A. Yes.

Q. Is that right? And where do you get that information to fill in the blanks?

A. Well, I have this listed on my schedule in the back of my testimony, schedule one.

Q. Okay. Let's look at schedule one. It says fuel prices were supplied by staff of John Cassady; is that right?

A. Yes.

Q. Do you know where he got those fuel prices?

A. No, I do not.

Q. Did you do any independent analysis of those fuel prices as to their -- anything about them?

A. I looked at them to make sure I had the fuel prices I needed to enter into the model, but I did no analysis to whether they were correct or incorrect.

Q. So if he gave you a fuel price on fuel oil of $2 a gallon, and in fact, that's inaccurate; it was $20 a gallon, would you know that?

A. I would notice it was -- yes. I would notice that was high and probably ask him about it.

Q. If he gave you a price of $2 a gallon and that was a typo; it should have been $3 a gallon, would you notice that difference?

A. No, I would not.

Q. And what do you base your ability to make that judgment?

A. Just past model runs that I have made. I know what the range of prices should be.

Q. All right.

A. It may be within a certain range. I don't know the exact number, but as long as it is in that range, it may seem reasonable.

Q. Can you -- what kind of price of coal would you see in information from John Cassady?

A. Just off the top of my head, I would say it is somewhere around a dollar per BTUs.

Q. He provides it to you in cost per BTU; is that correct?

A. Yes.

Q. Is all fuel given to you in that format?

A. Yes.

Q. Do you do any independent analysis as to whether or not the math has been done correctly by whoever did it originally to see if the cost per BTU is accurate?

A. No. I do not see those numbers.

Q. Do you know whether or not the cost per BTU of coal differs from one power plant to another?

A. Yes, it does.

Q. Also on schedule one you have unit maintenance

history. You indicate that's supplied to -- by UE data request response to the staff; is that right?

A. Yes.

Q. So do you take that information yourself from the data request response and put it in the model?

A. Yes, I do.

Q. Same thing with generation unit specific data?

A. Yes, I do.

Q. Does that information always come from Union Electric in the format that you need, or do you sometimes have to follow up?

A. Sometimes I have to follow up. I have never submitted DRs to UE before this case.

Q. The weather normalized hourly load, you indicate, is supplied by staff, Lena Mantle; is that right?

A. Yes.

Q. Do you do any independent analysis of that?

A. I examine the numbers the model is capable of, graphing -- it depends on what you call an analysis. I mainly just examine numbers to make sure you have a load for every hour and there are no zero loads and none of the loads are extreme, what I would consider extreme loads, to make sure the loads seem reasonable.

Q. And what variation would cause you to think that something is extreme?

A. Well, if I saw a zero in one hour, that would be extreme, because there is usually always a load in every hour.

Q. Are these -- is this a total system load that you are getting, or is this broken down by units, power plants?

A. This is a total weather normalized load.

Q. Purchase power contracts, capacities and prices, you indicate comes from 4CSR240-20.080 data; is that right?

A. Yes.

Q. What is that?

A. That is a monthly report we get from the utilities that 4CSR24020.080 is the monthly data that the utility submits to us.

Q. And that data includes what information?

A. Data includes purchases, sells, unit outages. There are other data that I can't remember right now.

Q. I believe you said you started working on the project on June 2, and June 21 was the first initial run. After completing the input, do you finally get to a point where you push a button and an answer comes out?

A. Yes. Essentially, you try to see if the model will run.

Q. Somewhere along the line you press enter, click the mouse or something, and you get an answer.

A. The program actually has a go button, and you push

the go button. It's a Windows oriented program.

Q. How long does it take it to think before you get an answer?

A. Since I have upgraded my computer, it doesn't take long. A few minutes.

Q. Okay. And what does the output look like?

A. Well, there are many output screens. I have one here. There are various output tables that can be printed. We print them either hourly or daily or monthly or yearly.

Q. All right. Pages with lots of numbers, right?

A. Yes.

Q. You have indicated, on page two of your testimony, that the results of the production cost model simulation show that the normalized cost of fuel and net purchase power for the test year is $343,785,940; is that right?

A. That is correct.

Q. Does that number actually show up at the bottom of some piece of paper that you print off the screen?

A. Yes, it does.

Q. All right. So you don't have to take a bunch of numbers and do a hand calculation?

A. No, I don't.

Q. After you push the go button and you get that number, do you do anything else with it before you give -- gave that to John Cassady?

A. No, I don't.

Q. You indicated that there are many screens that -- I think you indicated that there are many screens that the computer program or the simulation provides as output; is that right?

A. Yes.

Q. Do you examine those individual screens?

A. Yes, I do.

Q. And why do you do that?

A. Well, I examine the numbers to see if they are reasonable to see if I need to adjust my input.

Q. To see if you need to adjust your input?

A. To see if I need to adjust my input to see whether the numbers -- output is reasonable.

Q. In answer to the previous question, you said you didn't do anything before you gave that to John Cassady. Do you look to see if it is reasonable before you give it to him, or do you give it to him and do a check after that or --

A. I usually look at it before I give it to him. Yes.

Q. How would you know if something was unreasonable or if you had a problem that required you to adjust the input?

A. Well, as I said before, there are many screens,

many outputs that we look at, and it just depends on -- it just depends upon the problem that I looked at.

I compare the outage hours to see if they are close to what I have input. I compare -- I look at the planned maintenance outages to see whether they are what I input. I look to see whether units are generating close to what they should be generating. I look at the unit starts.

Q. What do you look at there?

A. Well, if a unit is cycling on and off excessively, there will be too many unit starts, and there may be something in the model that's causing that to do that that I need to adjust.

Q. How do you know what excessive is on unit starts?

A. On unit starts? I don't get numbers from the utility on unit starts, so it is just an experience with that.

Q. And where does that experience come from?

A. From past modeling experience with the Commission, running this model.

Q. So if the number of unit starts there seems to be, quote, reasonable in regard to what you have seen previously, you would consider that okay.

A. Yes.

Q. Do you have any independent experience at power plants knowing what an excessive amount of unit starts would

be?

A. I worked at Arkansas Nuclear One, which is a nuclear power plant, and I know that the nuclear power plants try to limit the number of starts, the number of cycles in a unit.

Q. If you've got more than one start in a year, that is not a good thing at a nuclear plant, is it?

A. That is true.

Q. What about fossil plants? Have you had any experience with them?

A. Just from working in the industry for years. I haven't actually worked at a fossil plant.

Q. Anything in your working in the industry give you a particular knowledge about the number of starts that a particular type of power plant would have before considered excessive?

A. No.

Q. You indicate that you do a check to see the amount of generation that the output shows. Is that listed per unit or per power plant?

A. Per unit.

Q. Per unit. And what do you compare that to to determine -- I think you said compared to what they should be getting or what they should be generating, what do you use to compare the information that's in the output to come

to that conclusion?

A. We get a -- I believe in one of the DRs we have an answer to that Ameren UE supplied us with the generation of each unit for the last ten years, and I have averaged those in five years, but I look at the generation to see how it compares to what the unit has been generating to see if the model is overgenerating or undergenerating.

Q. And at what point would you decide that there was a problem?

A. If the model is excessively overgenerating a unit by more than five to ten percent -- that's just a round number -- then I will look at that and try to figure out why the model is doing that.

Q. And that's -- five or ten percent is comparing the output of the model run to the five year averages that you mentioned.

A. Yes.

Q. So if the model indicates that a unit is running 25 percent more in the test year or the year that you are looking at, then the average you -- what do you do about that? Is that a problem that would attract your attention?

