

**FILED**  
MAY 10 2002  
Missouri Public  
Service Commission

**DEPOSITIONS  
OF  
LEON C. BENDER**



BEFORE THE PUBLIC SERVICE COMMISSION  
STATE OF MISSOURI

THE STAFF OF THE MISSOURI )  
PUBLIC SERVICE COMMISSION, )  
 )  
Complainant, ) Case No. EC-2002-1  
 )  
vs. )  
 )  
UNION ELECTRIC COMPANY, )  
d/b/a AMERENUE, )  
 )  
Respondent. )  
 )

DEPOSITION OF LEON C. BENDER  
TAKEN ON BEHALF OF THE RESPONDENT  
APRIL 19, 2002

COPY

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vs. )  
UNION ELECTRIC COMPANY, )  
d/b/a AMERENUE, )  
Respondent. ) April 19, 2002  
Jefferson City, MO

DEPOSITION OF LEON C. BENDER,

a witness, sworn and examined on the 19th day of  
April, 2002, between the hours of 8:00 a.m. and  
6:00 p.m. of that day at the Missouri Public Service  
Commission, Room 810, Governor State Office Building,  
in the City of Jefferson, County of Cole, State of  
Missouri, before

KRISTAL R. MURPHY, CSR, RPR, CCR  
ASSOCIATED COURT REPORTERS  
714 West High Street  
Post Office Box 1308  
JEFFERSON CITY, MISSOURI 65102  
(573) 636-7551

Notary Public, within and for the State of Missouri,  
in the above-entitled cause, on the part of the  
Respondent, taken pursuant to agreement.

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A P P E A R A N C E S

FOR THE COMPLAINANT:

DENNY L. FREY  
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FOR THE OFFICE OF THE PUBLIC COUNSEL:

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573.751.5565

1 ALSO PRESENT: Michael S. Proctor, Ph.D., PSC Staff  
2 John P. Cassidy, PSC Staff  
3 Lena Mantle, PSC Staff  
4 Ryan Kind, OPC  
5 Richard J. Kovach, Ameren  
6 Timothy D. Finnell, Ameren

7 SIGNATURE INSTRUCTIONS:

8 Presentment waived; signature requested.

9 EXHIBIT INSTRUCTIONS:  
10

11 Copy and attach.  
12  
13  
14

15 I N D E X

16 Direct Examination by Mr. Cook 4  
17 Cross-Examination by Mr. Frey 52  
18 Redirect Examination by Mr. Cook 53

19  
20  
21 E X H I B I T S I N D E X

22  
23 Exhibit No. 1 4  
24 Deposition of Leon Bender, taken  
25 November 19, 2001

1 (EXHIBIT NO. 1 WAS MARKED FOR IDENTIFICATION  
2 BY THE COURT REPORTER.)

3 LEON C. BENDER, being duly sworn, testified as  
4 follows:

5 DIRECT EXAMINATION BY MR. COOK:

6 Q. Good morning, sir.

7 A. Good morning.

8 Q. My name is Jim Cook, and I am the attorney  
9 for Ameren Corporation from AmerenUE, and today we're  
10 here to take the second deposition of Mr. Leon Bender  
11 of the Missouri Public Service Commission Staff in  
12 Case No. EC-2002-1.

13 We're in the Commission's eighth floor  
14 conference room, and with me are Mr. Tim Finnell and  
15 Mr. Richard Kovach of the Company.

16 And I guess I will ask you if you would  
17 introduce your side of the table, please.

18 MR. FREY: Okay. Dennis Frey with the  
19 General Counsel of the Commission.

20 DR. PROCTOR: Mike Proctor with the Missouri  
21 Public Service Commission.

22 MS. O'NEILL: Ruth O'Neill, Public Counsel.

23 MS. MANTLE: Lena Mantle with the Commission  
24 Staff.

25 MR. CASSIDY: John Cassidy, Missouri Public

1 Service Commission.

2 MR. COOK: Thank you.

3 BY MR. COOK:

4 Q. As I did last time, Mr. Bender, let me first  
5 go through a couple of general questions, and if at  
6 any time you have trouble hearing me, let me know. If  
7 you have trouble understanding my question, please let  
8 me know.

9 If -- unless you so indicate, we'll assume  
10 that you do understand the question. Is that all  
11 right?

12 A. Yes.

13 Q. And are you feeling all right this morning?

14 A. Yes. I'm fine.

15 Q. Nothing to prevent you from hearing the  
16 questions and answering and participating in this  
17 deposition; is that correct?

18 A. That's correct.

19 Q. As with last time, it is possible that  
20 sometime during the deposition your attorney may  
21 object to a question, and if he does so, he will so  
22 state on the record. And then -- however, unless he  
23 specifically directs you not to answer, it will be  
24 appropriate for you to go ahead and answer, and then  
25 if the objection needs to be followed up with, it will

1 be done at a later time; is that all right?

2 A. That's fine.

3 Q. Would you state your name for the record,  
4 please?

5 A. Leon C. Bender.

6 Q. And by whom are you employed?

7 A. The Missouri Public Service Commission  
8 Staff.

9 Q. And in what capacity are you employed?

10 A. Utility Regulatory Engineer.

11 Q. And is it true that you presented testimony  
12 in March of this year in EC-2002-1?

13 A. Yes, it is.

14 Q. And that's the documents that we have in  
15 front of us entitled, "The Direct Testimony of Leon C.  
16 Bender"; is that right?

17 A. Yes.

18 Q. And the issues that are listed on the cover  
19 sheet of this testimony are fuel run and production  
20 cost model; is that right?

21 A. Yes, that's true.

22 Q. Now, in the first deposition, I asked you a  
23 variety of questions about what you did and did not do  
24 in your analysis. Do you recall that generally?

25 A. Generally, yes.

1 Q. And subsequent to that deposition, which  
2 has been marked as Exhibit 1, and I would ask it be  
3 made a part of this record -- that deposition was on  
4 November 19th, 2001; does that sound about right?

5 A. That's true.

6 Q. All right. After that deposition was taken  
7 and before the testimony that we're talking about  
8 today that you filed in March, did you make additional  
9 model runs for the production cost model?

10 A. Yes, I did.

11 Q. So the new testimony reflects the results of  
12 the production cost models that you have run since the  
13 last deposition; is that right?

14 A. That was filed on March 1st, yes.

15 Q. Okay. Did you make any changes to your  
16 model run on the inputs or any other way that you can  
17 make changes to the model after the deposition and  
18 before you filed the testimony?

19 A. Yes, I did.

20 Q. Can you generally describe what kind of  
21 changes you made?

22 A. Yes. The filing after -- the filing in July  
23 was based upon a different test year. The filing in  
24 March was based upon the test year, twelve months  
25 ending June 30th, 2002 -- 2001.

1 Q. All right. I assume there are various  
2 different numbers, then, that you input to reflect the  
3 newer test year; is that correct?

4 A. Yes. The new test year had new weather  
5 normalized loads, had new purchase power prices and  
6 availability, had new contracts and contract prices.  
7 It also included spinning reserve which was not  
8 included in the original model.

9 I updated the outages for the new test year.  
10 I also updated the heat rates of each unit. I updated  
11 the maximum and minimum of the units. I also  
12 included -- I believe there was a change in -- change  
13 in Venice CT from Venice oil to CT gas.

14 Also I changed the Taum Sauk pumping  
15 efficiency. In the original model, I used a pumping  
16 efficiency which was in the Union Electric budget run.  
17 They had 81.64 percent. But RealTime doesn't use  
18 pumping efficiency. It uses cycle efficiency, so I  
19 changed that to cycle efficiency, which was also in  
20 our model, to 66.67 percent.

21 I added plans which would plan the Callaway  
22 coast down and ramp up. The hydro and pump storage  
23 files were updated to the new year. I also added six  
24 CTs with 39 megawatts and six CTs at 38 megawatts to  
25 run on Columbia gas, which were added at 12,200 BTUs

1 per kilowatt hour.

2 And, in general, that's the updates I made  
3 for the March filing.

4 Q. Have you provided information on all of  
5 these updates to the Company in your work papers?

6 A. Yes, I have.

7 Q. At the time that we had our last deposition,  
8 I believe there was still a problem with running the  
9 model with the JDA; is that true?

10 A. There was a problem with getting the  
11 reports -- the hour reports that we needed to do the  
12 JDA assignment of cost.

13 Q. And were those problems resolved before your  
14 testimony was filed in March?

15 A. Yes, they were.

16 Q. Were there any changes made to the program  
17 itself, not just the inputs, but any changes that you  
18 or the people that support the software made to the  
19 software program?

20 A. The changes made were limited to the hourly  
21 reporting functions before the March 1st filing.

22 Q. Explain that a little more, please. What  
23 changes were made?

24 A. We weren't happy with the hourly reports  
25 that we were getting from the model. To do the JDA

1 assignments of costs we needed better reports. We had  
2 the model representative here and explained to him  
3 what we were looking for.

4 Q. Uh-huh.

5 A. And he did that, gave us several updates to  
6 the reporting functions of the model.

7 Q. Are you currently satisfied that the model  
8 and the reports are now correct?

9 A. I believe the reports out of the model are  
10 correct, but we are still fine-tuning -- to model the  
11 JDA is a very difficult thing, so we're still  
12 fine-tuning those results.

13 Q. Okay. When you say you're still fine-tuning  
14 results, do you anticipate that as that fine-tuning  
15 continues that there will be changes in the results of  
16 the model run for the JDA?

17 A. The -- what we're seeing now is a very  
18 minor -- a very small difference in what we've  
19 reported, and there may be some small changes to that  
20 number, yes.

21 Q. By use of the words "small" and "minor," I  
22 assume you do not anticipate any significant change to  
23 your testimony; is that right?

24 A. We may have to -- before the case is over,  
25 we may have to update that number, yes.

1 Q. At this point you don't know whether that  
2 update will be minor or significant?

3 A. No, I do not.

4 Q. Okay. Do I understand from what you were  
5 just saying that you brought someone in to assist you  
6 with making the modifications or doing the tweaking to  
7 the model; is that right?

8 A. Yes.

9 Q. Is that someone from the Emelar Group?

10 A. Yes.

11 Q. And how many people came in?

12 A. One.

13 Q. And how long was he or she here?

14 A. I don't recall the exact number of days, but  
15 I think he was here for four days.

16 Q. Do you continue to have conversations with  
17 that person or others at Emelar Group about  
18 modifications or tweaking that you're doing?

19 A. Yes, I do.

20 Q. You listed a variety of things that have  
21 either been updated or changed or modified in the --  
22 in the model run since the first testimony was filed  
23 last July. And if you'll recall, in the last  
24 deposition we went through a variety of issues asking  
25 you about whether you had done something in the model

1 and how you had done it.

2 Have you examined each of those items that  
3 we raised in that deposition and either made a change  
4 to the model or decided not to do anything about that?

5 A. I'm not sure what the question is.

6 Q. Let me rephrase it.

7 Without going through the deposition and  
8 discussing each and every point that was raised in the  
9 deposition now, did you some time after the deposition  
10 go back through it and address each item that was  
11 raised and determine whether or not you should make a  
12 modification -- whether you made the modification or  
13 not, did you look at each item that was raised?

14 A. Yes, I did.

15 Q. Did you make a change in each item that was  
16 raised?

17 A. I do not -- I do not recall.

18 Q. Okay. I'm going to ask you some more  
19 questions that are somewhat specific to the model run,  
20 some of the inputs.

