

Exhibit No.  
Issues: In-Service Criteria;  
New Plant In-Service  
Witness: Blake A. Mertens  
Type of Exhibit: Direct Testimony  
Sponsoring Party: Empire District  
Docket No.:  
Date: January 2017

**Before the Corporation Commission  
of the State of Kansas**

**Direct Testimony**

**Of**

**Blake A. Mertens**

**January 2017**



DIRECT TESTIMONY  
OF  
BLAKE A. MERTENS  
ON BEHALF OF  
THE EMPIRE DISTRICT ELECTRIC COMPANY  
BEFORE THE  
KANSAS CORPORATION COMMISSION  
DOCKET NO.

1 **INTRODUCTION**

2 **Q. PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.**

3 A. Blake A. Mertens. My business address is 602 South Joplin Avenue, Joplin,  
4 Missouri.

5 **POSITION**

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

7 A. The Empire District Electric Company (“Empire” or “Company”), I am - Vice  
8 President Energy Supply and Delivery Operations.

9 **Q. PLEASE DESCRIBE YOUR EDUCATIONAL BACKGROUND.**

10 A. I graduated from Kansas State University in 2000 with a Bachelor of Science  
11 Degree in Chemical Engineering with a minor in Business. I received a Masters  
12 Degree in Business Administration from Missouri State University in December of  
13 2007. I am also a professionally licensed engineer in the state of Kansas.

14 **Q. PLEASE GIVE AN OVERVIEW OF YOUR PROFESSIONAL**  
15 **EXPERIENCE.**

16 A. I was employed by Black & Veatch Corp. immediately following my graduation  
17 from Kansas State University in May of 2000. From June of 2000 through  
18 November of 2001, I held roles as a technical analyst and energy consultant for the  
19 Strategic Planning Group of Black & Veatch’s Power Sector Advisory Services in

1 the Energy Services Division. Duties included assisting in power plant siting  
2 studies, economic analysis of potential power plants using production cost  
3 modeling, independent engineering evaluations of plant assets, and market analysis  
4 of the California energy crisis of 2000 – 2001. I went to work for Empire in  
5 November of 2001 as a Staff Engineer in Energy Supply where my duties included  
6 tracking of plant capital and operating & maintenance (“O&M”) expenses,  
7 involvement in energy supply regulatory issues, evaluation of new generating  
8 resource options, assisting in the construction of new plant, and assisting in the  
9 modeling and tracking of fuel and purchased power costs. In 2003, my title was  
10 changed to Planning Engineer with similar duties but more responsibilities in the  
11 area of generation planning. In the fall of 2004 I took a position as Combustion  
12 Turbine Construction Project Manager. In this position I was responsible for the  
13 construction and commissioning of a 150 megawatt (“MW”) combustion turbine at  
14 Empire’s Riverton Power Plant known as Riverton Unit 12. Riverton Unit 12 went  
15 into commercial operation in April of 2007. In the fall of 2006 I took on the  
16 position of Manager of Strategic Projects. In this role I was responsible for the  
17 management of new generation and major projects for Energy Supply facilities.  
18 This included representing Empire's interests at the Iatan, Plum Point and other off-  
19 system generation facilities. In January of 2010 my duties were expanded to  
20 oversee Empire’s environmental and safety departments and my title was likewise  
21 changed to Director of Strategic Projects, Safety, and Environmental Services. In  
22 April of 2011 I was promoted to my current position where I am responsible for  
23 power plant operations, fuel supplies, energy procurement and marketing, and

1 energy supply services. As Vice President, Energy Supply, I am accountable for  
2 the proper budgeting and accounting of capital, operating, and maintenance  
3 expenses for Empire’s generation assets, both individually- and jointly-owned.

4 **PURPOSE**

5 **Q. WHAT IS THE PURPOSE OF YOUR DIRECT TESTIMONY IN THIS**  
6 **CASE BEFORE THE KANSAS CORPORATION COMMISSION**  
7 **(“COMMISSION”)?**

8 A. I will quantify and describe the investment Empire has made in the Riverton 12  
9 Combined Cycle natural gas-fired (“Riverton 12 NGCC”) generating unit as well as  
10 the process utilized to select the contractor responsible for engineering,  
11 procurement, and construction of the unit.

12 **RIVERTON 12 NGCC**

13 **Q. PLEASE BRIEFLY EXPLAIN THE RIVERTON 12 NGCC ADDITION.**

14 A. The Riverton 12 NGCC project involved converting the existing Riverton Unit 12  
15 simple cycle gas turbine, which went into service in 2007, to a combined cycle gas  
16 turbine. The conversion included the installation of a heat recovery steam  
17 generator, steam turbine generator, auxiliary boiler, cooling tower, and other  
18 balance of plant equipment. The Riverton 12 NGCC will be the most efficient  
19 generator in Empire’s fleet and was identified in Empire’s 2013 Integrated  
20 Resource Plan (“IRP”), filed with the Missouri Public Service Commission (MPSC)  
21 in Docket No. EO-2013-0547, as a least cost option to comply with environmental  
22 regulations including the Cross State Air Pollution Rule (CSAPR).

