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## BEFORE THE PUBLIC SERVICE COMMISSION OF THE STATE OF MISSOURI

In The Matter of Union )
Electric Company d/b/a )
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 MICHAEL S. PROCTOR

TAKEN ON BEHALF OF UNION ELECTRIC COMPANY

NOVEMBER 13, 2008

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## MICHAEL PROCTOR 11/13/2008

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2	WITNESSES	1 2	APPEARANCES
3	All Witnesses: Page	3	FOR THE PUBLIC SERVICE COMMISSION:
4	MICHAEL S. PROCTOR for Union	4	Staff of the Commission
_	Electric Company	5	Office of the General Counsel
5 6	Examination by Mr. Lowery 6	6	Missouri Public Service Commission
7	EXHIBITS	7	Governor Office Building
8	MP1 Schedule 2.1 from Dr.	8	200 Madison Street, Suite 100
	Proctor's ER-2007-002 direct	9	Jefferson City, Missouri 65101
9	testimony 96	10	by: Mr. Steven Dottheim
10	MP2 Work paper from Dr.	11	gencounsel@psc.mo.gov
1 1	Proctor's ER-2007-002 direct	12	
11 12	testimony 97	13	FOR UNION ELECTRIC COMPANY:
13		14	SMITH LEWIS, LLP
14		15	Suite 200, City Centre Building
15		16	111 South Ninth Street
16		17	Columbia, Missouri 65205-0918
17 18		18	(573) 443-3141
19		19	by: Mr. James B. Lowery (via telephone)
20		20	Ms. Cheryl L. Lobb, paralegal
21		21	lowery@smithlewis.com
22		22 23	
23		24	
24 25		25	
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1	BEFORE THE PUBLIC SERVICE COMMISSION	1	ALSO PRESENT:
2	OF THE STATE OF MISSOURI	2	MIDWEST LITIGATION SERVICES
3		3	711 North 11th Street
4	In The Matter of Union )	4	St. Louis, Missouri 63101
5	Electric Company d/b/a ) AmerenUE for Authority ) Case No.	5	(314) 644-2191
	to File Tariffs Increasing ) ER-2008-0318	6	1-800-280-DEPO
6	Rates for Electric Service )	7	by: Ms. Tara Schwake, CRR, RPR
	Provided to Customers in )	8	
7	the Company's Missouri ) Service Area. )	9	Mr. Ajay Arora (via telephone)
8	Solvice Liter.	10	
9		11	
10	DEPOSITION OF WITNESS, MICHAEL S.	12	
11 12	PROCTOR, produced, sworn and examined on the 13th day of November, 2008, between the hours of eight	13	
13	o'clock in the forenoon and six o'clock in the	14 15	
14	afternoon of that day, at the offices of the	15  16	
15	Missouri Public Service Commission, 9900 Page	17	
16 17	Avenue, Suite 130, Overland, Missouri, before Tara Schwake, a Certified Realtime Reporter and	18	
18	Notary Public within and for the State of	19	
19	Illinois, in a certain cause now pending Before	20	
20	the Public Service Commission of the State of	21	
21	Missouri, Case No. ER-2008-0318.	22	
22 23		23	
24		24	
25		25	

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1	IT IS HEREBY STIPULATED AND AGREED	1	about the regulated entity Union Electric
2	by and between Counsel for the Plaintiff and	2	Company. Do you understand the difference?
3	Counsel for the Defendant that this deposition	3	A Yes.
4	may be taken by Tara Schwake, Notary Public and	4	Q Dr. Proctor, when did you first
5	Certified Realtime Reporter, thereafter	5	start doing work that would be used in this rate
6	transcribed into typewriting, with the signature	6	case?
7	of the witness being expressly reserved.	7	A Probably in serious type of work,
8	MICHAEL S. PROCTOR,	8	sometime in September.
9	Of lawful age, having been produced, sworn, and	9	Q When you say "serious type work,"
10	examined on the part of Union Electric Company,	10	did you do some preliminary work before that?
11	testified as follows:	11	A Yes.
12	EXAMINATION	12	Q Could you tell me when you began
13	QUESTIONS BY MR. LOWERY:	13	that preliminary work and what it consisted of?
14	Q Dr. Proctor, how are you this	14	A I am not sure of the exact date,
15	afternoon?	15	but it was after AmerenUE filed its testimony,
16	A I am doing well.	16	direct testimony in this case, and I was asked by
17	Q I'm Jim Lowery, I know you know	17	the staff to review certain testimonies, to take
18	that, but at least for the record, I represent	18	a look at those and give my opinion on those.
19	AmerenUE and will be taking your deposition this	19	And I reviewed the testimonies the in
20	afternoon.	20	particular, Ajay Arora.
21	A Okay.	21	Q Was it before or after several
22	Q You've been deposed a number of	22	staff members met with Mr. Arora in mid to late
23	times, I know. Correct?	23	July of this year?
24	A Correct.	24	A I believe that it was after that
25	Q So you know that you and I have to	25	period of time, but I may have I may have done
	Page 7		Page 9
1	try to avoid talking over each other and that you	1	a quick look at his testimony before that period
2	cannot give verbal or a non-verbal response to	2	of time. But it was after they met with him that
3	my questions, right?	3	I went back through that testimony, and later,
4	A Yes.	4	probably in August, gave a kind of a overview of
5	Q If you need to take a break, let me	5	that to the staff that was in particular
6	know and we'll do that. Dr. Proctor, you're not	6	interested in the fuel adjustment clause issue.
7	taking any medication that would interfere with	7	Q Doctor, you indicated that staff
8	your ability to understand my questions or give	8	asked you to look at testimony, and I think in
9	complete answers to them, are you?	9	particular Mr. Arora's testimony. When you say
10	A I am not.	10	"staff," about whom are you speaking?
11	Q And you don't have any other reason	11	A This probably would have been Lena
12	that you know of that would prevent you from	12	Mantle was the primary staff person. I don't
13	understanding or answering my questions; is that	13	recall whether Dan Beck was involved with that as
14	correct?	14	well, but Lena was the person who had contacted
15	A That's correct.	15	me and asked me to take a look at it.
16		16	
17	Q If you don't understand a question or I'm not clear about one, which is possible	17	Q Lena approached you about doing that?
	· · · · · · · · · · · · · · · · · · ·		
18 19	certainly, would you please just let me know and	18 19	
20	I'll try to rephrase it?	20	Q Did she indicate whether anyone
	A Okay.	21	else on the staff had suggested that you be
21 22	Q I wanted to see if we could agree	22	approached about doing that?
	on just a couple of definitions. If I say		A I don't recall that she did.
23	Ameren, I'm talking about Ameren Corp and its	23	Q Did you talk with anyone else on
24	subsidiaries as a whole generally versus if I say	24	the staff about your assignment other than Miss
25	AmerenUE or Union Electric Company, I'm talking	25	Mantle and perhaps Mr. Beck? And I'm not asking

2 Dottheim or other lawyers on the case. 3 A Other technical staff? 4 Q Well, from Wes Henderson on down, 5 how about that? 6 A Okay. All right. Have I talked 7 with any, anyone else? I mean 8 Q About, about 9 A My participation? 10 Q Your participation in this case. 11 A I don't recall talking to anyone 12 else about my participation in the case, no. 2 for a fuel adjustm 3 falls in the catego 4 Q Aside from the cases assessment study 6 view, you're not end to view, you're no	page 12 approve AmerenUE's request tent clause. So I think that ory of what you're asking. om whether the risk is adequate support in your expressing opinions about the adjustment clause proposal one is that true? The work is the expression of th
2 Dottheim or other lawyers on the case. 3 A Other technical staff? 4 Q Well, from Wes Henderson on down, 5 how about that? 6 A Okay. All right. Have I talked 7 with any, anyone else? I mean 8 Q About, about 9 A My participation? 10 Q Your participation in this case. 11 A I don't recall talking to anyone 12 else about my participation in the case, no. 2 for a fuel adjustm 3 falls in the catego 4 Q Aside from the catego 5 assessment study 6 view, you're not end to with any, anyone else? I mean 7 merits of the fuel way or the other; 9 A That's transported to totally on the risk and the case, no.	nent clause. So I think that bry of what you're asking. om whether the risk is adequate support in your expressing opinions about the adjustment clause proposal one is that true? ue. My testimony focuses assessment study.
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 Q About, about Q Your participation? A I don't recall talking to anyone  glasses a falls in the catego A Q Aside from the catego A view, you're not erecall talked with any, anyone else? I mean A My participation? A That's training to anyone A That's training to anyone A I don't recall talking to anyone  glasses a falls in the catego A view, you're not erecall talked A That's training to anyone A That's training to anyone A That's training to anyone A I don't recall talking to anyone A Well, let me back	ory of what you're asking. om whether the risk is adequate support in your expressing opinions about the adjustment clause proposal one is that true? ue. My testimony focuses assessment study.
4 Q Well, from Wes Henderson on down, 5 how about that? 6 A Okay. All right. Have I talked 7 with any, anyone else? I mean 8 Q About, about 9 A My participation? 10 Q Your participation in this case. 11 A I don't recall talking to anyone 12 else about my participation in the case, no. 4 Q Aside from the passes assessment study 6 view, you're not eview, you're not eview	om whether the risk is adequate support in your expressing opinions about the adjustment clause proposal one is that true? ue. My testimony focuses assessment study.
5 how about that? 6 A Okay. All right. Have I talked 7 with any, anyone else? I mean 8 Q About, about 9 A My participation? 10 Q Your participation in this case. 11 A I don't recall talking to anyone 12 else about my participation in the case, no. 15 assessment study 6 view, you're not e 7 merits of the fuel 8 way or the other; 9 A That's tr 10 totally on the risk 11 Q You I be 12 well, let me back	is adequate support in your expressing opinions about the adjustment clause proposal one is that true?  ue. My testimony focuses assessment study.
6 A Okay. All right. Have I talked 7 with any, anyone else? I mean 8 Q About, about 9 A My participation? 10 Q Your participation in this case. 11 A I don't recall talking to anyone 12 else about my participation in the case, no. 16 view, you're not e 7 merits of the fuel 8 way or the other; 9 A That's tr 10 totally on the risk 11 Q You I be 12 well, let me back	expressing opinions about the adjustment clause proposal one is that true?  ue. My testimony focuses assessment study.
7 with any, anyone else? I mean 8 Q About, about 9 A My participation? 10 Q Your participation in this case. 11 A I don't recall talking to anyone 12 else about my participation in the case, no. 17 merits of the fuel 8 way or the other; 9 A That's tr 10 totally on the risk 11 Q You I be 12 well, let me back	adjustment clause proposal one is that true? ue. My testimony focuses assessment study.
8 Q About, about 9 A My participation? 10 Q Your participation in this case. 11 A I don't recall talking to anyone 12 else about my participation in the case, no. 18 way or the other; 9 A That's tr 10 totally on the risk 11 Q You I be 12 well, let me back	is that true? ue. My testimony focuses assessment study.
9 A My participation? 9 A That's tr 10 Q Your participation in this case. 11 A I don't recall talking to anyone 11 Q You I be 12 else about my participation in the case, no. 12 well, let me back	ue. My testimony focuses assessment study.
10 Q Your participation in this case.  11 A I don't recall talking to anyone  12 else about my participation in the case, no.  10 totally on the risk 11 Q You I be 12 well, let me back	assessment study.
11 A I don't recall talking to anyone 11 Q You I be 12 else about my participation in the case, no. 12 well, let me back	
else about my participation in the case, no.   12 well, let me back	elieve indicated that
	tion an overview in August,
	e answered this and I apologize if
	you give an overview to
A Yes. After, after I did a more 16 somebody, I take	
	y recollection is we had a
18 I recall, and I can't don't recall the exact   18 conference call ar	mong the staff, and the input
date, but we had a telephone call where we 19 they were looking	g for from me in that conference
20 discussed it, and I don't I know Lena was 20 call was did I see	any issues or problems with
	. So that was the study that I
Mr. Schallenburg might have been 22 gave at that time.	
23 participating, I don't recall whether he was or 23 Q And you	ı and was this that call
24 not specifically. There may have been other 24 where you said M	Ir. Schallenburg might have been
25 staff people that were participating in that 25 on there but you contain 25 on the	can't remember?
Page 11	Page 13
1 conversation. 1 A That's co	orrect.
2 Q Who made the decision that you 2 Q Do you i	recall having any other
3 would file testimony in rebuttal of Mr. Arora's 3 contacts with Mr.	Schallenburg about this case
4 direct testimony? 4 other than that one	e call where he might have been
5 A I'm not sure. I might have made 5 involved?	-
6 that decision. I may have made the offer, but I 6 A No, I do	not.
7 talked to Mr. Dottheim about it. 7 Q You don	n't recall anything specific
8 Q You may have answered this or 8 that he said or ask	xed during that call?
9 largely answered it, but in working on the scope 9 A No, I do:	n't.
10 of your participation in this case, did you 10 Q I think y	ou indicated you actually
	g your rebuttal testimony in
person that you have not mentioned to me thus   12   September?	,
13 far? 13 A That's co	orrect.
A Oh, probably from time to time I've 14 Q Dr. Proc	tor, in developing your
talked with some of the people here on staff in 15 rebuttal testimony	, did you consider all of the
	nation that you consider to be
17 Rackers [phonetic].   17 important to arrive	ing at the opinions that you
	bout Mr. Arora's analysis?
19 about the propriety or lack thereof of granting 19 A Yes.	·
20 Union Electric Company a fuel adjustment clause 20 Q Dr. Proc	tor, are you expressing
	do you have any opinions about
	AmerenUE's net fuel costs?
	ou ask the question a little
24 find that AmerenUE's risk assessment study for 24 bit more specifica	
25 net fuel expense does not provide the support 25 Q I'll try to	).

	Page 14		Page 16
1	A It's pretty broad, so I'm trying to	1	but in general I would say yes, I would not I
2	narrow it down in my mind.	2	haven't changed my views in general.
3	Q Do you have an opinion about the	3	There may be some specific
4	level of uncertainty/volatility in AmerenUE's net	4	statements in there that might need to be
5	fuel costs?	5	clarified, but I haven't had a chance to go back
6	A Can I try can I try rephrasing	6	through that to look at that. But my general
7	it, Jim?	7	views about the study and most of most of my
8	Q Give it a try.	8	testimony, if not all of it, hasn't changed.
9	A I have not well. I have not	9	Q So your basic and let's make
10	performed a study in which I could testify to	10	sure I'm stating that you essentially have one
11	that I have a have determined what the level	11	basic opinion in this, and that is that Mr.
12	of variation or uncertainty or volatility or	12	Arora's analysis does not provide sufficient
13	whatever word we want to use is for AmerenUE's	13	evidence for the commission to conclude that UE's
14	net fuel costs. I have not performed such a	14	net fuel costs are uncertain enough to justify a
15	study.	15	fuel adjustment clause?
16	Q And without performing such a study	16	A I would agree with that, yes.
17	or essentially endorsing a study performed by	17	Q And you're saying that his rebuttal
18	somebody else, you don't feel like you're in a	18	testimony and surrebuttal testimony has not, in
19	position to express an opinion about yes, their	19	your view, changed that basic opinion?
20	net fuel costs are uncertain, or no, they're not,	20	A That's correct.
21	or this is how uncertain they are, or this is how	21	Q But that there may be some things
22	uncertain they're not. Is that fair to say?	22	that you said in your rebuttal testimony that
23	A That's fair to say, yes.	23	need to be clarified or modified or perhaps even
24	Q So it's not your testimony in this	24	changed based upon what he had to say in his
25	case that AmerenUE's net fuel costs are not	25	rebuttal and surrebuttal; is that fair?
	Page 15		Page 17
1	uncertain or not volatile, it's your testimony	1	A There may be a few things, yes.
2	that Mr. Arora's analysis, in your view, doesn't	2	Q All right. But you don't know what
3	necessarily show that they are uncertain?	3	those are at this moment.
4	A I would probably phrase it a little	4	A At this moment I haven't gone
5	bit different from that, but essentially I think	5	through my rebuttal testimony to determine if
6	you're correct. I don't think his study provides	6	there is anything there.
7	the support necessary for the commission to make	7	Q Are you able to express anything
8	that determination.	8	with which you agree in Mr. Arora's rebuttal or
9	Q I should have asked you this	9	surrebuttal testimony?
10	before, but when I say "net fuel costs," you	10	A Oh. I, I'm sure there are
11	understand that I mean the sum of fuel and	11	statements he makes in both of those testimonies
12	purchase power less all system sales revenues.	12	because he talks about how we agree on certain
13	Are we on the same page about that?	13	things, that we do agree on those things. But
14	A Yes, we are.	14	going, going through I would have to sit down
15	Q Now, you reviewed Mr. Arora's	15	with his testimony in front of me and go through
16	rebuttal and surrebuttal testimonies; is that	16	it and look at it from that perspective, and I
17	right?	17	haven't
18	A That's correct.	18	Q You can't identify anything in
19	Q Based upon your review of Mr.	19	particular at this point?
20	Arora's rebuttal and surrebuttal testimonies,	20	A He states in his surrebuttal
21	would you modify any of the statements,	21	testimony that we agree that hedged coal costs
22	conclusions, or opinions that you expressed in	22	are not highly correlated with unhedged market
23	your rebuttal testimony?	23	prices for electricity. That's one thing I can
24	A Actually, I haven't looked at the	24	say I know we agree on because I said it in my
25	specifics of what was in my rebuttal testimony,	25	rebuttal testimony as well.
	operates of what was in my foodital testimony,		recental testimony as went.

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 - and I are ally have to go through - O And you intendyou do intend to go through it; is that correct? With this sort of examination in mind?  A Well, I wasn'tno, I wasn't thinking about going through it - O Not necessarily, all right.  Atrying to find out where we had agreement, but I was more reviewing it in terms of where we disagreed.  Q Not necessarily, all right.  Atrying to find out where we had agreement, but I was more reviewing it in terms of where we disagreed.  Q Well, left stalk about that. Can you cite to me where you disagree with Mr. Arora's rebuttal estimony?  MR DOTTHEIM: Jim, I'm going toif you're going to continue it and go into considerable detail.  The staff has a deposition of Mr. Arora's scheduled for next Tuesday for which Dr.  Page 19  Protor and I are working on, and we will be working on preparing for the hearing's cross-examination. So 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 going into material regarding what he was going to put in in its rebuttal testimony.  And and also to - I think we've been down this road before, if my memory serves me correctly, when you were deposition of Steve Rackers when I think, if my memory serves me correctly, when you were deposition of Steve Rackers when I think, if my memory serves me correctly, when you were deposition, pursuit, and that I instructed Mr. And we wound up not doing that.  And and I received that was an improper area of discussion, pursuit, and that I instructed Mr. And we wound up not doing that.  And my review of the that in the staff believed, I believed that was an improper area of discussion, pursuit, and that I instructed Mr. And we wound up not doing that.  And and I rearly and we well be depositions of Mr. Brewbaker and Mr. Dofaney		Page 18		Page 20
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 our where we had a queement, but I was more reviewing it in terms of where we disagreed. Q Well, lefs talk about that. Can you cite to me where you disagree with Mr. A rora's rebuttal testimony or surrebuttal testimon? MR. DOTTHEIM: Im, I'm going to to going to raise an objection now as far as this line of questioning if we're going to going to raise an objection now as far as this your going to continue it and go into you gree going to continue it and go into you gree going to continue it and go into you going to continue it and go into you reason objection now as far as this line of questioning if we're going to you reason objection now as far as this line of questioning if we're going to you reason objection now as far as this line of questioning if we're going to you reason objection now as far as this line of questioning if we're going to you reason objection now as far as this line of questioning if we're going to you went object to me where we had testimony?  I haven't have and fully intend to want to stop the deposition and go to the RLJ, I'm and the RLJ, I'm and if you 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  MR. DOTTHEIM: I believe you can ask him his opinions and about the rebustal testimony other than matters that we have engaged in in disciplination?  MR. LOWERY: I believe you can ask him his opinions are about Mr. Arora's rebuttal testimony  MR. DOTTHEIM: Believe with that.  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  MR. DOTT	_			
and 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, lefs talk about that. Can you cite to me where you disagree with Mr. for 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 — 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 — 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 — 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 — 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 — 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 — 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 — 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 — I have has asked you. I agree with that.  Yeap or the 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 — I have has asked you. I agree with that.  Yeap or the said anything to this point, but I'm discussion, that's atomey—client.  MR. LOWERY: Well, I will ask my questions, but I just want to understand from that learn this point.  MR. LOWE				
4 Cand I have and fully linend to object to questions of this nature, and if you 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 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 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 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 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 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 object to questions of this nature, and if you want to stop the deposition and go to the RLJ, I fully intend to object to questions of this RLJ, and I range free RLJ, and and go to the MR. LOWERY: If I fully intend to object to questions of this RLJ, and I range free RLJ, an				
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 thinking about going through it — Q Not necessarily, all right.  Q Not necessarily, all right. Q Well, lef's talk about that. Can agreement, but I was more reviewing it in terms of where we disagreed. Q Well, lef's talk about that. Can you cite to me where you disagree with Mr. A cora's rebuttal testimony? WR DOTTHEIM: Jim, I'm going to — 18 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 — 14 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 into — 15 Arora scheduled for next Tuesday for which Dr.  Page 19 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 examination. So I think we're beginning to get examination. So I think we're beginning to get deposition of Steve Rackers when I think, if my memory serves me correctly, when you were deposing Mr. Rackers and you were going into mis reviewed and I am working on that is based upon his reviewed and I am working on that is based upon his reviewed and I am working on that is based upon his reviewed and I am working on that is based upon his reviewed and I am working on that is also ongoing to raise an objection meet of the position and go to the RLJ, I am perfectly happy to do that. And if I get an adverse ruling from the RLJ, I ally intend to the RLJ, I am perfectly happy to do that. And if I get an adverse ruling from the RLJ, I ally intend to the RLJ, I all adverse ruling from the RLJ, I ally intend to that it is the text intomy or surrebuttal testimony.  MR. DOTTHEIM: I believe that it is object to guestions of the safety it is optionated that the hard sa shim his optionate about the rebuttal testimony or surrebuttal testimony				
so through it; is that correct? With this sort of of examination in mind?  A Well, I wasn't — no, I wasn't thinking about going through it — 10				
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Page 24 Page 22 was different than or in addition to the opinions 1 1 surrebuttal testimony that have not been covered 2 that he has expressed in his written testimony, 2 in my prefiled testimony. Is that a fair answer? 3 3 is it your contention I'm not entitled to know O That is fair. I never suggested 4 that? 4 that it wasn't. My question was simply do you 5 5 know at this moment as you sit here in this MR. DOTTHEIM: No, but again, there 6 are limits to the questions that you can ask. 6 deposition of any opinions that you formed based 7 7 on Mr. Arora's surrebuttal or rebuttal testimony You just -- you just phrased a completely 8 unlimited, unbounded question for which you asked 8 to which you might testify at the hearing? 9 9 for a response from me. Do you know of any as you sit here 10 10 MR. LOWERY: All right. Well, I'll today? I understand that you could be asked a 11 11 proceed and we'll see where it goes. question by a commissioner or me or anybody else 12 (BY MR. LOWERY) Dr. Proctor, do 12 that would call for a different answer. 13 13 you have any opinions based upon Mr. Arora's I don't know if this is answering 14 rebuttal testimony or surrebuttal testimony that 14 your question specifically, but when you talk 15 15 you would intend to express at the hearing that about opinions, that's fairly broad. I will say 16 are not already reflected in your prefiled 16 this, that my opinion of my rebuttal position has 17 17 written testimony? not changed based upon Mr. Arora's surrebuttal 18 MR. DOTTHEIM: Mr. Lowery, I object 18 testimony. 19 19 to the -- your, your question. How does Dr. By the way, his rebuttal testimony 20 20 Proctor know what opinions he will express at the I don't think really dealt with the issues that I 21 21 hearings when he has no idea what crossam covering in my testimony, so I can probably 22 22 examination he will be asked at the hearings? answer, I probably won't have any opinions on his 23 MR. LOWERY: I asked him what he 23 rebuttal testimony. And I didn't spend -- I intended. If he doesn't know, then he couldn't 24 24 haven't spent a lot of time looking at that 25 have an intention at this moment. 25 rebuttal testimony, so I may have missed Page 23 Page 25 1 MR. DOTTHEIM: Dr. Proctor, do you 1 something. 2 2 understand the question? I may get a question on it so I'm 3 THE WITNESS: I'm not sure I 3 going to kind of qualify there that I just 4 4 haven't spent that much time on his rebuttal remember the question. 5 5 testimony because he was rebutting other MR. DOTTHEIM: Let Mr. Lowery --6 б let Mr. Lowery ask the question or have the court witnesses, not me. 7 7 reporter read the question back. The surrebuttal was aimed at my 8 8 MR. LOWERY: Why don't you have her rebuttal testimony, and that's where I've kind of 9 read it back? 9 focused. 10 10 THE REPORTER: "Do you have any Opinions, do -- you know, generally 11 11 opinions based upon Mr. Arora's rebuttal do I agree with Mr. Arora, and the answer is no. 12 12 testimony or surrebuttal testimony that you would We have disagreements about various things, and I 13 13 intend to express at the hearing that are not haven't read anything in his testimony that would 14 14 already reflected in your prefiled written change my views about what I agree or disagree 15 testimony?" 15 with Mr. Arora about. 16 16 A Let me think about that just a Q I take it that you don't really 17 17 have any opinions one way or the other about the minute. I'm struggling with the question in the 18 following sense, is -- and I think Mr. Dottheim 18 matters expressed and discussed in his rebuttal 19 may have hit on it. I'm not sure what questions 19 testimony based on your statement a moment ago? 20 20 I might get about Mr. Arora's rebuttal or Well, I -- generally I read his 21 surrebuttal testimony. So I could get questions 21 rebuttal testimony, I have not set down and 22 that were not covered in my prefiled testimony. 22 studied his rebuttal testimony because it didn't 23 (BY MR. LOWERY) Fair enough. 23 deal with the issue -- with the issues of the 24 24 A I guess that's the answer is I may modeling of the uncertainty. -- I could get some questions on Mr. Arora's 25 Q All right. Let's talk about some

