

Exhibit No.:
Issues: On-System Fuel and Purchased Power
Expense, Fuel Adjustment Clause
Witness: Todd W. Tarter
Type of Exhibit: Direct Testimony
Sponsoring Party: Empire District Electric
Case No. ER-2012-0345
Date Testimony Prepared: July 2012

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

Direct Testimony

of

Todd W. Tarter

July 2012



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OF
TODD W. TARTER
ON BEHALF OF
THE EMPIRE DISTRICT ELECTRIC COMPANY
BEFORE THE
MISSOURI PUBLIC SERVICE COMMISSION
CASE NO. ER-2012-0345

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1 **I. INTRODUCTION**

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

3 A. Todd W. Tarter. My business address is 602 S. Joplin Avenue, Joplin, Missouri.

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

5 A. The Empire District Electric Company (“Empire” or “Company”). My title is Manager of
6 Strategic Planning.

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

9 A. I graduated from Pittsburg State University in 1986 with a Bachelor of Science Degree in
10 Computer Science. After graduation, I received a mathematics education certification. I
11 began my employment with Empire in May 1989. During my tenure with Empire I have
12 worked in the Corporate Planning, Strategic Planning, Information Technology, and
13 Planning and Regulatory departments. My primary responsibilities during this time have
14 included work with the Company’s construction budget, load forecasts, sales and revenue
15 budgets, financial forecasts and fuel and purchased power projections, among others. In
16 September 2004, I was promoted to my current position where I primarily work with fuel
17 and purchased power projections and integrated resource planning.

18 **Q. HAVE YOU EVER TESTIFIED BEFORE THE MISSOURI PUBLIC SERVICE**
19 **COMMISSION (“COMMISSION”) OR ANY OTHER STATE UTILITY**

1 **COMMISSION?**

2 A. Yes. I testified on behalf of Empire on the topic of on-system fuel and purchased power
3 expense in Commission Case Nos. ER-2006-0315, ER-2008-0093, ER-2010-0130 and ER-
4 2011-0004. I also testified on behalf of Empire regarding its fuel adjustment clause in
5 Commission Case Nos. ER-2011-0320, ER-2012-0098 and ER-2012-0326. Additionally, I
6 testified on behalf of Empire in Kansas Corporation Commission Case No. 05-EPDE-980-
7 RTS, Oklahoma Corporation Commission Cause Nos. PUD 20110082 and PUD
8 20110013, and Arkansas Public Service Commission Docket No. 07-076-TF.

9 **Q. WHAT IS THE PURPOSE OF YOUR DIRECT TESTIMONY IN THIS CASE?**

10 A. I will support Empire’s proposal to continue its Fuel Adjustment Clause (“FAC”) in this
11 case. I will also support Empire’s estimate of the ongoing level of on-system fuel and
12 purchased power (“FPP”) costs as part of this case. In addition, I will provide the information
13 required by 4 CSR 240-3.161(3) for continuance of the FAC. I will also describe the
14 adjustments for normalized coal inventory balances. The on-system FPP expense values that
15 I will be addressing can be grouped into the following categories: (1) normalized on-system
16 FPP energy expense calculated with a production cost model; (2) fuel-related costs, such as
17 unit train and undistributed and other costs associated with the normalized production cost
18 model run; (3) natural gas-related costs, such as firm transportation, commodity charge,
19 storage costs, undistributed and other costs and natural gas losses that are associated with the
20 normalized production cost model run; and (4) other energy related costs, such as the cost of
21 consumables associated with the power plants’ air quality control systems (“AQCS”) and
22 revenue from the sale of renewable energy credits (“RECs”). In connection with the
23 normalized production cost run referenced above, I will describe the model, the modeling

1 process, the results of the model run and some of the key data inputs to the model.

2 **Q. PLEASE LIST THE ENERGY COST COMPONENTS ASSOCIATED WITH**
3 **EMPIRE'S CURRENT FAC BASE.**

4 A. Empire's current FAC base consists of fuel and purchased power energy costs (including fuel
5 related costs such as unit train, undistributed and other and variable natural gas transportation
6 expenses) plus the cost of the AQCS consumables and net emissions cost, if any, less the net
7 sales of RECs. The FAC base is then calculated on a per unit basis utilizing net system input
8 expressed in kilowatt hours or megawatt hours. The current FAC base is \$0.02823 per kWh.
9 Based on the most recent analysis of the FAC cost components for the preparation of this
10 case, Empire is proposing to raise the FAC base slightly by about 0.5% to \$0.02837 per kWh
11 subject to any true-up adjustments that may be considered in this case. The FAC base
12 comparison can be found in Schedule TWT-1.

13 **Q. DOES THIS TESTIMONY ADDRESS ALL OF THE COSTS ASSOCIATED WITH**
14 **EMPIRE'S FAC?**

15 A. Yes, it does. In addition to the costs I previously described, I also am sponsoring some
16 fixed costs generally associated with FPP expense, such as purchase demand, natural gas
17 firm transportation and natural gas storage costs that are not a component of the existing
18 Empire FAC.

19 **II. SUPPORTING INFORMATION FOR AN FAC CONTINUATION REQUEST AS**
20 **REQUIRED BY 4 CSR 240.3.161(3)**

21 **Q. IS EMPIRE'S REQUEST TO CONTINUE ITS FAC DESIGNED TO COMPLY**
22 **WITH THE COMMISSION'S RULES?**

23 A. Yes. Empire has designed its FAC continuation request to comply with the Commission's

1 rule governing the fuel adjustment process. The table below displays a list of the twenty
 2 (20) minimum filing requirements and where this information can be found in supporting
 3 schedules and testimony.

Rule Reference	Brief Description	Location
4 CSR 240.3.161 (3) (A)	Customer notice	Schedule TWT-4
4 CSR 240.3.161 (3) (B)	Example customer bill	Schedule TWT-3
5 CSR 240.3.161 (3) (C)	Proposed FAC tariff	Schedule TWT-10
4 CSR 240.3.161 (3) (D)	Explanation of FAC	Tarter Testimony
4 CSR 240.3.161 (3) (E)	FAC and opportunity to earn a fair ROE	Tarter Testimony
4 CSR 240.3.161 (3) (F)	(Over)/Under recoveries & true-up	Tarter Testimony
4 CSR 240.3.161 (3) (G)	FAC and prudence review	Tarter Testimony
4 CSR 240.3.161 (3) (H)	Specific costs and FERC accounts	Tarter Testimony
4 CSR 240.3.161 (3) (I)	Specific revenue and FERC accounts	Tarter Testimony
4 CSR 240.3.161 (3) (J)	Incentive features and benefits	Tarter Testimony
4 CSR 240.3.161 (3) (K)	Volatility mitigation	Tarter Testimony
4 CSR 240.3.161 (3) (L)	Company procedures/prudent costs	Tarter Testimony
4 CSR 240.3.161 (3) (M)	Customer class rate design	Tarter Testimony
4 CSR 240.3.161 (3) (N)	FAC, business risk and allowed ROE	Tarter & Vander Weide Testimonies
4 CSR 240.3.161 (3) (O)	How responses differ	Tarter Testimony
4 CSR 240.3.161 (3) (P)	Supply-side, Demand-side resource data	Schedule TWT-5
4 CSR 240.3.161 (3) (Q)	Unit heat rate & unit efficiency testing	Schedule TWT-6
5 CSR 240.3.161 (3) (R)	Existing IRP and objectives	Tarter Testimony
6 CSR 240.3.161 (3) (S)	Emission allowance cost/(revenue) & FAC	Tarter Testimony
7 CSR 240.3.161 (3) (T)	Authorization to release 5-years of surveillance	Tarter Testimony

1 **Q. IS THE COMPANY PROPOSING ANY CHANGES TO ITS EXISTING FAC**
2 **TARIFF IN THIS CASE?**

3 A. No. The Company is not proposing any changes to its FAC tariff, other than to correctly
4 reflect the current Missouri jurisdictional base cost of energy. I have attached a copy of
5 the proposed FAC tariff sheet to my testimony as Schedule TWT-10. The proposed FAC
6 tariff contains the proposed base energy cost per kWh, which is the only change from the
7 existing FAC tariff (the existing FAC tariff is provided as Schedule TWT-2). Several of
8 the major features of the tariff are:

- 9 • Changes in the FAC factor are based upon 95 percent of the difference between the cost
10 of fuel and energy that is built into base rates and the actual cost of fuel and energy;
- 11 • Costs included in the FAC calculation are based upon the actual Missouri jurisdictional
12 historical expenses recorded in FERC accounts 501, 547 and 555, including the
13 cost/benefits associated with Empire's fuel hedging program. In addition, the FAC will
14 include the recovery of emission allowance costs (sulfur dioxide) recorded in FERC
15 account 509, the Renewable Energy Credit ("REC") revenue actually earned by Empire
16 and the cost of consumables associated with Air Quality Control Systems ("AQCS") at
17 Empire's generating units;
- 18 • Costs included in the FAC calculation exclude the capacity charges associated with
19 purchased power contracts, the fixed portion of the natural gas firm transportation and
20 natural gas storage costs;
- 21 • Only two changes in the FAC factor are made each year, one in June and one in
22 December;
- 23 • The current Missouri jurisdictional base cost of energy under the FAC is \$0.02823 per

1 kWh, but as previously mentioned, Empire is proposing to adjust this to \$0.02837 per
2 kWh subject to any true-up adjustments that may be considered in this case;

- 3 • Over/under recoveries of Missouri jurisdictional energy costs are refunded/collected
4 periodically (every six months) from Missouri retail customers through the operation of
5 the tariff;
- 6 • Over/under recoveries of Missouri jurisdictional energy costs are recorded on the books
7 of the Company in FERC accounts using an asset/liability account to track over/under
8 recoveries of energy costs on the balance sheet, FERC Account No. 182 and 254 and an
9 offsetting expense account to reflect the over/under recoveries of energy costs on the
10 income statement, Account No. 501. This will continue to ensure that net operating
11 income is not distorted by over/under recoveries of Missouri jurisdictional energy costs.
12 In addition, this accounting process will leave an audit trail for internal and external
13 auditors. This audit trail will be very useful during the periodic prudence reviews that
14 are required under the Commission's rules governing the fuel adjustment process.
15 Empire has continued to restrict the recovery and refund of over/under recoveries to 95
16 percent of the total difference that was established in the last rate case.
- 17 • Carrying costs on energy costs deferred as part of the operation of the FAC are
18 calculated on a monthly basis using Empire's embedded cost of short-term debt, and
19 will be applied during both the accumulation period and the recovery period.