A. Yes, it would.

Q. And what would you do about that?

A. I would try to determine what in the model was causing that to happen.

Q. Did you find any such differences in your run in Ameren's case?

A. Yes, I did.

Q. And what did you do about that?

A. Well, unfortunately, I found those too late to make an adjustment. We did know one unit was overgenerating and a couple units were undergenerating at the time of the filing, but we did not know what was causing that, and we did not have time before the filing to correct that.

Q. Do you mention that in your testimony?

A. John Cassady did in his testimony. I am not sure if that is in his testimony or in his Interrogatories.

Q. Interrogatory.

A. In his Interrogatories.

Q. I thought I saw something. Do you have a copy of the Interrogatories with you?

A. Yes, I do.

Q. Would you look at 95A please, which I believe is an answer prepared by John Cassady, page 90 I believe. In the middle of the staff response, I believe, it says, quote, subsequent to the staff's direct testimony filing, it was discovered that the economic loading order of the filed fuel run was not correct. Staff filed fuel run loads -- staff file fuel run loads the more expense Meramec plant before the less expensive Sioux plant; is that correct?

A. Yes, that is correct.

Q. And did John Cassady discover that, or did you discover that or --

A. I think we discovered that together while looking at the runs.

Q. Have you found any other examples of significant enough variations between the model's output and your five year average since this?

A. No, I haven't.

Q. Have you continued to look, or have you looked again?

A. Yes. We have been constantly -- because we are trying to complete the hourly report we described in the back of my testimony, we have been constantly working with the model to update it to do this.

Q. When you find a situation where you think there had been a problem, can you tell whether that problem occurred because of, nothing personal, operator error or whether something went wrong with the computer process itself or whether the information that you were given was wrong?

A. Well, I look at all the information, whether -- it is a possibility -- there is always a possibility I typed in the wrong number. It is a possibility I was given the wrong number. It's a possibility I used the wrong number.

Q. Have you ever run across a situation where you have determined subsequently that there was something wrong with the model?

A. Something wrong with the model itself?

Q. Right.

A. No, I haven't.

Q. Is it correct that you use a historical time period for your simulation run? In other words, the information that you put in is all historic; is that correct?

A. Yes.

Q. And does all the information that you put in come from a particular time period?

A. Yes, it is.

Q. And is that usually a 12 month period?

A. Yes, it does.

Q. And in this case you used the calendar year 2000; is that right?

A. Yes, I did.

Q. When you put that information in the model, was all of it from the year 2000?

A. Well, I will clarify that. The outages that we use are a five-year average outage.

Q. All right. And is that a specific per unit average?

A. Yes, it is.

Q. In other words, you average five years of outages for Labadie 1 and five years of outages for Labadie 2.

A. Yes.

Q. Same five year period for all units?

A. For all the major units. I don't do that for the CTs in my units.

Q. You don't do what?

A. I don't -- I did not put in the average outages for the CTs.

Q. You just use what?

A. For the major units.

Q. What do you use for the CTs?

A. I believe in this case I just used what Tom had already built into his model.

Q. So you don't know where that came from.

A. I do not know where that came from.

Q. Why do you use a five year average instead of the actual year that you are looking at for your major units?

A. Well, most of your major units will have major outages every five years, and in order to spread those hours out over the years, we use the five year average. This way it gives the company a credit for those hours.

Now, also there may be some type of abnormal situation that may have happened to a power plant this year

that may never reoccur for the next ten years or next five years.

Q. Why is it important to do that? Why do you care whether or not all that's taken into account?

A. I would like to have the closest normalized fuel as I could get, and I don't want to run an abnormal year.

Q. Why not?

A. I don't want to use the outages in an abnormal year. For all I know, 2000 was an abnormal year, and I don't want to use an abnormal year.

Q. Why not?

A. This would give me an inaccurate number, would not give me a normal number.

Q. Why do you want a normal number?

A. I think it would be difficult to base rates upon basing them on an abnormal year.

Q. You understand that rates are based on the output of your model run; is that right?

A. No. I understand that rates are based -- I understand that my results of my model run is one of the inputs that go into the accountant's numbers.

Q. And those numbers are used to set the company's rates; is that right?

A. I assume that. Yes.

Q. Do you know when those rates are to be in effect?

A. No, I do not.

Q. Do you know if those rates are to be in effect in the future or the past?

A. No, I do not.

Q. You don't. Okay. What five year average did you use?

A. I used five years ending year 2000.

Q. Including 2000.

A. Including 2000.

Q. Did you determine that the year 2000 was an abnormal year?

A. No, I did not.

Q. Did you determine that it was not an abnormal year?

A. No.

Q. You made no such determination.

A. I made no such determination.

Q. Do you compare, even in a very general sense or at a superficial level, the output that you get against the actual 2000 numbers from the company?

A. I have those numbers, and I do look at those numbers. Yes. But I don't make a mathematical comparison to it. No.

Q. Why do you look at them?

A. Just to see the range that those units have been

generating, to see if I am in the right range, see if the output is in the right range.

Q. Okay. A few minutes ago we talked about the fact that you would compare your output versus a five year average, and if there was a deviation of more than five or ten percent, you would notice that.

A. I would do that too.

Q. You do this to the year 2000 as well.

A. Yes, I would -- well, no. Just compare it to -- I just look to see if it is in that range.

Q. All right. And if you see --

A. To see what the unit had been doing that year. I make no judgment.

Q. Is there a deviation that would be so significant that would cause you to do something?

A. No, there is not.

Q. Let me try to make sure you heard the question I asked. I didn't ask if there was a deviation in this case, but is there possibly such a deviation that would cause you to say I need to look at that and figure out why, comparing the output versus the actual for the test year?

A. If there is an extreme deviation, I would probably wonder why. Yes.

Q. Have you ever seen such a deviation in this or any other case that you have done?

A. No, I haven't.

Q. Will the output from the model run be so specific as to tell you the generation levels of a particular power plant for the year?

A. Yes, it does.

Q. And would it tell you the output of generation for a particular unit for the year?

A. Yes, it does.

Q. Does it tell you the output by month?

A. Yes, it will.

Q. In the analysis or the checking that we were talking about a few minutes ago of the output versus the actual from 2000, do you look at that by unit?

A. Yes, I do. Well, except for Meramec. I have to clarify that. The data I got from Ameren UE was -- included the Meramec plant. It did not include the Meramec units. So I have to total those up. I don't have the specific information for each unit.

Q. All right. I think you testified that there were no variations in the output as compared to the actual for 2000 that caused you to look a second time at anything; is that right?

A. Well, in this case, as stated earlier, we did know that the Meramec and Sioux plant generations were not normal, and we were going to correct those.

Q. Did that discovery come about when analyzing the -- or comparing the output versus the actual 2000 or comparing it against the five year average?

A. When we looked at the actual 2000.

Q. Did you reach a determination as to what the problem was there?

A. Yes, I did.

Q. What is that?

A. Well, I used the same minimum of up times, up time inputs.

Q. Ump times?

A. Up, U-P.

Q. Up. I'm sorry.

A. Up.

Q. Thank you.

A. Up times that Ameren UE had used in its Prosym model, and this was causing one of the units -- I am not sure which -- to stay on longer than it should modeling-wise.

Q. One of the units at which plant? Do you know?

A. I don't remember which one. I subsequently submitted a DR to UE to have them clarify their minimum up times and down times.

Q. Did you discover any other variations that caused you concern or caused you to look elsewhere for an answer

like when you compared the model's results with either the actual results or the five year average?

A. Yes, I did. I compared -- the model, if you put in a maximum capacity, will try to run that unit at its maximum capacity if it is cost effective to do so, and I compared that maximum capacity with what the power plants, the 20.080 data, with what the power plants were actually generating.

