BEFORE THE PUBLIC SERVICE COMMISSION

OF THE STATE OF MISSOURI

In The Matter of Union Electric Company d/b/a AmerenUE for Authority to File Tariffs Increasing Rates for Electric Service Provided to Customers in the Company's Missouri Service Area.	Case No. ER-2008-0318

DEPOSITION OF MICHAEL S. PROCTOR

TAKEN ON BEHALF OF UNION ELECTRIC COMPANY

NOVEMBER 13, 2008

INDEX
WITNESSES

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OF THE STATE OF MISSOURI

In The Matter of Union)
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AmerenUE for Authority) Case No.
to File Tariffs Increasing) ER-2008-0318
Rates for Electric Service)
Provided to Customers in)
the Company's Missouri)
Service Area.)

DEPOSITION OF WITNESS, MICHAEL S. PROCTOR, produced, sworn and examined on the 13th day of November, 2008, between the hours of eight o'clock in the forenoon and six o'clock in the afternoon of that day, at the offices of the Missouri Public Service Commission, 9900 Page Avenue, Suite 130, Overland, Missouri, before Tara Schwake, a Certified Realtime Reporter and Notary Public within and for the State of Illinois, in a certain cause now pending Before the Public Service Commission of the State of Missouri, Case No. ER-2008-0318.

APPEARANCES

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Mr. Ajay Arora (via telephone)

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IT IS HEREBY STIPULATED AND AGREED by and between Counsel for the Plaintiff and Counsel for the Defendant that this deposition may be taken by Tara Schwake, Notary Public and Certified Realtime Reporter, thereafter transcribed into typewriting, with the signature of the witness being expressly reserved.

MICHAEL S. PROCTOR,

Of lawful age, having been produced, sworn, and examined on the part of Union Electric Company, testified as follows:

EXAMINATION

QUESTIONS BY MR. LOWERY:

Q Dr. Proctor, how are you this afternoon?
A I am doing well.
Q I'm Jim Lowery, I know you know that, but at least for the record, I represent AmerenUE and will be taking your deposition this afternoon.
A Okay.
Q You've been deposed a number of times, I know. Correct?
A Correct.
Q So you know that you and I have to

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try to avoid talking over each other and that you cannot give verbal -- or a non-verbal response to my questions, right?
A Yes.
Q If you need to take a break, let me know and we'll do that. Dr. Proctor, you're not taking any medication that would interfere with your ability to understand my questions or give complete answers to them, are you?
A I am not.
Q And you don't have any other reason that you know of that would prevent you from understanding or answering my questions; is that correct?
A That's correct.
Q If you don't understand a question or I'm not clear about one, which is possible certainly, would you please just let me know and I'll try to rephrase it?
A Okay.
Q I wanted to see if we could agree on just a couple of definitions. If I say Ameren, I'm talking about Ameren Corp and its subsidiaries as a whole generally versus if I say AmerenUE or Union Electric Company, I'm talking

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about the regulated entity Union Electric Company. Do you understand the difference?
A Yes.
Q Dr. Proctor, when did you first start doing work that would be used in this rate case?
A Probably in serious type of work, sometime in September.
Q When you say "serious type work," did you do some preliminary work before that?
A Yes.
Q Could you tell me when you began that preliminary work and what it consisted of?
A I am not sure of the exact date, but it was after AmerenUE filed its testimony, direct testimony in this case, and I was asked by the staff to review certain testimonies, to take a look at those and give my opinion on those. And I reviewed the testimonies the -- in particular, Ajay Arora.
Q Was it before or after several staff members met with Mr. Arora in mid to late July of this year?
A I believe that it was after that period of time, but I may have -- I may have done

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a quick look at his testimony before that period of time. But it was after they met with him that I went back through that testimony, and later, probably in August, gave a kind of a overview of that to the staff that was in particular interested in the fuel adjustment clause issue.
Q Doctor, you indicated that staff asked you to look at testimony, and I think in particular Mr. Arora's testimony. When you say "staff," about whom are you speaking?
A This probably would have been Lena Mantle was the primary staff person. I don't recall whether Dan Beck was involved with that as well, but Lena was the person who had contacted me and asked me to take a look at it.
Q Lena approached you about doing that?
A Yes.
Q Did she indicate whether anyone else on the staff had suggested that you be approached about doing that?
A I don't recall that she did.
Q Did you talk with anyone else on the staff about your assignment other than Miss Mantle and perhaps Mr. Beck? And I'm not asking

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about conversations you might have had with Mr. Dottheim or other lawyers on the case.
A Other technical staff?
Q Well, from Wes Henderson on down, how about that?
A Okay. All right. Have I talked with any, anyone else? I mean --
Q About, about --
A My participation?
Q Your participation in this case.
A I don't recall talking to anyone else about my participation in the case, no.
Q Or about the -- or about the work that you're doing, the opinions you've arrived at, the analysis you're doing?
A Yes. After, after I did a more thorough review of Mr. Arora's direct testimony, I recall, and I can't -- don't recall the exact date, but we had a telephone call where we discussed it, and I don't -- I know Lena was there, I think Mr. Dottheim was there.
Mr. Schallenburg might have been participating, I don't recall whether he was or not specifically. There may have been other staff people that were participating in that

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conversation.
Q Who made the decision that you would file testimony in rebuttal of Mr. Arora's direct testimony?
A I'm not sure. I might have made that decision. I may have made the offer, but I talked to Mr. Dottheim about it.
Q You may have answered this or largely answered it, but in working on the scope of your participation in this case, did you consult or otherwise communicate with any other person that you have not mentioned to me thus far?
A Oh, probably from time to time I've talked with some of the people here on staff in the St. Louis office, John Cassidy and Steve Rackers [phonetic].
Q Are you expressing any opinions about the propriety or lack thereof of granting Union Electric Company a fuel adjustment clause in this case?
A I believe in my rebuttal testimony I make the statement that the commission should find that AmerenUE's risk assessment study for net fuel expense does not provide the support

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necessary for it to approve AmerenUE's request for a fuel adjustment clause. So I think that falls in the category of what you're asking.
Q Aside from whether the risk assessment study is adequate support in your view, you're not expressing opinions about the merits of the fuel adjustment clause proposal one way or the other; is that true?
A That's true. My testimony focuses totally on the risk assessment study.
Q You I believe indicated that -- well, let me back up.
You mention an overview in August, and you may have answered this and I apologize if you have, but did you give an overview to somebody, I take it?
A Well, my recollection is we had a conference call among the staff, and the input they were looking for from me in that conference call was did I see any issues or problems with Mr. Arora's study. So that was the study that I gave at that time.
Q And you -- and was this that call where you said Mr. Schallenburg might have been on there but you can't remember?

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A That's correct.
Q Do you recall having any other contacts with Mr. Schallenburg about this case other than that one call where he might have been involved?
A No, I do not.
Q You don't recall anything specific that he said or asked during that call?
A No, I don't.
Q I think you indicated you actually started developing your rebuttal testimony in September?
A That's correct.
Q Dr. Proctor, in developing your rebuttal testimony, did you consider all of the factors and information that you consider to be important to arriving at the opinions that you have developed about Mr. Arora's analysis?
A Yes.
Q Dr. Proctor, are you expressing -- do you express or do you have any opinions about the uncertainty in AmerenUE's net fuel costs?
A Could you ask the question a little bit more specifically?
Q I'll try to.

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A It's pretty broad, so I'm trying to narrow it down in my mind.
Q Do you have an opinion about the level of uncertainty/volatility in AmerenUE's net fuel costs?
A Can I try -- can I try rephrasing it, Jim?
Q Give it a try.
A I have not -- well. I have not performed a study in which I could testify to that I have a -- have determined what the level of variation or uncertainty or volatility or whatever word we want to use is for AmerenUE's net fuel costs. I have not performed such a study.
Q And without performing such a study or essentially endorsing a study performed by somebody else, you don't feel like you're in a position to express an opinion about yes, their net fuel costs are uncertain, or no, they're not, or this is how uncertain they are, or this is how uncertain they're not. Is that fair to say?
A That's fair to say, yes.
Q So it's not your testimony in this case that AmerenUE's net fuel costs are not

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uncertain or not volatile, it's your testimony that Mr. Arora's analysis, in your view, doesn't necessarily show that they are uncertain?
A I would probably phrase it a little bit different from that, but essentially I think you're correct. I don't think his study provides the support necessary for the commission to make that determination.
Q I should have asked you this before, but when I say "net fuel costs," you understand that I mean the sum of fuel and purchase power less all system sales revenues. Are we on the same page about that?
A Yes, we are.
Q Now, you reviewed Mr. Arora's rebuttal and surrebuttal testimonies; is that right?
A That's correct.
Q Based upon your review of Mr. Arora's rebuttal and surrebuttal testimonies, would you modify any of the statements, conclusions, or opinions that you expressed in your rebuttal testimony?
A Actually, I haven't looked at the specifics of what was in my rebuttal testimony,

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but in general I would say yes, I would not -- I haven't changed my views in general.
There may be some specific statements in there that might need to be clarified, but I haven't had a chance to go back through that to look at that. But my general views about the study and most of -- most of my testimony, if not all of it, hasn't changed.
Q So your basic -- and let's make sure I'm stating -- that you essentially have one basic opinion in this, and that is that Mr. Arora's analysis does not provide sufficient evidence for the commission to conclude that UE's net fuel costs are uncertain enough to justify a fuel adjustment clause?
A I would agree with that, yes.
Q And you're saying that his rebuttal testimony and surrebuttal testimony has not, in your view, changed that basic opinion?
A That's correct.
Q But that there may be some things that you said in your rebuttal testimony that need to be clarified or modified or perhaps even changed based upon what he had to say in his rebuttal and surrebuttal; is that fair?

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A There may be a few things, yes.
Q All right. But you don't know what those are at this moment.
A At this moment I haven't gone through my rebuttal testimony to determine if there is anything there.
Q Are you able to express anything with which you agree in Mr. Arora's rebuttal or surrebuttal testimony?
A Oh. I, I'm sure there are statements he makes in both of those testimonies because he talks about how we agree on certain things, that we do agree on those things. But going, going through -- I would have to sit down with his testimony in front of me and go through it and look at it from that perspective, and I haven't --
Q You can't identify anything in particular at this point?
A He states in his surrebuttal testimony that we agree that hedged coal costs are not highly correlated with unhedged market prices for electricity. That's one thing I can say I know we agree on because I said it in my rebuttal testimony as well.

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But, I mean, that's just one of the things that comes to mind. I don't right now have his testimony in front of me, and I -- and I really have to go through --

Q And you intend -- you do intend to go through it; is that correct? With this sort of examination in mind?

A Well, I wasn't -- no, I wasn't thinking about going through it --

Q Not necessarily, all right.

A -- trying to find out where we had agreement, but I was more reviewing it in terms of where we disagreed.

Q Well, let's talk about that. Can you cite to me where you disagree with Mr. Arora's rebuttal testimony or surrebuttal testimony?

MR. DOTTHEIM: Jim, I'm going to -- I haven't said anything to this point, but I'm going to raise an objection now as far as this line of questioning if we're going to -- if you're going to continue it and go into considerable detail.

The staff has a deposition of Mr. Arora scheduled for next Tuesday for which Dr.

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Proctor and I are working on, and we will be working on preparing for the hearing's cross-examination. So I think we're beginning to get into some attorney-client material.

And, and also to -- I think we've been down this road before, if my memory serves me correctly, in the last rate case in your deposition of Steve Rackers when I think, if my memory serves me correctly, when you were deposing Mr. Rackers and you were going into material regarding what he was going to put in his rebuttal testimony.

And I indicated that the staff believed, I believed that was an improper area of discussion, pursuit, and that I instructed Mr. Rackers to not respond, and you indicated that you wanted to stop the proceedings and go to the RLJ, and I responded fine, let's go to the RLJ. And we wound up not doing that.

In my review of the transcripts to the depositions of Mr. Brewbaker and Mr. Dofaney [phonetic] in this case, I think you pursued with them some questions that I would characterize of the nature that you posed in the deposition of Mr. Rackers, and as a consequence, I thought that

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this afternoon we might encounter questions of Dr. Proctor that we have been getting and we are now getting at this point.

And I have and fully intend to object to questions of this nature, and if you want to stop the deposition and go to the RLJ, I am perfectly happy to do that. And if I get an adverse ruling from the RLJ, I fully intend to take it to the commission.

MR. LOWERY: Mr. Dottheim, is it your contention that I can't ask Dr. Proctor what his opinions are about Mr. Arora's rebuttal testimony or surrebuttal testimony?

MR. DOTTHEIM: I believe you can ask him his opinions about the rebuttal testimony other than matters that we have engaged in in discussion, that's attorney-client.

MR. LOWERY: I agree that if you -- I agree that your communications to him I cannot ask him about and I cannot ask him to tell me what he has asked you. I agree with that.

MR. DOTTHEIM: And, and he is also engaged in preparation, which I have -- and I have reviewed and I am working on that is based upon his review of Mr. Arora's surrebuttal

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testimony and direct testimony for purposes of the deposition next Tuesday which I would consider to be attorney-client.

So I think you can ask him certain questions, but I think that there are some questions that he is not required to respond to. And I will object to. And you can ask your questions and we can just proceed along that, that course.

MR. LOWERY: Well, I will ask my questions, but I just want to understand from you, and I'm not trying to be argumentative about it at all, I'm trying to clarify your position. Whether or not you agree that I am entitled to know his opinions about the issues that are the subject of his testimony about which he might testify at the hearing. Don't you agree I'm entitled to know those opinions?

MR. DOTTHEIM: I agree that within certain limits, you are entitled to know his opinions about testimony that has been filed. You are also, of course, entitled to know more about the testimony that he himself has filed.

MR. LOWERY: If Dr. Proctor was going to express an opinion at the hearing that

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was different than or in addition to the opinions that he has expressed in his written testimony, is it your contention I'm not entitled to know that?

MR. DOTTHEIM: No, but again, there are limits to the questions that you can ask. You just -- you just phrased a completely unlimited, unbounded question for which you asked for a response from me.

MR. LOWERY: All right. Well, I'll proceed and we'll see where it goes.

Q (BY MR. LOWERY) Dr. Proctor, do you have any opinions based upon Mr. Arora's rebuttal testimony or surrebuttal testimony that you would intend to express at the hearing that are not already reflected in your prefiled written testimony?

MR. DOTTHEIM: Mr. Lowery, I object to the -- your, your question. How does Dr. Proctor know what opinions he will express at the hearings when he has no idea what cross-examination he will be asked at the hearings?

MR. LOWERY: I asked him what he intended. If he doesn't know, then he couldn't have an intention at this moment.

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MR. DOTTHEIM: Dr. Proctor, do you understand the question?

THE WITNESS: I'm not sure I remember the question.

MR. DOTTHEIM: Let Mr. Lowery -- let Mr. Lowery ask the question or have the court reporter read the question back.

MR. LOWERY: Why don't you have her read it back?

THE REPORTER: "Do you have any opinions based upon Mr. Arora's rebuttal testimony or surrebuttal testimony that you would intend to express at the hearing that are not already reflected in your prefiled written testimony?"

A Let me think about that just a minute. I'm struggling with the question in the following sense, is -- and I think Mr. Dottheim may have hit on it. I'm not sure what questions I might get about Mr. Arora's rebuttal or surrebuttal testimony. So I could get questions that were not covered in my prefiled testimony.

Q (BY MR. LOWERY) Fair enough.

A I guess that's the answer is I may -- I could get some questions on Mr. Arora's

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surrebuttal testimony that have not been covered in my prefiled testimony. Is that a fair answer?

Q That is fair. I never suggested that it wasn't. My question was simply do you know at this moment as you sit here in this deposition of any opinions that you formed based on Mr. Arora's surrebuttal or rebuttal testimony to which you might testify at the hearing?

Do you know of any as you sit here today? I understand that you could be asked a question by a commissioner or me or anybody else that would call for a different answer.

A I don't know if this is answering your question specifically, but when you talk about opinions, that's fairly broad. I will say this, that my opinion of my rebuttal position has not changed based upon Mr. Arora's surrebuttal testimony.

By the way, his rebuttal testimony I don't think really dealt with the issues that I am covering in my testimony, so I can probably answer, I probably won't have any opinions on his rebuttal testimony. And I didn't spend -- I haven't spent a lot of time looking at that rebuttal testimony, so I may have missed

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something.

I may get a question on it so I'm going to kind of qualify there that I just haven't spent that much time on his rebuttal testimony because he was rebutting other witnesses, not me.

The surrebuttal was aimed at my rebuttal testimony, and that's where I've kind of focused.

Opinions, do -- you know, generally do I agree with Mr. Arora, and the answer is no. We have disagreements about various things, and I haven't read anything in his testimony that would change my views about what I agree or disagree with Mr. Arora about.

Q I take it that you don't really have any opinions one way or the other about the matters expressed and discussed in his rebuttal testimony based on your statement a moment ago?

A Well, I -- generally I read his rebuttal testimony, I have not set down and studied his rebuttal testimony because it didn't deal with the issue -- with the issues of the modeling of the uncertainty.

Q All right. Let's talk about some

areas about which you and Mr. Arora I think perhaps do agree. One of them I think you already mentioned yourself, and that is you agree that there is an insignificant correlation between UE's hedged delivered coal costs and spot power prices. Is that right?

A I probably wouldn't state it that way. I would say there is significantly reduced amounts of correlation between those two as compared to unhedged coal prices and power prices. And I testified to that in my rebuttal testimony.

Q Do you have an opinion about whether any correlation, if there is any, between UE's hedged delivered coal costs and spot power prices, whether any such correlation would be statistically significant?

A I don't have an opinion on that, no.

Q Would you expect it to be?