20

1 **Q. DOES EMPIRE AUTHORIZE THE COMMISSION TO RELEASE THE LAST**
2 **FIVE YEARS OF HISTORICAL SURVEILLANCE REPORTS TO THE PARTIES**
3 **IN THIS CASE?**

4 A. Empire agrees to release the last five years of historical surveillance information to the
5 Commission Staff and to The Office of the Public Counsel. If other parties to this case
6 desire to receive this information, Empire will provide it subject to the protections to
7 confidential information that are afforded by 4 CSR 240-2.135. At this point, we are
8 concerned about other utilities operating in Missouri that compete with Empire, such as
9 KCPL and Ameren, gaining unrestricted access to our surveillance information as a result
10 of intervening in this rate case. It would, therefore, be unfair to Empire to require a
11 complete release of this information to parties to this case without safeguards as to the
12 access by competitors and the extent to which employees of competitors may view the
13 information. If these concerns can be addressed satisfactorily, Empire is willing to allow a
14 release of five-years of the surveillance information to the parties in this rate case.

15 **Q. DOES THE EXISTING FAC TARIFF AND THE RECOVERY/REFUND**
16 **MECHANISM PROVIDE EMPIRE SUFFICIENT OPPORTUNITY TO EARN A**
17 **FAIR RETURN ON EQUITY?**

18 A. Yes and no. The existing FAC mechanism is a significant improvement over the recovery
19 of these costs through base rates. During periods of extreme fuel and energy price
20 fluctuations, the FAC will recover 95 percent of the changes in energy costs, which means
21 that the Missouri retail customers will reimburse Empire for a significant portion of its
22 actual prudently incurred fuel and energy costs. In the event that fuel and energy costs
23 stabilize at or near the base established in the FAC, which has been the case since the FAC

1 was originally implemented, the energy cost changes that pass through to the customer
2 through the FAC would be minimal. For example, since September of 2008 through
3 February 2012, Empire has requested to pass on to its Missouri retail customers around
4 \$15.9 million of increased fuel and energy costs through the FAC. This represents a
5 change in Missouri jurisdictional energy costs of about 3.5 percent during the past three
6 and a half years, and an overall change in Missouri jurisdictional retail revenue of about
7 1.2 percent during the last 42 months.

8 Although, overall, the current FAC is a great improvement over the situation that existed
9 prior to the FAC, any negative adjustment to the 95%/5% sharing mechanism could
10 deprive Empire of a sufficient opportunity to earn a fair return on equity and thereby deny
11 the Company one of the major benefits an FAC was supposed to provide. During periods
12 when fuel and purchased power costs increase between rate cases, the sharing mechanism
13 requires Empire to absorb five percent of those costs increases – which directly reduces the
14 Company’s earnings – even though all those costs were prudently incurred. If, however,
15 the percentage of costs the Company is required to absorb under the FAC’s sharing
16 mechanism is increased above the current level, the resulting effect on net income could
17 deprive Empire of an opportunity to earn a fair return on equity. Likewise, if energy costs
18 would happen to fall below the FAC base, Empire’s customers could be adversely
19 impacted by what I referred to as any negative adjustment to the 95%/5% sharing
20 mechanism.

21 **Q. IS THE FAC DESIGNED TO COMPLY WITH THE PRUDENCE REVIEW**
22 **PROCEDURES PRESCRIBED BY THE COMMISSION’S RULES?**

23 A. Yes. Empire’s FAC is flexible and allows the Commission to adjust the amount of FAC

1 recovery if any cost is disallowed as the result of a prudence review. As I mentioned
2 earlier, the accounting procedures used by Empire will involve an audit trail that should
3 facilitate the audit process associated with those periodic prudence reviews.

4 **Q. DOES THE ACCOUNTING AND BILLING PROCESS IN THE FAC ENABLE**
5 **EMPIRE TO TRACK FAC REVENUES AS A DISCRETE LINE ITEM ON**
6 **CUSTOMER'S BILLS?**

7 A. Yes. FAC changes/credits have been, and will continue to be, shown as a separate line
8 item on each customer's bill, and the FAC revenue will continue to be segregated on the
9 Empire books and records to facilitate the accounting and audit process.

10 **Q. WILL EMPIRE'S CUSTOMERS BE NOTIFIED OF THE REQUEST TO**
11 **CONTINUE THE FAC?**

12 A. Yes. In addition, to the normal notice requirements for a general rate filing, Empire has
13 prepared a notice that describes the request to continue the existing FAC. I have attached
14 an exemplar copy of this notice as Schedule TWT-4.

15 **Q. PLEASE DESCRIBE HOW THE FAC WORKS.**

16 A. As shown on Schedule TWT-2 (the existing FAC tariff), the application of the tariff
17 involves the accumulation of actual Missouri jurisdictional energy costs over a six-month
18 period, comparing that cost accumulation to the base cost of energy built into the Missouri
19 jurisdictional rates, and then determining the amount of over/under recovery of energy
20 costs. Ninety-five percent (95%) of this over/under recovery balance is then
21 billed/credited to Empire's Missouri retail customers over a six-month billing period that
22 immediately follows the six-month accumulation period. In addition, 95 percent of the
23 actual Missouri jurisdictional off-system sales are flowed through the FAC as well as the

1 Missouri jurisdictional portion of REC sales. As shown in Schedule TWT-2, the first six-
2 month accumulation period is September through February and the recovery or billing
3 period associated with this accumulation period is the following June through November.
4 The process in the FAC involves changing the energy cost recovery factor twice each year,
5 once in June and again in December. Empire has filed for energy cost recovery changes
6 under the FAC, in April and October of each year since April of 2009.

7 **Q. DO THE ENERGY COSTS ELIGIBLE FOR RECOVERY THROUGH THE**
8 **EXISTING FAC INCLUDE THE COSTS AND/OR BENEFITS ASSOCIATED**
9 **WITH EMPIRE'S FUEL RISK MANAGEMENT (HEDGING) PROGRAM?**

10 A. Yes. As indicated on Schedule TWT-2, the costs eligible for recovery through the tariff
11 include Empire's fuel risk management costs, which are recorded in FERC accounts 501,
12 547 and 555.

13 **Q. WHAT IS THE TIMING OF THE SEMI-ANNUAL FAC FILINGS IN THE FAC**
14 **TARIFF?**

15 A. The existing tariff incorporates the following timing of actions:

- 16 • Filing for a change in the cost adjustment factor ("CAF") on April 1st and October 1st
17 each year;
- 18 • Staff recommendation on the filed CAF by May 1st and November 1st each year;
- 19 • Commission Approval of the CAF by June 1st and December 1st or CAF as filed is
20 allowed to go into effect on June 1st and December 1st each year.

1 **Q. IS THE TIMING OF THESE ACTIONS DESIGNED TO BE IN ACCORDANCE**
2 **WITH THE COMMISSION'S RULES GOVERNING THE FILING OF PERIODIC**
3 **ADJUSTMENTS TO THE FAC?**

4 A. Yes. The Staff has thirty days from the date of a CAF filing to make its recommendation
5 and the Commission has sixty days from the CAF filing date in which it can render a
6 decision concerning the cost recovery factor or allow it to go into effect by operation of
7 law.

8 **Q. HOW DOES THE TRUE-UP OF ENERGY COST RECOVERY TAKE PLACE**
9 **AND HOW ARE PRUDENCE REVIEWS SCHEDULED ACCORDING TO THE**
10 **EXISTING FAC TARIFF?**

11 A. The true-up of recovered energy costs takes place every six months. The exact timing of
12 the prudence review has not been explicitly set out in the tariff, but the tariff specifies that
13 prudence reviews will take place no less than every eighteen (18) months. The
14 Commission Staff has completed two prudence reviews of Empire's existing FAC and has
15 recommended no cost disallowances as a result of these reviews.

16 **Q. DOES THE EXISTING FAC INCLUDE ANY RATE VOLATILITY MITIGATION**
17 **FEATURES?**

18 A. Yes, the energy cost changes that occur during the accumulation period will be spread over
19 six months. This feature will fix the FAC component of a customer's bill for six months
20 and will tend to smooth out energy price volatility.

21 **Q. HAS EMPIRE CONDUCTED ANY HEAT RATE TESTING ON ITS**
22 **GENERATION UNITS DURING WITHIN THE PREVIOUS TWENTY-FOUR**
23 **MONTHS?**

1 A. Yes. These are included as Schedule TWT-6.

2 **Q. ARE YOU PROVIDING ANY OTHER SUPPLY-SIDE AND DEMAND-SIDE**
3 **RESOURCE INFORMATION IN SUPPORT OF EMPIRE'S REQUEST TO**
4 **CONTINUE THE FAC?**

5 A. Yes. Based on the Company's most recently approved budget, I am providing the
6 following information as required by the various subparts of 4 CSR 240-3.161(3)(P):

- 7 • Schedule TWT-5 page 1, which is a list of the supply-side and demand-side resources
8 that the Company expects to use to meet its load for the next four (4) years;
- 9 • Schedule TWT-5 page 2, which shows the expected dispatch (generation levels) of
10 the supply-side resources that Empire expects to utilize for the next four (4) years and
11 explains why these expected dispatch levels are appropriate;
- 12 • Schedule TWT-5 page 3, which shows the expected heat rates for each supply-side
13 resource that the Company expects to utilize for the next four (4) years; and
- 14 • Schedule TWT-5 page 4, which shows the fuel types utilized in each of Empire's
15 supply-side resources.