Page 28 Page 26 1 areas about which you and Mr. Arora I think 1 2009, right? 2 perhaps do agree. One of them I think you 2 A I agree. 3 3 already mentioned yourself, and that is you agree Would you agree that UE's hedged 4 that there is an insignificant correlation 4 delivered coal costs in 2009 should not be 5 5 between UE's hedged delivered coal costs and spot expected to be highly correlated with spot power 6 power prices. Is that right? б prices in 2009? 7 7 A I probably wouldn't state it that A At this point in time I would agree 8 way. I would say there is significantly reduced 8 I think with that statement with the following, 9 9 amounts of correlation between those two as is that once you hedge those costs, they're 10 10 compared to unhedged coal prices and power fixed. So it's fixed, and if at this point in 11 11 prices. And I testified to that in my rebuttal time you're looking forward to at the electricity 12 12 prices, those are not fixed. testimony. 13 13 Do you have an opinion about For example, UE hedges a certain 14 14 percentage of the sales that they make into -whether any correlation, if there is any, between 15 15 from their power plants, and of course that UE's hedged delivered coal costs and spot power 16 prices, whether any such correlation would be 16 portion is fixed. My recollection is that the 17 17 statistically significant? proportion that's hedged is highly confidential 18 A I don't have an opinion on that, 18 so I'll try to avoid using the number here at 19 19 this point. no. 20 20 Would you expect it to be? Q Well -- go ahead, Dr. Proctor. Q 21 Here's the way correlation works, 21 So, but it's, it's more than a and I don't know that "statistically significant" 22 22 majority of their off-system sales are not hedged 23 is the right word to use when talking about 23 at this point, and those prices obviously are not 24 correlations. I think you can talk about data 24 fixed. So any variation that we see in those 25 series being either highly correlated or not 25 prices compared to a fixed coal price, you're not Page 29 Page 27 highly correlated, and you can talk about degrees 1 going to see any correlation. Because you're not 1 2 2 of correlation. going to see any movement in the one, but you 3 And I think the statement that I 3 could see movement in the other at this point in 4 4 would agree with is, is that you're not going to time. 5 5 find a high degree of correlation between these MR. LOWERY: Fair enough. Mr. 6 hedged coal costs and unhedged power prices. 6 Dottheim, I actually had meant to mention this at 7 7 Q So if we have to -- if we were the inception of the deposition, but there is 8 8 describing -- we're going to say two variables going to be a lot of highly confidential 9 are highly correlated or two variables are not 9 information that really is going to have to be 10 10 highly correlated, you'd put the hedged coal discussed in this deposition. 11 11 costs and spot power prices in the not highly If it's all right with you, what 12 12 correlated bucket, so to speak; is that fair to I'd like to do is go ahead and deal with those 13 13 say? numbers, have Dr. Proctor testify to them or I 14 14 That's a fair statement. I think ask questions about them, and we will -- we will 15 that statement needs to be put into a context, 15 have to go back and any, any transcript that 16 16 and the context is at what point in time are you might become part of the record, we'll have to 17 17 talking about the hedged coal, coal prices. I mark highly confidential, or have a redacted 18 was looking at them on an after the fact basis, 18 version for a public version to take care of that 19 19 highly confidential information. but -- and certainly on an after the fact basis 20 20 and looking at them historically they fall into But I don't think it's practical to 21 the category that you just described as not 21 go in and out, so to speak, with two different 22 22 highly correlated. transcripts going along. That's how we handled 23 23 Q As we sit here in November of 2008 it with Mr. Kime's [phonetic] deposition this 24 24 and UE's delivered coal costs are pretty morning with Mr. Mills. 25 25 substantially hedged, you agree with that for MR. DOTTHEIM: That sounds fine.

	Page 30		Page 32
1	Q (BY MR. LOWERY) Dr. Proctor, do	1	that's the right that's the thing that he
2	you agree that the approach Mr. Arora took in his	2	should have done. Right?
3	analysis, that the concept of the study and the	3	A Correct.
4	approach was sound; is that right?	4	Q And taking those uncertainties and
5	A Yeah, I think he basically	5	applying those correlations between the variables
6	followed, I'll just call it the outline, the	6	and then running 250 scenarios of annual power
7	conceptual outline that I had presented in the	7	market simulations using a production cost model,
8	last case. The problem I had was with the	8	that's what you suggested in the last case and
9	implementation.	9	that was the right approach to take; is that
10	Q If the result that he obtained were	10	right?
11	if it were correct or if you had not felt	11	A That's correct.
12	there were implementation problems and you got	12	Q And the he created this set of
13	those same results, you would have essentially	13	250 scenarios to measure uncertainties for
14	come to the same conclusions that he came to; is	14	several time horizons, one of them was going into
15	that fair to say?	15	the immediate next year, here the test year, and
16	A If I had performed such a study and	16	the other periods were for future years '09
17	I felt that everything going into it was correct	17	through 2012; is that correct?
18	and that study turned out to be the same study	18	A That's correct.
19	that Mr. Arora performed, I think the answer to	19	Q And he then ran annual production
20	your question is yes.	20	cost model simulations to determine the annual
21	Q If you were for example, you	21	level of net fuel costs for each of those 250
22	performed a study and you came and you generated	22	scenarios; is that right?
23	a Table 1, essentially the same table as he	23	A That's right.
24	generated, a Table 1 in his testimony, and if the	24	Q And the concept behind this
25	results were essentially similar, you would	25	approach was a sound and reasonable way to
	Page 31		Page 33
1	interpret them the same way as he did; is that	1	approach it. Is that right?
2	true?	2	A That's correct.
3	A Yeah, that's correct. That's	3	Q Now, since we're going to deal with
4	correct.	4	the highly confidential issue later, you would
5	Q And you agree that, I think you	5	agree that UE typically hedges only about
6	said a moment ago, he basically followed the	6	percent of its system sales volumes forward for
7	steps that you would recommend to be followed for	7	between a month and a year out; is that right?
8	an uncertainty study of UE's net fuel costs, he	8	A That's my understanding, yes.
9	first determined specific uncertain variables for	9	Q And that means that in any given
10 11	the key inputs?  A That's correct.	10 11	twelve month period about percent of UE's
12		12	off-system sales volumes are going to be sold in the daily spot power market; is that correct?
13	Q Power prices, gas prices, coal prices, correct?	13	A That's correct.
14	A Correct.	14	Q And I think staff and UE's models
15	Q And that's the right you think	15	in this case, they're very, very close, both come
16	that's the right thing to have done, right?	16	up with about 10 million megawatt hours of
17	A That's correct.	17	off-system sales in a given year at a normalized
18	Q And he determined statistical	18	level; is that right?
19	measures for each of those uncertain variables	19	A You're asking me to recall a number
20	and you think that was the right way to go about	20	that I've probably I've seen, but I haven't
21	it. Correct?	21	focused on it.
22	A Correct.	22	Q Fair enough. Whatever those two
23	Q And he determined correlations	23	models come up with you'd accept as a normalized
24	between each variable, and determining	24	level off-system sales, and for the purposes of
25	correlations between each of those variables,	25	my question today, can you assume it's 10 million

	Page 34		Page 36
1	megawatt hours give or take 100,000?	1	
1 2	A That would be fine.	2	A I think there's a refueling every eighteen months.
3	Q That sounds about right based on,	3	Q Right. And so going into the test
4	if I recall, Dr. Proctor, I think that's very	4	year, the test year in this case that was being
5	similar to numbers we dealt with in the last	5	examined was April 1, '07 to March 31, '08.
6	case. Do you recall that?	6	Right?
7	A No, I don't, but that's all right.	7	A That was the staff's test year,
8	Q Fair enough. Do you agree that the	8	yes.
9	going into the test year results in Mr. Arora's	9	Q And that's the test year case that
10	Table 1 were generated using typical hedge	10	Mr. Arora was examining as well. Right?
11	percentages at the beginning of a particular	11	A I will accept that. I'm not sure
12	year, happen to be the going into the test year	12	I'm real clear what his test year was, but I
13	here, for gas, for coal, for nuclear power, and	13	think we were supposed to be operating on the
14	for energy?	14	same test year, yes.
15	A Would you repeat that question?	15	Q You don't have any information that
16	Q Sure. Do you agree that the going	16	indicates that that wasn't the test year?
17	into the test year results in Mr. Arora's Table 1	17	A No, I don't.
18	you're familiar with this Table 1?	18	Q And you've looked at Mr. Arora's
19	A Yes.	19	work papers that underlie his analysis; is that
20	Q And he has a column that shows	20	right?
21	it's called it's labeled I think test year,	21	A That's correct.
22	but it reflects a going into the test year	22	Q Do you recall that about in that
23	analysis?	23	in going into the test year case analysis that
24	A Mm-hmm.	24	the hedge percentages for off-system sales was
25	Q Do you agree that the for	25	about percent?
	Page 35		Page 37
1	running those the 250 simulations for that	1	A I don't I'm not I don't
2	test for that year, going into that year, do you	2	recall those the hedge percentages that he
3	agree that what Mr. Arora did is he used typical	3	used specifically going into the test year. I do
4	hedge percentages for each of the main inputs,	4	know that the purpose of his test year analysis
5	coal, nuclear, gas, and power?	5	was to use those things that were hedged. But
6	"Typical" meaning how much would UE	6	percent seems to me would be the right number to
7	be hedged on those four items just before the	7	use.
8	twelve month period that was being examined.	8	Q All right. Fair enough. Do you
9	A Yes.	9	agree that much of the gas that would be needed
10	Q You agree that all or nearly all of	10	to run the company CTGs during a particular year
11	the expected coal needs are typically hedged at	11	is not typically hedged going into the year
12	the beginning of a year, including at the	12	because the gas burn is pretty uncertain?
13	beginning of the test year in this case?	13	A I agree.
14	A Yes.	14	Q Do you agree that going into any
15	Q Nuclear fuel was essentially hedged	15	particular year there's uncertainty in the spot
16	for the test year case. You agree with that.	16	fuel and spot fuel and power prices?
17	Right?	17	A Oh, in spot prices, yes.
18	A I did not look at nuclear. I	18	Q Do you agree that going into any
19	cannot I didn't look at nuclear fuel so I	19	particular year there's load forecasting
20	don't know the answer to that one.	20	uncertainty?
21	Q Okay. That makes sense to you,	21	A If you're looking at going into a
22 23	doesn't it, since there was a refueling there	22 23	year, yes.
23 24	just was a refueling the last couple weeks, and the last one would have been back in the spring	24	Q And that was my question. So going
2 <del>4</del> 25	of	2 <del>4</del> 25	into a particular year there's load forecasting uncertainty. Right?
رك	UI	ركا	uncertainty. Right:

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1	A That's correct.	1	isn't that fair to say?
2	Q And going into any particular year	2	A That's fair, and if power prices
3	there's plant availability uncertainty, is there	3	vary, it can the coal burn can vary quite a
4	not?	4	bit.
5	A Yes.	5	Q So the dispatch could change?
6	Q And going into any particular year	6	A That's correct.
7	there's uncertainty about unplanned plant	7	Q And the amount of diesel fuel
8	outages?	8	surcharges in a given year vary from what was
9	A Yes.	9	expected going into that year?
10	Q Going into a particular year	10	A Diesel fuel surcharges for coal
11 12	there's uncertainty about the impact of	11  12	delivery?
13	transmission outages in the region; is that true?  A That's true.	13	<ul><li>Q Sure. Yes. For delivering coal.</li><li>A I believe that's the case, yes.</li></ul>
14	Q Going into a year there's	14	Q Could there be coal delivery
15	uncertainty about when planned outages will occur	15	disruptions in a year that were not expected like
16	because the company and utilities in general	16	we saw in 2005?
17	sometimes move planned outages up a few weeks or	17	A Yes, but I don't know how to put a
18	back a few weeks. Right?	18	probability on that one. That's the only
19	A I am not I don't know.	19	disruption that's ever occurred on the Powder
20	Q You don't know whether or not the	20	River Basin coal deliveries that I'm aware of.
21	company sometimes moves a plant outage from the	21	Q Obviously the gas burn can vary
22	spring to the fall or vice versa?	22	from what was expected going into the year since
23	A Well, if you're talking about going	23	we can't really predict the gas burn very well.
24	into a specific test year and you're only a month	24	Right?
25	or so out from the beginning of that test year, I	25	A That's correct.
	Page 39		Page 41
1	would think that planned outages are pretty much	1	Q Market prices for power are highly
2	fixed.	2	correlated with weather. Correct?
3	Q So you're not as certain about how	3	A Daily prices, yes.
4	much you're not as sure about how much	4	Q Daily market prices for power
5	uncertainty going into a particular year there	5	highly correlate with weather, with that proviso.
6	may be about planned outages?	6	Correct?
7	A No, and I don't recall looking at	7	A With that proviso, daily, yes.
8	any data that tried to capture that. But there	8	Q Weather is probably the variable
9	may be some uncertainty there. I don't know.	9	that has the most effect on loads; is that fair
10	Q Sure. Do you agree that actual	10	to say?
11	spot power prices can be quite different in a	11	A It is the major factor impacting
12	particular year than they were predicted to be	12	load. There are other factors as well, but
13	going into that year?	13	Q And that's why when you run a
14	A Yes.	14	production cost model, you need to match weather
15	Q Early in a year we can think that	15	normalized prices with weather normalized loads.
16	the average spot power price over that upcoming	16	Correct?
17	year may be X and it may turn out to be Y, higher	17	A Yes, you need to match the prices
18	or lower than X?	18 19	with the load.
19 20	A Yes.	20	Q And you need to use weather
21	Q Can the coal burn during a given year vary from what was expected going into the	21	normalized loads when you run the model, so you also need to weather normalize prices?
22	year?	22	A Which models are we talking about?
23	A It will vary.	23	Q Production cost model.
24	Q If it's much hotter or much colder	24	A Oh, production cost model. Okay.
25	than normal, it might vary quite a little bit;	25	You need to weather normalize the loads,
ّ	man norman, it imgit vary quite a fittle oft,		1 ou nood to woulder normanize the loads,

Page 42 Page 44 1 absolutely. I don't know that anyone has yet 1 at that. That we look at forecasts of annual 2 attempted to weather normalize the prices, or to 2 prices that were done a year ahead or -- and, and 3 3 look at a history of those kinds of forecasts to try to do an adjustment to the prices based on 4 normal versus abnormal weather. 4 find out what the uncertainty is. The 5 5 uncertainty band around those is. And since that One of the things that the staff 6 does do, however, is it looks at the years of 6 hasn't been done -- since that hasn't been done, 7 7 data -- the year of data that it's using, and it I don't know what the uncertainty band of looks for months or times when the weather was 8 8 forecasting is. 9 9 highly abnormal. Q Would you agree that if we were to 10 10 But we do not sit down and run assume going into a particular year that the 11 11 regressions and find a relationship between average annual spot power price was going to be 12 prices and mean daily temperatures or two day 12 \$45 a megawatt hour and that price were to vary 13 13 weighted mean daily temperatures and do an up or down a range of just 10 percent, a total 14 adjustment to a price based on that. 14 range of 20 percent, that that would represent 15 15 Well, if you were running a about a \$9 range of possible prices of 4.50 above 16 production cost model using weather normalized 16 and 4.50 below that predicted \$45 number? 17 A Give me the parameters again? I'm 17 loads, which you said you absolutely need to 18 weather normalize, right? 18 going to do the calculation. 19 19 Α Yes. Sure. Going into the year we 20 20 If you were running the production thought the average annual spot power price was 21 21 cost model using those weather normalized loads going to be \$45 per megawatt hour. And if the 22 22 and you were using prices for a period that had variance around that prediction is just 20 23 -- that were abnormal because the weather was 23 percent, 10 percent up or 10 percent down, that 24 24 pretty abnormal during that period, your results range is between 35.50 and 49.50. Right? 25 might not be very reliable from the model; isn't 25 I'm sorry, I didn't do my math Page 43 Page 45 1 that fair to say? 1 right, 40.50 and 49.50? 2 2 If you found a price in a given A Yeah, 40.50 and 49.50. I'm doing 3 month, for example, that was extremely high or 3 my math on a spreadsheet, so yeah. It's between 4 4 extremely low and that the cause for that was 40.50 and 49.50. 5 5 weather, you should adjust that -- you should O And if you apply that \$9 range 6 б adjust the price in that month. between the low and the high to the roughly 7 7 Q Do you know of any production cost million megawatt hours of unhedged off-system 8 8 model that can conclusively always predict the sales that the company has going into a 9 annual spot power prices within an error margin 9 particular year, that represents alone a \$ 10 10 of 20 percent? million swing in off-system sales revenues, 11 doesn't it, just because of spot power price 11 A I don't think the production cost 12 12 model's objective is to predict power prices. movements within that relatively narrow plus or 13 13 But I think your question is a more general one minus 10 percent band? 14 14 of whether or not you can predict power prices A Real quick, that's the 10 million 15 within a certain band of certainty. Am I 15 times the 9 million? 16 16 O I'm sorry, the million unhedged interpreting your question correctly? off-system sales times \$9 price range. 17 I think so. And would it be fair 17 18 to say that predicting power prices, average 18 Okay million times nine is 19 19 annual spot power prices within an error band of 20 20 even 20 percent is a fairly tough thing to do? 21 A I don't know the answer to that. 21 I'm sorry. 22 22 0 10 percent on either side? Q So if power prices vary, are only 23 23 going to -- if we knew that power prices are only I don't know. I don't know the 24 going to vary plus or minus 10 percent from that 24 percentage. One of the things I recommended in my rebuttal testimony is that we go back and look 25 25 expected number and it's \$45 what we expected

Page 46 Page 48 1 going into, UE's off-system sales revenues could 1 the single year was closer to normal on the 2 vary by, and I'm talking about -- could vary by 2 weather than the two year average. 3 3 million using just the unhedged portion of So using something like a two year 4 the off-system sales volumes just because of that 4 average does not by any means assure you that 5 5 plus or minus 10 percent movement in power you're going to be normalizing prices for 6 prices. Right? 6 weather. 7 7 Α Yes. I mean, that could be the O Did you work with Miss Maloney on 8 total swing from the low number to the high 8 her work on this rate case? 9 9 Yes, I did. 10 10 That's right. It's the total range What was your role with respect to 0 O 11 11 between the low to the high. working with Miss Maloney? 12 Yep. I agree. 12 Well, she's taken over this issue A 13 Now, if you use prices in a 13 going into the future, and so I guess you might 14 simulation that are not weather normalized, but 14 say that my role was to consult with her and help 15 15 her become familiar with the things that I had you use weather normalized loads in that 16 simulation, couldn't you -- couldn't you 16 looked at in the previous case, and to just give 17 overstate or understate the simulated normalized 17 her advice on what she was doing in this case. 18 18 production costs produced by the model? I'm not going to use the word 19 19 Well, again, it depends, in my "trained" Miss Maloney because she's a pretty 20 mind, on what you mean by "weather normalized." 20 good analyst, but get her familiar with all the 21 You mean as it pertains to the 21 specific data and the analysis of that data for 22 22 prices? this particular determination of these various 23 23 prices. Power prices, coal prices, gas prices. Well, as pertained to the specific Α 24 24 O Well, I had asked you earlier what -- yeah, as it pertains to the prices, but 25 specifically what do you mean by "weather 25 your assignment for this case was and with whom Page 49 Page 47 1 normalized"? I don't know -- it -- I think I 1 you consulted, and I take it that you at that 2 2 have answered this question before that, that -time were focusing solely on the subject of your 3 are you talking about running regressions on 3 rebuttal testimony, and I take it that you have 4 4 power prices against mean temperatures and then had some other roles with respect to this rate 5 5 case that you didn't tell me about; is that fair? using normal mean temperatures to adjust those, 6 is that what you mean by "weather normalization"? б Yeah, I understood your question to 7 7 Or -be related to this issue with Mr. Arora. 8 8 0 No, I guess, Dr. Proctor, what I O Well, let's go back and let me go 9 mean is using longer periods of time to average 9 back and broaden my question. What other 10 10 out abnormalities in power prices caused by -- or assistance, consultation, communication have you 11 11 that were driven by weather. had with staff members, and again, I'm not asking 12 12 A Well, the problem with that is the for any attorney-client communications, period of time that you use for those averages. 13 13 respecting the staff's case in this rate case? 14 14 And when we weather normalize loads, we use A I communicated regularly with Miss 15 thirty years of weather to go through versus the 15 Maloney and with John Cassidy on the staff's 16 16 regressions. And it's pretty specific in terms development of net fuel costs, and in particular 17 of the amount of time that we talk about in terms 17 power prices and coal dispatch prices, natural 18 of normal. 18 gas prices, those types of things. 19 19 And my recollection was that we --I did not consult on things like 20 20 that Erin Maloney [phonetic], who did this outages of power plants that go into the model, 21 analysis for the staff, did look at the weather 21 either scheduled or forced outages, probabilistic 22 22 for particular -- the particular test year and outages. I did not consult on the load input 23 23 compared that to what you would get with the that goes into the model. And I think I pretty 24 24 thirty year normal, and also looked at averaging much covered that. 25 25 two years, and found that actually the test year, Q So two areas of responsibility with