A Here's the way correlation works, and I don't know that "statistically significant" is the right word to use when talking about correlations. I think you can talk about data series being either highly correlated or not

highly correlated, and you can talk about degrees of correlation.

And I think the statement that I would agree with is, is that you're not going to find a high degree of correlation between these hedged coal costs and unhedged power prices.

Q So if we have to -- if we were describing -- we're going to say two variables are highly correlated or two variables are not highly correlated, you'd put the hedged coal costs and spot power prices in the not highly correlated bucket, so to speak; is that fair to say?

A That's a fair statement. I think that statement needs to be put into a context, and the context is at what point in time are you talking about the hedged coal, coal prices. I was looking at them on an after the fact basis, but -- and certainly on an after the fact basis and looking at them historically they fall into the category that you just described as not highly correlated.

Q As we sit here in November of 2008 and UE's delivered coal costs are pretty substantially hedged, you agree with that for

2009, right?

A I agree.

Q Would you agree that UE's hedged delivered coal costs in 2009 should not be expected to be highly correlated with spot power prices in 2009?

A At this point in time I would agree I think with that statement with the following, is that once you hedge those costs, they're fixed. So it's fixed, and if at this point in time you're looking forward to at the electricity prices, those are not fixed.

For example, UE hedges a certain percentage of the sales that they make into -- from their power plants, and of course that portion is fixed. My recollection is that the proportion that's hedged is highly confidential so I'll try to avoid using the number here at this point.

Q Well -- go ahead, Dr. Proctor.

A So, but it's, it's more than a majority of their off-system sales are not hedged at this point, and those prices obviously are not fixed. So any variation that we see in those prices compared to a fixed coal price, you're not

going to see any correlation. Because you're not going to see any movement in the one, but you could see movement in the other at this point in time.

MR. LOWERY: Fair enough. Mr. Dottheim, I actually had meant to mention this at the inception of the deposition, but there is going to be a lot of highly confidential information that really is going to have to be discussed in this deposition.

If it's all right with you, what I'd like to do is go ahead and deal with those numbers, have Dr. Proctor testify to them or I ask questions about them, and we will -- we will have to go back and any, any transcript that might become part of the record, we'll have to mark highly confidential, or have a redacted version for a public version to take care of that highly confidential information.

But I don't think it's practical to go in and out, so to speak, with two different transcripts going along. That's how we handled it with Mr. Kime's [phonetic] deposition this morning with Mr. Mills.

MR. DOTTHEIM: That sounds fine.

Q (BY MR. LOWERY) Dr. Proctor, do you agree that the approach Mr. Arora took in his analysis, that the concept of the study and the approach was sound; is that right?
A Yeah, I think he basically followed, I'll just call it the outline, the conceptual outline that I had presented in the last case. The problem I had was with the implementation.
Q If the result that he obtained were -- if it were correct or if you had not felt there were implementation problems and you got those same results, you would have essentially come to the same conclusions that he came to; is that fair to say?
A If I had performed such a study and I felt that everything going into it was correct and that study turned out to be the same study that Mr. Arora performed, I think the answer to your question is yes.
Q If you were -- for example, you performed a study and you came and you generated a Table 1, essentially the same table as he generated, a Table 1 in his testimony, and if the results were essentially similar, you would

interpret them the same way as he did; is that true?
A Yeah, that's correct. That's correct.
Q And you agree that, I think you said a moment ago, he basically followed the steps that you would recommend to be followed for an uncertainty study of UE's net fuel costs, he first determined specific uncertain variables for the key inputs?
A That's correct.
Q Power prices, gas prices, coal prices, correct?
A Correct.
Q And that's the right -- you think that's the right thing to have done, right?
A That's correct.
Q And he determined statistical measures for each of those uncertain variables and you think that was the right way to go about it. Correct?
A Correct.
Q And he determined correlations between each variable, and determining correlations between each of those variables,

that's the right -- that's the thing that he should have done. Right?
A Correct.
Q And taking those uncertainties and applying those correlations between the variables and then running 250 scenarios of annual power market simulations using a production cost model, that's what you suggested in the last case and that was the right approach to take; is that right?
A That's correct.
Q And the -- he created this set of 250 scenarios to measure uncertainties for several time horizons, one of them was going into the immediate next year, here the test year, and the other periods were for future years '09 through 2012; is that correct?
A That's correct.
Q And he then ran annual production cost model simulations to determine the annual level of net fuel costs for each of those 250 scenarios; is that right?
A That's right.
Q And the concept behind this approach was a sound and reasonable way to

approach it. Is that right?
A That's correct.
Q Now, since we're going to deal with the highly confidential issue later, you would agree that UE typically hedges only about [redacted] percent of its system sales volumes forward for between a month and a year out; is that right?
A That's my understanding, yes.
Q And that means that in any given twelve month period about [redacted] percent of UE's off-system sales volumes are going to be sold in the daily spot power market; is that correct?
A That's correct.
Q And I think staff and UE's models in this case, they're very, very close, both come up with about 10 million megawatt hours of off-system sales in a given year at a normalized level; is that right?
A You're asking me to recall a number that I've probably -- I've seen, but I haven't focused on it.
Q Fair enough. Whatever those two models come up with you'd accept as a normalized level off-system sales, and for the purposes of my question today, can you assume it's 10 million

megawatt hours give or take 100,000?
A That would be fine.
Q That sounds about right based on, if I recall, Dr. Proctor, I think that's very similar to numbers we dealt with in the last case. Do you recall that?
A No, I don't, but that's all right.
Q Fair enough. Do you agree that the going into the test year results in Mr. Arora's Table 1 were generated using typical hedge percentages at the beginning of a particular year, happen to be the going into the test year here, for gas, for coal, for nuclear power, and for energy?
A Would you repeat that question?
Q Sure. Do you agree that the going into the test year results in Mr. Arora's Table 1 -- you're familiar with this Table 1?
A Yes.
Q And he has a column that shows -- it's called -- it's labeled I think test year, but it reflects a going into the test year analysis?
A Mm-hmm.
Q Do you agree that the -- for

running those -- the 250 simulations for that test for that year, going into that year, do you agree that what Mr. Arora did is he used typical hedge percentages for each of the main inputs, coal, nuclear, gas, and power?
"Typical" meaning how much would UE be hedged on those four items just before the twelve month period that was being examined.
A Yes.
Q You agree that all or nearly all of the expected coal needs are typically hedged at the beginning of a year, including at the beginning of the test year in this case?
A Yes.
Q Nuclear fuel was essentially hedged for the test year case. You agree with that. Right?
A I did not look at nuclear. I cannot -- I didn't look at nuclear fuel so I don't know the answer to that one.
Q Okay. That makes sense to you, doesn't it, since there was a refueling -- there just was a refueling the last couple weeks, and the last one would have been back in the spring of --

A I think there's a refueling every eighteen months.
Q Right. And so going into the test year, the test year in this case that was being examined was April 1, '07 to March 31, '08. Right?
A That was the staff's test year, yes.
Q And that's the test year case that Mr. Arora was examining as well. Right?
A I will accept that. I'm not sure I'm real clear what his test year was, but I think we were supposed to be operating on the same test year, yes.
Q You don't have any information that indicates that that wasn't the test year?
A No, I don't.
Q And you've looked at Mr. Arora's work papers that underlie his analysis; is that right?
A That's correct.
Q Do you recall that about in that -- in going into the test year case analysis that the hedge percentages for off-system sales was about [redacted] percent?

A I don't -- I'm not -- I don't recall those -- the hedge percentages that he used specifically going into the test year. I do know that the purpose of his test year analysis was to use those things that were hedged. But [redacted] percent seems to me would be the right number to use.
Q All right. Fair enough. Do you agree that much of the gas that would be needed to run the company CTGs during a particular year is not typically hedged going into the year because the gas burn is pretty uncertain?
A I agree.
Q Do you agree that going into any particular year there's uncertainty in the spot fuel and spot fuel and power prices?
A Oh, in spot prices, yes.
Q Do you agree that going into any particular year there's load forecasting uncertainty?
A If you're looking at going into a year, yes.
Q And that was my question. So going into a particular year there's load forecasting uncertainty. Right?

A That's correct.
Q And going into any particular year there's plant availability uncertainty, is there not?
A Yes.
Q And going into any particular year there's uncertainty about unplanned plant outages?
A Yes.
Q Going into a particular year there's uncertainty about the impact of transmission outages in the region; is that true?
A That's true.
Q Going into a year there's uncertainty about when planned outages will occur because the company and utilities in general sometimes move planned outages up a few weeks or back a few weeks. Right?
A I am not -- I don't know.
Q You don't know whether or not the company sometimes moves a plant outage from the spring to the fall or vice versa?
A Well, if you're talking about going into a specific test year and you're only a month or so out from the beginning of that test year, I

would think that planned outages are pretty much fixed.
Q So you're not as certain about how much -- you're not as sure about how much uncertainty going into a particular year there may be about planned outages?
A No, and I don't recall looking at any data that tried to capture that. But there may be some uncertainty there. I don't know.
Q Sure. Do you agree that actual spot power prices can be quite different in a particular year than they were predicted to be going into that year?
A Yes.
Q Early in a year we can think that the average spot power price over that upcoming year may be X and it may turn out to be Y, higher or lower than X?
A Yes.
Q Can the coal burn during a given year vary from what was expected going into the year?
A It will vary.
Q If it's much hotter or much colder than normal, it might vary quite a little bit;

isn't that fair to say?
A That's fair, and if power prices vary, it can -- the coal burn can vary quite a bit.
Q So the dispatch could change?
A That's correct.
Q And the amount of diesel fuel surcharges in a given year vary from what was expected going into that year?
A Diesel fuel surcharges for coal delivery?
Q Sure. Yes. For delivering coal.
A I believe that's the case, yes.
Q Could there be coal delivery disruptions in a year that were not expected like we saw in 2005?
A Yes, but I don't know how to put a probability on that one. That's the only disruption that's ever occurred on the Powder River Basin coal deliveries that I'm aware of.
Q Obviously the gas burn can vary from what was expected going into the year since we can't really predict the gas burn very well. Right?
A That's correct.

Q Market prices for power are highly correlated with weather. Correct?
A Daily prices, yes.
Q Daily market prices for power highly correlate with weather, with that proviso. Correct?
A With that proviso, daily, yes.
Q Weather is probably the variable that has the most effect on loads; is that fair to say?
A It is the major factor impacting load. There are other factors as well, but --
Q And that's why when you run a production cost model, you need to match weather normalized prices with weather normalized loads. Correct?
A Yes, you need to match the prices with the load.
Q And you need to use weather normalized loads when you run the model, so you also need to weather normalize prices?
A Which models are we talking about?
Q Production cost model.
A Oh, production cost model. Okay. You need to weather normalize the loads,

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absolutely. I don't know that anyone has yet attempted to weather normalize the prices, or to try to do an adjustment to the prices based on normal versus abnormal weather.

One of the things that the staff does do, however, is it looks at the years of data -- the year of data that it's using, and it looks for months or times when the weather was highly abnormal.

But we do not sit down and run regressions and find a relationship between prices and mean daily temperatures or two day weighted mean daily temperatures and do an adjustment to a price based on that.

Q Well, if you were running a production cost model using weather normalized loads, which you said you absolutely need to weather normalize, right?

A Yes.

Q If you were running the production cost model using those weather normalized loads and you were using prices for a period that had -- that were abnormal because the weather was pretty abnormal during that period, your results might not be very reliable from the model; isn't

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that fair to say?

A If you found a price in a given month, for example, that was extremely high or extremely low and that the cause for that was weather, you should adjust that -- you should adjust the price in that month.

Q Do you know of any production cost model that can conclusively always predict the annual spot power prices within an error margin of 20 percent?

A I don't think the production cost model's objective is to predict power prices. But I think your question is a more general one of whether or not you can predict power prices within a certain band of certainty. Am I interpreting your question correctly?

Q I think so. And would it be fair to say that predicting power prices, average annual spot power prices within an error band of even 20 percent is a fairly tough thing to do?

A I don't know the answer to that.

Q 10 percent on either side?

A I don't know. I don't know the percentage. One of the things I recommended in my rebuttal testimony is that we go back and look

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at that. That we look at forecasts of annual prices that were done a year ahead or -- and, and look at a history of those kinds of forecasts to find out what the uncertainty is. The uncertainty band around those is. And since that hasn't been done -- since that hasn't been done, I don't know what the uncertainty band of forecasting is.

Q Would you agree that if we were to assume going into a particular year that the average annual spot power price was going to be $45 a megawatt hour and that price were to vary up or down a range of just 10 percent, a total range of 20 percent, that that would represent about a $9 range of possible prices of 4.50 above and 4.50 below that predicted $45 number?

A Give me the parameters again? I'm going to do the calculation.

Q Sure. Going into the year we thought the average annual spot power price was going to be $45 per megawatt hour. And if the variance around that prediction is just 20 percent, 10 percent up or 10 percent down, that range is between 35.50 and 49.50. Right?

I'm sorry, I didn't do my math

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right, 40.50 and 49.50?

A Yeah, 40.50 and 49.50. I'm doing my math on a spreadsheet, so yeah. It's between 40.50 and 49.50.

Q And if you apply that $9 range between the low and the high to the roughly [redacted] million megawatt hours of unhedged off-system sales that the company has going into a particular year, that represents alone a $[redacted] million swing in off-system sales revenues, doesn't it, just because of spot power price movements within that relatively narrow plus or minus 10 percent band?

A Real quick, that's the 10 million times the 9 million?

Q I'm sorry, the [redacted] million unhedged off-system sales times $9 price range.

A Okay [redacted] million times nine is [redacted] I'm sorry.

Q So if power prices vary, are only going to -- if we knew that power prices are only going to vary plus or minus 10 percent from that expected number and it's $45 what we expected going into, UE's off-system sales revenues could vary by, and I'm talking about -- could vary by [redacted] million using just the unhedged portion of the off-system sales volumes just because of that plus or minus 10 percent movement in power prices. Right?

A Yes. I mean, that could be the total swing from the low number to the high number.

Q That's right. It's the total range between the low to the high.

A Yep. I agree.

Q Now, if you use prices in a simulation that are not weather normalized, but you use weather normalized loads in that simulation, couldn't you -- couldn't you overstate or understate the simulated normalized production costs produced by the model?

A Well, again, it depends, in my mind, on what you mean by "weather normalized."

Q You mean as it pertains to the prices?

A Well, as pertained to the specific -- yeah, as it pertains to the prices, but specifically what do you mean by "weather

normalized"? I don't know -- it -- I think I have answered this question before that, that -- are you talking about running regressions on power prices against mean temperatures and then using normal mean temperatures to adjust those, is that what you mean by "weather normalization"? Or --

Q No, I guess, Dr. Proctor, what I mean is using longer periods of time to average out abnormalities in power prices caused by -- or that were driven by weather.

A Well, the problem with that is the period of time that you use for those averages. And when we weather normalize loads, we use thirty years of weather to go through versus the regressions. And it's pretty specific in terms of the amount of time that we talk about in terms of normal.

And my recollection was that we -- that Erin Maloney [phonetic], who did this analysis for the staff, did look at the weather for particular -- the particular test year and compared that to what you would get with the thirty year normal, and also looked at averaging two years, and found that actually the test year,

the single year was closer to normal on the weather than the two year average.

So using something like a two year average does not by any means assure you that you're going to be normalizing prices for weather.

Q Did you work with Miss Maloney on her work on this rate case?

A Yes, I did.

Q What was your role with respect to working with Miss Maloney?

A Well, she's taken over this issue going into the future, and so I guess you might say that my role was to consult with her and help her become familiar with the things that I had looked at in the previous case, and to just give her advice on what she was doing in this case.

I'm not going to use the word "trained" Miss Maloney because she's a pretty good analyst, but get her familiar with all the specific data and the analysis of that data for this particular determination of these various prices. Power prices, coal prices, gas prices.

Q Well, I had asked you earlier what your assignment for this case was and with whom

you consulted, and I take it that you at that time were focusing solely on the subject of your rebuttal testimony, and I take it that you have had some other roles with respect to this rate case that you didn't tell me about; is that fair?

A Yeah, I understood your question to be related to this issue with Mr. Arora.

Q Well, let's go back and let me go back and broaden my question. What other assistance, consultation, communication have you had with staff members, and again, I'm not asking for any attorney-client communications, respecting the staff's case in this rate case?

A I communicated regularly with Miss Maloney and with John Cassidy on the staff's development of net fuel costs, and in particular power prices and coal dispatch prices, natural gas prices, those types of things.

I did not consult on things like outages of power plants that go into the model, either scheduled or forced outages, probabilistic outages. I did not consult on the load input that goes into the model. And I think I pretty much covered that.

Q So two areas of responsibility with

regard to this case, the areas that you previously had in mind in terms of uncertainty of net fuel costs and Mr. Arora's analysis and your analysis of that and so on, and then assistance to Mr. Cassidy and Miss Maloney relating to power prices, essentially, and the inputs, power price inputs and so on for the staff's production cost model. Are those the only two areas?

A Those are the only two areas that I can recall. Yes.

Q The twelve months of power prices for the test year that was used by Miss Maloney and any adjustments that she made to those, was that your recommendation or her recommendation?

A It was her recommendation.

Q She suggested it to you first?

A We discussed it, but she's the one that -- she's the one that made the ultimate recommendation.

Q Whose idea was it first?

A Oh, I don't know. We talked about several possible ways to approach it.

Q What's your understanding of why you arrived at the approach that was taken?

A In our discussions we looked at

several factors. We looked at weather, the one that you've mentioned. We also looked at twelve month moving averages of prices and how they were moving. We looked at -- I'm trying to think what else we looked at.

