| | |
|---|---|
| Exhibit No.: | |
| Issues: | Fuel and Purchase Power Expenses; Fuel Stock Inventory Levels |
| Witness: | V. William Harris |
| Sponsoring Party: | MoPSC Staff |
| Type of Exhibit: | Direct Testimony |
| Case No.: | ER-2001-299 |
| Date Testimony Prepared: | April 3, 2001 |

# MISSOURI PUBLIC SERVICE COMMISSION

## UTILITY SERVICES DIVISION

# DIRECT TESTIMONY

# OF

# V. WILLIAM HARRIS

## THE EMPIRE DISTRICT ELECTRIC COMPANY

## CASE NO. ER-2001-299

Exhibit No. 56
Date 5/29/01 Case No. ER-2001-299
Reporter KLR

Jefferson City, Missouri
April 2001

**Denotes Highly Confidential Information**

NP

**TABLE OF CONTENTS**

**OF DIRECT TESTIMONY OF**

**V. WILLIAM HARRIS, CPA, CIA**

**THE EMPIRE DISTRICT ELECTRIC COMPANY**

**CASE NO. ER-2001-299**

**DIRECT TESTIMONY**

**OF**

**V. WILLIAM HARRIS, CPA, CIA**

**THE EMPIRE DISTRICT ELECTRIC COMPANY**

**CASE NO. ER-2001-299**

Q. Please state your name and business address.

A. V. William Harris, Noland Plaza Office Building, Suite 110, 3675 Noland Road, Independence, Missouri 64055.

Q. By whom are you employed and in what capacity?

A. I am a Regulatory Auditor with the Missouri Public Service Commission (Commission or PSC).

Q. Please describe your educational background.

A. I graduated from Missouri Western State College at St. Joseph, Missouri in 1990, with a Bachelor of Science degree in Business Administration with a major in Accounting. I successfully completed the Uniform Certified Public Accountant (CPA) examination in 1991 and subsequently received the CPA certificate. I am currently licensed as a CPA in the state of Missouri. I also successfully completed the Uniform Certified Internal Auditor (CIA) examination in 1995 and am currently certified as a CIA by the Institute of Internal Auditors in Altamonte Springs, Florida.

Q. Please describe your employment history.

A. From 1991 until I assumed my current position as a Regulatory Auditor with the Commission in 1994, I was employed as a Regulatory Auditor with the Federal Energy Regulatory Commission in Washington, DC. Prior to that, I was an

Internal Auditor and Training Supervisor with Volume Shoe Corporation (d/b/a Payless ShoeSource).

Q. What are your responsibilities with the Commission?

A. I am responsible for directing or assisting in the audits and examinations of the books and records of regulated utility companies operating within the state of Missouri.

Q. Have you previously filed testimony before this Commission?

A. Yes. I have attached a list of the cases in which I have filed testimony before this Commission as Schedule 1 of my direct testimony.

Q. With reference to Case Nos. ER-2001-299, have you examined and studied the books and records of The Empire District Electric Company (Empire or Company)?

A. Yes, with the assistance of other members of the Commission Staff (Staff).

Q. What is the purpose of your direct testimony in this proceeding?

A. The purpose of my direct testimony in this proceeding is to present the Staff's recommendations concerning the Company's:

- Fuel expense
- Purchased power demand cost
- Fuel inventory levels

Q. What adjustments are you sponsoring in Case No. ER-2001-299?

A. I am sponsoring the following Adjustments to the Income Statement in Accounting Schedule 10:

Steam Power Production - Fuel Annualization S-7.2

| | |
|---|---|
| Combustion Turbine Production - Fuel Annualization | S-28.2 |
| Purchased Power Energy Annualization | S-36.1 |
| Purchased Power Demand Charge Annualization | S-36.2 |

Q. Please describe adjustments S-7.2, S-28.2, S-36.1 and S-36.2.

A. These items reflect the Staff's fuel and related expense adjustments to the Staff test year. I will provide a more detailed discussion of these adjustments later in my direct testimony.