Page 52 Page 50 1 regard to this case, the areas that you 1 the system? 2 previously had in mind in terms of uncertainty of 2 À Absolutely. 3 3 net fuel costs and Mr. Arora's analysis and your And economic conditions, a 4 analysis of that and so on, and then assistance 4 significant upturn or downturn in the economy can 5 5 affect loads? to Mr. Cassidy and Miss Maloney relating to power 6 prices, essentially, and the inputs, power price б Α 7 7 inputs and so on for the staff's production cost 0 By the way, how would you expect 8 model. Are those the only two areas? 8 the current economic condition that we are all 9 9 A Those are the only two areas that I experiencing in our 401(k)s, I guess, how would 10 10 can recall. Yes. you expect those to affect utility loads in the 11 11 The twelve months of power prices next year? 12 for the test year that was used by Miss Maloney 12 A Well, first, let me say that I have 13 13 and any adjustments that she made to those, was not done a specific analysis of that. Okay? 14 that your recommendation or her recommendation? 14 Fair enough. You've been in this 15 15 business for a very long time, and I don't mean A It was her recommendation. 16 O 16 that in a critical way at all, you have a lot of She suggested it to you first? 17 17 We discussed it, but she's the one experience with these things, and so just based Α 18 that -- she's the one that made the ultimate 18 upon your twenty-five or thirty years of 19 19 recommendation. knowledge and experience in this industry, it 20 20 Whose idea was it first? seems to me that you might have an expectation O 21 21 Oh, I don't know. We talked about about how the current economic condition would be 22 22 several possible ways to approach it. expected to affect utility loads in the next 23 What's your understanding of why 23 year; is that fair? 24 you arrived at the approach that was taken? 24 That's fair. Generally when, for 25 In our discussions we looked at 25 example, when you're running a load forecast, and Page 51 Page 53 1 several factors. We looked at weather, the one 1 by the way, I haven't run a load forecast for a 2 2 that you've mentioned. We also looked at twelve long time, it's been a long time since I've done 3 month moving averages of prices and how they were that, but particularly with respect to commercial 4 moving. We looked at -- I'm trying to think what 4 loads and somewhat with respect to industrial 5 5 else we looked at. loads, one of the driver variables that's used in 6 6 We looked at specific months to see the forecast is the area income. So if the 7 7 if there were any prices that appeared to be out income is dropping, the load will drop. 8 8 of line, and, you know, were they way too low or And what about your expectation way too high. Even though -- even though the 9 9 about the effect of the current economic 10 10 weather may be close to normal, you can -- you conditions on market prices for power in the 11 11 can have other shifts that occur that cause the coming year? 12 12 prices to be higher or lower than what you would A Well, generally if load is normally expect. So we looked at those -- we 13 dropping, demand is falling, and if there are no 13 14 14 looked at all of those in coming to a final other interventions on the supply side, then 15 decision. 15 power prices will fall. But you could have 16 16 Q We talked a minute ago that weather interventions on the supply side --17 17 In other words, some supply goes has probably the most effect on loads; is that 18 what we talked about? You -- I think you agreed 18 away? 19 19 with that? Excuse me? A 20 20 A It has a significant -- it's the 0 In other words, some supply goes 21 thing that can affect variations in load more 21 away? 22 22 than anything else, yes. No, not that it goes away. That it 23 23 All right. Fair enough. Other -- the intervention on the supply side would be 24 24 things can also affect loads, though, can't they? increasing prices for, for elements that are used Like large industrial customers coming on or off 25 to produce to generate the power. Increases on

	Page 54		Page 56
1		1	
1	the cost side, let me put it that way, increasing	1	calculating some kind of uncertainty measure
2	prices of natural gas or coal supplies or things	2 3	looking forward into a year, we would expect that
3	along that line.		uncertainty measure to be higher, or much higher
4	Q Let me ask you this. Is it fair to	4	than if we're looking backwards at a year that's
5	say going into a particular year or a particular	5	already over; is that correct?
6	twelve month period, if you were trying to	6	A That's correct, and I think I
7	predict for that twelve month period, say I'm in	7	characterized that in my rebuttal testimony is
8	November to December looking forward into the	8	uncertainty associated with forecasting there.
	next calendar year.	9	Q Forecast uncertainty. There's not
10	<b>3</b>	10	forecast uncertainty looking backwards. Right?
11	Q	11	A That's right.
12		12	Q But there is forecast uncertainty
		13	looking forward. Right?
14	, , , , , , , , , , , , , , , , , , ,	14	A That's correct.
	1 23	15	Q And Mr. Arora did not look backward
		16	at his test year case, did he? He was looking
17	7 <b>3</b>	17	forward at the beginning of the test year, was he
18		18	not?
	1 3	19	A I believe that's the case, yes.
20	weather in play going into each year; is that	20	Q So when you criticized that the
	fair to say?	21	uncertainty factor was too high because you
22	A Yes.	22	thought the only thing that could vary was
23		23	weather, that was based on a mistaken assumption
	fact at a year, we would not expect to see	24	that Mr. Arora was looking backwards, wasn't it?
25	uncertainty because all of the values are already	25	A I don't I don't think I made the
	Page 55		Page 57
1	known after the fact. If we're looking forward	1	statement that the only thing that could vary was
2	going into a year, we would expect there to be a	2	weather. I don't believe I made that statement.
3	higher, quote, uncertainty factor, to use a	3	Now, I may have indicated in part of the
4	paraphrase I think that you used at your	4	testimony in trying to characterize certain types
5	testimony on page 30. Correct?	5	of uncertainties and uncertainty related to
6	A Let me where on page 30? I'm	6	weather or you know, primarily related to
7	sorry.	7	weather, but I don't here is the here is
8	Q Let me find it, Dr. Proctor. On	8	the issue in what
9	line 8, "I see uncertainty factors"	9	Q I'm sorry, Dr. Proctor, maybe if I
10	A Oh, uncertainty factor. I think	10	I'm just trying to understand your testimony.
11	J	11	On page 30, line 8 and 9 of your rebuttal
12	coined in his direct testimony.	12	testimony, you say, "The uncertainty factor in
13	Q Right.	13	the test year is significantly too high for
14	A Okay. So	14	variations in the annual average price of
15	Q Let me ask my question again.	15	electricity simply due to changes in weather
16	A Yeah, ask your question again.	16	scenarios."
17	Q If we look back after the fact at a	17	A That's correct.
18	year, it's not surprising we don't see	18	Q And you understand, as you
		19	indicated a moment ago, that Mr. Arora was
20	We're looking backwards, we know what happened.	20	looking forward into the test year, not looking
	Right?	21	backwards, so that the uncertainty factor he was
22		22	calculating wasn't simply due to variations in
23		23	weather. Right?
	<b>3</b>	24	A I agree. Yeah. And I don't think
25	many of those variables are, and if we're	25	that's

Page 58 Page 60 O So explain to me how that 1 1 Q But Mr. Arora wasn't looking 2 uncertainty factor is too -- why did you say, 2 backward at the test year. You agree with that. 3 3 "The uncertainty factor in this test year is too A I -- it -- I'm not sure what --4 high for variations simply due to changes in 4 that Mr. Arora -- I think he just -- I think test 5 5 weather"? year just happens to be a year -- yes. A year in 6 Well, let me -- let me indicate 6 which he is looking at it almost as every other 7 7 that my view of the test year when I was writing year in his analysis except that he has a greater 8 this testimony was that it was a base case. 8 amount of the cost being hedged in the test year 9 9 Okay? And that in the base case you didn't have than in the other years. 10 10 any forecast uncertainty, but you did have Q Exactly. The only difference is 11 11 uncertainty related to the weather. So that, that because just before the beginning of any 12 that was the -- that was the -- that was the 12 particular year, UE has just about all of its 13 13 description that was the basis for this paragraph coal costs typically hedged, high percentage of 14 14 its nuclear hedged, about percent of its on page 30. 15 15 off-system sales hedged, probably not a lot of So when you were using the term 16 "test year" on page 30, you're not talking about 16 its gas hedged because of the uncertainty in the 17 17 Mr. Arora's going into the test year case in gas burn. 18 18 So UE has hedged a lot of its fuel Table 1 in his direct testimony, you're talking 19 19 about a generic test year? and, you know bercent off-system sales going 20 20 Yes. I was talking about a base into a year, which we would expect to make the 21 21 case in which you were looking at primarily uncertainty in that year less than a year later 22 22 variations that occur in power prices due to and a year later and a year later. Right? 23 changes in weather, though that may not be the 23 Α Yes. But --24 24 only factor that's changing when you're looking And that's what -- when Mr. Arora 25 at this. You can have changes in supply. 25 -- he called it test year with uncertainty in Page 59 Page 61 1 I mean, weather affects the demand 1 Table 1, and I think he claimed in his 2 for electricity. Within any given test year you surrebuttal testimony that label may have been a 3 can have changes in supply that also occur within 3 little bit confusing, but you understand that he 4 4 that test year. So both of those -- both of was looking forward into a test year period, not 5 5 those factors can impact what kinds of looking backwards at what had already happened. 6 б uncertainty you would have within a specific test So he -- there was forecast 7 7 year. I was differentiating that from what I uncertainty going into the test year case that he 8 8 here was calling forecast uncertainty. was running. Correct? 9 In other words, you're looking back 9 A If he says so, yes. But he did not 10 10 at historical data, and in that particular measure forecast uncertainty. He simply looked 11 11 historical data you're going to have uncertainty at uncertainty related to daily variations in 12 12 that's due to changes in supply and changes in power prices over the years 2006, 2007, and 13 13 demand, and you are wanting to capture that in a plugged that into his -- into his model to 14 14 base case. reflect uncertainty in average annual prices. 15 That is different from, in my 15 Well, do you have Mr. Arora's 16 16 testimony there? testimony, that's different from looking forward 17 17 to, let's say, the next year in which you also Α No, I do not. 18 introduce a concept of forecast uncertainty. 18 I think Miss Lobb has it for you. 19 19 MS. LOBB: Which one is it, Jim? And I don't call it -- in the test 20 20 year you can have changes in supply. What you're Direct? doing is measuring the uncertainty that has 21 21 MR. LOWERY: Yeah. 22 22 happened historically because of those changes. I have it now. 23 That is not a forecast. That is something that 23 (BY MR. LOWERY) Turn to page 29, Q 24 24 has already occurred and that you are measuring please. 25 25 as having already occurred. Yes.

	Page 62		Page 64
1	Q Between the 25th and the 75th	1	got about the same uncertainty, and so on.
2	percentile going into the test <u>year case</u> we can	2	So the farther out we went, the
3	see a range of uncertainty of million. Right?	3	more uncertainty Mr. Arora's analysis reflected.
4	A I'm sorry, what's this got to do	4	Right?
5	with my testimony? My testimony dealt with power	5	A I think your description is
6	prices, not with net fuel.	6	correct. I'm not that that those numbers
7	Q I didn't say it was your testimony,	7	that you're pointing to reflect a range of
8	I'm asking you a question about Mr. Arora's	8	uncertainty for each of those years, yes.
9	testimony that you rebutted.	9	And the other thing that you said
10	A That's what the table shows.	10	that I would agree with is you go out from the
11	Q So going into the test <u>year case</u> ,	11	test year to 2009, the amount that's hedged of
12	Mr. Arora calculated a range of million	12	coal costs and other fuel costs is decreasing.
13	between the 25th and 75th percentile. That's	13	Q And you understand that that's how
14	what the table says, right?	14	Mr. Arora my description of 250 simulations
15	A Yes.	15	for the going into the test year case using those
16	Q And that's a measure that's a	16	higher hedge percentages were run and that's how
17	measure of uncertainty produced using his 250	17	the \$ million was derived in the 25 to 75th
18	simulations for that going into the test year	18	percentile range and 250 simulations were done
19	case. Right?	19	using
20	A It is a measure, yes.	20	A Yes. Understood.
21	Q And a year later, in 2009, when the	21	Q hedge ratios about a year out
22	hedged percentages for coal, nuclear, power would	22	for the 2009 case and that's how we came up with
23	have been lower for the 250 simulations for 2009,	23	You agree that that's how it was done.
24	the uncertainty not quite doubled. Right?	24	Correct?
25	A That's correct.	25	A Yes.
	Page 63		Page 65
1	Q And in 2010, the uncertainty was	1	Q And it's not surprising to you that
2	similar. Right?	2	the uncertainty ranges get wider the farther out
3	A The 25 to 75 percent range was	3	we get. Right?
4	actually almost identical to 2009.	4	A Yeah, I guess what's surprising to
5	Q And then for 2011, we're getting	5	me is it didn't get wider for 2010.
6	farther in the future, net fuel costs became more	6	Q Okay. But over the course of the
7	uncertain. Right?	7	years observed, overall, that uncertainty became
8	A It did go up, yes.	8	larger, as you would expect. Right?
9	Q 2012 it went up again, became more	9	A Yes. As you decrease the amount
10	uncertain according to the analysis. Correct?	10	that's hedged in costs, your uncertainty is going
11	A That's correct.	11	to increase.
12	Q And what was happening here is 250	12	Q We've been talking about
13	simulations were being run using for the going	13	projections of net fuel cost uncertainty just
14	into the test year case using those typical	14	now, and that's what Mr. Arora's simulations are,
15	pretty high hedge ratios for coal, about 30	15	they're projections. Right?
16	percent of power hedged. So he ran 250	16	A They are estimates, that's correct.
17	simulations based on that hedge position for fuel	17	Q Okay. Are estimates and
18	and for off-system sales, and we got a more	18	projections the same thing in your mind?
19	narrow range of uncertainty.	19	A No. He's projecting a range. He's
20	Then we ran 250 simulations using	20 21	estimating a range. Projection to me, it's
21 22	the hedge percentages on those components that we	22	probably just me, but carries this context of
23	would expect when we're a little more than a year	23	something like a forecast. But here he's
23 24	away for 2009, and we got more uncertainty. And we used the hedge percentages that we would	24	actually doing a calculation of a range of net that fuel outcomes that could occur in the
25	expect when we're about two years out for 2010,	25	future. So I
د ک	expect when we ie about two years out for 2010,	ردی	1utu1c. 501

Page 66 Page 68 1 O Okay. Fair -- when I use the term 1 of UE's forecast is that it uses forward prices 2 "projection," I really was -- I really was 2 to -- as estimates for the portions of the costs 3 denoting something that could occur in the future 3 and in this case electricity market prices that 4 is how I was using it. 4 are not hedged. So another reason that is going 5 5 Α Sure. to change is because of the volatility that 6 So if I slip up and say 6 exists in the forward, forward price markets. 7 7 "projections," that -- do you understand that I'm And there's volatility in the 8 just talking about something that could happen in 8 actual daily spot power markets. Right? 9 9 the future? What'd I say? Price markets? 10 10 Q You said price. A Okay. 11 11 0 Now, are you aware that UE Α Power markets, yeah. 12 periodically forecasts its net fuel costs 12 And there's volatility in the 0 13 approaching and going into a particular year and 13 actual daily spot power market, too, correct? 14 14 Well, what do you mean by then reforecasts them periodically as the year 15 15 progresses? "volatility"? 16 16 Α Yes. O Well, daily prices go up and down 17 17 Are you aware that those forecasts, day to day or certainly week to week or month to 18 18 month quite a bit throughout the year. Correct? for example, for a particular year change quite a 19 19 bit over time leading up to and during that Sure. Yeah. They move around. 20 20 particular year that we're looking at? Now, the, to me, volatility needs to be measured A 21 21 Yes. within a context. Just because something changed 22 22 0 Why would that be? Would that be -- changes doesn't mean it's volatile. It's 23 because all of these variables we've been talking 23 volatile if it changes around what your -- what 24 about, the hedge percentage on coal and power and 24 your expectations are. If it -- if there's wide 25 gas, for example, the load, the outage scheduled, 25 variations around your expectations of that Page 67 Page 69 energy prices, fuel prices, all those things keep 1 price, then I think you've got a volatility. 1 2 2 MR. LOWERY: Dr. Proctor, if you moving as we're approaching that year and as 3 we're going through that year. Is that true? 3 don't mind, I'd like to take about a five minute 4 4 A Yeah. I would be a little bit more break myself. Is that all right? 5 5 specific than that. I -- obviously as you -- if THE WITNESS: That's fine. 6 б you're saying you're forecasting for 2009, as you MR. LOWERY: All right. Let's take 7 move through the year in 2008 or any year prior 7 a break. 8 8 to that, you're exactly right. (Off the record.) 9 The amount that you have hedged of 9 (BY MR. LOWERY) Dr. Proctor, 10 10 your cost at any point and of your sales at any before we took a break, we were talking about the 11 11 point will vary. So that, that will impact the fact that going into a particular year, the 12 12 forecast that you will have for the upcoming year company forecast net fuel costs, and then as that 13 13 or for a year out or two years out or whatever. year progresses, say end of '08, the company 14 14 O And it will impact, if I'm going forecasts what fuel costs are going to be. And into -- let's take your 2009 example. 15 15 then as that year -- for '09, and then as '09 16 16 If I'm going into 2009 and let's progresses, the company reforecasts at various 17 say I'm in late '08 and I forecast fuel costs for 17 times and those forecasts can vary quite a little 18 2009 and then I reforecast them in the first 18 bit. Do you remember that discussion? 19 19 quarter of '09 and the second and third and Α Yes. 20 20 fourth, all those forecasts may vary quite a bit And if we look back, let's say if 21 because these variables are moving as you point 21 we look back at a particular year after we had 22 22 out, the hedge percentages are moving as the year forecasted it going into that year and after we 23 progresses. Right? 23 reforecasted it a few times during that year, if A Well, yeah. The hedge -- the 24 we look back, it could turn out that the actual 24 25 25 hedged amount varies, and also my understanding net fuel costs for that year were quite a bit

	Page 70		Page	72
1	different than any of the forecasts we had for	1	that forecast were based upon forward prices that	
2	that year. Correct?	2	were in place as of November 7th.	
3	A Yes.	3	But in June '08, some of those	
4	Q And, and that is exactly what Table	4	prices must have been higher than what was	
5	AKASR1 in Mr. Arora's surrebuttal testimony	5	forecasted because the net fuel costs dropped	
6	shows; is that correct? And if you don't have	6	significantly. And then he shows July of '08	
7	it, Miss Lobb will give it to you. Mr. Arora's	7	where they went up a little bit, which means that	
8	surrebuttal testimony, take a look at page 9.	8	by July of '08, the forward prices for the rest	
9	A With one qualification. That the	9	of the year must have been dropping at that time.	
10	he is not looking at forecasts well, I was	10	Q Well, the November '07 forecast	
11	just looking at the 2009 forecast. Yes, I agree	11	that you pointed to for calendar year '08 for net	
12	that's what his table looks at.	12	fuel costs, that would also wouldn't you	
13	Q And Table AKASR1 is an after the	13	expect that would also included whatever hedges	
14	fact look at how net fuel cost predictions by the	14	for power for 2008 existed in November of '07?	
15	company varied. Correct? That's what it	15	A That's, that's correct.	
16	depicts?	16	Q And by June of '08, a lot more of	
17	A That's what it depicts as how their	17	the '08 power would have been hedged. Right?	
18	forecasts have changed, yes.	18	A It's likely. I don't know that for	
19	Q The variation between those	19	a fact, but that could have been the case, yes.	
20	forecasts. Right?	20	Q It makes sense it would have been,	
21	A That's correct.	21	right?	
22	Q And what that table demonstrates is	22	A If they were, if they continued to	
23	that UE has actually experienced quite a bit of	23	yes. If they continued to hedge, say, a	
24	uncertainty in its net fuel costs. Hasn't it?	24	couple months ahead, that would have been the	
25	A No.	25	case, yes.	
	Page 71		Page	73
1	Q No. Why not?	1	Q And so the June '08 reforecast is	
2	A As I indicated earlier in my answer	2	going to include hedges, power hedges that have	
3	to why you get these variations, is because UE	3	been put on between November '07 and June '08.	
4	uses forward prices, which are highly volatile,	4	Right?	
5	as a part of their forecasts of what the what	5	A That's correct.	
6	the electricity prices will be.	6	Q And do you know whether the	
7	So I think what this really	7	forecast the three forecasts going that	
8	reflects is in large part the volatility and	8	that occurs throughout a year, do you do you	
9	forward prices. Particularly when you're within	9	realize that that also includes actual fuel costs	
10	the year when almost all of your well, all of	10	and off-system sales as of the time of the	
11	your costs are hedged.	11	reforecast?	
12	Q Well, going into the year, almost	12	A I would assume that it does, yes.	
13	all the coal costs are hedged as well, right?	13	Q All right.	
14	A That's correct.	$\begin{vmatrix} 13 \\ 14 \end{vmatrix}$	A So, for example, in June of for	
15	Q That doesn't really change	15	example, if the forecast depending on when the	
16	throughout the year. Right?	16	forecast is done in June of '08, but the	
17	A That's correct. For example, for	17	surely that forecast would include what actually	
18	2008, he's got a forecast in for November '07.	18	occurred up to that point in time.	
19	Q Yep.	19	Q That's right. You agree that	
20	A And what the net fuel costs will	20	that's likely what's done here. Correct?	
21	be, and then by June of '08, that forecast is	21	A I think that's likely what's done.	
22	dropped. The November '07 forecast was very	22	You know, weather has an impact on this as well	
23	likely based upon a almost all the coal costs	23	because going into at November of '07, you're	
24	being hedged by November of '07 for '08, but the	24	going to be doing basing your forecast on	
25	electricity prices that were put into there, into	25	normalized loads, and if weather is different	
	par mile miles			