1 **Q. PLEASE DESCRIBE THE “PREFERRED PLAN” ASSOCIATED WITH**  
2 **MISSOURI IRP RULES.**

3 A. The Missouri Electric Utility Resource Planning rules “require the utility to select a  
4 preferred resource plan, develop an implementation plan, and officially adopt a  
5 resource acquisition strategy.”<sup>1</sup> In addition, among other conditions, “in the  
6 judgment of the utility decision-makers, the preferred plan, in conjunction with the  
7 deployment of emergency demand response measures and access to short-term and  
8 emergency power supplies, [must have] sufficient resources to serve load forecasted  
9 under extreme weather conditions pursuant to 4 CSR 240-22.030(8)(B) for the  
10 implementation period.”<sup>2</sup> Also, among the fundamental objectives of the resource  
11 planning process included in the Missouri IRP rules is that a utility shall “[u]se  
12 minimization of the present worth of long-run utility costs as the primary selection  
13 criterion in choosing the preferred resource plan, subject to the constraints in”<sup>3</sup>  
14 CSR 240-22.010(1)(C).

15 **Q. WAS THE RIVERTON 12 NGCC CONVERSION PROJECT SELECTED**  
16 **AS PART OF THE PREFERRED PLAN IN MPSC DOCKET EO-2013-0547?**

17 A. Yes. The preferred plan, which included the Riverton 12 NGCC conversion  
18 project, was selected among 18 alternative resource plans developed by Empire in  
19 MPSC Docket EO-2013-0547.

20 “Ventyx, an ABB Company (Ventyx), who was already retained by Empire for  
21 work on the 2013 IRP, conducted the 2016 resource analysis. As part of the  
22 agreement, Empire provided a statement of work for this study, and it was reviewed

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<sup>1</sup> Missouri Code of State Regulations 4 C.S.R. 240-22.070

<sup>2</sup> Missouri Code of State Regulations 4 C.S.R. 240-22.070(1)(D)

<sup>3</sup> Missouri Code of State Regulations 4 C.S.R. 240-22.070(1)(B)

1 and amended by the interested parties. Ventyx performed the study by utilizing the  
2 2013 IRP assumptions and the methodology reviewed by all parties in the scope of  
3 work statement as amended based on stakeholder input. A study report was  
4 supplied to the interested parties on April 5, 2013 and a meeting to discuss the  
5 results was held on April 23, 2013. The study showed that the Riverton conversion  
6 project was the lowest cost and lowest risk resource option for Empire for its 2016  
7 resource need. In addition, there were several other key factors such as operational  
8 issues, transmission and congestion cost risks and unit age that favored the Riverton  
9 12 conversion option. Empire concluded, and expressed to the interested parties,  
10 that the Riverton 12 conversion is the lowest cost 2016 supply alternative, should  
11 continue to be treated as a committed resource in its 2013 IRP and that Empire  
12 would move forward with the Riverton combined cycle project.”<sup>4</sup>

13 **Q. DID THE PARTIES TO THE MPSC DOCKET EO-2013-0547 COME TO AN**  
14 **AGREEMENT CONCERNING EMPIRE’S 2013 IRP FILING?**

15 A. Yes. “On January 31, 2014, Empire and the parties who submitted reports alleging  
16 deficiencies and concerns (collectively, the ‘Signatories’) filed a *Joint Filing*, which  
17 proposed a remedy to most of the alleged deficiencies and concerns. The *Joint*  
18 *Filing* also identified six alleged deficiencies and concerns that remain  
19 unresolved.”<sup>5</sup>

20 **Q. DID EMPIRE KEEP THE COMMISSION STAFF INFORMED OF ITS**  
21 **PLANS AND CONSTRUCTION RELATING TO THE RIVERTON 12**  
22 **PLANT?**

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<sup>4</sup> MPSC Docket EO-2013-0547, The Empire District Electric Company, Integrated Resource Plan, Volume 1, page 16.

<sup>5</sup> MPSC Docket EO-2013-0547, Order Regarding 2013 Integrated Resource Plan, page 1.

1

2 A. Yes. Empire provided the Commission Staff with Empire’s Missouri IRP filings  
3 and throughout the construction process have conducted calls with the Commission  
4 Staff to keep them up to date on the progress of that construction through  
5 completion and startup of operation of the plant.