I noticed that Ameren was not running its plants at maximum capacity. So there is a -- there is an input to the model that I can adjust that.

Q. You haven't done that yet.

A. I have done that.

Q. So will that be included in your next --

A. That will be included in our update.

Q. Excuse me a minute while I decide if I need to ask some of these questions or if we have already gone through them.

(Wherein, a brief recess was taken, and Mr. Cynkar left the deposition).

Q. (By Mr. Cook) Mr. Bender, as part of the reasonableness check or whatever you want to call it that you do after the model run is complete, if -- would you notice, I guess, would you notice that the model assumed a level of generation for a unit that the unit had never

reached?

A. If the model overgenerated, I assume your question is if the model overgenerated a specific unit. Yes, I would notice that.

Q. Would you consider that a problem?

A. Yes, I would.

Q. Let me ask you about purchase power prices. Is that an input into your model?

A. Yes, they are.

Q. And then I assume there is a certain output that tells you what purchase power prices the model has now assigned or presumed would be used; is that right?

A. Yes, there is.

Q. Do you do any type of true up to the actual bill prices that the company experienced in a particular year?

A. I do not.

Q. Do you know whether or not the input prices that you receive from the company include estimates?

A. I do not.

Q. Does the -- the model should include all units that are available to Union Electric or to Ameren; is that right?

A. During the period that I run the model in, yes, that are regulated.

Q. Right. Do you know whether your model included

Taum Sauk, T-A-U-M S-A-U-K?

A. Yes, it did.

Q. Let me show you something and ask you if we are missing something. Let me show you what I believe is one of your work papers that you provided to us.

It is a -- actually, it is three papers. One of them is entitled UE CIPS complaint case EC 2002-01, and off to the side it says, energy generated (MWH). If you look at that, please, and I think near the bottom there is a section called hydrounits, and you have Keokuk and Osage.

A. Yes.

Q. And then I have another one here. This is a two page energy generated. I think the first one I gave you is UE, and the second one I think is all of Ameren, and the same thing on there, it's hydrounits, Keokuk and Osage. Do you know whether Taum Sauk appears elsewhere?

A. It doesn't appear on this sheet.

Q. Okay. But to your understanding, it should be and you believe is included in your model run.

A. In the model run that I have here, it is listed as pumped storage. Why it does not show up on your sheet, I do not know.

Q. All right. In that model run that includes pumped storage --

A. Yes.

Q. -- is there a total cost for production cost at the bottom?

A. Yes, there is.

Q. What is that number?

A. 34378594.

Q. All right. Well, let's --

A. Perhaps --

Q. Let me suggest that off the record afterwards if you and Mr. Finnell can look and see what the differences between what you have and what we have, because we have the same bottom number apparently but not --

MR. FINNELL: I got 82403.

THE WITNESS: That's what this says too.

MR. FINNELL: Alphabetical.

THE WITNESS: Yes, it is. Are these the files that I sent you?

MR. FINNELL: Yeah.

(Wherein, an off the record discussion was held.)

MR. COOK: It appears, after a brief discussion off the record, that what looks like the very same documents that you have and we have, ours does not have Taum Sauk, but the bottom line number is the same, and Mr. Bender and Mr. Finnell will look and see if we can figure that out.

Q. (By Mr. Cook) Mr. Bender, you testified that included in your model run are scheduled outages; is that

right?

A. Yes.

Q. And the information that you use for those scheduled outages comes from a -- based on a five year average; is that right?

A. No. For the scheduled outage, I actually use the UE -- a typical UE 2000 outage schedule. This is it right here in fact. Power plants measure unit outage schedule. It's dated December 11, 2000.

Q. So for your model run you -- well, is that actual, or is that actual planned, or actual historic?

A. I'm sorry. To build my outage schedule, I used this outage schedule as a reference. The number of outage hours that I made an outage to last was based on a five year average.

Q. Okay. So the length of the outage is based on the five year average.

A. Yes.

Q. Is that per unit?

A. Per unit.

Q. Specific average per unit.

A. Right.

Q. And then what do you use that particular piece of paper for?

A. I use this as a reference so I can see the way UE

schedules its plants.

Q. What do you mean by "the way UE schedules its plants"?

A. The timing that Union Electric has used to schedule its plants whether it scheduled it to start in May or February or any other month.

Q. So its your understanding that your model would include a timing of those schedules pursuant to the company's planned outage schedule that it developed in advance; is that right?

A. Yes.

Q. Now, the model run, I believe you indicated, in effect, it dispatches the units in the least cost manner; is that right?

A. Yes, it does.

Q. That means that each hour the model determines the most efficient way to dispatch the units to meet the load of that hour; is that right?

A. Yes.

Q. Generally. And to make that determination, the model needs to know what the costs are that are associated with each unit; is that right?

A. Yes.

Q. What information do you use to tell? What do you tell the computer? What input do you do to tell us what

costs to use?

A. One input is fuel cost.

Q. All right.

A. Another input is heat rate for that unit.

Q. All right.

A. Another input is emissions cost.

Q. Emissions cost.

A. Yes.

Q. Uh-huh. All right.

A. Another input is variable O and M costs, operating and maintenance cost.

Q. All right.

A. Also another input is the start-up cost.

Q. Okay.

A. I believe that's all.

Q. Are these average costs? In other words --

A. Which costs?

Q. On emissions costs, how do you determine what the emissions cost is for Labadie unit 2?

A. The emissions cost we actually got from Union Electric in the DR response.

Q. And is there -- do you know if there is a difference in emissions costs depending on the day of the month or the time of the day that the unit is being operated?

A. The emissions costs are included on a monthly basis with the cost of the fuel.

Q. So there is an average emissions cost per hour that is assigned to a particular unit.

A. I don't know how it figures it on an hourly basis.

Q. Do you know whether there is any -- whether the input includes a difference in emissions cost of one hour versus another hour?

A. No, I don't.

Q. You don't make any such specific input that you are aware of.

A. Not on an hourly basis, no.

Q. Anything?

A. It is possible to do that, but I don't do that.

Q. What about heat rate? Does that vary by hour?

A. It is also possible to do that, but we do not do that. I do not do that.

Q. What about fuel costs? Does that change by the hour?

A. It is possible to do that, but the fuel costs I input are the costs that John Cassady gave me.

Q. And is that one number for a month or --

A. I would have to look. I believe we have one number for each month.

Q. All right.

A. If the number was the same for two months in a row, I may not put a number in that month, because it will continue to use the last month until -- it will continue to use the same number until it is changed.

Q. You don't -- I mean, you do know -- let me rephrase that. Are you saying that you do not put in a different cost of fuel for each hour of the month for a particular unit?

A. Yes. That's true. I do not put in a fuel cost for each hour of the day.

Q. And do you know whether or not the model adjusts that cost of fuel itself for any purpose?

A. No. The model does not adjust the cost of the fuel other than in the subroutines that it runs to calculate its cost, and I don't know what those are.

Q. Would the fuel costs for Labadie 2 be the same for any hour in the month of August the Labadie 2 is shown to be running in your model?

A. If I have put in a monthly price, I am assuming that it will use that price for every hour in that month.

Q. What does the term normalization mean?

A. Normalization, as I understand it, is to eliminate nonrecurring items from a period of time.

Q. And why would you want to normalize something? Let's assume we are talking about a rate case here. Why

would you want to normalize?

A. You would not want to model an abnormal year, because rate payers may be paying excessive rates if we model an abnormal year, and by the same token, the company -- if we model an abnormal year, the company may not be getting enough return in that year.

Q. Do you normalize anything in the work that you do and have done for this case?

A. I use -- no, I have not.

Q. Does the -- is the effect of any decisions that you've made on what input to put into the model have the effect of normalizing anything?

