

Exhibit No.
Issues: In-Service Criteria;
New Plant In-Service;
FAC Supporting Information
Witness: Blake A. Mertens
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Case No.: ER-2011-0004
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2010

**Before the Public Service Commission
of the State of Missouri**

Direct Testimony

Of

Blake A. Mertens

September 2010

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OF
BLAKE A MERTENS
ON BEHALF OF
THE EMPIRE DISTRICT GAS COMPANY
BEFORE THE
MISSOURI PUBLIC SERVICE COMMISSION

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DIRECT TESTIMONY
OF
BLAKE A. MERTENS
ON BEHALF OF
THE EMPIRE DISTRICT ELECTRIC COMPANY
BEFORE THE
MISSOURI PUBLIC SERVICE COMMISSION
CASE NO. ER-2011-0004

1 **INTRODUCTION**

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

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

4 **Q. BY WHOM ARE YOU EMPLOYED AND WHAT IS YOUR JOB TITLE?**

5 A. I am employed by The Empire District Electric Company (“Empire” or
6 “Company”); where I am Director of Strategic Projects, Safety, and Environmental
7 Services.

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

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

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

15 A. I was employed by Black & Veatch Corporation. immediately following my
16 graduation from Kansas State University in May of 2000. From June 2000 through
17 November 2001, I held roles as a technical analyst and energy consultant for the
18 Strategic Planning Group of Black & Veatch’s Power Sector Advisory Services in
19 the Energy Services Division. My duties included assisting in power plant siting
20 studies, economic analysis of potential power plants using production cost
21 modeling, independent engineering evaluations of plant assets, and market analysis
22 of the California energy crisis of 2000 – 2001. I went to work for Empire in
23 November of 2001 as a Staff Engineer in the Energy Supply department where my
24 duties included tracking of plant capital and operating & maintenance (“O&M”)
25 expenses, involvement in energy supply regulatory issues, evaluation of new

1 generating resource options, assisting in the construction of new plant, and assisting
2 in the modeling and tracking of fuel and purchased power costs. In 2003, my title
3 was changed to Planning Engineer with similar duties, but more responsibilities in
4 the area of generation planning. In the fall of 2004 I took a position as Combustion
5 Turbine Construction Project Manager. In this position I was responsible for the
6 construction and commissioning of a 150 megawatt (“MW”) combustion turbine at
7 Empire’s Riverton Power Plant, known as Riverton Unit 12. Riverton Unit 12 went
8 into commercial operation in April 2007. In the fall of 2006 I took on the position
9 of Manager of Strategic Projects. In this role I was responsible for the management
10 of new generation and major projects for Energy Supply facilities. This includes
11 representing Empire's interests at the Iatan, Plum Point, and other off-system
12 generation facilities. In March 2009 I was promoted to the position of Associate
13 Director of Strategic Projects. My duties remained much the same as my previous
14 position but with a broader focus on company-wide projects rather than those just
15 related to Energy Supply. Finally, in January 2010 I was promoted to my current
16 position as Director of Strategic Projects, Safety, and Environmental Services. In
17 this position I added management of Empire’s Safety and Environmental
18 departments to my previous responsibilities.

19 **EXECUTIVE SUMMARY**

20 **Q. WHAT IS THE PURPOSE OF YOUR DIRECT TESTIMONY IN THIS**
21 **CASE BEFORE THE MISSOURI PUBLIC SERVICE COMMISSION**
22 **(“COMMISSION”)?**

23 A. My testimony will quantify and describe the investment Empire has made in the
24 Iatan Unit 2 coal-fired generating unit. The ongoing operating and maintenance
25 expenses associated with this new generating unit will also be quantified. Finally,
26 in support of the Fuel Adjustment Clause (“FAC”) continuation, I will provide
27 testimony describing Empire’s current generation testing procedures concerning
28 unit heat rates and efficiency and Empire’s emission allowance costs and revenues.

29 **IATAN UNIT 2**

30 **Q. PLEASE BRIEFLY EXPLAIN THE IATAN UNIT 2 ADDITION.**

1 A. Iatan Unit 2 is an approximately 850 MW, supercritical, pulverized coal-fired
2 generating unit located at the Iatan site near Weston, Missouri. This unit is jointly
3 owned by Kansas City Power and Light (“KCPL”), Greater Missouri Operations
4 Company (“GMOC”), Empire, the Missouri Joint Municipal Electric Utility
5 Commission (“MJMEUC”), and Kansas Electric Power Cooperative (“KEPCO”).
6 Empire’s share of Iatan Unit 2 is 12 % or approximately 102 MW. This unit has
7 been under construction since early 2006 and is scheduled to be available for
8 service in the latter part of 2010. Empire’s ownership in Iatan Unit 2 was
9 contemplated and approved by the Commission as part of Empire’s Experimental
10 Regulatory Plan in Case No. EO-2005-0263.

11 **Q. DO YOU HAVE PROPOSED IN-SERVICE CRITERIA FOR THE IATAN**
12 **UNIT 2 ADDITION?**

13 A. Yes. Attached as Schedule BAM-1 are the in-service criteria KCPL, the
14 Commission Staff, and Empire have jointly drafted for Iatan Unit 2.

