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Witness: W. Scott Keith
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Case No. EO-2014-0030
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Before the Public Service Commission of the State of Missouri

Direct Testimony

of

W. Scott Keith

October 2013

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THE EMPIRE DISTRICT ELECTRIC COMPANY
BEFORE THE
MISSOURI PUBLIC SERVICE COMMISSION
CASE NO. EO-2014-0030

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INTRODUCTION

Q. STATE YOUR NAME AND ADDRESS PLEASE.

A. My name is W. Scott Keith and my business address is 602 S. Joplin Avenue, Joplin, Missouri.

POSITION

Q. BY WHOM ARE YOU EMPLOYED AND IN WHAT CAPACITY?

A. I am presently employed by The Empire District Electric Company ("Empire" or the "Company") as the Director of Planning and Regulatory. I have held this position since August 1, 2005.

Q. PLEASE DESCRIBE YOUR EDUCATIONAL BACKGROUND.

A. In August 1973, I received a Bachelor of Business Administration degree with a major in Accounting at Washburn University, Topeka, Kansas.

Q. WHAT EXPERIENCE HAVE YOU HAD IN THE FIELD OF PUBLIC UTILITIES?

A. In 1973, I accepted a position in the firm of Troupe Kehoe Whiteaker & Kent as a staff accountant. I assisted in or was responsible for fieldwork and preparation of exhibits for rate filings presented to various regulatory commissions and audits leading to opinions on financial statements for various types of companies including utility companies.

In September 1976, I accepted a position with the staff of the Kansas Corporation Commission ("KCC"). My responsibilities at the KCC included the investigation of utility rate applications and the preparation of exhibits and presentation of testimony in connection with applications that were under the jurisdiction of the KCC. The scope of the investigations I performed on behalf of the KCC included the areas of accounting, cost of service, and rate design.

In March of 1978, I joined the firm of Drees Dunn & Company and continued to perform services for various utility clients with that firm until it dissolved in March of 1991.

From March of 1991 until June of 1994, I was self-employed as a utility consultant and continued to provide clients with analyses of revenue requirements, cost of service studies, and rate design. In connection with those engagements, I also provided expert testimony and exhibits to be presented before regulatory commissions.

I was employed by Aquila, Inc., as the Director of Regulatory for its electric operations in Kansas and Colorado from 1995 to July 2005.

Q. HAVE YOU PREVIOUSLY PARTICIPATED IN ANY REGULATORY PROCEEDINGS?

A. Yes, I have. I have testified before regulatory commissions in the states of Arkansas, Kansas, Colorado, Indiana, Missouri, Oklahoma, and West Virginia. I have also testified before the Federal Energy Regulatory Commission ("FERC").

PURPOSE

Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY?

A. My testimony will provide an overview of Empire's Missouri Energy Efficiency Investment Act ("MEEIA") filing with the Missouri Public Service Commission ("Commission").

Q. PLEASE DESCRIBE EMPIRE'S MEEIA REQUEST.

A. Empire is seeking Commission approval of a new Missouri demand-side management ("DSM") portfolio, including four new DSM programs, and the implementation of a new Demand Side Investment Mechanism ("DSIM") to recover the revenue requirement associated with Empire's new DSM portfolio. The details of Empire's MEEIA proposal are contained within Empire's MEEIA ("Report") and the appendices to the Report. The Report is attached hereto as Schedule A.

INTEGRATED RESOURCE PLAN AGREEMENT

Q. WHY IS EMPIRE MAKING A MEEIA FILING WITH THE COMMISSION AT THIS TIME?

A. Empire is making this MEEIA filing to comply with agreements reached in Empire's 2010 Integrated Resource Plan ("IRP") proceeding, Commission Docket No. EO-2011-0066 and subsequent MEEIA filing, Commission Docket No. EO-2012-0206.