**Overview of Electric Generation**

Q. What generating facilities does Empire own and use for the production of electric power?

A. Empire owns or co-owns the following generating facilities:

Iatan Plant Unit 1

Asbury Plant Units 1 and 2

Riverton Plant Units 7, 8, 9, 10 and 11

Empire Energy Center Units 1 and 2

State Line Units 1 and 2

State Line Unit 3/combined cycle (under construction)

Ozark Beach Hydro Plant (4 units)

Q. Please describe each facility including the type of units and the primary and secondary fuel sources for each unit.

A. The Iatan power plant is jointly owned by Kansas City Power & Light Company (KCPL), St. Joseph Light & Power Company (SJLP) and Empire, with ownership percentages of 70%, 18% and 12%, respectively. KCPL is the operating partner of Iatan. The Iatan plant is a large 670-megawatt (MW) base-load power plant,

which utilizes low cost, low sulfur western coal as the main boiler fuel. No. 2 fuel oil is required for boiler start-ups and flame stabilization. Empire's ownership percentage entitles it to approximately 80 MW of Iatan's generation.

The Asbury generating station consists of two base-load steam units that burn coal as the primary fuel and No. 2 fuel oil for flame stabilization. Asbury Unit 1 operates at 193 MW and Asbury Unit 2 has a 20 MW capacity. However, Unit 1 must be running in order to operate Unit 2. This requirement, combined with the costs of operating Unit 2, results in Empire generally operating Unit 2 only as a peaking unit during the summer months.

The Riverton plant consists of five units. Riverton Units 7 (38 MW) and 8 (53 MW) are base load/intermediate steam units that burn coal as the primary fuel and natural gas for flame stabilization. Riverton Units 9, 10 and 11 (45 combined MW) are combustion turbine (CT) peaking units that burn natural gas as the primary fuel and No. 2 oil as a secondary fuel.

The Empire Energy Center consists of two large (90 MW each) CT peaking units that burn natural gas as the primary fuel and Jet A oil as a secondary fuel.

The Ozark Beach plant is a hydro plant consisting of four hydro generators (16 combined MW) and is located between Lake Taneycomo and Tablerock Lake. Empire's use of the hydro units depends upon the lake levels and the operation of surrounding dams that are under the direction of the Army Corps of Engineers.

The State Line plant includes two CT peaking units that burn natural gas as the primary fuel and Jet A oil as a secondary fuel. State Line Unit 1 is rated at 101 MW and State Line Unit 2 currently operates at a capacity of 152 MW.

Q. Will there be any additions to Empire's generating capacity?

A. Yes. Empire is currently constructing a new unit identified as the State Line Combined Cycle (Combined Cycle Unit or SLCC) unit that the Company believes will be in service and fully operational by June 1, 2001. The new unit will consist of a refurbished Unit 2 (still approximately 150 MW) and a new 150 MW CT that will combine their combustion gas discharges into two heat recovery steam generators (HRSGs) that will then produce the steam required for an additional 200 MW of generation. The new 500 MW combined cycle unit will be 60 % owned (300 MW) by Empire and 40 % owned (200 MW) by Westar Generating, Inc. (WGI), a subsidiary of Western Resources, Inc. (WRI). Please refer to the direct testimonies of Staff Accounting witnesses Cary G. Featherstone and Mark L. Oligschlaeger, and David W. Elliott, of the Engineering Section of the Electric Department, for more information on the SLCC.

Q. How are quantities expressed for the various types of fuels?

A. Coal is purchased in tons; natural gas is purchased in decatherms (Dtms); fuel oil is purchased in either gallons or barrels (there are 42 gallons in a barrel). The actual quantities purchased for coal and natural gas are converted into a BTU content for purposes of calculating the cost of the purchase. Fuel oil is generally priced on a per gallon or per barrel basis rather than on the basis of BTU content.

Q. What is the meaning of BTU content?

A. BTU stands for "British Thermal Unit." MBTU stands for one thousand BTU and MMBTU stands for a thousand-thousand (or a million) BTU. The BTU content of a fuel indicates the heating quality of the fuel when it is burned.