15 **Q. WHAT IS THE CURRENT STATUS OF THE IATAN UNIT 2 PROJECT?**

16 A. Major construction activities are complete. The unit initially synced to the grid and
17 fired on coal for the first time on July 20, 2010. Since that time KCPL project
18 management and operations personnel have continued with commissioning of
19 various systems on the unit and currently are working with Commission Staff to
20 validate that the in-service criteria have been met. Currently, KCPL and GMOC
21 have rate cases filed with the Commission, Case No. ER-2010-0355 and ER-2010-
22 0356 respectively, which include requests that costs associated with Iatan 2 be
23 included in Missouri electric rates.

24 **CAPITAL COSTS ASSOCIATED WITH NEW PLANT IN-SERVICE**

25 **Q. HAVE THE CAPITAL COSTS ASSOCIATED WITH THE IATAN 2**
26 **PROJECT BEEN INCLUDED IN THE REVENUE REQUIREMENT IN**
27 **THIS RATE CASE?**

28 A. Yes. The filing includes the capital costs associated with Empire’s share of Iatan
29 Unit 2.

30 **Q. WHAT LEVEL OF IATAN 2 EXPENDITURES ARE INCLUDED IN**
31 **EMPIRE’S RATE CASE?**

1 A. In total, Empire's filing reflects \$269,059,109 in total investment for Iatan Unit 2,
2 which includes incurred and projected capital expenditures and AFUDC for Unit 2
3 itself and a portion of the Common Facilities at the Iatan site. The Missouri
4 jurisdictional share of this investment is approximately 83.3% or \$224.2 million.

5 **Q. ARE THERE ANY FACTORS THAT COMPLICATE HOW THE**
6 **AMOUNTS INCLUDED FOR IATAN 2 ARE REPORTED?**

7 A. Yes.

8 **Q. PLEASE EXPLAIN.**

9 A. Specifically, the complication is related to the Iatan projects and that portion of the
10 investment that has been designated as Common Property. A portion of the Iatan
11 Unit 1 AQCS additions that were included in Empire's last rate case and Iatan Unit
12 2 project include investment that is designated as Common Property. This
13 designation is for equipment that will be utilized by both Iatan Unit 1 and Unit 2.
14 This includes items, such as the stack shell, limestone handling, fuel handling, etc.
15 This Common Property designation had to be made due to the fact that the two units
16 have different ownership structures (i.e. KEPCO and MJMEUC are part owners of
17 Unit 2, but not of Unit 1). From Empire's overall cost perspective, this designation
18 is inconsequential since we are a 12-percent owner in both units; however, from a
19 total project accounting and plant in-service perspective this designation is
20 important.

21 **Q. PLEASE CONTINUE.**

22 A. When the Iatan Unit 1 AQCS went into service, FERC accounting regulations
23 (specifically 18 CFR Ch.1, Section 107.B) require the Common Property to be
24 placed in-service at the same time. The budgets for Iatan Unit 1 AQCS and Iatan
25 Unit 2 project each included Common Property items; that is, there was not a
26 separate budget for Iatan Common Property. As a result an evaluation of Common
27 Property had to be made to determine what portion of the budgets for each of the
28 Iatan projects were Common Property that had to be placed in-service. This
29 evaluation does not change the overall budget for the Iatan projects, but does create
30 some confusion when presenting project actual expenditures compared to project
31 budgets.

1 **Q. WHAT ARE THE AMOUNTS OF COMMON PROPERTY INCLUDED IN**
2 **THE IATAN 1 AQCS AND IATAN 2 PROJECT BUDGETS?**

3 A. Excluding AFUDC and property taxes, the total shared Iatan Unit 1 AQCS budget
4 is approximately \$484 million (Empire's share \$58.1 million) of which
5 approximately \$114 million (Empire's share \$13.7 million) is Common Property.
6 Similarly, excluding AFUDC and property taxes, Iatan Unit 2's current total shared
7 budget is approximately \$1.988 billion (Empire's share \$238.5 million) of which
8 \$269 million (Empire's share \$32.4 million) is Common Property.

9 **Q. WITH THE IATAN COMMON PROPERTY ISSUE IN MIND, PLEASE**
10 **PROVIDE FURTHER DETAIL ON THE INVESTMENT IN THESE**
11 **PROJECTS.**

12 A. Schedule BAM-1 summarizes the current budgets for not only the Iatan 2 project,
13 but also the Iatan 1 AQCS and Plum Point projects and shows the costs incurred
14 through June 30, 2010, the amount of AFUDC costs accrued through June 30, 2010,
15 the amounts reflected as plant in-service as of June 30, 2010 for Iatan Unit 1 AQCS
16 and Iatan Common Property, and the projected amounts of costs and AFUDC
17 accruals through project completion.