6 **Q. DID THE MPSC ISSUE AN ORDER IN DOCKET EO-2013-0547?**

7 A. Yes. However, the MPSC rules outlining the procedure for the IRP process in  
8 Missouri do not require a hearing on IRP filings. Consequently, Docket No. EO-  
9 2013-0547 was not a contested case. Nevertheless, the MPSC, in its order dated  
10 March 12, 2014, found that “Empire’s IRP filing demonstrates compliance with the  
11 requirements of Commission Rule 4 CSR 240-22 and concludes that no hearing is  
12 necessary concerning the six unresolved alleged deficiencies and concerns.”<sup>6</sup>

13 **Q. PLEASE BRIEFLY EXPLAIN THE REQUEST FOR PROPOSAL (“RFP”)**  
14 **PROCESS.**

15 A. Black and Veatch, an engineering firm based in Kansas City, Kansas was  
16 contracted by Empire to serve as Owners Engineer in the development of the RFP  
17 for the Riverton 12 NGCC Engineer, Procure, Construct (“EPC”) Contract. The  
18 EPC Contract RFP included Commercial and Technical Sections for the  
19 construction of Riverton 12 NGCC. Also included in the EPC contract were  
20 Commissioning activities. Work began on the RFP specifications in September  
21 2012 and was completed in December 2012. The RFP was sent out on January 3,  
22 2013 to six different firms: Burns & McDonnell, SEGA Engineering, Kiewit

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<sup>6</sup> *Ibid.* page 2

1 Construction, Enerfab, Alberici Constructors, Sargent & Lundy, and Fluor. Bids  
2 were due on April 9, 2013. A Pre-bid meeting was held on January 16, 2013 at the  
3 Riverton site.

4 **Q. WERE ALL ASPECTS OF THE RIVERTON 12 NGCC INCLUDED IN THE**  
5 **EPC CONTRACT RFP?**

6 A. The EPC contract did not include Empire labor & overheads, professional services,  
7 permitting, fuel costs net of market revenue, and site preparation.

8 **Q. WHAT WERE THE RESULTS OF THE RFP FOR THE EPC CONTRACT?**

9 A. Proposals were received from four bidders: Burns & McDonnell, Enerfab, Segal,  
10 and Riverton Partners – a joint venture of Alberici Constructors and Sargent &  
11 Lundy. Proposals were reviewed for technical acceptability and completeness by  
12 the Empire Team and Black & Veatch. Commercial Terms and Conditions were  
13 reviewed by the Empire Team. A matrix was developed for the preliminary  
14 evaluation of the proposals. The proposals were evaluated on the following criteria:  
15 cost, schedule; performance guarantees; commercial terms and conditions;  
16 contractor safety record and project experience. Black & Veatch, Empire's owner's  
17 engineer for the project, aided in the technical evaluation of the proposals without  
18 sharing in any pricing or other commercial information. Direct Exhibit BAM -1, an  
19 internal memorandum further detailing the RFP evaluation process, provides the  
20 results of the scoring matrix. Burns & McDonnell was ultimately selected as the  
21 preferred EPC contractor and the EPC contract was agreed to by both parties on  
22 July 9, 2013.



1 **Q. PLEASE BRIEFLY EXPLAIN THE RIVERTON 12 NGCC**  
2 **CONSTRUCTION AND PROJECT MANAGEMENT PROCESS.**

3 A. Burns & McDonnell performed all Engineering, Procurement, and Construction  
4 aspects of Riverton 12 NGCC. All engineering documents including design, layout,  
5 construction, and equipment supplier information was reviewed by the Empire  
6 Riverton 12 Project Team and Black & Veatch for technical acceptability. Any  
7 questions regarding such documents were submitted to Burns & McDonnell for  
8 clarification. Weekly telephone conference calls were held between Burns &  
9 McDonnell, the Empire Riverton 12 Project Team and Black & Veatch throughout  
10 the project. In addition, monthly progress meetings were held either at Burns and  
11 McDonnell in Kansas City or at the Riverton 12 site. Burns & McDonnell provided  
12 construction management services while subcontracting major aspects of the  
13 project. Daily on site construction meetings were held each morning with on-site  
14 contractors to discuss daily activities and issues. Weekly construction and schedule  
15 meetings were held with each on-site contractor separately to discuss construction  
16 progress and schedule. The Empire team attended all daily and weekly on-site  
17 meetings. An important aspect of all of these meetings was safety. The Empire  
18 team was in the field directly observing and witnessing construction and  
19 commissioning activities. Where appropriate, the Empire team was direct  
20 participants in the construction and commissioning process. Weekly construction  
21 progress meetings were held by the entire Empire Riverton 12 Project Team.

22 **Q. WHAT REPORTS WERE GENERATED AND SUBMITTED DURING THE**  
23 **CONSTRUCTION PROCESS?**

1 A. Burns & McDonnell submitted monthly reports describing engineering,  
2 procurement, and construction efforts. Included in this report were engineering and  
3 construction progress reports discussing completed activities and upcoming  
4 activities. Construction issues were also discussed as well as schedule impacts.  
5 The Empire Riverton 12 Project Team also generated a monthly report discussing  
6 construction progress, project financial information, and any project issues.

7 **Q. WAS IN-SERVICE CRITERIA ESTABLISHED?**

8 A. Yes, the in-service criteria were agreed to between the Company and the MPSC  
9 Staff. Empire and the MPSC Staff worked together in establishing the in-service  
10 criteria prior to execution of the EPC contract so that the criteria could be included  
11 as part of the EPC Contractors responsibilities to meet before certain contractual  
12 milestones and payments could be met. This process was similar to past practice on  
13 previous units Empire has constructed. The in-service criteria are shown in Direct  
14 Exhibit BAM-2.