16 **Q. DO YOUR RESPONSES TO THE INFORMATION REQUIRED BY 4 CSR**
17 **240.3.161 (3) FILED IN THIS CASE DIFFER FROM THE INFORMATION FILED**
18 **IN RESPONSE TO THE INFORMATION AND RESPONSES REQUIRED BY 4**
19 **CSR 240.3.161(2)?**

20 A. Not materially. In the initial case authorizing Empire's FAC, which was governed by 4
21 CSR 240-3.161(2), some of the information Empire submitted dealt with the FAC tariff
22 proposed by Empire in Case No. ER-2008-0093. In this case, which is governed by 4 CSR
23 240-3.161(3), the FAC tariff we propose to continue is in existence, so the responses and

1 information requirements are tailored to meet the needs of the existing FAC.

2 **III. FUEL PLANNING AND PROCUREMENT**

3 **Q. DOES EMPIRE HAVE PROCEDURES IN PLACE DESIGNED TO ENSURE**
4 **THAT ITS FUEL PURCHASING IS PRUDENT?**

5 A. Yes it does. Empire plans its fuel procurement activity using long-term planning and
6 maintains an active Risk Management Policy ("RMP").

7 **Q. PLEASE DESCRIBE EMPIRE'S RMP.**

8 A. Empire implemented its RMP in 2001 to manage natural gas price volatility. The RMP
9 outlines the instruments that may be used to help manage volatility. In general terms,
10 Empire's RMP allows the use of financial and physical transactions to help manage price
11 volatility. In addition, the RMP establishes minimum quantities of natural gas in future
12 calendar years that are required to be price protected by a certain date.

13 **Q. DOES EMPIRE ALSO HAVE ACCESS TO OTHER SOURCES OF ELECTRIC**
14 **ENERGY THAT CAN BE USED TO OFFSET NATURAL GAS PRICE**
15 **VOLATILITY?**

16 A. Yes. In addition to its coal fired generating units, Empire also owns and operates the Ozark
17 Beach hydro facility. It has a capacity of about 16 MW and averages about 64,000 MWh's
18 of output per year. The output of this unit is limited by the water released from Table
19 Rock Lake and the level of water maintained on Bull Shoals Lake.

20 At the end of 2005, Empire began receiving electricity from the Elk River Wind Project
21 owned by PPM Energy. Empire has a contractual commitment to purchase 100% of the
22 output from this project for 20 years. Empire expects to receive about 550,000 MWh's per
23 year from this project or about 10% of its overall energy supply. The energy under this

1 contract is purchased at a predetermined cost. Empire also entered into an agreement with
2 Cloud County Windfarm, LLC, owned by Horizon Wind Energy, to purchase all of the
3 output from Meridian Way Wind Farm since late December 2008. Empire anticipates
4 purchasing approximately 330,000 megawatt-hours of energy under this contract annually.

5 **Q. HOW DOES EMPIRE ACQUIRE THE FUEL AND PURCHASED POWER USED**
6 **TO SUPPLY ELECTRICITY TO ITS CUSTOMERS?**

7 A. Empire's fuel and purchased power acquisition planning is performed using a three-step
8 process. The steps in this process are:

- 9 • Long-term Integrated Resource Plan ("IRP");
- 10 • An annual and five-year business plan;
- 11 • Updates to the annual and five-year business plans as conditions change.

12 **Q. PLEASE DESCRIBE THE IRP PROCESS.**

13 A. Empire utilizes the IRP process to develop a long-term strategy to reliably serve its
14 customers at the lowest possible cost. This planning process uses Empire's entire load in
15 all five of its jurisdictions (Missouri, Arkansas, Kansas, Oklahoma, and the FERC). This
16 formal IRP process has been in place since the early 1990's when Missouri implemented a
17 formal IRP rule. Since that time Oklahoma and Arkansas also have implemented IRP
18 rules. Empire has thus far been allowed to use the IRP developed for filing in Missouri as
19 the basis for the IRP filings in Oklahoma and Arkansas. The IRP process that Empire uses
20 results in a target list of future resources designed to serve Empire's projected usage and
21 customer levels in all jurisdictions. The resource plan selected by Empire as a result of this
22 process includes base load, intermediate, and peaking resources using a mix of fuels from
23 coal to natural gas and renewable resources. Demand-side management programs are also

1 considered as potential resources as part of the IRP process. Empire filed its latest IRP in
2 Missouri on September 3, 2010.

3 **Q. HOW DOES THE SECOND STEP OF THE PLANNING PROCESS WORK?**

4 A. In addition to the long range planning, Empire conducts annual financial and operational
5 planning, which is used to develop a five-year business forecast. This planning process
6 includes detailed load forecast, detailed generation unit modeling, detailed operations and
7 maintenance cost, and capital budget planning, and revenue forecast. This plan is used to
8 assess many things including the ability to raise capital, debt and equity, and the near term
9 impact on the overall cost of service. The detailed generation unit modeling developed in
10 this phase of the planning process is used as the primary source of information for the
11 development of the fuel and purchased power procurement plan.

12 **Q. ARE THE ANNUAL AND FIVE-YEAR BUSINESS PLANS ADJUSTED TO**
13 **REFLECT CHANGES IN THE BUSINESS ENVIRONMENT?**

14 A. Yes. The annual and five-year business plans are periodically refined to take into account
15 changes that have occurred since the plans were initially developed. Empire takes into
16 account changes in such things, as load growth, weather, the number of customers, fuel
17 prices, purchased power prices, rail transportation delays, and fuel availability. As these
18 refinements are made to the near term forecasts, Empire adjusts its fuel procurement plans
19 as necessary.

20 **Q. PLEASE PROVIDE ADDITIONAL INFORMATION THAT DEMONSTRATES**
21 **THAT EMPIRE HAS A LONG-TERM RESOURCE PLANING PROCESS IN**
22 **PLACE.**

23 A. Empire filed its most recently completed integrated resource plan (“IRP”) in Missouri on

1 September 3, 2010 in File No. EO-2011-0066. The Commission granted Empire's request
2 for waivers related to this IRP in File No. EE-2010-0246 (Empire previously filed a
3 triennial compliance IRP in September 2007 in File No. EO-2008-0069). Empire
4 prepared an IRP Annual Update Report and conducted a Stakeholder Update Session in
5 March 2012 in File No. EO-2012-0294 that was designed to provide an IRP update to the
6 September 2010 IRP. Following a nonunanimous stipulation and agreement in File No.
7 EO-2011-0066, Empire has been meeting quarterly with its IRP Stakeholder Advisory
8 Group. This group consists of stakeholders such as the Staff of the Missouri Public
9 Service Commission ("Staff"), the Office of the Public Counsel ("OPC"), the Missouri
10 Department of Natural Resources ("MDNR"), Dogwood Energy, LLC ("Dogwood") and
11 other interested parties. The IRP Stakeholder Advisory Group process is intended to assist
12 Empire in its selection of analytic methods and to facilitate Empire's collection and use of
13 new data for its next IRP filing that is scheduled for April 2013. The periodic IRP analysis
14 in conjunction with Empire's normal planning process assists Empire in making decisions
15 concerning the timing and type of system expansion that should occur. In addition to the
16 formal IRP filing, Empire develops annual and five year business plans each year, and
17 updates these plans as conditions change. According to 4 CSR 240-22.010 - Policy
18 Objectives, which was in place during the September 2010 IRP filing, "the fundamental
19 objective of the Missouri resource planning process at electric utilities is to provide the
20 public with energy services that are safe, reliable and efficient, at just and reasonable rates,
21 in a manner that serves the public interest." As stated in Empire's recent IRP filings,
22 integrated resource planning for electric utilities has evolved considerably over the past
23 twenty years and can no longer solely identify the least cost resources; such a plan must

1 also explicitly consider risks and uncertainties. Empire's objectives in preparing its IRPs
2 reflect its commitment to provide cost-effective, safe, and reliable electric service to its
3 customers:

- 4 • to provide reliable electricity service while complying with all environmental
5 requirements
- 6 • to minimize the cost of providing electric service
- 7 • to achieve and/or maintain investment grade ratings on its debt to provide corporate
8 financial stability and minimize financing costs
- 9 • to accommodate and manage a broad range of industry uncertainties.

10 **Q. IS THE EXISTING FAC DESIGNED TO PRODUCE A DIFFERENT CAF FOR**
11 **DIFFERENT VOLTAGE LEVELS?**

12 A. Yes. The FAC includes a feature that reduces the CAF to those customers taking service at
13 primary voltage or higher. The existing expansion factors were based upon the
14 information coming from the periodic line loss studies performed by the Company.

15 **Q. ARE THERE BENEFITS ASSOCIATED WITH THE CONTINUED USE OF THE**
16 **EXISTING EMPIRE FAC?**

17 A. Yes.

18 **Q. PLEASE EXPLAIN.**

19 A. I believe there are significant benefits for all of the Company's stakeholders. First, Empire
20 benefits by being able to recover almost all of its actual fuel and energy costs through the
21 FAC. This strengthens Empire's financial profile and enhances its ability to attract the
22 financing necessary to meet its customers' needs and to obtain that financing at the best
23 rates possible. In addition, the need to file general rate cases for the purpose of recovering

1 ongoing fuel and energy costs in base electric rates has essentially been eliminated. Over
2 time, this may reduce the overall number of electric rate cases in Missouri, and a reduction
3 in the number of general rate cases will ultimately lower Empire's regulatory costs and
4 ultimately the cost to serve Empire's Missouri customers.