The agreements reached in the 2010 IRP and related MEEIA filing included the following regarding Empire's future MEEIA filing:

Paragraph 7:

b. As specified in Paragraph 9, Empire agrees to work with the

Stakeholder Advisory Group to request the Commission's approval to implement new demand-side programs, including the demand-side programs in Empire's preferred resource plan in the September 2010 filing, after the effective date of the Commission's MEEIA rules;

Paragraph 9:
As referenced in 7.b., the Signatories agree to the following provisions with respect to planning and implementation of new demand-side programs during the period between the effective date of this Agreement and Empire's anticipated April 2013 filing. This period will be referred to as the "interim period":

a. New demand-side programs whose implementation was described during the interim period in the September 2010 filing include ***(1) an ENERGY STAR® washing machine rebate program****,* ***(2) a Residential High Efficiency Lighting program, and (3) a Home Energy Comparison Reports program****.*

b. As referenced in Paragraph 7.b., to augment the demand-side resource portfolio contained in the resource acquisition strategy in the September 2010 filing, three additional demand-side programs will be considered. These programs are a ***refrigerator recycling program, an ENERGY STAR® refrigerator rebate program and a pilot ENERGY STAR® dehumidifier rebate program****.*

c. Empire will, unless advised otherwise by at least two non-utility members of the Stakeholder Advisory Group, request the Commission's approval of: ***1) the demand side programs identified in Paragraphs 9.a and 9.b****., except as described in part 9.d., and* ***2) a demand-side programs investment mechanism ("DSIM") within nine months of the effective date of the Commission's MEEIA rules during the interim period****.*

d. If the revised ENERGY STAR® dehumidifier standard has not been published at the time specified in Paragraph 9.c., then the pilot ENERGY STAR® dehumidifier rebate program shall be considered at a later time than the other demand-side programs listed in Paragraphs 9.a. and 9.b. Empire, in consultation with the Stakeholder Advisory Group, shall consider this program for implementation during the interim period, within three months following the publication by the U.S. Environmental Protection Agency's revised standard for ENERGY STAR® dehumidifiers.

e. Alternative Demand-Side Programs Cost Recovery Mechanism: In the event the cost recovery provisions of the MEEIA rules are not in effect, the parties will support a reasonable request for an Accounting Authority Order authorizing the Company to accumulate the costs associated with new demand-side programs in regulatory asset accounts as the program(s) costs are incurred, unless a mechanism concerning these costs is established in File No.ER-2011-0004. The amortization of these deferred program costs and the recovery of these deferred program costs from the Company's customers, if not later addressed by a DSIM, shall be addressed in the Company's subsequent electric general rate proceeding.

Paragraph 10:
a. Prior to requesting Commission approval of new demand-side programs,

> *including new demand-side programs identified in Paragraph 9.a. and 9.b., Empire agrees to confer with the Stakeholder Advisory Group concerning program participation levels, design and implementation at least quarterly.*

Paragraph 11:
The Signatories agree to the following provisions with respect to Empire's existing demand-side programs. Empire shall consult with the Stakeholder Advisory Group concerning the future of Empire's existing portfolio of energy efficiency programs under MEEIA or the Commission's MEEIA rules. If Empire determines, in consultation with the Stakeholder Advisory Group, that a continuation or modification of any or all of the existing programs is warranted, Empire shall file for approval of the such programs and for approval of a DSIM under the MEEIA or the Commission's MEEIA rules within nine (9) months of the effective date of the Commission's MEEIA rules. Empire agrees to work with the Stakeholders Advisory Group and a demand-side consultant, if necessary, to analyze the levels of participation and the incentive levels for each of Empire's existing demand-side programs and develop a plan that will maximize the savings attributable to each program while maintaining Total Resource Cost levels of 1.0 or greater.

Q. DID EMPIRE REACH AN AGREEMENT WITH THE VARIOUS PARTIES IN THE SUBSEQUENT MEEIA FILING THAT INFLUENCED THE TIMING OF THIS MEEIA FILING?

A. Yes.

Q. PLEASE GENERALLY DESCRIBE THE AGREEMENT EMPIRE ENTERED INTO IN ITS 2012 MEEIA FILING.

A. Essentially, the parties to Empire's 2012 MEEIA filing, Case No. EO-2012-0206, agreed that the timing of Empire's compliant MEEIA filing should be delayed until at least 120 days after the filing of Empire's 2013 Integrated Resource Plan ("IRP"). This delay in the MEEIA filing would allow Empire to better take into account the results of a market potential study and Empire's preferred resource plan coming out of the 2013 IRP. The Commission approved this agreement on June 27, 2012.

Q. DOES EMPIRE'S MEEIA FILING COMPLY WITH THE SECOND AGREEMENT REACHED IN THE EO-2011-0066 AND EO-2012-0206

DOCKETS?

A. Yes. The timing and contents of the current MEEIA filing comport to the agreements reached in those dockets.

Q. DID EMPIRE RETAIN A CONSULTANT IN CONNECTION WITH THIS MEEIA FILING?

A. Yes. As part of the 2013 IRP process, Empire retained the Applied Energy Group ("AEG") to examine the DSM potential in Empire's service area to determine a portfolio of cost effective DSM programs. This MEEIA filing includes all of the DSM programs that were included as part of Empire's preferred resource plan in the recently filed 2013 IRP.