15 **Q. HAS EMPIRE MET THE IN-SERVICE CRITERIA ESTABLISHED FOR**  
16 **THE RIVERTON 12 NGCC ADDITION?**

17 A. Yes. All in-service criteria have been met, and the results are attached to this  
18 testimony as Direct Exhibit BAM-3. MPSC Staff, as well as the intervening parties  
19 in Empire's recently completed Missouri Rate Case ER-2016-0023, have agreed the  
20 criteria were met. The relevant language from the Stipulation and Agreement filed  
21 June 20, 2016 of that case stating as such are attached as Direct Exhibit BAM-4.

22 **Q. WHAT IS THE CURRENT STATUS OF THE RIVERTON 12 NGCC**  
23 **PROJECT?**

1 A. Major construction, start-up, and commissioning activities are complete,  
2 and the unit went into service on May 1, 2016. In fact, as of August 31<sup>st</sup>, the unit  
3 has operated 2,243 hours since being placed in service benefiting Empire's  
4 customer in all jurisdictions.

5 **Q. DOES EMPIRE CONSIDER THE RIVERTON 12 NGCC ADDITION TO BE**  
6 **USED AND USEFUL IN EMPIRE'S PROVISION OF ELECTRIC**  
7 **SERVICE?**

8 A. Yes. As noted above, the unit went into service on May 1, 2016, and the in-  
9 service criteria have been met.

10 **Q. HOW DID THE TOTAL COST OF THE PROJECT COMPARE TO**  
11 **BUDGET?**

12 A. The project was below budget. Total budget for the project was \$175,515,233  
13 excluding AFUDC. The total expenditures for the project as May 31, 2016 are  
14 \$168,553,709. Direct Exhibit BAM-5 shows the budget versus actuals for the  
15 project.

16 **Q. DOES THIS CONCLUDE YOUR TESTIMONY?**

17 A. Yes, it does.





# Internal Memo

**To:** Blake Mertens, Vice President — Energy Supply

**From:** Shaen T. Rooney, Manager of Strategic Projects

**CC:** Tim Wilson, Director of Energy Supply Services; Ed Easson, Plant Manager — Riverton Power Station

**Date:** April 26, 2013

**Re:** Evaluation of Riverton Unit 12 Combined Cycle Conversion Proposals

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Based upon current/pending environmental rules and regulations and the age and relatively low efficiency of Riverton units 7 and 8, the need to retire those units is approaching. To retire these units, Empire must acquire a new supply of energy to replace the generation and capacity of these traditionally baseload units. Empire will replace the capacity and generation of Riverton units 7 and 8 by converting the existing Riverton unit 12 to a combined cycle unit. This supply resource was identified in Empire's preferred plan in the 2010-2029 Integrated Resource Plan. Empire formed a team that engaged Black & Veatch to develop a technical specification for the combined cycle conversion to be issued as part of a formal request for proposals (RFP). Work began on this specification in September 2012 and was completed in December 2012. The specification calls for a heat recovery steam generator (HRSG) with supplemental duct firing to provide additional peaking output. Steam from the HRSG will drive a steam turbine generator. The specification also includes a new river water intake and cooling tower for cycle heat rejection, and an auxiliary steam boiler to keep the turbine sealed and heat in the boiler during brief shutdowns to allow for heavy cycling duty and faster starts. The technical specifications include lessons learned by Empire personnel in the construction and operation of State Line Combined Cycle. The RFP was released to six bidders on January 3<sup>rd</sup>, 2013.

Four bids were received and opened on April 9<sup>th</sup>. The four bidders that submitted proposals were:

- \*\* [REDACTED] \*\*
- \*\* [REDACTED] \*\*
- \*\* [REDACTED] \*\*
- \*\* [REDACTED] \*\*

All bids were reviewed and evaluated on the basis of price, performance guarantees, commercial terms, safety record and project history. The price rating is a composite of contract price, outage duration and project schedule/online date. The project history rating is a composite of individual ratings for the engineer and the constructor. Each factor was given a rating of 1 (worst) to 5 (best). These ratings were used in combination with the weighting of



- Project History: \*\* [REDACTED] \*\* joint venture, has reputation and experience that is known and respected worldwide. Their combined cycle experience is especially impressive, as it includes the very first utility combined cycle unit in the United States.

Although the other proposals have individual factors that scored well, they had either pricing or commercial terms that resulted in significant negative impact to their overall score. The proposals from Bums & McDonnell and \*\* [REDACTED] \*\* both have a combination of factors that indicate that the project will be completed successfully and that Riverton 12 Combined Cycle will provide energy for Empire's customers safely, reliably, efficiently and with less environmental impact for many years into the future. For these reasons, if it meets with approval of the directors of Empire, I, in conjunction with the rest of the Project Team, recommend short-listing the number of bidders to two, those being Bums & McDonnell and \*\* [REDACTED] \*\*, in order to obtain more in-depth information about each of the bids so that an informed decision can be made as to which of the entities should be considered for final EPC contract negotiations.

