

**BEFORE THE STATE CORPORATION COMMISSION
OF THE STATE OF KANSAS**

MAY 02 2005

Susan K. Duffy
Docket Room

DIRECT TESTIMONY

OF

JOHN P. OLSEN

WESTAR ENERGY

DOCKET NO. _____

I. INTRODUCTION

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Q. PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.

A. John P. Olsen, 818 South Kansas Avenue, Topeka, Kansas 66612.

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

A. Westar Energy, Inc. I am Executive Director, Bulk Power Marketing.

Q. PLEASE DESCRIBE YOUR EDUCATIONAL BACKGROUND AND BUSINESS EXPERIENCE.

A. I received my B.S. degree in electrical engineering from the University of Nebraska – Lincoln in 1987. I began my career in 1987 with the Goodyear Tire & Rubber Co. where I spent two years doing design work for production equipment enhancements. Before joining Westar, I did engineering design work for fossil-fueled power plants and wholesale marketing for the Nebraska

1 Public Power District. In 1998, I joined Westar. I have served in
2 several positions in the bulk power marketing department before
3 being appointed to my current position in 2003.

4 **Q WHAT IS THE PURPOSE OF YOUR TESTIMONY?**

5 A. I will describe the PROSYM® production cost model that was used
6 to determine the fuel normalization adjustments for Westar North
7 and South and will discuss the necessary modifications made to
8 key input parameters in the production cost model to generate
9 normalized results. I will also explain how we allocate the cost of
10 fuel between customer groups.

11 **II. FUEL NORMALIZATION**

12 **Q PLEASE DESCRIBE THE PRODUCTION COST MODEL THAT**
13 **WAS USED TO DETERMINE THE FUEL NORMALIZATION**
14 **ADJUSTMENT.**

15 A. PROSYM® is an hourly production cost model that simulates the
16 dispatch and commitment decisions of Westar's generation and
17 purchased power resources. We use the PROSYM® model to
18 optimize our resources to meet system demand and asset based
19 market opportunities. For the test year, we used the PROSYM®
20 model to determine the quantity and cost of fuel for each generating
21 unit, purchased power costs and revenues from asset based sales.

22 **Q. HOW DID YOU USE THE MODEL TO DEVELOP THE SUPPORT**
23 **FOR THE FUEL NORMALIZATION ADJUSTMENT?**

1 A. We ran the model using test year data to develop a base case
2 scenario. We then adjusted certain input parameters to develop a
3 normalized scenario. Using the results of these model runs, Mr.
4 Seelye determined the Fuel Normalization adjustment included in
5 our Minimum Filing Requirements. We used the same fuel prices,
6 purchased power prices and wholesale market prices in both the
7 base case and normalized scenarios.

8 **Q. WHAT ARE THE KEY INPUT PARAMETERS USED IN THE**
9 **MODEL TO DEVELOP THE BASE CASE?**

10 A. They include: (i) hourly loads for our requirements customers; (ii)
11 generating unit parameters; (iii) fuel costs; and (iv) market prices for
12 wholesale transactions. The principal generating unit parameters
13 include heat rate curves (i.e., the relationship between fuel
14 consumed and electricity produced), maximum and minimum
15 operating capacities, fuel types, maintenance outages, unit ramp
16 rates and startup costs. Fuel cost and the heat content of the fuel
17 are specified for each fuel type.

18 **Q. WHAT MODIFICATIONS DID YOU MAKE TO THE MODEL**
19 **INPUT PARAMETERS IN ORDER TO DEVELOP A**
20 **NORMALIZED SCENARIO?**

21 A. We made modifications to the model inputs to reflect normal
22 weather, year-end customer levels, the addition of a new large high

1 load factor industrial customer early in 2005 and the effect of the
2 Wolf Creek Generating Station (Wolf Creek) outage.

3 **Q. HOW DID YOU USE APPLY THESE ADJUSTMENTS TO YOUR**
4 **MODEL?**

5 A. We distributed the annual MWHs associated with the adjustments
6 on an hourly basis using a proprietary software tool called
7 LoadFarm®. This software uses the actual hourly system loads,
8 actual maximum system demands and actual minimum demands
9 for Westar North and South to shape the normalization adjustments
10 on an hourly basis. The resulting load shapes were then used in
11 the normalized production cost case for Westar North and South.

12 **Q. HOW WERE THE INPUTS TO THE MODEL MODIFIED TO**
13 **REFLECT THE REFUELING OF WOLF CREEK?**

14 A. Wolf Creek refueling outages occur every eighteen months and are
15 performed either in the spring or fall, when loads are at their
16 seasonal lows. The average duration of the last four refueling
17 outages was 39 days. Since outages occur approximately every 18
18 months, normalizing to a 12-month period results in an annual
19 outage equivalent of 26 days. In the normalized production cost
20 case, the refueling was scheduled for 26 days in April. We chose
21 April because no other large generation resources were scheduled
22 to be out of service for maintenance at that time.

23 **Q. HOW DID YOU VERIFY THE ACCURACY OF THE MODEL?**

1 A. In determining the base case, we used the ProSym® model to
2 replicate the actual test year energy-related expenses and
3 revenues. We compared the model output to test year actual data
4 and determined that the output replicated actual experience within
5 a reasonable level of accuracy.

