

Exhibit No.:
Issue: Fuel Cost
Witness: Leon C. Bender
Sponsoring Party: MoPSC Staff
Case Nos.: EO-97-144 and EC-97-362

MISSOURI PUBLIC SERVICE COMMISSION
UTILITY OPERATIONS DIVISION

UTILICORP UNITED, INC.
d/b/a MISSOURI PUBLIC SERVICE
CASE NOS. EO-97-144 and EC-97-362

DIRECT TESTIMONY
OF
LEON C. BENDER

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Leon C. Bender

1 station, Arkansas Nuclear One. In December, 1995 I was employed by the Missouri Public
2 Service Commission.

3 Q. What is the purpose of your testimony in the Staff's earnings
4 complaint case against Missouri Public Service (MPS or Company), a division of UtiliCorp
5 United, Inc. (UCU), Case No. EC-97-362?

6 A. The purpose of my testimony is to present the results of the Staff's
7 electric production cost model simulation to establish a reasonable fuel cost for MPS for the
8 test year.

9 Q. What is the test year used by the Staff?

10 A. January 1, 1995 to December 31, 1995 updated for changes until June
11 30, 1996.

12 Q. What is a production cost model?

13 A. A production cost model is a computer program used to perform an
14 hour-by-hour chronological simulation of a utility's generation and net power purchases,
15 determining energy costs, and fuel consumption necessary to economically meet a utility's
16 native load.

17 Q. What is meant by an "hour-by-hour chronological simulation of a
18 utility's generation and net power purchases"?

19 A. The production cost model operates in a chronological fashion, solving
20 each hour's demand before moving to the next hour. It will schedule units to dispatch in a
21 least cost manner based upon fuel cost and cost of purchased power. This way it more

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1 closely simulates the way units should dispatch in the real world to meet the native load in a
2 least cost manner.

3 Q. What is meant by "native load"?

4 A. "Native load" means the firm load that a utility is obligated to serve. It
5 includes retail but not wholesale loads.

6 Q. What model did the Staff use in this case?

7 A. The RealTime production cost model was used to determine the
8 simulated generation and fuel consumption.

9 Q. Is this the same model used by MPS?

10 A. Yes, it is.

11 Q. Did you use the load data submitted by MPS?

12 A. Yes.

13 Q. What load data was used?

14 A. I used normalized load as provided by staff witness Lena Mantle.

15 Q. What unit fuel prices were used to run the model?

16 A. Unit fuel prices used in this simulation were provided by Mr. Cary
17 Featherstone of the Commission's Accounting Staff and are addressed in his direct
18 testimony.

19 Q. What purchased power prices were used?

20 A. The purchased prices used were those provided by Mr. Tom Lin of the
21 Commission's Energy Engineering Staff and are addressed in his direct testimony.

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1 Q. Did you review maintenance outage schedules, heat rates, and fuels
2 used by the various generation units of MPS?

3 A. Yes.

4 Q. Did you use the planned outage hours scheduled submitted to the Staff
5 by MPS?

6 A. No, I used a weighted average hours of outages for MPS units from
7 1992 through 1996.

8 Q. Is a weighted average of outage hours for a period of years more
9 appropriate than using the actual scheduled outage hours for the test year?

10 A. Yes. In any one specific year a unit's outage may be atypical
11 depending upon events that year. For example, a unit's outage may be prolonged by an event
12 such as converting the unit to burn a different fuel or may be shortened for scheduling
13 reasons. Therefore, using that particular year's data would result in an unreasonable outage
14 length for a normal year and would not give a reasonable fuel expense. Also, for example,
15 lengthy turbine overhaul outages occur only approximately every five years. Using a
16 weighted average for a five year period ensures that the hours for the outage are accounted
17 for without skewing the test year results toward a more expensive or a less expensive unit to
18 determine a reasonable fuel expense for the test year.

19 Q. Did you use the same type of fuel submitted by MPS for each unit?

20 A. No. For the Greenwood Station, I used natural gas rather than oil.
21 This is because in April, 1996, Greenwood Station was converted from oil to natural gas.

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1 Therefore, it would no longer be reasonable to permit the Greenwood Station to use oil in the
2 production cost model.

3 Q. What is the annual cost of fuel and net purchased power as determined
4 by the Staff's production model run for MPS to supply generation to its native load?

5 A. The annual fuel cost, including net purchased power, used for the test
6 year is \$57,424,690. This value does not include fuel adders such as coal train lease cost nor
7 does it include demand charges.

8 Q. Does this conclude your prepared direct testimony?

9 A. Yes, it does.

In the matter of the Earnings Review of	)	
UtiliCorp United, Inc., d/b/a Missouri Public Service	)	<u>Case No. EO-97-144</u>
and		
The Staff of the Missouri Public	)	
Service Commission,	)	
Complainant,	)	
v.	)	<u>Case No. EC-97-362</u>
	)	
UtiliCorp United Inc.,	)	
d/b/a Missouri Public Service,	)	
Respondent.	)	