240-22.030(2)(A)**
- 2. Forecasts of the number of units for each major class were not compared to historical trends. 4 CSR 240-22.030(5)(B)1.B.**
- 3. Only a base-case and low-case load forecast were provided. 4 CSR 240-030(6)**

- 4. AmerenUE did not include a discussion of “interruptible” measures. 4 CSR 240-22.050(1)(A)**
- 5. AmerenUE did not conduct studies in identified areas of need. 4 CSR 240-22.050(5)**
- 6. AmerenUE’s evaluation plans do not include a study of interactive effects for the demand-side resources in current preferred resource plan. 4 CSR 240-22.050(9) and 4 CSR 240-22.050(11)(J)**
- 7. AmerenUE did not provide “Recommendations for changing the Missouri Chapter 22 DSM IRP Rule”, as required in Paragraph 18, Task 8 of the Non-Uniform Stipulation and Agreement in the 2005 AmerenUE resource planning filing (Case No. EO-2006-0240)**
- 8. Reference errors in documentation**



#### **4 CSR 240-22.030 Load Analysis and Forecasting**

##### **SUMMARY**

This section of the Staff's Report provides Staff's review of AmerenUE's load analysis and energy and demand forecasts. In its review, Staff has found some areas that seem to be inconsistent and are cause for concern. In other areas, Staff has found AmerenUE's report to be deficient in its analysis. In this section, Staff identifies these concerns and deficiencies for the Commission.

With respect to the Load Analysis and Forecasting Rule, AmerenUE requested waivers from specific provisions of the rule that were granted by the Commission. These waivers allowed Ameren UE to obviate addressing all or part of the following sections:

- 4 CSR 240-22.030(1)(D)1. Start date of historical energy data base
- 4 CSR 240-22.030(1)(D)2. Start date of historical peak and hourly load data base
- 4 CSR 240-22.030(3) Analysis of use per unit
- 4 CSR 240-22.030(3)(A)1. End use detail
- 4 CSR 240-22.030(3)(A)2. Schedule for acquiring end use detail
- 4 CSR 240-22.030(3)(A)4. Differences between total load and total end use
- 4 CSR 240-22.030(3)(B)1. Measures of stock of energy-using capital goods
- 4 CSR 240-22.030(3)(B)2. Estimate of end-use energy and demand
- 4 CSR 240-22.030(4)(A) Load Profiles for Class and for Net System Load
- 4 CSR 240-22.030(4)(B) Calibrate Class Load Profiles to Net System Load Profiles
- 4 CSR 240-22.030(5)(B)2.A. Specify the forecasts of driver variables
- 4 CSR 240-22.030(5)(B)2.B. End Use Detail
- 4 CSR 240-22.030(6) Sensitivity Analysis
- 4 CSR 240-22.030(7) Load Forecasts for inputs to strategic risk analysis
- 4 CSR 240-22.030(8)(B)2. Plots of coincident demands showing end-use components
- 4 CSR 240-22.030 (8)(C) Sensitivity Analysis for forecasts of energy and peak demands
- 4 CSR 240-22.030(8)(E)1. Plots of hourly load profiles with end use components

##### **CONCERNS**

**A. AmerenUE's plan regarding serving wholesale customers.** From the report and from on-going meetings with AmerenUE, it is unclear what plans AmerenUE has regarding serving Wholesale Customers. AmerenUE should clarify its intentions of

serving Wholesale Customers beyond 2008, and these intentions should be reflected in resource planning.

**B. Gaps and inconsistencies in databases.** It appears that data gaps and inconsistencies in the database have lead to erroneous reporting, such as the customer counts for Commercial Small Primary Service and Commercial Large Primary Service customers (pages 3 and 4<sup>1</sup> and as illustrated in Figures (8)-17 and (8)-18 on page 291.) Unexplained dips in customer numbers, such as those shown in figures (8)-20, (8)-43, (8)-45, and (8)-67 are confusing and unexplained by AmerenUE. Also, the total number of customers as given in the chart is less than the sum of the number of customers in each class. There is no explanation of why these data anomalies occur and how they are handled in forecasting respecting these customers.