We looked at specific months to see if there were any prices that appeared to be out of line, and, you know, were they way too low or way too high. Even though -- even though the weather may be close to normal, you can -- you can have other shifts that occur that cause the prices to be higher or lower than what you would normally expect. So we looked at those -- we looked at all of those in coming to a final decision.

Q We talked a minute ago that weather has probably the most effect on loads; is that what we talked about? You -- I think you agreed with that?

A It has a significant -- it's the thing that can affect variations in load more than anything else, yes.

Q All right. Fair enough. Other things can also affect loads, though, can't they? Like large industrial customers coming on or off

the system?

A Absolutely.

Q And economic conditions, a significant upturn or downturn in the economy can affect loads?

A Yes.

Q By the way, how would you expect the current economic condition that we are all experiencing in our 401(k)s, I guess, how would you expect those to affect utility loads in the next year?

A Well, first, let me say that I have not done a specific analysis of that. Okay?

Q Fair enough. You've been in this business for a very long time, and I don't mean that in a critical way at all, you have a lot of experience with these things, and so just based upon your twenty-five or thirty years of knowledge and experience in this industry, it seems to me that you might have an expectation about how the current economic condition would be expected to affect utility loads in the next year; is that fair?

A That's fair. Generally when, for example, when you're running a load forecast, and

by the way, I haven't run a load forecast for a long time, it's been a long time since I've done that, but particularly with respect to commercial loads and somewhat with respect to industrial loads, one of the driver variables that's used in the forecast is the area income. So if the income is dropping, the load will drop.

Q And what about your expectation about the effect of the current economic conditions on market prices for power in the coming year?

A Well, generally if load is dropping, demand is falling, and if there are no other interventions on the supply side, then power prices will fall. But you could have interventions on the supply side --

Q In other words, some supply goes away?

A Excuse me?

Q In other words, some supply goes away?

A No, not that it goes away. That it -- the intervention on the supply side would be increasing prices for, for elements that are used to produce to generate the power. Increases on the cost side, let me put it that way, increasing prices of natural gas or coal supplies or things along that line.

Q Let me ask you this. Is it fair to say going into a particular year or a particular twelve month period, if you were trying to predict for that twelve month period, say I'm in November to December looking forward into the next calendar year.

A Okay.

Q Going into that next year there are a lot of variables that are unknown which would cause my actual net fuel costs in that next year to vary considerably from the net fuel costs that I expected for that coming year. Is that fair to say?

A I think so, yes.

Q There are a lot of variables in play and there's a lot of variables other than weather in play going into each year; is that fair to say?

A Yes.

Q So while if we look back after the fact at a year, we would not expect to see uncertainty because all of the values are already

known after the fact. If we're looking forward going into a year, we would expect there to be a higher, quote, uncertainty factor, to use a paraphrase I think that you used at your testimony on page 30. Correct?

A Let me -- where on page 30? I'm sorry.

Q Let me find it, Dr. Proctor. On line 8, "I see uncertainty factors" --

A Oh, uncertainty factor. I think the uncertainty factor was a term that Mr. Arora coined in his direct testimony.

Q Right.

A Okay. So --

Q Let me ask my question again.

A Yeah, ask your question again.

Q If we look back after the fact at a year, it's not surprising we don't see uncertainty because the values are already known. We're looking backwards, we know what happened. Right?

A Sure.

Q But if we're looking forward going into a year, we don't know what the values of many of those variables are, and if we're

calculating some kind of uncertainty measure looking forward into a year, we would expect that uncertainty measure to be higher, or much higher than if we're looking backwards at a year that's already over; is that correct?

A That's correct, and I think I characterized that in my rebuttal testimony is uncertainty associated with forecasting there.

Q Forecast uncertainty. There's not forecast uncertainty looking backwards. Right?

A That's right.

Q But there is forecast uncertainty looking forward. Right?

A That's correct.

Q And Mr. Arora did not look backward at his test year case, did he? He was looking forward at the beginning of the test year, was he not?

A I believe that's the case, yes.

Q So when you criticized that the uncertainty factor was too high because you thought the only thing that could vary was weather, that was based on a mistaken assumption that Mr. Arora was looking backwards, wasn't it?

A I don't -- I don't think I made the

statement that the only thing that could vary was weather. I don't believe I made that statement. Now, I may have indicated in part of the testimony in trying to characterize certain types of uncertainties and uncertainty related to weather or -- you know, primarily related to weather, but I don't -- here is the -- here is the issue in what --

Q I'm sorry, Dr. Proctor, maybe if I -- I'm just trying to understand your testimony. On page 30, line 8 and 9 of your rebuttal testimony, you say, "The uncertainty factor in the test year is significantly too high for variations in the annual average price of electricity simply due to changes in weather scenarios."

A That's correct.

Q And you understand, as you indicated a moment ago, that Mr. Arora was looking forward into the test year, not looking backwards, so that the uncertainty factor he was calculating wasn't simply due to variations in weather. Right?

A I agree. Yeah. And I don't think that's --

Q So explain to me how that uncertainty factor is too -- why did you say, "The uncertainty factor in this test year is too high for variations simply due to changes in weather"?

A Well, let me -- let me indicate that my view of the test year when I was writing this testimony was that it was a base case. Okay? And that in the base case you didn't have any forecast uncertainty, but you did have uncertainty related to the weather. So that, that was the -- that was the -- that was the description that was the basis for this paragraph on page 30.

Q So when you were using the term "test year" on page 30, you're not talking about Mr. Arora's going into the test year case in Table 1 in his direct testimony, you're talking about a generic test year?

A Yes. I was talking about a base case in which you were looking at primarily variations that occur in power prices due to changes in weather, though that may not be the only factor that's changing when you're looking at this. You can have changes in supply.

I mean, weather affects the demand for electricity. Within any given test year you can have changes in supply that also occur within that test year. So both of those -- both of those factors can impact what kinds of uncertainty you would have within a specific test year. I was differentiating that from what I here was calling forecast uncertainty.

In other words, you're looking back at historical data, and in that particular historical data you're going to have uncertainty that's due to changes in supply and changes in demand, and you are wanting to capture that in a base case.

That is different from, in my testimony, that's different from looking forward to, let's say, the next year in which you also introduce a concept of forecast uncertainty.

And I don't call it -- in the test year you can have changes in supply. What you're doing is measuring the uncertainty that has happened historically because of those changes. That is not a forecast. That is something that has already occurred and that you are measuring as having already occurred.

Q But Mr. Arora wasn't looking backward at the test year. You agree with that.

A I -- it -- I'm not sure what -- that Mr. Arora -- I think he just -- I think test year just happens to be a year -- yes. A year in which he is looking at it almost as every other year in his analysis except that he has a greater amount of the cost being hedged in the test year than in the other years.

Q Exactly. The only difference is that because just before the beginning of any particular year, UE has just about all of its coal costs typically hedged, high percentage of its nuclear hedged, about [redacted] percent of its off-system sales hedged, probably not a lot of its gas hedged because of the uncertainty in the gas burn.

So UE has hedged a lot of its fuel and, you know, [redacted] percent off-system sales going into a year, which we would expect to make the uncertainty in that year less than a year later and a year later and a year later. Right?

A Yes. But --

Q And that's what -- when Mr. Arora -- he called it test year with uncertainty in

Table 1, and I think he claimed in his surrebuttal testimony that label may have been a little bit confusing, but you understand that he was looking forward into a test year period, not looking backwards at what had already happened.

So he -- there was forecast uncertainty going into the test year case that he was running. Correct?

A If he says so, yes. But he did not measure forecast uncertainty. He simply looked at uncertainty related to daily variations in power prices over the years 2006, 2007, and plugged that into his -- into his model to reflect uncertainty in average annual prices.

Q Well, do you have Mr. Arora's testimony there?

A No, I do not.

Q I think Miss Lobb has it for you.

MS. LOBB: Which one is it, Jim? Direct?

MR. LOWERY: Yeah.

A I have it now.

Q (BY MR. LOWERY) Turn to page 29, please.

A Yes.

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Q Between the 25th and the 75th percentile going into the test year case we can see a range of uncertainty of [redacted] million. Right?
A I'm sorry, what's this got to do with my testimony? My testimony dealt with power prices, not with net fuel.
Q I didn't say it was your testimony, I'm asking you a question about Mr. Arora's testimony that you rebutted.
A That's what the table shows.
Q So going into the test year case, Mr. Arora calculated a range of [redacted] million between the 25th and 75th percentile. That's what the table says, right?
A Yes.
Q And that's a measure -- that's a measure of uncertainty produced using his 250 simulations for that going into the test year case. Right?
A It is a measure, yes.
Q And a year later, in 2009, when the hedged percentages for coal, nuclear, power would have been lower for the 250 simulations for 2009, the uncertainty not quite doubled. Right?
A That's correct.

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Q And in 2010, the uncertainty was similar. Right?
A The 25 to 75 percent range was actually almost identical to 2009.
Q And then for 2011, we're getting farther in the future, net fuel costs became more uncertain. Right?
A It did go up, yes.
Q 2012 it went up again, became more uncertain according to the analysis. Correct?
A That's correct.
Q And what was happening here is 250 simulations were being run using -- for the going into the test year case using those typical pretty high hedge ratios for coal, about 30 percent of power hedged. So he ran 250 simulations based on that hedge position for fuel and for off-system sales, and we got a more narrow range of uncertainty.
Then we ran 250 simulations using the hedge percentages on those components that we would expect when we're a little more than a year away for 2009, and we got more uncertainty. And we used the hedge percentages that we would expect when we're about two years out for 2010, got about the same uncertainty, and so on.
So the farther out we went, the more uncertainty Mr. Arora's analysis reflected. Right?

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A I think your description is correct. I'm not -- that -- that those numbers that you're pointing to reflect a range of uncertainty for each of those years, yes.
And the other thing that you said that I would agree with is you go out from the test year to 2009, the amount that's hedged of coal costs and other fuel costs is decreasing.
Q And you understand that that's how Mr. Arora -- my description of 250 simulations for the going into the test year case using those higher hedge percentages were run and that's how the $[redacted] million was derived in the 25 to 75th percentile range and 250 simulations were done using --
A Yes. Understood.
Q -- hedge ratios about a year out for the 2009 case and that's how we came up with the [redacted] You agree that that's how it was done. Correct?
A Yes.

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Q And it's not surprising to you that the uncertainty ranges get wider the farther out we get. Right?
A Yeah, I guess what's surprising to me is it didn't get wider for 2010.
Q Okay. But over the course of the years observed, overall, that uncertainty became larger, as you would expect. Right?
A Yes. As you decrease the amount that's hedged in costs, your uncertainty is going to increase.
Q We've been talking about projections of net fuel cost uncertainty just now, and that's what Mr. Arora's simulations are, they're projections. Right?
A They are estimates, that's correct.
Q Okay. Are estimates and projections the same thing in your mind?
A No. He's projecting a range. He's estimating a range. Projection to me, it's probably just me, but carries this context of something like a forecast. But here he's actually doing a calculation of a range of net -- that fuel outcomes that could occur in the future. So I --

Q Okay. Fair -- when I use the term "projection," I really was -- I really was denoting something that could occur in the future is how I was using it.
A Sure.
Q So if I slip up and say "projections," that -- do you understand that I'm just talking about something that could happen in the future?
A Okay.
Q Now, are you aware that UE periodically forecasts its net fuel costs approaching and going into a particular year and then reforecasts them periodically as the year progresses?
A Yes.
Q Are you aware that those forecasts, for example, for a particular year change quite a bit over time leading up to and during that particular year that we're looking at?
A Yes.
Q Why would that be? Would that be because all of these variables we've been talking about, the hedge percentage on coal and power and gas, for example, the load, the outage scheduled,

energy prices, fuel prices, all those things keep moving as we're approaching that year and as we're going through that year. Is that true?
A Yeah, I would be a little bit more specific than that. I -- obviously as you -- if you're saying you're forecasting for 2009, as you move through the year in 2008 or any year prior to that, you're exactly right.
The amount that you have hedged of your cost at any point and of your sales at any point will vary. So that, that will impact the forecast that you will have for the upcoming year or for a year out or two years out or whatever.
Q And it will impact, if I'm going into -- let's take your 2009 example.
If I'm going into 2009 and let's say I'm in late '08 and I forecast fuel costs for 2009 and then I reforecast them in the first quarter of '09 and the second and third and fourth, all those forecasts may vary quite a bit because these variables are moving as you point out, the hedge percentages are moving as the year progresses. Right?
A Well, yeah. The hedge -- the hedged amount varies, and also my understanding

of UE's forecast is that it uses forward prices to -- as estimates for the portions of the costs and in this case electricity market prices that are not hedged. So another reason that is going to change is because of the volatility that exists in the forward, forward price markets.
Q And there's volatility in the actual daily spot power markets. Right?
A What'd I say? Price markets?
Q You said price.
A Power markets, yeah.
Q And there's volatility in the actual daily spot power market, too, correct?
A Well, what do you mean by "volatility"?
Q Well, daily prices go up and down day to day or certainly week to week or month to month quite a bit throughout the year. Correct?
A Sure. Yeah. They move around. Now, the, to me, volatility needs to be measured within a context. Just because something changed -- changes doesn't mean it's volatile. It's volatile if it changes around what your -- what your expectations are. If it -- if there's wide variations around your expectations of that

price, then I think you've got a volatility.
MR. LOWERY: Dr. Proctor, if you don't mind, I'd like to take about a five minute break myself. Is that all right?
THE WITNESS: That's fine.
MR. LOWERY: All right. Let's take a break.
(Off the record.)
Q (BY MR. LOWERY) Dr. Proctor, before we took a break, we were talking about the fact that going into a particular year, the company forecast net fuel costs, and then as that year progresses, say end of '08, the company forecasts what fuel costs are going to be. And then as that year -- for '09, and then as '09 progresses, the company reforecasts at various times and those forecasts can vary quite a little bit. Do you remember that discussion?
A Yes.
Q And if we look back, let's say if we look back at a particular year after we had forecasted it going into that year and after we reforecasted it a few times during that year, if we look back, it could turn out that the actual net fuel costs for that year were quite a bit

different than any of the forecasts we had for that year. Correct?
A Yes.
Q And, and that is exactly what Table AKASR1 in Mr. Arora's surrebuttal testimony shows; is that correct? And if you don't have it, Miss Lobb will give it to you. Mr. Arora's surrebuttal testimony, take a look at page 9.
A With one qualification. That the -- he is not looking at forecasts -- well, I was just looking at the 2009 forecast. Yes, I agree that's what his table looks at.
Q And Table AKASR1 is an after the fact look at how net fuel cost predictions by the company varied. Correct? That's what it depicts?
A That's what it depicts as how their forecasts have changed, yes.
Q The variation between those forecasts. Right?
A That's correct.
Q And what that table demonstrates is that UE has actually experienced quite a bit of uncertainty in its net fuel costs. Hasn't it?
A No.

Q No. Why not?
A As I indicated earlier in my answer to why you get these variations, is because UE uses forward prices, which are highly volatile, as a part of their forecasts of what the -- what the electricity prices will be.
So I think what this really reflects is in large part the volatility and forward prices. Particularly when you're within the year when almost all of your -- well, all of your costs are hedged.
Q Well, going into the year, almost all the coal costs are hedged as well, right?
A That's correct.
Q That doesn't really change throughout the year. Right?
A That's correct. For example, for 2008, he's got a forecast in for November '07.
Q Yep.
A And what the net fuel costs will be, and then by June of '08, that forecast is dropped. The November '07 forecast was very likely based upon a -- almost all the coal costs being hedged by November of '07 for '08, but the electricity prices that were put into there, into

that forecast were based upon forward prices that were in place as of November 7th.
But in June '08, some of those prices must have been higher than what was forecasted because the net fuel costs dropped significantly. And then he shows July of '08 where they went up a little bit, which means that by July of '08, the forward prices for the rest of the year must have been dropping at that time.
Q Well, the November '07 forecast that you pointed to for calendar year '08 for net fuel costs, that would also -- wouldn't you expect that would also included whatever hedges for power for 2008 existed in November of '07?
A That's, that's correct.
Q And by June of '08, a lot more of the '08 power would have been hedged. Right?
A It's likely. I don't know that for a fact, but that could have been the case, yes.
Q It makes sense it would have been, right?
A If they were, if they continued to -- yes. If they continued to hedge, say, a couple months ahead, that would have been the case, yes.

Q And so the June '08 reforecast is going to include hedges, power hedges that have been put on between November '07 and June '08. Right?
A That's correct.
Q And do you know whether the forecast -- the three forecasts going -- that that occurs throughout a year, do you -- do you realize that that also includes actual fuel costs and off-system sales as of the time of the reforecast?
A I would assume that it does, yes.
Q All right.
A So, for example, in June of -- for example, if the forecast -- depending on when the forecast is done in June of '08, but the -- surely that forecast would include what actually occurred up to that point in time.
Q That's right. You agree that that's likely what's done here. Correct?
A I think that's likely what's done. You know, weather has an impact on this as well because going into -- at November of '07, you're going to be doing -- basing your forecast on normalized loads, and if weather is different

from the normalized, then by the time you get to June, it's going to reflect that.

Q So if we take a look at, in November of 2006, the company predicted its net fuel costs for '07 were going to be [redacted] million. Right? You see that in Table AKASR1?

A I do see that, yes.

Q And by December '07 when most of the year is behind them and they know what their fuel costs have been up to then, they know what their off-system sales have been, they've layered in hedges for their power, it turned out that the net fuel costs were forecast for calendar year '07 as of December '07 to be [redacted] million, right?

A Yes. And as I said before, probably the biggest factor in that difference is the difference between the forward prices that were used in November of '06 and the prices that actually occurred in December of '07.