**FUEL AND PURCHASED POWER EXPENSE**

Q. What was your responsibility in this case with regard to the determination of the cost of fuel and purchased power?

A. My responsibilities were to determine Empire's current prices for coal, natural gas and No. 2 oil/Jet A oil burned in the Company's generating facilities and to determine the annual level of contracted demand charges relating to various system participation power contracts. I was also responsible for providing a five-year average of the scheduled, forced and equivalent forced outage rates to Staff witness Leon C. Bender of the Engineering Section of the Energy Department for input into the RealTime™ production cost model (production cost model or fuel model). The Staff used the model to calculate a portion of its annualized fuel and purchased power expense.

Q. How did you examine the fuel prices in this case?

A. I reviewed the coal and freight contracts and the natural gas contracts, including transportation and capacity agreements. The Staff performed numerous analyses of actual historical information regarding the operations of the individual generating units. The analyses included fuel burns by unit, MMBTUs consumed, and the number, length and type of outages. The Staff also reviewed the purchases of power from other utilities over several years and, where warranted, the Staff made additional inquiries on the fluctuations of certain prices.

Q. How did the Staff use fuel prices in determining the total annualized fuel and purchased power expense?

A. Staff witness Bender used these prices in the production cost model to compute the level of normalized net system fuel and purchased power expense, exclusive of purchased power demand charges, cost of off-system sales (sales to other electric

utilities) and cost of energy exchanged. I subsequently added the costs associated with purchased power demand charges, off-system sales and energy exchanged to the production cost model results. I also added the following costs to the production cost model's results to arrive at an overall total annualized level of fuel and purchased power expense:

- maintenance and leasing costs for unit trains
- property taxes on unit trains
- maintenance cost for railroad spur
- non-labor fuel handling costs
- Atlantic Richfield Company (ARCO) advance payment amortization

The RealTime™ production cost model will be discussed in greater detail by Staff witness Bender in his direct testimony. Labor costs related to fuel handling are covered in Staff Accounting witness Janis E. Fischer's payroll annualization.

Q. Please explain the ARCO advance payment authorization.

A. Iatan had been receiving the bulk of its coal, from the Black Thunder Mines in Wyoming, under a contract with the Atlantic Richfield Company (ARCO). The contract was effective January 1, 1984 through December 31, 2003. The Arch Coal Company (Arch) acquired ARCO and subsequently negotiated a new contract with KCPL, Iatan's managing partner, to recoup some of the cash used in the ARCO acquisition. The new contract became effective April 1, 1999. Terms of the new contract include:

- **_____**
- **_____**



NP

- **_____**

**_____**

Empire accounted for its share of the transaction (in the same manner that KCPL did) by recording a prepayment and is amortizing the prepaid balance volumetrically over the length of the contract. This correctly matches the savings in coal costs with the related expenses incurred to realize those savings. Therefore, the Staff is reflecting the ARCO amortization in its expense recommendation in this case.

**Fuel Costs**

Q. How did you determine the coal prices for each of these plants?

A. I examined the specific prices associated with the various components of the total coal price for each type of coal that is burned at each coal-fired plant. Total coal price includes the commodity cost of coal plus rail freight costs and truck shipping costs where applicable. For each generating unit, I examined historical information for each individual component of the total coal price and then combined the individual components to derive the total coal prices for each unit. I then converted the total cost on a dollar per ton basis to dollars per MMBTU based upon the contractual BTU content of the coal.

I used current prices as of January 2001 to determine the total coal and freight costs for each plant. I used blended coal prices for the Asbury units (1 and 2) and Riverton (Unit 7) because Empire burns a blend of low sulfur Wyoming coal and medium sulfur coal (Utah and Oklahoma, respectively) at these plants. The blended coal is predominately Wyoming coal (81% at both Asbury units and 68% at Riverton Unit 7). Riverton Unit 8 has burned 100% Wyoming coal since October 1999.