**C. Derivation of the exponents on “Heat Use” variables.** AmerenUE did not document the source of the exponents on the variables used to calculate the Heat Use, Cooling and Other variables in the Residential and Commercial forecasting models, or explain why they have changed since the Load Analysis and Forecasting Workshop I.

**D. Lack of quantification of energy efficiency improvements effect on forecasts.** Ameren did not quantify or explain the statement “some level of energy efficiency improvement” (page 266) that is used in the base load analysis.

## DEFICIENCIES

**1. AmerenUE has not provided an explanation or the assumptions necessary for including in some forecasting models driver variables that are shown to be statistically insignificant. 4 CSR 240-22.030(2)(A)**

It appears that some of the driver variables used in the models to forecast the number of customers are statistically insignificant and provide no additional information useful for forecasting the number of units. AmerenUE has not provided an explanation

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<sup>1</sup> All page and table numbers in this section are from the Load Analysis and Forecasting Report.

or the assumptions necessary for arguing that these variables should remain in the models. For example, the residential customer number model contains a population variable that is statistically insignificant. In this particular case, it may be useful to replace the population variable with a monthly household variable that is constructed from the household variable used for developing the residential heat index. It is reasonable to assume that a variable based on the number of households will be a better proxy for the number of customers than general population, because each household, regardless of household size or demographic mix, will tend to have an in-service meter.

Overall, AmerenUE should re-examine its forecasting models for number of units, and remove or replace driver variables that do not contribute to the forecasting ability of the model. Driver variables that are insignificant should be dropped from the models, or AmerenUE should provide a clear explanation of its rationale that supports the decision to leave these variables in the model.

**2. Forecasts of the number of units for each major class were not compared to historical trends. 4 CSR 240-22.030(5)(B)1.B.**

It appears from the tables presented on pages 145 through 150 that Ameren provided only forecasts, and did not provide the comparison to historical trends. AmerenUE should provide updated tables that provide historical data and the forecasts with accompanying documentation that identifies and explains significant differences between the historic and forecasted trends.

**3. Only a base-case and low-case load forecast were provided. 4 CSR 240-030(6)**

The Commission gave AmerenUE a partial waiver of this subsection. The waiver proposed an alternate submittal and states that “...AmerenUE will select at least two (2) additional load forecasts (a high-growth case and a low-growth case) that bracket the base-case load forecast.” AmerenUE only provided a base-case and low-case load forecast. AmerenUE should develop a high-case load forecast that has a load growth greater than the base-case.

#### **4 CSR 240-22.040 Supply Side Resource Analysis**

##### **SUMMARY**

This rule requires the electric utility to review alternative supply-side resources and determine cost estimates for each type of resource in order to include these resources in the integration process used to determine a preferred resource plan.

AmerenUE started its review with a list of 32 fossil fueled resources, and 29 renewable energy and storage resources. AmerenUE, with the assistance of Black & Veatch, reviewed and eliminated 23 of those technologies (14 fossil fuel resources and 9 renewable and energy storage resources) that could not be reasonably developed or implemented by AmerenUE based on commercial status and market availability. Tables 1, 2, 3, 21, and 22 on pages 4, 5, 7, 35 and 36, respectively, in Volume 1 of AmerenUE's Supply-Side Resource Analysis identifies the potential and non-potential technologies that were included in the integration analysis.

Staff believes AmerenUE's supply-side resource filing meets the supply-side requirements of the Non-Unanimous Stipulation And Agreement in Case No EO-2006-0240.

##### **DEFICIENCIES**

**Staff did not find any deficiencies in AmerenUE's supply side resource filing.**

#### **4 CSR 240-22.050 Demand Side Resource Analysis**

##### **SUMMARY**

AmerenUE's Demand-Side Resource Analysis is much more comprehensive than its resource planning filing in 2005. The Company previously filed for certain waivers and received Commission approval related to 4 CSR 240-22.050(2), (3)(F), (4), (6)(D), (9), (11)(C), (11)(D), and (11)(J).