Q But it's pretty likely that the net fuel costs for '07 came out probably fairly close to that [redacted] million for '07 since the reforecast was being done in December. Right?

A I -- yes.

Q And regardless of why the company

only forecast [redacted] million in November of '06, which is pretty close to the beginning of '07, the fact is the company missed its net fuel cost forecast by quite a bit for '07. Didn't it?

A I agree.

Q Doesn't that tend to indicate that there is quite a little bit of uncertainty even going into a particular year about what net fuel costs will actually end up being?

A Well, it indicates to me that there's a lot of uncertainty around using forward prices for power prices.

Q What do you think the company should use?

MR. DOTTHEIM: Mr. Lowery, would you let Dr. Proctor finish his response?

MR. LOWERY: Sure, Mr. Dottheim, I didn't realize he wasn't finished.

A I can't even remember what we were talking about now. But I think I said it's a strong indication that there's a lot of uncertainty in using forward prices as a forecast for what your net fuel costs are going to be in the year coming up.

And I do not know exactly how

AmerenUE uses their forward price, if they're using it on a specific date or if they're -- if they're looking at those -- what's happening to forward prices in coming up with an estimate based on that -- on, on where those forward prices are trending or tending to go or -- I don't know exactly how they do that.

Q (BY MR. LOWERY) Dr. Proctor -- were you finished with that answer?

A Yes.

Q Dr. Proctor, it sounds to me like you have an issue with using forward prices to predict what power prices are going to be in a subsequent period.

A Sure. Go ahead.

Q That's a -- you agree you do have an issue with that. Right?

A I have a concern, yes.

Q A concern. Dr. Proctor, what do you -- how do you think the company should forecast what power prices are going to be in the future?

I mean, the company has a risk management department, they have training groups. It's my understanding those risk management

policies apply to the unregulated generation owned by affiliates of Union Electric Company, the same as they apply to the AM&T training group that trains UE's generation.

And it's my understanding that this is how those risk management groups advise management about how it ought to be trying to make money in the off-system sales market, or in the merchant generation market.

So if you've got concerns about how Ameren Corporation and UE goes about forecasting those power prices, what's your recommendation?

A I have not sat down and -- my, my concern comes from the amount of volatility that I see in forward prices. And in using a measure that's, that's highly volatile, and -- by the way, is a lot more volatile than the actual prices that occur historically over time for average annual levels.

I am just expressing a concern. I do not -- I have not studied this, or tried to come up with a recommendation for an alternative. I think in my rebuttal testimony what I said was I would, for purposes of the study that Mr. Arora did, I would look at several different alternative forecasting, um, forecasts that were done and choose the one that had the lowest forecasting error. I don't know what that is. In fact, it may be forward prices. I don't know.

But I haven't looked at alternative forecasting methods. So I'm not sure I can answer your question about giving a recommendation to UE about what to use on this.

Q Fair enough. But it may be that forward prices is the right, right thing to be looking at for this purpose. You just don't know. Right?

A It may be, and it may be that it's not the most current forward price, it might be an average of this week's forward prices or it might be an average of this past month's forward prices or it might be some analysis of those forward prices on which you base the forecast.

Q Dr. Proctor, you know, I -- you know probably ten times, a hundred times more about this than I do. But it just seems to me that when you've got -- you got a merchant generating company, Ameren energy generating company sitting over there. It's selling into a power market, it doesn't have captive rate

payers.

It's trying to figure out when to put hedges on its power. Do I -- do I contract for a lot of my generation today at this price, do I wait, what kind of product do I sell? All of those decisions that are going to -- that are going to decide whether that company makes money or not, which directly impacts whether Ameren Corporation makes money.

It just seems to me that if that company is using risk management policies that use forward prices in the way UE is using them as well, that there must be a good reason for doing it, else they're, I don't know, else they're incompetent or something, because surely, surely they've thought about whether this was a good way to forecast power prices. Doesn't that make sense?

A Well, I'm not -- I, I don't know if that's the way the -- the way they do their risk management, and their forecasts and risk management are related to the way they use forward prices to put together this forecast and net fuel costs. I don't know that that's --

Q If you were -- if you were --

MR. DOTTHEIM: Mr. Lowery, would you please let Dr. Proctor complete his response?

A I don't know whether that's the case or not. I don't think we've seen any testimony on that. I don't think the staff has looked into the risk management in the way -- in any great detail how AmerenUE manages its risks, particularly with respect to any forward contracts that they enter into for sales of power from their generating units.

I think there's a lot more that goes into it than what just goes into this net fuel forecast. So I have a little bit of disconnect between what you're saying and what I'm looking at on Table AKASR1 on page 9.

Q (BY MR. LOWERY) Let's take a look at Table AKASR2 on page 11 of Mr. Arora's surrebuttal testimony.

A Yes.

Q We don't see as much variability in the forecast as we did in net fuel costs, and that's not surprising. Right?

A That's correct.

MR. DOTTHEIM: Dr. Proctor, I'm going to object at this point.

Mr. Lowery, can you indicate whether you have a great amount of the remainder of the deposition on questions involving the surrebuttal testimony or, or not very much?

It's approaching four o'clock and I don't know that I want to lose the RLJ, because if we're going down this road in great detail, I think I'd like to avail ourselves of the opportunity of putting this before the RLJ.

MR. LOWERY: I don't think I have very many additional questions about Mr. Arora's surrebuttal testimony at all.

MR. DOTTHEIM: Is it limited to this Table AKASR2? Or are we going to go to another table and another testimony in the surrebuttal?

MR. LOWERY: Mr. Dottheim, honestly I don't recall exactly, but I don't believe I have a lot of questions about the surrebuttal testimony.

MR. DOTTHEIM: Well, why don't you check, because --

MR. LOWERY: Again, I am not -- I, I do not understand -- I understand if I were to ask something that called for advice or ideas and so on that you may have given Dr. Proctor, I certainly understand I'm not entitled to that.

To answer your question, I don't believe I have very many more questions about the surrebuttal testimony.

MR. DOTTHEIM: All right. Well, let's, let's continue, then.

MR. LOWERY: I'll ask the court reporter just to read back the last question or at least give us an idea of where we were.

THE REPORTER: "Let's take a look at Table AKASR2 on page 11 of Mr. Arora's surrebuttal testimony."

The answer was "Yes."

"Question: We don't see as much variability in the forecast as we did in net fuel costs, and that's not surprising. Right?"

And the answer was "That's correct," and then we began the colloquy.

Q (BY MR. LOWERY) So it's not surprising we don't have as much variation, you agreed with that, but there's still quite a bit of variation in the forecast of fuel and purchase power costs and we're ignoring off-system sales?

A There is variation there, yes.

Q If we look down at Table AKASR1 and look at the range of forecast variation we were talking about there and we look at the forecast variation, the range of the uncertainty measured on Mr. Arora's Table 1 in his direct testimony for the going into the test year case, those numbers are sort of in the same ballpark. Correct?

A We're on Table AKASR1, you're asking --

Q Look at Table AKASR1 and the [redacted] and we compare it to --

A Compare that to the [redacted] million?

Q Right.

A Are those numbers in the same ballpark?

Q That's correct.

A I don't know what the same ballpark is. Those numbers appear to be higher than the [redacted]

Q Forecasts were actually varied by more than the uncertainty range that Mr. Arora found in the 25th to 75th percentile in his 250 simulations. Right?

A That's correct.

Q Dr. Proctor, do you agree there was uncertainty in the individual components of net fuel cost?

A Yes.

Q Uncertainty in gas prices and volumes?

A Yes.

Q Uncertainty in coal prices?

A Yes.

Q Uncertainty in power prices?

A Yes.

Q Loads?

A Yes.

Q Dr. Proctor, let's turn to your rebuttal testimony, your Figure 3. I don't have a page reference, but we'll probably both find it, it's on page 16.

A Yes.

Q Figure 3 on page 16 of your rebuttal testimony indicates what you believe to be a trend in power prices from 2002 to 2007. Right?

A That's correct.

Q And you drew that trend line,

right?

A I did.

Q And to determine the trend line you performed a regression on historical average electricity prices. Is that right?

A That's correct.

Q That regression relies on a formula. Correct?

A Yes.

Q That formula -- in that formula you included a dummy variable for 2005 which allows the formula to treat 2005 different than the annual average electricity prices that you included for the other years. Is that right?

A That's correct. That's correct.

Q Including the dummy variable for 2005 means that the actual data for 2005 did not influence the trend line depicted in Figure 3. Right?

A That's correct.

Q And you've also used a dummy variable to exclude 2005 from the determination of the uncertainty band that's depicted on Schedule 2A to your rebuttal testimony.

A That's correct.

Q Now, just so I understand, the closer the dashed lines are to the solid line in Schedule 2A, the less uncertainty and vice versa. Correct?
A Let me -- let me get back to the Schedule 2A.
Q Right.
A Yes.
Q Let's just look at the top part on Schedule 2A, focus on that one. Coal and power prices. Okay?
A Right. Yes.
Q Just make sure the record's clear, the closer those dashed lines are on each side of that solid black line, the less uncertainty that's being depicted. Right?
A That's correct.
Q Or the less uncertainty that's been calculated. Right?
A That's correct. Well, it's uncertainty around the trend line, yes.
Q Less uncertainty around the trend line.
A Right.
Q So those dashed lines are closer to

the solid line than they otherwise would be because you excluded 2005 for purposes of determining the trend line. Right?
A That's correct.
Q Had you included the historical data for 2005, the uncertainty band on Schedule 2A would have been wider, would have shown more uncertainty. Right?
A Correct.
Q Now, let's look at your Table 1 back on page 16 of your rebuttal testimony.
A Okay.
Q I'm correct that the dummy variable you used to generate your trend line in Figure 3 measures the difference between the trend line and the actual 2005 prices?
A That's correct.
Q In Table 1 what you did was you subtracted the value of the dummy variable from the actual 2005 observations. Is that right?
A Yes, that's correct.
Q And had you not done that, the uncertainty that you measured in Table 1, which is represented by the standard deviation that you list in Table 1, would have been higher. Right?

A If I had what? I'm sorry.
Q If you had not subtracted the value of the dummy variable from the 2005 actual observation --
A And just put the 2005 observation in? Yes, it would have been higher.
Q The standard deviation would have been higher, wouldn't it?
A That's correct.
Q Would you be surprised if the standard deviation which is a measure of uncertainty would have been more than two times as high as the number you calculated? Three dollars and eighty cents versus $1.62?
A I haven't made that calculation, but it would be significantly higher. And there's a lot of reasons for that.
Q I understand. Now, while I understand that you think using the dummy variable was appropriate?
A Yes.
Q I understand that that's your opinion?
A Yes.
Q The fact that uncertainty you

measured in Table 1 and that's depicted in Schedule 2A is substantially lower, the fact is that the uncertainty that you measured in Table 1, the $1.62 standard deviation, and the width of that uncertainty band depicted in Schedule 2A, they're substantially lower because you used the dummy variable to exclude the effect of 2005. Right?
A Right.
Q Have you drawn a similar Figure 3 trend picture for coal or gas prices? Have you looked at that?
A No, I have not.
Q Why not?
A I don't know. It wasn't -- I mean, I did not -- there's a lot of analysis I could have done. I guess it just -- I didn't have enough time.
Q Would you anticipate that trends for coal and natural gas would look similar to the trend that you depict for power in Figure 3?
A Yes.
Q Would you also want to exclude 2005 for coal and natural gas because 2005 was unusual?

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A Yes.
Q Let's talk some more about the deviations of the individual years from the trend that you are depicting in your Figure 3.
A Sure.
Q You agree, do you not, that actual 2005 data is quite a bit different from your trend?
A Yes.
Q Even though you excluded it from your analysis, 2005 happened. Right?
A Correct.
Q The coal and gas and power prices that, that you believe were unusual in 2005, they happened. Correct?
A That's correct. They were --
Q When UE was planning for 2005 throughout 2004, could UE have anticipated what was going to happen in 2005?
A I don't think so.
Q Isn't it a fact that UE actually faced uncertainty going into 2005?
A Sure.
Q Isn't it a fact that whether or not UE could have anticipated the events of 2005, UE

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had no mechanism in place that would adjust its rates either up or down due to uncertainty that it was facing going into 2005 and that it couldn't control during 2005?
A Are you saying that they didn't have a fuel adjustment clause?
Q Or any other mechanism. Right?
A Yeah, except 2005 turned out to be one of the best years for them to hedge their coal costs because the power prices went up. They didn't need -- they would have had to return dollars to rate payers had they had a mechanism in place.
Q So a fuel adjustment clause would have worked in the rate payers' favor at that time, right?
A Yes.
Q But going into a particular year if you don't have a mechanism, a fuel adjustment clause, for example, then if the uncertainty you face going into that year causes actual results to vary a lot from what you expected, whether it's in the utility's favor or not in the utility's favor, there's no way to adjust rates to manage that uncertainty, is there?

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A Well, when you say "manage that uncertainty," what do you mean?
Q How about if I say to address the uncertainty?
A Well, there's no -- let me answer it by saying there's no mechanism by which if things turn out differently than what are in rates, that the -- either the rate payer can be paid back the difference or that the company can receive the difference.
Q The utility is facing a lot of uncertainty going into each year which means its net fuel costs may be a lot higher or a lot lower which is going to affect its earnings, and that could be good for utilities, could be good for rate payers; but without a fuel adjustment clause, somebody's going to win and somebody's going to lose in that year. Right?
A There are risks on both sides, yes. I don't know if somebody's going to win or somebody's going to lose, but there are a lot of -- there are risks on both sides for the rate payer and for the company.
Q And a fuel adjustment clause mitigates those risks for both sides, true?

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A Depends on how the fuel adjustment clause is constructed, but generally that's the way that you would put together a fuel adjustment clause is to balance that between rate payers and shareholders.
Q If you had a fuel adjustment clause with either no sharing or symmetric sharing, you would balance that between the utility and the rate payers, that risk, wouldn't you?
A Yes. When you say no -- I just -- you said no sharing or -- no sharing meaning what?
Q Well, a full pass-through of whatever's being tracked in the fuel adjustment clause. Net fuel costs in this case.
A Well, that -- yeah. I just wasn't real clear on what those concepts were.
Q Sure. If you had a fuel adjustment clause that just passed through changes in net fuel costs, then the risk that the actual results turn out different from what might have been expected because of all this uncertainty you face going into a year would be mitigated for both sides. Right?
A Yeah, if you're wanting to balance

the risk for both sides, the starting point is critical.
Q In other words, what the base amount is critical.
A That's correct.
Q But if you choose a reasonable base amount, then you've balanced the risk for both sides and you have a fuel adjustment clause with no sharing, haven't you?
A That's -- yeah, if you're talking about straight flow through. If net fuel costs go up, the company gets to raise its rates to collect that. If they go down, then dollars are refunded to customers or rates are lowered, I should say. Rates are lowered.
Q Right. Rates are lowered which is -- amounts to the same thing. It's not a refund, but customers pay less for their electricity.
A Right.
Q And we talked about you expect that very well might have happened in 2005 had there been a fuel adjustment clause of the type we're talking about in place?
A That's correct.
Q So, Dr. Proctor, in your last -- in

your case No. ER-2007-002 rate case testimony, and you know that's the last UE rate case, right? That case number?
A Yes.
Q You also analyzed trends and correlations of power and fuel costs. Correct?
A Correct.
Q You depicted an analysis of trends and correlations of power and fuel costs in Schedule 2.1 to your 2007 rate case direct testimony. Did you not?
A Don't have that in front of me.
Q Well, Miss Lobb will give it to you. How about that?
A Okay.
MS. LOBB: Can you mark that? Please?
MR. LOWERY: And I'm looking at Schedule 2.1, I might have mentioned that.
MS. LOBB: Do you want me to hand him his testimony or just the --
MR. LOWERY: Well, Dr. Proctor, she's going to hand you and have the court reporter mark it as an exhibit.
MS. LOBB: Yes. I am. She is.

MR. LOWERY: And what is the Exhibit No? MP1?
(Exhibit MP1 marked for identification by the court reporter.)
Q (BY MR. LOWERY) Miss Lobb has handed you Deposition Exhibit MP1. Do you recognize that, Dr. Proctor?
A Yes.
Q Is that your Schedule 2.1 from your ER-2007-002 direct testimony?
A It is from the direct testimony. Yes.
Q Now, in the analyses that you did that generated the trend line, the data that's shown in Schedule 2.1, you did not exclude 2005 data as an outlier, did you?
A I don't believe I did. But this --
Q I'm sorry to interrupt you, but on that question, you did not exclude 2005 when you did the analyses that led to Schedule 2.1. I mean, I just want to make sure I understand yes or no to that.
A Yes, but this is different, if my recollection is that this is twelve month moving average data. It's not annual average data.

Average annual coal price data.
Q I understand. But the 2005 data is in this data that generated Schedule 2.1, right?
A I'm trying to remember how --
MR. LOWERY: Dr. Proctor, maybe I can help you. Miss Lobb, would you have the court reporter mark Dr. Proctor's work paper, the MP coal dispatch prices spreadsheet?
MS. LOBB: Yeah.
(Exhibit MP2 marked for identification by the court reporter.)
A I'm trying to recall how far into 2005 this data went. I know it didn't go all the way to the end of 2005.
Q (BY MR. LOWERY) Dr. Proctor, do you have I believe what would be Deposition Exhibit MP2?
A Right. Yeah.
Q Do you recognize that as a work paper that you provided from your -- from your ER-2007-002 direct testimony?
A Yes.
Q And that's the data that underlies Schedule 2.1; is that correct?
A Yeah, looks like it goes through

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September '06.
Q So data for every month of 2005 is included in the analysis that generated what's depicted on Schedule 2.1. Correct?
A Yes. That's correct.
Q Now, if you had excluded 2005 from your analysis back in that -- in, in that rate case, you would have found a different relationship than is depicted on Schedule 2.1. Correct?
A It's two completely different types of analyses. You're making a comparison between an analysis of twelve month moving average data versus looking at average annual prices. I don't -- I don't know how in this particular analysis you could exclude the data from 2005.
MR. DOTTHEIM: Dr. Proctor, excuse me, you said "in this particular analysis." Could you clarify in what analysis you were referring to?
THE WITNESS: Yeah, the one that was done in my direct testimony in the last UE rate case.
Q (BY MR. LOWERY) I understand. Let me just -- so maybe we can short circuit this.