Q. What price for No. 2/Jet A fuel oil did the Staff include in its fuel model?



NP

A. The Staff used the most recent prices for No. 2/Jet A oil purchased at each of Empire's plants. Since Empire did not purchase any Jet A oil during the test year for use at its State Line facility, I used the price of the most recent purchase of Jet A oil for use at the Energy Center (December 2000). I converted the average dollar per gallon to a dollar per MMBTU based upon the BTUs per gallon of oil.

Empire burns No. 2/Jet A fuel oil only as a secondary fuel or for flame stabilization. As a result, No. 2/Jet A fuel oil is purchased infrequently. The limited number of purchases of No. 2 fuel oil makes it difficult to perform any meaningful type of averaging method. An accurate historical analysis of No. 2 fuel oil prices is not possible because Empire does not make purchases during the majority of the year. Thus, any trend in costs could be misleading because of the limited amount of data available to analyze.

The Staff believes the most recent fuel prices are the best available reflection of ongoing costs based on Empire's purchasing practice regarding No. 2/Jet A fuel oil.

Q. What monthly natural gas prices did the Staff use in developing its total fuel cost for each plant?

A. I examined the gas invoices, the monthly prices, and the weighted average price by plant and combined composite price from January 1997 to December 2000 to determine if any trends existed. Since Empire also filed rate cases in 1995 and 1997, the Staff updated its similar analyses from those cases enabling the Staff to have information on gas prices dating back to January 1991. The analyses performed by the Staff indicated that natural gas prices are very volatile. Accordingly, the Staff believes that the use of a three-year average gas price for each month (i.e., [May 1998+May 1999+May 2000]/3) is necessary to smooth out these fluctuations. I developed an average delivered price in

dollars per MMBTU for the three years ended December 31, 2000 by month, using the combined composite price for all plants. The combined composite price includes the average actual prices paid for gas burns at all of Empire's generating units during the entire year, including high peak gas demand in the winter as well as summer months.

The delivered price of natural gas includes the commodity costs of the natural gas itself and any transportation charges required to move the natural gas from the supply and production side to the delivery point of each generating station. Empire has firm transportation capacity reserved on the natural gas pipelines and must pay a firm price each month, regardless of usage. This firm price was included in the overall prices I examined and is reflected in the average prices used to determine fuel expense in this case.

Q. Has any other Staff witness filed direct testimony on natural gas prices?

A. Yes. Please refer to the direct testimony of Staff witness Kwang Choe of the Procurement Analysis Department.

Q. Please describe how you determined the total coal price for the Iatan plant that was used as an input to the fuel model in annualizing fuel and purchased power expense.

A. I analyzed and developed a cost per ton for each component of the total coal price. As discussed previously, the total coal price includes the commodity cost of the coal itself and all freight/shipping costs. I combined the individual component prices to derive the total coal price. I converted the total cost on a dollar per ton basis to dollars per MMBTU based upon contractual BTU content of the coal.

Q. Please describe how you calculated the cost for each of the above detailed components for Iatan.

A. The coal at the Iatan plant is supplied from the Black Thunder Mine in Wyoming shipped via Burlington Northern/Santa Fe and Kansas City Southern railroads. I examined the coal and freight contracts, as well as the prices resulting from the escalation clauses detailed in the contracts, for January 1997 through December 2000 to determine the current delivered cost per ton of the contract coal. I used the current contract price as of January 2001 for both the coal and freight prices.

Q. How does Empire deliver its coal supplies to its generating facilities?

A. Empire leases an aluminum unit train for coal deliveries to its Asbury and Riverton generating units. Empire also has a Company owned steel unit train that it leases to **_____**. The Staff has reflected the net lease amounts in its unit train annualization. Empire is also responsible for its 12% ownership share of the unit trains leased by KCPL for the Iatan generating station.

Q. How did you treat unit train costs?

A. I added the property taxes, leased train charges and miscellaneous operations and maintenance (O&M) charges for the test year to the output results from the fuel model as a separate component since the unit train costs were not included as an input to the fuel model. I also added railroad "spur" line costs and non-labor fuel handling costs to the fuel model output. The Staff treated the annualized level of depreciation expense and annualized labor/payroll expense (related to fuel handling costs) consistent with how these costs were handled for the other property in the case. Since the lease payments for the unit trains are constant monthly fees, the Staff used the December 2000 amounts for its annualizations. The Staff included the O&M costs for unit trains and railroad spur line based on the twelve months ending December 31, 2000.



NP

The Staff totaled the annualized dollars for each cost component of the unit train and included this amount in arriving at total energy costs.

Q. Please describe how you determined the total coal price for the Asbury plant.

A. I used the same methodology described above relating to the total coal price for the Iatan plant. However, Empire burns a blend of low sulfur western coal and high sulfur local coal at this plant. Therefore, I had to develop the total coal price of each type of coal. I then computed a blended coal price based upon the contractual BTU content of each type of coal and Empire's expected burn for each type of coal.

Q. Please describe how you calculated the cost for each component of Asbury's total coal price.

A. The coal at the Asbury plant is supplied under contract from two sources: Peabody Holding Company (Peabody) and Genwal Coal Company (Genwal). The Peabody coal (i.e., the western coal from Wyoming) is shipped to the Asbury plant via Kansas City Southern Railroad, with whom Empire also has a contract. The Genwal coal (from Utah) is delivered by rail using the Railway, Burlington Northern/Santa Fe, and Kansas City Southern railroads.

I examined the coal contracts and the freight contracts, as well as the resulting prices for each, for January 1997 through December 2000, to determine the current contractual delivered coal price per ton for each type of coal. The Staff found the current coal and freight prices as of January 2000 to be representative of the Company's actual experience and used them as inputs into the fuel model.

I used the same methodology relating to the various components for unit train costs for both the Asbury and Riverton generating facilities (i.e., maintenance, repairs,

special unit train leases, etc.). The Staff utilized the total annual costs for the twelve months ending December 2000. I totaled the annualized level for each component and included this amount to arrive at total energy costs for Asbury.

Q. How did the Staff determine the blended coal price for the Asbury plant?

A. The Peabody total coal price and the Genwal total coal price were weighted based upon the contractual BTU content of each coal and the percentage of each type of coal burned at the plant, based on MMBTU burns of each coal, to derive a blended coal cost.

Q. Please describe how you determined the total coal price for the Riverton plant.

A. I used the same methodology described above relating to the total coal price for the Iatan and Asbury plants. Empire also burns a blend of low sulfur western coal and high sulfur local coal at Riverton as it does at Asbury, although different burn percentages are used for each type of coal at each plant. Therefore, the Staff had to develop the total coal price of each type of coal and compute a blended coal price based upon Empire's expected burn for each coal at the Riverton plant.

Q. Please describe how you calculated the cost for each component of Riverton's total coal price.

A. The western coal for Riverton Units 7 and 8 is supplied from the same source as the Asbury plant (Peabody). The coal and freight contract terms as detailed above for the Asbury plant are the same for the Riverton plant. However, once the Peabody (western) coal is delivered at the Asbury plant it must be trucked to the Riverton plant; therefore, an additional trucking charge is incurred in the delivered price of the western coal for the Riverton plant. Riverton Unit 7 burns a blend of Peabody (Western)

coal and a local coal supplied by the Phoenix Coal Company (from Oklahoma). The local coal is delivered by truck to the Riverton plant under a contract with CRG, Inc. The Staff included the additional trucking cost in the delivered price of coal for Riverton.

The Staff utilized the same unit train cost at Riverton that it developed for Asbury, including this amount to arrive at Riverton's total energy costs.

Q. *How did the Staff determine the blended coal price used for the Riverton plant?*

A. I weighted the Peabody total coal price and the Phoenix total coal price based upon the contractual BTU content of each coal and the percentage of each coal burned at Riverton, based on MMBTU burns of each coal, to derive a blended coal price.

Q. How did the Staff calculate the fuel cost for the Riverton Units 9, 10 and 11?

A. I provided the prices for natural gas and No. 2 oil, discussed previously in my testimony, to Staff witness Bender as an input for the Staff's production cost model. Since there are no fuel handling costs incurred at these units, the total fuel cost is the cost of the natural gas and/or No. 2 oil.