The range of measures selected, evaluated, and screened by AmerenUE include a variety of measures based on AmerenUE's own experience and best practices from other utilities. AmerenUE has utilized contractors with documented skill in performing the calculations needed to meet the requirements of the rule, such as CRA International's Multi-Region National – North American Electricity and Environmental Model (MRN-NEEM) for projections of wholesale electric prices. Similarly AmerenUE used information from the California Public Utilities Commission (CPUC), the California Energy Commission (CEC), and U. S. Department of Energy's DOE-2 building simulation model and the Database of Energy Efficient Resources (DEER) for compiling measure information. In the cost-effectiveness screening of end-use measures the Company used weather data from four National Weather Service Stations that are in or adjacent to the three geographic areas that AmerenUE serves in Missouri; St. Louis, MO; Columbia, MO; Kansas City, MO; and Memphis, TN.

##### **DEFICIENCIES**

#### **4. AmerenUE did not include a discussion of “interruptible” measures. 4 CSR 240-22.050(1)(A)**

AmerenUE's documentation regarding this subsection discusses the sources used in the development of measures for the residential, commercial, and industrial sectors. The language in the documentation does not include a similar discussion regarding measures for the “interruptible” class.

Staff notes that there are “interruptible” measures in the full list of measures cited in AmerenUE’s 4 CSR 240-22.050\_Appendix A, specifically measure ID 864 on page 2.26.

AmerenUE should add documentation that discusses how the interruptible “class” of measures was also considered by it as part of the “menu of energy efficiency and energy management measures” referred to in the subsection of the rule.

**5. AmerenUE did not conduct studies in identified areas of need. 4 CSR 240-22.050(5)**

In this section of the report, AmerenUE lists a wide variety of “secondary market research” and “secondary data sources” that were used for the design of the demand side program. At the end of this section, AmerenUE identified two areas of need:

- An improved understanding of the peak impacts of a variety of weather-sensitive measures
- An improved understanding of market baseline conditions, especially for the commercial and industrial sectors

In addition, Paragraph 21 in the Non-Unanimous Stipulation And Agreement in the 2005 AmerenUE resource planning filing (Case No. EO-2006-0240) states:

AmerenUE will conduct market research studies, customer surveys, pilot DSM programs, test marketing programs and other activities to develop the information necessary to design and implement cost-effective demand-side programs.

AmerenUE should gather data from secondary studies and / or conduct primary studies (possibly utilizing consultants) to eliminate these two areas of need. This task should be completed in time to provide the needed information for the development of AmerenUE’s next resource plan filing, February 5, 2011.

**6. AmerenUE’s evaluation plans do not include a study of interactive effects for the demand-side resources in current preferred resource plan. 4 CSR 240-22.050(9) and 4 CSR 240-22.050(11)(J)**

AmerenUE did seek a waiver from these requirements; however, as AmerenUE wrote on page 5 of Attachment B to its waiver filing, “The effect of this waiver is simply

to defer the detailed plans required until a final program set has been selected and detailed program designs have been prepared.”

In subsection 4 CSR 240-22.050(6)(B) of its report, AmerenUE noted that:

It is not possible to comprehensively account for all possible interactive effects, since they will depend on the combinations of measures actually installed by program participants and the order in which measures are installed.

In the discussion of AmerenUE’s high-level evaluation plans, there was no discussion of attempting to measure these interactive effects.

An evaluation of estimates of measure interactivity can be included in “high-level evaluation strategies”, as noted by AmerenUE in its discussion in Section 4 CSR 240-22.050(9).

Paragraph 21 in the Non-Unanimous Stipulation And Agreement in the 2005 AmerenUE resource planning filing (Case No. EO-2006-0240) states:

AmerenUE will conduct market research studies, customer surveys, pilot DSM programs, test marketing programs and other activities to develop the information necessary to design and implement cost-effective demand-side programs.

AmerenUE, in its future evaluation processes, should include a study of interactivity, as it relates to AmerenUE’s ability to predict the effects of future high efficiency equipment installation by all classes of customers.