21 Does the model run that you did use multiple  
22 fuel types at major fossil units?

23 Let me rephrase that.

24 Do you know, for instance, what fuel the  
25 model assumes Meramec burns?

1           A.     Not off the top of my head, but I can look  
2 it up, yes.

3           Q.     Could you?

4           A.     Sure.

5           Q.     Thanks.

6                     Yes?

7           A.     Meramec, I have here, is using coal for  
8 primary fuel, and as a start-up fuel, it's a blend  
9 in -- and I have -- I need to check one thing here.

10          Q.     Sure. Go ahead.

11          A.     For start-up fuel, it's a blend of coal and  
12 gas.

13          Q.     All right. So your model shows what --  
14 burning coal for the primary source, and you've  
15 indicated a blend of coal and gas for start-up?

16          A.     Yes.

17          Q.     Are you aware of something called a  
18 secondary fuel source, something other than primary or  
19 start-up?

20          A.     The model allows you to put in a secondary  
21 fuel that -- so that if the other fuel is less or more  
22 expensive, it can switch to that fuel, yes. I don't  
23 have that yet for Meramec.

24          Q.     All right. So if Meramec actually does use  
25 gas for more than just start-up, your model does not

1 indicate that; is that right?

2 A. Yes, that's correct.

3 Q. Does your model reflect different kinds of  
4 coal, for instance PRB coal and Illinois coal?

5 A. No, it doesn't.

6 Q. So it assumes only one type of coal?

7 A. Yes.

8 Q. What type does it assume for Meramec, do you  
9 know?

10 A. Meramec coal.

11 Q. It just says "Meramec coal"?

12 A. Yes, yes.

13 Q. Where did you get the information concerning  
14 cost and BTU content for -- and whatever other content  
15 you need to know for the coal that's used at Meramec?  
16 What's the source?

17 A. I use a fuel price given to me by John  
18 Cassidy.

19 Q. Do you know if that's the price for Illinois  
20 coal, PRB coal, some combination?

21 A. No, I do not.

22 Q. What about Sioux? Could you check and see  
23 what the fuel sources show for Sioux, please?

24 A. Yes.

25 Q. S-i-o-u-x.

1           A.     For primary fuel, Sioux uses coal, and for  
2 start-up, it uses a blend of coal and oil.

3           Q.     Again, you don't show any secondary source  
4 there other than start-up; is that right?

5           A.     No, I do not.

6           Q.     Do you know what kind of fuel Sioux uses  
7 actually, other than -- let me rephrase that.

8                     Do you know what kind of coal Sioux uses,  
9 where it comes from?

10          A.     No, I do not.

11          Q.     Do you know if it uses tire chips?

12          A.     I have toured Sioux at one time, and they  
13 were using tire chips, so I believe at that period of  
14 time they were using tire chips.

15                     At this point, I do not know.

16          Q.     When did you tour Sioux?

17          A.     I don't know the exact -- don't recall the  
18 exact date, but it's been a couple of years ago.

19          Q.     So you don't -- you don't know or your model  
20 does not reflect the use of tire chips as fuel; is  
21 that right?

22          A.     No, it does not.

23          Q.     What about pet coke? Do you know anything  
24 about its use?

25          A.     That's also not in there.

1 Q. Okay. Rather than go through each one, is  
2 it fair to say that your model assumes a primary  
3 source only for each plant and then a start-up fuel?

4 A. Yes, it does.

5 Q. You don't have anything in there about waste  
6 oil being used at Labadie?

7 A. No, I do not, not as a supplementary fuel.

8 Q. Could you give me a definition, if you know,  
9 of a planned outage at a power plant?

10 A. A planned outage is my -- the way I see it,  
11 is an outage which is scheduled by management for a  
12 period ahead of time. It usually -- usually has a  
13 reason for being scheduled.

14 Q. Does your model use that term or some  
15 equivalent for that type of outage?

16 A. Yes.

17 Q. What, is it called something else?

18 A. It's called a planned outage.

19 Q. Planned outage?

20 A. Planned.

21 Q. All right. What would your definition be of  
22 a forced outage?

23 A. A forced outage is an outage which will  
24 happen randomly which will bring a unit down  
25 unexpectedly.

1 Q. All right. I'm sorry. Go ahead.

2 A. That's -- that's basically my definition.

3 Q. Does your model use that term or some

4 equivalent?

5 A. Yes.

6 Q. It uses that term?

7 A. Yes.

8 Q. Are you familiar with something called a

9 maintenance outage?

10 A. Yes.

11 Q. And what would that be, please?

12 A. Normally, a maintenance outage is a plant

13 being brought down for maintenance. Sometimes these

14 are real short, seven days or less.

15 Q. And does your model use those?

16 A. Those are normally included in the plant

17 outage, since a company usually knows when it needs to

18 do maintenance.

19 Q. Does the model reflect different lengths of

20 planned outages?

21 A. Yes, it does.

22 Q. What's a partial outage?

23 A. I do not use partial outages, so I'm not

24 familiar with that term.

25 Q. Okay. Are you familiar with the term

1 "derating"?

2 A. Yes, I am.

3 Q. Did the model use derating?

4 A. No, it did not.

5 Q. You said you are familiar with that term,  
6 though; is that right?

7 A. Yes.

8 Q. Could you tell us what that is?

9 A. Derating is -- for -- for whatever reason,  
10 the boiler or the rest of the plant is unable to meet  
11 its maximum values or its heat rate and will -- the  
12 unit -- the unit will be reduced in the amount that it  
13 can generate.

14 Q. Okay. If, in fact, a plant is derated for  
15 some period of time prior to a maintenance outage,  
16 your model would take into account a maintenance  
17 outage, but it would not take into account the  
18 derating that preceded it; is that right?

19 A. That is true.

20 In the -- let me add, in the case of  
21 Callaway, we are able to plan the reduction of the  
22 output at Callaway prior to an outage.

23 Q. That would be what we referred to last time,  
24 I believe, as the coast down?

25 A. Yes, as coast down.

1 Q. And then does the model now take into  
2 account a ramp-up afterwards?

3 A. Yes, it does that also.

4 Q. Have you had to tweak the model to make it  
5 do that?

6 A. I've had to insert plans. The model has a  
7 function in there that I can plan a unit to operate at  
8 a certain level, and in order to get the model to do  
9 that, I have to tell it to use those plans.

10 Q. Does the model presume for each unit or each  
11 plant a certain number of maintenance outages a year?

12 A. Well, the model does not do that. I input  
13 the planned outages.

14 Q. The planned outages?

15 A. Yes. And the maintenance outages are  
16 included in plant outages.

17 Q. All right. Do you input, then, a variety of  
18 short-term and longer-term outages?

19 A. I'm not sure what you mean by that. The  
20 outage schedule I use to -- was discussed in my last  
21 deposition. We used a five-year average outage for  
22 each plant, each major plant.

23 Q. That's historical?

24 A. That's historical.

25 Q. And is it your understanding that that

1 information that I assume you get from the Company --

2 A. Yes, I do.

3 Q. -- includes both the longer-planned outages  
4 and the shorter maintenance outages?

5 A. Yes.

6 Q. Could you do to the planned outages the same  
7 thing you do to the Callaway -- Callaway outages? In  
8 other words, you do something to the model to cause  
9 Callaway to -- what you believe to properly reflect  
10 the effect of coast down and ramp up.

11 Could you do the same thing to the planned  
12 outages, either all or some of them, to reflect  
13 deratings which might occur prior to some of those  
14 outages?

15 A. That could be done, yes.

16 Q. You have not done that though?

17 A. I have not done it.

18 Q. The Staff normalized purchase power that was  
19 used in your model?

20 A. The classes that I use are actual prices for  
21 the test year.

22 Q. Uh-huh. Then you do something to them; is  
23 that right?

24 A. Yes.

25 Q. And I believe on page 5 of your testimony

1 you refer to a methodology -- "a methodology to  
2 calculate representative prices for purchased energy  
3 in the spot market dated March 18th, 1996."

4 A. Yes.

5 Q. Can you describe what it is that that  
6 methodology does to the actual spot purchased energy  
7 prices?

8 A. Yes. When -- first of all, we have to  
9 clarify that the model needs a price for every hour  
10 because it -- for spot purchases. Otherwise it  
11 assumes the price in an hour is zero, and we know  
12 that's not correct.

13 The data we receive from the Company in the  
14 20.080 data doesn't always have any purchases in that  
15 hour, so also what we are seeing is sometimes the  
16 purchases are made from multiple companies at  
17 different prices. So what this methodology does, is  
18 it gives us a weighted average price for each hour of  
19 the day for the hours that we have prices. It also  
20 sums the total megawatts that were bought in that  
21 hour.

22 In order to come up with the price in the  
23 hours where no power was purchased, we run it through  
24 this methodology which is a statistical calculation to  
25 predict what the price would have been in an hour

1 compared to the other hours.

2 Q. And that -- this document tells you how to  
3 do that?

4 A. Yes, it does.

5 Q. Has it been updated at all or modified at  
6 all since it was developed in 1996?

7 A. The only update we have made to that as --  
8 is the spreadsheet we used to use was in -- written  
9 for Lotus, and now we use Excel.

10 Q. Let me ask you some questions about how the  
11 model dispatches the Taum Sauk Plant.

12 A. Okay.

13 Q. Does the model use a fixed generation  
14 schedule for Taum Sauk?

15 A. No. The model schedules the Taum Sauk  
16 generation for the peak hours of the day, and it pumps  
17 up to storage during the low load hours.

18 Q. All right. Does the model assume that that  
19 happens every day?

20 A. What we input is -- is the maximum amount of  
21 pumping and generation and also a -- the amount of  
22 energy -- let me get the terminology here correct.

23 Q. Okay.

24 A. Let me correct that.

25 What the model does is it uses a generation

1 capacity, storage capacity and a cycle efficiency, and  
2 it will schedule the pumps -- the generation to  
3 operate during the peak hours of the day and schedule  
4 the pump to pump at the low load hours of the day.  
5 And, yes, it does do that every day.

6 Q. All right. Is there a daily limit on  
7 generation at Taum Sauk?

8 A. Yes, there is.

9 Q. And what is that?

10 A. That limit I got from UE's budget runs.

11 Q. Is it different, a different limit on  
12 different days, or is it just one number?

13 A. It's a monthly energy capacity.

14 Q. All right. Does it use the pump-back  
15 cost -- did you say it uses that pump-back cost from  
16 the previous day to determine the dispatch price?

17 A. There is no dispatch price for pump storage.  
18 It's assumed a zero cost.

19 Q. Okay. So it assumes that Taum Sauk is  
20 cost-free?

21 Maybe I'm not understanding what you're  
22 saying. Let me --

23 A. It displaces the -- it's not cost-free  
24 because you're -- you're -- you're displacing  
25 generation that would have been generated by a large

1 coal unit or something else, so it's not cost-free in  
2 that point, but there are no costs assigned to the  
3 generation. It takes -- it takes the amount of  
4 generation off the top of the load.

5 Q. Uh-huh.

6 A. And that's generation that your other plants  
7 do not have to generate.

8 Q. Is that a cost or a savings?

9 A. Well, generation is a savings. Pumping is a  
10 cost.

11 Q. And what cost is then included in the model  
12 for that pumping?

13 A. I don't include any cost for that pumping.

14 (MS. O'NEILL LEFT THE DEPOSITION ROOM.)

15 BY MR. COOK:

16 Q. Are you satisfied with the accuracy of the  
17 report writing in the RealTime model?

18 A. At this point in time, yes, I am, but I  
19 recognize that there's still some fine-tuning to be  
20 done.

21 Q. I had a series of questions concerning a  
22 problem that we believed we had found in some of the  
23 reports, and I believe Mr. Finnell discussed this with  
24 you. And you have this morning provided a new run  
25 which, as I understand it, you believe addresses that

1 concern. So rather than go through those questions,  
2 let me see if I can verify what the problem was and  
3 ask you what you've done to solve it.