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You obviously believed including 2005 data in the last rate case was the appropriate thing to do for purposes of what you were doing. Right?
A That's correct.
Q And you obviously believe that excluding the 2005 data was the right thing to do in this rate case for what you were -- for the purpose for what you were doing. Right?
A That's correct.
Q Okay. So we can agree on what you thought was appropriate. Is that fair?
A Okay.
Q Now, the slope of your line from the last case as depicted on Schedule 2.1, it's quite a bit steeper than the slope you calculated for this case as shown on the top chart on Schedule 2A to your rebuttal testimony. Is it not?
A I -- first of all, the analysis on Schedule 2.1 is not a trend line. Okay? It's a correlation of off-peak prices to coal dispatch prices. So you can't compare slopes. No, they're not comparable.
I mean, one -- on one you have a time axis, the dates. On this one you've got a

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coal dispatch prices on the X axis --
MR. DOTTHEIM: Dr. Proctor, when you said "this one," could you clarify what document you're referring to when you said "this one"?
THE WITNESS: Yeah, Schedule 2.1 in my direct testimony is a, an analysis of correlation between off-peak prices to coal dispatch prices. It's not a trend analysis.
Q (BY MR. LOWERY) Dr. Proctor, can I direct your attention to Schedule 2A to your rebuttal testimony in the current rate case?
A Yes.
Q The top graph on 2A?
A Yes.
Q Correlation of off-peak electric prices to coal dispatch prices. Correct?
A Correct.
Q 2A, Deposition Exhibit MP1 from ER-2007-002, is also a correlation of off-peak prices to coal dispatch prices. Correct?
A Correct.
Q You are looking at the same variables, are you not?
A No.

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Q You've got coal dispatch prices along one axis of both of these charts, do you not?
A Yes.
Q You've got off-peak prices along the other axis on both of these charts, do you not?
A I do. But it's not -- they're not the same variables. One, and I mentioned this before, one is a twelve month moving average and the other is an annual average.
Q There are two different ways of looking at the correlation. Correct?
A Yes.
Q But they are looking at the correlation between the same two commodities, are they not?
A Yes.
Q And the slope of your line in the last case is quite a bit steeper than the slope of the line on Schedule 2A in this case?
A And I would expect it to be.
Q And that's true, though. Correct?
A Yeah, but you're comparing oranges and apples.

Q Well, you -- that's fine. But -- that's fine that you have that opinion, but I asked a -- I think I asked a fairly simple question, and that's whether the slope -- the line in the last case is quite a bit steeper than the line in this case, and your answer was yes. Correct?
A That's correct.
Q Just to dumb it down for dummies like me, if I look at Schedule 2.1 in the last case and I look at a price of $1.40 for MMBTU for coal, I'm going to get a power price of about $31?
A Yes.
Q And at 1.70 I'm getting a power price of about thirty-four. Right?
A Yes.
Q And if I look at Schedule 2.1A in your rebuttal testimony in this case, power price for that same $1.40 coal cost is about 22 or $23; and at $1.70, power price is about twenty-five. Right?
A At $1.40 coal dispatch price, the off-peak electric price is around -- on Schedule 2.1?

Q Yeah.
A What did you say the off-peak price was?
Q Twenty-two or twenty-three.
A I don't think so. I think it's around thirty-two. Or thirty-three.
Q On Schedule 2A in this rate case?
A Oh, I -- no. I said Schedule 2.1.
Q I'm sorry. The numbers are too close.
A Yeah.
Q Schedule 2A in your rebuttal testimony in this case.
A Yes.
Q About 22, $23, right?
A Yes, that is correct.
Q And at $1.70, about $25. Right?
A That's correct.
Q So the relationship between coal prices and power prices, if you look at these two correlations, has changed substantially since the last rate case; is that right?
A No, you're -- and I've told you before you're looking at two different sets of -- two different types of data in trying to reach a

conclusion in comparing two different types -- two different types of data.
And as you pointed out, the data on Schedule 2.1 has the 2005 prices in it. And it's based on a twelve month moving average and it is going to result in higher prices because of that.
Q All right. Now, those higher prices in Schedule 2.1 in the last rate case, Exhibit MP1, Deposition Exhibit MP1, those higher prices resulted in higher off-system sales margins calculated in the last rate case which in turn led to a lower revenue requirement recommendation for the staff in that case. Right?
A I am sorry, you made a big jump there.
Q Okay.
A And I'm not following the logic.
Q Well, including the 2005 prices, that twelve month moving average, calculating prices in that fashion resulted in a higher power price than if you had excluded 2005 power prices. Right?
A I am -- we did not base our recommendation for off-peak prices in that case

based on 2005 prices.
Q I'm aware you didn't. You used a multi-year period. Did you not?
A No.
Q Well, what did you do?
A What we did was we plotted how off-peak prices had been changing over time, and my recollection was that there was a significant increase in those prices in 2005. As we came into 2006, those prices dropped and were lower.
And that what we had -- what we went with was where the prices were trending to at the end of the test year, and I believe that was September. We did not base prices in that case on 2005 prices.
Q When you say you ended up where they were trending to, you were -- you were calculating a twelve month moving average, and because the prices were coming down in 2006, you would add a lower cost month and replace a higher cost month, twelve month moving average, right?
A Yes, and we trued up to the end of the period is my recollection. We -- and I'm trying to recall whether -- I think we did get December of 2006 in our true up. And so the

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twelve month moving average would have had none of the prices from 2005 in it.
Q Is it your testimony today that the power price used in staff's model and the production cost model in the last case upon which staff based its off-system sales recommendation did not include any 2005 power price data; is that your testimony?
A That's my recollection. I would have to go back and check what we put into surrebuttal to confirm that. But that's my recollection, yes.
Q Give me just a minute, Dr. Proctor, please.
A Yes.
Q You believe that's in your surrebuttal testimony?
A I'd have to go back and check the work papers from the surrebuttal testimony, but I believe that's what we did for the true up. And I can't recall right now whether we completed the true up before surrebuttal or after. So it may or may not be in the surrebuttal testimony.
Q Just to clarify again, your recollection at least as you sit here today is

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that the energy price for off-system sales used in staff modeling that underlied your, I believe it was approximately [redacted] million off-system sale margin number in the last case was the end point of twelve month moving average power prices for 2006?
A '6. That's my recollection. Again, I'd have to go back and check that.
Q Okay.
A I'm not sure whether we had December -- what I can't recall is I know we had through -- well, I think we had through November, and I don't recall whether we had December prices in at the time we did the true up. But that's my recollection.
Q Dr. Proctor, can you explain to me again, and forgive me if you already have, but why when looking at the correlation of off-peak power to coal dispatch prices for this case you excluded 2005 data, but when looking at that same correlation in the last case you included 2005 data?
A Okay. In this particular case, what you're trying to determine is generally whether or not coal dispatch prices and either

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off-peak or on-peak prices, Schedule 2A and Schedule 2B, whether or not those have been correlated under, under normal conditions.
What happened in 2005 was we had supply disruptions from problems with Powder River Basin train deliveries, and we had two hurricanes that impacted -- disrupted the supply of natural gas.
Q Right.
A And those unusual events, there's no question they did occur, and -- but the analysis here is to come up with what is a -- is a typical correlation between these prices and, and the natural gas and coal prices. That was --
Q Why wouldn't you want to look at a typical correlation in the last rate case? I think what you just indicated to me is that the correlation you calculated in the last rate case was atypical because it had this atypical 2005 data in it.
A Right.
Q And you want to look at a typical correlation now. My question is why are you looking at an atypical correlation in the last rate case?

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A Well, there are a couple of reasons for that, but, but one is we had put together an analysis of how coal prices were related to off-peak prices for electricity, and we -- the focus there was on when we put the model together with our coal dispatch prices and with the off-peak prices, were, were they going to match.
Were they going to correspond to one another with the best information that we had available at this time. And we had data from, I believe the earliest was 2003 through, it appears from this schedule was around September of 2006.
Q You're looking at Exhibit MP2, right?
A Yes. Right. And what we were trying -- the purpose for this correlation in this particular analysis was --
Q When you say "this," you need to clarify for the record. What, what's "this"?
A I'm sorry. The purpose of the analysis in the previous rate case was to make sure that what we were putting into the model was matching the dispatch prices, the coal dispatch prices with, with the electric prices that we were putting in there. Putting into that. That

was the purpose.
So whatever, whatever prices that we were putting in there -- and by the way, we didn't put in off-peak prices that were up at the $[redacted] range in this. I think we were much closer to the middle of [redacted] and $[redacted] We wanted to make sure that those corresponded when we ran the fuel model. Okay?
What schedule 2A is addressing --
Q Now we're back in this case. Right?
A Yes. What Schedule 2A in this case is addressing is from, from the data that -- these average annual prices, is there correlation between the coal dispatch prices and the off-peak electric prices.
Now, let me say the data in Schedule 2A for this case came from Ajay Arora's direct testimony. I did not go in and look at that, how he defined off-peak, or how he defined on-peak.
We may have different definitions of those things between the two. In fact, I think we did. What he was calling off -- well. I believe what he was calling off-peak for the

data that he had in his table on this particular question of correlation may have, and I don't know for certain, but may have only included the hours from 11 p.m. until 6 a.m. in the morning seven days a week.
The off-peak prices is defined in Schedule 1 -- 2.1 from the previous case dealt with a definition of off-peak electric prices that also included all of Saturday and all of Sunday. And when you include the on-peak hours from Saturday and Sunday, you're going to increase the average price level.
So I don't -- these, these were two different sets of data and they were put together for two different purposes. So I -- that's the only way I know how to answer your question at this point. I don't think the data is the same and the analysis was done for different purposes.
What the analysis on Schedule 2A was, was to show that if you excluded this very -- this year in which there were significant supply interruptions, that the coal dis -- that the average annual prices that occurred are highly correlated.
Q The unusual year of 2005 --

A That's correct.
Q -- as we talked about before, it actually happened. Katrina happened and coal supply disruptions happened. Right?
A Yes. That's correct.
Q And both those things could happen again. Couldn't they?
A They could. One of the problems in this type of analysis is how likely are they to happen.
Q And probably none of us know, do we?
A Well, if you're going to include them in your analysis of uncertainty, you have to make a determination of that. I would have put it into what I would call forecast uncertainty.
Q But when you exclude them, you get less forecast uncertainty, correct?
A I didn't say I would exclude them from forecast uncertainty. And it depends upon what type of forecast uncertainty you're dealing with. Is it a month ahead for the next year? Or is it a year ahead? Or is it two years ahead?
And you have to evaluate this particular occurrence that occurred once in nine

years historically. Maybe you put that level of probability on it.
Q So by excluding it, there's no probability on it at all. Right?
A By excluding it from what? I'm sorry.
Q By excluding it from the calculations that showed the uncertainty range on your Schedule 2A in your rebuttal testimony in this case.
A I'm sorry, Schedule 2A doesn't have to do with uncertainty. It has to do with correlation.
Q The dashed lines depict uncertainty around your trend line, don't they?
A Yes, they do.
Q And the range of uncertainty around that trend line would have been substantially higher if you had included 2005. Right?
A What the dashed lines represent is plus or minus one standard deviation around the trend line for the points that were included in the calculation of that trend line.
Q Let's talk some more about your trend line in Figure 3. The trend shown in

Figure 3 of your current rebuttal testimony, that trend did not apply before 2002. Right?
A Excuse me, I need to catch up with you.
Q Sorry.
A Would you ask the question again?
Q Sure. Figure 3, page 16 of your rebuttal in this case, the trend that you have drawn in Figure 3, that trend did not apply before 2002. Correct?
A That's correct.
Q And prior to 2003, the trend was flat or down. Is that fair to say?
A Yes.
Q If we were back in time in 2002 today and you looked at the historic data prior to 2002, what you would have seen, you would have seen the flat or downward trend. Right?
A Yes.
Q Would you have been able to anticipate in 2002 that a new trend would have started in 2002?
A No. And that's not the purpose of this analysis.
MR. LOWERY: Miss Lobb, would you

hand Dr. Proctor Mr. Schukar's rebuttal testimony?
Q (BY MR. LOWERY) Would you turn to page 6 of Mr. Schukar's rebuttal testimony, Dr. Proctor?
A Yes. I am there.
Q The figure on page 6 depicts those unusually high prices in the second half of 2005, doesn't it?
A Yes.
Q And that's -- that looks pretty similar to several months of unusually high market prices we've seen in 2008, does it not?
A I don't know.
Q You don't know.
A No. This is -- I'm not sure what this data is. I have not read Mr. Schukar's testimony.
Q Well, let me ask you this. If we assume that this data are the hourly weighted LMPs, weighted being weighted by UE generating plants.
A Yes.
Q We assume that this data shows the hourly weighted LMPs for Union Electric Company's

generation from 3/31/05 through the end of September 2008.
A Okay.
Q You can see the spike in 2005 in those LMPs. Right?
A Yes.
Q And you can see starting in about late May 2008 a pretty noticeable jump up in LMPs that has fallen off considerably when we get down to August and September of 2008. Right?
A Yes.
Q If we look across the rest of that data, we don't see really any other -- we see one other spike there in the 8/13/2006, we see one other one there, but the data is fairly, fairly level across that period, is it not?
A Across which period?
Q The period depicted on this figure.
A I see a lot of variation. I'm sorry, I'm not following the question. I see a lot of variation in the data, but I think you're -- I'm not sure what you're asking. Across this whole figure I see a lot of variation in the data.
Q Would you agree we've seen some

arguably unusual events in 2008?
A I don't know what they are.
Q How about the big run up in coal prices that was due at least in part in disruptions in coal supply in China and Australia? Was that unusual?
A I don't know. I wasn't aware of those.
Q Were you aware that the Clean Air Interstate Rule was vacated by the federal courts this summer, summer of '08?
A Yes.
Q Was that a pretty important event in the electric industry?
A I'm not an expert in that area. I don't know whether it was or not.
Q Was oil shooting up to $145 a barrel and back down to $60 a barrel, is that unusual?
A I think the fact that it came down from 160 was not expected.
Q From 145 or -- maybe it was 160. I thought it got up to about 145, but.
A I don't think people expected it to drop that fast, no. If that's the question. But

that's -- you know, I'm still kinda searching for the unusual event. I mean, when I talk about unusual events, I'm talking about things that cause the occurrence of these things.

Q You don't think the spike up in power prices in June and July of this year and the quick fall off after that to where they are now, you don't think that's unusual?

A Yes, we did.

Q You do think that's unusual?

A Yes. And the staff modified on its true up the prices for June and July. Because they saw those as unusual and too high.

Q In late 2007 when UE was planning for 2008, the uncertainties and the events that have occurred in 2008, those are the kinds of uncertainties UE faced, right?

A Yes.

Q I mean, do unusual years happen? I mean, every year is not a normal, usual year, is it?

A Of course not. That's what you're trying to capture with, to some degree, with these uncertainty things, is if every year was the same, we wouldn't be concerned with this

issue.

Q If unusual things -- if unusual years do occur, the net fuel cost could be substantially lower or higher than UE thought they were going to be going into that year, right?

A They could be higher or lower.

Q Right.

A The problem is using the word "substantially," I don't believe we have a good measure yet of whether or not there is substantial variation there.

Q You're aware that oil, natural gas, and power prices have greatly decreased since July of this year?

A Yes.

Q Are you aware that the forward energy prices for 2009 and 2010 have also dropped substantially?

A I haven't looked at forward prices for 2009, 2010. It wouldn't surprise me.

Q Makes sense they probably have come down considerably, right?

A Again, you use the adjective "considerably." I'm not -- I, I wouldn't be

surprised if they came down. I don't know by how much. And I don't know if that's considerable or not.

Q Do you agree, Dr. Proctor, that UE can, as a practical matter, hedge a lot more of its coal purchases farther into the future than it can do for off-system sales volumes?

A I know they do, and one of the reasons is because of load uncertainty. They don't want -- they don't want to hedge too much in sales going forward because they may need the generation to meet their load. And that generation may not be available there to meet their obligations under the hedge.

Q Which is why I say as a practical matter, UE can hedge a lot more of its coal further into the future than it can its off-system sales.

A Sure. Right. Because they know --

Q You agree with that, right?

A I would agree with that, yes.

Q And the reason is the reason you gave, there's native load uncertainty and UE's got to make sure that it's got generations that can show up, so to speak, to serve that load if

the load varies. Right?

A That's, that's correct. And any hedge they enter into has to be met -- well. In order for it to be a hedge, it has to be met from generations that they will have available to sell into the market.

Q Staff is of the view that UE's coal costs are pretty well known in 2009, and while not as well known, substantially known for 2010. Right?

A Yes.

Q And you may not know -- pardon me?

A I don't know the exact percentages for 2010. I think for 2009, we're probably at [redacted] percent.

Q And the costs are substantially known in 2010, that's your understanding, is it not?

A Again, I don't know the exact percentages, but a significant amount of coal has already been purchased for 2010, yes.

Q Which means we know what the cost is going to be.

A Yes.