**7. AmerenUE did not provide “Recommendations for changing the Missouri Chapter 22 DSM IRP Rule”, as required in Paragraph 18, Task 8 of the Non-Unanimous Stipulation and Agreement in the 2005 AmerenUE resource planning filing (Case No. EO-2006-0240)**

Page 35 of the “Demonstration of Compliance with Non-Unanimous Stipulation and Agreement from AmerenUE’s 2005 Chapter 22 (4 CSR 240-22.010-.080) Electric Utility Resource Plan” document states that a consultant was retained to perform the tasks listed under Paragraph 18 of the Non-Unanimous Stipulation And Agreement, and lists areas in the current 2008 resource planning filing where the work is documented.

In the listed areas of the 2008 resource planning filing, there was no listing of suggestions for the DSM portion of Chapter 22. The final task for the consultant was to

provide recommendations to improve the Demand-Side Analysis rule. That work was not completed for two reasons. The first reason was attributable to the extensive additional demand-side analyses the consultant was asked to perform. The second reason was attributable to the resignation of the individual consultant, who was going to perform this task, from the firm he was working for.

AmerenUE should file its suggestions for changes to the Demand-Side Analysis rule by August 31, 2008.

## **8. Reference errors in documentation**

Within AmerenUE's Demand-Side Resource Analysis filing, there are some reference errors stating "**Error! Reference Source not found**". Two of these errors are in 4 CSR 240-22.050(3)(F) and 4 CSR 240-22.050(11)(D)1.-2.

AmerenUE should file an errata sheet to correct such errors and file that sheet within the case in EFIS.



#### **4 CSR 240-22.060 Integrated Resource Analysis**

##### **SUMMARY**

This rule requires the electric utility to design alternative resource plans to meet the planning objectives and sets minimum standards for the scope and level of detail required in resource plan analysis. AmerenUE created a large number of alternative resource plans, 110, and subsequently identified the top 18 plans to undergo risk analysis that were used to determine a preferred resource plan. The 110 plans are identified on pages 14-16 of AmerenUE's Integrated Resource Analysis Volume. The top 18 plans are identified on page 17 of that same volume.

Staff believes the Integrated Resource Analysis filing meets the supply-side requirements of the Non-Unanimous Stipulation And Agreement from Case No EO-2006-0240 if the waiver is granted from the Non-Unanimous Stipulation And Agreement requirement respecting analysis with and without the Callaway Nuclear Plant. This AmerenUE waiver request was discussed with the parties to the Non-Unanimous Stipulation And Agreement prior to AmerenUE's filing on February 5, 2008 and is consistent with AmerenUE's current plan to renew the license for the existing Callaway unit. At the time the Non-Unanimous Stipulation And Agreement was negotiated, AmerenUE had not committed to the renewal of the Callaway license. Since the waiver request is consistent with AmerenUE's current plans for this existing unit, Staff supports AmerenUE's request for a waiver related to the Callaway Nuclear Plant.

##### **DEFICIENCIES**

**Staff did not find any deficiencies in AmerenUE's integrated resource analysis filing.**

#### **4 CSR 240-22.070 Risk Analysis and Strategy Selection**

##### **SUMMARY**

This rule requires the electric utility to look at the risks and uncertainties associated with the portfolios identified in the Integrated Resource Analysis rule, select a preferred plan, an implementation plan for that preferred plan and identify contingency options for that preferred plan.

Staff believes the risk analysis and strategy selection filing meets the supply-side requirements of the Non-Unanimous Stipulation And Agreement from Case No EO-2006-0240 if the waiver is granted regarding the Non-Unanimous Stipulation And Agreement requirement respecting analysis with and without the Callaway Nuclear Plant. This waiver request was discussed with the parties to the Non-Unanimous Stipulation And Agreement prior to the filing and is consistent with AmerenUE's current plan to renew the license for the existing Callaway unit. At the time the Non-Unanimous Stipulation And Agreement was negotiated, AmerenUE had not committed to the renewal of the Callaway Nuclear Plant license. Since the waiver request is consistent with AmerenUE's current plans for this existing unit, Staff supports AmerenUE's request for a waiver related to the Callaway Nuclear Plant.

