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Case No.: ER-2016-0023
Date Testimony Prepared: October 2015

**DIRECT TESTIMONY
OF
TIM N. WILSON**

**ON BEHALF OF
THE EMPIRE DISTRICT ELECTRIC COMPANY**

OCTOBER 2015



Empire Exhibit No. 28-NP
Date 6.2.16 Reporter KKF
File No. ER-2016-0023



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1 **INTRODUCTION**

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

3 A. Tim N. Wilson. My business address is 602 South Joplin Ave., Joplin, Missouri.

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

5 A. The Empire District Electric Company (“Empire” or “Company”), as Director of
6 Energy Supply Services.

7 **Q. PLEASE DESCRIBE YOUR EDUCATIONAL AND PROFESSIONAL**
8 **BACKGROUND.**

9 A. I graduated from Pittsburg State University in 2000, with a Bachelor of Science in
10 Education, Mathematics. I graduated from Missouri State University in 2010, with
11 a Master of Science in Project Management. In October of 1999, I was hired by the
12 Company as an Associate Planning Analyst in the Strategic Planning Department.
13 In that position I was primarily responsible for the company’s fuel and purchased
14 power model and annual budget. I have held various other positions within the
15 Company including Planning Analyst, Energy Trader, Energy Supply Planning and
16 Operations Analyst, and Manager of Renewable and Strategic Initiatives. I have
17 sponsored testimony in various states, including Missouri, on capital plant in-

1 service investments and annual operating expenses for our generation fleet. In
2 2010, I was named to my current position.

3 **EXECUTIVE SUMMARY**

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

7 A. I will quantify and describe the investment Empire has made in the Riverton 12
8 Combined Cycle natural gas-fired (Riverton 12 NGCC) generating unit. The
9 ongoing operating and maintenance expenses associated with the Riverton 12
10 NGCC facility will be addressed in the direct testimony of Empire witness John M.
11 Woods.

12 **RIVERTON 12 NGCC**

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

14 A. Empire identified in its Integrated Resource Plan (IRP), filed with the Commission
15 in 2010, and then again in mid-2013, projects to comply with current and
16 forthcoming environmental regulations. The Mercury Air Toxic Standards (MATS)
17 and the Clean Air Interstate Rule (CAIR), replaced by the Cross State Air Pollution
18 Rule (CSAPR), were the drivers behind our compliance plan and strategy. The IRP
19 identified the Riverton 12 NGCC project as the most economic option to replace
20 older coal-fired units at the Riverton Power Generating Station, namely Riverton
21 Units 7 and 8 (as well as small gas turbines that used steam from these units for
22 start-up), in order to meet the previously-mentioned MATS rule. It should also be
23 noted, Empire completed special analysis comparing the Riverton 12 NGCC

1 addition to a competing natural gas supply-side option in the region as part of its
2 2013 IRP Triennial filing to ensure the Riverton 12 NGCC to be the least cost
3 option for Empire's customers.

4 **Q. PLEASE DESCRIBE AND QUANTIFY THE CAPACITY RETIRED AS A**
5 **RESULT OF MATS?**

6 A. As I mentioned earlier, Riverton units 7 and 8 were older coal fired units with
7 capacity of 38 and 54 megawatts respectively. Riverton unit 9 was a gas turbine
8 that was operated using steam from units 7 and 8 for start-up. Unit 9 was rated at
9 12 megawatts. In total, 104 megawatts of capacity has been eliminated with the
10 retirement of these three units, The Riverton 12 NGCC, with 100 megawatts of
11 additional capacity, replaces the capacity lost with the retirement of the
12 aforementioned Riverton units. Unlike Empire's Asbury unit, the size and age of
13 the Riverton units did not make it feasible to add additional pollution control
14 equipment to meet the MATS environmental requirements.