A. I think the effect of using the five year outage average has, in effect, normalized the run.

Q. Okay.

A. Also, we use normalized -- weather normalized loads.

Q. All right. You don't do the weather normalization yourselves.

A. No, I do not.

Q. Let me rephrase the question then. What type of normalization is -- what things are normalized in the staff's filing this case that you're aware of that you deal with? You indicated that the five year outage average has a tendency to normalize outages as weather normalization that

is provided to you. Is there anything else?

A. Those are the only effects I know of.

Q. Is there an attempt to normalize fuel costs?

A. I don't know what Mr. Cassady has done with the fuel cost.

Q. Purchase power costs. Are those normalized?

A. Purchase power cost. We use actual 2000 year data for this.

Q. All right. Are you familiar with the term known and measurable changes in the context of a rate case?

A. Yes, I am.

Q. Do you have an opinion on whether known and measurable changes should be taken into account when setting rates?

A. Well, I don't set rates, but if there is a known and measurable change in anything in the model, I will make that change.

Q. All right. Do you understand the concept of a prudence disallowance or imprudence disallowance in rate making?

A. That's terminology I wouldn't use. I am not familiar with that.

Q. So you have made no recommendations for a disallowance for imprudence in this case?

A. No, I have not.

Q. In comparing the results of your production cost model run and the company's actual experience for the year 2000, did you discover anything that you believe the company was imprudent about?

A. No, I did not.

Q. Do you believe it is appropriate for the Commission or its staff to interfere in the management of a company that it regulates?

A. I don't know that I am qualified to answer that question.

Q. Is it true that you -- well, do you believe that you have a right or a duty to interfere in the management of a company?

A. No, I do not have that right.

Q. Do you believe it is appropriate for a Commission to punish a company for bad management?

A. I don't know a case that that has ever been done. I don't have an opinion on that.

Q. Do you believe it is appropriate for a Commission to reward a company for good management?

A. I would give the same answer.

Q. You indicated earlier that you were aware in this case of normalization, either direct or the effect of something is to normalize for weather outages and that sort of thing. Do you also normalize or does the staff normalize

for management decisions?

A. I do not know.

Q. You don't know. I believe in response to a document request you provided a copy of your surrebuttal testimony in the Empire district case 2001-299 from May of 2001. Do you have a copy of that?

A. The surrebuttal testimony?

Q. Yes, sir.

A. I have a copy.

Q. All right. Would you look at what I believe is page two. There is a first page which has surrebuttal testimony on the top and then there is a second page. I think you are too far.

A. Page two or page three?

Q. Well, there is no page number on mine. This is page one. My page two has, on the top, answer the differences addressed in their rebuttal testimony.

A. Yes. I am on that page.

Q. If you look down at line ten, could you read the answer there, no, and then the next two sentences? Well, let's start with the question.

Should staff production cost model results represent actual test year expenses as alleged in Mr. Beecher's rebuttal testimony, and then you answer no, and then would you read the next two sentences, please?

A. Actual expenses for test year are not necessarily representing of expenses for any particular year.

Q. The next one.

A. Each year is unique in the set of problems that arise because of weather unit outages, fuel prices, market conditions and management decisions.

Q. And why don't you go ahead and read the full answer?

A. Staff normalizes as many of these factors as possible. It seeks to represent normalized year and not necessarily match any one set of unique circumstances that may have arisen in a particular test year.

It is not reasonable to assume a normalized expense would match that of any particular test year actual results.

Q. All right. Now, in that particular answer, you refer to the unique set of problems that arise in a particular year because of weather unit outages and management decisions and then indicates the staff normalizes as many of these factors as possible.

Is it -- was it your testimony in that case that the staff attempts to normalize management decisions?

A. No. In this context, I was referring to the fact that management decisions may result in power outages or unit outages which may affect units running.

Q. So is it your testimony that a management decision could have an affect on the operations of a company and you don't attempt to normalize for that or that you do?

A. It's my testimony that management decisions may have an affect upon an operation of a power plant and that we attempt to normalize the events which may happen to a power plant.

Q. So the effect of your normalization would be to, quote, normalize the effect of those management decisions; is that right?

A. Yes.

Q. Do you have any specific examples in mind, or did you have any specific examples in mind when you wrote that testimony as to the types of management decisions that have an affect on operations that you would want to normalize?

A. Well, the decision whether to make an upgrade, a major upgrade, this year or make it next year might affect the unit outages, whether the unit is down this year or next year. By normalizing the outages, we take that into effect.

Q. Is it your understand that the effect of that normalization -- let me rephrase that.

Do you make a determination as to which of those decisions need to be normalized or not?

A. No, I don't.

Q. Is it automatic if the decision has an effect on

something you are looking at?

A. I don't try to normalize the decision itself. I normalize the effect that the decision has on the plant's operation.

Q. Do you make a determination of whether the decision is reasonable or not?

A. No, I do not.

Q. Do you know whether the effect of your normalization is a determination on whether the decision was reasonable or not?

A. No, it is not.

Q. It is not.

A. It is not.

Q. In the Interrogatories we looked at before, I think it was number 89 on page 86. It was the response to 86 that included the cases that the staff has used the RealTime production cost model. We went through this earlier, and you indicated that you had participated in three of those cases including this one, the Empire case, and the UtliCorp case, 97394; is that right?

A. Yes.

Q. Now, in this case, your production cost model run indicated a cost somewhere in the neighborhood of five million dollars greater than the actual costs that you compared them against for the year 2000. Does that sound

right?

A. I didn't compare the cost to actual year.

MR. COOK: Let's go off the record a minute.

(Wherein, an off the record discussion was held.)

Q. (By Mr. Cook) That's apparently a number that Mr. Cassady has developed. You are not familiar with what that number is.

A. I am not familiar with that number.

Q. Do you know -- I am not crazy. I think it is in the Interrogatories a few items later, but it is prepared by John Cassady. You didn't check that for any reason; is that right?

A. Check what?

Q. That number, the difference between your model and the actual.

A. No, I did not.

Q. You did, however, tell us that you checked some of the specific outputs versus the specific actual numbers, right?

A. In the generation not cost.

Q. Okay. Do you know whether or not, in the other cases that you have worked on, if the model numbers came in above or below actual?

A. I don't recall.

Q. Do you know what an input output curve is?

A. I guess you would have to be more specific.
Q. Have you ever heard of that term as used in production cost model?
A. No, I haven't.
Q. All right. Unit heat rate. You know what a unit heat rate is, don't you?
A. Yes, I do.
Q. What is unit heat rate used for in your model?
A. In the model run it is used to determine the cost -- well, it is one of the factors used to determine cost of the units.
Q. All right. And that number -- is it a specific number for each unit?
A. Yes, there is.
Q. Does it vary with hour or day or month or anything?
A. It varies with load.
Q. All right. Do you know how that number is determined?
A. I use the heat rates given to me in a DR response in reviewing.
Q. Do you modify them in any way or adjust them in any way?
A. No, I do not.
Q. Are you aware of how Union Electric determines

those numbers?

A. I have a DR response that I ask them how they determine those numbers, and I would have to check the response to accurately reply to that.

Q. Do you -- are you familiar with the term field testing?

A. Yes.

Q. Do you know if those numbers are determined from field testing? Does that sound familiar?

A. I would have to check the DR response to see if they determine it that way.

Q. Do you know what an efficiency deviation factor is or EDF?

A. No, I do not.

Q. Have you ever heard of that?

A. I have seen the term EDF, but I've never inquired as to what it means.

Q. Where have you seen it?

A. I think I have seen that in Ameren UE's Prosym model.

Q. Do you know -- move on. Does your model include anything related to refueling of the nuclear plant at Callaway? Let me rephrase that.

Does your model include anything related to refueling at Callaway?

A. Other than refueling outage, no, it does not.

Q. All right. It does take into account an outage for refueling.

A. I would have to check to see if it did for this year. I use the average outages for this year.

Q. Do you know how often Callaway is refueled?

A. I understand every 18 months.

Q. And so what kind of average did you use for Callaway?

A. I use the five year average for Callaway.

Q. Ending in 2000, including 2000?

A. Including 2000.

Q. So however many Callaway outages are in that five years, that's part of the average; is that right?

A. Yes, it is.

Q. Do you know -- let me start that again.

Is it true that the length of the outage or the length of an outage or outages for Callaway that is included in your model would be the average of whatever outages occurred in those five years?

A. Yes, it is.

Q. Did you include anything which would take into account the most recent outage in the spring of 2001?

A. No, I did not.

Q. Can you check something that you may have brought

today in your materials which would indicate, or do you remember how many days you have included for the refueling outage in your run?

A. Let me check to see if I have brought that. I used 466 hours.

Q. All right. Let me make sure I understand how you did the averages. If there was no Callaway outage in 2000, you still don't come up with a number for a Callaway outage, right?

A. Yes.

Q. And where do you get that number?

A. That number was a five year average of the outages for the last five years.

Q. Would the same be true of any other units if there was no outage, say, at Labadie 3 in 2000?

A. Yes, that would be true.

Q. You would pick it up from the average of the five years.

A. Yes.

Q. Are we talking forced or planned outages or both?

A. Both.

Q. Both. You have worked at a nuclear facility previously; is that right?

A. Yes, I did.

Q. And were you there during any refueling outage?

A. Yes, I was.

Q. Did you have any responsibilities related to that outage?

A. Yes, I did.

Q. What were those?

A. My responsibility was engineering support to operations during the outage, making modifications to the plant during the outage.

Q. All right. When there is an outage, you shut down the nuclear plant, right?

A. Yes.

Q. It stops generating.

A. It stops.

Q. Do you know how that works at a very high level?

A. How what works?

Q. How do you turn it off?

A. How do you turn it off? You have to shut it down.

Q. Is there a switch that you throw and then you open a door and go in?

A. No. It's not quite that simple.

Q. No. Do you know how long it takes a nuclear plant to safely shut down for a refueling outage?

A. No, I don't.

Q. Do you know if it is more than an hour or two?

A. Yes, it is more than an hour or two.

Q. Is it a matter of days?

A. It is a matter of days. I am not sure exactly how long it is.

Q. Do you know how long it takes a nuclear power plant to return to full power after a refueling outage?

A. No, I don't.

Q. Are you familiar with the terms coast down and ramp up?

A. Yes, I am.

Q. And do you know whether a nuclear plant can provide its full load to the system during those times of coasting down and ramping up?

A. During coast down, a nuclear plant, I understand, cannot supply at full load. In ramping up, it also cannot supply full load.

Q. Do you know whether or not coasting down time and ramping up time is taken into account when you determine the availability of the Callaway plant in your production cost model?

A. I don't think the coast down time is in there, but we do have the ramp rate in the Callaway plant. We use the same ramp rate that Ameren UE used in their model.

MR. COOK: Let's go off the record moment.

(Wherein, a lunch recess was taken.)

Q. (By Mr. Cook) Back on the record after our lunch

break.

Mr. Bender, on outages and their treatment by your model, you have included information and we talked about the planned outage schedule, planned outages that you have included and the forced outages.

Are there any other types of outages of load reductions other than the Callaway refueling and the planned and forced outages that the model takes into account?

A. Other than what I have input into the model, no, there aren't any.

Q. That's the question. What have you inputted into the model?

A. I have inputted the planned outages and the forced outages -- I'm sorry -- forced outage rates.

Q. Are you familiar with something called fuel quality load reduction?

A. No, I am not.

Q. Do you have anything called that in your model?

A. I have never used that function. So I don't know whether it is in the model or not. I can look it up.

Q. Do you know whether your model takes into account whether a unit is generating at a reduced load because of the quality of fuel that is being used during a particular hour?

A. No, it does not.

Q. Do you --

A. It does have an adjustment factor that you can adjust the maximum output to.

Q. So you can, in effect, manually tweak something for some reason or another.

A. Yes.

Q. And do you do that at all? Have you done that in this case?

A. Not in the filed case. In my update I plan on doing that.

Q. And for what purposes will you do it in the update?

A. Like I said before, the model has a tendency to run a unit at its maximum capacity that is input, but I have noticed from looking at 20.080 data that some of the units aren't run at those capacities. So the model has a percentage that I can put -- that I can input that will adjust the normal running capacity but still allow the model to run at a maximum if it needs to during peak periods.

Q. And what will be the basis of the adjustment that you plan to make?

A. I will have to compare the model generating output with the yearly generation data I received from UE, both the year 2000 and the five year average.

Q. All right. Do you know whether there is the

possibility of an equipment problem at a unit that could cause a reduction in generation yet not cause a forced outage?

A. That is a possibility.

Q. And do you have anything factored into your model at the current time which would take that into account?

A. No, I do not.

Q. Are you familiar with the concept of spinning reserves?

A. Yes, I am.

Q. Do you know whether Ameren is required to maintain a certain amount of spinning reserve?

A. I understand they are required to maintain a certain amount. Yes.

Q. Does the model that you ran take that into account?

A. In the filed model, it does not.

Q. Are you familiar with the concept of quick start capacity?

A. Yes.

Q. And does your model include that?

A. The model includes units which have quick start ability, such as the CTs, and the ramp rate on those are quick start. In other words, they can start within a ten minute period.

Q. So your model assumes that they do.

A. Model assumes they do.

Q. Does RealTime model -- let me rephrase.

I believe you testified RealTime model models economic dispatch on an hourly basis; is that right?

A. Yes.

Q. And does it assume that all units are available one hour and not the next and then available the next hour again?

A. No. If a unit is always -- is already running, it will evaluate whether it is economical in the next hour to start up a next unit or to keep the one that it has running.

Q. So it is your understanding that the model takes into account the expense of starting up and shutting down.

A. Yes. Start-up costs are included.

Q. What are the factors that the model takes into account in determining whether or not it is economical to start a unit? Do you know?

A. Number one is its availability. Number two could be its incremental cost and start-up cost. The start-up costs are spread over a period of time, and we get that start-up spread from information that Union Electric has supplied us.

Q. Do you know what kind of costs are included in start-up costs?

A. You mean a dollar amount for each unit --

Q. No.

A. -- or the cost included in the cost?

Q. What kind of costs are included in that category called start-up cost?

A. No, I don't.

Q. Would a unit's ramp rate be relevant to that issue on whether or not it is to be started up or not in the model?

A. Yes, it would.

Q. Is there such a thing as a minimum up time?

A. Yes, there is.

Q. Minimum down time?

A. Yes.

Q. Is there something called defined cold hours?

A. Yes, there is.

Q. Are there other elements that you would consider important to know?

A. For starting up a unit?

Q. Uh-huh. Or to know whether it is economical to start up a unit.

A. Well, obviously, the fuel cost. I don't think we have mentioned those.

Q. Would you agree that whether or not a unit is a must run unit would have an affect on whether --

A. Yes, it would. I want to clarify that on the last run unit. It is not necessarily determined whether it is going to start up. That, more or less, determines whether it is going to shut down. If it is a must run unit, it just won't shut it down.

Q. Okay. Are these same kinds of -- are many of these same kind of factors also relevant on the question of whether you shut down a unit?

A. Yes, they are.

Q. Does the question of spinning reserve have an affect on that?

A. Yes, it does.

Q. Boiler characteristics?

A. There are no boiler characteristics in the model.

Q. All right. So you wouldn't take -- that would not be taken into account then.

A. No. That's taken into account by the heat rate.

Q. All right. What is a must run unit?

A. Usually, we let the utility define the must run units. Basically, it is a base load unit such as Callaway.

Q. Do you know what the meaning of must run is? What is it about a unit that would cause a utility to call it a must run unit?

A. I don't have an answer for that. I do not know.

Q. You don't know. Do you know if UE has any must

run units, or do you know what units UE may designate as must run?

A. I know Callaway is designated as a must run unit.

Q. Do you know whether Ameren energy generating company has any must run units?

A. I don't recall whether they do or not.

Q. Is there anything about your model that requires you to note that a unit is must run or to so designate a unit as must run?

A. Yes, there is. There is an entry for must run units. It is must run capacity.

Q. Must run capacity is referred to in your model.

A. Yes.

Q. And to your recollection, Callaway is the only unit that is so designated in your model.

A. Yes, it is.

Q. Do you know what the model does with that information or that fact as to how it treats it differently, if at all, from other units?

A. The model will not shut down a must run unit except for outages, and it will run at that capacity that's -- it will not get below that capacity.

Q. All right. Would it make any difference to your bottom line if there are units that are must run but are not listed that way in the model or vice versa?

A. Yes. It would change the loading order of all the other plants.

Q. I want to go back and ask a couple questions about the analysis or comparison or reasonableness check that you may make after you do a model. Do you call it that? Do you call it a reasonableness check or sanity check or anything? What would you refer to that as?

A. A reasonableness check.

Q. If you ran your model on actual test year data without normalizing, would you expect the model's cost to closely match those actual costs?

A. It would be close, but it's very difficult to model an actual year because of the random forced outages that the model includes. I cannot order the model to shut down the unit at a particular time other than using a planned outage. So it would be difficult to simulate actual year forced outages.

Q. So your model -- if you put in actual data for a test year, you would not put in the -- assuming a historical test year now, you could not put in the actual forced outages.

A. No, I cannot. I can put in a forced outage rate, but it is up -- the model will randomly select when it wants to shut down the units.

Q. The model doesn't use Murphy's law and require

that those outages occur at the most inopportune time.

A. Not to my knowledge.

Q. Okay. Are you familiar with the term start spread?

A. Yes.

Q. What is that?

A. Start spread is -- I can read that out of the manual for you. It is the number of hours that the cost of -- start-up cost are spread over.

Q. All right.

A. Start spread is the number of hours over which the start-up cost will be spread.

Q. Very good. Have you ever run your model using actual data, not normalized, for a particular given year and tested it against and compared it against the actual results?

A. No, I have not.

Q. For Ameren or any other company?

A. Ameren or any other company.

Q. Do you have an opinion as to whether or not a significant variance in the outcome of such a run would indicate a problem with the model, a significant difference in the outcome of the run versus the actual? You have indicated that you think there would be a problem because of the random forced outages.

A. Yes.

Q. Did you view that as a problem with the model?

A. No. I don't view that as a problem with the model.

Q. But because of that, is it your testimony or your opinion that the model would result in an inaccurate finding?

A. Because of that, we cannot model exact -- we cannot exactly model a particular year and expect to get the same results that the utility did in that year.

Q. Based on your understanding of how a model works and what is supposed to determine, but for that problem of the random assignment of forced outages, should a model be able to fairly closely replicate the actual year if you put in the actual numbers?

A. Perhaps closely, but I don't know how closely that would be.

Q. If it didn't come in close, would you think that's a problem?

A. No. I don't think that would be a problem, because we never model actual years. I have never modeled actual years.

Q. Okay. Is the fuel cost used to decide whether to dispatch a unit -- is a fuel cost that the model uses to decide whether to dispatch a unit the same fuel cost as the

model uses to calculate the total cost for that particular month?

A. No, it is not. The model uses an incremental heat rate to calculate the fuel cost to dispatch a unit, but to calculate the fuel cost for the entire month, it uses an average unit.

Q. Thank you. Let's talk about the Joint Dispatch Agreement for a moment. How often have you run a production cost model for Ameren prior to the run that is included in this filing, or have you?

A. I have never run the production cost model for Ameren prior to this case.

Q. Prior to June of this year?

A. Yes.

Q. Do you know when the Joint Dispatch Agreement went into effect?

A. I have that in testimony that it was agreed upon December 18, 1995.

Q. All right. Do you know when it was -- when it went into effect?

A. When they actually began to dispatch in a combined system; is that what you are asking?

Q. Yes.

A. No, I do not.

Q. Have you ever run a production cost model for any

other utilities or any other entities that requires the use of something like the Joint Dispatch Agreement?

A. No, I have not.

Q. What do you have to do to the model's inputs to accommodate the Joint Dispatch Agreement or the JDA?

A. I don't change the inputs at all.

Q. All right. At the end of your testimony you indicate that you were waiting for the model provider to supply an update to the model that will enable the staff to obtain the output necessary to complete the calculations, and my understanding was that that had something to do with the JDA. So is that a output related problem, as opposed to an input related problem?

A. Yes. The model was not able to give us the reports that we needed to do the JDA, to do the JDA allocations as we have described.

Q. Have you received that update to the model now?

A. We have been working on it since we filed this case, and just this last week we received an update that I'm evaluating at this time.

Q. Have you received prior updates that haven't worked?

A. Yes.

Q. Okay. So you have not completed that work yet; is that right?

A. We have not completed that. I have not.

Q. How many updates have you received from them?

A. I wasn't counting, but I would estimate around seven. This is the seventh update since filing.

Q. What is it about those updates that haven't allowed you to complete your work?

A. The main problem that we had before was the hourly reporting function of the model, and the main thing that was changed was reporting function of the model, reporting cost and generation.

Q. And that hasn't been working out?

A. It wasn't working out very well. The model itself is running fine, but the reports we were getting out of it were inconsistent on the hourly reports, to clarify that.

Q. I want to go back to a question I asked you a couple of minutes ago and make sure that -- make sure of anything. Let me ask it a slightly different way.

I asked about the fuel cost used to decide whether dispatch units -- whether the dispatch units are the same as the model uses for the total for the month, and you indicated it was incremental versus average.

A. Yes.

Q. Is the fuel price used for dispatching decisions the same as the fuel price used for the total?

A. The fuel price is the same. Yes.

Q. We talked a little bit ago about the reasonableness comparison that you make, and I think -- well, your model comes up with a total UE figure; is that right?

A. Total Ameren UE cost. Yes.

Q. Cost. Okay. Total Ameren UE. So it is not total Ameren. It does not include CIPS.

A. I can include CIPS. Yes.

Q. But what you filed does not --

A. What I filed does not include CIPS.

Q. And did you do a jurisdictional allocation?

A. I do not do that.

Q. Somebody else does that.

A. Somebody else does that.

Q. All right. And you indicated that you compare certain of the outputs against five year average, as I recall, to see if it looks about right.

A. Yes.

Q. And what documents do you compare it to when you're making that comparison. You have got your model run, and you compare it to the five years. Have you provided -- do we have those documents from previous data requests? Do you know?

A. Yes, you do.

Q. Do those include the ones I was showing you

previously for some reason had Taum Sauk missing?

A. No. I am going to retract that answer, because those documents were created after we replied to your Interrogatories. These documents were created as I was trying to update the model.

Q. All right. Do you have -- not with you, but do you have available the documents that you used to make those comparisons?

A. Yes, I do.

Q. Could I request that we get a copy of those? I will follow it up with a written data request. What we are looking for are the documents against which you made the comparisons, which I assume are some five year averages costs.

A. Well, not of costs. I am not looking at cost. I am looking at generation outage hours, etcetera.

Q. But what -- so I am clear, what does it include?

A. It includes outages and generation, megawatt hours.

Q. Megawatt hours.

A. Megawatt hour.

Q. And hours of outages.

A. And hours of outages.

Q. Does it include anything else that you would be comparing?

A. Not the documents, no.

Q. Do you compare it against anything else in your reasonableness check? Would you compare your model results against anything other than these documents that have the total megawatt hours and outage time, outage hours?

A. I think we covered this earlier.

Q. Probably so. I apologize.

A. Of course I look at -- I look at all the results, and what you are asking me is what do I compare those.

Q. Uh-huh.

A. I don't necessarily compare all the results to some number, but I do look at all the results. The main things I compare are the forced outage rate hours and the planned outages and the generation, the megawatt hours.

Q. The -- there is some dollars involved in your testimony like, for instance, the test here, total fuel and purchase power of 343 million plus. Do you compare that to anything?

A. No, I do not.

Q. Are there subcategories of those dollar amounts that you compare to anything?

A. No, I do not.

Q. The averages that you compare it to you said are five year averages; is that right?

A. I look at the five year -- I look at the five

year, and I have the three year, and I also look at the year 2000 in this case.

Q. Year 2000 actual?

A. Actual.

Q. And so did you make a comparison with both the five year and the three year average?

A. Yes, I do.

Q. And the test year actual?

A. And the test year actual.

Q. Look at the Interrogatories again for a few minutes. If you look at number nine on page 23, the question there is describe the participation or contribution of any person identified in response to the immediately preceding interrogatory.

The immediately proceeding interrogatory talks about anybody participated in or contributed to the preparation of your testimony; is that right?

A. Yes.

Q. And the answer -- both of these answers were prepared by you, I believe, and it indicates that Dr. Proctor provided a rough draft of portions of the testimony that refers to the JDA from page six to page ten; is that right?

A. Yes.

Q. How much -- can you specify which parts of pages

six to ten Dr. Proctor provided a rough draft for?

A. Page 6 where it starts with line 12, what is the JDA between UE and AG. Because I was very busy trying to model the UE and trying to write testimony, Dr. Proctor and I decided upon he would write a rough draft of this for me to review and comment on, and so essentially, from page 6 to page 11.

Q. Basically, all the discussion of the Joint Dispatch Agreement; is that right?

A. Yes.

Q. Is it fair to say that he wrote that and you adopted it?

A. He wrote portions of it. I edited it along with other members of the staff, and I have adopted the edited version of it.

Q. All right. Had you had any dealings with the Joint Dispatch Agreement before you started working on this production cost model run?

A. No, I had not.

Q. I think I may have already hit on this, but you testified, did you not, that none of the other cases that you have provided testimony for about your time production cost model has included a Joint Dispatch Agreement; is that correct?

A. That's correct.

Q. Can you tell me which of any of those cases that you previously worked on had a nuclear power plant associated with it?

A. I don't know if they had a case number, because I don't know if it ever came to be filed, but we had an earnings investigation of KCP&L, which I worked on which involves Wolf Creek Power Plant.

Q. That's not listed in the list of cases that you have filed testimony, right?

A. No. I don't think we ever got to the testimony stage.

Q. So none of those cases, then, of course, would have a refueling outage of a nuclear plant; is that right?

A. No.

Q. Can you tell me which, if any, of those cases -- and I guess we are just talking about Empire and UtliCorp, right, for the cases that you have worked on?

A. Yes.

Q. Did either of those cases include hydrofacilities?

A. Empire case included a hydrofacility.

Q. Do you know what kind of hydrofacility Empire has or what kinds they have?

A. I don't recall now.

Q. Do you know what kind of hydrofacilities Union Electric has?

A. I have modeled in the model. I have never visited the --

Q. Does Union Electric have a pump storage hydrofacility?

A. Yes, they do.

Q. Does Union Electric have a poundage storage hydrofacility?

A. Yes, they do.

Q. Does it have a run of the river hydrofacility?

A. I don't recall.

Q. I think we established that you did not use an EDF or efficiency deviation factor in your model for Union Electric. Have you ever included an EDF in the other cases that you have worked on?

A. No, I have not.

Q. Interrogatory 92 on page 87 is an answer that you provided I believe. It refers to the price of emergency purchased energy; is that correct?

A. Yes, it does.

Q. And is it correct that for this data you used actual prices paid as provided by the company?

A. Yes, it is.

Q. Let's look at interrogatory number 5, bottom of page 89. The end of that answer you say the staff plans to correct this error in the context of the update, the fuel

run, and this is the business about Sioux and Meramec; is that right?

A. Yes, it is.

Q. Has that modification to the fuel run been completed?

A. This particular modification has. Yes.

Q. So you have -- is it correct to say that you have changed the input to correct for this?

A. Yes, I have.

Q. Is the fuel run the same as the production cost model run?

A. Which fuel run are we talking about?

Q. The last sentence in the answer, the staff plans to correct this error in the context of an update to the fuel run.

A. Yes. I believe so. I didn't write this, but I believe that's what he is referring to.

Q. Okay. Mr. Cassady prepared this one; is that right?

A. Yes.

Q. At the beginning of that answer, Mr. Cassady says I performed the following historical analysis checks for reasonableness for the fuel area. Are you familiar with those analysis checks that he's talking about?

A. I am familiar with the terms that he is talking

about. I don't know what analysis he did.

Q. You do not participate or work with him on that.

A. No. We discussed the results of the model, but I don't know what analysis he did.

Q. All right. Other than the comparison or reasonableness check that we talked about previously on the megawatt hours output and the forced outages -- planned outages, I think, against your -- against the five and three year average in actual test year, do you do any additional historical analysis check yourself?

A. Other than those, I don't remember being any others.

(Wherein, a brief recess was taken.)

Q. (By Mr. Cook) Mr. Bender, I asked you some questions earlier about the Joint Dispatch Agreement, and I think I certainly got the impression that you had not done any other type of Joint Dispatch Agreement work except on this case, and rather than allow your attorney to have the opportunity to ask you the question on redirect, cross, whatever, is it true that you did do some work in another matter that had a Joint Dispatch Agreement or its equivalent?

A. I am not sure if they had a Joint Dispatch Agreement, but I did run the model for jointly dispatching the merger between Western Resources and KCP&L.

Q. Do you recall when that was about?
A. I believe 1997. I would have to check that date.
Q. Do you recall whether that was done -- the work you did was pursuant to a specific agreement between the parties as to how that would work or not?
A. I don't recall any that they had as specific agreement.
Q. Did you submit any testimony in that case?
A. Yes, I did.
Q. Western Resources and who?
A. KCPL, Kansas City Power and Light.
Q. EM97515. Does that sound right?
A. I don't know. I would have to look that up. EM97515. Yes.
Q. And I think the document request cover sheet indicates UtliCorp United, but is that inaccurate?
A. That's inaccurate. It should have been Missouri Public -- it should have been UtliCorp and KCP&L.
Q. Or Western Resources and KCP&L?
A. I'm sorry. Yes. Western Resources and KCP&L.
Q. Okay. Should that case be added to your response to interrogatory 89?
A. What was the question on interrogatory 89?
Q. I will let you look it up just to make sure, but it refers to your testimony, RealTime production cost model

is the same model used by staff in all other electric cases since '95. Identify each -- question B, identify each rate case in which this model was used?

A. This was not a rate case. This was a merger case.

Q. All right. So it was used in that case but not -- since it wasn't a rate case, that was not responsive; is that your --

A. Yes.

Q. -- position on that? The testimony in the merger case -- your testimony in the merger case is about seven and a quarter pages long; is that right?

A. Plus six schedules.

Q. Okay. Do you know if your model treats the different types of hydrofacilities that I listed earlier differently from each other?

A. I believe it treats all the hydrounits the same. I don't know if it has a capability to do that or not.

Q. Do you know, concerning the ramp up for Callaway after an outage, is there a difference between a ramp up after a refueling and a ramp up after a forced outage in the way the plant comes back on line?

A. No. It would be the same as far as the model is concerned.

Q. Do you know if it is the same in reality?

A. In reality, it would probably be different.

Q. I think we have discussed several times probably that you use the five year average for planned and forced outage rates for the plant; is that right?

A. Yes.

Q. And that five year average goes to the year 2000.

A. Yes, it does.

Q. Did you modify that number in any way before it was inputted -- or those numbers before it was inputted into the model?

A. No, I did not.

Q. Let me make sure I understand the answer to one of your interrogatories. If you look at number 105, please, on page -- the question is on page 97. The answer is on page 98.

The question is explain in as much detail as you can how the unit maintenance history data identified in schedule one to the testimony of Leon C. Bender was utilized in the RealTime production cost model.

Let me read the answer. Unit maintenance history was used to determine an outage schedule in a five year average of forced outage hours for each unit. The planned outage hours were averaged over five years, and that number was used to set the planned outage hours for the model.

The forced outage rate in the model was set such that the model produced approximately the same number of

forced outage hours as the five year average of forced outage hours on each major UE unit. The RealTime production cost model uses this to determine unit availability. What does the word "approximately" mean there?

A. This means that the number of hours that the model reported as forced outages hours was close to the same number as the forced outage as the five year average.

The model does not allow you to put in the -- put in actual five year forced outages. It uses a different subroutine to randomly select when hours -- when units are forced out. Then it totals those hours.

Q. All right. So you're saying that for planned outages, you actually put in a number.

A. Yes.

Q. And that is the actual five year average; is that right?

A. Yes, it is.

Q. And for the forced outages, the model just gives you a number, and you are saying that when you then check that output or -- I guess it is both an input and an output.

A. Yes. I can input a forced outage rate into the model, and it uses this rate to calculate how many hours of the year that it is going to force a unit out.

Q. Where did you get the forced outage rate that you put in?

A. Well, as I said here, I used the rates to adjust the forced outage hours so that they would be approximately equal to the forced out in the five year average.

We start out with a forced outage rate, and then I can adjust that rate until I get a forced outage hours that I need.

Q. The forced outage rate, is that one number for the system, one number for each plant, a number for each unit?

A. That's a number for each unit.

Q. Is that a percentage number?

A. Yes.

Q. So for instance, you would say that the forced outage rate for Labadie 3 is six percent?

A. Yes.

Q. And do you have to choose a rate at the very beginning of their process to stick in there?

A. Yes, you do.

Q. And where did you get that number?

A. I got it off of Tom's model.

Q. All right. So at that point you just used a number that had already been used previously.

A. That had already been used previously, which I am assuming that he got that off of UE's budget numbers.

Q. Then that rate is then taken by the model and randomly assigned throughout the year which gives it

different values depending on when that forced outage occurs; is that right?

A. Yes.

Q. And then is it true that you then looked at the output of that and modified the rates so that when you add the in, the output would be close or approximately the same number of hours as the five year average?

A. Yes.

Q. Thank you. Would you look at interrogatory number 90, please, on page 86? The question here is the term "net purchase power" is used by Leon C. Bender on page two of his testimony. Subquestion A is explain in as much detail as you can the meaning you give to this term.

And the response that you provided says net purchase power used in this case is the purchase power to meet the weather normalized load used in a production cost model.

The value includes only the cost of the energy purchased and thus is net of any capacity charges or other fees. Is that an accurate reading of that?

A. Yes, it is.

Q. Therefore, you do not include any capacity charges or capacity costs in your net purchase power; is that right?

A. That's correct.

Q. Why do you not do that?

A. That is a fixed charge, which, I understand, is added back in by the accountants.

Q. All right. So it does not -- does it appear anywhere in your total costs?

A. No, it does not.

Q. So that 343 million dollars does not include any capacity costs.

A. True.

Q. Do you agree that a regulated utility company is allowed the opportunity to earn a fair rate of return?

A. Is allowed? Yes.

Q. Is allowed. Yes. Okay. Do you know what the term allowed rate of return means in the context of a rate case?

A. No, I do not.

Q. Do you know what the staff has recommended as a fair and reasonable return for Ameren in this case?

A. No, I do not.

Q. Do you know what components go into determining what a return is in this particular case?

A. No, I do not.

Q. Do you know whether or not the level of costs which are included in the cost of service has a determination -- has an effect on the determination of the allowed return?

A. No, I don't. I don't work with the cost of service.

Q. Do you know whether or not there would be an effect on the company's allowed rate of return if the costs included in a cost of service study are substantially inaccurate?

A. I don't know what the effect would be because I am not familiar with the cost of service study.

Q. Would you agree that it is improper to knowingly understate or overstate the costs required to provide service?

A. I would agree that it is -- would be improper to knowingly, yes.

Q. What part of the overall case that the staff has provided are you personally responsible for?

A. Personally responsible for the model -- the production cost model and its results.

Q. Do you know whether or not that is included in the staff's cost of service study?

A. No, I do not.

Q. Do you know why -- do you know if the staff does the cost of service study?

A. I believe they do, but I don't know what one is.

Q. Okay. You don't know what one is and --

A. I am not involved in that, those activities.

Q. All right. Do you know if the RealTime production cost model is used by other state regulatory commission staffs?

A. No, I don't.

(Wherein, Mr. Cynkar returned to the deposition.)

Q. Schedule one to your testimony there is a list of four companies' names in the lower right hand box. What are those, please?

A. Those are the capacity purchases that were modeled in the production cost model.

Q. What do you mean the names of the purchases?

A. Those are the names of the companies who call the suppliers.

Q. They supply --

A. That supply energy that Ameren UE has contracts with.

Q. Do you know the term of those agreements?

A. No, I do not.

Q. And by "term," I mean the length of those agreements. Do you know when those agreements expire?

A. No, I do not.

Q. Do you know the rates that Ameren pays pursuant to these agreements?

A. I am not sure if you mean -- by "rates" you mean prices.

Q. Yes.

A. The prices are in the 20.080 data that we received from the company.

MR. COOK: That's all I have. Thank you very much, Mr. Bender. Do you have any questions?

MR. FREY: No.

MR. COOK: Do you wish to waive signature, or do you wish to sign?

MR. FREY: We don't want to waive signature.

NOTARIAL CERTIFICATE

I, DEANNE M. LAKE, a Notary Public, Registered Professional Reporter and Certified Shorthand Reporter, do hereby certify that there came before me at the office of 200 Madison, Suite 810, Jefferson City, Missouri,

LEON BENDER,

who was by me first duly sworn to testify to the truth and nothing but the truth of all knowledge touching and concerning the matters in controversy in this cause; that the witness was thereupon carefully examined under oath and said examination was reduced to writing by me; and that this deposition is a true and correct record of the testimony given by the witness.

I further certify that I am neither attorney nor counsel for, nor related, nor employed by any of the parties to the action in which this deposition is taken; further, that I am not a relative or employee of any attorney or counsel employed by the parties hereto or financially interested in this action.

IN WITNESS WHEREOF, I have hereunto set my hand and seal this 27th day of November, 2001.

DeAnne M. Lake
CSR #084-004441

DeANNE M. LAKE
Notary Public - Notary Seal
State of Missouri
County of St. Louis
My Commission Expires 05/31/2004