##### **DEFICIENCIES**

**Staff did not find any deficiencies in AmerenUE's integrated resource filing.**

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

Union Electric Company's 2008 Utility )  
Resource Filing pursuant to 4 CSR 240 - )  
Chapter 22 )

Case No. EO-2007-0409

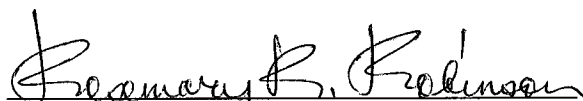
**AFFIDAVIT OF LENA M. MANTLE**

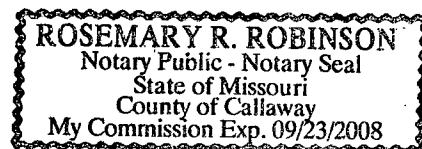
STATE OF MISSOURI            )  
  ) ss:  
COUNTY OF COLE            )

Lena M. Mantle, of lawful age, on oath states: that she has participated in the preparation of the following Staff Report in pages 1 to 4; that she has knowledge of the matters set forth in such Report; and that such matters are true to the best of her knowledge and belief.

  
\_\_\_\_\_  
LENA M. MANTLE

Subscribed and affirmed before me this 19<sup>th</sup> day of June, 2008 .

  
\_\_\_\_\_  
NOTARY PUBLIC



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

Union Electric Company's 2008 Utility )  
Resource Filing pursuant to 4 CSR 240 - )  
Chapter 22 )

Case No. EO-2007-0409

**AFFIDAVIT OF DAVID C. ROOS**

STATE OF MISSOURI )  
 ) ss:  
COUNTY OF COLE )

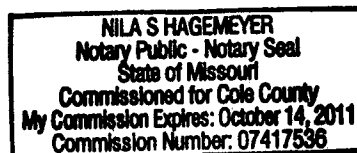
David C. Roos, of lawful age, on oath states: that he has participated in the preparation of the following Staff Report in pages 5 to 7; that he has knowledge of the matters set forth in such Report; and that such matters are true to the best of his knowledge and belief.

  
\_\_\_\_\_  
DAVID C. ROOS

Subscribed and affirmed before me this 18<sup>th</sup> day of June, 2008 .



  
\_\_\_\_\_  
NOTARY PUBLIC



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


Union Electric Company's 2008 Utility )  
Resource Filing pursuant to 4 CSR 240 - )  
Chapter 22 )

Case No. EO-2007-0409

**AFFIDAVIT OF DAVID W. ELLIOTT**

STATE OF MISSOURI )  
 ) ss:  
COUNTY OF COLE )


David W. Elliott, of lawful age, on oath states: that he has participated in the preparation of the following Staff Report in pages 8 to 8; that he has knowledge of the matters set forth in such Report; and that such matters are true to the best of his knowledge and belief.

  
\_\_\_\_\_  
DAVID W. ELLIOTT

Subscribed and affirmed before me this 17 day of June, 2008.



DAWN L. HAKE  
My Commission Expires  
March 16, 2009  
Cole County  
Commission #05407643

  
\_\_\_\_\_  
NOTARY PUBLIC

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

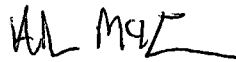
Union Electric Company's 2008 Utility )  
Resource Filing pursuant to 4 CSR 240 - )  
Chapter 22 )

Case No. EO-2007-0409

**AFFIDAVIT OF ADAM C. MCKINNIE**

STATE OF MISSOURI            )  
  ) ss:  
COUNTY OF COLE            )

Adam C. McKinnie, of lawful age, on oath states: that he has participated in the preparation of the following Staff Report in pages 9 to 12; that he has knowledge of the matters set forth in such Report; and that such matters are true to the best of his knowledge and belief.

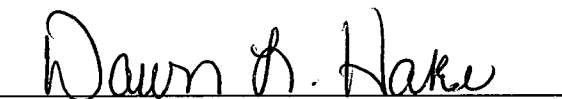


\_\_\_\_\_  
ADAM C. MCKINNIE

Subscribed and affirmed before me this 19<sup>th</sup> day of June, 2008 .



DAWN L. HAKE  
My Commission Expires  
March 16, 2009  
Cole County  
Commission #05407643

  
\_\_\_\_\_  
NOTARY PUBLIC