Q. How did the Staff calculate the fuel cost for the Energy Center?

A. The Energy Center was converted to burn natural gas as its primary fuel source in April 1995. Jet A fuel oil is now used as a backup fuel source. Since there are no fuel handling costs, the total fuel cost for the Energy Center is the cost of both the Jet A fuel oil per barrel and the natural gas per MMBTU. I provided this price to Staff witness Bender as an input for the Staff's production cost model.

Q. How did the Staff calculate the fuel cost for the State Line plant?

A. State Line Unit 1 burns natural gas with Jet A fuel oil as a back up fuel source. In conjunction with the installation of the SLCC unit, State Line Unit 2 has been converted from a dual burner to a natural gas only burning unit. (The SLCC unit will also burn natural gas only.) Since there are no fuel handling costs, the total fuel cost for the State Line plant is the cost of both the Jet A fuel oil per barrel and the natural gas per MMBTU. I provided this price to Staff witness Bender as an input for the Staff's production cost model.

**Demand Charges – Capacity Contracts**

Q. Please describe the various capacity contracts that Empire has entered into.

A. Because of Empire's increasing system demand and the lack of available sources for increased Company generation, Empire has contracted with several companies in recent years to obtain the additional power needed to meet its load requirements.

Empire had the following four capacity contracts in effect during the test year:

- **_____** of system participation power from Associated Electric Cooperative (AEC) effective through May 31, 2000.
- **_____** of system participation power from Southwestern Public Service (SPS) effective through May 31, 2001.
- **_____** of system participation power from Western Resources, Inc. (KG&E) effective through May 31, 2001.
- A unit participation agreement effective through May 31, 2010 with Western Resources, Inc. provided for **_____** of power from KG&E's Jeffrey Station.



NP

The firm capacity under the Jeffrey contract increased on June 1, 2000 from **_____** to **_____**.

Q. How did the Staff reflect the contract demand charges in this case?

A. Adjustment S-36.2 annualizes the Company's demand charges by reflecting these known and measurable changes during the test year ended December 31, 2000.

I added the annualized demand charge to the results of the Staff's production cost model to determine the total annualized level of fuel and purchased power expense. As stated previously, the Staff added this amount separately because the production cost model only accounts for energy charges.

Q. Were there any other fuel or purchased power related costs which were not calculated in the Staff's production cost model?

A. Yes. The fuel costs associated with off-system sales (to other electric utilities) and energy exchanged were added to the results of the Staff's production cost model since the model is based upon net system input only and does not reflect these types of sales.

Q. What level of fuel costs associated with off-system sales and energy exchanged did the Staff include in its annualized fuel and purchased power expense calculation?

A. The Staff analyzed off-system sales and energy exchanged and determined the test year level to be reasonable. Therefore, the Staff used the test year level of fuel costs associated with interchange sales and energy exchanged.



NP

**Generating Unit Availability**

Q. What historical analysis did the Staff perform relating to the generating units' availability?

A. I updated the historical unit availability analysis from Empire's last four rate cases, Nos. ER-90-138, ER-94-174, ER-95-279, and ER-97-81 to include the most current information. This analysis, when taken together from the prior rate cases, covers a period of fourteen years from 1987 through December 31, 2000, on a monthly as well as an annual basis.

I provided the unit availability analysis to Staff witness Bender for his input into the production cost model. The production cost model requires a level of scheduled and forced outages rates be included to reflect the simulation of "actual" generating unit operations.

Q. Why is it necessary to reflect outages in the production cost model?

A. Generating units will require planned (scheduled) maintenance and/or experience forced (unscheduled) outages due to equipment failure on an on-going basis. A scheduled outage occurs when a generating unit is taken out of service for general maintenance and equipment repair on a planned basis. Scheduled outages generally occur during periods of off peak production, such as the spring and fall months of the year.

Forced outages occur when generating units experience equipment failure on an unplanned or unexpected basis. These outages occur randomly and infrequently.