Q UE and staff both agree that on a

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normalized basis, about 40 million megawatt hours of generation each year comes from UE's coal plants; is that right?
A Yes. That's right.
Q And we talked about earlier that UE normally sells about 10 million megawatt hours of off-system sales volumes; right?
A Yes.
Q Agree that UE generates about four times more power from its coal plants than it sells off-system?
A Yes.
Q Would you then agree that on a per megawatt hour basis, assuming volume has remained constant, if the delivered cost of coal goes up a dollar, the realized power price on off-system sales has to go up $4 in order for the increased power sales to offset the $1 increase in delivered coal costs? And I'm looking at both of those on a per megawatt basis.
A That's correct.
Q Now, if Mr. Neff currently predicts a [redacted] percent increase in delivered coal costs in 2010 over '09 -- and by the way, do you have any reason to believe that Mr. Neff's prediction is

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substantially off?
A I have -- I didn't even know he had a prediction.
Q Well, given that -- given that a significant amount of the coal is hedged in 2010, it seems reasonable that Mr. Neff could probably do a pretty good job predicting what the 2010 increase in coal cost is going to be, doesn't that make sense?
A He probably has a pretty good idea, I don't know how good his prediction will be, though.
Q All right. Well, you don't have any reason to believe that Mr. Neff's rebuttal testimony, which reflects 2009 delivered coal costs of $[redacted] a megawatt hour, is significantly off, do you?
A Again, I wasn't even aware of what his prediction was.
Q I'm going to ask you to assume that his, his rebuttal testimony says that UE's coal costs in 2009, a delivered coal cost will be [redacted] a megawatt hour, and that's for '09, and we're pretty well hedged, right?
A Okay.

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Q I want you to assume that.
A Yes.
Q And I want you to also assume that in 2010, UE's coal costs are going up about [redacted] percent. Okay? Mr. Neff says. Do you have that assumption in mind?
A Yes.
Q That would represent a $[redacted] per megawatt hour increase in delivered coal costs in '10 over '09. Is that right?
A You're pushing me to make --
Q I think Miss Lobb has a calculator if you'd like to borrow it.
A No, I have a calculator. I'm going to do that. Yep, $[redacted] rounded.
Q And a $[redacted] increase per megawatt year to year doesn't sound all that unreasonable or unexpected to you; is that fair to say?
A Sounds pretty high. But go ahead.
Q Really. Are you familiar with the coal cost increases UE has been experiencing year to year the last few years?
A I haven't looked at that. [redacted] percent sounds fairly steep though.
Q Well, based on the assumption that

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Mr. Neff is right at least, if Mr. Neff is right, then when Mr. Arora says power would have to go up $[redacted] per megawatt hour from '09 to '10 to offset a [redacted] per megawatt increase in delivered coal costs, he's exactly right, isn't he?
A If you multiply [redacted] by four, you do get $[redacted]
MR. DOTTHEIM: Mr. Lowery, I don't believe Dr. Proctor had completed his response.
A I am a little -- I am a little reluctant to use averages for the purpose of what's going on here. Average coal costs and average power prices don't necessarily translate to revenues from off-system sales.
And I do understand on the coal cost side that the average cost of coal is -- plays an important role in determining what the actual coal costs are going to be.
But I'm a little reluctant on the average power price increase and implying that that has to be what the power price increase is in order to produce the -- on the average for the year to produce offsetting revenues. The markets, they just don't work that way.
So no, I'm not going to agree that

simply because I think it's one-fourth of UE's generation is -- goes to off-system sales, that on the average you have to have a $[redacted]increase. I don't think it's that simple.

I think as a ballpark type of estimate, it, it, it may be a back of the envelope type of calculation, it may give you an idea of what the increase has to be, but I'm not going to testify that you would need exactly a $[redacted]average price increase.

Q (BY MR. LOWERY) But you would need an increase that's in that range, would you not?

A It depends. Okay? Depends on a lot of different factors. And you can have natural gas price increases that outstrip this[redacted] percent increase because on-peak prices to go up significantly and perhaps the off-peak prices don't go up as much, and how much is UE selling in the off-peak versus the on-peak to get their revenues from this?

I mean, I'm just -- I'm very uncomfortable with these numbers as being even representative of the types of increases that would be needed in power prices. I mean, I guess my answer is I don't know.

Q You don't know.

A Yeah. It's -- I think it's more complex than this simple example.

Q Would you agree that clearly you're going to need a significantly greater move in power prices, average annual power prices to offset that $[redacted]per megawatt hour increase in delivered coal costs? [redacted]s not going to do it, is it?

A Depends on where that[redacted]occurs.

Q [redacted]s going to occur on January 1 of 2010, because as I think you know, UE's coal costs change on January 1 of each year; isn't that right?

A Well, let me -- suppose they had a decrease in a period of time when they don't do very many off-system sales.

Q A decrease in what, Dr. Proctor?

A Decrease in market prices in a period where they don't do -- currently don't do much in off-system sales, but later they had a significant price increase in a period of time where they do do off-system sales. I'm not sure that the -- that you can look at the average and determine, or even make a determination that the

average has to be higher or lower.

Q Dr. Proctor, you're not disputing that UE's coal costs go up on January 1 --

A No. I'm not --

Q They don't go up a little bit in January and a little bit more in February and a little bit more in March. Their coal and transportation contracts are calendar year based, and when the increases take effect, they take effect on January 1 and apply to the whole year. Isn't that right?

A That's correct.

Q So that $[redacted]per megawatt hour increase in delivered coal cost, if Mr. Neff is right, is going to apply to every megawatt hour generated from those coal plants in 2010. Right?

A Yes.

Q And if I've got four times as much coal generation as I have off-system sales, my power price increase is going to have to be substantially more than my delivered coal cost increase to offset it. Is it not?

A I told you I do not know the answer to that question.

MR. LOWERY: Don't know. Okay.

Fair enough. Why don't we take a little break.

(Off the record.)

Q (BY MR. LOWERY) Dr. Proctor, continuing our discussion we were having just before we took a break, which I think it's about over, but wouldn't UE have to realize on average a $[redacted]increase in its realized LMP at its generating units to generate a $[redacted]increase in coal costs?

A I think what you're asking is if, under the circumstance, that -- say their sales stayed at 10 million?

Q Right. And that's the assumption of all my questions in this area.

A And if we had looked at the average price that they received for those sales at 10 million --

Q Right.

A -- would it have to -- would that average revenue that they got be -- have to be equal to $[redacted]to offset the increase in costs. And my answer to that is yes, just as a -- just as a matter of calculating the equation. I may have misunderstood your question to be that power prices had increased by that much.

Q Fair enough. And my question may not have been a good one. But they would have to realize $[redacted] more to offset that [redacted] per megawatt hour coal cost increase, wouldn't they?
A That's correct if, if the standard you're looking at is offset, that's absolutely correct.
Q All right.
A If you want it to end up being at the same place as what you started, then that's true.
Q Have we ever observed an increase in power prices of that magnitude over the period 1999 to 2007?
A I haven't measured that, but in terms of you're, you're going back and comparing this average revenue number to power pricing increases.
Q Right. I have no idea what -- well, we don't even have LMPs at UE for nine years, but --
A Let's look at -- from Mr. Arora's table, let me see if I can find it here real quick.
Q Are you in his rebuttal testimony?

A No, I am in his direct testimony.
Q I'm sorry, I meant to say direct.
A Right. And let's look and see, I think there was, but --
Q Are you looking for a schedule or something that has UE LMPs?
A No, I'm looking at Schedule AKA-E2.
Q All right.
A And the average -- I'm going to do this on a calculator. I'm going to subtract the -- from the price in 2005 the price in 2004, and I get $12.49.
Q And I'm looking at -- you're looking at Schedule AKA-E2 to Mr. Arora's direct testimony. Right?
A Correct.
Q We've seen a increase in power prices of $[redacted] or more one time over that nine year period, right?
A I think that's the only -- I, I don't -- that's the only place I recall seeing a large price increase.
Q And they -- and that increase occurred because of Katrina and Rita and the coal supply disruptions that occurred in 2005. Right?

A Yes.
Q And 2005 was unusual. Right?
A Yes.
Q If we ignore 2005, we haven't seen a move in power prices anywhere near [redacted] between years over this last eight, nine year period, have we?
A I'm looking at them, but I don't think so. I think we had a, about a $4 increase between '03 and '04, but there was around a $7 increase between '02 and '03. Little more than $7 increase.
Q A [redacted] increase is pretty unusual based upon that historical information, correct? I mean, I realize it happened in '05, but we have agreed I think '05 was an unusual year, haven't we?
A Right. Well, I think it's an unusual year, yes.
Q Right. I mean, I -- so --
A But here's kind at -- here's where the correlation stuff comes into play, and it's -- you know, if coal prices are increasing by that much, I would expect power prices to increase as well.

Now, is it by a factor of four, you know, I don't know. I haven't done that analysis. But that factor of four, I don't think I've ever testified that power prices have to offset increases in fuel costs. I think the question is how much volatility is out there in that fuel.
So I, I don't expect power prices, and I don't think I've ever testified that power prices will offset, you know. So, so maybe, I mean, maybe that's too tough of a standard that they totally offset.
Q It's never been your testimony that a dollar increase in AmerenUE's delivered coal cost is going to be offset -- and I'm talking again on a per megawatt hour basis, all right?
A Right.
Q And a dollar increase in UE's delivered coal cost is going to be offset by a dollar increase in power prices.
A No. My recollection from the last case was that -- was that the increase in power prices since they would be correlated with increases in coal prices would narrow the range.
Q The power prices UE would have to

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realize at its generators to offset an increase in its delivered coal costs -- and we're looking at the same period, all right? Just to be clear, I'm looking at the same periods.
A What periods?
Q The realized prices UE is going to have to receive --
MR. DOTTHEIM: Mr. Lowery?
MR. LOWERY: I think I was in the middle of a question, Mr. Dottheim.
MR. DOTTHEIM: No, Dr. Proctor asked you a question for clarification.
Q (BY MR. LOWERY) Okay, go ahead.
A I didn't understand what you meant by "the same periods." I'm sorry.
Q If I have a dollar increase per megawatt increase for coal costs in 2009, to offset that increase with off-system sales in 2009, I'm going to have to realize $4 per megawatt hour more at my generators, right?
A Okay. So we're talking about the same concept.
Q Yeah.
A All right. I understand.
Q You understood my question?

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A I understand what you meant by "the same." I don't know if I recall your question. You might ask your question.
Q All right. I'll try it again. If I have a dollar per megawatt hour increase in delivered coal costs in 2009, on January 1, 2009, that applies all year, then UE's going to have to realize $4 per megawatt hour more for its off-system sales in 2009 to offset that, correct?
A Assuming that their generation used for off-system sales stays constant.
Q Assuming the volume of off-system sales stays the same.
A Yes.
Q All right. Thank you. Dr. Proctor, would you agree that for approximately -- the approximately [redacted] percent of UE's off-system sales that UE does not hedge, that the actual uncertainty UE faces is uncertainty in daily power price?
A As opposed to what? And I'm trying to get a context.
Q As opposed to annual average prices.
A I think they face -- I think those

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are different kinds of uncertainty and they face both, yes. I think uncertainty in daily prices is something that occurs due to weather, supply conditions at that time, those types of things, and that those accumulate to give you what the average annual realized price is.
But in terms of uncertainty, I think there are two different concepts.
Q Well, Dr. Proctor, every day UE has volumes of off-system sales that aren't hedged that are available to sell. Right?
A That's correct. That's right.
Q And the price they're going to get for those -- get for those each day depends on what the price of power is that day. Right?
A Actually, each hour.
Q Well, actually each hour of that day, but just a simplified assumption though, let's -- can we simplify it and say that, that -- well, that's fine.
A No, I don't think --
Q Let's take hourly uncertainty, then, each day, right?
A That's right, but see, the problem that you're getting to is Ajay -- I'm sorry, Mr.

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Arora could have measured hourly uncertainty in prices and used that to represent average annual uncertainty. He didn't, but it's -- but it's a different concept.
Q But for that [redacted] percent of those off-system sales, the uncertainty every day when the traders are bidding that generation that they face is the uncertainty associated with what the hourly prices are going to be for every hour of that day. Right?
A Absolutely. Yes.
Q UE doesn't know with certainty what the spot price of power will be on the next day, the average daily price, the average, the hours, certainly doesn't know what the spot price of power will be on a -- for a given hour on a given day. Right?
A I think -- I -- yeah, I agree. They don't know precisely. They have a pretty good idea of what it's going to be, though. Now, things can happen.
Q Things do happen, do they not?
A Yeah, things do happen.
Q Things definitely happen, right?
A That cause prices to be different

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from expectations.
Q But when UE is sitting at the beginning of a year and they've got [redacted] million megawatt hours of off-system sales that they are expecting to sell in that year.
A Yes.
Q They don't have any real good idea what the prices are going to be for each of those 365 days, do they?
A Yeah, I think that's what this whole issue is about is how much uncertainty is around there. Yeah. I agree there's, there's uncertainty. Yes.
Q Let me ask you this. Let's assume that UE could not hedge any of its off-system sales. I realize that UE does typically hedge [redacted] percent as we've talked about, but assume that they couldn't do that for whatever reason. Loads are way too uncertain, I don't know, just doesn't really matter, but just assume they couldn't do it. Okay?
A Yes.
Q UE would face the kind of uncertainty that we're talking about for every megawatt hour of off-system sales under that

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assumption. Right?
A Correct.
Q So given that UE only sells forward about [redacted] percent, UE faces that uncertainty for about [redacted] percent of its off-system sales volumes. Doesn't it?
A Yes.
Q Even if one assumed that there's some correlation between coal prices and spot power prices on a going forward basis, since UE hedges coal one to five years out but power only one month to one year out, even for the power that's hedged that correlation starts to break down, does it not?
A That's a complex question. Let me try to break it apart. I think what you're saying -- or let me tell you what I would agree to. That when you -- UE hedges coal costs significantly ahead of the time that they hedge their sales, and they're somewhat restricted on what they can hedge on their sales because of the uncertainty about their forecasted load --
Q All right, I'm following you so far.
A So you can't -- you can't match

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those hedge -- you can't match those hedges. You can't, while you're hedging coal, hedge all of your off-system sales at the same time. Am I understanding, is that what you're asking?
Q Yes.
A Okay. Yeah, I agree.
Q Would you agree that any correlation between coal prices and power prices only explains how much of the total variance in power prices is related to the variance in coal prices?
A Oh, my goodness. Repeat the question. I'm trying to picture.
MR. LOWERY: Could you read it back, please?
THE REPORTER: "Would you agree that any correlation between coal prices and power prices only explains how much of the total variance in power prices is related to the variance in coal prices?"
A I'm sorry, I'm not --
Q (BY MR. LOWERY) If there is -- I'm sorry, go ahead.
A I've got the correlation -- let's say you've got a correlation between coal prices

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and power prices. Okay? And if, if you -- let's suppose it's a perfect correlation.
And when you talk about the variance in the coal prices, I think you're talking about the deviations that can occur in the coal prices from the mean, how big of a variance there is there. And if you have perfect correlation, that then translates to how much variance you would then see in electric prices. And I'm not sure if that's what you're asking, though.
Q Well, you don't think there's a perfect correlation. Correct?
A No.
Q All right. What I'm asking, and apparently am not doing a very good job, which may not be your fault, but if there's a correlation between coal and power, imperfect though it may be, a movement in power prices that occurs because of a movement in coal prices, given that correlation, that correlation only explains how much of the total movement in the power prices is caused by the movement in coal prices. It doesn't explain how much of the movement in power prices is caused by other

variables that affect power.
A That's correct.
Q That was a better question, apparently.
A Yeah. I understood that one.
Q Any such correlation with coal doesn't explain movement in power price due to uncertainty in loads. Right?
A Okay.
Q Correct?
A Correct.
Q It doesn't explain movements in power prices because of unplanned outages that affect the market.
A That's correct.
Q It doesn't explain movement in power prices because of transportation disruptions?
A That's correct.
Q It wouldn't explain movement in power prices due to congestion or outages on the transmission system. Right?
A That's correct.
Q It wouldn't explain changes in power prices due to change in economic

conditions. Right?
A Not sure I agree with that one.
Q Why? Because if economic conditions change, they're going to affect coal in the same way? Is that what you're getting at?
A Yes.
Q What if they don't?
A Well, there's always a combination of impact from the correlation that we're talking about in residual impacts from other things, and when you do a statistical analysis, you can actually measure what those are.
And I don't want to get into the statistics of it, but if you run a regression on the data, you can calculate the deviations from the regression line that occur and you can statistically measure what the variance of those deviations turn out to be and those are unexplained. They are looked at as random errors, okay, but in fact you are exactly right, all of these other elements are what are causing those. They are unexplained elements by the correlation between the two variables.
Q If I've got eight or ten different factors that might explain power price movements

--
A Right.
Q -- isn't it necessarily the case that the correlation of power prices to each of those factors may -- is necessarily going to be small?
A Is necessarily going to be small?
Q Yes.
A No. That's not the case. They -- they can be highly correlated to several of those factors. Okay? But I, I think what you're asking is if you don't take the movement, if you have those high correlations and you don't take the movement, if you're just looking at the movement in one of them and not in the others, could you -- could you use that as a -- as a good predictor, and the answer is probably no because you haven't taken into account the movements of all the factors that tend to come into play.
Q Fair enough. All right. Let's talk about another subject a minute. We already I think talked about and you agree that it's tough for UE to predict its gas burn for generation going into a calendar very well, right?