5 **Q. WILL THE COMMISSION BENEFIT FROM THE CONTINUATION OF**
6 **EMPIRE'S FAC?**

7 A. Yes. The Commission benefits from the continuation of Empire's FAC, because the
8 number of required rate cases may be reduced as fuel and energy costs no longer drive the
9 filing of rate cases. In addition, the FAC process produces a result that is ultimately fair to
10 all sides. The utility will collect its actual cost of fuel and energy, and the customer will
11 pay for no more than the actual, prudently incurred fuel and energy cost.

12 **Q. DOES THE FAC BENEFIT THE CUSTOMER?**

13 A. Yes. In the long run, the customer benefits from the implementation and continuation of a
14 properly designed FAC. The customer will only reimburse Empire for the actual cost of
15 fuel and energy, not an estimate of future energy costs. Thus, there is no over or under
16 recovery of cost. Empire also has a stronger financial profile and an enhanced ability to
17 attract the capital necessary to operate its utility system at the best rates possible.
18 Ultimately, this should lower the cost of operations from what it would have been without
19 the FAC. In addition, the FAC conveys a more accurate cost of electric energy to Empire's
20 customers. If energy costs increase, the customer will know within six months and will be
21 in a position to make an informed decision concerning any energy efficiency measures that
22 could be implemented in an effort to lower consumption. The fixed energy pricing system
23 that Missouri used prior to the FAC tended to shield the customer from the true cost of

1 electric energy, which may hamper the customers' adoption of or participation in energy
2 efficiency programs.

3 **IV. REVIEW OF ON-SYSTEM FUEL AND PURCHASED POWER EXPENSE FOR**
4 **BASE RATES**

5 **Q. WHAT LEVEL OF ON-SYSTEM FUEL AND PURCHASED POWER EXPENSE IS**
6 **EMPIRE PROPOSING IN THIS CASE?**

7 A. Empire has developed an on-system FPP cost level for base rates with a computer
8 production cost model that will be discussed in this testimony. On an average cost basis,
9 Empire estimates that ongoing FPP cost is very close to the level currently in base rates.
10 As shown in Schedule TWT-1, the proposed total FPP for Empire FAC base is lower than
11 currently in base rates, even with a lower amount of RECs that are used to off set FPP
12 costs. However, the proposed FAC base is based on a lower energy requirement. As a
13 result, the proposed FAC base is slightly higher than the current FAC base on a per unit
14 basis.

15 **Q. PLEASE DESCRIBE THE ON-SYSTEM FUEL AND PURCHASED POWER**
16 **EXPENSE LEVEL THAT EMPIRE DEVELOPED FOR PURPOSES OF THIS**
17 **CASE.**

18 A. The FPP cost presented in this testimony is being provided as Empire's review of the
19 ongoing level of variable on-system FPP expense. The dispatch model run produced a
20 total company on-system FPP expense, excluding demand charges, natural gas
21 transportation and natural gas storage fixed costs ("fixed costs") and excluding AQCS
22 consumables and RECs ("other energy costs"), of \$149,862,710. This is based on a
23 projected net system energy requirement of 5,319,823 MWh. On an average basis, this

1 equals an average cost of \$28.17/MWh (excluding fixed costs and other energy costs). A
2 cost summary from this model run is provided as Schedule TWT-7.

3 **Q. HOW DID YOU ARRIVE AT THE ONGOING LEVEL OF FUEL AND**
4 **PURCHASED POWER EXPENSES FOR THIS CASE?**

5 A. This ongoing level of FPP expense was developed by running the hourly production cost
6 computer model known as PROSYM using normalized sales levels, growth, weather and
7 outage data, and projected fuel and purchased power prices.

8 **Q. COULD YOU BRIEFLY DESCRIBE THE PROSYM MODEL?**

9 A. The PROSYM model is a chronological computer model that dispatches resources to meet
10 demand requirements on an hourly basis. The model commits resources based on fuel
11 costs, unit start-up costs, and variable operation and maintenance (“O&M”) costs after
12 accounting for operational characteristics of a utility system that may override economic
13 dispatch. Empire has been using chronological production costing models for projection
14 purposes since 1991. Empire has used the PROSYM model in its seven previous rate case
15 filings in Missouri.

16 **V. UNIT DATA USED IN THE MODEL**

17 **Q. ARE THERE ANY SIGNIFICANT GENERATING UNIT CHANGES USED IN**
18 **YOUR CURRENT MODEL RUN OF ESTIMATED FPP COSTS THAT SHOULD**
19 **BE NOTED?**

20 A. Yes. The Riverton Generation Station includes two small, coal-fired units known as
21 Riverton Units 7 and 8. Unit 7, which is rated at 38 MW but operates at a maximum of 24
22 MW net on coal, was installed in 1950. Unit 8, which is rated at 54 MW and operates at a
23 maximum of 45 MW net on coal, was installed in 1954. Both units can also operate solely

1 on natural gas or over-fire with natural gas while burning coal to reach the rated capacity
2 levels. As outlined in Empire's most recent IRP annual update (File No. EO-2012-0294),
3 Empire's environmental compliance plan calls for the transition of Riverton Units 7 and 8
4 from operation on coal to full operation on natural gas after the summer of 2013. These
5 units will operate on natural gas from that time and until their retirement upon the
6 completion of the Riverton combined cycle project in 2016. Due to the recent decline in
7 natural gas and purchased power prices, Riverton 7 & 8, which are currently 62 and 58
8 years old respectively, have, for the most part, been on economic shutdown since
9 September 2011. Because the rates from this case will likely be in place during the period
10 when these two units are operating only on natural gas, they were modeled for purposes of
11 this case to operate on natural gas and not coal. It should also be noted that there will be
12 no additional costs to transition Riverton Units 7 and 8 to full operation on natural gas.
13 Unit operating characteristics such as heat rates, minimum up and down times, etc., and
14 fuel related costs have been adjusted within the model to account for these units operating
15 as natural gas peaking units, rather than base load coal units.

16 **Q. PLEASE PROVIDE AN OVERVIEW OF THE DATA USED FOR MODELING**
17 **EMPIRE'S GENERATING UNITS.**

18 A. Data used to model Empire's generating units are shown in Schedule TWT-8. These data
19 include each unit's rated capacity, maximum capacity, minimum capacity, heat rate curve
20 information, ramp rate, forced outage rate information, mean repair time, minimum down
21 time, minimum up time, fuel ratio, start-up fuel requirements and associated cost, and
22 variable O&M. The normalized outage schedule is provided in Schedule TWT-9.

23 **VI. FUEL DATA USED IN THE MODEL**

1 **Q. PLEASE EXPLAIN THE BASIS FOR THE COAL COSTS INCLUDED IN**
2 **EMPIRE'S PRODUCTION COST MODEL.**

3 A. All coal costs are based on the expected 2013 delivered cost (initial and freight). The
4 following solid fuel types were modeled: (1) Asbury western coal; (2) Asbury blend coal; (3)
5 Iatan western coal; and (4) Plum Point western coal.

6 **Q. PLEASE EXPLAIN HOW THE FUTURE NATURAL GAS PRICES WERE**
7 **DEVELOPED FOR USE IN THE MODEL.**

8 A. The model includes the assumption that Empire's gas-fired units first burn natural gas from
9 the Company's natural gas hedging efforts, and secondly from the spot natural gas market, as
10 needed. All spot market natural gas prices are estimates for delivered prices to the Southern
11 Star Central Gas Pipeline, where Empire takes natural gas delivery. Both the hedged natural
12 gas and spot market natural gas data that were utilized in the normalized model run are based
13 upon the expected natural gas data for calendar year 2013. The 2013 data were taken from
14 Empire's Natural Gas Position report dated May, 25, 2012.

15 **Q. WHAT WEIGHTED AVERAGE NATURAL GAS COST RESULTED FROM THE**
16 **MODEL RUN?**

17 A. In the PROSYM run, with the model utilizing a combination of the hedged and spot market
18 natural gas fuel types, the weighted average price of the natural gas consumed by the
19 generating units was about \$4.61 /MMBtu.

20 **VII. PURCHASED POWER DATA USED IN THE MODEL**

21 **Q. BRIEFLY DESCRIBE HOW THE POWER PURCHASES WERE MODELED.**

22 A. In the model, purchased power can be divided into the following categories: (1) 50 MW
23 Plum Point purchased power agreement ("PPA") (a coal-fired contract purchase); (2) 150

1 MW Elk River Wind Farm PPA and 105 MW Meridian Way Wind Farm PPA (wind
2 contract purchases); and (3) the wholesale power market, also referred to as spot purchases
3 (non-contract purchases).

4 **Q. PLEASE DESCRIBE HOW THE PLUM POINT PPA WAS MODELED.**

5 A. Empire has an ownership portion and a PPA portion of the Plum Point coal-fired unit.
6 Both portions were modeled at 50 MW each for a total capacity from this facility of 100
7 MW. Since the ownership portion and PPA portion will both be sourced from the same
8 unit, Plum Point was modeled as 100 MW so the ownership and PPA portions would retain
9 the same random forced outage draws in the model. In the model, half of the energy is
10 assigned to the ownership portion and half to the PPA portion. From the standpoint of on-
11 system FPP costs, the 50 MW PPA portion does have some additional costs associated
12 with it. The proportionate share of operating and maintenance costs, unit train costs, and
13 environmental emissions costs were added to the Plum Point 50 MW PPA contract
14 purchase for the normalized on-system FPP cost estimate.

15 **Q. PLEASE DESCRIBE HOW THE WIND FARM PURCHASES WERE MODELED.**

16 A. The 150 MW Elk River and 105 MW Meridian Way PPAs were modeled as “must take”
17 purchases with hourly load profiles. Elk River was modeled at around a 42% capacity
18 factor while Meridian Way was modeled at around a 36% capacity factor. The energy
19 prices used in the model for both of these contracts were based on contract prices for 2013.

20 **Q. WHAT PRICES WERE UTILIZED FOR THE SPOT OR NON-CONTRACT**
21 **PURCHASED ENERGY?**

22 A. The spot purchase data in the model represent a forecast of the wholesale power market.
23 The data are comprised of 8,760 hourly prices. The prices used in the model were

1 developed by the consulting firm Ventyx, an ABB Company, using computer models that
2 generate market price estimates for the Southwest Power Pool North region. The power
3 prices used in the dispatch model in this case are those forecasted for year 2013.