There is also another outage type, referred to partial outages (or equivalent forced outages), which result in the generating unit's production of electricity being reduced,

or "derated". The generating unit is able to stay on-line and generate electricity, but is unable to produce at its rated capacity.

Information on each of the three types of outages was compiled by outage duration and any related deratings for each generating unit by month from 1987 to present. Scheduled outage rates were determined to input into the fuel model to reflect the expected outages for planned maintenance that occur for each generating unit, such as turbine and boiler overhauls. Each of Empire's generating units is on a five-year overhaul cycle for both turbines and boilers, with the exception of Iatan, which has a six-year overhaul cycle for its turbine.

Forced outages are determined for the production cost model to reflect the unexpected outages for unplanned maintenance to repair equipment failures. I provided Staff witness Bender with five-year averages (1996-2000) for both forced and equivalent forced outages for input in the production cost model.

**Calculation of Fuel and Purchased Power Adjustments**

Q. Please summarize the Staff's calculation of the fuel and purchased power energy costs in this proceeding.

A. The Staff's annualized fuel and purchased power energy costs represent the cost of producing and purchasing power to meet the level of megawatt-hour (MWH) sales in the Staff's revenue annualization in this case. As previously stated, I provided Staff witness Bender the fuel prices, including related freight costs, as inputs into the production cost model. The Staff's annualized net system load (sales adjusted for line losses and Company use) was provided by Staff witness Lena Mantle of the Electric department. Staff witness Bender input these and other components, including capacity and availability of the generating units, purchased power demand contracts and purchased

power energy costs, into the production cost model. Please refer to the respective direct testimonies of Staff witnesses Bender and Mantle.

After reviewing the results of the production cost model, I added other fuel cost-related components that were not inputs into the model. These included non-labor related fuel handling costs, unit train lease and property tax expenses, operations and maintenance (O&M) costs for the unit trains, maintenance costs for Empire's railroad spur, the ARCO advance payment amortization (renegotiated Iatan coal contract) and the demand costs of Empire's purchased power capacity contracts in effect on December 31, 2000. The result represents Staff's annualized fuel expense reflected in adjustments S-7.2 and S-28.2 and Staff's purchased power energy and demand costs reflected in Staff adjustments S-36.1 and S-36.2.

**FUEL STOCK INVENTORY LEVELS**

Q. What was your responsibility in this case with regard to the determination of fuel stock inventory levels?

A. My responsibility was to determine reasonable inventory levels and costs for Empire's coal inventories maintained at its Iatan, Asbury and Riverton plants and for the No. 2/Jet A oil inventories maintained at its Iatan, Asbury, Riverton, Energy Center and State Line plants.

Q. What coal inventory level have you included in this case for Empire's Iatan, Asbury and Riverton plants?

A. I have included a 60-day supply of coal for the Asbury and Riverton plants and a 45-day supply for the Iatan plant based upon the Company's average daily burn over the test year. I priced the coal inventory levels at current prices to determine the dollar amount to include in rate base for coal inventory.

Q. What is the basis for your 60 and 45-day supply recommendations?

A. As stated in response to Staff Data Request No. 52, the Company's current policy is to maintain a 60-day supply of coal at its Asbury and Riverton plants. It has been KCPL's policy to maintain a 45-day supply at the Iatan plant. The 45-day policy at Iatan is also consistent with the Company's response to Staff Data Request No. 52. Accordingly, the Staff computed the 45 and 60-day supplies of coal based upon the Company's average daily burn at each plant over the test year ended December 31, 2000.

Historically, the Staff has included up to a 90-day supply of coal for inclusion in rate base. However, since fuel inventory is included in rate base, any inventory amount included in rate base greater than the amount the Company actually maintains would result in Empire earning a return on investment (coal inventory) that does not exist. Therefore, the Staff is recommending the 60 and 45-day coal supplies rather than the maximum ratemaking level of a 90-day coal supply.

Q. What No 2./Jet A oil inventory levels have you included in this case for Empire's Iatan, Asbury, Riverton, and Energy Center plants?

A. The Staff examined No. 2/Jet A oil inventory levels on a monthly basis from January 1997 through December 2000 for the aforementioned plants. The Company's average inventory levels remained fairly consistent from year to year. Therefore, the Staff calculated a 13-month average inventory level (in barrels). The Staff used a 13-month average to smooth out fluctuations which occur throughout the year and is consistent with Staff policy regarding other rate base items, such as material and supplies, and prepayments. I priced the 13-month average inventory level at the Staff's annualized No. 2 oil price to determine total inventory price.

Q. What Jet A oil inventory level did the Staff compute for the State Line generating station?

A. Empire did not burn or purchase any Jet A fuel oil at its State Line plant during the test year. As a result, the most accurate measure of the Company's investment in Jet A fuel oil inventory as of December 31, 2000 is a 13-month average of the actual investment recorded in the financial statements. Staff also noted that the State Line Unit 2 has been configured to no longer burn Jet A oil. As a result, it should take State Line Unit 1 a considerable length of time to burn the existing inventory and require additional purchases at another price.

Q. What items will you be responsible for updating in the true-up period?

A. As explained in the direct testimony of Staff Accounting witness Phillip K. Williams, the Staff is recommending a true-up in this case through June 30, 2001. I will be responsible for updating fuel prices for any changes that might occur through the true-up period of June 30, 2001. I will also be responsible for reflecting demand capacity contract changes through the June 30 true-up audit period and for calculating a fuel inventory for the new SLCC (provided it meets the Staff's proposed in-service criteria).

Q. Does this conclude your direct testimony?

A. Yes, it does.

**BEFORE THE PUBLIC SERVICE COMMISSION**

**OF THE STATE OF MISSOURI**

| | | |
|---|---|---|
| In the Matter of the Application of the Empire District Electric Company for a General Rate Increase. | ) ) ) | Case No. ER-2001-299 |

AFFIDAVIT OF V. WILLIAM HARRIS

STATE OF MISSOURI )
) ss.
COUNTY OF COLE )

V. William Harris, being of lawful age, on his oath states: that he has participated in the preparation of the foregoing Direct Testimony in question and answer form, consisting of 21 pages to be presented in the above case; that the answers in the foregoing Direct Testimony were given by him; that he has knowledge of the matters set forth in such answers; and that such matters are true and correct to the best of his knowledge and belief.

V. William Harris

Subscribed and sworn to before me this 2nd day of April 2001.

D SUZIE MANKIN
NOTARY PUBLIC STATE OF MISSOURI
COLE COUNTY
MY COMMISSION EXP. JUNE 21,2004

## V. William Harris

## Schedule of Testimony Filings

| Case No. | (Type) | Company |
|---|---|---|
| ER-95-279 | (Direct) | Empire District Electric Company |
| GR-96-285 | (Direct, Rebuttal, Surrebuttal) | Missouri Gas Energy (Southern Union Co.) |
| GR-97-272 | (Direct) | Associated Natural Gas Company |
| EC-98-573 | (Direct, Rebuttal, Surrebuttal) | St. Joseph Light and Power Company |
| HR-99-245 | (Direct, Rebuttal, Surrebuttal) | St. Joseph Light and Power Company |
| GR-99-246 | (Direct, Rebuttal, Surrebuttal) | St. Joseph Light and Power Company |
| ER-99-247 | (Direct, Rebuttal, Surrebuttal) | St. Joseph Light and Power Company |
| EM-2000-292 | (Rebuttal) | Utilicorp United / St. Joseph Light & Power |
| EM-2000-369 | (Rebuttal) | Utilicorp United / Empire District Electric |
| EO-2000-845 | (Rebuttal) | St. Joseph Light and Power Company |
| TT-2001-115 | (Rebuttal) | Green Hills Telephone Corporation |
| TC-2001-401 | (Direct) | Green Hills Telephone Corporation |

Case Nos. GR-96-285, EM-2000-292, EM-2000-369 and EO-2000-845 were litigated. All others were stipulated.