A Yes.
Q And one of the reasons UE can't predict its gas burn very well is because the MISO, M-I-S-O all caps, dispatches the gas units for reliability, not economic reasons. Right?
A Yes.
Q UE doesn't know when that's going to happen or how often. Right?
A That's correct.
Q And doesn't know how long the PTDs are going to have to run when that happens. Right?
A That's correct.
Q So UE's limited on the -- its ability to -- in terms of the volume of gas for electricity generation that it can hedge going into a particular year; is that correct?
A That's correct.
Q Which means that when UE turns on a CTG, it's often buying the gas to run it in the daily spot gas market; right?
A That's my understanding.
Q Which subjects UE to substantial daily gas spot market uncertainty. Correct?
A Correct.

Q Dr. Proctor, I am assuming you've never traded power.
A You are correct.
Q And that you've never been responsible for risk management of a utility's generation portfolio?
A You're correct.
Q Would you agree that forward power prices for particular delivery time reflect the market's expectation for what the spot price of power will be as of that delivery time?
A Ask the question again. I'm trying to --
Q Sure.
A I think I lost the assumption.
Q Would you agree that forward power prices for a particular delivery time reflect the market's expectation for what the spot price of power will be as of that delivery time?
A If we had a highly liquid market with lots of trades occurring on a daily basis, I would agree. I'd be much more inclined to agree if we were talking about futures markets rather than forward markets.
What I would say is that the

average trade price that occurs on a given day in a forward market represents the -- a settlement between sellers and buyers. Those folks that actually enter into contracts at that time as to the maximum that the buyers were willing to pay for a forward contract and the minimum that sellers were willing to take for such a contract.
Whether or not that represents the market's expectations about what the spot price is going to be I think is another -- it goes a step further than what I just described.
Q Is the synergy market a highly liquid market for electricity?
A I don't know.
Q You don't know if there are a lot of transactions, a lot of traders transacting at the synergy hub on a daily basis?
A I don't know. I haven't looked at that data.
Q If there are, then would you agree that the forward power price at synergy for a particular delivery time reflects all of those traders' collective expectations for what the spot power price will be at synergy at that delivery time?

A No. Even if it's highly liquid market, any time -- any time you've got a, an average settlement price that occurs, you've got a whole distribution of what people think the expectation is going to be. What their individual expectations are.
For example, if I really expect a price of, let's say, $40 at a future point in time and I am a seller, if that's my expectation, I probably won't enter into a forward contract unless I get at least $40, and I may enter into a contract where I am able to sell for $45.
And even though my expectation is that the price will only be 40 bucks, I am willing to enter into that trade at $45 because at least in my mind I am making a $5 profit over what I would make if I didn't enter into that contract.
Q Would you tell me again, then, what you believe forward power prices represent?
A They represent an average of what -- let's see if I can say it again. An average of the maximum price that buyers are willing to pay at that -- for the product at that delivery date, and the minimum that sellers are willing to

take for that product at that delivery point in the future.
Q All right. So if I -- if I'm -- if I'm transacting for power deliveries next June, if I'm transacting today for power deliveries next June, okay?
A Yes.
Q There is 500 of us transacting at a particular location for power deliveries next June.
A Right.
Q Five hundred buyers and 500 sellers, let's say there's a thousand of us. We're going to average what the 500 -- the maximum the 500 buyers are willing to pay and we're going to average the minimum the -- the 500 buyers are willing to pay and the -- average what the 500 sellers are willing to take, we're going to average that and we're going to get a forward price for June. Right?
A No. What we're going to do is allow those 500 people to interact and come up with trades.
Q All right. So we're going to end up with 500 trades today for delivery in June.

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A Yeah. If everybody can find someone they can trade with, it'll be 500, yeah.
Q All right.
A And then we're going to average -- everybody reports the price that they traded at and we calculate the average of that trade price for -- that occurred that day.
Q All right. And that's forward price for next June. Right?
A Yes.
Q Those participants and that transacting that took place on this day, today, that we were just talking about, that's a market, right?
A Yes.
Q So I am not understanding why the forward price for next June, as of today, which is an average of all the transactions conducted in that market, why it's not that market's expectation of what the price will be next June.
A Are you asking me to explain why you don't understand? I don't -- I can't do that.
Q I guess I'm -- right. I'm not understanding, so where am I wrong?

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A Well, I mean, there's lots of -- there's lots of different expectations reflected in those 500 sellers and 500 buyers about what the price is going to be. It's not like a single expectation. Now, if what you -- what -- and, and there are lots of expectations by folks that don't enter into contracts that particular day.
Now, if they see the contract price being lower than their expectations, they may get into that market tomorrow and try to make some trades. Okay?
I think that's really kind of where you're going is does -- do -- does the -- do the forward prices tend to converge to what the spot market price is, and my answer is yes.
But on any particular day does that represent the -- everybody in the market's expectation about what the price is, and the answer is no.
Q Let me ask this question, all right? I think that helped.
A Okay.
Q Would you agree with the following statement. Forward prices are expectations of future commodity prices adjusted for the risk

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associated with the uncertainty in those prices.
A I'm going to answer I don't know.
Q Okay.
A I don't know what "adjusted for the risk" means.
Q I asked you if you agreed with the following statement. Forward prices are expectations of future commodity prices adjusted for the risk associated with the uncertainty in those prices. And is your answer "I don't know"?
A Yes. My answer is I don't know.
Q And it's "I don't know" because you don't know what "adjusted for the risk associated with the uncertainty" means?
A Yes. I don't know what you meant by that particular phrase, so I don't know the answer to the question.
Q Let me ask you if you agree with this statement. Volatility is a measure of the uncertainty in a future commodity price at a particular time, and can be estimated from the prices of traded options or from model fits to spot or forward price changes over time.
A My goodness.
Q Let me break it down.

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A Yes. Break it down.
Q Do you agree that volatility is a measure of the uncertainty in a future commodity price at a particular time?
A I agree that volatility -- I would have said it the other way around. That uncertainty is a measure of volatility. But I guess I -- that's okay. What is the issue about a particular point in time? I don't understand that.
Q Would you agree that volatility is a measure of the uncertainty in a future commodity price?
A In a future commodity price. No, I actually have thought of volatility in terms of spot prices, not future prices, but yeah, you could -- you could talk about volatility with respect to future prices as well as spot prices.
That's where I'm struggling a little bit with this statement, because volatility is a general concept and it can be applied. So is volatility in future prices a measure of uncertainty that occurs in those future prices at a particular point in time, I would agree with that. I'm not trying to parse

words --
Q No, no, I don't believe that you are.
A I'm just trying to grab ahold of the concept in terms of the words that are being used.
Q I mean, there's no uncertainty in prices that have already happened. Right? I mean, we know what power prices have been for the last six months, we can look them up. Right?
A Yeah, but we can certainly talk about prices that have already occurred and whether or not they were volatile.
Q True. So volatility can be a measure of the uncertainty in a future commodity price?
A Sure.
Q It can also be the measure of uncertainty that was observed in a past set of prices.
A That's correct.
Q Is that what you're really getting at?
A Yes.
Q So it can be a measure of the

uncertainty in a future commodity price, just trying to make sure the record is clear. Do you agree with that?
A Yes. I agree with that.
Q Now I'm reading you. We can also measure volatility retroactively.
A Yes.
Q All right. Do you know if energy traders who are making decisions today about whether to sell power they have available for delivery in 2009 and about how much of that power to sell and at what price they should sell it, do you know if they consider possible changes in the forward price for power in calendar year 2009 when they make those decisions?
A Well, I suspect it depends on the product that they're trading.
Q What if they're trading a calendar year 2009 product?
A I don't know how frequently that particular product is traded. If you're talking about around the clock, which is the average for all the hours in that period, I don't know how, how many traders are involved in trading that product.

Q Well, what if I'm talking about a calendar year on peak product.
A Okay.
Q Got a lot of traders trading that product, don't we?
A Probably more so than around the clock product.
Q Are you familiar with Platts?
A Yes.
Q Platts Megawatt Daily?
A I've certainly heard of it.
Q Are you aware that Platts Megawatt Daily publishes an on-peak calendar year 2009 forward price?
A If you say they do, that's fine. I am not familiar with, with the various things that Platts publishes on a regular basis.
Q If they do, do you think that power traders, when they're making decisions about on-peak power they would have available in 2009, how much to sell and at what price they would sell it, do you think they would consider possible changes in that forward price in making those decisions?
A Oh, yeah. Sure.

Q Do you disagree with the fact that companies that sell power in wholesale electricity markets, or for that matter that sell them via bilateral contracts or both, commonly estimate the uncertainty in future spot power prices by quantifying how much the forward price for a forecasted delivery date is likely to change between the time of the forecast and the date of delivery?
A That would not surprise me at all. That sounds very familiar to what I described in my testimony as -- in terms of how much a price changes between a fixed point in time and the delivery point.
Q In other words, when they are making decisions on when to hedge a portion of their electricity volumes and at what price, they estimate the uncertainty in future spot power prices by quantifying how much the forward price for a forecasted delivery date is likely to change between the time of the forecast and the date of delivery. Right?
A Yes.
Q And this includes merchant generators who have no captive native load and

whose profits depend entirely on how good a job they do in making those sales, right?
A Well, I'm sure Ameren Energy Marketing is involved in that kind of -- those kinds of trades, yes.
Q And any other merchant generator. Right?
A I -- probably, but I don't know that for a fact.
Q Is it fair to say that this method of forecasting uncertainty, in other words, analyzing the likelihood of changes in forward prices, is standard practice for power traders in the real world?
A I suspect it is.
Q Should it not then also be appropriate for measuring the uncertainty related to UE's future off-system sales?
A Well, help me out. I don't know, I don't know if, if the uncertainty around future prices -- future price changes between a given point in time and a delivery point in the future is the same thing, the same kind of uncertainty that UE faces.
Q You don't know whether it is?

A I don't -- I can't -- I don't -- I don't know if it is. I don't have the connection between those two.
Q Do you have some reason to believe UE faces different uncertainty than everybody else?
A No, but the uncertainty that you face as a trader in a futures market or forwards market is different than the uncertainty that you face in net fuel expense.
Q Well, I'm only talking about off-system sales right now, though, right?
A Yes.
Q I mean, for the 10 million megawatt hours of off-system sales UE has, UE is simply trading power in the power market just like these other traders we're talking about, aren't they?
A Are you talking about with respect to UE entering into hedging, or are you talking about that portion that remains unhedged?
Q Well --
A I'm confused.
Q Let's talk about each of them separately.
A Okay.

Q Let's talk about the portion that's hedged.
A Okay.
Q Talk about the hedged portion.
A There the -- I would agree that the distribution of -- around forward price changes between the time that you're wanting to enter into the contract and the delivery date of the contract is very important.
Q So for that -- for that portion that UE hedges for its off-system sales, same kind of uncertain -- UE faces the same kind of uncertainty a merchant generator faces. Right? You would agree with that?
A Absolutely. Yeah.
Q Where we are breaking down is you don't know whether UE faces the same kind of uncertainty with respect to the remainder of its off-system sales.
A That's correct.
Q UE might or might not face the same kind of uncertainty; is that your testimony?
A Yes.
Q Dr. Proctor, is it fair to say that off-system sales are an item that's difficult to

forecast?
A Yes.
Q Dr. Proctor, are you aware that AmerenUE for its natural gas LDC business hedges natural gas costs through a multi-year process that procures natural gas for up to four to five years out?
A Yes. I didn't know how far out. I knew they were involved in hedging their natural gas for their natural gas business and hedging their purchases, yeah.
Q Does it make sense that it would be for several years out given that contracts are available for several years out and the LDC business is a lot easier to predict than gas generation?
A Well, I'm not --
Q If you don't know, that's fine.
A It's been -- it's been too long since I've been involved in the natural gas side. The last time I was involved in it, I think AmerenUE and others were about one or two years into hedging programs. So -- and at that time they -- I think they were just hedging for the year ahead.

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Q Okay.
A If they've gone to multiple years out, I was not aware of that. But I haven't been following it that closely.
Q Fair enough. Dr. Proctor, would you agree that the spot price uncertainty of natural gas and power is fairly similar?
A The spot power. Say that again?
Q Would you agree that the spot price uncertainty of natural gas and power is fairly similar?
A Well, I think they're -- I think they're highly correlated. Does that translate into similar uncertainties, um, it means that the uncertainty in one is related to the uncertainty in the other. I don't know what similar means. Are you talking about the -- a similar --
Q If I measure the -- I'm sorry?
A A similar uncertainty factor, a similar standard deviation, what?
Q Yeah, if I measured the uncertainty in spot natural gas prices and I separately measured the uncertainty in spot power prices, would I get similar levels of uncertainty?
A I think the standard deviations

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would be different. I think the means would be different, and therefore, I think the uncertainty factors could be different.
Q Let me ask you this. Would you consider spot natural gas prices to be moderately uncertain, highly uncertain? Choose your adjective.
A The problem with choosing the adjectives is it's making an assumption about something that I am measuring it against. It's highly uncertain when I'm measuring it against, say, the prices of automobiles.
Q Okay.
A It's -- it may be moderately uncertain when I'm measuring it against the price of gasoline.
Q Okay. If I measure -- so natural gas spot prices are highly uncertain when I measure it against automobiles. Are power prices highly uncertain if I measure those against automobiles?
A I would suspect so.
Q Okay. So when measured against the same benchmark, both power and natural gas spot prices are highly uncertain.

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A Is that what you mean by similar uncertainty?
Q Yes. That's what I mean.
A Oh, okay. Yeah, I think they both have a high degree of uncertainty when compared to things that are fairly stable.
Q That's fair enough. Dr. Proctor, if a utility buys 10 million megawatt hours of power in the spot market, is the uncertainty related to those purchased costs the same as the uncertainty in sales revenue if a utility sells 10 million megawatt hours of power in the same spot market?
A I don't know the perspective this question is coming from and I'm trying to figure that out. I mean, at one level the uncertainty would be the same, that is, that the distribution -- the uncertainty distribution about the forward price would be the same for both, whether you were purchasing or selling. Is that your question?
Q My question was my question. I honestly thought it was a simple question. If I got 10 million megawatt hours of power that I need to buy in the spot power market, so I'm a

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buyer and I need 10 million megawatt hours, and I'm a seller and I got 10 million megawatt hours to sell, the price I may have to buy at tomorrow or the next day, next week, or next month, or the price I can sell at tomorrow, next day, next week, next month, I got the same uncertainty on both sides, don't I?
A Probably. You're facing the same uncertainty in distribution on both -- on whether the price goes up or down. Both the buyer and the seller are facing the same -- the same uncertainty as to whether the price goes up or goes down.
Q If an electric utility relies on purchased power to supply, let's say, for example, about half of its native load, would you think that a significant portion of those purchased power needs could be hedged several years out just like UE can hedge its gas for -- its gas delivery business several years out, assuming UE can do that?
A I don't know.
Q You don't know, you don't know what hedges are available for power or for gas for that matter; is that your testimony?

A Well, I'm not -- I don't know what, what hedges are available for going several years out for hedging purchased power. You know, I don't know what the products are in the market going several years out.

If -- you know, there's a question between can you hedge, of course you can hedge. Okay? You can buy, you can buy several years out. But I don't think that's what you're trying to get at in your question.

Yeah, I can always -- if the products are there, I can buy them several years out. I don't know if the products are there several years out or not. Do -- is it a good practice to do that is another question.

Q Dr. Proctor, given the uncertainty in spot power markets, do you think it would be a good idea if utilities in Missouri who rely on spot power purchases -- for utilities in Missouri to rely on spot power purchases to supply, for example, at 40 percent of their native load?

A You made it sound like a question, but I'm not sure I got the question. Is it a good practice for them to hedge it; is that -- 40 percent?

Q No. Let me try it again. Given that there's uncertainty in spot power markets, and we agree there's uncertainty, right?

A Right.

Q Do you believe it would be a good idea for a utility in Missouri to rely on spot power purchases to supply, let's say, for example, 40 percent of that utility's native load?

A Let me put it this way. If a utility was in that situation where they were depending on purchases to supply 40 percent of their native load, I would encourage them to hedge rather than buy in the spot market. That's one question, and I think the answer is yeah, I would probably encourage them to hedge.

Another question is do I think it's a good idea that they -- that they're needing 40 percent of their native load from power purchases and should they do something about that, my answer is 40 percent is a pretty high number.

Q And that that might not be such a good idea?

A Might not be a very good idea. They probably need to look for -- see, there's

lots of ways you can hedge. One of the ways you can hedge is in the futures market that you're talking about. Another way you can hedge is to enter into a contract for basically generation.

Q Right. Lock up a bilateral contract for a base load unit for a period of time at a fixed price to remove that spot price uncertainty. Right?

A Right. So I guess it kind of falls in the same category. I would be encouraging them to find -- look at all the alternative ways to hedge against that -- paying that -- being exposed to the spot price.

Q Do you believe that if a Missouri utility did supply 40 percent of its native load through spot power purchases, that that would be a reason that would support its receiving an FAC since it faces all of this spot power uncertainty?

A Well, in the short run, it might be. But I would certainly from a longer perspective want to encourage that utility to not continue doing that.

Q Do you believe it's good public policy to grant FACs only to utilities who have

done a less than optimal job of hedging uncertainty while not allowing FACs [sic] who do a good job of hedging uncertainty to use an FAC?

A No, I don't think that's good policy.

Q Have you analyzed how the volatility of coal spot or dispatch prices compares to the volatility of spot prices for natural gas and power?

A I did in the previous case, and I think in this particular case the only relationships I have looked at are the ones that you see in my rebuttal testimony. I think it was Schedule 2A and 2B. But I haven't looked at daily, monthly, weekly, I just looked at this annual average price.

Q AmerenUE witnesses in this and the last case have provided evidence that the volatility of spot coal prices is now similar to the volatility of spot power and natural gas prices. Do you have any reason or basis to disagree with that?