	Page 74		Page 76
1	from the normalized, then by the time you get to	1	AmerenUE uses their forward price, if they're
2	June, it's going to reflect that.	2	using it on a specific date or if they're if
3	Q So if we take a look at, in	3	they're looking at those what's happening to
4	November of 2006, the company predicted its net	4	forward prices in coming up with an estimate
5	fuel costs for '07 were going to be million.	5	based on that on, on where those forward
6	Right? You see that in Table AKASR1?	6	prices are trending or tending to go or I
7	A I do see that, yes.	7	don't know exactly how they do that.
8	Q And by December '07 when most of	8	Q (BY MR. LOWERY) Dr. Proctor
9	the year is behind them and they know what their	9	were you finished with that answer?
10	fuel costs have been up to then, they know what	10	A Yes.
11	their off-system sales have been, they've layered	11	Q Dr. Proctor, it sounds to me like
12	in hedges for their power, it turned out that the	12	you have an issue with using forward prices to
13	net fuel costs were forecast fo <u>r cale</u> ndar year	13	predict what power prices are going to be in a
14	'07 as of December '07 to be smillion, right?	14	subsequent period.
15	A Yes. And as I said before,	15	A Sure. Go ahead.
16	probably the biggest factor in that difference is	16	Q That's a you agree you do have
17	the difference between the forward prices that	17	an issue with that. Right?
18	were used in November of '06 and the prices that	18	A I have a concern, yes.
19	actually occurred in December of '07.	19	Q A concern. Dr. Proctor, what do
20	Q But it's pretty likely that the net	20	you how do you think the company should
21	fuel costs for '07 came out probably fairly close	21	forecast what power prices are going to be in the
22	to that \$ million for '07 since the reforecast	22	future?
23	was being done in December. Right?	23	I mean, the company has a risk
24	A I yes.	24	management department, they have training groups.
25	Q And regardless of why the company	25	It's my understanding those risk management
	Page 75		Page 77
1		1	
1	million in November of '06,	1	policies apply to the unregulated generation
2	which is pretty close to the beginning of '07,	2	owned by affiliates of Union Electric Company,
3	the fact is the company missed its net fuel cost	3	the same as they apply to the AM&T training group
4	forecast by quite a bit for '07. Didn't it?	4	that trains UE's generation.
5	A I agree.	5	And it's my understanding that this
6	Q Doesn't that tend to indicate that	6	is how those risk management groups advise
7	there is quite a little bit of uncertainty even	7	management about how it ought to be trying to
8	going into a particular year about what net fuel	8	make money in the off-system sales market, or in
9	costs will actually end up being?	9 10	the merchant generation market.
10	A Well, it indicates to me that	11	So if you've got concerns about how
11 12	j	12	Ameren Corporation and UE goes about forecasting
13	prices for power prices.	13	those power prices, what's your recommendation?
14	Q What do you think the company	14	A I have not sat down and my, my
	should use?	15	concern comes from the amount of volatility that
15 16	MR. DOTTHEIM: Mr. Lowery, would	16	I see in forward prices. And in using a measure
	you let Dr. Proctor finish his response?		that's, that's highly volatile, and by the
17	MR. LOWERY: Sure, Mr. Dottheim, I didn't realize he wasn't finished.	17	way, is a lot more volatile than the actual
18 19		18 19	prices that occur historically over time for
19 20	A I can't even remember what we were	20	average annual levels.
20 21	talking about now. But I think I said it's a	21	I am just expressing a concern. I
22	strong indication that there's a lot of	22	do not I have not studied this, or tried to
23	uncertainty in using forward prices as a forecast	23	come up with a recommendation for an alternative.
23 24	for what your net fuel costs are going to be in	24	I think in my rebuttal testimony what I said was
24 25	the year coming up.  And I do not know exactly how	25	I would, for purposes of the study that Mr. Arora did, I would look at several different
40	And I do not know exactly flow	25	uiu, i woulu look at sevelal uittelellt

Page 78 Page 80 1 alternative forecasting, um, forecasts that were 1 MR. DOTTHEIM: Mr. Lowery, would 2 done and choose the one that had the lowest 2 you please let Dr. Proctor complete his response? 3 3 forecasting error. I don't know what that is. A I don't know whether that's the 4 In fact, it may be forward prices. I don't know. 4 case or not. I don't think we've seen any 5 5 But I haven't looked at alternative testimony on that. I don't think the staff has 6 forecasting methods. So I'm not sure I can 6 looked into the risk management in the way -- in 7 7 answer your question about giving a any great detail how AmerenUE manages its risks, 8 recommendation to UE about what to use on this. 8 particularly with respect to any forward 9 9 Q Fair enough. But it may be that contracts that they enter into for sales of power 10 10 forward prices is the right, right thing to be from their generating units. 11 11 looking at for this purpose. You just don't I think there's a lot more that 12 know. Right? 12 goes into it than what just goes into this net 13 13 A It may be, and it may be that it's fuel forecast. So I have a little bit of 14 not the most current forward price, it might be 14 disconnect between what you're saying and what 15 an average of this week's forward prices or it 15 I'm looking at on Table AKASR1 on page 9. 16 might be an average of this past month's forward 16 Q (BY MR. LOWERY) Let's take a look 17 17 prices or it might be some analysis of those at Table AKASR2 on page 11 of Mr. Arora's 18 forward prices on which you base the forecast. 18 surrebuttal testimony. 19 19 Dr. Proctor, you know, I -- you Α Yes. 20 20 know probably ten times, a hundred times more We don't see as much variability in 21 21 about this than I do. But it just seems to me the forecast as we did in net fuel costs, and 22 that when you've got -- you got a merchant 22 that's not surprising. Right? 23 generating company, Ameren energy generating 23 A That's correct. MR. DOTTHEIM: Dr. Proctor, I'm 24 company sitting over there. It's selling into a 24 25 power market, it doesn't have captive rate 25 going to object at this point. Page 79 Page 81 1 1 Mr. Lowery, can you indicate payers. 2 2 It's trying to figure out when to whether you have a great amount of the remainder 3 put hedges on its power. Do I -- do I contract 3 of the deposition on questions involving the 4 4 for a lot of my generation today at this price, surrebuttal testimony or, or not very much? 5 do I wait, what kind of product do I sell? All 5 It's approaching four o'clock and I 6 of those decisions that are going to -- that are 6 don't know that I want to lose the RLJ, because 7 7 going to decide whether that company makes money if we're going down this road in great detail, I 8 8 or not, which directly impacts whether Ameren think I'd like to avail ourselves of the 9 Corporation makes money. 9 opportunity of putting this before the RLJ. 10 10 It just seems to me that if that MR. LOWERY: I don't think I have 11 11 company is using risk management policies that very many additional questions about Mr. Arora's 12 use forward prices in the way UE is using them as 12 surrebuttal testimony at all. 13 13 well, that there must be a good reason for doing MR. DOTTHEIM: Is it limited to 14 14 it, else they're, I don't know, else they're this Table AKASR2? Or are we going to go to 15 incompetent or something, because surely, surely 15 another table and another testimony in the 16 16 they've thought about whether this was a good way surrebuttal? 17 to forecast power prices. Doesn't that make 17 MR. LOWERY: Mr. Dottheim, honestly 18 18 I don't recall exactly, but I don't believe I sense? 19 19 have a lot of questions about the surrebuttal Well, I'm not -- I, I don't know if Α 20 20 that's the way the -- the way they do their risk testimony. 21 management, and their forecasts and risk 21 MR. DOTTHEIM: Well, why don't you 22 22 management are related to the way they use check, because --23 forward prices to put together this forecast and 23 MR. LOWERY: Again, I am not -- I, net fuel costs. I don't know that that's --24 I do not understand -- I understand if I were to 24 Q If you were -- if you were --25 25 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 surrebutal testimony.  MR. DOYTHEIM: 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 RFPORTER: 'Let's take a look at Table AKASR2 on page II 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 Q My 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 junoring off-system sales? A There is variation there, yes.  Page 83  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 I in his direct testimony for the going into the test year case, those nor the same ballpark. Correct? A We're on Table AKASR1, you're asking:  Q C Day Ry Cowen, and we're giong into the test year case, those nor than the uncertainty measured of the same ballpark. A rhat's correct.  A We're on Table AKASR1 and the  Compare it to— Q Right. A Are those numbers in the same ballpark is And the same ballpark of principles of the same ballpark is Those numbers appear to be higher than the compare it to— Q That formula		Page 82		Page 84
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, lefts, lefts continue, then.  MR. LOWERY: I'll ask the court or at least give us an idea of where we were.  THE REPORTER: "Left stake a look at left and the surrebuttal testimony."  The answer was "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 Uncertainty in coal prices?  A Yes.  Q Uncertainty in power prices?  A Yes.  Q Dr. Proctor, lef's turn to your rebuttal testimony, your Figure 3. I don't have are a much well probably both find it, it's on page 16 of your rebuttal testimony, your Figure 3. I don't have a much variation, you agreed with that, but there's still quite a bit a tild it, i's 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 to determine the trend line you performed a regression on historical average electricity prices. Is that right?  A Yes.  Q That regression relies on a formula - in that formula you included a dummy variable for 2005 different than the underly on included a dummy variable for 2005 difforent than the	1	so on that you may have given Dr. Progter, I	1	A That's correct
To answer your questions about the surrebuttal testimony.   MR. DOTTHEIM: All right. Well,   1   1   1   1   1   1   1   1   1				
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surrebutal 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 reporter just to read back as a look at the foreast variation, we were talking about there and we look at the forecast variation, the range of the uncertainty measured on the forecast variation, the range of the uncertainty measured on the forecast variation, the range of the uncertainty measured on the forecast variation we were talking about there and we look at the forecast variation we were talking about there and we look at the forecast variation, the range of the uncertainty measured on the forecast variation we were talking about there and we look at the forecast variation we report to repo				
6 MR. DOTTHEIM: All right. Well, 8 MR. LOWERY: I'll ask the court 9 reporter just to read back the last question or at least give us an idea of where were. 11 THE REPORTER: "Let's take a look 12 at Table AKASR2 on page 11 of Mr. Arora's 13 surrebuttal testimony." 14 The answer was "Yes." 15 "Question: We don't see as much 16 variability in the forecast as we did in net fuel 17 coret, and than's not surprising. Right?" 18 And the answer was "That's 19 correct," and then we began the colloquy. 20 Q (BYMR. LOWERY) So it's not 21 surprising we don't have as much variation, you 21 agreed with that, but there's still quite a bit 22 power costs and we're ignoring off-system sales? 23 of variation in the forecast of fuel and purchase 24 power costs and we're ignoring off-system sales? 25 A There is variation there, yes.  Page 83  1 Q If we look down at Table AKASR1 and 20 look at the range of forecast variation we were 3 talking about there and we look at the forecast 4 variation, the range of the uncertainty mage had have as much variation, by a saking.— 3 O Look at Table AKASR1, you're 3 asking.— 4 A We're on Table AKASR1 and the 5 O Look at Table AKASR1, you're 5 and we 6 Or the going into the test year case, those 6 numbers are sort of in the same ballpark. 6 Correct? 9 A We're on Table AKASR1 and the 13 compare it to— 14 A Compare that to the million? 15 A I don't know what the same ballpark. 16 A Are those numbers in the same 17 A I don't know what the same ballpark. 18 A That's correct. 19 A I don't know what the same ballpark. 20 Q Frecasts were actually varied by 21 Q Forecasts were actually varied by or or the determination of the uncertainty range that Mr. Arora 22 Good of the uncertainty band that's depicted on your rebuttal testimony.				
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9 q Uncertainty in coal prices?  10 at least give us an idea of where we were. 11 THE REPORTER: "Let's take a look 12 at Table AKASR2 on page 11 of Mr. Arora's 13 surrebuttal testimony." 14 The answer was "Yes." 15 "Question: We don't see as much 16 variability in the forecast as we did in net fuel 17 costs, and that's not surprising. Right?" 18 And the answer was "That's 19 correct," and then we began the colloquy. 20 Q (By MR. LOWENY) So it's not surprising we don't have as much variation, you agreed with that, but there's still quite a bit of receast of fuel and purchase 24 power costs and we're ignoring off-system sales? 25 A There is variation there, yes.  10 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.  10 Q Right. 11 Q Look at Table AKASR1, you're asking 12 A We're on Table AKASR1, you're asking 13 A We're on Table AKASR1, you're asking 14 A Compare that to the million? 15 Q Right. 16 A A That's correct. 17 Q Look at Table AKASR1 and the compare it to 18 A That's correct. 19 A I don't know what the same ballpark and we compare it to 19 A I don't know what the same ballpark is. Those numbers appear to be higher than the compare it to 20 And you've also used a dummy variable for 2005 from the determination of the uncertainty band that's depicted on for the uncertainty band that's depicted o				
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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 orariation in the forecast of fuel and purchase power costs and we're ignoring off-system sales?  A There is variation there, yes.  Page 83  Q If we look down at Table AKASRI and look at the range of forecast variation we were atlally varied by and we compare it to  A Compare it to  A Compare it to  Q Right.  A Compare it to  A Right.  A Compare it to  A That's correct.  A That's				
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15 Q Right. 16 A Are those numbers in the same 16 Q Including the dummy variable for 17 ballpark? 18 Q That's correct. 19 A I don't know what the same ballpark 20 is. Those numbers appear to be higher than the 21 Q Forecasts were actually varied by 22 Q Forecasts were actually varied by 23 more than the uncertainty range that Mr. Arora 24 found in the 25th to 75th percentile in his 250  15 A That's correct. 16 Q Including the dummy variable for 2005 means that the actual data for 2005 did not influence the trend line depicted in Figure 3. 24 Part of the uncertainty correct. 25 Q And you've also used a dummy variable for 26 Variable to exclude 2005 from the determination of the uncertainty band that's depicted on 27 Schedule 2A to your rebuttal testimony.		•		
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found in the 25th to 75th percentile in his 250 24 Schedule 2A to your rebuttal testimony.				
1				
	25		25	

	Page 86		Page 88
1	Q Now, just so I understand, the	1	A If I had what? I'm sorry.
2	closer the dashed lines are to the solid line in	2	Q If you had not subtracted the value
3	Schedule 2A, the less uncertainty and vice versa.	3	of the dummy variable from the 2005 actual
4	Correct?	4	observation
5	A Let me let me get back to the	5	A And just put the 2005 observation
6	Schedule 2A.	6	in? Yes, it would have been higher.
7	Q Right.	7	Q The standard deviation would have
8	A Yes.	8	been higher, wouldn't it?
9	Q Let's just look at the top part on	9	A That's correct.
10	Schedule 2A, focus on that one. Coal and power	10	Q Would you be surprised if the
11	prices. Okay?	11	standard deviation which is a measure of
12	A Right. Yes.	12	uncertainty would have been more than two times
13	Q Just make sure the record's clear,	13	as high as the number you calculated? Three
14	the closer those dashed lines are on each side of	14	dollars and eighty cents versus \$1.62?
15	that solid black line, the less uncertainty	15	A I haven't made that calculation,
16	that's being depicted. Right?	16	but it would be significantly higher. And
17	A That's correct.	17	there's a lot of reasons for that.
18	Q Or the less uncertainty that's been	18	Q I understand. Now, while I
19	calculated. Right?	19	understand that you think using the dummy
20	A That's correct. Well, it's	20	variable was appropriate?
21	uncertainty around the trend line, yes.	21	A Yes.
22 23	Q Less uncertainty around the trend	22	Q I understand that that's your
24	line.	23 24	opinion? A Yes.
25	<ul><li>A Right.</li><li>Q So those dashed lines are closer to</li></ul>	25	A Yes. Q The fact that uncertainty you
23	Page 87	23	Page 89
1	the solid line than they otherwise would be	1	measured in Table 1 and that's depicted in
2	because you excluded 2005 for purposes of	2	Schedule 2A is substantially lower, the fact is
3	determining the trend line. Right?	3	that the uncertainty that you measured in Table
4	A That's correct.	4	1, the \$1.62 standard deviation, and the width of
5	Q Had you included the historical	5	that uncertainty band depicted in Schedule 2A,
6	data for 2005, the uncertainty band on Schedule	6	they're substantially lower because you used the
7	2A would have been wider, would have shown more	7	dummy variable to exclude the effect of 2005.
9	uncertainty. Right?	8	Right?
10	A Correct.	10	A Right. Q Have you drawn a similar Figure 3
11	Q Now, let's look at your Table 1 back on page 16 of your rebuttal testimony.	11	Q Have you drawn a similar Figure 3 trend picture for coal or gas prices? Have you
12	A Okay.	12	looked at that?
13	Q I'm correct that the dummy variable	13	A No, I have not.
14	you used to generate your trend line in Figure 3	14	Q Why not?
15	measures the difference between the trend line	15	A I don't know. It wasn't I mean,
16	and the actual 2005 prices?	16	I did not there's a lot of analysis I could
17	A That's correct.	17	have done. I guess it just I didn't have
18	Q In Table 1 what you did was you	18	enough time.
19	subtracted the value of the dummy variable from	19	Q Would you anticipate that trends
20	the actual 2005 observations. Is that right?	20	for coal and natural gas would look similar to
21	A Yes, that's correct.	21	the trend that you depict for power in Figure 3?
22	Q And had you not done that, the	22	A Yes.
23	uncertainty that you measured in Table 1, which	23	Q Would you also want to exclude 2005
24	is represented by the standard deviation that you	24	for coal and natural gas because 2005 was
25	list in Table 1, would have been higher. Right?	25	unusual?

	Page 90		Page 92
1	A Yes.	1	A Well, when you say "manage that
2	Q Let's talk some more about the	2	uncertainty," what do you mean?
3	deviations of the individual years from the trend	3	Q How about if I say to address the
4	that you are depicting in your Figure 3.	4	uncertainty?
5	A Sure.	5	A Well, there's no let me answer
6	Q You agree, do you not, that actual	6	it by saying there's no mechanism by which if
7	2005 data is quite a bit different from your	7	things turn out differently than what are in
8	trend?	8	rates, that the either the rate payer can be
9	A Yes.	9	paid back the difference or that the company can
10	Q Even though you excluded it from	10	receive the difference.
11	your analysis, 2005 happened. Right?	11	Q The utility is facing a lot of
12	A Correct.	12	uncertainty going into each year which means its
13	Q The coal and gas and power prices	13	net fuel costs may be a lot higher or a lot lower
14	that, that you believe were unusual in 2005, they	14	which is going to affect its earnings, and that
15	happened. Correct?	15	could be good for utilities, could be good for
16	A That's correct. They were	16	rate payers; but without a fuel adjustment
17	Q When UE was planning for 2005	17	clause, somebody's going to win and somebody's
18	throughout 2004, could UE have anticipated what	18	going to lose in that year. Right?
19	was going to happen in 2005?	19	A There are risks on both sides, yes.
20	A I don't think so.	20	I don't know if somebody's going to win or
21	Q Isn't it a fact that UE actually	21	somebody's going to lose, but there are a lot of
22	faced uncertainty going into 2005?	22	there are risks on both sides for the rate
23	A Sure.	23	payer and for the company.
24	Q Isn't it a fact that whether or not	24	Q And a fuel adjustment clause
25	UE could have anticipated the events of 2005, UE	25	mitigates those risks for both sides, true?
	Page 91		Page 93
1	had no mechanism in place that would adjust its	1	A Depends on how the fuel adjustment
2	rates either up or down due to uncertainty that	2	clause is constructed, but generally that's the
3	it was facing going into 2005 and that it	3	way that you would put together a fuel adjustment
4	couldn't control during 2005?	4	clause is to balance that between rate payers and
5	A Are you saying that they didn't	5	shareholders.
6	have a fuel adjustment clause?	6	Q If you had a fuel adjustment clause
7	Q Or any other mechanism. Right?	7	with either no sharing or symmetric sharing, you
8	A Yeah, except 2005 turned out to be	8	would balance that between the utility and the
9	one of the best years for them to hedge their	9	rate payers, that risk, wouldn't you?
10	coal costs because the power prices went up.	10	A Yes. When you say no I just
11	They didn't need they would have had to return	11	you said no sharing or no sharing meaning
12	dollars to rate payers had they had a mechanism	12	what?
13	in place.	13	Q Well, a full pass-through of
14	Q So a fuel adjustment clause would	14	whatever's being tracked in the fuel adjustment
15	have worked in the rate payers' favor at that	15	clause. Net fuel costs in this case.
16	time, right?	16	A Well, that yeah. I just wasn't
17	A Yes.	17	real clear on what those concepts were.
18	Q But going into a particular year if	18	Q Sure. If you had a fuel adjustment
19	you don't have a mechanism, a fuel adjustment	19	clause that just passed through changes in net
20	clause, for example, then if the uncertainty you	20	fuel costs, then the risk that the actual results
21	face going into that year causes actual results	21	turn out different from what might have been
22	to vary a lot from what you expected, whether	22	expected because of all this uncertainty you face
23	it's in the utility's favor or not in the	23	going into a year would be mitigated for both
24	utility's favor, there's no way to adjust rates	24	sides. Right?
25	to manage that uncertainty, is there?	25	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 2 go up, the company gets to raise its rates to 3 collect that. If they go down, then dollars are refunded to customers or rates are lowered, 1 should say. Rates are lowered which is - amounts to the same thing. It's not a refund, 2 but contents you will be but customers pay less for their electricity.  A Right. Rates are lowered which is - amounts to the same thing. It's not a refund, 2 but contents you will be but customers pay less for their electricity.  A Right are allowed to ustomers for their electricity.  A Right are allowed to ustomers or rates are lowered which is - amounts to the same thing. It's not a refund, 2 but customers pay less for their electricity.  A Right are allowed to ustomers or rates are lowered which is - amounts to the same thing. It's not a refund, 2 but customers pay less for their electricity.  A Right are allowed to ustomers or rates are lowered which is - amounts to the same thing. It's not a refund, 2 but customers pay less for their electricity.  A Right are allowed to ustomers or rates are lowered which is - amounts to the same thing. It's not a refund, 2 but customers pay less for their electricity.  A Right are allowed to ustomers or rates are lowered which is - amounts to the same thing. It's not a refund, 2 but customers pay less for their electricity.  A Right are allowed to ustomers or rates are lowered which is - amounts to the same thing. It's not a refund, 2 but customers pay less for their electricity.  A Right are funded to ustomers are lowered.  A That's order the testimony.  A Right are funded to ustomers are lowered.  A That's order the testimony.  A Right are funded to ustomers are lowered.  A Th		Dago 04		Daga 06
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				•
25 MS. LOBB: Yes. I am. She is.   25 A Yeah, looks like it goes through	25	MS. LOBB: Yes. I am. She is.	25	

	Page 98	1	Page 100
1	September '06.	1	coal dispatch prices on the X axis
2	Q So data for every month of 2005 is	2	MR. DOTTHEIM: Dr. Proctor, when
3	included in the analysis that generated what's	3	you said "this one," could you clarify what
4	depicted on Schedule 2.1. Correct?	4	document you're referring to when you said "this
5	A Yes. That's correct.	5	one"?
6	Q Now, if you had excluded 2005 from	6	THE WITNESS: Yeah, Schedule 2.1 in
7	your analysis back in that in, in that rate	7	my direct testimony is a, an analysis of
8	case, you would have found a different	8	correlation between off-peak prices to coal
9	relationship than is depicted on Schedule 2.1.	9	dispatch prices. It's not a trend analysis.
10	Correct?	10	Q (BY MR. LOWERY) Dr. Proctor, can I
11	A It's two completely different types	11	direct your attention to Schedule 2A to your
12	of analyses. You're making a comparison between	12	rebuttal testimony in the current rate case?
13	an analysis of twelve month moving average data	13	A Yes.
14	versus looking at average annual prices. I don't	14	Q The top graph on 2A?
15	I don't know how in this particular analysis	15	A Yes.
16	you could exclude the data from 2005.	16	Q Correlation of off-peak electric
17	MR. DOTTHEIM: Dr. Proctor, excuse	17	prices to coal dispatch prices. Correct?
18	me, you said "in this particular analysis."	18	A Correct.
19	Could you clarify in what analysis you were	19	Q 2A, Deposition Exhibit MP1 from
20	referring to?	20	ER-2007-002, is also a correlation of off-peak
21 22	THE WITNESS: Yeah, the one that	21	prices to coal dispatch prices. Correct?
23	was done in my direct testimony in the last UE	22	A Correct.
23 24	rate case.	23 24	Q You are looking at the same
25	Q (BY MR. LOWERY) I understand. Let me just so maybe we can short circuit this.	25	variables, are you not?  A No.
23	*	23	
	Page 99		Page 101
1	You obviously believed including 2005 data in the	1	Q You've got coal dispatch prices
2	last rate case was the appropriate thing to do	2	along one axis of both of these charts, do you
3	for purposes of what you were doing. Right?	3	not?
4	A That's correct.	4	A Yes.
5	Q And you obviously believe that	5	Q You've got off-peak prices along
6	excluding the 2005 data was the right thing to do	6	the other axis on both of these charts, do you
7	in this rate case for what you were for the	7	not?
8	purpose for what you were doing. Right?	8	A I do. But it's not they're not
9	A That's correct.	9	the same variables. One, and I mentioned this
10	Q Okay. So we can agree on what you	10	before, one is a twelve month moving average and
11	thought was appropriate. Is that fair?	11	the other is an annual average.
12	A Okay.	12	Q There are two different ways of
13	Q Now, the slope of your line from	13	looking at the correlation. Correct?
14	the last case as depicted on Schedule 2.1, it's	14	A Yes.
15	quite a bit steeper than the slope you calculated	15	Q But they are looking at the
16	for this case as shown on the top chart on	16	correlation between the same two commodities, are
17	Schedule 2A to your rebuttal testimony. Is it	17	they not?
18	not?	18	A Yes.
19	A I first of all, the analysis on	19	Q And the slope of your line in the
20	Schedule 2.1 is not a trend line. Okay? It's a	20	last case is quite a bit steeper than the slope
21	correlation of off-peak prices to coal dispatch	21 22	of the line on Schedule 2A in this case?
22 23	prices. So you can't compare slopes. No,	23	A And I would expect it to be.
23 24	they're not comparable.  I mean, one on one you have a	24	Q And that's true, though. Correct?
2 <del>4</del> 25	time axis, the dates. On this one you've got a	25	A Yeah, but you're comparing oranges
د ک	ume axis, the dates. Off this one you've got a	Z )	and apples.