Riverton 12 Combined Cycle Unit

In-Service Test Criteria Outlined

<p>1 <i>Major construction work and pre-operational tests have been successfully completed such that the combined cycle unit may be operated and successfully complete criteria items 2 through 7.</i> Mechanical Completion Certificate</p>
<p>2 <i>All contract performance guarantee testing will be successfully performed in accordance with the contracts for the combustion turbines, the steam turbine, and the heat recovery steam generators.</i> Guaranteed Air Emissions - Meets or Exceeds guarantees; tested in accordance 01800.3 Emissions Performance testing; PM, VOC, Opacity, NH3, SO2, H2O, CO, Nox, O2, CEMs Cert. Min and Max load emission tests RATA Testing Thermal Performance Guarantee Testing Net plant testing performed in accordance with 01800.2 Includes Ammonia Consumption Guaranteed Noise Emissions</p>
<p>3 <i>The combined cycle unit will demonstrate its ability to startup from turning gear operation to nominal capacity on natural gas fuel when prompted by the operator.</i></p>
<p>4 <i>The combined cycle unit will demonstrate its ability to shut down from minimum load resulting in turning gear operation when prompted by the operator.</i></p>
<p>5 <i>The combined cycle unit will demonstrate its ability to operate at minimum load for one (1) hour on natural gas fuel.</i></p>
<p>6 <i>The combined cycle unit will demonstrate its ability to operate at or above 95% of nominal capacity for four (4) continuous hours on natural gas fuel. During this test the unit will demonstrate its ability to operate at or above 98% of its nominal capacity for one (1) hour.</i></p>
<p>7 <i>The combined cycle unit must be able to operate at a capacity factor equal to or greater than its design capacity factor for a reasonable period of time. If the design capacity factor is not specified it will be assumed to be 0.60 unless the utility can offer evidence justifying a lower value. Capacity factor = energy generated for a continuous period of 168 hours / (design full load X 168 hours)</i></p>
<p>8 <i>Sufficient transmission facilities shall exist to carry the total design net electrical capacity of the combined cycle unit into transmission/distribution system.</i></p>

\*Nominal capacity shall be the Tested Plant Output (Max Load). See 01610.3.5.6



**IN-SERVICE TESTING CRITERIA #1**

***“Major construction work and pre-operational tests have been successfully completed such that the combined cycle unit may be operated and successfully complete criteria items 2 through 7.”***

**IN-SERVICE TESTING CRITERIA #2**

***“All contract performance guarantee testing will be successfully performed in accordance with the contracts for the combustion turbines, the steam turbine, and the heat recovery steam generators.”***

**IN-SERVICE TESTING CRITERIA #3**

***“The combined cycle unit will demonstrate its ability to startup from turning gear operation to nominal capacity on natural gas fuel when prompted by the operator.”***

**IN-SERVICE TESTING CRITERIA #4**

***“The combined cycle unit will demonstrate its ability to shut down from minimum load resulting in turning gear operation when prompted by the operator.”***

**IN-SERVICE TESTING CRITERIA #5**

***“The combined cycle unit will demonstrate its ability to operate at minimum load for one (1) hour on natural gas fuel.”***

### IN-SERVICE TESTING CRITERIA #6

***“The combined cycle unit will demonstrate its ability to operate at or above 95% of nominal capacity for four (4) continuous hours on natural gas fuel. During this test the unit will demonstrate its ability to operate at or above 98% of its nominal capacity for one (1) hour.”***

### IN-SERVICE TESTING CRITERIA #7

***“The combined cycle unit must be able to operate at a capacity factor equal to or greater than its design capacity factor for a reasonable period of time. If the design capacity factor is not specified it will be assumed to be 0.60 unless the utility can offer evidence justifying a lower value.*”**

***Capacity factor = energy generated for a continuous period of 168 hours / (design full load X 168 hours)”***

**IN-SERVICE TESTING CRITERIA #8**

***“Sufficient transmission facilities shall exist to carry the total design net electrical capacity of the combined cycle unit into transmission/distribution system.”***



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

In the Matter of The Empire District Electric )  
Company for Authority to File Tariffs Increasing )  
Rates for Electric Service Provided to Customers ) Case No. ER-2016-0023  
in the Company's Missouri Service Area )

**STIPULATION AND AGREEMENT**

COME NOW The Empire District Electric Company ("Empire" or "Company"), the Staff of the Commission ("Staff"), the Office of the Public Counsel ("OPC"), the City of Joplin ("Joplin"), the Missouri Department of Economic Development – Division of Energy ("DE"), and the Midwest Energy Consumers Group ("MECG") (collectively, the "Signatories"), by and through their respective counsel, and for their Stipulation and Agreement (this "Stipulation"), respectfully state as follows to the Missouri Public Service Commission ("Commission"):

1. All parties to this rate case proceeding, with the exception of the Midwest Energy Users' Association ("MEUA"), are Signatories to this Stipulation. MEUA has been involved with all settlement negotiations and reached an agreement in principle with the Signatories on all issues. MEUA, however, has not had an opportunity to fully review this settlement document, and, as such, is not a signatory at this time. MEUA will make a separate filing regarding its position, or all parties will submit an amended stipulation as soon as possible.

2. This Stipulation is being entered into solely for the purpose of settling all contested issues in this case. Unless otherwise explicitly provided herein, none of the Signatories shall be deemed to have approved or acquiesced in any ratemaking or procedural principle, including, without limitation, any method of cost of service or valuation determination or cost allocation, rate design, revenue recovery, or revenue-related methodology. Except as explicitly provided herein, none of the Signatories shall be prejudiced or bound in any manner by the terms of this Stipulation in this or any other proceeding.

3. This Stipulation has resulted from extensive negotiations among the parties, and the terms hereof are interdependent. If the Commission does not approve this Stipulation unconditionally and without modification, then this Stipulation shall be void and none of the Signatories shall be bound by any of the agreements or provisions hereof.

4. In the event the Commission accepts the specific terms of this Stipulation without condition or modification, the Signatories waive their respective rights to present oral argument and written briefs pursuant to RSMo. §536.080.1, their respective rights to the reading of the transcript by the Commission pursuant to §536.080.2, their respective rights to seek rehearing pursuant to §536.500, and their respective rights to judicial review pursuant to §386.510. This waiver applies only to a Commission order approving this Stipulation without condition or modification issued in this proceeding and only to the issues that are resolved hereby. It does not apply to any issues not explicitly addressed by this Stipulation.

5. **Admission of Testimony:** The Signatories consent to the admission of and request that the Commission admit into the record in this proceeding the following pre-filed written testimony: Empire Exhibits 1-31; Staff Exhibits 1-24; OPC Exhibits 1-18; DE Exhibits 1-5; Joplin Exhibit 1; MEUA Exhibits 1-3; and MECG Exhibits 1-5.

6. **Total Revenue Requirement:** The Signatories agree that Empire should be authorized to file tariffs designed to increase the Company's revenues by \$20,390,000 annually, exclusive of any applicable license, occupation, franchise, gross receipts taxes, or similar fees or taxes, to become effective on September 14, 2016. The Signatories intend to submit specimen tariff sheets within one week.

The Signatories further agree that Staff's billing determinants and current revenues for this case, plus an overall increase of \$20,390,000, should be used as the revenue requirement in the setting of rates in this case.

This revenue requirement is based on a return on equity (“ROE”) range of 9.5 to 9.9 percent.

This revenue requirement reflects rate case expense calculated pursuant to the sharing mechanism ordered by the Commission for use in Commission Case No. ER-2014-0370 (linking Empire’s recovery of rate case expense to the percentage of its rate increase request found or agreed to be just and reasonable).

The electric rates to be established for Empire pursuant to this Stipulation reflect a normalized level of fuel and purchased power costs, which is used to set the fuel adjustment clause (“FAC”) base factor.

7. **Depreciation:** Staff’s depreciation rates are authorized by the Commission in this case, and the Commission should order Empire to use the depreciation rates as shown in Schedule A attached hereto. Staff’s reserve adjustments, attached hereto as Schedules B and C, are recorded on Empire's books reflecting amounts updated through the effective date of new rates. Empire will no longer engage in the process of discontinuing depreciation on assets when reserves are equal to or higher than original costs.

8. **Discontinued Trackers:** As of March 31, 2016, the unamortized regulatory asset balances are as follows:

Vegetation/Infrastructure	\$2,182,407
O&M – Iatan Common	\$759,080
O&M – Iatan 2	(\$196,421)
O&M – Plum Point	\$110,308

For Vegetation/Infrastructure, \$436,481 shall be amortized annually, over a period of five (5) years. For O&M – Iatan Common, \$253,027 shall be amortized annually, over a period of three (3) years. For O&M – Iatan 2, (\$65,474) shall be amortized annually, over a period of three (3)

years. For O&M – Plum Point, \$36,769 shall be amortized annually, over a period of three (3) years.

9. **Riverton 12 O&M Tracker:** The Signatories agree that the tracker for Riverton 12 shall continue, with the base set at \$2.7 million, Missouri jurisdictional. Given that Riverton 12 was recently converted from a simple cycle to a combined cycle unit, there is no operational history by which to determine an appropriate level of Riverton O&M costs. As such, the parties agree that this is an extraordinary situation that allows for the use of a tracker mechanism. All non-labor O&M shall be tracked (FERC accounts attached hereto as Schedule D). Fluctuations in actual charges above and below the annual level of expense (base) shall continue to be recorded in a regulatory asset/liability account.

10. **Pension/OPEB:** The Signatories request that the Commission authorize the continuation of a tracker mechanism for pension and OPEB expenses. The annual level of ongoing Missouri jurisdictional pension and OPEBs expense is \$8,269,970 and \$2,683,757, respectively. This includes the actuarially determined expenses for 2015 of \$7,664,807 for pensions and \$2,731,018 for OPEBs, and the five (5) year amortization of Missouri jurisdictional amounts of \$605,163 for pensions and (\$47,261) for OPEBs.

The Missouri jurisdictional regulatory asset as of March 31, 2016, is a total of \$3,025,815 for pensions and (\$236,305) for OPEBs. The prepaid pension asset balance as of March 31, 2016 is \$23,314,960, Missouri jurisdictional. The Accounting Standards 715-30 and 715-60 (FAS 87/106) tracker language shall continue in effect.

11. **Solar Rebates:** The following language shall be added to Empire's solar rebate tariff, included in the contract between Empire and the customer, and shall be placed on Empire's website:

Disclaimer: Possible Future Rules and/or Rate Changes  
Affecting Your Photovoltaic (“PV”) System

1. Your PV system is subject to the Commission’s current rates, rules, and regulations. The Commission may alter its rules and regulations and/or change rates in the future. If this occurs, your PV system is subject to those changes, and you will be responsible for paying any future increases to electricity rates, charges, or service fees from the Company.
2. The Company’s electricity rates, charges, and service fees are determined by the Commission and are subject to change based upon the decisions of the Commission. These future adjustments may positively or negatively impact any potential savings or the value of your PV system.
3. Any future electricity rate projections which may be presented to you are not produced, analyzed, or approved by the Company or the Commission. They are based on projections formulated by external third parties not affiliated with the Company or the Commission.

The solar rebate regulatory asset is included in rate base (\$6,200,545 as of March 31, 2016) and shall be amortized over ten (10) years, pursuant to the Commission’s Renewable Energy Standard (“RES”) rule, 4 CSR 240-20.100.

12. **Current DSM / Energy Efficiency:** The Signatories agree that the Company’s current Demand Side Management (“DSM”) programs will continue to be offered, with the total annual budget for all DSM programs remaining at \$1.25 million.

a. The incentive structure for the current Commercial and Industrial (“C&I”) program will be modified to a range of \$0.06 to \$0.10/kWh of first year energy savings, which the Company can adjust to maximize program participation.

b. Remaining DSM portfolio funds for the 2016 calendar year not anticipated to be used by residential programs may be utilized by the C&I program, so that the C&I program will again be made available to customers as soon as possible following Commission approval of this Stipulation.

c. The Company will spend at least 5% of the annual DSM budget on marketing DSM programs other than C&I and will report quarterly marketing expenditures in its quarterly reports to the DSM Advisory Group (“DSMAG”).

d. Rates shall be designed so that DSM expenditures will be collected from the Residential and C&I rate groups according to which groups those programs are offered.

e. Current regulatory asset treatment and rate base inclusion for costs will be continued.

f. The Signatories agree that the current DSM programs will be discontinued when the Company’s new DSM program tariffs become effective. Pursuant to paragraph 13 below, the new DSM programs shall take effect on January 1, 2017, or as soon as possible after January 1, 2017.

13. **Planned DSM / Energy Efficiency:** The Signatories agree that between the effective date of this Stipulation and January 1, 2017, or as soon as possible after January 1, 2017, they will work together through the existing DSMAG to develop four (4) new DSM programs, namely, a Residential HVAC, a C&I custom rebate, a low-income multi-family, and either a non-low-income multi-family, single family low-income or an on-bill financing program targeted at low-income families.

a. The DSMAG will model these programs to the extent possible on existing programs in the state of Missouri and/or other best practices identified by the DSMAG.

b. Each program developed will include a proposed annual budget, energy and demand savings target(s), and marketing strategy.

c. All programs will have impact and process evaluation, measurement and verification (“EM&V”) performed by a third party independent contractor for the first two (2) full program years at a budget of 5% of the actual expenditures for the two (2) full program years.

d. The DSMAG will investigate Pay As You Save (“PAYS”) Financing and similar programs, the feasibility of administering PAYS Financing and similar programs in Empire’s service territory, and Empire will arrange for a presentation on PAYS Financing or a similar program at a Commission Agenda meeting.

e. Signatories agree that the Company will implement these or similar programs on January 1, 2017, or as soon as possible after January 1, 2017.

f. Signatories agree that the programs implemented on January 1, 2017, or as soon as possible after January 1, 2017, will have a term of not less than two (2) years.

g. Current regulatory asset treatment and rate base inclusion for costs will be continued as specified in Paragraph 15.

h. If the Commission orders a low-income rate pilot program in this case, the cost of the program will also receive regulatory asset/rate base treatment as specified in Paragraph 15.

14. **DSM Regulatory Asset:** The Signatories agree that Empire will continue amortization of the DSM regulatory asset for costs incurred during the Regulatory Plan, Case No. EO-2005-0263, for a total term of ten (10) years.

15. **DSM Program Costs:** The Signatories agree Empire will continue amortization for the DSM program costs incurred after the end of the Regulatory Plan and prior to any program implementation under MEEIA for a total term of six (6) years.

16. **Low-Income Weatherization:** The Signatories agree that Empire will continue its current low-income weatherization program, with an annual budget of \$250,000 (increased from \$225,000). If the budget amount is not spent in any given Empire budget year, the balance will roll over to be spent cumulatively with the annual budget amount in the next Empire budget year. On a going forward basis, the low-income weatherization program is not a "demand-side measure" or program for purposes of RSMo. §393.1075.7. Costs for this program are built into and will be recovered through the agreed-upon revenue requirement.

The Signatories agree to a process evaluation ("Evaluation"), to be conducted by an independent evaluator, of the Company's Low-Income Weatherization Program. The Evaluation shall conduct a process review including: (1) the Company and Community Action Agencies' ("CAAs") administration of Company funded weatherization funds, and (2) communication between the Company and CAAs regarding these funds. The Evaluation will identify why funds for Low-Income Weatherization remain unspent, whether barriers exist to full utilization of Company funded weatherization funds, and will recommend solutions to remedy these barriers.

Aside from the above-identified evaluation topics and goals, and the process evaluation topics the evaluator may generally choose to review, the Signatories will develop a list of data to be collected from the CAAs for the process evaluation to analyze potential barriers to program participation.

The Signatories agree that the cost of the low-income weatherization process evaluation should not exceed \$15,000, with the cost of the evaluation being funded through the Company's weatherization program funding.

17. **FAC Tariff and Base:** The Signatories agree that Empire should be allowed to continue its FAC, as modified herein. The sharing mechanism shall remain at 95%/5%, and the



transmission percentages shall remain the same (50% of MISO non-administrative costs, 34% of SPP non-administrative costs).

The listing of accounts for costs and revenues flowing through the FAC are attached hereto as Schedule E. Empire shall include in its monthly FAC submission, the FAC costs in each of the general ledger accounts in Schedule E for that month and the twelve months ending that month.

The electric rates to be established for Empire pursuant to this Stipulation reflect a base level of fuel and purchased power costs of \$24.15/MWh.

18. **Residential Customer Charge.** The Signatories agree that the residential customer charge will be increased to \$13.00.

19. **Rate Design:** There shall be a \$3 million revenue neutral shift to the residential class, allocated as follows: -\$2 million to GP; -\$525,000 to CB; -\$340,000 to LP; and -\$135,000 to the Praxair class.

After the revenue neutral shifts, the non-energy efficiency overall rate increase will be allocated on an equal percentage basis to all classes except feed mill and lighting.

For the LP class, the volumetric energy charges shall not be increased as part of this case.

The following Small Heating Rate charges should be matched to their Commercial Building counterparts:

- a. Customer Charge,
- b. Summer First Block Charge,
- c. Summer Second Block Charge, and
- d. Non-Summer First Block Charge.

The Total Electric Building customer charge should be realigned with the corresponding General Power rate charge.

After these adjustments, including setting the residential customer charge, all remaining rates within each class shall be increased by the same percentage.

20. **Volumetric Rate Design / Block Rates:** Staff, OPC, DE, and Empire agree to work together to develop an analysis regarding responsible energy use as related to residential block rates, with said analysis to be filed by Empire as part of its direct testimony in Empire's next general rate case.

21. **Reporting:** The Signatories agree that Empire should continue to provide monthly quality of service reporting, should continue submitting monthly revenue and usage reports to Staff, and should continue providing the following information as part of its monthly FAC reports (as agreed to in the Non-Unanimous Stipulation and Agreement filed May 12, 2010, in Case No. ER-2010-0130):

- a. Monthly SPP market settlements and revenue neutrality uplift charges;
- b. Notify Staff within 30 days of entering a new long-term contract for transportation, coal, natural gas or other fuel; natural gas spot transactions are specifically excluded;
- c. Provide Staff with a monthly natural gas fuel report that includes all transactions, spot and longer term; the report will include term, volumes, price and analysis of number of bids;
- d. Notify Staff within 30 days of any material change in Empire's fuel hedging policy, and provide the Staff with access to new written policy;
- e. Provide Staff its Missouri Fuel Adjustment Interest calculation work papers in electronic format with all formulas intact when Empire files for a change in the cost adjustment factor;
- f. Notify Staff within 30 days of any change in Empire's internal policies for participating in the SPP; and

g. Continue to provide Staff access to all contracts and policies upon Staff's request, at Empire's corporate office in Joplin, Missouri.

Further, Empire will provide its quarterly FAC report to David Woodsmall, as counsel for MECG.

22. **Cost Allocation Manual ("CAM"):** Within two weeks of the filing of this Stipulation, Empire, Staff, and OPC shall present a jointly proposed procedural schedule in Empire's CAM docket, Case No. AO-2012-0062.

23. **Riverton 12:** The Signatories request that the Commission adopt Staff's recommended in-service criteria regarding the conversion of the existing Riverton Unit 12 simple cycle gas turbine, which went into service in 2007, to a combined cycle gas turbine and find Riverton 12 to be "fully operational and used for service."

24. **True-Up and Briefing:** The Signatories agree that true-up testimony and a true-up hearing in this case are no longer needed and also agree that no post-hearing briefing is needed.

**The Empire District Electric Company:**

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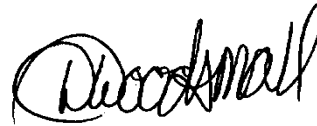
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\*\* Confidential in its entirety except for final total budget and actual cost numbers\*\*

	BUDGET	ACTUAL
<b>Total Project Costs:</b>	<b>\$ 175,515,233</b>	<b>\$ 168,553,709</b>