18 **Q. OF THE APPROXIMATELY \$269 MILLION YOU PREVIOUSLY**
19 **REFERRED TO AS EMPIRE'S TOTAL IATAN 2 INVESTMENT, HOW**
20 **MUCH IS ASSOCIATED WITH COMMON PROPERTY?**

21 A. A total of \$33,239,600, including AFUDC, is included for Common Property
22 leaving \$235,819,508, including AFUDC, associated directly with Iatan Unit 2.

23 **O&M ADJUSTMENTS ASSOCIATED WITH IATAN 2**

24 **Q. BEYOND CAPITAL COSTS, ARE THERE ANY OTHER COSTS**
25 **ASSOCIATED WITH IATAN 2 THAT SHOULD BE ACCOUNTED FOR**
26 **AND REFLECTED IN RATES?**

27 A. Yes. Specifically the operating, maintenance, and other miscellaneous costs
28 associated with ongoing operations of Iatan 2 need to be accounted for and reflected
29 in Empire's rates for electric service.

30 **Q. PLEASE SUMMARIZE THE OPERATING AND MAINTENANCE**
31 **EXPENSE YOU ARE SUPPORTING IN THIS RATE CASE FOR IATAN 2.**

1 A. The proposed adjustments to operating and maintenance (“O&M”) expense for
2 Iatan 2 total \$3,362,652, which includes ammonia, limestone, and powder activated
3 carbon for the Unit 2 AQCS. This adjustment is based on the projected O&M
4 budget KCP&L prepared for the plant during last year’s budgeting cycle for 2011,
5 the unit’s first full year of operation. Please refer to schedule BAM-2 for the details
6 of this adjustment.

7 **Q. YOU SPECIFICALLY MENTION THAT THIS O&M ADJUSTMENT**
8 **INCLUDES “AMMONIA, LIMESTONE, AND POWDER ACTIVATED**
9 **CARBON.” WHY DO YOU MAKE THIS DISTINCTION?**

10 A. I am referring to the costs of ammonia used by the selective catalytic reduction
11 (“SCR”) system, the costs of limestone used by scrubbers, and the cost of powder
12 activated carbon used in mercury removal processes. In Empire’s last Missouri rate
13 case these costs were collectively referred to as “AQCS consumables.” In Empire’s
14 last rate case it was also decided that AQCS Consumables at all of Empire’s
15 operating units should be passed on to Empire’s customers through Empire’s Fuel
16 Adjustment Clause (“FAC”). So to clarify, \$612,371 of the total Iatan 2 O&M
17 adjustment of \$3,362,652 is associated with AQCS Consumables and would flow
18 through Empire’s FAC.

19 **Q. DID EMPIRE MAKE AN ADJUSTMENT TO ONGOING OPERATING**
20 **EXPENSES TO INCLUDE THE COST OF THE IATAN 2 AQCS**
21 **CONSUMABLES?**

22 A. No. Empire has included the fuel, purchased power, and AQCS expenses agreed to
23 in the Stipulation and Agreement in Case No. ER-2010-0130. However, if the fuel
24 & purchase power expenses are updated in this current case, an adjustment of
25 \$612,371 would be needed to reflect the increase in Iatan 2 AQCS costs.

26 **HEAT RATE AND EFFICIENCY TESTING**

27 **Q. HAS EMPIRE PERFORMED HEAT RATE TESTS AT ITS GENERATING**
28 **FACILITIES IN SUPPORT OF THE REQUEST IN THIS CASE TO**
29 **CONTINUE THE COMPANY’S FAC, AS REQUESTED BY 4 CSR 210-**
30 **3.161?**

31 A. Yes.

1 **Q. WHEN WERE THESE TESTS PERORMED?**

2 A. Table BAM-1, Heat Rate Testing Schedule, shows the details of the timing for each
3 test. Empire has submitted the respective heat rate test data for each unit as part of
4 its workpapers in this rate case.

5 **TABLE BAM-1**
6 **Heat Rate Testing Schedule**

Generating Unit	Date of Test
Asbury	6/29/2010
Riverton 7	7/23/2010
Riverton 8	7/23/2010
Riverton 9	7/21/2010
Riverton 10	7/16/2010
Riverton 11	7/27/2010
Riverton 12	7/16/2010
Energy Center 1	8/2/2010
Energy Center 2	8/3/2010
Energy Center 3	8/3/2010
Energy Center 4	8/4/2010
State Line 1	8/4/2010
State Line Combined Cycle	6/22/2010
Iatan Unit 1	7/16/2009

7

8 **EMISSION ALLOWANCE COSTS AND REVENUES**

9 **Q. DID EMPIRE REALIZE ANY REVENUES OR INCUR ANY EXPENSES**
10 **DURING THE TEST YEAR WITH RESPECT TO EMISSION**
11 **ALLOWANCES?**

12 A. Yes, Empire realized \$6,649.92 in revenue as a result of the sale of sulfur dioxide
13 emission allowances through the Environmental Protection Agency's Annual SO₂
14 Allowance auction.

15 **Q. DOES THIS CONCLUDE YOUR DIRECT TESTIMONY?**

16 A. Yes, it does.