Q. PLEASE DESCRIBE THE RESULT OF AEG'S DSM PROGRAM ANALYSIS.

A. AEG analyzed the potential DSM in Empire's service area in accordance with the Commission's IRP rules, and Empire filed the results of AEG's analysis with the Commission as part of its IRP filing in EO-2013-0547. Empire's preferred resource plan ("Preferred Plan") in the 2013 IRP includes a portfolio of eleven (11) DSM programs, including four (4) new DSM programs and modifications to some of Empire's existing DSM programs. The detail surrounding each of the programs is included in volume 5 of Empire's 2013 IRP. In total, the proposed DSM programs that Empire is seeking approval of in this filing are cost effective using the Total Resource Cost ("TRC") test.

Q. DOES THE PREFERRED PLAN SELECTED REFLECT THE LOWEST COST RESOURCE PLAN OF THOSE ANALYZED?

A. No. Plan 11, which included no DSM, resulted in the lowest revenue requirement, and lowest overall electric rates.

Q. PLEASE QUANTIFY THE REVENUE REQUIREMENT DIFFERENCES BETWEEN EMPIRE'S PREFERRED PLAN AND ALTERNATIVE PLAN 11, WHICH INCLUDED NO DSM.

A. Empire's Preferred Plan had a Present Value Revenue Requirement ("PVRR") of $7.365 billion over the planning horizon, while Alternative Plan 11 had a PVRR of $7.321 billion over the planning horizon. The overall difference in PVRR between these two plans represents an increase of $44 million or 0.60 percent over the planning horizon.

Q. PLEASE QUANTIFY THE RATE DIFFERENTIALS BETWEEN EMPIRE'S PREFERRED PLAN AND ALTERNATIVE PLAN 11, WHICH INCLUDED NO DSM.

A. The rate differentials per kilowatt-hour between the two plans are displayed in the following table for the first nine (9) years of the planning horizon.

Year	Preferred Plan	Alt. Plan 11	Diff	Percentage
2013	$.0917	$.0917	$.0000	-
2014	$.0943	$.0923	$.0020	2.2%
2015	$.0993	$.0968	$.0025	2.6%
2016	$.1057	$.1026	$.0031	3.0%
2017	$.1078	$.1043	$.0035	3.4%
2018	$.1103	$.1065	$.0038	3.6%
2019	$.1123	$.1083	$.0040	3.7%
2020	$.1137	$.1095	$.0042	3.8%
2021	$.1155	$.1112	$.0043	3.9%

As indicted, the Preferred Plan is forecast to result in average rates that are from two to four percent higher than those produced by Alternative Plan 11, which includes no DSM.

Q. WHY ARE THE OVERALL RATES FROM TWO TO FOUR PERCENT HIGHER IN THE PREFERRED PLAN THAN THOSE IN THE NO DSM ALTERNATIVE WHEN THE OVERALL REVENUE REQUIREMENT DIFFERENTIAL IS LESS THAN ONE PERCENT?

A. The overall percentage rate differential is greater than the revenue requirement percentage differential due to the reduction in future kilowatt-hour sales as a result of increasing levels of DSM and the need to increase rates to recover ongoing fixed costs that cannot be avoided. The rate differential between the two plans increases, as the fixed costs continue to increase and future sales levels are depressed by the installation of more DSM. In Empire's case, this relationship is magnified due to Empire's already low rate of sales growth and the attendant lack of new resource requirements.

Q. WHY DID EMPIRE SELECT A PREFERRED PLAN THAT DID NOT PRODUCE THE LOWEST OVERALL REVENUE REQUIREMENT?

A. As set out in the Executive Summary, Volume 1, of Empire's most recent IRP Case No. EO-2013-0547, the preferred plan represents a balance between the various planning objectives cited by the Commission's IRP rules. While the minimization of the overall revenue requirement is one of the primary goals of the Commission's rule, it is not the sole planning objective that is required to be addressed. For example, the utilization of cost effective demand-side resources must also be addressed as part of the IRP process in Missouri. Empire's Preferred Plan is expected to result in a significant increase in the use of demand-side resources on Empire's system. If customer participation levels are attained at the level forecast in the IRP, the Commission's overall MEEIA rule of 1.5 percent energy savings should be met by year three of Empire's energy efficiency program cycle.