	Page 102		Page 104
1	Q Well, you that's fine. But	1	conclusion in comparing two different types
2	that's fine that you have that opinion, but I	2	two different types of data.
3	asked a I think I asked a fairly simple	3	And as you pointed out, the data on
4	question, and that's whether the slope the	4	Schedule 2.1 has the 2005 prices in it. And it's
5	line in the last case is quite a bit steeper than	5	based on a twelve month moving average and it is
6	the line in this case, and your answer was yes.	6	going to result in higher prices because of that.
7	Correct?	7	Q All right. Now, those higher
8	A That's correct.	8	prices in Schedule 2.1 in the last rate case,
9	Q Just to dumb it down for dummies	9	Exhibit MP1, Deposition Exhibit MP1, those higher
10	like me, if I look at Schedule 2.1 in the last	10	prices resulted in higher off-system sales
11	case and I look at a price of \$1.40 for MMBTU for	11	margins calculated in the last rate case which in
12	coal, I'm going to get a power price of about	12	turn led to a lower revenue requirement
13	\$31?	13	recommendation for the staff in that case.
14	A Yes.	14	Right?
15	Q And at 1.70 I'm getting a power	15	A I am sorry, you made a big jump
16	price of about thirty-four. Right?	16	there.
17	A Yes.	17	Q Okay.
18	Q And if I look at Schedule 2.1A in	18	A And I'm not following the logic.
19 20	your rebuttal testimony in this case, power price for that same \$1.40 coal cost is about 22 or \$23;	19 20	Q Well, including the 2005 prices,
21		21	that twelve month moving average, calculating
22	and at \$1.70, power price is about twenty-five.	22	prices in that fashion resulted in a higher power
23	Right?  A At \$1.40 coal dispatch price, the	23	price than if you had excluded 2005 power prices. Right?
24	off-peak electric price is around on Schedule	24	A I am we did not base our
25	2.1?	25	recommendation for off-peak prices in that case
	Page 103		Page 105
_			
1	Q Yeah.	1	based on 2005 prices.
2	A What did you say the off-peak price	2	Q I'm aware you didn't. You used a
3	was?	3	multi-year period. Did you not?
4	Q Twenty-two or twenty-three.	4	A No.
5	A I don't think so. I think it's	5	Q Well, what did you do?
6	around thirty-two. Or thirty-three.	6	A What we did was we plotted how
7	Q On Schedule 2A in this rate case?	7	off-peak prices had been changing over time, and
8 9	A Oh, I no. I said Schedule 2.1.	8 9	my recollection was that there was a significant
10	Q I'm sorry. The numbers are too close.	10	increase in those prices in 2005. As we came
11		11	into 2006, those prices dropped and were lower.  And that what we had what we
12		12	
13	Q Schedule 2A in your rebuttal testimony in this case.	13	went with was where the prices were trending to at the end of the test year, and I believe that
14	A Yes.	14	was September. We did not base prices in that
15	Q About 22, \$23, right?	15	case on 2005 prices.
16	A Yes, that is correct.	16	Q When you say you ended up where
17	Q And at \$1.70, about \$25. Right?	17	they were trending to, you were you were
18	A That's correct.	18	calculating a twelve month moving average, and
19	Q So the relationship between coal	19	because the prices were coming down in 2006, you
20	prices and power prices, if you look at these two	20	would add a lower cost month and replace a higher
21	correlations, has changed substantially since the	21	cost month, twelve month moving average, right?
22	last rate case; is that right?	22	A Yes, and we trued up to the end of
23	A No, you're and I've told you	23	the period is my recollection. We and I'm
24	before you're looking at two different sets of	24	trying to recall whether I think we did get
25	two different types of data in trying to reach a	25	December of 2006 in our true up. And so the

Page 108 Page 106 1 twelve month moving average would have had none 1 off-peak or on-peak prices, Schedule 2A and 2 of the prices from 2005 in it. 2 Schedule 2B, whether or not those have been 3 3 correlated under, under normal conditions. Q Is it your testimony today that the 4 power price used in staff's model and the 4 What happened in 2005 was we had 5 5 production cost model in the last case upon which supply disruptions from problems with Powder 6 staff based its off-system sales recommendation б River Basin train deliveries, and we had two 7 7 did not include any 2005 power price data; is hurricanes that impacted -- disrupted the supply 8 that your testimony? 8 of natural gas. 9 9 That's my recollection. I would Q Right. 10 10 have to go back and check what we put into A And those unusual events, there's 11 11 surrebuttal to confirm that. But that's my no question they did occur, and -- but the 12 12 analysis here is to come up with what is a -- is recollection, yes. 13 Give me just a minute, Dr. Proctor, 13 a typical correlation between these prices and, Q 14 14 and the natural gas and coal prices. That was -please. 15 15 Why wouldn't you want to look at a Α Yes. 16 O You believe that's in your 16 typical correlation in the last rate case? I 17 surrebuttal testimony? 17 think what you just indicated to me is that the 18 18 A I'd have to go back and check the correlation you calculated in the last rate case 19 19 work papers from the surrebuttal testimony, but I was atypical because it had this atypical 2005 20 20 believe that's what we did for the true up. And data in it. 21 I can't recall right now whether we completed the 21 Α Right. 22 22 true up before surrebuttal or after. So it may O And you want to look at a typical 23 or may not be in the surrebuttal testimony. 23 correlation now. My question is why are you 24 O Just to clarify again, your 24 looking at an atypical correlation in the last 25 recollection at least as you sit here today is 25 rate case? Page 109 Page 107 1 that the energy price for off-system sales used 1 Well, there are a couple of reasons 2 2 in staff modeling that underlied your, I believe for that, but, but one is we had put together an 3 it was approximately million off-system sale 3 analysis of how coal prices were related to 4 4 margin number in the last case was the end point off-peak prices for electricity, and we -- the 5 5 of twelve month moving average power prices for focus there was on when we put the model together 6 б 2006? with our coal dispatch prices and with the 7 7 '6. That's my recollection. off-peak prices, were, were they going to match. 8 8 Were they going to correspond to Again, I'd have to go back and check that. 9 Okav. 9 one another with the best information that we had 10 10 available at this time. And we had data from, I I'm not sure whether we had 11 11 December -- what I can't recall is I know we had believe the earliest was 2003 through, it appears 12 12 through -- well, I think we had through November, from this schedule was around September of 2006. 13 13 and I don't recall whether we had December prices You're looking at Exhibit MP2, Q 14 14 in at the time we did the true up. But that's my right? 15 recollection. 15 Yes. Right. And what we were 16 16 Dr. Proctor, can you explain to me trying -- the purpose for this correlation in 17 17 this particular analysis was -again, and forgive me if you already have, but 18 why when looking at the correlation of off-peak 18 When you say "this," you need to 19 19 clarify for the record. What, what's "this"? power to coal dispatch prices for this case you 20 20 A I'm sorry. The purpose of the excluded 2005 data, but when looking at that same 21 correlation in the last case you included 2005 21 analysis in the previous rate case was to make 22 22 data? sure that what we were putting into the model was 23 23 A Okay. In this particular case, matching the dispatch prices, the coal dispatch 24 24 prices with, with the electric prices that we what you're trying to determine is generally

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were putting in there. Putting into that. That

25

whether or not coal dispatch prices and either

	D 110		David 110
	Page 110		Page 112
1	was the purpose.	1	A That's correct.
2	So whatever, whatever prices that	2	Q as we talked about before, it
3	we were putting in there and by the way, we	3	actually happened. Katrina happened and coal
4	didn't put in off-peak prices that were up at the	4	supply disruptions happened. Right?
5	range in this. I think we were much closer	5	A Yes. That's correct.
6	to the middle of and \$ We wanted to make	6	Q And both those things could happen
7	sure that those corresponded when we ran the fuel	7	again. Couldn't they?
8	model. Okay?	8	A They could. One of the problems in
9	What schedule 2A is addressing	9	this type of analysis is how likely are they to
10	Q Now we're back in this case.	10	happen.
11	Right?	11	Q And probably none of us know, do
12	A Yes. What Schedule 2A in this case	12	we?
13	is addressing is from, from the data that	13	A Well, if you're going to include
14	these average annual prices, is there correlation	14	them in your analysis of uncertainty, you have to
15	between the coal dispatch prices and the off-peak	15	make a determination of that. I would have put
16	electric prices.	16	it into what I would call forecast uncertainty.
17	Now, let me say the data in	17	Q But when you exclude them, you get
18	Schedule 2A for this case came from Ajay Arora's	18	less forecast uncertainty, correct?
19	direct testimony. I did not go in and look at	19	A I didn't say I would exclude them
20	that, how he defined off-peak, or how he defined	20	from forecast uncertainty. And it depends upon
21	on-peak.	21	what type of forecast uncertainty you're dealing
22	We may have different definitions	22	with. Is it a month ahead for the next year? Or
23	of those things between the two. In fact, I	23	is it a year ahead? Or is it two years ahead?
24	think we did. What he was calling off well.	24	And you have to evaluate this
25	I believe what he was calling off-peak for the	25	particular occurrence that occurred once in nine
	Page 111		Page 113
1	data that he had in his table on this particular	1	years historically. Maybe you put that level of
2	question of correlation may have, and I don't	2	probability on it.
3	know for certain, but may have only included the	3	Q So by excluding it, there's no
4	hours from 11 p.m. until 6 a.m. in the morning	4	probability on it at all. Right?
5	seven days a week.	5	A By excluding it from what? I'm
6	The off-peak prices is defined in	6	sorry.
7	Schedule 1 2.1 from the previous case dealt	7	Q By excluding it from the
8	with a definition of off-peak electric prices	8	calculations that showed the uncertainty range on
9	that also included all of Saturday and all of	9	your Schedule 2A in your rebuttal testimony in
10	Sunday. And when you include the on-peak hours	10	this case.
11	from Saturday and Sunday, you're going to	11	A I'm sorry, Schedule 2A doesn't have
12	increase the average price level.	12	to do with uncertainty. It has to do with
13	So I don't these, these were two	13	correlation.
14	different sets of data and they were put together	14	Q The dashed lines depict uncertainty
15	for two different purposes. So I that's the	15	around your trend line, don't they?
16	only way I know how to answer your question at	16	A Yes, they do.
17	this point. I don't think the data is the same	17	Q And the range of uncertainty around
18	and the analysis was done for different purposes.	18	that trend line would have been substantially
19	What the analysis on Schedule 2A	19	higher if you had included 2005. Right?
20	was, was to show that if you excluded this very	20	A What the dashed lines represent is
21	this year in which there were significant	21	plus or minus one standard deviation around the
22	supply interruptions, that the coal dis that	22	trend line for the points that were included in
23	the average annual prices that occurred are	23	the calculation of that trend line.
24	highly correlated.	24	Q Let's talk some more about your
25	Q The unusual year of 2005	25	trend line in Figure 3. The trend shown in

	MICHAEL PROCI		
	Page 114		Page 116
1	Figure 3 of your current rebuttal testimony, that	1	generation from 3/31/05 through the end of
2	trend did not apply before 2002. Right?	2	September 2008.
3	A Excuse me, I need to catch up with	3	A Okay.
4	you.	4	Q You can see the spike in 2005 in
5	Q Sorry.	5	those LMPs. Right?
6	A Would you ask the question again?	6	A Yes.
7	Q Sure. Figure 3, page 16 of your	7	Q And you can see starting in about
8	rebuttal in this case, the trend that you have	8	late May 2008 a pretty noticeable jump up in LMPs
9	drawn in Figure 3, that trend did not apply	9	that has fallen off considerably when we get down
10	before 2002. Correct?	10	to August and September of 2008. Right?
11	A That's correct.	11	A Yes.
12	Q And prior to 2003, the trend was	12	Q If we look across the rest of that
13	flat or down. Is that fair to say?	13	data, we don't see really any other we see one
14 15	A Yes.	14 15	other spike there in the 8/13/2006, we see one
16	Q If we were back in time in 2002	16	other one there, but the data is fairly, fairly
17	today and you looked at the historic data prior	17	level across that period, is it not?  A Across which period?
18	to 2002, what you would have seen, you would have	18	±
19	seen the flat or downward trend. Right?  A Yes.	19	Q The period depicted on this figure. A I see a lot of variation. I'm
20	Q Would you have been able to	20	sorry, I'm not following the question. I see a
21	anticipate in 2002 that a new trend would have	21	lot of variation in the data, but I think you're
22	started in 2002?	22	I'm not sure what you're asking. Across this
23	A No. And that's not the purpose of	23	whole figure I see a lot of variation in the
24	this analysis.	24	data.
25	MR. LOWERY: Miss Lobb, would you	25	Q Would you agree we've seen some
	Page 115		Page 117
1	hand Dr. Proctor Mr. Schukar's rebuttal	1	arguably unusual events in 2008?
2	testimony?	2	A I don't know what they are.
3	Q (BY MR. LOWERY) Would you turn to	3	Q How about the big run up in coal
4	page 6 of Mr. Schukar's rebuttal testimony, Dr.	4	prices that was due at least in part in
5	Proctor?	5	disruptions in coal supply in China and
6	A Yes. I am there.	6	Australia? Was that unusual?
7	Q The figure on page 6 depicts those	7	A I don't know. I wasn't aware of
8	unusually high prices in the second half of 2005,	8	those.
9	doesn't it?	9	Q Were you aware that the Clean Air
10	A Yes.	10	Interstate Rule was vacated by the federal courts
11	Q And that's that looks pretty	11	this summer, summer of '08?
12	similar to several months of unusually high	12	A Yes.
13	market prices we've seen in 2008, does it not?	13	Q Was that a pretty important event
14	A I don't know.	14	in the electric industry?
15	Q You don't know.	15	A I'm not an expert in that area. I
16	A No. This is I'm not sure what	16	don't know whether it was or not.
17	this data is. I have not read Mr. Schukar's	17	Q Was oil shooting up to \$145 a
18	testimony.	18	barrel and back down to \$60 a barrel, is that
19	Q Well, let me ask you this. If we	19	unusual?
20	assume that this data are the hourly weighted	20 21	A I think the fact that it came down
21 22	LMPs, weighted being weighted by UE generating	22	from 160 was not expected.
23	plants. A Yes.	23	Q From 145 or maybe it was 160. I thought it got up to about 145, but.
24	Q We assume that this data shows the	24	A I don't think people expected it to
25	hourly weighted LMPs for Union Electric Company's	25	drop that fast, no. If that's the question. But
	nounty weighted Entry 5 for emon Electric Company 5		arop mai mot, no. ir mai o mo quomon. Dut

	Page 118		Page 120
1	that's you know, I'm still kinda searching for	1	surprised if they came down. I don't know by how
2	the unusual event. I mean, when I talk about	2	much. And I don't know if that's considerable or
3	unusual events, I'm talking about things that	3	not.
4	cause the occurrence of these things.	4	Q Do you agree, Dr. Proctor, that UE
5	Q You don't think the spike up in	5	can, as a practical matter, hedge a lot more of
6	power prices in June and July of this year and	6	its coal purchases farther into the future than
7	the quick fall off after that to where they are	7	it can do for off-system sales volumes?
8	now, you don't think that's unusual?	8	A I know they do, and one of the
9	A Yes, we did.	9	reasons is because of load uncertainty. They
10	Q You do think that's unusual?	10	don't want they don't want to hedge too much
11	A Yes. And the staff modified on its	11	in sales going forward because they may need the
12	true up the prices for June and July. Because	12	generation to meet their load. And that
13	they saw those as unusual and too high.	13 14	generation may not be available there to meet
14 15	Q In late 2007 when UE was planning	15	their obligations under the hedge.
16	for 2008, the uncertainties and the events that	16	Q Which is why I say as a practical
17	have occurred in 2008, those are the kinds of	17	matter, UE can hedge a lot more of its coal further into the future than it can its
18	uncertainties UE faced, right?  A Yes.	18	off-system sales.
19	Q I mean, do unusual years happen? I	19	A Sure. Right. Because they know
20	mean, every year is not a normal, usual year, is	20	Q You agree with that, right?
21	it?	21	A I would agree with that, yes.
22	A Of course not. That's what you're	22	Q And the reason is the reason you
23	trying to capture with, to some degree, with	23	gave, there's native load uncertainty and UE's
24	these uncertainty things, is if every year was	24	got to make sure that it's got generations that
25	the same, we wouldn't be concerned with this	25	can show up, so to speak, to serve that load if
	Page 119		Page 121
1	issue.	1	the load varies. Right?
2	Q If unusual things if unusual	2	A That's, that's correct. And any
3	years do occur, the net fuel cost could be	3	hedge they enter into has to be met well. In
4	substantially lower or higher than UE thought	4	order for it to be a hedge, it has to be met from
5	they were going to be going into that year,	5	generations that they will have available to sell
6	right?	6	into the market.
7	A They could be higher or lower.	7	Q Staff is of the view that UE's coal
8	Q Right.	8	costs are pretty well known in 2009, and while
9	A The problem is using the word	9	not as well known, substantially known for 2010.
10	"substantially," I don't believe we have a good	10	Right?
11	measure yet of whether or not there is	11	A Yes.
12	substantial variation there.	12	Q And you may not know pardon me?
13	Q You're aware that oil, natural gas,	13	A I don't know the exact percentages
14	and power prices have greatly decreased since	14	for 2010. I think for 2009, we're probably at
15	July of this year?	15	percent.
16	A Yes.	16	Q And the costs are substantially
17	Q Are you aware that the forward	17	known in 2010, that's your understanding, is it
18	energy prices for 2009 and 2010 have also dropped	18	not?
19	substantially?	19	A Again, I don't know the exact
20	A I haven't looked at forward prices	20	percentages, but a significant amount of coal has
21	for 2009, 2010. It wouldn't surprise me.	21	already been purchased for 2010, yes.
22	Q Makes sense they probably have come	22	Q Which means we know what the cost
23	down considerably, right?	23	is going to be.
24	A Again, you use the adjective	24	A Yes.
25	"considerably." I'm not I, I wouldn't be	25	Q UE and staff both agree that on a

	Page 122		Page 124
1	normalized basis, about 40 million megawatt hours	1	Q I want you to assume that.
2	of generation each year comes from UE's coal	2	A Yes.
3	plants; is that right?	3	Q And I want you to also assume that
4	A Yes. That's right.	4	in 2010, UE's coal costs are going up about
5	Q And we talked about earlier that UE	5	percent. Okay? Mr. Neff says. Do you have that
6	normally sells about 10 million megawatt hours of	6	assumption in mind?
7	off-system sales volumes; right?	7	A Yes.
8	A Yes.	8	Q That would represent a Secretary
9	Q Agree that UE generates about four	9	megawatt hour increase in delivered coal costs in
10	times more power from its coal plants than it	10	'10 over '09. Is that right?
11	sells off-system?	11	A You're pushing me to make
12	A Yes.	12	Q I think Miss Lobb has a calculator
13	$\mathcal{E}$	13	if you'd like to borrow it.
14	megawatt hour basis, assuming volume has remained	14	A No, I have a calculator. I'm going
15	,	15	to do that. Yep, \$ rounded.
16	dollar, the realized power price on off-system	16	Q And a surrence per megawatt
17	$\mathcal{E}$ 1 ,	17	year to year doesn't sound all that unreasonable
18	power sales to offset the \$1 increase in	18 19	or unexpected to you; is that fair to say?
19	delivered coal costs? And I'm looking at both of		A Sounds pretty high. But go ahead.
20 21	those on a per megawatt basis.  A That's correct.	20 21	Q Really. Are you familiar with the
22		22	coal cost increases UE has been experiencing year to year the last few years?
23	Q Now, if Mr. Neff currently predicts a percent increase in delivered coal costs in	23	A I haven't looked at that.
24	2010 over '09 and by the way, do you have any	24	percent sounds fairly steep though.
25	reason to believe that Mr. Neff's prediction is	25	Q Well, based on the assumption that
23		23	
	Page 123		Page 125
1	substantially off?	1	Mr. Neff is right at least, if Mr. Neff is right,
2	A I have I didn't even know he had	2	then when Mr. Arora says power would have to go
3	a prediction.	3	up \$ per megawatt hour from '09 to '10 to
4	Q Well, given that given that a	4	offset a per megawatt increase in delivered
5	significant amount of the coal is hedged in 2010,	5	coal costs, he's exactly right, isn't he?
6	it seems reasonable that Mr. Neff could probably	6	A If you multiply by four, you
7	do a pretty good job predicting what the 2010	7	do get \$
8	increase in coal cost is going to be, doesn't	8	MR. DOTTHEIM: Mr. Lowery, I don't
9	that make sense?	9	believe Dr. Proctor had completed his response.
10	r · · · · · · · · · · · · · · · · · · ·	10	A I am a little I am a little
11	$\mathcal{E}$ 1	11	reluctant to use averages for the purpose of
12	$\mathcal{C}$	12	what's going on here. Average coal costs and
13		13 14	average power prices don't necessarily translate
14	5	1 <del>4</del> 15	to revenues from off-system sales.
15 16		16	And I do understand on the coal
17		17	cost side that the average cost of coal is plays an important role in determining what the
18	· •	18	actual coal costs are going to be.
19	A Again, I wasn't even aware of what his prediction was.	19	But I'm a little reluctant on the
20	Q I'm going to ask you to assume that	20	average power price increase and implying that
21	his, his rebuttal testimony says that UE's coal	21	that has to be what the power price increase is
22	costs in 2009, a delivered coal cost will be	22	in order to produce the on the average for the
23	a megawatt hour, and that's for '09, and	23	year to produce offsetting revenues. The
24	we're pretty well hedged, right?	24	markets, they just don't work that way.
25	A Okay.	25	So no, I'm not going to agree that

Page 128 Page 126 1 simply because I think it's one-fourth of UE's 1 average has to be higher or lower. 2 generation is -- goes to off-system sales, that 2 Q Dr. Proctor, you're not disputing 3 on the average you have to have a \$ 3 that UE's coal costs go up on January 1 --4 I don't think it's that simple. 4 No. I'm not --5 5 I think as a ballpark type of They don't go up a little bit in 6 estimate, it, it, it may be a back of the 6 January and a little bit more in February and a 7 7 envelope type of calculation, it may give you an little bit more in March. Their coal and 8 idea of what the increase has to be, but I'm not 8 transportation contracts are calendar year based, 9 9 going to testify that you would need exactly a and when the increases take effect, they take 10 10 average price increase. effect on January 1 and apply to the whole year. 11 11 Q (BY MR. LOWERY) But you would need Isn't that right? 12 an increase that's in that range, would you not? 12 That's correct. A 13 13 It depends. Okay? Depends on a So that \$ per megawatt hour 14 lot of different factors. And you can have 14 increase in delivered coal cost, if Mr. Neff is 15 15 natural gas price increases that outstrip this right, is going to apply to every megawatt hour 16 percent increase because on-peak prices to go up 16 generated from those coal plants in 2010. Right? 17 significantly and perhaps the off-peak prices 17 Α Yes. 18 18 don't go up as much, and how much is UE selling And if I've got four times as much O 19 19 in the off-peak versus the on-peak to get their coal generation as I have off-system sales, my 20 20 revenues from this? power price increase is going to have to be 21 21 I mean, I'm just -- I'm very substantially more than my delivered coal cost 22 22 uncomfortable with these numbers as being even increase to offset it. Is it not? 23 representative of the types of increases that 23 I told you I do not know the answer Α 24 24 would be needed in power prices. I mean, I guess to that question. 25 my answer is I don't know. 25 MR. LOWERY: Don't know. Okay. Page 127 Page 129 1 O You don't know. 1 Fair enough. Why don't we take a little break. 2 2 Yeah. It's -- I think it's more (Off the record.) 3 complex than this simple example. 3 (BY MR. LOWERY) Dr. Proctor, 4 4 Q Would you agree that clearly you're continuing our discussion we were having just 5 5 before we took a break, which I think it's about going to need a significantly greater move in 6 б power prices, average annual power prices to over, but wouldn't UE have to realize on average 7 offset that \$ 7 per megawatt hour increase in increase in its realized LMP at its delivered coal costs? 8 8 generating units to generate a \$ increase in 9 going to do it, is it? 9 coal costs? 10 10 Depends on where that I think what you're asking is if, 11 11 s going to occur on under the circumstance, that -- say their sales 12 12 January 1 of 2010, because as I think you know, stayed at 10 million? 13 13 UE's coal costs change on January 1 of each year; Q Right. And that's the assumption 14 14 isn't that right? of all my questions in this area. 15 Well, let me -- suppose they had a 15 And if we had looked at the average 16 16 decrease in a period of time when they don't do price that they received for those sales at 10 17 very many off-system sales. 17 million --18 A decrease in what, Dr. Proctor? 18 Right. 19 19 Decrease in market prices in a -- would it have to -- would that 20 20 period where they don't do -- currently don't do average revenue that they got be -- have to be 21 much in off-system sales, but later they had a 21 equal to \$ to offset the increase in costs. 22 22 significant price increase in a period of time And my answer to that is yes, just as a -- just 23 where they do do off-system sales. I'm not sure 23 as a matter of calculating the equation. I may 24 24 that the -- that you can look at the average and have misunderstood your question to be that power determine, or even make a determination that the 25 25 prices had increased by that much.