4 Do you recall a conversation you had with  
5 Mr. Finnell where it appeared that although the -- the  
6 reports indicated otherwise, the fuel price was coming  
7 out the same for each month, for instance, at the Rush  
8 Island Plant?

9 A. Yes, I do.

10 Q. And although there were different fuel  
11 expense-- there were different fuel expenses and BTUs  
12 for each month for Rush Island, when you divided the  
13 one by the other, you always came out with -- was it  
14 \$9.85 per million BTUs; is that right?

15 A. I believe it was .98 cents.

16 Q. Ninety-eight cents?

17 A. I don't recall the exact number.

18 Q. All right. But does that problem sound  
19 familiar?

20 A. Yes, it does.

21 Q. Can you tell me what -- have you determined  
22 what caused that?

23 A. Yes, we have. There was a -- as the  
24 RealTime representative tells me, as he describes it,  
25 there was a bug in the pre-processor. The

1 pre-processor processes the files, the input files,  
2 before the RealTime program uses those. It puts them  
3 in a language that the RealTime program understands.  
4 And there was a bug in that which caused the  
5 pre-processor to -- to use these prices.

6 That bug has been fixed.

7 Q. Okay. Was that affecting more than just  
8 Rush Island?

9 A. Yes, it was. It was affecting all of the  
10 units.

11 Q. All of the units for all of the months of  
12 the year that you used?

13 A. Yes.

14 (MS. O'NEILL ENTERED THE DEPOSITION ROOM.)

15 THE WITNESS: This bug didn't exist in our  
16 July filing. It's in our updates. We don't know  
17 which -- which update it apparently appeared and was  
18 not caught.

19 BY MR. COOK:

20 Q. Do you now have full confidence in the  
21 report writing that there are no other bugs?

22 A. Yes, I do.

23 Q. What do you base that on?

24 A. We have gone back and compared the numbers  
25 to make sure it's using the proper numbers.

1 Q. On this issue?

2 A. On this issue and others.

3 Q. You've checked every other number that comes  
4 out of the report?

5 A. Not every number, but most of the numbers.

6 Q. Have you discovered that other reports had  
7 errors in them, or bugs?

8 A. No, I haven't.

9 Q. Can you explain how the model handles the  
10 JDA?

11 A. Well, the model doesn't handle the JDA.  
12 What we do is we assign costs using the reporting out  
13 of the model, we -- as I described in my testimony on  
14 page 10, starting about line 15.

15 Q. Uh-huh. Could you explain that?

16 A. Yes. I made three production cost model  
17 runs, one of them as a stand-alone run for -- for AEG,  
18 one a stand-alone run for Union Electric, one is a  
19 joint run, a combined run. And then in a -- we  
20 produce reports on an hourly basis out of that -- out  
21 of those runs, put them in a spreadsheet which then  
22 assigns a cost based upon the JDA assignment.

23 Q. What was it -- what is it about that process  
24 that was causing a problem that you were unable to do  
25 that for your previous testimony and hadn't completed

1 it even by the time we had our deposition in November?

2 A. Now, which previous testimony?

3 Q. The first testimony in March or --

4 A. In July?

5 Q. Yeah, July. Sorry. Let me rephrase that so  
6 it's clear.

7 What is it about the process that you  
8 describe on page 10 and you've just discussed that was  
9 a problem so that when you first filed testimony in  
10 this case you had not completed that and had not  
11 completed it into November and apparently required  
12 additional assistance from the Emelar Group?

13 A. In the July filing, it's -- it was the first  
14 time we had done that. We didn't know how much time  
15 it was going to take. As you recall, we were talking  
16 about the -- the time we had to file this case in  
17 June. We just didn't have the time to do these  
18 calculations. This is very time-consuming.

19 We also discovered that we weren't  
20 necessarily getting the hourly reports that we wanted  
21 out of the model.

22 Q. The hourly reports for anybody, AEG or UE or  
23 joint?

24 A. For any of the reports. Normally, we don't  
25 run -- we don't ask for hourly reports. We just do

1 the monthly. But to do the JDA allocations, those are  
2 done on an hourly basis. And those reports at that  
3 time -- it's very time-consuming and we didn't have  
4 time to do that.

5 Q. On page 6 of your testimony you refer to  
6 thirteen combustion turbine generating units that do  
7 not presently exist; is that right?

8 A. I'm finding the line here.

9 Q. Line 14.

10 A. What line is that?

11 Q. Line 14. Page 6, line 14.

12 A. Yes, I did.

13 Q. And you indicate there that for discussion  
14 of why the units were included see testimony of  
15 Dr. Michael Proctor?

16 A. Yes, I do.

17 Q. Where did you get the information that you  
18 needed about those hypothetical units to put into your  
19 model?

20 A. I used the Columbia gas CT as a -- a -- as a  
21 model. I just modeled those after the Columbia CT.

22 Q. Is this what you were talking about when you  
23 read through your list of changes, and at the end you  
24 said you added six CTs at 39 megawatts and six at 30  
25 (sic)?

1           A.     Yes.

2           Q.     That's twelve?

3           A.     That's twelve total to afford a total of 500

4 megawatts.

5           Q.     Okay.  Where did the thirteenth come in?

6           A.     I don't recall mentioning a thirteenth.

7           Q.     In your testimony, line 14.

8                     I may have written that down wrong.  Did you

9 have six at 39 megawatts and six at 30 (sic), or six

10 and seven?

11          A.     Let me look that up.

12                     There are seven at 38 megawatts --

13          Q.     All right.

14          A.     -- and that makes thirteen.

15          Q.     All right.  There is seven at which number?

16          A.     At 38 megawatts.

17          Q.     Thirty-eight?

18          A.     Yes.

19          Q.     And six at 39?

20          A.     Yes.

21          Q.     What fuel do these burn?

22          A.     These use Columbia gas.

23          Q.     And the pipeline carrier for that fuel is

24 who?  Do you know?

25          A.     I do not know.

1 Q. Can these units be started within ten  
2 minutes?

3 A. Yes.

4 Q. Are they counted towards spinning reserves?

5 A. Yes, they are.

6 Q. Did you use an efficiency deviation factor,  
7 or EDF, in the latest runs that you used prior to the  
8 filing of your Direct Testimony in March?

9 A. Yes, I did.

10 Q. And have you used that -- an efficiency  
11 deviation factor in the most recent runs you've been  
12 providing us?

13 A. Yes, I did.

14 MR. COOK: Let me suggest we go off the  
15 record for a minute; is that right?

16 MR. FREY: Sure.

17 (A RECESS WAS TAKEN.)

18 BY MR. COOK:

19 Q. Before we broke, Mr. Bender, I mentioned  
20 that there was some question about the efficiency  
21 deviation factor, or EDF, and which one you used.

22 As I understand it, you and Mr. Finnell have  
23 spoken, and you have verified that the efficiency  
24 deviation factor that you used in the model runs that  
25 are included in your testimony was what I would refer

1 to as the original efficiency deviation factor for an  
2 earlier period and that you did not use a more -- a  
3 more current efficiency deviation factor that the  
4 Company had provided in December. Is that true?

5 And if that's true, why did you use one  
6 versus the other?

7 A. Yes, that is true.

8 I did not use the revised EDF that was  
9 presented because they were outside of the test year.  
10 The date that was on the document was well outside the  
11 test year.

12 Q. Is it my understanding that although the  
13 date on the document may be outside the test year, the  
14 period used to determine that efficiency deviation  
15 factor may, in fact, be the test period?

16 A. That's what was explained to me, yes.

17 Q. And are you going to check that out and  
18 perhaps either use it or not but at least look and see  
19 if you feel it's appropriate to use?

20 A. Yes, I will.

21 Q. Thank you.

22 You're familiar with the term "must-run  
23 units"; is that right?

24 A. Yes, I am.

25 Q. And what units did you classify as must-run

1 units?

2 A. In this model, I classified Callaway as  
3 must-run.

4 Q. And only Callaway?

5 A. Yes.

6 Q. What is -- why did you do it that way?

7 A. Why did I classify Callaway as -- as  
8 must-run?

9 Q. Well, let me put it this way: Why did you  
10 only classify Callaway as must-run?

11 A. Well, I didn't find a reason to classify any  
12 other units as must-run.

13 Q. And why not? What is it about those units  
14 or your model that caused you to make that  
15 determination?

16 A. One of the reasons for classifying -- for  
17 modeling purposes, one of the reasons for classifying  
18 the unit as must-run is to keep the units from cycling  
19 excessively. Otherwise, the model will do an economic  
20 dispatch of the units.

21 If I classify a unit as must-run, it will  
22 run that unit whether it's economic to do so or not.  
23 And since we're trying to achieve an economic dispatch  
24 here, I didn't see any reason to classify any other  
25 unit as must-run.

1 I know in a data request response from UE  
2 that they classified several of the units as must-run  
3 for economic reasons, and the model already does  
4 economic dispatch, so I don't see any reason for doing  
5 that.

6 Q. So it's your testimony that even though  
7 units may actually be running and your model assumes  
8 it's not a must-run, there is no difference there?

9 A. I'm not sure if I understand the question.

10 Q. All right. If, in fact, units are treated  
11 by the Company as must-run units, does that cause you  
12 any concern about your model outputs?

13 A. You mean in reality the dispatcher is told  
14 he must run that unit?

15 Q. Yes.

16 A. Well, I'm not sure that that would be an  
17 economic dispatch then.

18 Q. What does that mean?

19 A. Well, the model attempts to do an economic  
20 dispatch. To tell the dispatcher he must run a unit  
21 out of economic dispatch, I don't understand.

22 Q. Do you understand the difference between a  
23 cold start on a hot start?

24 A. Yes.

25 Q. Does your model take into account the

1 effects of those two different types of starts?

2 A. Yes, it does.

3 Q. If a unit is actually running, then it does  
4 not have a cold start, does it?

5 A. That's true.

6 Q. But your model would assume that it does?

7 A. Yes.

8 Q. But not -- did you compare your model  
9 results with actual hot and cold starts?

10 A. With actual, no, I didn't. I did look at --  
11 I did look at the model results. They did not seem to  
12 be excessive.

13 Q. What was not excessive?

14 A. The hot and cold starts.

15 Q. And how would you determine what excessive  
16 was?

17 A. Well, that's a -- rather a judgment call  
18 there. Such as -- such as a model is only doing a hot  
19 start of Sioux once per month -- I'm sorry -- a cold  
20 start of Sioux once a month, I don't consider that to  
21 be an excessive amount. In fact, there are some  
22 months when it has no cold starts at all.

23 Q. What about hot starts on Sioux? What does  
24 it show? And these are your model outputs that you're  
25 talking about. Right?

1           A.     Yes. Well, except for the CTs, I don't see  
2 anything really alarming there either. I don't --

3           Q.     What kind of numbers does it show?

4           A.     Once again, I haven't averaged the numbers,  
5 but there are some months when there are absolutely no  
6 hot starts. There's a few months where there are a  
7 larger number of hot starts, nine and fourteen. I  
8 don't -- I don't see anything excessive about that,  
9 to -- to bring a unit down, remain hot, and then bring  
10 it back up to follow load.

11          Q.     Is it true that the outage rate that you use  
12 is based on a five-year history?

13          A.     Yes, it is.

14          Q.     And what -- what five-year period was used?

15          A.     Well, the five-year period included 2001.

16          Q.     Calendar year 2001?

17          A.     Calendar year 2001, five years back. I  
18 believe it was 1997. I did address that in my  
19 testimony, 1997 to 2001.