Q. DOES EMPIRE'S MEEIA FILING INCLUDE THE ADDITIONAL DSM PROGRAMS SPECIFIED IN THE EMPIRE 2010 IRP AGREEMENT?

A. Yes. Empire's MEEIA request includes aspects of the four (4) additional DSM programs agreed to for review in the last IRP. Those four aspects are:

- A residential high efficiency lighting program;
- A residential appliance program;
- An appliance recycling program; and
- A small business lighting program.

The Energy Star appliance rebate program encompasses a range of appliances including refrigerators, dehumidifiers, and pool pumps. A more detailed description of each of the demand-side programs that Empire is seeking Commission approval of is included in Empire's MEEIA Report attached hereto, and is also contained in volume 5 of Empire's recent IRP filing, Case No. EO-2013-0547. A home comparison program was screened as part of Empire's 2013 IRP, but it did not pass the screening process and was excluded from Empire's proposed MEEIA DSM portfolio in the Company's preferred resource plan.

<u>DEMAND-SIDE INVESTMENT MECHANISM ("DSIM")</u>

Q. PLEASE DESCRIBE THE DSIM EMPIRE IS SEEKING TO IMPLEMENT.

A. Empire is requesting Commission approval of a mechanism to recover DSM program costs and incentives (DSM Revenue Requirement) outside of the normal rate case process. As proposed, the mechanism is designed to recover actual program costs, shared benefits and earned and verified incentives on a calendar year basis. Under the proposal, Empire would implement DSIM recovery factor by making an annual filing. The DSIM factor(s) will ultimately recover Empire's actual DSM costs, the actual shared benefits earned, and actual program incentive earned. This latter component, program incentive, is verified through the Evaluation, Measurement and Verification ("EM&V") process. As part of the recovery proposal, Empire would create a regulatory asset to capture any over/(under) recovery of DSM program revenue requirement. This will ensure that Empire only recovers the actual revenue requirement authorized by the Commission.

Q. HOW OFTEN WILL EMPIRE'S DSM RECOVERY FACTOR BE ADJUSTED UNDER EMPIRE'S PROPOSAL?

A. The DSM cost recovery factor will be adjusted annually to recover the annual forecast of DSM revenue requirement, any over/under collections of DSM revenue requirement, and ultimately any incentives earned due to program performance and lost revenue, if applicable. The detailed aspects of the DSIM, including proposed DSIM sheets, are included as part of Empire's MEEIA Report, and attached hereto as Schedule A.

Q WAS A DSIM CONTEMPLATED AS PART OF THE AGREEMENT REACHED IN EMPIRE'S 2010 IRP?

A. Yes, but the details of the DSIM were not specified.

Q. WILL THE DSIM RESULT IN AN INCREASE IN CHARGES TO EMPIRE'S MISSOURI CUSTOMERS?

A. Yes. If Empire's actual DSM expenditures reach the budget levels displayed in Appendix E to Empire's MEEIA Report, Empire's Missouri revenue would increase by $6.7 million in the first year following DSM program implementation. By the third year of the DSM program, Empire estimates that its annual DSM revenue requirement would climb to approximately $10.0 million. In terms of percentage increase, these levels of revenue increases for a residential customer range from 1.56 percent in the first year following DSM program implementation to 2.21 percent by the third year following DSM program implementation. Empire's MEEIA Report includes more information on the revenue impact of Empire's DSIM proposal on each of Empire's customer classes.

Q. DOES EMPIRE'S DSIM PROPOSAL EXCLUDE ANY MISSOURI CUSTOMERS?

A. Yes. Empire's DSIM proposal excludes our lighting tariffs and customers who have "opted out" of the Company's DSM programs. At the present time, larger customers using around eight (8) percent of the energy Empire sells in Missouri have declined to participate in Empire's DSM programs and "opted out".

<u>DSM SAVINGS</u>

Q. DO THE ESTIMATED ENERGY AND DEMAND SAVINGS PRODUCED BY EMPIRE'S PROPOSED DSM PROGRAMS MEET THE GOALS OUTLINED IN THE COMMISSION'S MEEIA RULES?

A. Yes. Empire estimates that by the end of DSM program year three, the installed DSM measures will result in savings of approximately 54,758 MWH annually, or approximately 1.5 percent of the annual Missouri sales levels in Empire's latest

Missouri electric rate case, Case No. ER-2012-0345. This savings result is in line with the Commission's MEEIA rule goal of 1.5 percent kWh savings by year 3 of a DSM program cycle. The annual savings levels Empire has estimated in the third program year excludes all of the savings associated with the DSM measures that have been installed by Empire's customers over the last four or five years through participation in Empire's existing DSM programs.