4 **VIII. OTHER FUEL RELATED COSTS**

5 **Q. BRIEFLY DESCRIBE THE OTHER FUEL RELATED COSTS THAT ARE**
6 **INCLUDED IN THE ESTIMATE OF TOTAL COMPANY ON-SYSTEM FUEL**
7 **AND PURCHASED POWER EXPENSE OF \$149,862,710 OR \$28.17 /MWH.**

8 A. The other fuel related costs, in addition to the energy costs from the PROSYM model, are:
9 (1) coal related costs, such as unit train and undistributed and other costs; and (2) natural gas
10 related costs, such as commodity charges, undistributed and other costs and natural gas
11 pipeline losses.

12 **Q. PLEASE DESCRIBE ANY PURCHASED POWER DEMAND CHARGES.**

13 A. Although it is not included in the current base energy cost component for the FAC, there is
14 a monthly demand charge for the 50 MW Plum Point PPA. The demand charge rate (\$
15 /KW/month), which is established by contract, escalates at 2% annually for the first several
16 years of the contract. The annualized value of that has been utilized in this case represents
17 the expected demand charges for calendar year 2013.

18 **Q. PLEASE LIST THE OTHER SOLID FUEL RELATED EXPENSES.**

19 A. The other fuel related expenses include undistributed and other costs at the coal-fired
20 facilities, unit train lease, unit train maintenance, unit train depreciation and unit train
21 property taxes.

22 **Q. PLEASE DESCRIBE THE NATURAL GAS FUEL RELATED EXPENSES.**

23 A. The natural gas fuel related expenses include the costs associated with commodity charges,

1 and natural gas pipeline losses. The commodity charge estimates are based on a rate of
2 \$0.02 /MMBtu. The interstate pipeline natural gas losses are based on a natural gas loss
3 rate of 2.62%.

4 **Q. PLEASE DESCRIBE ANY OTHER COSTS ASSOCIATED WITH THE NATURAL**
5 **GAS STORAGE AND DELIVERY.**

6 A. Although not included in the current base energy cost component for the FAC, other
7 natural gas fuel related expenses include the costs associated with firm natural gas
8 transportation service and natural gas storage fixed costs established by contracts. The
9 natural gas storage costs represent the annualized cost of a storage contract Empire
10 recently entered into with the Southern Star Central Pipeline (“Southern Star”). The
11 annualized value that has been utilized in this case for natural gas storage and natural gas
12 firm transportation represents the expected costs for calendar year 2013.

13 **Q. PLEASE DESCRIBE THE AQCS CONSUMABLES.**

14 A. As mentioned previously, the AQCS consumables are a component of Empire’s existing FAC.
15 The environmental equipment at the generating stations utilize consumable products in order
16 to perform their air quality control functions. A selective catalytic reduction (“SCR”) system,
17 which removes nitrogen oxides (“NOx”), utilize ammonia. A wet scrubber, used for the
18 removal of sulfur oxides (“SOx”), utilizes limestone, while dry scrubbers utilize lime. A
19 powder activated carbon system is used for the removal of mercury. In this testimony,
20 ammonia, lime, limestone, and powder activated carbon are collectively referred to as the
21 AQCS consumables.

22 **Q. PLEASE LIST THE EMPIRE GENERATING UNITS THAT UTILIZE AQCS**
23 **CONSUMABLES AND DESCRIBE THE LEVEL OF COSTS BEING PROPOSED.**

1 A. Ammonia is used by the SCRs at the Asbury coal-fired unit and at the State Line Combined
2 Cycle gas-fired unit. Empire also pays for its share of all the aforementioned AQCS
3 consumables used by the jointly-owned Iatan Unit 1, Iatan Unit 2 and Plum Point coal-
4 fired units. The AQCS consumable costs are highly correlated to the amount of fuel
5 consumed and/or electric generation produced by these generating units, and like fuel
6 costs, the prices for the AQCS consumables are subject to variability. The annualized
7 value of consumables that have been utilized in this case represents the expected level for
8 calendar year 2013 based on the generating unit operation in the model run that was
9 described earlier. The ongoing AQCS cost is about 14.6% lower than the level in Empire's
10 existing FAC base.

11 **Q. PLEASE DESCRIBE THE REVENUES FROM THE SALE OF RECS AND**
12 **DESCRIBE THE LEVEL OF REC OFFSET TO FPP THAT IS BEING**
13 **PROPOSED.**

14 A. Empire currently receives energy from two Kansas wind farms through long-term PPAs.
15 Empire also receives the renewable energy credits or RECs from these resources. Empire
16 currently sells a significant portion of the RECs from these wind farms on the open market,
17 and flows the revenue from the sales of RECs net of sales-related expenses through the
18 FAC as an offset to FPP and energy costs. The annualized value of RECs that have been
19 utilized in this case represents the expected level for calendar year 2013 based on the wind
20 farm production in the model run described earlier. This is about a 63.6% lower offset to
21 FPP costs than the level in Empire's existing FAC base. The primary reason for this
22 expected decline in REC revenue is the expiration of a REC sale contract at the end of
23 2012. Once this contract expires, the average price received per REC sold is expected to

1 decline considerably as the current REC market prices are much lower than the prices in
2 the expired contract.

3 **Q. PLEASE PROVIDE A CHART OF THE ADJUSTMENTS MADE TO FUEL AND**
4 **PRUCHASE POWER YOU ARE SPONSORING.**

5 A.

	Test Year	Pro Forma	Adjustment
Fuel & Purchase Power	173,736,800	166,327,152	(7,409,648)
Construction Accounting	2,376,907	(149,423)	(2,526,330)
SWPA Refund	(2,146,394)	(2,264,957)	(118,563)
Total On-System F&PP	173,967,313	163,912,772	(10,054,541)
Consumables	1,965,485	1,626,017	(339,468)
Renewable Energy Credits	(1,472,413)	(552,534)	919,879

6 **IX. NORMALIZED COAL INVENTORY BALANCES**

7 **Q. WHAT ADJUSTMENTS WERE MADE TO NORMALIZE EMPIRE'S RATE BASE**
8 **FOR COAL INVENTORY?**

9 A. Empire used the results of the fuel model, which was described earlier, to calculate the
10 annual amount of coal on a MMBtu basis for the various types of coal at each generating
11 plant to meet its total company normalized native load. Native load is the kilowatt or
12 megawatt demand placed on Empire's electric system by its regulated customers. As I
13 mentioned, this model run assumes that Riverton Units 7 and 8 will transition to operate
14 solely on natural gas and, therefore, will not maintain a coal inventory. To determine the
15 normalized amount of coal inventory, the average daily burn by generating unit must be
16 calculated. The average daily burn is derived by dividing the annualized MMBtu from the
17 fuel model by the difference between 365 days and the number of annual normalized
18 planned outage days. The average daily burn is then multiplied by the target number of

1 days on hand for coal inventory. The target inventory days on hand which Empire expects
2 to maintain is 60 days. The result is then multiplied by the cost of fuel on a \$/MMBtu basis
3 to arrive at an annualized dollar value for coal inventory. Also included in inventory
4 balances for the Asbury and Iatan units is an estimated level of basemat coal. The Plum
5 Point inventory excludes basemat coal since the basemat coal has been capitalized as part
6 of the plant. Basemat coal is the bottom layer of a coal pile that is not usable as fuel due to
7 contamination by soil, clay, and other contaminants. The normalization of the coal
8 inventory resulted in an adjustment that decreased Missouri jurisdictional coal inventory
9 by \$4,326,193.

10 **X. SUMMARY**

11 **Q. PLEASE PROVIDE A SUMMARY OF YOUR DIRECT TESTIMONY.**

12 A. In this case Empire is requesting the continuation of its FAC. One section of this
13 testimony provided the information required for an FAC continuation filing. In conjunction
14 with the continuation of the current FAC, Empire has estimated the level of 2013 on-
15 system FPP expenses in order to rebase the FAC as part of this case. Empire has simulated
16 a dispatch of its generation system using the PROSYM production cost model to determine
17 an estimate of annualized and normalized total company FPP expense. Schedule TWT-7 is
18 a summary of the PROSYM model run and Schedule TWT-1 is a comparison of Empire's
19 existing FAC base and the proposed FAC base pending any true up runs in this case.

20 **Q. HOW DOES THIS ESTIMATED COST LEVEL COMPARE TO THE AVERAGE**
21 **BASE ENERGY COSTS BUILT INTO EMPIRE'S EXISTING MISSOURI RATES**
22 **AND EMPIRE'S EXISTING MISSOURI FAC?**

23 A. The average energy costs built into Empire's current base rates (excluding purchase demand

1 charges, natural gas firm transportation and fixed natural gas storage costs) equals \$28.23
2 MWh. The comparable estimate of future average energy costs presented in this testimony
3 for the 2013 timeframe equals \$28.37 per MWh, an increase of \$0.15 per MWh or
4 approximately 0.5 percent.

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

6 A. Yes, at this time.

SCHEDULE TWT-1

Based on Gas Price of: \$ 5.65

\$ 4.61

<u>Description</u>	<u>Current FAC Base Total Company</u>	<u>Proposed FAC Base Total Company</u>	<u>Difference</u>	<u>% Change</u>
<u>FUEL</u>				
Fuel	\$ 100,572,857	\$ 94,314,546	\$ (6,258,311)	-6.2%
Gas Transportation - Variable	\$ 100,358	\$ 156,729	\$ 56,372	56.2%
Gas losses (LUF) at Cost of Gas	\$ 823,712	\$ 946,264	\$ 122,551	14.9%
AQCS Consumables (Ammonia, Limestone, PAC)-Variable	\$ 1,905,037	\$ 1,626,017	\$ (279,020)	-14.6%
Total Fuel	<u>\$ 103,401,964</u>	<u>\$ 97,043,556</u>	<u>\$ (6,358,408)</u>	<u>-6.1%</u>

<u>FUEL RELATED COSTS</u>				
Total Fuel-Related Costs	\$ 4,002,880	\$ 3,693,117	\$ (309,763)	-7.7%
TOTAL FUEL AND RELATED COSTS	\$ 107,404,844	\$ 100,736,673	\$ (6,668,171)	-6.2%

<u>PURCHASED POWER ENERGY CHARGES</u>				
Purchased power energy	\$ 44,839,700	\$ 47,386,230	\$ 2,546,530	5.7%
50 MW Plum Point O&M Cost-Variable	\$ 2,978,039	\$ 3,365,823	\$ 387,784	13.0%
Purchased power energy	\$ 47,817,739	\$ 50,752,053	\$ 2,934,314	6.1%

LESS: Renewable Energy Credits-Variable	\$ (1,516,715)	\$ (552,534)	\$ 964,181	-63.6%
Benefit of Natural Gas Storage-Variable	\$ (1,133,004)	\$ (1,133,004)	\$ 1,133,004	-100.0%
Total	<u>\$ (2,649,719)</u>	<u>\$ (552,534)</u>	<u>\$ 2,097,185</u>	<u>-79.1%</u>

Fuel and Purchased Power Adjustment for Settlement Purposes	\$ 776,200	\$ (776,200)	\$ (776,200)	-100.0%
-------------------------------------------------------------	------------	--------------	--------------	---------

TOTAL FUEL AND PURCHASED POWER FOR EMPIRE FAC BASE	\$ 153,349,064	\$ 150,936,193	\$ (2,412,871)	-1.6%
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Total kWh's	5,432,910,685	5,319,822,612	-113,088,072	-2.1%
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Base Cost per kWh			\$ 0.00015	0.5%
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Base Cost per MWh			\$ 0.15	0.5%
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Other Energy Related Costs not included in FAC

Gas Transportation - Fixed	\$ 5,948,773	\$ 5,962,452	\$ 13,679	0.2%
Plum Point PPA Demand Charge - Fixed	\$ 9,037,350	\$ 9,370,491	\$ 333,141	3.7%
SSCGP Natural Gas Storage - Fixed	\$ 1,131,500	\$ 1,131,500	\$ -	0.0%

TOTAL F&PP WITH FIXED COSTS (excludes consumables and RECs)	\$ 169,078,365	\$ 166,327,152	\$ (2,751,213)	-1.6%
	\$ 31.12	\$ 31.27	\$ 0.14	0.5%

ENERGY ONLY (excludes consumables, RECs other fixed costs not in FAC)	\$ 152,960,742	\$ 149,862,710	\$ (3,098,032)	-2.0%
	\$ 28.15	\$ 28.17	\$ 0.02	0.1%

THE EMPIRE DISTRICT ELECTRIC COMPANY

SCHEDULE TWT-2

P.S.C. Mo. No. 5 Sec. 4 Original Sheet No. 17h

Canceling P.S.C. Mo. No. _____ Sec. _____ Sheet No. _____

For ALL TERRITORY

FUEL ADJUSTMENT CLAUSE
SCHEDULE FAC
For service on and after June 15, 2011.

The two six-month accumulation periods, the two six-month recovery periods and filing dates will be as follows:

<u>ACCUMULATION PERIOD</u>	<u>RECOVERY PERIOD</u>	<u>ACCUMULATION PERIOD</u>	<u>RECOVERY PERIOD</u>
SEPTEMBER	JUNE	MARCH	DECEMBER
OCTOBER	JULY	APRIL	JANUARY
NOVEMBER	AUGUST	MAY	FEBRUARY
DECEMBER	SEPTEMBER	JUNE	MARCH
JANUARY	OCTOBER	JULY	APRIL
FEBRUARY	NOVEMBER	AUGUST	MAY
Filing date:	April 1 st		October 1 st

The Company will make a Cost Adjustment Factor ("CAF") filing by each Filing Date. The new CAF rates for which the filing is made will be applicable starting with the recovery period that begins following the Filing Date. All CAF filings shall be accompanied by detailed workpapers supporting the filing in an electronic format with all formulas intact.

DEFINITIONS

ACCUMULATION PERIOD:

The six calendar months during which the actual costs subject to this rider will be accumulated for purposes of determining the CAF.

RECOVERY PERIOD:

The billing months during which CAF is applied to retail customer billings on a per kilowatt-hour (kWh) basis.

BASE ENERGY COST:

Base Energy Cost in this FAC are calculated using the costs included in the revenue requirement upon which Empire's general rates are set for fuel including the costs associated with the Company's fuel hedging program; purchased power energy charges, including applicable transmission fees; Southwest Power Pool variable costs, Air Quality Control System consumables, such as anhydrous ammonia, limestone, and powder activated carbon, and emission allowance costs, but not purchased power demand costs as off-set by off-system sales revenue, any emission allowance revenues, and renewable energy credit revenues in the accumulation period.

BASE ENERGY COST PER kWh:

Base energy cost per kWh at the generator, established in the most recent base rate case. The base energy cost per kWh is \$0.02823 for each accumulation period.

DATE OF ISSUE June 3, 2011
ISSUED BY Kelly S. Walters, Vice President, Joplin, MO

DATE EFFECTIVE June 15, 2011

P.S.C. Mo. No. 5 Sec. 4 Original Sheet No. 17i

Canceling P.S.C. Mo. No. _____ Sec. _____ Sheet No. _____

For ALL TERRITORY

FUEL ADJUSTMENT CLAUSE
SCHEDULE FAC
For service on and after June 15, 2011.

APPLICATION

FUEL ADJUSTMENT CLAUSE

The average price per kWh of electricity generated or purchased will be adjusted subject to application of the FAC, and approved by the Public Service Commission. The price will reflect 95 percent of the accumulation period costs either above or below base costs specified below for:

1. Fuel and AQCS consumables consumed in Company electric generating plants;
2. Purchased energy (excluding demand);
3. Off-system sales revenue;
4. Emission allowance costs and revenues; and
5. Renewable energy credit revenues.

It will also include:

6. An adjustment for the prior recovery period's over/under recovery of FAC Costs;
7. Interest at a rate equal to the Company's short-term interest rate will be applied to the average monthly deferred electric energy costs and will be accumulated during the accumulation period. Deferred electric energy cost shall be determined monthly. The monthly deferred amount may be negative or positive during the accumulation period.

The formula and components are displayed below.

$$FAC = \{[(F + P + E - O - R - B) * J] * 0.95\} + C + I$$

Where:

- F = Actual total cost of fuel - FERC Accounts 501 & 547 (excluding fixed pipeline reservation charges and fixed pipeline storage charges), and AQCS consumables - FERC Account 506.2.
- P = Actual total system cost of purchased energy - FERC Account 555 (excluding purchase power demand charges).
- E = Actual total system net emission allowance cost and revenues - FERC Accounts 509 & 254.103.
- O = Actual total system off-system sales revenue.
- B = Base energy cost is calculated as follows:

1. For each accumulation period $B = (NSI \text{ kWh} * \$0.02823)$

NSI = Actual net system input at the generation level for the accumulation period.

P.S.C. Mo. No. 5 Sec. 4 Original Sheet No. 17i

Canceling P.S.C. Mo. No. _____ Sec. _____ _____ Sheet No. _____

For ALL TERRITORY

FUEL ADJUSTMENT CLAUSE SCHEDULE FAC For service on and after June 15, 2011.

R = Renewable energy credit revenues.

J = Missouri energy ratio calculated as follows:

$$\text{Missouri energy ratio} = \frac{\text{Missouri retail kWh sales}}{\text{Total system kWh sales}}$$

Where Total system kWh sales excludes off-system sales.

C = True-up of over/under recovery of FAC balance from prior recovery period as included in the deferred energy cost balancing account. This factor will reflect any modifications made due to prudence reviews.

I = Interest.

COST ADJUSTMENT FACTOR

The CAF is the result of dividing the FAC by estimated recovery period Missouri net system input (NSI) kWh, rounded to the nearest \$.00000. The CAF shall be adjusted to reflect the differences in line losses that occur at primary and above voltage and secondary voltage by multiplying the average cost at the generator by 1.0502 and 1.0686, respectively. Any CAF authorized by the Commission shall be billed based upon customers' energy usage on and after the authorized effective date of the CAF. The formula and components are displayed below.

$$\text{CAF} = \frac{\text{FAC}}{\text{S}}$$

Where:

S = Forecasted Missouri NSI kWh for the recovery period. Missouri NSI kWh is calculated as:

$$\text{Missouri NSI} = \text{Forecasted NSI} * \frac{\text{Forecasted Missouri retail kWh sales}}{\text{Forecasted total system kWh sales}}$$

Where Forecasted Total System kWh Sales excludes off-system sales.

PRUDENCE REVIEW

There shall be a periodic review of fuel and energy costs subject to the FAC and a comparison of the FAC revenue collected. Prudence reviews shall occur no less frequently than at eighteen (18) month intervals.

TRUE-UP OF FAC

After completion of each recovery period, the Company will make a true-up filing in conjunction with an adjustment to its FAC on the first Filing Date that occurs after completion of each recovery period. The true-up adjustment shall be the difference between the revenues billed in the recovery period to the costs authorized for collection in the recovery period, i.e. the true-up adjustment. Any true-up adjustments or refunds shall be reflected in item C above and shall include interest calculated as provided for in item I above.

DATE OF ISSUE June 3, 2011
ISSUED BY Kelly S. Walters, Vice President, Joplin, MODATE EFFECTIVE June 15, 2011

THE EMPIRE DISTRICT ELECTRIC COMPANY

SCHEDULE TWT-2

P.S.C. Mo. No. 5 Sec. 4 2nd Sheet No. 17k

Canceling P.S.C. Mo. No. 5 Sec. 4 1st Sheet No. 17k

For ALL TERRITORY

FUEL ADJUSTMENT CLAUSE
SCHEDULE FAC
For service on and after June 15, 2011.

ACCUMULATION PERIOD ENDING, (Feb 29, 2012)

1.	Total energy cost (F + P + E - O - R)	\$65,773,548
2.	Base energy cost (B)	\$70,393,679
3.	Missouri energy ratio (J)	0.8188
4.	Fuel cost recovery $[(F + P + E - O - R) - B] * J * 0.95$	\$(3,608,949)
5.	Adj for over/under recovery for the recovery period ending 11-30-2011 (C)	\$(230,875)
6.	Interest (I)	\$29,016
7.	Fuel Adjustment Clause (FAC)	\$(3,810,809)
8.	Forecasted Missouri NSI for the recovery period (S)	2,230,199,532
9.	Cost Adjustment Factor (CAF) to be applied to bills beginning 06-01-2012	\$(0.00171) / kWh
10.	CAF - Primary and above (Line 9 x Primary Expansion Factor)	\$(0.00180) / kWh
11.	CAF - Secondary (Line 9 x Secondary Expansion Factor)	\$(0.00183) / kWh

Primary Expansion Factor = 1.0502
Secondary Expansion Factor = 1.0686

Example Customer Bill

Account Detail

7	Electric 000011-11-001	For Service at 101 Main Street, Anywhere, MO 11111	Rate: RG-Residential
8	Read for: 00118237 From 06/20/12 to 07/20/12 (30 Days), Curr Read - 13701 Prev Read - 12701. Totaling 1,000 Kwh		
9	07/24/12	Customer Charge	1 x 12.52 \$12.52
10	07/24/12	Usage Charge	1000kwh x .107 \$107.00
11	07/24/12	Fuel Adjust Charge	1000kwh x (.00183) (\$1.83)
12	07/24/12	Anywhere County Tax	117.69 x .00875 \$1.03
		13 Current Months Charges:	\$118.72
	07/24/12	14 APP Installment	\$117.00
		15 Billed Charges:	\$117.00
Contract Update			
	APP	16 Status before payment is \$1.54, after payment in full \$3.26. This account will be reevaluated in May.	

- 7) Service address - this is important for customers who have multiple accounts with Empire.
- 8) Meter number, previous meter read, current meter read, and usage information.
- 9) Empire service includes a fixed monthly customer charge, no matter how much electricity is used.
- 10) The usage charge is for the kilowatt hours (kwh) used by a customer. The charge for each kwh used by a customer from June 16 through September 16 is \$0.107 per kwh. The charge for electricity for the other eight months of each year is \$0.107 per kwh for the first 600kwh and \$0.0871 for each kwh thereafter.
- 11) The charge for the difference between fuel and purchased power costs established in the current rate structure and the actual fuel and purchased power costs incurred by Empire. This rate changes twice a year. If fuel costs are less than what is established by the current rates, customers will see a credit in the Fuel Charge line. The cost includes no mark-up or profit for Empire.
- 12) Taxes, fees, and other assessments.
- 13) Total charges for the billing period.
- 14) APP, average payment plan, is a payment contract that calculates a customer's expected annual usage and divides it into 12 equal payments. Each month one payment installment is due from the customer. At the end of 12 months the actual usage is reviewed and a customer's contract and installments are adjusted for the next 12 months.
- 15) The amount due from the customer by the due date.
- 16) Important information about a customer's payment contract.

SCHEDULE TWT-4

EXEMPLARY NOTICE

On July x, 2012 The Empire District Electric Company filed revised electric service tariff sheets with the Missouri Public Service Commission (PSC) which would increase the Company's Missouri jurisdictional annual gross revenues by \$30.7 million or approximately 7.56 percent. For a residential customer using 1,000 kilowatt-hours of electricity a month, the proposed increase would be approximately \$8.70 each month.

The Company is also asking to continue the use of the Fuel Adjustment Clause (FAC) that was approved by the PSC in its last case with an updated base cost of energy. The continuation of the FAC will allow the Company to adjust customers' bills twice each year, on June 1st and December 1st, based on the varying costs of fuel used to generate electricity at the Company's generating units and electric energy the Company purchases on behalf of its customers.

Local public hearings have been set before the PSC as follows:

- At (time), (day of the week), (month) (day), 20xx, at Webster Hall, Missouri Southern State University, 3950 E. Newman Road, Joplin, Missouri.
- At (time), (day of the week), (month) (day), 20xx, at Webster Hall, Missouri Southern State University, 3950 E. Newman Road, Joplin, Missouri.
- At (time) (day of the week), (month) (day), 20xx, at the Tri-Lakes TCRC, University of Missouri Extension at Reeds Spring High School, ITV Room, 20277 State Highway 413 (in the South Wing of Reeds Spring High School), Reeds Spring, Missouri.

***A question-and-answer session will be held one-half hour before the beginning of each hearing.**

If you wish to comment or secure information, you may contact the Office of the Public Counsel, P.O. Box 2230, Jefferson City, Missouri 65102, telephone (866) 922-2959, email opcservice@ded.mo.gov or the Missouri Public Service Commission, Post Office Box 360 Jefferson City, Missouri 65102, telephone 800-392-4211, email pscinfo@psc.mo.gov.

The Commission will also conduct an evidentiary hearing at its offices in Jefferson City during the weeks of (month) (day) through (month) (day), and (month) (day) through (month) (day), beginning at 8:30 a.m.

The hearings and local public hearings will be held in buildings that meet accessibility standards required by the Americans with Disabilities Act. If a customer needs additional accommodations to participate in these hearings, please call the Public Service Commission's Hotline at 1-800-392-4211 (voice) or Relay Missouri at 711 prior to the hearing.

Schedule TWT-6

Unit	Date of test	Heat rate (Btu/kWh)
Asbury	6/29/2010	10,817
Riverton 7	7/23/2010-7/26/2010	14,427
Riverton 8	7/19/2010-7/22/2010	13,714
Riverton 9	7/21/2010	16,443
Riverton 10	7/16/2010	15,608
Riverton 11	7/27/2010	15,365
Riverton 12	7/16/2010	10,283
Energy Center 1	8/2/2010	13,547
Energy Center 2	8/3/2010	13,671
Energy Center 3	8/3/2010	10,546
Energy Center 4	8/4/2010	10,578
State Line 1	8/4/2010	11,410
SLCC	6/22/2010	7,080
Iatan 1	*	*
Iatan 2	*	*
Plum Point	1/17/2012	9,477

* Please refer to the KCP&L filing

Thermal Unit Model Inputs

	Rated Capacity (MW)	Modeld Max Capacity (MW)	Modeld Min Capacity (MW)	Heat Rate Curve		Ramp Rate (MW/hr)	Normalized Outage (Days)	Forced Outage Rate (%)	Mean Repair Time (Hours)	Min Down Time (Hours)	Min Up Time (Hours)	Fuel Ratio (MMBtu)	Start		Variable O&M (\$/MWh)
				Capacity (MW)	Heat Rate (Btu/MWh)								Fuel	Cost (\$)	
Asbury 1	189	181	135	110	11485	90	30	5.5%	60	90		94% / 6%	1200 (oil)	2500	0.60
Asbury 2	18	16	4	4	18300	8	30	20%	60	60		94% / 6%	0	0	5.00
Iatan 1	85	82	40	70	10100	90	29	8.0%	60	60	168	100%	1200 (oil)	2500	0.60
Iatan 2	102	100	60	60	9200	90	27	8.1%	60	60	168	100%	1200 (oil)	2500	0.60
Plum Point	100	100	60	60	9750	90	27	7.0%	60	60	168	100%	1200 (oil)	2500	0.60
Riverton 7 (Gas)	38	35	20	20	12700	40	12	2.0%	48	90	8		600 (gas)	300	4.00
Riverton 8 (Gas)	54	50	30	30	12300	40	12	2%	72	90	8		600 (gas)	3000	4.00
Riverton 9	12	12	4	4	18500	6	12	10%	60	24	8		50 (gas)	1500	3.75
Riverton 10	16	16	6	6	17500	8	12	10%	60	24	8		50 (gas)	1500	3.75
Riverton 11	17	17	10	10	18500	8	12	10%	60	24	8		50 (gas)	1500	3.75
Riverton 12	Summer 142 Winter 160	142	118	90	11774	60	9	10%	72	10	14		150 (gas)	11,000	3.62
Energy Center 1	82	76	30	30	19500	60	17	10%	72	24	12		150 (gas)	5000	3.00
Energy Center 2	82	75	30	30	20200	60	17	10%	72	24	12		150 (gas)	5000	3.00
Energy Center 3	49 Summer 55 Winter	49 Summer 55 Winter	25	30	12240	40	15	10%	60	2	2		0	300	3.00
Energy Center 4	49 Summer 55 Winter	49 Summer 55 Winter	25	30	12240	40	15	10%	60	2	2		0	300	3.00
State Line 1	94	89	80	60	14750	60	15	10%	120	24	24		150 (gas)	5000	3.00
SLCC 1x1	Summer 149 Winter 167	149	72	72	8700	90	26	7%	72	36	72		300 (gas)	13,000	3.50
SLCC 2x1	Summer 149 Winter 167	149	90	90	7075	20	26	14%	72	36	72		300 (gas)	2500	3.00

Schedule TWT-9

Normalized Maintenance Schedule Used for Modelling

Unit	Annual Days	Outage 1		Outage 2	
		Start Date	Days Out	Start Date	Days Out
ASBURY	30	15-Mar	21	1-Nov	9
IATAN 1	29	5-Apr	29		
IATAN 2	27	4-May	27		
PLUM POINT	27	4-Oct	27		
RIVERTON 7	12	5-Apr	12		
RIVERTON 8	12	26-Apr	12		
RIVERTON 9	12	17-May	12		
RIVERTON 10	12	1-Nov	12		
RIVERTON 11	12	31-May	12		
RIVERTON 12	9	26-Apr	9		
ENERGY CENTER 1	17	30-Mar	10	8-Nov	7
ENERGY CENTER 2	17	12-Apr	10	4-Oct	7
ENERGY CENTER 3	15	10-May	10	18-Oct	5
ENERGY CENTER 4	15	22-May	10	25-Oct	5
STATELINE 1	15	8-Mar	10	15-Nov	5
SLCC 1X1	26	29-Mar	26		
SLCC 2X1	26	11-Oct	26		

THE EMPIRE DISTRICT ELECTRIC COMPANY

P.S.C. Mo. No. 5 Sec. 4 1st Revised Sheet No. 17h

Canceling P.S.C. Mo. No. 5 Sec. 4 Original Sheet No. 17h

For ALL TERRITORY

FUEL ADJUSTMENT CLAUSE
 SCHEDULE FAC
 For service on and after XX-XX-XXXX.

The two six-month accumulation periods, the two six-month recovery periods and filing dates will be as follows:

<u>ACCUMULATION PERIOD</u>	<u>RECOVERY PERIOD</u>	<u>ACCUMULATION PERIOD</u>	<u>RECOVERY PERIOD</u>
SEPTEMBER	JUNE	MARCH	DECEMBER
OCTOBER	JULY	APRIL	JANUARY
NOVEMBER	AUGUST	MAY	FEBRUARY
DECEMBER	SEPTEMBER	JUNE	MARCH
JANUARY	OCTOBER	JULY	APRIL
FEBRUARY	NOVEMBER	AUGUST	MAY
Filing date:	April 1 st		October 1 st

The Company will make a Cost Adjustment Factor ("CAF") filing by each Filing Date. The new CAF rates for which the filing is made will be applicable starting with the recovery period that begins following the Filing Date. All CAF filings shall be accompanied by detailed workpapers supporting the filing in an electronic format with all formulas intact.

DEFINITIONS

ACCUMULATION PERIOD:

The six calendar months during which the actual costs subject to this rider will be accumulated for purposes of determining the CAF.

RECOVERY PERIOD:

The billing months during which CAF is applied to retail customer billings on a per kilowatt-hour (kWh) basis.

BASE ENERGY COST:

Base Energy Cost in this FAC are calculated using the costs included in the revenue requirement upon which Empire's general rates are set for fuel including the costs associated with the Company's fuel hedging program; purchased power energy charges, including applicable transmission fees; Southwest Power Pool variable costs, Air Quality Control System consumables, such as anhydrous ammonia, limestone, and powder activated carbon, and emission allowance costs, but not purchased power demand costs as off-set by off-system sales revenue, any emission allowance revenues, and renewable energy credit revenues in the accumulation period.

BASE ENERGY COST PER kWh:

Base energy cost per kWh at the generator, established in the most recent base rate case. The base energy cost per kWh is \$0.02837 for each accumulation period.

P.S.C. Mo. No. 5 Sec. 4 1st

Revised Sheet No. 17i

Canceling P.S.C. Mo. No. 5 Sec. 4

Original Sheet No. 17i

For ALL TERRITORY

FUEL ADJUSTMENT CLAUSE
SCHEDULE FAC
For service on and after XX-XX-XXXX.

APPLICATION

FUEL ADJUSTMENT CLAUSE

The average price per kWh of electricity generated or purchased will be adjusted subject to application of the FAC, and approved by the Public Service Commission. The price will reflect 95 percent of the accumulation period costs either above or below base costs specified below for:

1. Fuel and AQCS consumables consumed in Company electric generating plants;
2. Purchased energy (excluding demand);
3. Off-system sales revenue;
4. Emission allowance costs and revenues; and
5. Renewable energy credit revenues.

It will also include:

6. An adjustment for the prior recovery period's over/under recovery of FAC Costs;
7. Interest at a rate equal to the Company's short-term interest rate will be applied to the average monthly deferred electric energy costs and will be accumulated during the accumulation period. Deferred electric energy cost shall be determined monthly. The monthly deferred amount may be negative or positive during the accumulation period.

The formula and components are displayed below.

$$FAC = \{[(F + P + E - O - R - B) * J] * 0.95\} + C + I$$

Where:

- F = Actual total cost of fuel - FERC Accounts 501 & 547 (excluding fixed pipeline reservation charges and fixed pipeline storage charges), and AQCS consumables - FERC Account 506.2.
- P = Actual total system cost of purchased energy - FERC Account 555 (excluding purchase power demand charges).
- E = Actual total system net emission allowance cost and revenues - FERC Accounts 509 & 254.103.
- O = Actual total system off-system sales revenue.
- B = Base energy cost is calculated as follows:

1. For each accumulation period $B = (NSI \text{ kWh} * \$0.02837)$

NSI = Actual net system input at the generation level for the accumulation period.

P.S.C. Mo. No. 5 Sec. 4 1st Revised Sheet No. 17j

Canceling P.S.C. Mo. No. 5 Sec. 4 Original Sheet No. 17j

For ALL TERRITORY

FUEL ADJUSTMENT CLAUSE
 SCHEDULE FAC
 For service on and after XX-XX-XXXX.

R = Renewable energy credit revenues.

J = Missouri energy ratio calculated as follows:

$$\text{Missouri energy ratio} = \frac{\text{Missouri retail kWh sales}}{\text{Total system kWh sales}}$$

Where Total system kWh sales excludes off-system sales.

C = True-up of over/under recovery of FAC balance from prior recovery period as included in the deferred energy cost balancing account. This factor will reflect any modifications made due to prudence reviews.

I = Interest.

COST ADJUSTMENT FACTOR

The CAF is the result of dividing the FAC by estimated recovery period Missouri net system input (NSI) kWh, rounded to the nearest \$.00000. The CAF shall be adjusted to reflect the differences in line losses that occur at primary and above voltage and secondary voltage by multiplying the average cost at the generator by 1.0502 and 1.0686, respectively. Any CAF authorized by the Commission shall be billed based upon customers' energy usage on and after the authorized effective date of the CAF. The formula and components are displayed below.

$$\text{CAF} = \frac{\text{FAC}}{\text{S}}$$

Where:

S = Forecasted Missouri NSI kWh for the recovery period. Missouri NSI kWh is calculated as:

$$\text{Missouri NSI} = \text{Forecasted NSI} * \frac{\text{Forecasted Missouri retail kWh sales}}{\text{Forecasted total system kWh sales}}$$

Where Forecasted Total System kWh Sales excludes off-system sales.

PRUDENCE REVIEW

There shall be a periodic review of fuel and energy costs subject to the FAC and a comparison of the FAC revenue collected. Prudence reviews shall occur no less frequently than at eighteen (18) month intervals.

TRUE-UP OF FAC

After completion of each recovery period, the Company will make a true-up filing in conjunction with an adjustment to its FAC on the first Filing Date that occurs after completion of each recovery period. The true-up adjustment shall be the difference between the revenues billed in the recovery period to the costs authorized for collection in the recovery period, i.e. the true-up adjustment. Any true-up adjustments or refunds shall be reflected in item C above and shall include interest calculated as provided for in item I above.

THE EMPIRE DISTRICT ELECTRIC COMPANY

SCHEDULE TWT-10

P.S.C. Mo. No. 5 Sec. 4 3rd

Revised Sheet No. 17k

Canceling P.S.C. Mo. No. 5 Sec. 4 2nd

Revised Sheet No. 17k

For ALL TERRITORY

FUEL ADJUSTMENT CLAUSE
 SCHEDULE FAC
 For service on and after XX-XX-XXXX.

ACCUMULATION PERIOD ENDING, (XX-XX-XXXX)

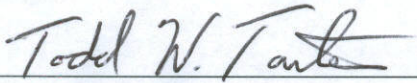
1.	Total energy cost (F + P + E - O - R)	\$XXXXXXXX
2.	Base energy cost (B)	\$XXXXXXXX
3.	Missouri energy ratio (J)	XXXXXX
4.	Fuel cost recovery $[(F + P + E - O - R) - B] * J * 0.95$	\$XXXXXXXX
5.	Adj for over/under recovery for the recovery period ending XX-XX-XXXX (C)	\$XXXXXX
6.	Interest (I)	\$XXXXXX
7.	Fuel Adjustment Clause (FAC)	\$XXXXXXXX
8.	Forecasted Missouri NSI for the recovery period (S)	XXXXXXXXXXXX
9.	Cost Adjustment Factor (CAF) to be applied to bills beginning XX-XX-XXXX	\$XXXXXXX / kWh
10.	CAF - Primary and above (Line 9 x Primary Expansion Factor)	\$XXXXXXX / kWh
11.	CAF - Secondary (Line 9 x Secondary Expansion Factor)	\$XXXXXXX / kWh

Primary Expansion Factor = 1.0502
 Secondary Expansion Factor = 1.0686

AFFIDAVIT OF TODD W. TARTER

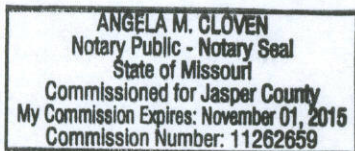
STATE OF MISSOURI)
) ss
COUNTY OF JASPER)

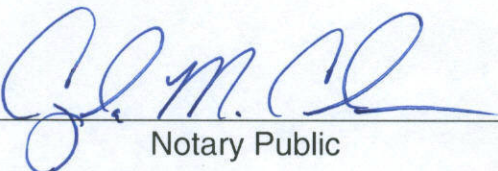
On the 2nd day of July, 2012, before me appeared Todd W. Tarter, to me personally known, who, being by me first duly sworn, states that he is Manager of Strategic Planning of The Empire District Electric Company and acknowledges that he has read the above and foregoing document and believes that the statements therein are true and correct to the best of his information, knowledge and belief.



Todd W. Tarter

Subscribed and sworn to before me this 2nd day of July, 2012.





Notary Public

My commission expires: 11/01/2015.