20          Q.     Did you compare that outage history with any  
21 previous periods?

22          A.     Previous to 1997?

23          Q.     The five-year period you looked at, did you  
24 look at that against any other five-year periods or  
25 historic --

1 A. No, I did not.

2 Q. Do you know whether or not any other Public  
3 Service Commission Staffs use the RealTime model?

4 A. At the time I asked -- I asked this question  
5 of our RealTime representative, and he replied no,  
6 he -- no other Commission was using this. At this  
7 very point in time, I do not know.

8 Q. In your experience or from talking with the  
9 representative, do any utilities use it?

10 A. Any utilities do?

11 Q. Uh-huh.

12 A. I know of one that does. I don't know about  
13 others.

14 Q. Which one is that?

15 A. They were called UtiliCorp. Now they are  
16 called Aquila.

17 Q. To your knowledge, do they still use it?

18 A. Yes.

19 Q. Page 2 of your testimony, let's look at that  
20 for a moment, if you would, please.

21 On line 12 you refer to an allocated  
22 normalized cost of fuel and net purchased power for  
23 the test year of \$345.8 million basically.

24 Is that cost for total Ameren all of UE or  
25 just UE Missouri?

1           A.     That cost is the cost it takes to meet the  
2 load that Lena Mantle has provided for the model. And  
3 what all that load includes, I refer you to her.

4           Q.     So you don't know if it's -- it's a number  
5 she provided to you?

6           A.     Yes.

7           Q.     And do you know what the term "allocated"  
8 means then in that phrase?

9           A.     The "allocated" is synonymous with assigned,  
10 because the Joint Dispatch Agreement assigns costs  
11 after the fact. So this -- this number that I  
12 reported here is actually not the number we get out of  
13 the model. It's the assigned cost after we do the  
14 spreadsheet on the Joint Dispatch Agreement.

15          Q.     After you do the spreadsheet on the Joint  
16 Dispatch Agreement that you talked about before?

17          A.     Yes. Me and Dr. Proctor, yes.

18          Q.     But I thought you said Lena Mantle provided  
19 them?

20          A.     She provided the loads.

21          Q.     She provided the loads?

22          A.     Yes.

23          Q.     So you take her loads and the cost figures  
24 that you get after you run your JDA analysis to come  
25 out with this cost; is that right?

1           A.       I'm not sure how to answer that because her  
2 loads are input into the model and, as described, the  
3 model generates an hourly report which we put in a  
4 spreadsheet which assigns the costs, and these are the  
5 costs that are assigned.

6           Q.       The spreadsheet assigns the costs per hour?

7           A.       On an hourly basis, and then we sum those to  
8 get a yearly basis.

9           Q.       All right. And where does the load fit into  
10 that calculation that Lena provides?

11          A.       The load is used up-front in the model as an  
12 input to the model.

13          Q.       So you come out with a number, then, that is  
14 \$345.8 million?

15          A.       Yes.

16          Q.       You don't know whether that has to be  
17 allocated down to Union Electric or UE Missouri?

18          A.       No, I do not.

19          Q.       You used the test year of the twelve months  
20 ending June 30, 2001 updated to September 30, 2001; is  
21 that right?

22          A.       Yes.

23          Q.       And then you used certain kilowatt hour  
24 information based on the test year or the updated test  
25 year; is that right?

1           A.     Based upon the updated test year, based upon  
2 the load that Lena has provided me.

3           Q.     So for kilowatt hours, that should be  
4 updated -- let me rephrase that.

5                     For kilowatt hours you used information  
6 through September 30th?

7           A.     I used the updated load that Lena Mantle  
8 provided. You would have to ask her what was in that  
9 load.

10          Q.     You don't know if that was September 30th or  
11 June 30th?

12          A.     No, I do not.

13          Q.     What about hourly peaks? Do you know if  
14 that was through September or through June?

15          A.     No, I do not.

16          Q.     And what about fuel costs or level of fuel  
17 prices?

18          A.     It is my belief that those were updated by  
19 John Cassidy, but you would have to check with John  
20 Cassidy.

21          Q.     You don't need to know for your purposes  
22 whether that's the June or September numbers?

23          A.     For the fuel prices?

24          Q.     Or for any of that, fuel prices, peaks, or  
25 hourly peaks, or --

1 A. No. I used the numbers they give me.

2 Q. Did you set up your model to exactly  
3 duplicate the Company's actual sales and generation  
4 during the test year or some level of adjusted sales  
5 and generation level?

6 A. There were no sales included in my model.

7 Q. What about generation level?

8 A. The -- I'm sorry. Repeat the question.

9 Q. Did your model use Company actual generation  
10 or is there some Staff adjustment?

11 A. The model generates the power necessary to  
12 meet the load input.

13 Q. Do you know if the information that is  
14 provided to you by Lena Mantle includes adjustments  
15 the Staff has made, or do you know if it's actual, or  
16 do you know?

17 A. I do not know.

18 Q. So you don't know whether there are  
19 adjustments included there or what kind they are or  
20 the magnitude of those adjustments; is that right?

21 A. That's correct.

22 MR. COOK: Excuse me a minute.

23 (A DISCUSSION WAS HELD OFF THE RECORD.)

24 BY MR. COOK:

25 Q. Page 4 of your testimony, please.

1           You say there that capacity purchase  
2 contracts were used in your model; is that right?

3           A.     Are you talking at line 6?  Yes.

4           Q.     Uh-huh.  Do you know whether the model  
5 utilized any of these purchase contracts to meet the  
6 generation requirements of the Staff's adjustments  
7 such as the one for customer growth?

8           A.     The model used these capacity purchases to  
9 meet the load which we input, which was supplied by  
10 Lena Mantle.

11          Q.     Are you familiar with the adjustment that  
12 Staff is proposing for customer growth?

13          A.     No, I am not.

14          Q.     You don't know whether that's included in  
15 the information that was given to you, or, if so, how  
16 it's included or anything?

17          A.     No, I do not.

18          Q.     Would the same thing be true for spot energy  
19 purchases?

20          A.     Yes, it would.

21          Q.     You also refer to emergency energy  
22 purchases.  You refer to it generally, I guess, on  
23 page 4, and then on page 5 you talk about -- the  
24 question is, "What is emergency purchased energy?"

25          A.     Yes.

1 Q. Could you explain that?

2 A. To explain emergency purchased energy?

3 Q. Uh-huh, please.

4 A. I've done so in my testimony.

5 Q. Right.

6 A. It's just -- it's energy that's purchased on  
7 a short-term basis as needed.

8 Q. And that would normally be at a  
9 substantially higher price; is that right?

10 A. Yes, it would normally be a substantially  
11 higher price.

12 Q. And how did you determine how much emergency  
13 purchased energy to include in your model, or is that  
14 something that comes out of your model?

15 A. No. That's an input into the model.

16 This -- I also explained that in my  
17 testimony. If you'll give me a moment, I'll read what  
18 I said in my testimony.

19 Q. Sure. That's fine.

20 A. Well, as I said in my testimony, I estimated  
21 the amount of hourly energy -- purchased energy  
22 available to be approximately 10 percent of the total  
23 generation capacity in the nonsummer months and  
24 15 percent in the summer months.

25 Q. What did you base that estimate on?

1           A.     Well, this was based upon the total  
2 generation capacity. I could have made less  
3 available, but I thought 10 percent was a conservative  
4 number.

5           Q.     And why did you think that was conservative?

6           A.     Well, first of all, the model -- looking at  
7 the model, the model doesn't buy a lot of this  
8 energy. I think in the entire year in the joint  
9 dispatch run it only bought 2,000 megawatt hours of  
10 this energy, so I felt 10 percent was being -- was  
11 conservative simply because it just didn't need to buy  
12 a lot of it. I could make more available, but the  
13 model simply wouldn't buy it.

14          Q.     What do you mean, "the model wouldn't buy  
15 it"?

16          A.     It's not -- it's not -- it's not buying what  
17 is available, so why make more available?

18          Q.     Did you compare that to actual?

19          A.     No, I did not.

20          Q.     Do you know whether any of the spot energy,  
21 emergency energy capacity purchases were used -- let  
22 me rephrase that.

23                    You don't know, I guess, based on your  
24 previous answers, how or whether the Staff's  
25 adjustments that were included in -- that may be

1 included in Lena Mantle's information to you are  
2 affected by emergency or spot or capacity purchases;  
3 is that right?

4 A. That's right.

5 Q. The -- is it true that the costs and  
6 generation level of the combustion turbines come from  
7 the assumption that they would operate like the  
8 Columbia turbines? Is that right?

9 A. Of the added -- which combustion turbines?

10 Q. The thirteen hypothetical.

11 A. Of the thirteen hypothetical turbines?

12 Yes.

13 Q. Do you know how much they contributed  
14 towards meeting the entire Company load?

15 A. The model details those numbers. I would  
16 have to add those up. I don't have them added up.

17 Q. All right. If -- are you aware -- let me  
18 back up a bit.

19 You're aware, are you not, that Lena Mantle  
20 has included Staff adjustments in her load numbers, is  
21 that right, in her hourly load numbers?

22 A. I haven't reviewed Lena's testimony. I'm  
23 not sure what she has included in those loads.

24 Q. You don't -- do you remember hearing  
25 anything about that at the technical conference that

1 was held the other day?

2 A. No, I do not. I think I missed half of  
3 that. I was gone most of that conference.

4 Q. Okay.

5 A. So I didn't hear all of it.

6 Q. You didn't do anything to take any  
7 adjustments out of the information that she gave you,  
8 did you?

9 A. No. I used the load she gave me.

10 Q. Okay. Let's look at page 8 of your  
11 testimony, please.

12 On line 14 you discuss the use of SO2  
13 allowances in the model as a cost to dispatch a  
14 generating unit.

15 Let me see. I believe the answer --  
16 question and answer is, Question: "Did you use SO2  
17 allowances in the production cost model?"

18 Answer: "Yes." Replacement costs of  
19 emission allowances are included as a cost to dispatch  
20 a generation unit that emits SO2."

21 Is that an accurate reading?

22 A. Yes, it is.

23 Q. Then look on page 9, line 1. You say,  
24 "However, emission costs are not reported in the total  
25 number reported by the production cost model used to

1 annualize fuel and purchase power."

2 Can you explain the difference there?

3 A. The Joint Dispatch Agreement has an  
4 attachment, if it can be called an attachment, that  
5 requires that the units be dispatched with the  
6 replacement costs of emissions in their generation  
7 dispatch cost, but, however, these -- these are not --  
8 an attempt of the model is to report the fuel used,  
9 and so I'm not -- I'm not reporting any cost for the  
10 emissions cost.

11 Q. So is the cost, a value of these allowances,  
12 included in the Staff's cost of service for UE?

13 A. I do not know.

14 Q. It is not in your run; is that right?

15 A. That's true.

16 Q. Do you know how many allowances were used in  
17 your run?

18 A. No. I did not print that out.

19 Q. So you wouldn't know what the cost was  
20 that's included?

21 A. No, I wouldn't.

22 Q. Is that available? Could that become  
23 available? Is it something that you can ask it to  
24 print out?

25 A. I'll have to check to see whether I can do

1 that or not.

2 Q. You don't know?

3 A. I don't know. It's -- the cost I used -- I  
4 didn't ask for a report on that because the costs are  
5 relative to fuel here, but the costs are used in  
6 determining the dispatch order of the units but not  
7 necessarily included in reporting costs. And the  
8 reason its used in that is because the JDA agreement  
9 says this is the way it will be done.

10 Q. The JDA agreement doesn't say that SO2  
11 allowances aren't going to be included in the  
12 Company's cost of service, does it?

13 A. I'm not sure whether it does or not.

14 Q. As I understand what you're saying is that  
15 the costs -- replacement costs of emission  
16 allowances -- well, let me back up.

17 What is the replacement cost of emission  
18 allowance?

19 A. The replacement costs are -- actually, the  
20 emissions or allowances are given to the Company free  
21 of charge, and they have to -- if they use any  
22 additional SO2 allowances above that, then they have  
23 to buy those. And the amount that they pay to get  
24 those is -- is the replacement cost.

25 Q. So the assumption here is if we use 1,000

1 SO2 allowances in a given period, those will have to  
2 be replaced for future use, and, therefore, there is a  
3 cost associated with that?

4 A. Yes.

5 Q. And so you include that cost in the  
6 determination of the dispatch order; is that right?

7 A. Yes.

8 Q. What other costs are included in the  
9 determination of the dispatch order?

10 A. Well, the fuel costs and the -- any start-up  
11 costs.

12 Q. Are fuel costs and start-up costs reported  
13 in the total number reported by the production cost  
14 model used to annualize fuel and purchased power?

15 A. Yes, they are.

16 Q. But emission allowances and replacement  
17 costs are not?

18 A. They are not.

19 Q. Do you have any idea of the magnitude of  
20 that?

21 A. No, I do not.

22 Q. We discussed earlier that you just used the  
23 numbers that Lena Mantle gave you and you don't know  
24 if that includes adjustments or not; is that right?

25 A. That's true.

1 Q. Obviously -- it's obvious to me. I'll ask  
2 you if it's obvious to you.

3 If you were given another set of numbers,  
4 you could run your model again with another set of  
5 numbers and determine the difference between the first  
6 set and the second set; is that right?

7 A. Yes, I could.

8 Q. So if one set included certain adjustments  
9 and one set did not include those adjustments, you  
10 could then determine, is it true, the difference?

11 A. If there were no other changes, yes, I  
12 could.

13 Q. Everything else being equal?

14 A. Everything else being equal.

15 Q. You have not done that with any numbers for  
16 any reason, is that right?

17 A. No, I have not.

18 Q. Do you have an opinion based on the work  
19 that you've done on the production cost model as to  
20 the quality of management at Union Electric in any  
21 area?

22 A. No, I do not.

23 Q. Do you have an opinion as to the Company's  
24 safety record?

25 A. No, I do not.

1 Q. Do you have an opinion as to its  
2 environmental record?

3 A. No, I do not.

4 Q. Do you have an opinion about Union  
5 Electric's rates as compared to other utilities in  
6 Missouri or in the Midwest or nationwide?

7 A. No, I do not. I haven't made that  
8 comparison.

9 Q. Do you have an opinion as to the importance  
10 or lack of importance of rate stability on Union  
11 Electric?

12 A. No, I do not.

13 Q. Do you know the impact of your work on the  
14 proposed Staff adjustments in the rate case; in other  
15 words, the dollar value of your work?

16 A. The dollar value? No, I do not.

17 Q. Have you considered the impact of your --  
18 your work and the decisions that you made as to  
19 whether or not it has any impact on AmerenUE?

20 A. No, I do not.

21 Q. Do you have an opinion as to the impact of  
22 the rate case in general on AmerenUE's ability to  
23 provide service?

24 A. No, I don't.

25 Q. Do you have an opinion as to the impact of

1 the rate case on the Company's ability to invest in  
2 infrastructure?

3 A. No, I do not.

4 Q. On the impact on the economy of the state of  
5 Missouri?

6 A. No, I do not.

7 MR. COOK: Just a moment, if you would.

8 I believe that's all I have.

9 MR. FREY: If I might ask Mr. Bender one  
10 point of clarification.

11 CROSS-EXAMINATION BY MR. FREY:

12 Q. I believe Mr. Cook asked you some questions  
13 about that emergency -- if I can find the term,  
14 emergency -- what is the term? Emergency purchases.  
15 Do you recall that?

16 A. Yes, I do.

17 Q. And I'm not sure if there was some confusion  
18 as to whether or not emergency purchases are actually  
19 an output of the model.

20 Is it your testimony that you input the  
21 available information as to the available purchases  
22 and -- as well as the prices, and then the model uses  
23 that information and develops output as to how much  
24 emergency purchases there actually were according to  
25 its calculations? Is that correct?

1 A. That is correct.

2 MR. FREY: Okay. Thank you.

3 That's all I have.

4 MR. COOK: I may have a redirect to  
5 Mr. Frey.

6 I'm not sure that clarified it in my mind,  
7 so let me go back for a few more questions.

8 REDIRECT EXAMINATION BY MR. COOK:

9 Q. I thought you said that you chose the  
10 10 percent, or some number like that. Is that a  
11 number that you put in or is that a number that it  
12 puts out?

13 A. No. That is a number that I put in.

14 Q. All right.

15 A. I don't put in 10 percent. I put in  
16 actual -- I put in a megawatt hour available or  
17 megawatts available.

18 Q. Megawatts of what available? Emergency  
19 power?

20 A. Of emergency power.

21 Q. Okay. So what you're putting in is the  
22 emergency power that is -- emergency purchased energy  
23 that is available to be used by the --

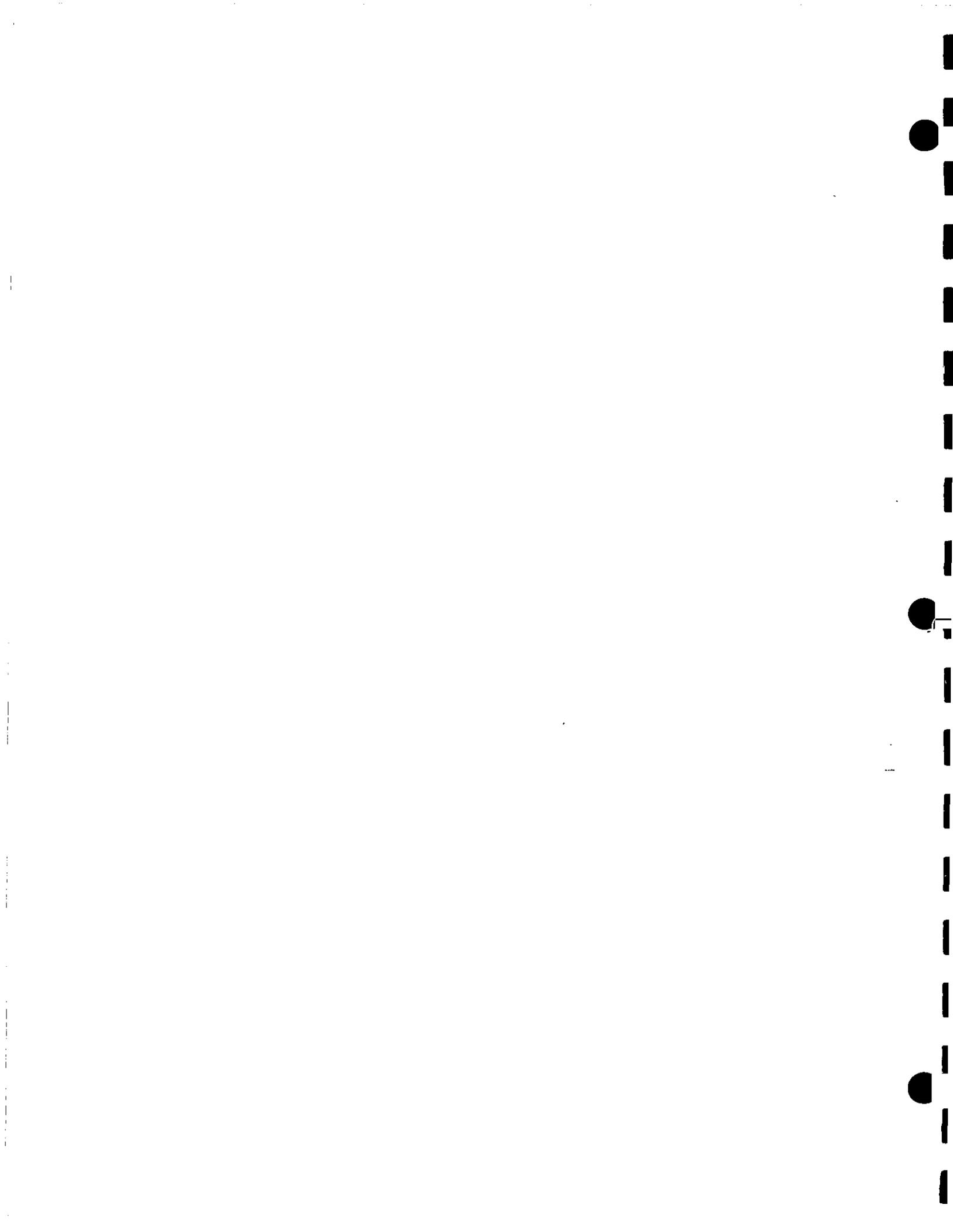
24 A. By the model.

25 Q. -- by the model or by the Company?









**ERRATA SHEET**

Deposition of: Leon Bender  
Case Caption: EC-2002-1  
Date Taken: November 19,2001

Page	Line	Correction	Reason
10	2	Replace word "variance" with "turbine".	Incorrect word
11	1	Replace words " is fine" with " assigned"	Incorrect words
32	17	Replace word "dispatching" with "dispatch in"	Mis-transcribed
55	9	Delete word "of "and replace second "up" with "down"	Clarification
56	6	Delete the words "with what the power plants, the 20.080 data," and insert after "generating" the words ", as reflected in the 20.080 data."	Clarification
60	8	Replace word "measure" with "major"	Incorrect word
73	21	Delete the words "in reviewing"	Clarification
82	2	Insert the word "The" before "Model"	Clarification
84	1	Replace word "last" with "must"	Incorrect word
85	22	Replace word "that's" with "that is"	Clarification
89	6	Replace word "unit" with "heat rate"	Clarification

  
\_\_\_\_\_  
Signature

(This is the signature page to the deposition of Leon Bender taken on November 19, 2001.)

STATE OF MISSOURI     )  
  ) ss.  
COUNTY OF COLE        )

I, Leon Bender, do hereby certify:

That I have read the foregoing deposition;

That I have made such changes in form and/or substance on the attached errata sheet(s),  
as might be necessary to render the same true and correct;

That having made such changes thereon, I hereby subscribe my name to the deposition.

Executed this 28th day of March, 2002,  
at Missouri Public Service Commission Office, Jefferson City, MO

Leon Bender  
(Name)

ROSEMARIE REED  
Notary Public - Notary Seal  
STATE OF MISSOURI  
COLE COUNTY  
MY COMMISSION EXPIRES 12/31/02

My Commission Expires:

Notary Public: Rosemarie Reed

BEFORE THE PUBLIC SERVICE COMMISSION  
OF THE STATE OF MISSOURI

The Staff of the Missouri )  
Public Service Commission, )  
Complainant, )  
vs. ) Cause No. EC-2002-1  
Union Electric Company, )  
d/b/a Ameren UE, )  
Respondent. )

DEPOSITION OF LEON BENDER  
taken on behalf of the Respondent  
November 19, 2001

*ORIGINAL*

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Mr. Cook	4

INDEX OF EXHIBITS

No Exhibits were proffered.

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BEFORE THE PUBLIC SERVICE COMMISSION  
OF THE STATE OF MISSOURI

The Staff of the Missouri	)	
Public Service Commission,	)	
	)	
Complainant,	)	
vs.	)	Cause No. EC-2002-1
	)	
Union Electric Company,	)	
d/b/a Ameren UE,	)	
	)	
Respondent.	)	

DEPOSITION OF WITNESS, LEON BENDER, produced,  
 sworn, and examined on the 19th day of November, 2001,  
 between the hours of eight o'clock in the forenoon and six  
 o'clock in the afternoon on that day, at the offices of 200  
 Madison, Suite 810, Jefferson City, Missouri, before DEANNE  
 M. LAKE, a Registered Professional Reporter, Certified  
 Shorthand Reporter and Notary Public, in a certain cause now  
 pending Before the Public Service Commission of the State of  
 Missouri, wherein The Staff of the Missouri Public Service  
 Commission is the Complainant and Union Electric Company,  
 d/b/a Ameren UE is the Respondent.

A P P E A R A N C E S

For the Complainant:

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Mr. Steven Dottheim

For the Respondent:

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314-554-2237

Also present:

Mr. Tim Finnell  
Mr. Johannes P. Pfeifenberger  
Mr. Robert J. Cynkar

1           IT IS HEREBY STIPULATED AND AGREED, by and between  
2 counsel for the Complainant and counsel for the Respondent  
3 that this deposition may be taken in shorthand by DeAnne M.  
4 Lake, a Certified Shorthand Reporter, Registered  
5 Professional Reporter and Notary Public, and afterwards  
6 transcribed into typewriting; and the signature of the  
7 witness is expressly reserved.

8                           \* \* \* \* \*

9                           **LEON BENDER,**  
10 of lawful age, produced, sworn, and examined on behalf of  
11 the RESPONDENT, deposes and says:

12                           \* \* \* \* \*

13                           **DIRECT-EXAMINATION**

14 **QUESTIONS BY MR. COOK:**

15           Q.    Good morning, sir.

16           A.    Good morning.

17           Q.    How are you?

18           A.    Just fine.

19           MR. COOK: Good. My name is Jim Cook, and I am  
20 the attorney for Ameren Corporation, Ameren UE, Union  
21 Electric Company, and today we are here to take the  
22 deposition of Mr. Leon Bender of the Missouri Public Service  
23 Commission staff in MPSC Case Number EC-2002-1.

24                       We're taking this deposition in the Commission's  
25 offices in a conference room on the 8th floor, and with me

1 in the room are Mr. Tim Finnell, Johannes Pfeifenberger and  
2 Robert Cynkar, C-Y-N-K-A-R, and could you tell us who is in  
3 the room for your side, please?

4 MR. FREY: Yes. We have Lena Mantle of the energy  
5 department, as well as Mike Proctor, the energy department,  
6 and I am Dennis Frey, the attorney for the staff, Missouri  
7 Public Service Commission representing Mr. Bender.

8 Q. (By Mr. Cook) Okay. Thank you. Mr. Bender,  
9 first, let me address a couple of preliminary matters. Have  
10 you ever had your deposition taken previously?

11 A. No, I have not.

12 Q. Okay. And are you feeling all right this morning?

13 A. I am feeling fine.

14 Q. Good. Do you have any problems hearing me?

15 A. No.

16 Q. Okay. If at any time you do have a problem  
17 hearing me or if in any way you do not understand a question  
18 that I ask, please let me know. Okay?

19 A. Yes.

20 Q. Are you aware of any factors that would interfere  
21 with your ability to understand and respond to my questions  
22 today?

23 A. No, I am not.

24 Q. And let me mention that if at any time you want to  
25 take a break or need to do that, just let me know, and we

1 will take a break. Do you understand that?

2 A. Yes.

3 Q. Okay. It is also possible that sometime during  
4 this deposition your attorney may object to a question. If  
5 he does so, he will so state. The reporter will take down  
6 that objection, but unless your attorney specifically  
7 directs you not to answer, then you are still to answer the  
8 question, and then the objection can be taken up later with  
9 the hearing examiner. Do you understand?

10 A. Yes, I do.

11 Q. To make sure the record is correct, would you  
12 state your name, please?

13 A. Leon C. Bender.

14 Q. And by whom are you employed?

15 A. Missouri Public Service Commission.

16 Q. And in what capacity are you employed at the  
17 Commission?

18 A. I am a utility regulatory engineer one.

19 Q. And did you prepare and file testimony in this  
20 case, EC-2002-1?

21 A. Yes, I did.

22 Q. That testimony was filed on July 2, 2001; is that  
23 correct?

24 A. Yes, it is.

25 Q. And near the end of your testimony you indicate

1 that you have not completed your analysis or had not  
2 completed your analysis at the time the testimony was filed;  
3 is that right?

4 A. That is correct.

5 Q. Has it now been completed?

6 A. No, it has not.

7 Q. All right. And when do you plan on completing  
8 that analysis?

9 A. We just got an update to the program this last  
10 week, and I am hoping to complete this analysis before  
11 December 5.

12 Q. There does seem to be a fan right above us.

13 A. Well, I am a very soft spoken person anyway.

14 Q. All right. But you hope to complete that and file  
15 additional testimony or just have the analysis complete by  
16 December 5?

17 A. Just have the analysis complete by December 5.

18 Q. Okay.

19 A. Since we have a holiday in here, it is  
20 interrupting things.

21 Q. Do you know when you plan or if you plan to  
22 supplement the testimony that you filed?

23 A. I don't know.

24 Q. All right. Has there been anything keeping you  
25 from completing that analysis that is due to lack of

1 information from the company in any way?

2 A. No, there is not.

3 Q. Thank you. Mr. Bender, how long have you been  
4 with the Commission?

5 A. I have started in January of 1996.

6 Q. Okay. And what positions have you held with the  
7 Commission since that time, please?

8 A. I started as a utility regulatory engineer one,  
9 and I am still a utility regulatory engineer one.

10 Q. Okay. And what type of work do you do in that  
11 position?

12 A. Basically, I have several functions. One thing is  
13 to run the production cost model. I also listen to and  
14 answer customer complaints, investigate any incidents which  
15 may occur, certain incidents which may be assigned to me,  
16 just other things that are assigned.

17 Q. What do you do in regard to customer complaints?  
18 Could you give us an example of the kind of complaint that  
19 you would get and what you would do about that to  
20 investigate it, please?

21 A. Well, sometimes there are customer complaints  
22 which our customer complaint department cannot handle  
23 because they involve engineering matters, and I am somewhat  
24 low on the totem pole as far as that goes.

25 There are other people who normally answers those,

1 but when those people are not around, I will take the calls  
2 and listen to their complaint and try to contact the company  
3 and try to investigate, see what the complaint is, see if it  
4 can be resolved.

5 Q. When you say, may involve an engineering matter,  
6 what kind of engineering matter would come up in a customer  
7 complaint?

8 A. Some of the matters involve electrical problems to  
9 the system.

10 Q. What do you mean by "the system"?

11 A. In the transmission or distribution system.  
12 Usually the complaints are fairly minor. One specific  
13 complaint that I can remember was about cutting off  
14 someone's electricity.

15 Q. Do you handle billing complaints?

16 A. No, I do not.

17 Q. About how much of your time on an average over a  
18 month or a year would you say you spend doing customer  
19 complaint work; just an estimate?

20 A. As an estimate, purely an estimate, I would say  
21 less than 10 percent.

22 Q. All right. You also indicated that you  
23 investigate incidents. What kind of an incident have you  
24 investigated?

25 A. We investigated -- I have investigated an incident

1 that involves loss of lubrication oil to a turbine, which  
2 resulted in catastrophic failure of a variance.

3 Q. And is this part of an investigation for which you  
4 then -- the staff then makes a report to the Commission?

5 A. Yes.

6 Q. Do you have an estimate of either how many of  
7 those incidents you -- well, let me ask you this. How many  
8 of those incidents have you investigated -- do you know --  
9 since you have been with this Commission?

10 A. I can't recall an exact number. I would probably  
11 say around five.

12 Q. That's in total.

13 A. Yes.

14 Q. And about how much of your time is spent doing  
15 that do you think?

16 A. As a rough estimate, I would say no more than ten  
17 percent.

18 Q. Okay. Then you run production cost models; is  
19 that right?

20 A. Yes.

21 Q. About how much of your time is spent doing that?

22 A. As a rough estimate, I would say 60 percent.

23 Q. All right. Recognizing that these are estimates,  
24 that adds up to about 80 percent. So 20 percent of your  
25 time would be doing a variety of other things.

1 A. Doing other things is fine, administrative.

2 Q. That probably includes making reports that we all  
3 make that we have no idea why we make them probably.

4 A. Well, hopefully I have some idea.

5 Q. Good. When did you first begin doing work with  
6 electric production cost modeling simulations?

7 A. When I first started with the Public Service  
8 Commission in 1996.

9 Q. All right. When did you first provide testimony  
10 on this subject in a case before the Commission?

11 A. I can't recall. I can look that up. I believe I  
12 have that in one of the interrogatory questions.

13 Q. Check interrogatory number 89. There is a list of  
14 rate cases. I don't know that that is exactly the question  
15 that was asked there, but there was a list there.

16 The question there is in relation to the RealTime  
17 production cost model being used by staff since 1995. That  
18 does not necessarily ask if you worked on each of those. So  
19 that is my question though. Which of those or others did  
20 you first use or first work on and provide testimony?

21 A. Let me check, and I believe I filed testimony. I  
22 have a place to file testimony here.

23 Q. Okay.

24 A. Sometimes just because we worked on it doesn't  
25 mean we filed testimony. I do believe the -- it appears the

1 first testimony I filed was in September, 1997.

2 Q. And what case was that?

3 A. That was ER 97394.

4 Q. And what company was that for?

5 A. For UtliCorp United.

6 Q. All right. In this list there is an ER 9782  
7 Empire interim rate case. Did you not work on that one?

8 A. I did not work on that one.

9 Q. And ER 9781, Empire rate case. You did not work  
10 on that one.

11 A. I did not work on that one.

12 Q. And ER 95279, also Empire. You did not do that.

13 A. I did not do that.

14 Q. But it's your understanding that those cases did  
15 use the RealTime models; is that right?

16 A. Yes.

17 Q. I'm sorry. Did I ask whether you worked on EC  
18 97362 UtliCorp complaint case?

19 A. Let me check to see if I have got that one here.  
20 I don't remember what that case involved. Sometimes a  
21 complaint is filed and then the company files a rate case.  
22 So that may have -- I don't remember. I don't see any  
23 testimony I filed on the case. I may have worked on the  
24 case but not filed testimony.

25 Q. All right. Did you file testimony in ER 99247,

1 St. Joseph Power and Light?

2 A. No, I did not.

3 Q. And did you in ER 2001-299, Empire?

4 A. Yes, I did.

5 Q. And of course you filed in this case.

6 A. Yes.

7 Q. According to my notes, then, by using this list of  
8 cases that the Commission staff has used RealTime -- and  
9 that's capital R and then e-a-l, capital T-i-m-e, one word,  
10 production cost model. You have provided testimony in three  
11 cases, including the one we are here today on; is that  
12 right?

13 A. Yes, it is.

14 Q. And those are the only cases that you have  
15 provided RealTime pricing -- or you have provide production  
16 cost model testimony; is that right?

17 A. Yes, it is.

18 Q. All right. Thank you. Prior to your employment  
19 with the Commission, I believe you were employed by Entergy  
20 Operations, Inc. at the nuclear power plant; is that  
21 correct?

22 A. Yes, I was.

23 Q. How long were you at Entergy?

24 A. I was there approximately four and a half years.

25 Q. And did you work for Entergy at any other

1 location?

2 A. No, I did not.

3 Q. And what type of work did you do for Entergy at  
4 Arkansas Nuclear One I believe it was?

5 A. Our official title was system engineer. To relate  
6 that to -- it essentially is a plant engineer.

7 Q. All right.

8 A. So we aided operations in troubleshooting problems  
9 and hopefully resolved those problems.

10 Q. Did you do any production cost modeling in that  
11 job?

12 A. No, I did not.

13 Q. And prior to working for Entergy, you were with  
14 Southwestern Public Service Company.

15 A. Yes.

16 Q. Where was that located?

17 A. That's located in Amarillo, Texas.

18 Q. And that's where you worked, in Amarillo.

19 A. Yes.

20 Q. How long were you with them?

21 A. I started there in August of '78 and left in May  
22 of '90.

23 Q. All right. And what positions did you hold there?

24 A. I was a mechanical design engineer.

25 Q. Did you have any other positions during that time?

1           A.    When Southwestern Public Service created its  
2 design firm, Utility Engineering Corporation, I became a  
3 controls engineering.

4           Q.    What does a mechanical design engineer do?

5           A.    I designed piping systems, pumping systems,  
6 chemical systems. We built new power plant, new generation.

7           Q.    Okay. So that design work was for new generating  
8 plants.

9           A.    Yes.

10          Q.    And was that -- were those plants to be built by  
11 Southwestern Public Service, or was this a service that you  
12 provided to other entities?

13          A.    Well, at first it was just a service for  
14 Southwestern Public Service. Then when we entered the --  
15 when they created the Utility Engineering Corporation, we  
16 performed more for other companies.

17          Q.    And is that when you changed from being a  
18 mechanical design engineer to a controls engineer?

19          A.    Yes.

20          Q.    And what kind of work did you do as a controls  
21 engineer?

22          A.    As a controls engineer, I designed the controls  
23 for water treating systems, bag houses and other  
24 miscellaneous systems.

25          Q.    This is also for new generating facilities?

1 A. Yes.

2 Q. Did you do that work in Amarillo always, or did  
3 you go to the site of the new facilities?

4 A. The design work is actually done in Amarillo, but  
5 we had to visit the site occasionally.

6 Q. Did you do any work for Ameren or Union Electric?

7 A. No, I did not.

8 Q. Did you do any work for Central Illinois Public  
9 Service Company?

10 A. No, I did not.

11 Q. Did any of those positions include running  
12 production cost models?

13 A. No, it did not.

14 Q. On page one of your testimony, line 21, you  
15 mention that when you were at Utility Engineering  
16 Corporation you were responsible for projects at various  
17 other clients' power generation plants. What you are  
18 referring to there is what you just described; is that  
19 right?

20 A. Yes, it is.

21 Q. On that page you indicate that you received a  
22 bachelor of science degree in mechanical engineering from  
23 Texas Tech; is that right?

24 A. Yes.

25 Q. And have you received any advance degrees beyond a

1 bachelor of science?

2 A. No, I have not.

3 Q. Have you taken any advance courses from a college  
4 or university in any subject?

5 A. Yes, I have.

6 Q. And what is that?

7 A. I took the -- I started in the MBA program at West  
8 Texas. At the time it was West Texas State University. Now  
9 it is West Texas A&M University.

10 Q. All right. And did you complete that program?

11 A. No, I did not.

12 Q. Did you study electric production cost modeling in  
13 college as part of your mechanical engineering degree?

14 A. No, I did not.

15 Q. Did you study that as part of your MBA studies?

16 A. No, I did not.

17 Q. What is the name of the production cost model that  
18 the Commission staff uses?

19 A. It is called RealTime.

20 Q. How long has the Commission staff used that model?

21 A. Since it was purchased. I believe sometime -- it  
22 was actually purchased before I arrived in 1995. I don't  
23 know the exact date.

24 Q. All right. Who produces that model?

25 A. I believe it says product of the Emelar Group.

1 Q. Can you spell that, please?

2 A. E-M-E-L-A-R.

3 Q. Have you ever talked to anybody from the Emelar  
4 Group?

5 A. Yes, I have.

6 Q. Do you know where they are located?

7 A. They give their address. Do you want the street  
8 address?

9 Q. Just the city.

10 A. Delray Beach, Florida.

11 Q. Ever talk Mike into a trip to Delray Beach?

12 A. No, I haven't.

13 Q. I am sorry. Do you know whether the model has  
14 been modified at all since the Commission began using it?

15 A. We get regular updates to the model, yes. There  
16 have been different versions.

17 Q. Do you know how many versions there have been  
18 since you started using it?

19 A. No. I do not.

20 Q. Do you know when a modification is made -- let me  
21 rephrase that. Do you know -- when a modification is made,  
22 do they just notify you to tweak a particular part or change  
23 a part of the model, or do you get an entirely new package  
24 of information?

25 A. Usually we just get an entirely new package.

1 Q. The package that you used to prepare the testimony  
2 in this case, is there a particular version number or  
3 something that would tell us what version you used?

4 A. Yes, there is. I don't have that with me. I can  
5 look it up.

6 Q. And did you use only one version throughout the  
7 time that you worked on the model run that you did for this  
8 case?

9 A. Yes.

10 Q. Has there been an additional version that's been  
11 submitted to you since you submitted this case?

12 A. Yes, there has been.

13 Q. You have indicated that you are going to do  
14 something in the future to complete your analysis for this  
15 case. Will you use the new version or the version that you  
16 used to prepare the direct testimony?

17 A. We will -- I will use the new version.

18 Q. Does the Emelar Group explain to you, when they  
19 send a new version, what it is that they have modified from  
20 the previous version?

21 A. Yes. There is a history of modifications that is  
22 accessible through the screen, through model screen.

23 Q. All right.

24 A. And it explains what modifications were made to  
25 that version.

1 Q. What exactly do you get from the producer of the  
2 model physically? What is it that you get?

3 A. I am sorry. From the --

4 Q. From the designers.

5 A. From the --

6 Q. From Emelar.

7 A. From Emelar Group. Usually we get an electronic  
8 file, which will unzip inside the RealTime program file, and  
9 it modifies -- it makes modifications to that file.

10 Q. If a commission or a company wants to run a  
11 production cost model and has never done so before and they  
12 call the Emelar Group, what do they get in the mail, or does  
13 it come electronically? Do you get a diskette? Do you get  
14 20 diskettes? Do you get something through e-mail? Do you  
15 get a letter saying come see us?

16 A. Well, if you don't have the model, you probably  
17 have to contact the vender, but if you already have the  
18 model and you're on his list, he can send you,  
19 electronically, the new version.

20 Q. All right. So if you are getting a new version or  
21 have recently gotten a new version, you will just get that  
22 electronically through the internet.

23 A. Yes. Well, there are two ways. That is one way.  
24 One way is he will send that version to you via e-mail or  
25 the other way is he will tell us a new version is out there

1 and tell us where it is to go get it on the internet.

2 Q. All right. Do you get a manual?

3 A. Yes, I do.

4 Q. Is that what you have there?

5 A. This is the manual.

6 Q. All right. Do you get technical assistance?

7 A. Yes, I do.

8 Q. And you mentioned previously that you have spoken  
9 to people from that group. Is that the contact that you  
10 would have spoken to seeking technical assistance?

11 A. Yes.

12 Q. How many other electric production cost models are  
13 on the market?

14 A. I do not know.

15 Q. Do you know if there are any other besides  
16 RealTime?

17 A. I know of one.

18 Q. And what is that one?

19 A. That is the one that Ameren uses.

20 Q. And do you know the name of that one?

21 A. It is Prosym.

22 Q. Do you know what production cost model Empire  
23 uses, or do they?

24 A. I don't know what they are using at this moment.  
25 They used to use Enpro I understand.

1 Q. Enpro.

2 A. Enpro.

3 Q. Okay.

4 A. But I believe Prosym bought out Enpro, and Enpro  
5 is no longer supported.

6 Q. Do you know --

7 A. I don't know whether they use that themselves or  
8 consult that out.

9 Q. All right. Do you know whether UtliCorp uses a  
10 production cost model, and if so, which one they use?

11 A. I believe UtliCorp uses RealTime.

12 Q. Have you personally run any models other than  
13 RealTime?

14 A. No, I have not.

15 Q. Do you know how much one of these models costs?

16 A. No, I do not.

17 Q. You have indicated that -- I think you said that  
18 Union Electric uses Prosym.

19 A. Yes.

20 Q. Do you know how that is spelled?

21 MR. FINNELL: I do.

22 THE WITNESS: No, I don't.

23 MR. COOK: Okay. Spell it

24 MR. FINNELL: P-R-O-S-Y-M.

25 MR. COOK: Thank you.

1 Q. (By Mr. Cook) Mr. Bender, have you ever run that  
2 model?

3 A. No, I have not.

4 Q. Do you know whether that model differs in any way  
5 from the model that you use?

6 A. No. I know nothing about Prosym.

7 Q. Did you ask for information about the company's  
8 model in your data requests to the company?

9 A. I believe the person who had this case before me  
10 and the person who had this case before her asked for the  
11 Prosym manual who also asked for the inputs and the outputs  
12 of the model.

13 Q. When you say the person that had this case before  
14 you, who was that?

15 A. That was Eve Lissik.

16 Q. And someone before her?

17 A. Tom Lin.

18 Q. When you say, "had this case," you filed the  
19 testimony in July of '01; is that right?

20 A. Yes.

21 Q. And how long did you work on the case before it  
22 was filed?

23 A. I was assigned the case when Eve Lissik left. I  
24 don't recall the exact date. It was toward the end of May,  
25 before Memorial Day.

1 Q. All right. And Tom Lin was the person for the  
2 Commission that did this type of work before her; is that  
3 right?

4 A. Yes.

5 Q. And do you remember when he left?

6 A. Not the exact date. I believe it was before  
7 January of 2000.

8 Q. Before January of 2000.

9 A. Yes.

10 Q. So --

11 A. 2000, 2001.

12 Q. Did you work with Tom or Eve on this case before  
13 either one of them left?

14 A. No, I did not.

15 Q. So is it fair to say that you didn't do anything  
16 on this case until the end of May of 2001?

17 A. Yes. That is true.

18 Q. Okay.

19 A. Well, let me back that statement up with I believe  
20 I did. When Eve let me know she was leaving, I did send out  
21 some DRs to ask for the new Prosym budget runs for 2001.

22 Q. So once Eve announced she was leaving, you did  
23 start -- were you told, then, that you were going to take  
24 over the case?

25 A. Yes.

1 Q. And do you know about how long before she left  
2 that occurred?

3 A. Probably a week.

4 Q. Had you been providing any assistance to either of  
5 them before that week, before she left on this case?

6 A. Not on this case.

7 Q. What is your understanding of what was done by Eve  
8 or Tom prior to their departures on preparation for this  
9 case?

10 A. I don't know how much Eve had done. I think she  
11 adopted what Tom had done. Tom, I know, was working on the  
12 original merger case, and I don't have that number, and he  
13 had a model built for the merger case.

14 Q. When you say, "he had a model built for the merger  
15 case," do you know -- did he build it, or did he ask someone  
16 else to build it?

17 A. As far as I know, he built it.

18 Q. And why was it necessary for him to build a model  
19 for the merger case, or is that what you call doing a --  
20 getting ready for a case?

21 A. I am not sure what all his role was in the merger  
22 case, other than to -- I don't know. You would have to ask  
23 Tom that.

24 Q. What I am exploring now is what you mean by  
25 building a model. Is that what you would call preparing a

1 case, or was there something special that had to be done to  
2 the RealTime model to make it accommodate a merger?

3 A. No. Just putting in the inputs in the model.

4 Q. All right. Do you know when the inputs started  
5 being put into the model in preparation for the filing of  
6 this complaint case?

7 A. I adopted Tom's model, and then once I got a new  
8 budget run from the Prosym from Ameren UE, I began to  
9 investigate all the inputs to the model, and I believe that  
10 was somewhere around June 1. I would have to look that date  
11 up.

12 Q. So if Tom left sometime before January of '01, is  
13 it your understanding that he would have been working on  
14 preparing for this filing that resulted in this case  
15 sometime prior to that; is that correct?

16 A. I am sorry. Working on a filing for what?

17 Q. In preparation for this case?

18 A. He may have been. I don't know.

19 Q. Why else would he have been inputting things into  
20 the model or starting to build a model?

21 A. I do not know.

22 Q. Let me ask you this. Do you know whether Tom or  
23 Eve or do you continually update the production cost model  
24 run if you are not in anticipation of a complaint case or a  
25 rate case being filed?

1 A. No, we don't.

2 Q. Prior to your work on this current case, had you  
3 ever done any work associated with Ameren or Union Electric  
4 in regard to production cost models?

5 A. No, I haven't.

6 Q. When you took over working on the case from Eve,  
7 had initial decisions about what to include or what inputs  
8 needed to be included, had those already been made?

9 A. I believe Tom already had, as I say, some inputs  
10 input, but I rechecked all of those inputs.

11 Q. All right. When you say you rechecked those  
12 inputs, would you give me an example of an input that you  
13 would look at and say, oh, I see that Tom has already done  
14 this; I need to look and see if it is still appropriate?  
15 What kind of information are we talking about?

16 A. Well, unit names, making sure that number of units  
17 agreed with the period year that I was using.

18 Q. I'm sorry. Say that last part again. Making  
19 sure --

20 A. Making sure that the number of units were correct.

21 Q. Right.

22 A. I would check -- I checked the heat rates. I  
23 wanted to know where he got those from. I essentially  
24 checked all the input data Tom had put in to verify that I  
25 knew where they came from and whether they were correct or

1 not.

2 Q. All right. And what would you check that against  
3 to see if it was still accurate?

4 A. I checked it against the DRs that we -- DR  
5 responses that we had received from Ameren UE.

6 MR. COOK: Why don't we take break?

7 (Wherein, a brief recess was taken.)

8 Q. (By Mr. Cook) Mr. Bender, what is the purpose of  
9 an electric production cost model simulation?

10 A. The purpose of the production cost model is to  
11 arrive at a cost of fuel and net purchase of power for  
12 whatever year that we are studying or any period of time.

13 Q. Any period of time. All right.

14 A. That's what we use them for.

15 Q. And why do you want to know that?

16 A. Well, we need to know the fuel -- the production  
17 cost model economically dispatches units of purchase power  
18 to meet its load, and we need to know what the fuel cost  
19 would be to do that.

20 Q. So you run this to find out what the fuel cost and  
21 the net purchase power costs would be associated with the  
22 economic dispatch of the company's generating units as those  
23 are dispatched pursuant to the model; is that right?

24 A. Yes.

25 Q. Now, what is done with the information that you

1 develop after running the model?

2 A. I give that information to -- in this case, I gave  
3 that information to John Cassady of our accounting staff.

4 Q. And do you know what he does with it?

5 A. No, I do not. You will have to ask him.

6 Q. Do you know whether or not the work that you do  
7 has an affect on the revenue requirements that is indicated  
8 by the staff for Union Electric in the rate case?

9 A. I don't know how the accountants use this number  
10 to figure the revenue.

11 Q. Do you know whether or not there would be an  
12 affect on the accountant's recommended revenue requirement  
13 if you did or did not include certain items in your  
14 analysis? Let me rephrase that.

15 Do you know whether or not your analysis, your  
16 production cost model, would change that revenue requirement  
17 depending on what you did or did not do in your run, or did  
18 or did not include in your run?

19 A. No, I do not.

20 Q. Do you understand that the staff in this case has  
21 proposed a significant rate cut for Union Electric Company?

22 A. I believe that is the case.

23 Q. And do you know how your analysis affects that  
24 number, the magnitude of that recommendation?

25 A. What I give the accountants is the normalized cost

1 of fuel and net purchase power. I would assume a lower  
2 number, perhaps, would lower that revenue requirement, but I  
3 don't know what the effect would be on that revenue  
4 requirement.

5 Q. All right. Do you understand or do you have any  
6 knowledge as to the effect of the proposed rate cut on the  
7 company's revenues?

8 A. No, I do not.

9 Q. On the company's earnings?

10 A. No, I do not.

11 Q. Do you have any understanding or opinion or  
12 knowledge about the impact that the recommended rate cut, if  
13 adopted by the Commission, would have on the company's stock  
14 price?

15 A. No, I do not.

16 Q. How about the company's financial standing in the  
17 financial community?

18 A. No, I do not.

19 Q. Are you familiar generally with the issue of  
20 mergers and acquisitions in the utility business within the  
21 last several years?

22 A. I am aware that there have been some. Yes.

23 Q. Are you specifically aware of the acquisition of  
24 Louisville Gas and Electric by a company from out of the  
25 country?

1 A. No, I am not.

2 Q. Have you made any analysis or participated in any  
3 discussions concerning the likelihood of such a takeover of  
4 Union Electric?

5 A. No, I have not.

6 Q. In regard to the rate cut that the staff is  
7 recommending, are you aware of the concept of excessive  
8 earnings?

9 A. No, I am not.

10 Q. How about the term excess earnings? Are you  
11 familiar with that term?

12 A. Very vaguely.

13 Q. Are you aware that the Commission staff has  
14 claimed that the company has been earning excessive earnings  
15 in recent years?

16 A. Yes, I am.

17 Q. Do you know how long the company's earnings have  
18 been excessive in the staff's view?

19 A. No, I do not.

20 Q. Do you know whether or not those excess earnings  
21 that the staff claims the company has been earning form a  
22 basis for the staff's filing in this case?

23 A. I am not sure what you mean by basis.

24 Q. Do you know whether or not the staff would have  
25 filed this case if the company had not, in the staff's view,

1 been earning excess earnings?

2 A. No, I don't know what the staff would have done.

3 Q. Would you look at your testimony on page two  
4 again, please, starting around line 14? You indicate that  
5 the model performs an hour -- "an hour by hour chronological  
6 simulation of a utility's generation and power purchases";  
7 is that correct?

8 A. Yes.

9 Q. Can you explain a little bit more about what the  
10 hour by hour chronological simulation of generation means?

11 A. Actually, this is explained in the next question,  
12 what is meant by the hour by hour chronological simulation.

13 Q. All right.

14 A. Production cost model operates in a chronological  
15 fashion and it meets -- meeting each hour energy demand  
16 before moving to the next hour. It will schedule generating  
17 units to dispatching a least cost manner based upon fuel  
18 cost and cost of purchase power.

19 Q. All right. Chronological fashion means that the  
20 model looks at each hour.

21 A. The model solves the first hour before it moves on  
22 to the second hour.

23 Q. All right. And it will -- is it true that it will  
24 schedule generating units for each of those hours; is that  
25 right?

1 A. Yes.

2 Q. How does the model do that?

3 A. It does that in the least cost manner. It -- I  
4 really haven't examined the computer code which does that.  
5 So I don't really know the process by which it does that.

6 Q. Okay. We don't need to go that far into the code,  
7 but what information does the model have that allows it to  
8 make that judgment on what is the least cost unit for each  
9 hour?

10 A. It looks at the incremental heat rate. It looks  
11 at the units that are available to run and determines -- it  
12 also uses the fuel cost to determine what a cost to run that  
13 unit is.

14 Q. And the information that it has comes from where?

15 A. Comes from the input that I input.

16 Q. When did you run the model that you used that came  
17 out with the results that are included in your testimony?

18 A. Let me look. June 28, 2001.

19 Q. Now, you filed testimony on July 2, 2001, I  
20 believe; is that right?

21 A. Yes.

22 Q. I assumed that you did not take the results of the  
23 model and prepare the testimony all between June 28 and July  
24 2.

25 A. I was writing testimony at the same time.

1 Q. How much prior to June 28 of '01 did you start  
2 working on this project?

3 A. I started working on the project -- I ran the 2nd  
4 of June.

5 Q. And do I understand your previous testimony that  
6 preliminary work had been already done by Tom Lin and Eve  
7 Lissik; is that right?

8 A. Yes. I wanted to clarify that too.

9 Q. Sure.

10 A. I know Tom had been working with Ameren UE data,  
11 especially on the merger case, but I don't know whether he  
12 was working to prepare for this case. So he already had a  
13 model built as I pointed out earlier.

14 Q. He already had a model built for this case.

15 A. No. He had already had an Ameren model built.

16 Q. And it is your testimony that that was developed  
17 for the merger case; is that right?

18 A. Yes.

19 Q. When you say an Ameren model or model built for  
20 Ameren, what is it that you have to do to build a model for  
21 a particular company?

22 A. Well, you have to input all the unit's specific  
23 data that the company owns. There are a lot of inputs that  
24 are unique to that company.

25 Q. All right. So obviously, if you are running a

1 model for Ameren one day and a model for Empire the next  
2 day, you would have to have two different --

3 A. Two different models.

4 Q. All right. And those would include the unit names  
5 and various other pieces of information about those units;  
6 is that right?

7 A. Yes.

8 Q. And is that what you are saying that Tom Lin had  
9 started on before you got involved?

10 A. Yes.

11 Q. And do you check each and every bit of information  
12 that is put into the model by Tom or Eve before you run it  
13 to see if it is current?

14 A. Yes, I do.

15 Q. Now you say you started working on this project on  
16 June 2 of '01.

17 A. Yes.

18 Q. Had any of the --

19 MR. COOK: Strike that.

20 Q. (By Mr. Cook) At some point --

21 MR. COOK: Strike that.

22 Q. (By Mr. Cook) Does the model come with  
23 instructions?

24 A. The model comes with a manual. Yes. The manual  
25 is the instructions.

1 Q. And it tells you what type of information you need  
2 to input into the model, right, categories, information?

3 A. Yes, it does.

4 Q. Do you have to adjust the model at all to make it  
5 work with a particular company versus another company?

6 A. Well, like I said, each company is unique, and so  
7 we have to -- if you are talking about adjust the model  
8 itself, no, but we have to change all the inputs.

9 Q. So is it your testimony that by putting in the  
10 correct inputs, that will take care of any differences  
11 between Ameren and Empire and UtliCorp?

12 A. Yes, it would.

13 Q. You don't have to go in and tell the model to do  
14 something different with this particular piece of  
15 information because at Ameren something is different than at  
16 UtliCorp. That just automatically happens.

17 A. No. That automatically happens.

18 Q. How long does it take to put all the information  
19 into the model for Ameren?

20 A. Well, apparently, in this case it took me close to  
21 four weeks.

22 Q. That's how -- that's the amount of time between  
23 the date that you started working on it and the testimony  
24 was filed. When was the information in the model enough for  
25 you to run the model to get an answer?

1           A.    I think my first run -- I looked at that just the  
2 other day. My first run was June 21 I believe.

3           Q.    And the information that you get or the answer  
4 that you get is given to someone else, right?

5           A.    The final model number, the cost of fuel and net  
6 purchase power is given to John Cassady in this case.

7           Q.    All right. When did he get that number that was  
8 used in the filing? Do you know?

9           A.    I believe June 28, after I had checked the model,  
10 somewhere in that time frame.

11          Q.    Had he gotten any preliminary numbers before that  
12 from you?

13          A.    We had discussed some preliminary numbers. I had  
14 to make several initial runs. I call them initial runs just  
15 to verify the model is working with some of the data, and  
16 then we update some of the data --

17          Q.    That would have been --

18          A.    -- as needed.

19          Q.    I'm sorry.

20          A.    As needed.

21          Q.    Those initial runs would have occurred during  
22 June.

23          A.    Yes.

24          Q.    Now, we indicated that the -- you indicated that  
25 the model tells you what type of information that it needs.