Q. ARE EMPIRE'S CUSTOMERS REQUIRED TO PARTICIPATE IN THE COMPANY'S DSM PROGRAM OFFERINGS?

A. No. Customer participation in Empire's DSM programs is strictly voluntary. If Empire's customers elect not to participate in the energy efficiency programs at the levels forecast in the Company's DSM analysis, the energy and demand savings will not reach the levels estimated by Empire's DSM consultant, AEG.

Q. DO EMPIRE'S CUSTOMERS INCUR COSTS TO PARTICIPATE IN EMPIRE'S DSM PROGRAMS?

A. With certain programs, the customer must invest their own money to participate. For example, in the High Efficiency Cooling rebate program, the customer must invest in a more efficient air conditioner to qualify for an Empire rebate. Empire's rebate is not designed to cover 100 percent of the customer's incremental cost. Several of the other programs also involve a level of customer investment. Given the current economic environment, our customers may decide to use their money for something other than energy efficiency. This customer choice will ultimately impact DSM program participation levels.

DSM BUDGET LEVELS

Q. PLEASE DESCRIBE THE DSM INVESTMENT LEVELS UNDER EMPIRE'S MEEIA PROPOSAL.

A. Under Empire's MEEIA proposal, as outlined in Empire's MEEIA Report attached hereto as Schedule A, overall DSM program expenditures are expected to increase from the current levels of $1.5 million per year to around $5.0 million per year.

Q. PLEASE DESCRIBE THE DSIM INCENTIVES UNDER EMPIRE'S MEEIA PROPOSAL.

A. Empire's proposed DSIM incentive is directly tied to the actual program energy savings. For example, Empire estimates that its proposed DSM programs will save 111,527 MWH over the first three years of operation. As proposed, Empire's DSIM incentive will not be earned during the first three years of program operation unless Empire's actual verified DSM energy savings reach fifty (50) percent of the target of 111,527 MWH, or 55,764 MWH. At that level of performance, Empire would be eligible for an incentive of $1,220,000. The incentive increases as program performance improves. Under Empire's proposal, the incentive is capped at a maximum of $3 million at a program performance level of 130 percent of program goal during a program cycle (three (3) years). All of the savings actually achieved will be verified by the periodic EM&V process before being included in the DSIM revenue requirement.

Q. HOW WERE THE PROGRAM PERFORMANCE PERAMETERS ESTABLISHED FOR EMPIRE'S PROPOSAL?

A. Empire reviewed the DSM program savings goals and performance parameters approved for Ameren and KCPL's Greater Missouri Operations and adjusted the incentive and performance goals to reflect the size of Empire's electric operations and aggressiveness of Empire's programs as compared with these two companies. For example, Empire's electric operations are smaller than these other two entities, but Empire's DSM savings goals are more aggressive. Empire's size relative to these two entities resulted in a lower potential incentive. Empire's more aggressive DSM savings goals lowered the overall program performance threshold. Workpapers supporting these calculations will be provided to the parties to this case.

Q. IS EMPIRE'S DSIM PROPOSAL A CRITICAL COMPONENT OF THE MEEIA FILING?

A. Yes. If the Commission does not authorize a DSIM that recovers Empire's DSIM revenue requirement, including shared benefits and incentives, in a timely manner, Empire will be forced to re-examine the level of DSM investment proposed in this filing.

Q. DOES THIS CONCLUDE YOUR DIRECT TESTIMONY?

A. Yes.

AFFIDAVIT OF W. SCOTT KEITH

STATE OF MISSOURI)
) ss
COUNTY OF JASPER)

On the 29th day of October 2013, before me appeared W. Scott Keith, to me personally known, who, being by me first duly sworn, states that he is the Director of Planning and Regulatory of The Empire District Electric Company and acknowledges that he has read the above and foregoing document and believes that the statements therein are true and correct to the best of his information, knowledge and belief.

W. Scott Keith

W. Scott Keith

Subscribed and sworn to before me this 29th day of October, 2013.

ANGELA M. CLOVEN
Notary Public - Notary Seal
State of Missouri
Commissioned for Jasper County
My Commission Expires: November 01, 2015
Commission Number: 11262659

Angela M. Cloven

Notary Public

My commission expires: 11/01/2015