6 **Q. HOW ACCURATE IS THE MODEL?**

7 A. One can never know with certainty. What we do know is that the
8 model used to estimate the normalized results produced a very
9 accurate replica of actual results. Moreover, any modeling biases
10 in the base case scenario will generally be replicated in the
11 normalized scenario.

12 **Q. WHAT IS THE IMPACT OF THE NORMALIZATION**
13 **ADJUSTMENTS ON ENERGY-RELATED EXPENSES**
14 **GENERATED BY THE PRODUCTION COST MODEL?**

15 A. For Westar South, the inclusion of a scheduled refueling for Wolf
16 Creek increases fuel costs and reduces asset based sales
17 revenues. Wolf Creek is a low-cost unit and a scheduled refueling
18 outage will shift production to higher cost resources (generating
19 units or purchased power resources) and will reduce the
20 opportunity for making asset based sales. Also, for Westar South,
21 the addition of a new large high load factor industrial customer
22 increases energy expenses and reduces asset based sales
23 revenues. The increased sales resulting from the weather

1 normalization and customer annualization adjustments increase
2 energy expenses and decrease asset based sales revenues for
3 both Westar North and South. The dollar impacts associated with
4 the increased energy expenses and decreased asset based sales
5 revenues of Westar North and South are described in Mr. Seelye's
6 testimony.

7 **Q. DID YOU MAKE ANY OTHER ADJUSTMENTS TO TEST YEAR**
8 **OPERATING EXPENSES IN THE NORMALIZED SCENARIO?**

9 A. Yes. Because the normalized scenario has a lower level of asset
10 based sales than the base case scenario, the cost of transmission
11 paid to third parties was also lower. We made an adjustment to
12 reflect that effect.

13 **III. FUEL FORECAST**

14 **Q. DID YOU DEVELOP A FUEL FORECAST THROUGH 2008?**

15 A. Yes. For forecast years through 2008, we used the PROSYM®
16 model to determine the quantity and cost of fuel for each generating
17 unit, purchased power costs and revenues from asset based sales.

18 **Q. WHAT INPUT PARAMETERS DID YOU USE?**

19 A. We used: (i) our peak and energy load forecast, (ii) the same
20 generating unit parameters used in the base case; (iii) forecasted
21 market prices for natural gas and No. 6 fuel oil; (iv) forecasted
22 adjustments of coal prices as allowed in our contracts; and (v)
23 forecasted market prices for wholesale energy transactions.

1 The future prices were based on forward market prices as of
2 January 27, 2005.

3 **IV. FUEL ALLOCATION**

4 **Q. WHAT DOES WESTAR USE TO ALLOCATE THE COST OF**
5 **FUEL BETWEEN RETAIL AND WHOLESALE GROUPS?**

6 A. We use a proprietary Post Analysis Cost Evaluation® model
7 (PACE) to determine the allocation of the cost of fuel – including
8 SO₂ allowances – and purchased power among customer groups.
9 We run the PACE model after the close of each business day to
10 determine the cost to serve the various wholesale transactions.

11 **Q. PLEASE DESCRIBE THE PROCESS.**

12 A. First, transactions are grouped based on price and contractual
13 terms and conditions. The various blocks are then stacked on each
14 other with the retail customers and select longer-term wholesale
15 transactions being the first block followed by various wholesale
16 transactions. Succeeding blocks are added in order of decreasing
17 contractual obligations. Using this approach, non-firm service to
18 the Westar South “Generating Municipals,” is one of the last
19 wholesale blocks added to the stack because, contractually, these
20 customers are to be served by Westar’s surplus source of supply.

21 Next, we use the PACE model to determine the cost to serve
22 these transactions. We assign the highest priced source – whether
23 from our generation or purchased power – to the last group of

1 transactions added to the transaction stack. In this manner, the
2 highest cost of fuel or purchased power is assigned to the lowest
3 priority customer. We then remove this block of transactions from
4 the stack and the resources that served it. We repeat this process
5 of assigning the next highest priced generation unit or wholesale
6 market purchase to serve the next transaction block until the final
7 block that is left is our retail customers and select longer-term
8 wholesale transactions. This process assigns the fuel associated
9 with our lowest cost units – generally our baseload and
10 intermediate load plants –to our retail customers.

11 **Q. WHAT FUEL COSTS ARE USED IN THE PACE MODEL?**

12 A. The current market prices for natural gas, No. 6 fuel oil and SO₂
13 emission credits are used to determine the opportunity cost for
14 running our units each day. Coal prices are based on the actual
15 contract price for each generating station. We also use the actual
16 price paid for purchased power.

17 **Q. ARE THE PRICES USED BY PACE THE SAME AS THE PRICES
18 USED BY THE COMPANY FOR ACCOUNTING PURPOSES?**

19 A. No. These prices are different than the average fuel price that the
20 company uses for accounting purposes. This method reflects the
21 replacement cost of fuel consumed for incremental transactions
22 rather than our book cost.

1 **Q WHY IS IT APPROPRIATE FOR WESTAR TO USE**
2 **REPLACEMENT COST TO ALLOCATE FUEL?**

3 A. Using replacement cost assures that we do not understate the true
4 cost to serve incremental wholesale transactions.

5 **Q. THANK YOU.**