			7
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1	Q Fair enough. And my question may	1	A Yes.
2	not have been a good one. But they would have to	2	Q And 2005 was unusual. Right?
3	realize \$ more to offset that	3	A Yes.
4	megawatt hour coal cost increase, wouldn't they?	4	Q If we ignore 2005, we haven't seen
5	A That's correct if, if the standard	5	a move in power prices anywhere near between
6	you're looking at is offset, that's absolutely	6	years over this last eight, nine year period,
7	correct.	7	have we?
8	Q All right.	8	A I'm looking at them, but I don't
9	A If you want it to end up being at	9	think so. I think we had a, about a \$4 increase
10	the same place as what you started, then that's	10	between '03 and '04, but there was around a \$7
11	true.	11	increase between '02 and '03. Little more than
12	Q Have we ever observed an increase	12	\$7 increase.
13	in power prices of that magnitude over the period	13	Q A increase is pretty unusual
14	1999 to 2007?	14	based upon that historical information, correct?
15	A I haven't measured that, but in	15	I mean, I realize it happened in '05, but we have
16	terms of you're, you're going back and comparing	16	agreed I think '05 was an unusual year, haven't
17	this average revenue number to power pricing	17	we?
18 19	increases.	18	A Right. Well, I think it's an
	Q Right. I have no idea what	19 20	unusual year, yes.
20 21	well, we don't even have LMPs at UE for nine	21	Q Right. I mean, I so A But here's kind at here's where
22	years, but A Let's look at from Mr. Arora's	22	
23		23	the correlation stuff comes into play, and it's
24	table, let me see if I can find it here real	24	you know, if coal prices are increasing by that much, I would expect power prices to
25	quick.  Q Are you in his rebuttal testimony?	25	increase as well.
23	Page 131	23	
			Page 133
1	A No, I am in his direct testimony.	1	Now, is it by a factor of four, you
2	Q I'm sorry, I meant to say direct.	2	know, I don't know. I haven't done that
3	A Right. And let's look and see, I	3	analysis. But that factor of four, I don't think
4	think there was, but	4	I've ever testified that power prices have to
5	Q Are you looking for a schedule or	5	offset increases in fuel costs. I think the
6	something that has UE LMPs?	6	question is how much volatility is out there in
7	A No, I'm looking at Schedule AKA-E2.	7	that fuel.
8	Q All right.	8	So I, I don't expect power prices,
9	A And the average I'm going to do	9	and I don't think I've ever testified that power
10	this on a calculator. I'm going to subtract the	10	prices will offset, you know. So, so maybe, I
11	from the price in 2005 the price in 2004, and	11	mean, maybe that's too tough of a standard that
12	I get \$12.49.	12 13	they totally offset.
13 14	Q And I'm looking at you're	14	Q It's never been your testimony that
	looking at Schedule AKA-E2 to Mr. Arora's direct testimony. Right?	15	a dollar increase in AmerenUE's delivered coal cost is going to be offset and I'm talking
15 16	A Correct.	16	
17	Q We've seen a increase in power	17	again on a per megawatt hour basis, all right?  A Right.
18	prices of Source or more one time over that nine	18	Q And a dollar increase in UE's
19	year period, right?	19	delivered coal cost is going to be offset by a
20	A I think that's the only I, I	20	dollar increase in power prices.
21	don't that's the only place I recall seeing a	21	A No. My recollection from the last
22	large price increase.	22	case was that was that the increase in power
23	Q And they and that increase	23	prices since they would be correlated with
24	occurred because of Katrina and Rita and the coal	24	increases in coal prices would narrow the range.
25	supply disruptions that occurred in 2005. Right?	25	Q The power prices UE would have to

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1	realize at its generators to offset an increase	1	are different kinds of uncertainty and they face
2	in its delivered coal costs and we're looking	2	both, yes. I think uncertainty in daily prices
3	at the same period, all right? Just to be clear,	3	is something that occurs due to weather, supply
4	I'm looking at the same periods.	4	conditions at that time, those types of things,
5	A What periods?	5	and that those accumulate to give you what the
6	Q The realized prices UE is going to	6	average annual realized price is.
7	have to receive	7	But in terms of uncertainty, I
8	MR. DOTTHEIM: Mr. Lowery?	8	think there are two different concepts.
9	MR. LOWERY: I think I was in the	9	Q Well, Dr. Proctor, every day UE has
10	middle of a question, Mr. Dottheim.	10	volumes of off-system sales that aren't hedged
11	MR. DOTTHEIM: No, Dr. Proctor	11	that are available to sell. Right?
12	asked you a question for clarification.	12	A That's correct. That's right.
13	Q (BY MR. LOWERY) Okay, go ahead.	13	Q And the price they're going to get
14 15	A I didn't understand what you meant	14 15	for those get for those each day depends on
16	by "the same periods." I'm sorry.	16	what the price of power is that day. Right?
17	Q If I have a dollar increase per megawatt increase for coal costs in 2009, to	17	A Actually, each hour.  Q Well, actually each hour of that
18	offset that increase with off-system sales in	18	Q Well, actually each hour of that day, but just a simplified assumption though,
19	2009, I'm going to have to realize \$4 per	19	let's can we simplify it and say that, that
20	megawatt hour more at my generators, right?	20	well, that's fine.
21	A Okay. So we're talking about the	21	A No, I don't think
22	same concept.	22	Q Let's take hourly uncertainty,
23	Q Yeah.	23	then, each day, right?
24	A All right. I understand.	24	A That's right, but see, the problem
25	Q You understood my question?	25	that you're getting to is Ajay I'm sorry, Mr.
	Page 135		Page 137
1	A I understand what you meant by "the	1	Arora could have measured hourly uncertainty in
2	same." I don't know if I recall your question.	2	prices and used that to represent average annual
3	You might ask your question.	3	uncertainty. He didn't, but it's but it's a
4	Q All right. I'll try it again. If	4	different concept.
5	I have a dollar per megawatt hour increase in	5	Q But for that percent of those
6	delivered coal costs in 2009, on January 1, 2009,	6	off-system sales, the uncertainty every day when
7	that applies all year, then UE's going to have to	7	the traders are bidding that generation that they
8	realize \$4 per megawatt hour more for its	8	face is the uncertainty associated with what the
9	off-system sales in 2009 to offset that, correct?	9	hourly prices are going to be for every hour of
10	A Assuming that their generation used	10	that day. Right?
11	for off-system sales stays constant.	11	A Absolutely. Yes.
12	Q Assuming the volume of off-system	12	Q UE doesn't know with certainty what
13	sales stays the same.	13	the spot price of power will be on the next day,
14	A Yes.	14	the average daily price, the average, the hours,
15	Q All right. Thank you. Dr.	15	certainly doesn't know what the spot price of
16	Proctor, would you agree that for approximately	16	power will be on a for a given hour on a given
17	the approximately percent of UE's	17	day. Right?
18	off-system sales that UE does not hedge, that the	18	A I think I yeah, I agree.
19	actual uncertainty UE faces is uncertainty in	19	They don't know precisely. They have a pretty
20	daily power price?	20	good idea of what it's going to be, though. Now,
21	A As opposed to what? And I'm trying	21	things can happen.
22	to get a context.	22	Q Things do happen, do they not?
23	Q As opposed to annual average	23 24	A Yeah, things do happen.
24	prices.  A Lthink they face Lthink these	24 25	Q Things definitely happen, right?
25	A I think they face I think those	⊿3	A That cause prices to be different

Page 140 Page 138 1 from expectations. 1 those hedge -- you can't match those hedges. You 2 Q But when UE is sitting at the 2 can't, while you're hedging coal, hedge all of 3 3 beginning of a year and they've got your off-system sales at the same time. Am I 4 megawatt hours of off-system sales that they are 4 understanding, is that what you're asking? 5 5 expecting to sell in that year. O Yes. 6 Α Yes. 6 Α Okay. Yeah, I agree. 7 7 0 They don't have any real good idea Would you agree that any 8 what the prices are going to be for each of those 8 correlation between coal prices and power prices 9 9 365 days, do they? only explains how much of the total variance in 10 10 Yeah, I think that's what this power prices is related to the variance in coal 11 11 whole issue is about is how much uncertainty is prices? 12 around there. Yeah. I agree there's, there's 12 Oh, my goodness. Repeat the 13 13 uncertainty. Yes. question. I'm trying to picture. 14 14 MR. LOWERY: Could you read it Q Let me ask you this. Let's assume 15 15 that UE could not hedge any of its off-system back, please? 16 sales. I realize that UE does typically hedge 16 THE REPORTER: "Would you agree 17 17 percent as we've talked about, but assume that that any correlation between coal prices and 18 18 power prices only explains how much of the total they couldn't do that for whatever reason. Loads 19 19 are way too uncertain, I don't know, just doesn't variance in power prices is related to the 20 20 variance in coal prices?" really matter, but just assume they couldn't do 21 21 it. Okay? A I'm sorry, I'm not --22 22 Α Yes. (BY MR. LOWERY) If there is -- I'm O 23 0 UE would face the kind of 23 sorry, go ahead. 24 24 I've got the correlation -- let's uncertainty that we're talking about for every 25 megawatt hour of off-system sales under that 25 say you've got a correlation between coal prices Page 139 Page 141 assumption. Right? 1 and power prices. Okay? And if, if you -- let's 1 2 2 Correct. suppose it's a perfect correlation. 3 So given that UE only sells forward 3 And when you talk about the 4 percent, UE faces that uncertainty for 4 variance in the coal prices, I think you're about 5 5 about percent of its off-system sales volumes. talking about the deviations that can occur in 6 Doesn't it? 6 the coal prices from the mean, how big of a 7 7 variance there is there. And if you have perfect A Yes. 8 8 correlation, that then translates to how much Even if one assumed that there's 9 some correlation between coal prices and spot 9 variance you would then see in electric prices. 10 10 power prices on a going forward basis, since UE And I'm not sure if that's what you're asking, 11 11 hedges coal one to five years out but power only though. 12 one month to one year out, even for the power 12 Well, you don't think there's a O 13 perfect correlation. Correct? 13 that's hedged that correlation starts to break 14 14 down, does it not? 15 That's a complex question. Let me 15 All right. What I'm asking, and 16 16 try to break it apart. I think what you're apparently am not doing a very good job, which 17 17 saying -- or let me tell you what I would agree may not be your fault, but if there's a 18 to. That when you -- UE hedges coal costs 18 correlation between coal and power, imperfect 19 significantly ahead of the time that they hedge 19 though it may be, a movement in power prices that 20 20 their sales, and they're somewhat restricted on occurs because of a movement in coal prices, 21 what they can hedge on their sales because of the 21 given that correlation, that correlation only 22 22 uncertainty about their forecasted load -explains how much of the total movement in the 23 23 All right, I'm following you so power prices is caused by the movement in coal 24 24 far. prices. It doesn't explain how much of the 25 25 A So you can't -- you can't match movement in power prices is caused by other

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1	variables that affect power.	1	
2	A That's correct.	2	A Right.
3	Q That was a better question,	3	Q isn't it necessarily the case
4	apparently.	4	that the correlation of power prices to each of
5	A Yeah. I understood that one.	5	those factors may is necessarily going to be
6	Q Any such correlation with coal	6	small?
7	doesn't explain movement in power price due to	7	A Is necessarily going to be small?
8	uncertainty in loads. Right?	8	Q Yes.
9	A Ökay.	9	A No. That's not the case. They
10	Q Correct?	10	they can be highly correlated to several of those
11	A Correct.	11	factors. Okay? But I, I think what you're
12	Q It doesn't explain movements in	12	asking is if you don't take the movement, if you
13	power prices because of unplanned outages that	13	have those high correlations and you don't take
14		14	the movement, if you're just looking at the
15	A That's correct.	15	movement in one of them and not in the others,
16	Q It doesn't explain movement in	16	could you could you use that as a as a good
17	1 1	17	predictor, and the answer is probably no because
18	1	18	you haven't taken into account the movements of
19		19	all the factors that tend to come into play.
20	Q It wouldn't explain movement in	20	Q Fair enough. All right. Let's
21	power prices due to congestion or outages on the	21	talk about another subject a minute. We already
22	transmission system. Right?	22	I think talked about and you agree that it's
23	A That's correct.	23	tough for UE to predict its gas burn for
24	Q It wouldn't explain changes in	24	generation going into a calendar very well,
25	power prices due to change in economic	25	right?
	Page 143		Page 145
1	conditions. Right?	1	A Yes.
2	A Not sure I agree with that one.	2	Q And one of the reasons UE can't
3	Q Why? Because if economic	3	predict its gas burn very well is because the
4	conditions change, they're going to affect coal	4	MISO, M-I-S-O all caps, dispatches the gas units
5	in the same way? Is that what you're getting at?	5	for reliability, not economic reasons. Right?
6	A Yes.	6	A Yes.
7	Q What if they don't?	7	Q UE doesn't know when that's going
8	A Well, there's always a combination	8	to happen or how often. Right?
9	of impact from the correlation that we're talking	9	A That's correct.
10	about in residual impacts from other things, and	10	Q And doesn't know how long the PTDs
11	<i>y y y y y y y y y y</i>	11	are going to have to run when that happens.
12		12	Right?
13	$\mathcal{C}$	13	A That's correct.
14	statistics of it, but if you run a regression on	14	Q So UE's limited on the its
15 16		15	ability to in terms of the volume of gas for
16 17	2	16	electricity generation that it can hedge going
18	· ·	17 18	into a particular year; is that correct?  A That's correct.
19		18 19	Q Which means that when UE turns on a
20	unexplained. They are looked at as random	20	•
21	errors, okay, but in fact you are exactly right, all of these other elements are what are causing	21	CTG, it's often buying the gas to run it in the daily spot gas market; right?
22	those. They are unexplained elements by the	22	A That's my understanding.
23	correlation between the two variables.	23	Q Which subjects UE to substantial
24	Q If I've got eight or ten different	24	daily gas spot market uncertainty. Correct?
25	factors that might explain power price movements	25	A Correct.
	ractors that implic explain power price movements		11 COHOCK

Page 148 Page 146 1 Q Dr. Proctor, I am assuming you've 1 A No. Even if it's highly liquid 2 never traded power. 2 market, any time -- any time you've got a, an 3 3 average settlement price that occurs, you've got A You are correct. 4 4 a whole distribution of what people think the And that you've never been 5 responsible for risk management of a utility's 5 expectation is going to be. What their 6 generation portfolio? б individual expectations are. 7 7 Α You're correct. For example, if I really expect a 8 Would you agree that forward power 8 price of, let's say, \$40 at a future point in 9 9 prices for particular delivery time reflect the time and I am a seller, if that's my expectation, 10 10 market's expectation for what the spot price of I probably won't enter into a forward contract 11 11 power will be as of that delivery time? unless I get at least \$40, and I may enter into a 12 Ask the question again. I'm trying 12 contract where I am able to sell for \$45. 13 13 And even though my expectation is to --14 14 that the price will only be 40 bucks, I am O Sure. 15 15 willing to enter into that trade at \$45 because I think I lost the assumption. Α 16 16 Would you agree that forward power at least in my mind I am making a \$5 profit over 17 17 prices for a particular delivery time reflect the what I would make if I didn't enter into that 18 market's expectation for what the spot price of 18 contract. 19 19 power will be as of that delivery time? Q Would you tell me again, then, what 20 20 If we had a highly liquid market you believe forward power prices represent? 21 21 with lots of trades occurring on a daily basis, I They represent an average of what 22 22 would agree. I'd be much more inclined to agree -- let's see if I can say it again. An average 23 if we were talking about futures markets rather 23 of the maximum price that buyers are willing to 24 24 pay at that -- for the product at that delivery than forward markets. What I would say is that the 25 25 date, and the minimum that sellers are willing to Page 149 Page 147 1 average trade price that occurs on a given day in 1 take for that product at that delivery point in 2 2 a forward market represents the -- a settlement the future. 3 between sellers and buyers. Those folks that 3 All right. So if I -- if I'm -- if O 4 actually enter into contracts at that time as to 4 I'm transacting for power deliveries next June, 5 the maximum that the buyers were willing to pay 5 if I'm transacting today for power deliveries 6 б for a forward contract and the minimum that next June, okay? 7 7 sellers were willing to take for such a contract. A Yes. 8 8 Whether or not that represents the There is 500 of us transacting at a 9 market's expectations about what the spot price 9 particular location for power deliveries next 10 10 is going to be I think is another -- it goes a June. 11 11 step further than what I just described. Α Right. 12 Five hundred buyers and 500 12 Q Is the synergy market a highly liquid market for electricity? 13 13 sellers, let's say there's a thousand of us. 14 14 A I don't know. We're going to average what the 500 -- the 15 0 You don't know if there are a lot 15 maximum the 500 buyers are willing to pay and 16 16 of transactions, a lot of traders transacting at we're going to average the minimum the -- the 500 17 17 buyers are willing to pay and the -- average what the synergy hub on a daily basis? 18 A I don't know. I haven't looked at 18 the 500 sellers are willing to take, we're going 19 19 to average that and we're going to get a forward that data. 20 20 If there are, then would you agree price for June. Right? 21 that the forward power price at synergy for a 21 A No. What we're going to do is 22 particular delivery time reflects all of those 22 allow those 500 people to interact and come up 23 traders' collective expectations for what the 23 with trades. 24 24 spot power price will be at synergy at that All right. So we're going to end delivery time? 25 up with 500 trades today for delivery in June. 25

Page 152 Page 150 associated with the uncertainty in those prices. 1 Yeah. If everybody can find 1 2 someone they can trade with, it'll be 500, yeah. 2 I'm going to answer I don't know. 3 3 Q All right. Q Okay. 4 4 I don't know what "adjusted for the Α And then we're going to average --Α 5 5 everybody reports the price that they traded at risk" means. 6 and we calculate the average of that trade price 6 I asked you if you agreed with the 7 7 following statement. Forward prices are for -- that occurred that day. 8 All right. And that's forward 8 expectations of future commodity prices adjusted 9 9 price for next June. Right? for the risk associated with the uncertainty in 10 10 Yes. those prices. And is your answer "I don't know"? Α 11 11 Those participants and that Α Yes. My answer is I don't know. 12 transacting that took place on this day, today, 12 And it's "I don't know" because you 13 don't know what "adjusted for the risk associated 13 that we were just talking about, that's a market, 14 14 with the uncertainty" means? right? 15 15 A Yes. I don't know what you meant Α Yes. 16 O 16 by that particular phrase, so I don't know the So I am not understanding why the 17 17 forward price for next June, as of today, which answer to the question. 18 is an average of all the transactions conducted 18 Q Let me ask you if you agree with 19 19 in that market, why it's not that market's this statement. Volatility is a measure of the 20 20 expectation of what the price will be next June. uncertainty in a future commodity price at a 21 21 Are you asking me to explain why particular time, and can be estimated from the vou don't understand? I don't -- I can't do 22 22 prices of traded options or from model fits to 23 23 spot or forward price changes over time. that 24 24 My goodness. Q I guess I'm -- right. I'm not 25 understanding, so where am I wrong? 25 Let me break it down. Page 151 Page 153 1 Well, I mean, there's lots of --1 Yes. Break it down. Α 2 2 there's lots of different expectations reflected Do you agree that volatility is a 3 in those 500 sellers and 500 buyers about what 3 measure of the uncertainty in a future commodity 4 the price is going to be. It's not like a single 4 price at a particular time? 5 expectation. Now, if what you -- what -- and, 5 A I agree that volatility -- I would 6 and there are lots of expectations by folks that 6 have said it the other way around. That 7 7 uncertainty is a measure of volatility. But I don't enter into contracts that particular day. 8 8 guess I -- that's okay. What is the issue about Now, if they see the contract price 9 being lower than their expectations, they may get 9 a particular point in time? I don't understand 10 10 into that market tomorrow and try to make some that. 11 11 trades. Okay? Would you agree that volatility is 12 a measure of the uncertainty in a future 12 I think that's really kind of where you're going is does -- do -- does the -- do the 13 13 commodity price? 14 14 forward prices tend to converge to what the spot In a future commodity price. No, I 15 market price is, and my answer is yes. 15 actually have thought of volatility in terms of 16 But on any particular day does that 16 spot prices, not future prices, but yeah, you 17 17 could -- you could talk about volatility with represent the -- everybody in the market's 18 expectation about what the price is, and the 18 respect to future prices as well as spot prices. 19 That's where I'm struggling a 19 answer is no. 20 20 O Let me ask this question, all little bit with this statement, because 21 right? I think that helped. 21 volatility is a general concept and it can be 22 22 applied. So is volatility in future prices a Α Okav. 23 23 measure of uncertainty that occurs in those Would you agree with the following 24 future prices at a particular point in time, I 24 statement. Forward prices are expectations of future commodity prices adjusted for the risk 25 25 would agree with that. I'm not trying to parse

			1
	Page 154		Page 156
1	words	1	Q Well, what if I'm talking about a
2	Q No, no, I don't believe that you	2	calendar year on peak product.
3	are.	3	A Okay.
4	A I'm just trying to grab ahold of	4	Q Got a lot of traders trading that
5	the concept in terms of the words that are being	5	product, don't we?
6	used.	6	A Probably more so than around the
7	Q I mean, there's no uncertainty in	7	clock product.
8	prices that have already happened. Right? I	8	Q Are you familiar with Platts?
9	mean, we know what power prices have been for the	9	A Yes.
10	last six months, we can look them up. Right?	10	Q Platts Megawatt Daily?
11	A Yeah, but we can certainly talk	11	A I've certainly heard of it.
12	about prices that have already occurred and	12	Q Are you aware that Platts Megawatt
13	whether or not they were volatile.	13	Daily publishes an on-peak calendar year 2009
14	Q True. So volatility can be a	14	forward price?
15	measure of the uncertainty in a future commodity	15	A If you say they do, that's fine. I
16	price?	16	am not familiar with, with the various things
17	A Sure.	17	that Platts publishes on a regular basis.
18	Q It can also be the measure of	18	Q If they do, do you think that power
19	uncertainty that was observed in a past set of	19	traders, when they're making decisions about
20	prices.	20	on-peak power they would have available in 2009,
21	A That's correct.	21	how much to sell and at what price they would
22	Q Is that what you're really getting	22	sell it, do you think they would consider
23	at?	23	possible changes in that forward price in making
24	A Yes.	24	those decisions?
25	Q So it can be a measure of the	25	A Oh, yeah. Sure.
	Page 155		Page 157
1	uncertainty in a future commodity price, just	1	Q Do you disagree with the fact that
2	trying to make sure the record is clear. Do you	2	companies that sell power in wholesale
3	agree with that?	3	electricity markets, or for that matter that sell
4	A Yes. I agree with that.	4	them via bilateral contracts or both, commonly
5	Q Now I'm reading you. We can also	5	estimate the uncertainty in future spot power
6	measure volatility retroactively.	6	prices by quantifying how much the forward price
7	A Yes.	7	for a forecasted delivery date is likely to
8	Q All right. Do you know if energy	8	change between the time of the forecast and the
9	traders who are making decisions today about	9	date of delivery?
10	whether to sell power they have available for	10	A That would not surprise me at all.
11	delivery in 2009 and about how much of that power	11	That sounds very familiar to what I described in
12	to sell and at what price they should sell it, do	12	my testimony as in terms of how much a price
13	you know if they consider possible changes in the	13	changes between a fixed point in time and the
14	forward price for power in calendar year 2009	14	delivery point.
15	when they make those decisions?	15	Q In other words, when they are
16	A Well, I suspect it depends on the	16	making decisions on when to hedge a portion of
17	product that they're trading.	17	their electricity volumes and at what price, they
18	Q What if they're trading a calendar	18	estimate the uncertainty in future spot power
19	year 2009 product?	19	prices by quantifying how much the forward price
20	A I don't know how frequently that	20	for a forecasted delivery date is likely to
21	particular product is traded. If you're talking	21	change between the time of the forecast and the
22	about around the clock, which is the average for	22	date of delivery. Right?
23	all the hours in that period, I don't know how,	23	A Yes.
24	how many traders are involved in trading that	24	Q And this includes merchant
25	product.	25	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  A Marketing is involved in that kind of those kinds of trades, yes.  A I probably, but I don't know that for a fact.  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 there are an alwaying the likelihood of changes in forward prices, is standard practice for power traders in the trades were alking about the portion that's bedged, a A Okay.  A There theI would agree that the distribution of around forward price changes between the time that you're wanting to enter other trades were into the contract and the delivery after of the contract and the delivery point of uncertainty amerchant generator faces. Right?  You would agree with for that portion that 'UE hedges for its off-system sales, same into the contract and the delivery point of uncertainty amerchant generator faces. Right?  You would agree with for that portion that 'UE hedges for its off-system sales, same with of uncertainty and off uncertainty are merchant generator faces. Right?  You would agree with the form of uncertainty amerchant generator faces. Right?  You would agree with that 'You would agree with the distribution of around forward price changes between the time that you're wanting to enter into the contract and the delivery portion that UE hedges for its off-system sales, same with of uncertainty and uncertainty in the spect to the remainder of its off-system sales				1
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 1 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 1 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 in stume thing, the same kind of uncertainty are same thing, the same kind of uncertainty are given by that UE faces. Q You don't know whether it is?  A I don't I can't I don't I don't I don't know if it is. I don't have the connection between the situe. Q Do you have some reason to believe UE face as a trader in a futures market or forwards market is different than the uncertainty that you face in a futures market or forwards market is different than the uncertainty that you face in a futures market or forwards market is different than the uncertainty that you face as a trader in a futures market or forwards market is different than the uncertainty that you face in a futures market or forwards market is different than the uncertainty that you face in the future off-system sales. UE has, UE is simply trading power in the power market just like these other traders we'te talking about, aren't they?  Q Well, I'm nonly talking about govern the power market just like these other traders we'te talking about, aren't they? Q Well		Page 158		Page 160
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 1 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 1 suspect it is. Q Should it not then also be appropriate for measuring the uncertainty around future prices. Future price changes between the time that you're wanting to enter in that UE hedges for its off-system sales. Same kind of uncertainty and off uncertainty.  A 1 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 the time that you're wanting to enter in that UE hedges for its off-system sales. Same kind of uncertainty?  A Well, help me out. Jeach in the future prices - future price changes between the time that you're wanting to enter in that UE hedges for its off-system sales. Same kind of uncertainty?  A Well, help me out. Jeach in the future prices - future price changes between the time that you're wanting to enter in that UE hedges for its off-system sales. Same kind of uncertainty?  A 1 don't know if, if the uncertainty around future prices - future price changes between the time that you're wanting to enter in the future prices, is standard practice for power traders we're talking about a face in the future prices. Future price changes between the time that you're and the delivery point in that the contract and the delivery point of that UE hedges for its off-system sales. Same kind of uncertainty?  A Vell, help me out. Jeach in the future prices is standard practice for power in the pour to five yestem sales in the future prices, it standard practice for power in the pour	1	whose profits depend entirely on how good a job	1	Q Let's talk about the portion that's
4 Marketing is involved in that kind of — those 5 kinds of trades, yes. 6 Q And any other merchant generator. 7 Right? 8 A I — probably, but I don't know 9 that for a fact. 9 Q So for that — for the portion of forecasting uncertainty, in other words, 11 of forecasting uncertainty, in other words, 12 analyzing the likelihood of changes in forward 13 prices, is standard practice for power traders in 1 14 the real world? 15 A I suspect it is. 16 Q Should it not then also be 16 appropriate for measuring the uncertainty related 17 appropriate for measuring the uncertainty related 18 to UE's future off-system sales? 19 A Well, help me out. I don't know, I 10 don't know if, if the uncertainty around future 21 prices — future price changes between a given 22 point in time and a delivery point in the future 23 is the same thing, the same kind of uncertainty 24 that UE faces. 25 Q You don't know whether it is? 26 Page 159 27 A No, but the uncertainty than everybody 28 face as a trader in a futures market or forwards market is different than the uncertainty that you 18 face as a trader in a futures market or forwards market is different than the uncertainty that you 19 face in net fuel expense. 10 Q Well. I'm only talking about 11 off-system sales ue land, gabout with respect to the remains unhedged? 11 Q Well. I'm only talking about 12 off-system sales ue land, it is in the process that it would be fore in a futures market or forwards market is different that you testimony? 11 A Yes. 12 Q Dr. Proctor, are you aware that off-system sales are an item that's difficult to five year out a future in the future off-system sales are an item that's difficult to five year out a future in the future off-system sales are an item that's difficult to five year out a future future in the future off-system sales are an item that's difficult to five year out a future futur	2	they do in making those sales, right?	2	
5 kinds of trades, yes. 6 Q And any other merchant generator. 7 Right? 8 A I probably, but I don't know but for a fact. 10 Q Is it fair to say that this method of of cassting uncertainty, in other words, analyzing the likelihood of changes in forward the time that you're wanting to enter into the contract and the delivery date of the contract size with might of uncertainty a marchant generator faces. Right? 15 A I suspect it is. 16 Q Should it not then also be appropriate for measuring the uncertainty related to UE's future off-system sales? 17 A Well, help me out. I don't know, I don't know if if the uncertainty around future prices – future price changes between the time that you're wanting to enter into the contract and the delivery date of the contract is very important. 19 Q Should it not then also be appropriate for measuring the uncertainty related to UE's future off-system sales had of uncertainty a merchant generator faces. Right? 14 A Well, help me out. I don't know, I don't know if if the uncertainty around future prices – future price changes between the time that you're wanting to enter into the contract and the delivery date of the contract and the delivery date of the contract and the delivery date of the contract is very important.  Q So for that – for that portion that prehe and of uncertainty a merchant generator faces. Right?  A A Subsolutely. Yeah.  Q When 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?  18 A I don't – I can't – I don't – I don't know if it is. I don't know whether it is?  19 A Yes.  Q Do you have some reason to believe the don't know whether it is.  10 Q Well, I'm only talking about and the uncertainty that you face in net fuel expense.  11 A I don't encant — I don't — I don't know har	3	A Well, I'm sure Ameren Energy	3	A Okay.
5 kinds of trades, yes. 6 Q And any other merchant generator. 7 Right? 8 A I probably, but I don't know but for a fact. 10 Q Is it fair to say that this method of of cassting uncertainty, in other words, analyzing the likelihood of changes in forward the time that you're wanting to enter into the contract and the delivery date of the contract size with might of uncertainty a marchant generator faces. Right? 15 A I suspect it is. 16 Q Should it not then also be appropriate for measuring the uncertainty related to UE's future off-system sales? 17 A Well, help me out. I don't know, I don't know if if the uncertainty around future prices – future price changes between the time that you're wanting to enter into the contract and the delivery date of the contract is very important. 19 Q Should it not then also be appropriate for measuring the uncertainty related to UE's future off-system sales had of uncertainty a merchant generator faces. Right? 14 A Well, help me out. I don't know, I don't know if if the uncertainty around future prices – future price changes between the time that you're wanting to enter into the contract and the delivery date of the contract and the delivery date of the contract and the delivery date of the contract is very important.  Q So for that – for that portion that prehe and of uncertainty a merchant generator faces. Right?  A A Subsolutely. Yeah.  Q When 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?  18 A I don't – I can't – I don't – I don't know if it is. I don't know whether it is?  19 A Yes.  Q Do you have some reason to believe the don't know whether it is.  10 Q Well, I'm only talking about and the uncertainty that you face in net fuel expense.  11 A I don't encant — I don't — I don't know har	4	Marketing is involved in that kind of those	4	Q Talk about the hedged portion.
6 Q And any other merchant generator. 7 Right? 8 A I probably, but I don't know that for a fact. 9 Q Is it fair to say that this method of forecasting uncertainty, in other words, analyzing the likelihood of changes in forward 12 analyzing the likelihood of changes in forward 13 prices, is standard practice for power traders in 14 the real world? 15 A I suspect it is. 16 Q Should it not then also be appropriate for measuring the uncertainty related to UE's future off-system sales? 17 don't know if, if the uncertainty around future prices - future price changes between a given 2 point in time and a delivery point in the future 23 is the same thing, the same kind of uncertainty 23 that UE faces. 18 Q You don't know whether it is? 19 A I don't - I can't - I don't know if it is. I don't have the connection 2 between those two. 20 Q Do you have some reason to believe 5 UE faces the ifferent uncertainty than everybody else? 21 Q Well, I'm only talking about a forf-system sales in each fuel expense. 22 Q Well, I'm only talking about that protion that UE hedges for its off-system sales, same kind of uncertainty an merchant generator faces. Right? You would agree with that? 22 A You would agree with that? 23 A Yes. Q UE might or might not face the same prices - future price changes between a given 2 point in time and a delivery point in the future 2 point in time and a delivery point in the future 2 point in time and a delivery point in the future 2 point in time and a delivery point in the future 2 point in time and a delivery point in the future 2 point in time and a delivery point in the future 2 point in time and a delivery point in the future 2 point in time and a delivery point in the future 2 point in time and a delivery point in the future 3 point in time and a delivery point in the future 3 point in time and a delivery point in the future 4 point in time and a delivery point in the future 4 point in time and a delivery point in the future 4 point in time and a delivery point in time and a delivery point in t	5		5	A There the I would agree that the
A 1—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 prices - future price changes between a given point in time and a delivery point in the future sis that UE faces. Q You don't know whether it is?  Page 159  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.  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.  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 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 as a trader in a futures market or forwards market is different than the uncertainty that you face as a trader in a futures market or forwards market is different than the uncertainty that you face 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 A rey ou duffing about, aren't they? A A rey ou don't know whether UE faces.  Q Well - A restanting the keep the don't know the delivery date of the contract is very important.  Q Where we are breaking down is will don't know the there that gess the same kind of uncertainty with respect to the readers were talking about, aren't they? A restanting the keep the don't know the traders were talking about, aren't they? A restanting the keep the don't know the traders w	6	Q And any other merchant generator.	6	distribution of around forward price changes
10	7	Right?	7	between the time that you're wanting to enter
10   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?	8	A I probably, but I don't know	8	into the contract and the delivery date of the
that UE faces the same kind of uncertainty with respect to the remainder of its off-system sales, same with that?  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 is the same thing, the same kind of uncertainty is the same kind of uncertainty; is that your testimony?  A I don't I can't — I don't I adon't know whether it is?  Page 159  A I don't — I can't — I don't I adon't know if it is. I don't have the connection between those two.  Q You 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 that you face as a trader in a futures market or forwards market is different than 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 Do you have some reason to believe the formation in the power market just like these off-system sales right now, though, right?  A Yes.  Q Do you have some reason to believe the formation in the power market just like these off-system sales right now, though, right?  A Yes.  Q Ur mere we are breaking down is you don't know whether U	9		9	contract is very important.
analyzing the likelihood of changes in forward the read 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 with respect to the remainder of its off-system sales are an item that's difficult to page 159  A I don't know wif, 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 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 off-system sales are an item that's difficult to off-system sales fight now, though, right?  A No, but the uncertainty that you face as a trader in a futures market or forwards market is different 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 right now, though, right?  A A Pes.  Q Does it make sense that it would be for several years out given that contracts are available 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 genetation?  A Well, I'm not  Q Well  A I'm confused.  Q Let's talk about each of them  A I'm confused.  A I'm confused in the future tale in the future lass into ledging their natural gas side.  The last time I was involved in it, I think  A Time the me		Q Is it fair to say that this method	10	Q So for that for that portion
12 analyzing the likelihood of changes in forward the real world?		of forecasting uncertainty, in other words,	11	that UE hedges for its off-system sales, same
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 at that UE faces.  Q 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 Do you don't know whether it is?  Page 159  A I don't I can't I don't I  don't know if, if the 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  Page 161  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 costs through a multi-year process that procures natural gas business and hedging their purchases, yeah.  Q Do well, I'm only talking about and the LDC  bousiness is a lot easier to predict than gas generation?  A Yes.  Q Does it make sense that it would be for several years out and the LDC  business is a lot easier to predict than gas generation?  A Well, I'm not  A I'm confused.  Q Well  A I'm confused.  Q Let's talk about each of them	12	analyzing the likelihood of changes in forward	12	
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5 UE faces different uncertainty than everybody 6 else? 7 A No, but the uncertainty that you 8 face as a trader in a futures market or forwards 9 market is different than the uncertainty that you 10 face in net fuel expense. 11 Q Well, I'm only talking about 12 off-system sales right now, though, right? 13 A Yes. 14 Q I mean, for the 10 million megawatt 15 hours of off-system sales UE has, UE is simply 16 trading power in the power market just like these 17 other traders we're talking about, aren't they? 18 A Are you talking about with respect 19 to UE entering into hedging, or are you talking 20 about that portion that remains unhedged? 21 Q Well 22 A I'm confused. 23 Q Let's talk about each of them 25 natural gas costs through a multi-year process 6 that procures natural gas for up to four to five 7 years out? 8 A Yes. I didn't know how far out. I 9 knew they were involved in hedging their natural gas for their natural gas business and hedging 10 gas for their natural gas business and hedging 11 their purchases, yeah. 12 Q Does it make sense that it would be 13 a Yes. 14 available for several years out given that contracts are 14 available for several years out and the LDC 15 business is a lot easier to predict than gas 16 generation? 17 A Well, I'm not 18 A Are you talking about with respect 19 A It's been it's been too long 20 since I've been involved in the natural gas side. 21 The last time I was involved in it, I think 22 AmerenUE and others were about one or two years 23 into hedging programs. So and at that time			l .	
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		A I'm confused.		
24 separately 24 they I think they were just hedging for the		Q Let's talk about each of them		
	24	separately.	24	they I think they were just hedging for the
25 A Okay. 25 year ahead.	25	A Okay.	25	year ahead.

	Page 162		Page 164
1	Q Okay.	1	A Is that what you mean by similar
2	A If they've gone to multiple years	2	uncertainty?
3	out, I was not aware of that. But I haven't been	3	Q Yes. That's what I mean.
4	following it that closely.	4	A Oh, okay. Yeah, I think they both
5	Q Fair enough. Dr. Proctor, would	5	have a high degree of uncertainty when compared
6	you agree that the spot price uncertainty of	6	to things that are fairly stable.
7	natural gas and power is fairly similar?	7	Q That's fair enough. Dr. Proctor,
8	A The spot power. Say that again?	8	if a utility buys 10 million megawatt hours of
9	Q Would you agree that the spot price	9	power in the spot market, is the uncertainty
10	uncertainty of natural gas and power is fairly	10	related to those purchased costs the same as the
11	similar?	11	uncertainty in sales revenue if a utility sells
12	A Well, I think they're I think	12	10 million megawatt hours of power in the same
13	they're highly correlated. Does that translate	13	spot market?
14	into similar uncertainties, um, it means that the	14	A I don't know the perspective this
15	uncertainty in one is related to the uncertainty	15	question is coming from and I'm trying to figure
16	in the other. I don't know what similar means.	16	that out. I mean, at one level the uncertainty
17	Are you talking about the a similar	17	would be the same, that is, that the distribution
18	Q If I measure the I'm sorry?	18	the uncertainty distribution about the forward
19	A A similar uncertainty factor, a	19	price would be the same for both, whether you
20	similar standard deviation, what?	20	were purchasing or selling. Is that your
21	Q Yeah, if I measured the uncertainty	21	question?
22	in spot natural gas prices and I separately	22	Q My question was my question. I
23	measured the uncertainty in spot power prices,	23	honestly thought it was a simple question. If I
24	would I get similar levels of uncertainty?	24	got 10 million megawatt hours of power that I
25	A I think the standard deviations	25	need to buy in the spot power market, so I'm a
	Page 163		Page 165
1	would be different. I think the means would be	1	buyer and I need 10 million megawatt hours, and
2	different, and therefore, I think the uncertainty	2	I'm a seller and I got 10 million megawatt hours
3	factors could be different.	3	to sell, the price I may have to buy at tomorrow
4	Q Let me ask you this. Would you	4	or the next day, next week, or next month, or the
5	consider spot natural gas prices to be moderately	5	price I can sell at tomorrow, next day, next
6	uncertain, highly uncertain? Choose your	6	week, next month, I got the same uncertainty on
7	adjective.	7	both sides, don't I?
8	A The problem with choosing the	8	A Probably. You're facing the same
9	adjectives is it's making an assumption about	9	uncertainty in distribution on both on whether
10	something that I am measuring it against. It's	10	the price goes up or down. Both the buyer and
11	highly uncertain when I'm measuring it against,	11	the seller are facing the same the same
12	say, the prices of automobiles.	12	uncertainty as to whether the price goes up or
13	Q Okay.	13	goes down.
14	A It's it may be moderately	14	Q If an electric utility relies on
15	uncertain when I'm measuring it against the price	15	purchased power to supply, let's say, for
16	of gasoline.	16	example, about half of its native load, would you
17	Q Okay. If I measure so natural	17	think that a significant portion of those
18	gas spot prices are highly uncertain when I	18	purchased power needs could be hedged several
19	measure it against automobiles. Are power prices	19	years out just like UE can hedge its gas for
20	highly uncertain if I measure those against	20	its gas delivery business several years out,
21	automobiles?	21	assuming UE can do that?
22	A I would suspect so.	22	A I don't know.
23	Q Okay. So when measured against the	23	Q You don't know, you don't know what
24	same benchmark, both power and natural gas spot	24	hedges are available for power or for gas for
25	prices are highly uncertain.	25	that matter; is that your testimony?

Page 168 Page 166 1 A Well, I'm not -- I don't know what, 1 lots of ways you can hedge. One of the ways you 2 what hedges are available for going several years 2 can hedge is in the futures market that you're 3 3 out for hedging purchased power. You know, I talking about. Another way you can hedge is to 4 don't know what the products are in the market 4 enter into a contract for basically generation. 5 5 going several years out. Right. Lock up a bilateral 6 If -- you know, there's a question 6 contract for a base load unit for a period of 7 7 between can you hedge, of course you can hedge. time at a fixed price to remove that spot price 8 Okay? You can buy, you can buy several years 8 uncertainty. Right? 9 9 out. But I don't think that's what you're trying Right. So I guess it kind of falls 10 10 to get at in your question. in the same category. I would be encouraging 11 11 Yeah, I can always -- if the them to find -- look at all the alternative ways 12 products are there, I can buy them several years 12 to hedge against that -- paying that -- being 13 13 out. I don't know if the products are there exposed to the spot price. 14 several years out or not. Do -- is it a good 14 Q Do you believe that if a Missouri 15 15 practice to do that is another question. utility did supply 40 percent of its native load 16 Dr. Proctor, given the uncertainty 16 through spot power purchases, that that would be 17 17 in spot power markets, do you think it would be a a reason that would support its receiving an FAC 18 good idea if utilities in Missouri who rely on 18 since it faces all of this spot power 19 19 spot power purchases -- for utilities in Missouri uncertainty? 20 20 to rely on spot power purchases to supply, for Well, in the short run, it might Α 21 21 example, at 40 percent of their native load? be. But I would certainly from a longer 22 22 A You made it sound like a question, perspective want to encourage that utility to not 23 but I'm not sure I got the question. Is it a 23 continue doing that. Do you believe it's good public 24 good practice for them to hedge it; is that -- 40 24 25 percent? 25 policy to grant FACs only to utilities who have Page 169 Page 167 1 No. Let me try it again. Given 1 done a less than optimal job of hedging 2 2 that there's uncertainty in spot power markets, uncertainty while not allowing FACs [sic] who do 3 and we agree there's uncertainty, right? 3 a good job of hedging uncertainty to use an FAC? 4 4 A No, I don't think that's good Α Right. 5 5 0 Do you believe it would be a good policy. 6 б idea for a utility in Missouri to rely on spot Have you analyzed how the 7 7 power purchases to supply, let's say, for volatility of coal spot or dispatch prices 8 8 example, 40 percent of that utility's native compares to the volatility of spot prices for 9 load? 9 natural gas and power? 10 10 I did in the previous case, and I Let me put it this way. If a 11 11 utility was in that situation where they were think in this particular case the only 12 12 depending on purchases to supply 40 percent of relationships I have looked at are the ones that 13 13 their native load, I would encourage them to you see in my rebuttal testimony. I think it was 14 14 hedge rather than buy in the spot market. That's Schedule 2A and 2B. But I haven't looked at 15 one question, and I think the answer is yeah, I 15 daily, monthly, weekly, I just looked at this 16 16 would probably encourage them to hedge. annual average price. 17 17 Another question is do I think it's AmerenUE witnesses in this and the 18 a good idea that they -- that they're needing 40 18 last case have provided evidence that the 19 19 percent of their native load from power purchases volatility of spot coal prices is now similar to 20 20 and should they do something about that, my the volatility of spot power and natural gas answer is 40 percent is a pretty high number. 21 21 prices. Do you have any reason or basis to 22 22 0 And that that might not be such a disagree with that? 23 23 good idea? Α No, I don't disagree with that. 24 24 Might not be a very good idea. Now, if the spot prices for coal,

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natural gas, and power are all very similar,

25

They probably need to look for -- see, there's

25

	Page 170		Page 172
1	isn't it true that the volatility of the	1	the country where a utility was forced to
2	utility's fuel costs should be a function of its	2	discontinue its fuel adjustment clause because it
3	hedging/contracting program, not a function of	3	was expected to file frequent rate cases?
4	its mix of coal, natural gas, or purchase power?	4	A I'm not aware of what's
5		5	
6	1 8	6	generally what goes on in regulation with respect
7	questions to follow. Can you parse that out a	7	to fuel adjustment clauses across the country.
	little bit? Or put it out in pieces?		Q Fair enough. I guess, then, you're
8	Q I'll do my best. We just talked	8	not aware of any case where fuel adjustment
9	about that you didn't really disagree with the	9	clauses were limited to any case around the
10	concept that spot prices for coal and natural gas	10	country where fuel adjustment clauses were
11	and power are similar.	11	limited only to small utilities that don't have
12	A Right.	12	the resources to manage their fuel cost
13	Q So if that's true, then the	13	uncertainties?
14	volatility of utility fuel costs should be driven	14	A Again, I guess the answer is no.
15	by should be a function of how it hedges and	15	Q Do you think that smaller utilities
16	contracts, not a function of its mix of coal,	16	manage the uncertainty of their fuel cost more
17	natural gas, and purchase power generation and	17	poorly than larger ones?
18	purchase power serve load. Right?	18	A I don't know.
19	A Oh, I think I understand. I think	19	Q How do you believe market liquidity
20	I understand your question now.	20	affects price uncertainty? Would you believe
21	Q Okay.	21	buyers face more uncertainty when markets are
22	A If and the concept is the	22	highly liquid or do they face more uncertainty
23	differentiation between a utility that has, say,	23	when markets are not very liquid?
24	has a lot of purchase power or natural gas in its	24	A I don't know. I haven't thought
25	net fuel expense versus one that has a lot of	25	about that question. So I don't know.
	Page 171		Page 173
1	coal that's been hedged	1	Q Doesn't it make sense that if a
2	Q The spot, let me	2	market's less liquid, they've got a lot less
3	A So what you're saying is that it's	3	transactions, lot less price discovery, that
4	the volatility of fuels that ought to drive the	4	there's a lot more uncertainty in an illiquid
5	fuel adjustment clause, not strictly a function	5	market than there is in a liquid market? Isn't
6	of what its fuel mix is. And I generally I	6	that just a pretty basic concept?
7	agree with that.	7	A I don't I have not I have not
8	I think the history until recently	8	thought of that, nor analyzed that, and I think
9	has been that natural gas has been the most	9	it's it may be a basic concept for folks that
10	volatile fuel, and so if a utility has a high	10	have thought about it and have analyzed it, that
11	level of natural gas in its net fuel cost, that	11	it's not one that I feel ready to or competent to
12	it's more exposed to volatility than if it has	12	express a opinion on.
13	coal.	13	Q Do you know if liquidity in the gas
14	I think that's been historically	14	market is higher than in the coal market?
15	the concept, and I think you're asking is that	15	A Do I know for certain? No.
16	changing because coal prices are becoming more	16	Q Do you have an opinion about that?
17	volatile, and I think the answer is yes.	17	A Do I have a guess?
18	Q All right. Dr. Proctor, are you	18	Q Well, is it a guess or are you
19	aware of any case around the country where a	19	speculating or do you have some reasonable
20	utility was denied a fuel adjustment clause	20	opinion about which
21		21	A I don't know.
22	because it was expected that it would file	22	
23	another rate case in a year or so?	23	Q Excuse me?
	A I am not, no, I'm not aware of		A Since I haven't analyzed the two
24 25	that.	24 25	markets in terms of liquidity, I don't I don't
7. (1)	Q Are you aware of any case around	Z O	know.

Page 176 Page 174 1 O Okay. Fair enough. 1 know that I wasn't going to make it to the 2 Mr. Dottheim, I'm just about done, 2 meeting, and I don't think any of us felt that it 3 3 just to give you an idea. was appropriate at the last minute to cancel it. 4 Dr. Proctor, in your rebuttal 4 You're aware staff has requested 5 5 testimony -- let me find it. You made note of numerous meetings since this case was filed with 6 the fact that you weren't contacted by Mr. Arora б numerous experts on a moment's notice, moved 7 7 before UE filed its direct testimony and his meetings around, asked a lot of questions, 8 analysis. Right? 8 company's met with a lot of the staff auditors 9 9 That's correct. and experts. Why wouldn't it be appropriate for A 10 10 you to have said, "Hey, this is my area, I know I take it from my earlier questions 11 11 that you were aware when you wrote your rebuttal Mr. Arora, I ought to be asking these questions. 12 testimony that the staff requested and that Union 12 I ought to be having this discussion with him," 13 13 Electric accommodated that request and held more not witnesses who are not nearly as qualified and 14 than a half day meeting with staff members on or 14 didn't end up filing testimony on the issue? 15 15 about July 22 of this year in St. Louis. Were MR. DOTTHEIM: I object to the 16 16 vou aware of that? question, I think it's argumentative, it assumes 17 17 A And that was after the testimony facts in evidence, the statement about the staff 18 18 was filed. has asked for meetings on a moment's notice. Dr. 19 19 Q That's right. Proctor, answer the question, please. 20 20 Yes, I was aware of that. Okay. Probably the best way to Α 21 21 Why didn't you attend that meeting? answer your question is -- and I don't -- I don't 22 I had a conflict and I -- I was --22 know what the polite thing to do is on meetings 23 wanted to go to that meeting, but I had a 23 that have been schedule for a period of time and 24 24 conflict. And I have looked back at my calendar, people are preparing for those meetings, I -- I 25 because I thought you would ask this question, 25 assumed that it wasn't proper for me to say, Page 177 Page 175 1 and I really can't tell you exactly what that 1 "Hey, can we move this meeting because I can't be 2 2 there." conflict is. But I. I had a conflict and that's 3 why I wasn't able to make it. 3 (BY MR. LOWERY) Is it fair to say 4 4 You, I'm sure, in staff's view, are that you were criticizing Mr. Arora on page 6 of 5 5 the most qualified person on the staff to look at your rebuttal testimony on the fact that he 6 б what Mr. Arora did, analyze it, discuss it didn't contact you before he filed his testimony? 7 7 intelligently; isn't that fair to say? Yes. Α 8 8 Α Probably. Yes. That's fair to 0 Is that the staff's expectation 9 sav. 9 that utilities have to contact the staff before 10 10 Now, the staff had April and May the utility files its rate case about various 111 11 and June and July and August to put its direct issues that may come up in the rate case? 12 12 case together, and you had until October to file A On something that's being done for your rebuttal testimony. What prevented you from 13 13 the first time and that hasn't been done 14 14 asking to change the meeting with Mr. Arora, or previously, to contact the staff, to get the 15 whatever needed to be done so that the person 15 staff's input on this particular thing, I think 16 16 that really had the most knowledge would attend a would have made a big difference. 17 17 meeting, a four or five hour meeting where lots Not, not to make the staff feel 18 and lots of questions were posed and answered by 18 better, but to, to get input from other 19 Mr. Arora about his analysis? 19 perspectives on, on how this -- how this -- how 20 20 A I think the conflict, and I don't the uncertainties for these models should be put 21 recall exactly, but I think the conflict came up 21 together, and to understand that ahead of time. 22 22 at the last minute, because I -- my recollection And we've done that, for example, 23 is that I was planning to attend that meeting, 23 we did it in the Midwest ISO case where we were 24 and then something came up at the last minute and 24 working with the cost benefit analysis, obviously I didn't feel it was appropriate -- I let people 25 that came out of an agreement to do it ahead of

	7 180		7 100
	Page 178		Page 180
1	time.	1	attend a meeting about this on July 22, you
2	But, you know, to me, it's just I	2	weren't able to make the meeting, but you were
3	had made the offer in the previous case, I was	3	thinking about this back in July, correct?
4	just telling the commission, that had not	4	A Yes.
5	happened in this case.	5	Q And from July, August, September,
6	Q Well, Mr. Arora did put together an	6	you didn't contact Mr. Arora to discuss your
7	analysis following the steps and the approach	7	concerns, right?
8	that you suggested in the last case, did he not?	8	A No, I did not. I didn't start
9	You quarrel with how he implemented it, but he	9	getting into the depth of this until September.
10	put together an analysis that was essentially as	10	Q Well, but that's not Mr. Arora's
11 12	outlined in terms of the approach in your	11 12	fault, is it?
13	testimony in the last case, did he not?  A Yes.	13	A No, I this isn't about fault.
14		$\begin{vmatrix} 13 \\ 14 \end{vmatrix}$	Q Well, you yourself indicate you
15	Q You know Mr. Arora fairly well? A Yes.	15	were being critical of Mr. Arora on page 6 of your rebuttal testimony.
16	Q You respect his expertise?	16	A Yeah, and it has to do with meeting
17	A Yes.	17	with the staff before you file the direct. I
18	Q Do you find him to be a reasonable	18	mean, once you file that direct testimony, it
19	utility manager with whom to deal?	19	and particularly in this case where a lot of
20	A Yes.	20	computer runs went into it, into his analysis, at
21	Q Do you believe he's a person of	21	this point he's going to be very reticent to
22	integrity?	22	change anything and to rerun anything.
23	A Yes.	23	Q Well, you don't know if you don't
24	Q You're not suggesting that he had	24	ask the question.
25	some ill motive or intent in not contacting you	25	A I don't know that, you're right.
	Page 179		Page 181
1	before he filed his direct testimony?	1	Q Is that fair? You don't know if
2	A No, I was not.	2	you had if you had called Mr. Arora and said,
3	Q You said that you think it would	3	"Look, Mr. Arora" you probably would have
4	have made a big difference had that discussion	4	said, "Look, Ajay," because you know him
5	taken place. A big difference in what? A big	5	personally.
6	difference in the analysis he would have done? A	6	You would have said, "Look, I got
7	big difference in staff's position regarding an	7	some severe concerns, why don't we have a
8	FAC in this case? What difference would it have	8	technical conference? Why don't we sit down and
9	made?	9	talk about this in July or August or September?"
10	A I think it would have made a big	10	You don't know that he would have been the least
11	difference in the analysis that he had done.	11	bit reticent, do you?
12	Q Do you have any reason to believe	12	A I don't know.
13	I'm sorry, go ahead.	13	Q In fact, knowing him as you do,
14	A I think that I think it would	14	don't you think he would have sat down with you?
15	help it would have helped this the staff in	15	A Oh, I think he would have, yes.
16	understanding what the uncertainties are that	16	Q You said you believe he's a person
17	AmerenUE faces.	17	of integrity, you respected his intelligence and
18	Q You didn't contact Mr. Arora in the	18	ability. So if you had made valid points to him,
19	more than six months between the filing of the	19	and I'm not saying that your points are or are
20	direct case and the file of your rebuttal case to	20	not valid, but if you made points that he
21	express to him that you had concerns about what	21	believed to be valid, what leads you to believe
22	he did, did you?	22 23	that he would be reticent to listen to those
23 24	A No, as I indicated, I didn't really	23 24	points and perhaps make adjustments based on
24 25	start working on this until September.	25	those points?
45	Q Well, you had scheduled yourself to	<u> </u>	A I think it's generally the case

	Page 182		Page 184
1	that after you file the position and you've put	1	fuel adjustment clause that you have not told me
2	in testimony and you swear that this is the right	2	or that are not reflected in your prepared
3	and correct thing, it becomes much more difficult	3	written testimony filed to date?
4	to change that.	4	A Well, look, I, I was asked and came
5	Q Which could apply to your position	5	in to look at the specifics related to the
6	in this case as well.	6	analysis that was performed by Mr. Arora. Okay?
7	A Sure. I think it applies to	7	I am not the staff policy witness on fuel
8	everyone's. That's why	8	adjustment clause. I may have opinions on those
9	Q You're going to be much more	9	things, but I am not the witness on that, and I
10	reluctant if Mr. Arora in his	10	am so I am not expressing opinions on that
11	MR. DOTTHEIM: Mr. Lowery, I don't	11	either today or in my testimony.
12	think Dr. Proctor had completed his response.	12	Now, if asked those opinions in a
13	Q (BY MR. LOWERY) Go ahead, Dr.	13	hearing about things if, if I have an opinion
14	Proctor.	14	on them, I may very well express those. And
15	A I think all my testimony referred	15	there's just too
16	to was that I had not been contacted before the	16	Q You don't have an intention to
17	company filed its position in this case, and what	17	express any particular opinion that you haven't
18	I am you know, I don't know whether he would	18	told me, though
19	have changed anything afterwards.	19	A That's correct.
20	I just know generally from my	20	Q or that's not reflected in your
21	experience in testifying in many rate cases that	21	written testimonies.
22	it becomes more and more it becomes more	22	A That's correct.
23	difficult to change something after you have	23	MR. LOWERY: I think that's all I
24	already put it into after you have already	24	have. I assume that we're going to waive
25	filed it and said this is your position. That's	25	presentment and read and sign, Steve?
	Page 183		Page 185
1	all I'm saying.	1	MR. DOTTHEIM: Yes. Yes.
2	I'm saying it's much better to meet	2	MR. LOWERY: And can we stipulate,
3	for folks to meet before that point in time to	3	I think as we've done before, that if the
4	work out differences than to try to work out	4	deposition is not signed at the time Dr. Proctor
5	differences after that point in time. That's all	5	takes the stand, it will be treated as if it is
6	I'm saying.	6	signed? He's obviously going to have an
7	Q Dr. Proctor, do you have any other	7	opportunity to read it and sign it, but
8	opinions about AmerenUE's requested fuel	8	MR. DOTTHEIM: Yes. Yeah. I mean,
9	adjustment clause that you've not told me today	9	we've got you know, I haven't read what Stu
10	or that are not reflected in your prepared	10	filed so, you know, I don't know if he's gone
11	written testimony that you've filed to date?	11	ahead and and when I said "Stu," that's Mr.
12	MR. DOTTHEIM: Mr. Lowery, I object	12	Conrad
13	to that question as similar in nature of one	13	MR. LOWERY: Why don't we go off
14	earlier, much earlier. I don't think	14	the record. Or I mean, unless there's some
15	MR. LOWERY: That he knows of	15	reason we need to be on the record. I don't
16	today.	16	think we need to be on the record for this
17	MR. DOTTHEIM: that, that you	17	discussion, do we?
18	I don't know that you have a question pending now	18	MR. DOTTHEIM: No, I don't I
19	specifically of the nature, you know, asking,	19	don't think so, other than I really don't have
20	asking him for a particular response. But, Dr.	20	any great need not to be on, on the record for
21	Proctor, if you can respond to Mr. Lowery's	21	that having started down this road.
22	question.	22	So if the schedule stays the way it
23	Q (BY MR. LOWERY) Let me rephrase my	23	is, Dr. Proctor being as busy as he is and not
24	question. Have you as of this moment formulated	24 25	traveling to Carmel, Indiana, and various sites
25	any other opinions about AmerenUE's requested	_∠5	because of SPP, assuming that the fuel adjustment

	Page 186		Page 188
1	clause issue stays at the end of the hearings, or	1	CERTIFICATE OF REPORTER
2	the second to last week of the hearings, I don't	2	
3	think there's going to be any problem with us	3	I, TARA SCHWAKE, a Registered
4	having Dr. Proctor review the transcript and him	4	Professional Reporter and Notary Public within
5	signing and us getting back to you whatever	5	and for the State of Illinois, do hereby certify
6	corrections he might have.	6	that the witness whose testimony appears in the
7	MR. LOWERY: Well, how about if we	7	foregoing deposition was duly sworn by me; that
8	stipulate to this. As long as you have the	8	the testimony of said witness was taken by me to
9	transcript, Steve, five days before Dr. Proctor	9	the best of my ability and thereafter reduced to
10	takes the witness stand, then if for some reason	10	typewriting under my direction; that I am neither
11	it didn't get signed, we can stipulate that it	11	counsel for, related to, nor employed by any of
12	can be used as if it was. How about that?	12	the parties to the action in which this
13	I have expedited the transcript,	13	deposition was taken, and further that I am not a
14	you're going to have it soon.	14	relative or employee of any attorney or counsel
15	MR. DOTTHEIM: Yeah. And so and	15	employed by the parties thereto, nor financially
16	so I fully expect that, that before Dr. Proctor	16	or otherwise interested in the outcome of the
17	takes the stand, it will be signed and whatever	17	action.
18	corrections he has to the transcript, you will	18	
19	have.	19	
20	MR. LOWERY: If for any reason that	20	Natara Dallia in and far
21 22	weren't the case, I don't want to be in a	21 22	Notary Public in and for The State of Illinois
23	situation because I don't control that, you do.  MR. DOTTHEIM: Understood.	23	The State of Hillinois
24	Otherwise	24	Mr. commission armines Irms 7, 2000
25	MR. LOWERY: As long as you have	25	My commission expires June 7, 2009
23	Page 187	23	Page 189
1	the transcript five days before he takes the	1	Midwest Litigation Services 711 North 11th Street
2	witness stand, if you don't get if it hasn't	2	St. Louis, Missouri 63101
3	been signed, it can be treated as if it was	3 4	Phone (314) 644-2191 * Fax (314) 644-1334
4	signed.	5 6	November 14, 2008 Staff of the Commission Office of the
5	MR. DOTTHEIM: Yes.	0	General Counsel
6	MR. LOWERY: Fair enough.	7	Missouri Public Service Commission Governor Office Building
7	MR. DOTTHEIM: Yes. I didn't mean	8	200 Madison Street, Suite 100
8	to indicate otherwise.	9	Jefferson City, Missouri 65101
9	MR. LOWERY: Sure. Okay. Great.		Attn: Mr. Steven Dottheim
10	MR. DOTTHEIM: You know, again,	10	In Re: Union Electric ER-2008-0318
11	assuming that we don't have FAC immediately after	11	
12	return on equity, which I don't expect is going	12	Dear Mr. Dottheim:
13	to happen, but one never knows.		Please find enclosed your copy of the deposition
14	MR. LOWERY: Okay. Thank you, Dr.	13	of MICHAEL PROCTOR, taken on November 13, 2008, in the above-referenced case. Also enclosed is
15 16	Proctor.  THE WITNESS: Thenk you	14 15	the original signature page and errata sheets.
16 17	THE WITNESS: Thank you.		Please have the witness read your copy of the transcript, indicate any changes and/or
18	(Wherein, the taking of the instant deposition ceased.)	16	corrections desired on the errata sheets, and sign the signature page before a notary public.
19	(Deposition to be read and signed	17	
20	by the witness.)	18	Please return the errata sheets and notarized signature page to Mr. James Lowery for filing
21	by the withess.)		prior to trial date.
22		19 20	Thank you for your attention to this matter. Sincerely,
23		21 22	Tara Schwake, CRR, RPR, CSR
24		23	Enclosures
25		24 25	Cc: Mr. James Lowery

## MICHAEL PROCTOR 11/13/2008

		Page	190
1	CTATE OF		
1	STATE OF		
2			
3	I, MICHAEL PROCTOR, do hereby certify:		
4	That I have read the foregoing deposition	ı;	
5	That I have made such changes in form		
6	and/or substance to the within deposition as		
7	might be necessary to render the same true an	nd	
8	correct;		
9	That having made such changes thereon,	I	
10	hereby subscribe my name to the deposition.		
11	I declare under penalty of perjury that		
12	the foregoing is true and correct.		
13	Executed this day of		
14		,	
	2008, at		
15			
16			
17	Notary Public		
18	My commission expires:		
19			
20			
21	MICHAEL PROCTOR		
22			
23	TRS/MICHAEL PROCTOR, 11/13/08		
24	In Re: Union Electric ER-2008-0318		
25			
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		Page	191
1	WITNESS ERRATA SHEET	Page	191
1 2		Page	191
	Witness Name: MICHAEL PROCTOR	Page	191
2	Witness Name: MICHAEL PROCTOR Case Name: Union Electric ER-2008-0318	Page	191
2 3 4	Witness Name: MICHAEL PROCTOR	Page	191
2 3 4 5	Witness Name: MICHAEL PROCTOR Case Name: Union Electric ER-2008-0318 Date Taken: 11/13/08	Page	191
2 3 4 5 6	Witness Name: MICHAEL PROCTOR Case Name: Union Electric ER-2008-0318 Date Taken: 11/13/08  Page # Line #		
2 3 4 5 6 7	Witness Name: MICHAEL PROCTOR Case Name: Union Electric ER-2008-0318 Date Taken: 11/13/08  Page # Line # Should read:		
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49 (Pages 190 to 191)

1	STATE OF
2	COUNTY OFSTLOUTS)
3	I, MICHAEL PROCTOR, do hereby certify:
4	That I have read the foregoing deposition;
5	That I have made such changes in form
6	and/or substance to the within deposition as
7	might be necessary to render the same true and
8	correct;
9	That having made such changes thereon, I
10	hereby subscribe my name to the deposition.
11	I declare under penalty of perjury that
12	the foregoing is true and correct.
13	Executed this 4th day of December,
14	2008, at Stloni's MO
15	
16	James Pormagnitot
17	Notary Public
18	My commission expires:
19	
20	JAMES PENNINGROTH Notary Public, Notary Seal State of Missouri St. Louis County
21	Commission # 07389617 My Commission Expires October 28, 2011  MICHAEL PROCTOR
22	
23	TRS/MICHAEL PROCTOR, 11/13/08
24	In Re: Union Electric ER-2008-0318
25	

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1
                          WITNESS ERRATA SHEET
2
    Witness Name: MICHAEL PROCTOR
    Case Name: Union Electric ER-2008-0318
3
4
    Date Taken: 11/13/08
5
6
   Page # 145 Line # 10
   Should read: CTGs
7
8
   Reason for change: not: PTDs
9
10
    Page # 147 Line # 12 and 21
11
    Should read: Cinergy
12
    Reason for change: not: synergy
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    Page # 133 Line # 7
14
15
    Should read: net fuel
    Reason for change: not: that fuel
16
17
    Page # 107 Line # 7
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19
    Should read: '06
    Reason for change: not: '6
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    Page # Line #
23
    Should read:
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Reason for change:

24