15 **Q. PLEASE DESCRIBE THE PROJECT IN MORE DETAIL.**

16 A. The Riverton 12 NGCC project involves converting the existing Riverton Unit 12
17 simple cycle gas turbine, which went into service in 2007, to a combined cycle gas
18 turbine. The conversion includes the installation of a heat recovery steam
19 generator, steam turbine generator, auxiliary boiler, cooling tower, and other
20 balance of plant equipment. Upon completion, the Riverton 12 NGCC will be the
21 most efficient generator in Empire's fleet.

22 **Q. DO YOU HAVE PROPOSED IN-SERVICE CRITERIA FOR RIVERTON**
23 **12 NGCC?**

1 A. Yes. Attached as Schedule TNW-1 is the in-service criteria that Empire and the
2 Commission Staff previously discussed.

3 **Q. WHAT IS THE CURRENT STATUS OF THE RIVERTON 12 NGCC**
4 **PROJECT?**

5 A. Major construction activities are complete. Empire management and operations
6 personnel will be working with the engineering, procurement and construction
7 contractor, Burns and McDonnell out of Kansas City, MO, on upcoming start-up
8 and commissioning activities. Empire expects substantial completion for the
9 project to be achieved by mid-2016. Empire will submit data supporting an in-
10 service determination to the Commission Staff and other interested parties upon
11 completion for review and audit.

12 **Q. HAS EMPIRE KEPT THE COMMISSION STAFF UP TO DATE ON THE**
13 **PROGRESS OF THE RIVERTON 12 NGCC PROJECT?**

14 A. Yes. Monthly progress reports summarizing progress and expenditures have been
15 submitted to Commission Staff and Office of Public Counsel for audit purposes
16 since late 2013, as part of File No. EO-2014-0069.

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

18 **Q. HAVE THE CAPITAL COSTS ASSOCIATED WITH THE RIVERTON 12**
19 **NGCC PROJECT BEEN INCLUDED IN THE REVENUE REQUIREMENT**
20 **IN THIS RATE CASE?**

21 A. Yes. The filing includes capital costs associated with the Riverton 12 NGCC
22 project.

1 **Q. WHAT LEVEL OF RIVERTON 12 NGCC EXPENDITURES ARE**
2 **INCLUDED IN EMPIRE'S RATE CASE?**

3 A. In total, Empire's filing reflects \$186.5 million (See Schedule TNW-2 HC) in total
4 Company investment for Riverton 12 NGCC, which includes incurred and projected
5 capital expenditures and AFUDC (\$175.5 million excluding AFUDC). The
6 Missouri jurisdictional share of this investment is approximately \$160.8 million.

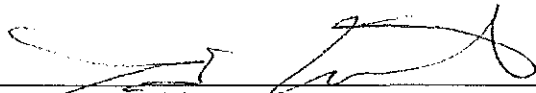
7 **Q. DOES THIS CONCLUDE YOUR DIRECT TESTIMONY?**

8 A. Yes, it does.

AFFIDAVIT OF TIMOTHY N. WILSON

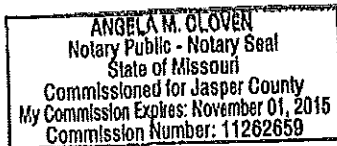
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COUNTY OF JASPER)

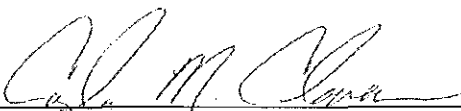
On the 14th day of October, 2015, before me appeared Timothy N. Wilson, to me personally known, who, being by me first duly sworn, states that he is the Director of Energy Supply Services of The Empire District Electric Company and acknowledges that he has read the above and foregoing document and believes that the statements therein are true and correct to the best of his information, knowledge and belief.



Timothy N. Wilson

Subscribed and sworn to before me this 14th day of October, 2015.





Notary Public

My commission expires: 11/01/2015.

Combined Cycle Unit
In-Service Test 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.
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.
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.
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.
5. The combined cycle unit will demonstrate its ability to operate at minimum load for one (1) hour on natural gas fuel.
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.
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)

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

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