A No, I don't disagree with that.

Q Now, if the spot prices for coal, natural gas, and power are all very similar,

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isn't it true that the volatility of the utility's fuel costs should be a function of its hedging/contracting program, not a function of its mix of coal, natural gas, or purchase power?
A You sure put together some tough questions to follow. Can you parse that out a little bit? Or put it out in pieces?
Q I'll do my best. We just talked about that you didn't really disagree with the concept that spot prices for coal and natural gas and power are similar.
A Right.
Q So if that's true, then the volatility of utility fuel costs should be driven by -- should be a function of how it hedges and contracts, not a function of its mix of coal, natural gas, and purchase power generation and purchase power serve load. Right?
A Oh, I think I understand. I think I understand your question now.
Q Okay.
A If -- and the concept is the differentiation between a utility that has, say, has a lot of purchase power or natural gas in its net fuel expense versus one that has a lot of

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coal that's been hedged --
Q The spot, let me --
A So what you're saying is that it's the volatility of fuels that ought to drive the fuel adjustment clause, not strictly a function of what its fuel mix is. And I -- generally I agree with that.
I think the history until recently has been that natural gas has been the most volatile fuel, and so if a utility has a high level of natural gas in its net fuel cost, that it's more exposed to volatility than if it has coal.
I think that's been historically the concept, and I think you're asking is that changing because coal prices are becoming more volatile, and I think the answer is yes.
Q All right. Dr. Proctor, are you aware of any case around the country where a utility was denied a fuel adjustment clause because it was expected that it would file another rate case in a year or so?
A I am not, no, I'm not aware of that.
Q Are you aware of any case around

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the country where a utility was forced to discontinue its fuel adjustment clause because it was expected to file frequent rate cases?
A I'm not aware of what's -- generally what goes on in regulation with respect to fuel adjustment clauses across the country.
Q Fair enough. I guess, then, you're not aware of any case where fuel adjustment clauses were limited to -- any case around the country where fuel adjustment clauses were limited only to small utilities that don't have the resources to manage their fuel cost uncertainties?
A Again, I guess the answer is no.
Q Do you think that smaller utilities manage the uncertainty of their fuel cost more poorly than larger ones?
A I don't know.
Q How do you believe market liquidity affects price uncertainty? Would you believe buyers face more uncertainty when markets are highly liquid or do they face more uncertainty when markets are not very liquid?
A I don't know. I haven't thought about that question. So I don't know.

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Q Doesn't it make sense that if a market's less liquid, they've got a lot less transactions, lot less price discovery, that there's a lot more uncertainty in an illiquid market than there is in a liquid market? Isn't that just a pretty basic concept?
A I don't -- I have not -- I have not thought of that, nor analyzed that, and I think it's -- it may be a basic concept for folks that have thought about it and have analyzed it, that it's not one that I feel ready to or competent to express a opinion on.
Q Do you know if liquidity in the gas market is higher than in the coal market?
A Do I know for certain? No.
Q Do you have an opinion about that?
A Do I have a guess?
Q Well, is it a guess or -- are you speculating or do you have some reasonable opinion about which --
A I don't know.
Q Excuse me?
A Since I haven't analyzed the two markets in terms of liquidity, I don't -- I don't know.

Q Okay. Fair enough.
Mr. Dottheim, I'm just about done, just to give you an idea.
Dr. Proctor, in your rebuttal testimony -- let me find it. You made note of the fact that you weren't contacted by Mr. Arora before UE filed its direct testimony and his analysis. Right?
A That's correct.
Q I take it from my earlier questions that you were aware when you wrote your rebuttal testimony that the staff requested and that Union Electric accommodated that request and held more than a half day meeting with staff members on or about July 22 of this year in St. Louis. Were you aware of that?
A And that was after the testimony was filed.
Q That's right.
A Yes, I was aware of that.
Q Why didn't you attend that meeting?
A I had a conflict and I -- I was -- wanted to go to that meeting, but I had a conflict. And I have looked back at my calendar, because I thought you would ask this question,

and I really can't tell you exactly what that conflict is. But I, I had a conflict and that's why I wasn't able to make it.
Q You, I'm sure, in staff's view, are the most qualified person on the staff to look at what Mr. Arora did, analyze it, discuss it intelligently; isn't that fair to say?
A Probably. Yes. That's fair to say.
Q Now, the staff had April and May and June and July and August to put its direct case together, and you had until October to file your rebuttal testimony. What prevented you from asking to change the meeting with Mr. Arora, or whatever needed to be done so that the person that really had the most knowledge would attend a meeting, a four or five hour meeting where lots and lots of questions were posed and answered by Mr. Arora about his analysis?
A I think the conflict, and I don't recall exactly, but I think the conflict came up at the last minute, because I -- my recollection is that I was planning to attend that meeting, and then something came up at the last minute and I didn't feel it was appropriate -- I let people

know that I wasn't going to make it to the meeting, and I don't think any of us felt that it was appropriate at the last minute to cancel it.
Q You're aware staff has requested numerous meetings since this case was filed with numerous experts on a moment's notice, moved meetings around, asked a lot of questions, company's met with a lot of the staff auditors and experts. Why wouldn't it be appropriate for you to have said, "Hey, this is my area, I know Mr. Arora, I ought to be asking these questions. I ought to be having this discussion with him," not witnesses who are not nearly as qualified and didn't end up filing testimony on the issue?
MR. DOTTHEIM: I object to the question, I think it's argumentative, it assumes facts in evidence, the statement about the staff has asked for meetings on a moment's notice. Dr. Proctor, answer the question, please.
A Okay. Probably the best way to answer your question is -- and I don't -- I don't know what the polite thing to do is on meetings that have been schedule for a period of time and people are preparing for those meetings, I -- I assumed that it wasn't proper for me to say,

"Hey, can we move this meeting because I can't be there."
Q (BY MR. LOWERY) Is it fair to say that you were criticizing Mr. Arora on page 6 of your rebuttal testimony on the fact that he didn't contact you before he filed his testimony?
A Yes.
Q Is that the staff's expectation that utilities have to contact the staff before the utility files its rate case about various issues that may come up in the rate case?
A On something that's being done for the first time and that hasn't been done previously, to contact the staff, to get the staff's input on this particular thing, I think would have made a big difference.
Not, not to make the staff feel better, but to, to get input from other perspectives on, on how this -- how this -- how the uncertainties for these models should be put together, and to understand that ahead of time.
And we've done that, for example, we did it in the Midwest ISO case where we were working with the cost benefit analysis, obviously that came out of an agreement to do it ahead of

time.
But, you know, to me, it's just I had made the offer in the previous case, I was just telling the commission, that had not happened in this case.
Q Well, Mr. Arora did put together an analysis following the steps and the approach that you suggested in the last case, did he not? You quarrel with how he implemented it, but he put together an analysis that was essentially as outlined in terms of the approach in your testimony in the last case, did he not?
A Yes.
Q You know Mr. Arora fairly well?
A Yes.
Q You respect his expertise?
A Yes.
Q Do you find him to be a reasonable utility manager with whom to deal?
A Yes.
Q Do you believe he's a person of integrity?
A Yes.
Q You're not suggesting that he had some ill motive or intent in not contacting you

before he filed his direct testimony?
A No, I was not.
Q You said that you think it would have made a big difference had that discussion taken place. A big difference in what? A big difference in the analysis he would have done? A big difference in staff's position regarding an FAC in this case? What difference would it have made?
A I think it would have made a big difference in the analysis that he had done.
Q Do you have any reason to believe -- I'm sorry, go ahead.
A I think that -- I think it would help -- it would have helped this -- the staff in understanding what the uncertainties are that AmerenUE faces.
Q You didn't contact Mr. Arora in the more than six months between the filing of the direct case and the file of your rebuttal case to express to him that you had concerns about what he did, did you?
A No, as I indicated, I didn't really start working on this until September.
Q Well, you had scheduled yourself to

attend a meeting about this on July 22, you weren't able to make the meeting, but you were thinking about this back in July, correct?
A Yes.
Q And from July, August, September, you didn't contact Mr. Arora to discuss your concerns, right?
A No, I did not. I didn't start getting into the depth of this until September.
Q Well, but that's not Mr. Arora's fault, is it?
A No, I -- this isn't about fault.
Q Well, you yourself indicate you were being critical of Mr. Arora on page 6 of your rebuttal testimony.
A Yeah, and it has to do with meeting with the staff before you file the direct. I mean, once you file that direct testimony, it -- and particularly in this case where a lot of computer runs went into it, into his analysis, at this point he's going to be very reticent to change anything and to rerun anything.
Q Well, you don't know if you don't ask the question.
A I don't know that, you're right.

Q Is that fair? You don't know -- if you had -- if you had called Mr. Arora and said, "Look, Mr. Arora" -- you probably would have said, "Look, Ajay," because you know him personally.
You would have said, "Look, I got some severe concerns, why don't we have a technical conference? Why don't we sit down and talk about this in July or August or September?" You don't know that he would have been the least bit reticent, do you?
A I don't know.
Q In fact, knowing him as you do, don't you think he would have sat down with you?
A Oh, I think he would have, yes.
Q You said you believe he's a person of integrity, you respected his intelligence and ability. So if you had made valid points to him, and I'm not saying that your points are or are not valid, but if you made points that he believed to be valid, what leads you to believe that he would be reticent to listen to those points and perhaps make adjustments based on those points?
A I think it's generally the case

that after you file the position and you've put in testimony and you swear that this is the right and correct thing, it becomes much more difficult to change that.

Q Which could apply to your position in this case as well.

A Sure. I think it applies to everyone's. That's why --

Q You're going to be much more reluctant if Mr. Arora in his --

MR. DOTTHEIM: Mr. Lowery, I don't think Dr. Proctor had completed his response.

Q (BY MR. LOWERY) Go ahead, Dr. Proctor.

A I think all my testimony referred to was that I had not been contacted before the company filed its position in this case, and what I am -- you know, I don't know whether he would have changed anything afterwards.

I just know generally from my experience in testifying in many rate cases that it becomes more and more -- it becomes more difficult to change something after you have already put it into -- after you have already filed it and said this is your position. That's

all I'm saying.

I'm saying it's much better to meet -- for folks to meet before that point in time to work out differences than to try to work out differences after that point in time. That's all I'm saying.

Q Dr. Proctor, do you have any other opinions about AmerenUE's requested fuel adjustment clause that you've not told me today or that are not reflected in your prepared written testimony that you've filed to date?

MR. DOTTHEIM: Mr. Lowery, I object to that question as similar in nature of one earlier, much earlier. I don't think --

MR. LOWERY: That he knows of today.

MR. DOTTHEIM: -- that, that you -- I don't know that you have a question pending now specifically of the nature, you know, asking, asking him for a particular response. But, Dr. Proctor, if you can respond to Mr. Lowery's question.

Q (BY MR. LOWERY) Let me rephrase my question. Have you as of this moment formulated any other opinions about AmerenUE's requested

fuel adjustment clause that you have not told me or that are not reflected in your prepared written testimony filed to date?

A Well, look, I, I was asked and came in to look at the specifics related to the analysis that was performed by Mr. Arora. Okay? I am not the staff policy witness on fuel adjustment clause. I may have opinions on those things, but I am not the witness on that, and I am -- so I am not expressing opinions on that either today or in my testimony.

Now, if asked those opinions in a hearing about things -- if, if I have an opinion on them, I may very well express those. And there's just too --

Q You don't have an intention to express any particular opinion that you haven't told me, though --

A That's correct.

Q -- or that's not reflected in your written testimonies.

A That's correct.

MR. LOWERY: I think that's all I have. I assume that we're going to waive presentment and read and sign, Steve?

MR. DOTTHEIM: Yes. Yes.

MR. LOWERY: And can we stipulate, I think as we've done before, that if the deposition is not signed at the time Dr. Proctor takes the stand, it will be treated as if it is signed? He's obviously going to have an opportunity to read it and sign it, but --

MR. DOTTHEIM: Yes. Yeah. I mean, we've got -- you know, I haven't read what Stu filed so, you know, I don't know if he's gone ahead and -- and when I said "Stu," that's Mr. Conrad --

MR. LOWERY: Why don't we go off the record. Or I mean, unless there's some reason we need to be on the record. I don't think we need to be on the record for this discussion, do we?

MR. DOTTHEIM: No, I don't -- I don't think so, other than I really don't have any great need not to be on, on the record for that having started down this road.

So if the schedule stays the way it is, Dr. Proctor being as busy as he is and not traveling to Carmel, Indiana, and various sites because of SPP, assuming that the fuel adjustment clause issue stays at the end of the hearings, or the second to last week of the hearings, I don't think there's going to be any problem with us having Dr. Proctor review the transcript and him signing and us getting back to you whatever corrections he might have.

MR. LOWERY: Well, how about if we stipulate to this. As long as you have the transcript, Steve, five days before Dr. Proctor takes the witness stand, then if for some reason it didn't get signed, we can stipulate that it can be used as if it was. How about that?

I have expedited the transcript, you're going to have it soon.

MR. DOTTHEIM: Yeah. And so -- and so I fully expect that, that before Dr. Proctor takes the stand, it will be signed and whatever corrections he has to the transcript, you will have.

MR. LOWERY: If for any reason that weren't the case, I don't want to be in a situation because I don't control that, you do.

MR. DOTTHEIM: Understood. Otherwise --

MR. LOWERY: As long as you have

the transcript five days before he takes the witness stand, if you don't get -- if it hasn't been signed, it can be treated as if it was signed.

MR. DOTTHEIM: Yes.

MR. LOWERY: Fair enough.

MR. DOTTHEIM: Yes. I didn't mean to indicate otherwise.

MR. LOWERY: Sure. Okay. Great.

MR. DOTTHEIM: You know, again, assuming that we don't have FAC immediately after return on equity, which I don't expect is going to happen, but one never knows.

MR. LOWERY: Okay. Thank you, Dr. Proctor.

THE WITNESS: Thank you.

(Wherein, the taking of the instant deposition ceased.)

(Deposition to be read and signed by the witness.)

CERTIFICATE OF REPORTER

I, TARA SCHWAKE, a Registered Professional Reporter and Notary Public within and for the State of Illinois, do hereby certify that the witness whose testimony appears in the foregoing deposition was duly sworn by me; that the testimony of said witness was taken by me to the best of my ability and thereafter reduced to typewriting under my direction; that I am neither counsel for, related to, nor employed by any of the parties to the action in which this deposition was taken, and further that I am not a relative or employee of any attorney or counsel employed by the parties thereto, nor financially or otherwise interested in the outcome of the action.

____

Notary Public in and for
The State of Illinois

My commission expires June 7, 2009

Midwest Litigation Services
711 North 11th Street
St. Louis, Missouri 63101
Phone (314) 644-2191 * Fax (314) 644-1334

November 14, 2008

Staff of the Commission Office of the General Counsel
Missouri Public Service Commission
Governor Office Building
200 Madison Street, Suite 100
Jefferson City, Missouri 65101

Attn: Mr. Steven Dottheim

In Re: Union Electric ER-2008-0318

Dear Mr. Dottheim:

Please find enclosed your copy of the deposition of MICHAEL PROCTOR, taken on November 13, 2008, in the above-referenced case. Also enclosed is the original signature page and errata sheets.

Please have the witness read your copy of the transcript, indicate any changes and/or corrections desired on the errata sheets, and sign the signature page before a notary public.

Please return the errata sheets and notarized signature page to Mr. James Lowery for filing prior to trial date.

Thank you for your attention to this matter.

Sincerely,

Tara Schwake, CRR, RPR, CSR

Enclosures

Cc: Mr. James Lowery

STATE OF _______________)
COUNTY OF ______________)
I, MICHAEL PROCTOR, do hereby certify:

That I have read the foregoing deposition;

That I have made such changes in form and/or substance to the within deposition 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.

I declare under penalty of perjury that the foregoing is true and correct.

Executed this _____ day of ______________, 2008, at ____________________________.

____
Notary Public
My commission expires: ___________________________

____
MICHAEL PROCTOR

TRS/MICHAEL PROCTOR, 11/13/08
In Re: Union Electric ER-2008-0318

WITNESS ERRATA SHEET
Witness Name: MICHAEL PROCTOR
Case Name: Union Electric ER-2008-0318
Date Taken: 11/13/08

Page #_____ Line #_____
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Reason for change: ______________________________

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Should read: ____________________________________
Reason for change: ______________________________
Witness signature: ______________________________

STATE OF MO)
COUNTY OF St Louis)
I, MICHAEL PROCTOR, do hereby certify:

That I have read the foregoing deposition;

That I have made such changes in form and/or substance to the within deposition 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.

I declare under penalty of perjury that the foregoing is true and correct.

Executed this 4th day of December, 2008, at St Louis, MO.

James Penningroth

Notary Public

My commission expires: 10/28/11

JAMES PENNINGROTH
Notary Public, Notary Seal
State of Missouri
St. Louis County
Commission # 07389617
My Commission Expires October 28, 2011

Michael S Proctor

MICHAEL PROCTOR

TRS/MICHAEL PROCTOR, 11/13/08

In Re: Union Electric ER-2008-0318

WITNESS ERRATA SHEET

Witness Name: MICHAEL PROCTOR

Case Name: Union Electric ER-2008-0318

Date Taken: 11/13/08

Page # 145 Line # 10

Should read: CTGs

Reason for change: not: PTDs

Page # 147 Line # 12 and 21

Should read: Cinergy

Reason for change: not: synergy

Page # 133 Line # 7

Should read: net fuel

Reason for change: not: that fuel

Page # 107 Line # 7

Should read: '06

Reason for change: not: '6

Page # Line #

Should read:

Reason for change: