

STATE OF MISSOURI  
PUBLIC SERVICE COMMISSION

TRANSCRIPT OF PROCEEDINGS

Evidentiary Hearing

September 24, 2018

Jefferson City, Missouri

Volume 12

In the Matter of Kansas City )  
Power & Light Company's )  
Request for Authority to ) File No. ER-2018-0145  
Implement a General Rate )  
Increase for Electric Service)

In the Matter of KCP&L )  
Greater Missouri Operations )  
Company's Request for ) File No. ER-2018-0146  
Authority to Implement a )  
General Rate Increase for )  
Electric Service )

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RONALD D. PRIDGIN, Presiding  
DEPUTY CHIEF REGULATORY LAW JUDGE  
RYAN SILVEY, Chairman  
WILLIAM P. KENNEY,  
DANIEL HALL,  
SCOTT T. RUPP,  
MAIDA J. COLEMAN,  
COMMISSIONERS

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1 (WHEREIN; the hearing began at 8:31 a.m.)

2 JUDGE PRIDGIN: Good morning. We are on  
3 the record. This is the hearing in file numbers  
4 ER-2018-0145 and ER-2018-0146.

5 Good morning. I'm Ron Pridgin. I'm  
6 the regulatory law judge assigned to preside over  
7 this hearing that's being held beginning  
8 September 24th, 2018, in the Governor Office Building  
9 in Jefferson City, Missouri. The time is  
10 approximately 8:30 a.m. I would like to get oral  
11 entries of appearance from counsel please beginning  
12 with KCP&L and GMO.

13 MR. FISCHER: Thank you, Judge. On  
14 behalf of the two companies, let the record reflect  
15 the appearance of the Robert J. Hack, Robert W.  
16 Steiner, Joshua Harden, and myself, James Fischer.  
17 Our contact information's been given to the court  
18 reporter.

19 JUDGE PRIDGIN: Mr. Fischer, thank you.  
20 On behalf of the staff of the Commission  
21 please.

22 MS. MERS: Nicole Mers and Mark Johnson  
23 appearing on behalf of the Public Service Commission  
24 staff, and our information has been provided to the  
25 court reporter.

1 JUDGE PRIDGIN: Thank you. On behalf of  
2 the Office of the Public Counsel please.

3 MR. SMITH: On behalf of the Office of  
4 Public Counsel, Ryan Smith and Nathan Williams appear  
5 for the Office of the Public Counsel. My information  
6 has been provided to the court reporter. Thank you.

7 JUDGE PRIDGIN: Mr. Smith, thank you.  
8 On behalf of AEMA please.

9 MR. COMLEY: Good morning, Judge.  
10 Appearing on behalf of Advanced Energy Management  
11 Alliance, let the record reflect the entry of Mark W.  
12 Comley, Newman, Comley & Ruth. My information's been  
13 given to the court reporter, but given this limited  
14 advertising moment, my address is 601 Monroe Street,  
15 Suite 301, Jefferson City Missouri 65102.

16 JUDGE PRIDGIN: Mr. Comley, thank you.  
17 On behalf of the Missouri Division of  
18 Energy please.

19 MR. POSTON: Marc Poston appearing for  
20 the Division of Energy.

21 JUDGE PRIDGIN: Mr. Poston, thank you.  
22 On behalf of MECG please.

23 MR. WOODSMALL: Good morning. David  
24 Woodsmall appearing on behalf of Midwest Energy  
25 Consumers Group.

1 JUDGE PRIDGIN: Mr. Woodsmall, thank you.  
2 On behalf of MIEC please.

3 MS. ILES: Good morning. Carole Iles on  
4 behalf of MIEC.

5 JUDGE PRIDGIN: Ms. Iles, thank you.  
6 On behalf of MJMEUC please.

7 MS. WHIPPLE: Good morning, Judge. Peggy  
8 Whipple on behalf of the Missouri Joint Municipal  
9 Electric Utility Commission, and MJMEUC works just  
10 fine.

11 JUDGE PRIDGIN: MJMEUC, thank you.

12 MS. WHIPPLE: And the court reporter has  
13 my information.

14 JUDGE PRIDGIN: Ms. Whipple, thank you.  
15 On behalf of Renew Missouri please.

16 MR. OPITZ: Good morning, Judge. On  
17 behalf of Renew Missouri Advocates, I'm Tim Opitz,  
18 and I've provided my information to the court  
19 reporter.

20 JUDGE PRIDGIN: Mr. Opitz, thank you.  
21 And I believe Mr. Lumley filed a request  
22 to be excused representing Dogwood Energy, so. But  
23 just in case, is there anyone here for Dogwood?

24 Okay. Have I overlooked anyone? All  
25 right.

1                   Before we begin, I understood the  
2 parties are fairly close on settling some of the  
3 issues that would be -- otherwise be heard today. In  
4 talking with counsel both Friday and this morning, I  
5 understood that the parties wanted to go ahead and  
6 address some Commission-raised issues; that would be  
7 on the net metering and line extension tariffs. And  
8 then I understood you perhaps wanted to take a break  
9 to further negotiate.

10                   MR. FISCHER: We think that would make  
11 sense, Judge, at this point.

12                   JUDGE PRIDGIN: And I'm assuming you --  
13 would you want the rest of the day and then start  
14 tomorrow, or what were your thoughts?

15                   MR. FISCHER: We're open to whatever the  
16 Commission would like to do. I think we're -- we'd  
17 like to make sure we're together on the terms sheet.  
18 And it's my understanding that if we are, that will  
19 eliminate many of the rate design issues, but there  
20 will still be some revenue allocation issues and some  
21 other rate design issues that would probably need to  
22 be tried. But that will be determined after we get  
23 together.

24                   JUDGE PRIDGIN: And I guess we can kind  
25 of play it by ear. We'll see how long the Commission

1 issues take. And certainly glad to give you a break  
2 to continue talking.

3 My thought -- I thought about this some  
4 over the weekend. I figured you would want the rest  
5 of the day to talk. If you need more or less time,  
6 you know, please let me know. I'm trying to -- I'm  
7 trying to accommodate you as much as we can, but.  
8 And you can give me your thoughts, you know, now or  
9 later; it doesn't matter. You can talk after -- or  
10 we can take a break and we can come back and say,  
11 Hey, we think we need X number of hours.

12 MR. FISCHER: That might make some sense  
13 from my perspective.

14 JUDGE PRIDGIN: Okay. I was kind of  
15 seeing some nods.

16 So let's get through the Commission  
17 issues. And I understand the parties wanted to give  
18 mini opening statements on each issue as it comes up;  
19 is that correct? I'm seeing some nods. Okay.

20 And again, it may be the easiest course  
21 just for parties to go ahead and start with mini  
22 openings on the line extension tariff issue and then  
23 we'll move on to the net metering. And then we'll  
24 take a break and then we can figure out where we go  
25 from there.



1 Anything further from counsel or the  
2 bench before we start with line extension tariffs?

3 Okay. Any mini opening on line extension  
4 tariffs for the Company?

5 MR. STEINER: Your Honor, the Company  
6 waives its opening on that issue.

7 JUDGE PRIDGIN: Does any party wish to  
8 give an opening or just simply, simply just answer  
9 questions from the bench?

10 MR. JOHNSON: Staff would waive its  
11 opening as well.

12 MR. SMITH: As would OPC.

13 JUDGE PRIDGIN: Okay. Very good.  
14 Commissioner Kenney?

15 COMMISSIONER KENNEY: I have no  
16 questions. I'm just kidding. How do you want to do  
17 this?

18 JUDGE PRIDGIN: I would say just simply  
19 you're free to simply ask questions however you wish.

20 COMMISSIONER KENNEY: Okay. All right.  
21 And I suppose just -- you want me to generalize it to  
22 any witness? There's -- I think there's Staff had  
23 two witnesses and I believe the Company had two. But  
24 I didn't really see much of anything from the Company  
25 on this issue.

1 MR. STEINER: Yeah. We have Brad Lutz is  
2 our witness on this issue and he filed a  
3 supplemental --

4 COMMISSIONER KENNEY: Okay.

5 MR. STEINER: -- direct.  
6 We can call him up.

7 COMMISSIONER KENNEY: Yeah, let's do  
8 that. Then I'll talk to Mr. Lutz.

9 JUDGE PRIDGIN: So come forward and be  
10 sworn please, sir.

11 (Witness sworn.)

12 JUDGE PRIDGIN: Thank you very much.  
13 Mr. Steiner.

14 BRAD LUTZ, having been first duly sworn,  
15 testified as follows:

16 DIRECT EXAMINATION BY MR. STEINER:

17 Q. Please state your name for the record.

18 A. My name is Brad Lutz, L-u-t-z.

19 Q. Mr. Lutz, where do you work?

20 A. I work with Kansas City Power & Light  
21 at 1200 Main Street, Kansas City, Missouri.

22 Q. And what's your position there?

23 A. I am the senior manager in regulatory  
24 affairs.

25 Q. Mr. Lutz, did you cause to be filed

1           **supplemental direct testimony which has been**  
2           **premarked as Exhibit 149?**

3           A.       I did.

4           **Q.       Do you have any changes or corrections to**  
5           **that testimony?**

6           A.       I do not.

7           **Q.       If I were to ask you the same questions**  
8           **contained in that testimony, would your answers be**  
9           **the same as what's in Exhibit 149?**

10          A.       Yes, they would.

11                   MR. STEINER: Your Honor, I move for the  
12                   admission of Exhibit 149 and tender the witness for  
13                   cross-examination.

14                   JUDGE PRIDGIN: 149 has been offered.  
15                   Any objections?

16                   MR. JOHNSON: No objections.

17                   MR. SMITH: No objection.

18                   JUDGE PRIDGIN: Hearing none, Exhibit 149  
19                   is admitted.

20                   (Exhibit 149 was received into evidence.)

21                   CROSS-EXAMINATION BY COMMISSIONER KENNEY:

22                   **Q.       Good morning.**

23                   A.       Good morning.

24                   **Q.       I'd like to talk to you about a couple**  
25                   **things: The residential mainline extensions and then**

1       **also how the charges for those are determined and**  
2       **then the developer rebates are determined.**

3           A.     Okay.

4           **Q.     Okay.**

5           A.     Okay.

6           **Q.     And explain to me just the overall, just**  
7       **so we all know, the overall extension policy for the**  
8       **distribution service, what's involved in the**  
9       **distribution service, and how the contractual**  
10       **arrangement with the applicant works.**

11          A.     Okay. The process I'm describing is  
12       consistent for KCPL and our GMO territories beginning  
13       January 1 of this year. We implemented a change, a  
14       pretty significant change to our KCPL system on that  
15       date following an order in another proceeding. So  
16       I'll speak to the process that we've been using this  
17       year.

18                 The line extension process is basically  
19       divided up into three major parts. There's a  
20       residential piece that's, I'll call it free of  
21       charge. It's for -- more for single-family  
22       individual residences, those kind of line extensions.  
23       And then there's another residential that is built --  
24       or anything that's in excess of what is provided for  
25       by that provision.

1           **Q.     Is that multiple lots or just individual**  
2           **lots?**

3           A.     Yes. The -- I believe that the limit is  
4           up to four, I believe. Yes. We can do up to four  
5           lots under the first -- under the -- the  
6           free-of-charge approach.

7                     But anything over four falls into our  
8           subdivision terms and is treated a little bit  
9           differently. It is more along the line of our  
10          residential excess segments of that policy where  
11          there's a -- a set of standard charges that are based  
12          on the type of home that's being built and individual  
13          lot charges associated with those.

14          **Q.     Why is it free of charge for four under,**  
15          **but costs the applicant on above four?**

16          A.     That term came to us through our GMO  
17          provisions. I'm not exactly sure of the genesis of  
18          it. It predates our company and the merger, but I  
19          would offer that I think that there's a tipping point  
20          when the investment needed to serve a larger number  
21          of lots moves beyond the provisions that were made  
22          for in that, what I'll call the free extension, and  
23          then we have to start to factor in the contributions  
24          of those --

25          **Q.     On the free extension, what's the length**

1 **of the line extension that falls under free?**

2 A. Correct. We have a quarter-mile term that  
3 we use. And again, this was new for GMO I think in  
4 the -- around 2016 and then was common to both  
5 jurisdictions after that, but we allow for a quarter  
6 mile of extension for that.

7 **Q. So you could have -- is that for one lot,**  
8 **and then maybe a half a mile for two lots, three-**  
9 **quarter mile for three, mile for four?**

10 A. No. Well, I'm not exactly certain how we  
11 might break up something like that one. I think it  
12 tends to be more in one segment as opposed --

13 **Q. Well, maybe your attorney can, when we do**  
14 **final briefs, they can have that laid out so we can**  
15 **see that. Because if you're -- like a normal**  
16 **subdivision you might have lots that are 75 feet**  
17 **long.**

18 A. Right.

19 **Q. You can go a quarter mile, 1,320 feet and**  
20 **it's free, and -- but to run a quarter mile and take**  
21 **into account 20 lots in that quarter mile, it costs**  
22 **the applicant. Does that make sense to you?**

23 A. Well, I think what we have to do is look  
24 at what's trying to be done as opposed to maybe that  
25 strict look of that quarter mile. We have to be

1 careful because there's a -- there's a relationship  
2 that's trying to be maintained within the words of  
3 the tariff, but in the application, there's an  
4 infinite number of possible combinations that could  
5 come into play that might make that balance a little  
6 harder or a little clear-- less clear to be able to  
7 apply. So many time --

8 **Q. I understand you might -- you have more**  
9 **pedestals and --**

10 A. Right.

11 **Q. -- and, you know, every two houses, you**  
12 **have pedestals versus two pedestals for four houses.**

13 A. Right.

14 **Q. But --**

15 A. The way -- the way the subdivision starts  
16 to apply, the subdivision provisions, there's an  
17 intention built into the design where we try to, in a  
18 sense, partner with that developer so that as that  
19 subdivision is being built out and those homes are  
20 actually being built, there's a back and forth  
21 between the company and that developer for those  
22 costs.

23 **Q. What does the back and forth mean?**

24 A. So up front there's a deposit that's  
25 required to be paid for, for the lots, based on the

1 house that's being built in that location.

2 **Q. Please explain. What do you mean based on**  
3 **the house?**

4 A. Right. We have three different types of  
5 charges that are associated with the kind of heating  
6 and cooling that's in that home. So if you're -- you  
7 are a, like a gas-heat home or an electric-heating  
8 home, you will have a different allowance for your  
9 home because of the expectation of revenue that we  
10 see from that location.

11 **Q. Yeah. I saw in your testimony where**  
12 **someone's building say ten electric-heat homes, it**  
13 **might be a \$200 cost. And if it's gas -- or maybe**  
14 **that was in -- I think that was in Sarah Lange's**  
15 **testimony. I'm sorry. Continue.**

16 A. Right. So what we do is there's a  
17 required up-front deposit. And so the developer pays  
18 that up front and that helps us cover the cost of  
19 getting facilities into that subdivision. The thing  
20 that still has to happen is the building of the  
21 homes. You could -- you could fully fit a  
22 subdivision with primaries and secondaries and have  
23 an extreme situation where it never gets built.

24 **Q. Like the last -- like eight, nine, ten,**  
25 **or, you know, several years ago.**



1           A.     Right.  When there was kind of that  
2     crash --

3           **Q.     All over --**

4           A.     -- in the housing market.

5           **Q.     -- Kansas Ci ty.**

6           A.     Right, right.

7           **Q.     Tons of dead subdivi sions.**

8           A.     Absol utely.  So we want to avoid that  
9     where we've put a lot of infrastructure into the  
10    ground and then aren't able to get that back, to see  
11    that actually turn into usage, customers, revenue,  
12    all of those things, so.

13          **Q.     What's included in that distribution**  
14    **system?**

15          A.     That generally includes down to the -- I  
16    believe down to the transformer, possibly into the  
17    secondaries, which move from the transformer to say a  
18    pedestal.  The service drops are defini tely separate.

19          **Q.     So is that conduit feeder lines,**  
20    **service lines, pad mounts, submersible transformers,**  
21    **switch --**

22          A.     Yes.

23          **Q.     -- gear --**

24          A.     Yes.  However, some of those parts are  
25    supplied by the customer, by the devel oper.

1           **Q.     what is supplied by the customer --**

2           A.     I --

3           **Q.     -- or applicant?**

4           A.     I believe all of the conduit work is by  
5 the -- the applicant.

6           **Q.     And I think that's in your tariff report.**

7           A.     Yes.

8           **Q.     How does that differ from Ameren Missouri?**

9           A.     I think -- let me double check. I am -- I  
10 am, subject to check, I believe that Ameren has a  
11 similar policy with respect to conduit.

12          **Q.     Would it surprise you if I said Ameren  
13 provides the conduit?**

14          A.     Oh, as far as -- yes, but then the  
15 developer would install --

16          **Q.     But does KCP&L --**

17          A.     No.

18          **Q.     -- provide the conduit?**

19          A.     No. We do not install the conduit.

20          **Q.     So the difference is -- now, does Ameren  
21 charge a deposit, a mainline deposit?**

22          A.     There is a deposit associated with their  
23 subdivision policy. I'm -- what I'm sensing is  
24 you're bifurcating between --

25          **Q.     Do we have --**

1 A. -- the mainline --

2 Q. Yeah.

3 A. -- and the -- the blocks.

4 Q. **Do we have a mainline refundable deposit?**

5 A. Yeah. Yeah. I'm not sure about the  
6 mainline. I know the lots, the heart of the  
7 subdivision policy through the lots, there is a  
8 refundable piece, yes.

9 Q. **Are you positive about that?**

10 A. I think that their -- they have a  
11 contingency set up where you can accept a standard or  
12 you can do a revenue test. And I believe --

13 Q. **I haven't -- I haven't found that in their**  
14 **tariff that they have a refundable deposit, but I**  
15 **could be wrong.**

16 A. Okay. I thought under the refundable  
17 side -- or, excuse me, the revenue test side, there  
18 was a refundable element. But I -- I'm not a  
19 practitioner of the Ameren tariff, I have to admit.  
20 I reviewed it honestly in deep detail to support this  
21 testimony.

22 Q. **Okay. Well, regarding the mainline**  
23 **deposits, why do -- why does the developer install**  
24 **your pedestals, your distribution system? Why**  
25 **doesn't the Company install that?**

1           A.     I'm not sure of the exact reason. Again,  
2     that, I think, has been our policy for -- for quite a  
3     while. So again, I can't speak to a genesis point of  
4     it, but I would offer I think it's about control and  
5     timing. I think that that -- that represents a very  
6     important time in the development of the subdivision  
7     as far as when you're getting that laid out. And by  
8     having that control given to the developer, it  
9     helps -- it helps that person maintain control of  
10    when that gets put in and then they can close the  
11    ground back up behind them and continue their work.

12           **Q.     Okay. So once they install all that, all**  
13    **the infrastructure according to your standards, and**  
14    **then the Company comes in and runs the --**

15           A.     Correct.

16           **Q.     -- the service lines?**

17           A.     We'll pull the primaries into those  
18    conduits for the -- the backbone if you will of that  
19    subdivision layout. And then as the homes are built,  
20    then the services will be run from the pedestals to  
21    the meter point.

22           **Q.     Why does the Company not supply the**  
23    **conduit? They supply everything else.**

24           A.     Past practice. I'm not sure. I mean, I  
25    know that -- what you're talking about with Ameren.

1 I don't have an answer for that.

2 **Q. Is there a safety component that the**  
3 **company -- or is there a specification that the**  
4 **applicant uses?**

5 A. Certainly there are construction  
6 specifications dictate the kind of -- like the  
7 schedule of PVC, you know, to make sure that they're  
8 not putting in something that's too thin or has the  
9 wrong kind of bends or those kind of things, but I  
10 don't think that it's -- it's anything extensive.

11 I think in most case, you know, these  
12 developers are, you know, long experienced in our  
13 area, and I don't think there's been a lot of issue  
14 or discussion from developers back to us about  
15 concerns in that space. So, you know, subject to  
16 some feedback, I think it seems to be operating.

17 **Q. Okay. Can you tell me how it's determined**  
18 **what is eligible on that refund for the -- on the**  
19 **deposit, the deposit side. When the applicant**  
20 **develops a subdivision, let's say there's -- make it**  
21 **simple, a hundred lots --**

22 A. Right.

23 **Q. -- which would be a lot.**

24 A. Right.

25 **Q. And they pay so much of a deposit. How is**

1       **it determined what's refundable?**

2           A.     Right. What we're doing is that we're  
3     doing a comparison of the revenues that we expect  
4     from those homes once they're built. And if there is  
5     a cover provided from the revenue that will account  
6     for the investment, then we're able to refund more of  
7     that money. But to the extent that there is expected  
8     to be less revenue, then we will go ahead and  
9     obligate the contractor in this case or the homeowner  
10    or whoever the applicant would be to cover some  
11    portion of that cost that's not covered by the  
12    expected revenue.

13           **Q.     And what determine-- well, can you explain**  
14    **to me how that revenue is determined? What's -- what**  
15    **are the components that you're taking into account?**

16           A.     Sure. What we'll do is we will model what  
17    we believe to be a typical home of that type. So --

18           **Q.     In the Kansas City market, wherever it is,**  
19    **you take an area and you know what's normally going**  
20    **in. So explain the individual pieces that are**  
21    **refundable.**

22           A.     The -- well, it's -- let me -- if I may,  
23    let me answer it in this way and then we'll kind of  
24    work backwards and see if I've hit your mark. But  
25    what we'll do is largely things are handled on the

1 lot basis. We just look at a lot generically. And  
2 then within that, we just answer one question: What  
3 is the heating source for that -- that home that  
4 exists in the lot. And then based on that, that  
5 gives us our number.

6 That number has been established through a  
7 standardized calculation where we basically take a  
8 standard or a typical home, if you will, and apply  
9 our construction standard to it to derive a cost.  
10 We'll set that number annually because it -- usually  
11 it doesn't change. I mean, we use lots of similar  
12 applications of wire size, wire length, you know. We  
13 don't do detailed estimates of each one, but we apply  
14 this in more of an average.

15 And then as the subdivision is built out  
16 and those homes are actually connected to our system,  
17 then that would trigger the refund associated with  
18 those typical house types. So if you have an  
19 all-electric home for example, you're going to  
20 generate more revenue for the company and, therefore,  
21 can get a higher refund of that original deposit.

22 **Q. Okay. But let's say you don't have an**  
23 **all-electric home.**

24 A. Uh-huh.

25 **Q. What are individual refundable items that**

1 **the Company looks at to refund the applicant?**

2 A. It's -- yeah. I don't -- I don't know  
3 that there's any individual items per se. What I  
4 would --

5 **Q. Let's say a take ground source heat pump.**

6 A. That would qualify for the heating.

7 **Q. So does that qualify as an individual**  
8 **item?**

9 A. No. I mean, what we would do is just look  
10 at that as --

11 **Q. So you're saying --**

12 A. -- an all-electric home.

13 **Q. Are you saying that the Company does not**  
14 **have a set amount that they refund on a ground source**  
15 **heat pump?**

16 A. Within our line extension processes that  
17 would qualify under other all electric homes just  
18 like an air source heat pump or a resistance heat.  
19 All of those would fall in the same category.

20 **Q. Let's -- I think I mischaracterized the**  
21 **ground source. I didn't mean that. It's the --**  
22 **your -- the -- standard Kansas City heat pump or that**  
23 **area.**

24 A. Yeah.

25 **Q. We call that an air source --**



1 A. Air source.

2 Q. **That's what I meant to say; I apologize.**

3 A. No, that's fine.

4 Q. **Air source heat pump.**

5 A. For us that would --

6 Q. **Explain -- for those who don't know, would**  
7 **you explain what an air source heat pump is?**

8 A. Okay. A heat pump basically attempts to  
9 extract energy from the ambient air. And it takes  
10 that and converts it into either heating or cooling,  
11 depending on the season, and then uses that to either  
12 heat or cool the living space.

13 Q. **So it acts as an air conditioner?**

14 A. Right. They can run both directions in a  
15 sense.

16 Q. **Or it can heat?**

17 A. Correct.

18 Q. **Is it efficient year round in the Kansas**  
19 **City market?**

20 A. To a temperature point. There's a point  
21 around freezing where the efficiency drops off pretty  
22 strong. Most homes that have heat pumps have a  
23 secondary source which might be electric resistance  
24 or natural gas that kicks on when those extreme  
25 temperatures are reached.

1           **Q.     So if I were to say, say 38 percent -- or**  
2           **at 38 degrees that it might be an automatic**  
3           **switchover?**

4           A.     Right.  There's a set point in the system.  
5           Right.

6           **Q.     Where the system automatically kicks over**  
7           **and goes to gas?**

8           A.     Correct.  It's usually around freezing is  
9           what I've found, but it's up to the individual  
10          comfort.  You know, some homeowners prefer, you know,  
11          to -- a warmer sensation; you might set that set  
12          point higher.

13          **Q.     What do you mean a warmer sensation?**

14          A.     Well, the temperature of the air that  
15          comes out of a heat pump is often, you know, maybe in  
16          the 80 degree range.  You know, it's enough to heat  
17          the home but it doesn't, to your skin, feel as warm  
18          as say a natural gas heat.

19          **Q.     Would you say it might feel cool?**

20          A.     It could.  I mean, if it's at 80 degrees,  
21          it's, you know, it's higher than the temperature on  
22          your thermostat so it is heating the home, but if  
23          your body temperature is in the, you know, low 90s.  
24          So, yeah, it would be cooler than your body  
25          temperature.

1           **Q.     Yeah. How does -- do you know the**  
2 **difference in -- if someone has a -- in the Kansas**  
3 **City market most, I would say -- would you say that**  
4 **most everyone who has an air source heat pump also**  
5 **has a gas furnace?**

6           A.     I don't think --

7           **Q.     Or electric?**

8           A.     I would say they tend to be electric and  
9 much of that is driven by the multi-family  
10 applications of heat pumps, apartment complexes.

11           **Q.     What about new development subdivisions in**  
12 **the Kansas City market; would you say that the**  
13 **majority of them have a natural gas furnace as a**  
14 **backup?**

15           A.     I don't know as a market; I don't know  
16 that number for sure. I would imagine it's more  
17 likely that they have an electric backup because that  
18 reduces the first cost for the developer.

19           **Q.     Would it surprise you that in, let's say**  
20 **where I live, in the Lee's Summit market, of the**  
21 **current 13 subdivisions that I checked, 100 percent**  
22 **have gas furnaces?**

23           A.     Oh, as a backup to a heat pump or just --

24           **Q.     As a -- no. As standard heat --**

25           A.     Oh.

1           **Q.     -- heating source with or without an air**  
2           **source heat pump.**

3           A.     No.  It wouldn't surprise me at all.  The  
4           gas prices have changed dramatically over the last  
5           five years or so, so it's changed the economics for  
6           people, you know, to -- to choose a heating source.

7           **Q.     That's what I'd like to discuss right now.**

8           A.     Okay.

9           **Q.     So is -- do you know how the cost to that**  
10          **home -- to a homeowner or a builder, the difference**  
11          **of the price of an air conditioner versus an air**  
12          **source heat pump is?**

13          A.     I don't know precisely.  I know that a  
14          generic air conditioner is cheaper than a heat pump,  
15          I know that much, but I don't know by how -- what the  
16          amount is or the total cost.

17          **Q.     Would it surprise you or, subject to**  
18          **check, would -- if I said for the average price of a**  
19          **new construction at a low end \$300,000 home in the**  
20          **Kansas City market, that the additional cost would be**  
21          **approximately \$1,300 for that?**

22          A.     No.  That wouldn't surprise me.

23          **Q.     Okay.  Now, I want to -- you know, I know**  
24          **that this Commission is very keen on energy**  
25          **efficiency.**

1 A. Uh-huh.

2 Q. And I appreciate KCP&L because they've  
3 done, and GMO, have done a fantastic job in that  
4 area.

5 A. Thank you.

6 Q. I've been in the Kansas City market  
7 since 1979 and appreciate the service through the  
8 different companies.

9 A. Uh-huh.

10 Q. MOPA, MOHELA, and GMO.

11 But one of the concerns I have is that  
12 within your KCP&L's developer mainline deposit refund  
13 program, an air source heat pump is about a \$500  
14 item. So in my looking at this as I've gone around  
15 to the different subdivisions and reviewed their lot  
16 contracts, if a -- it's almost a hundred percent that  
17 the developer requires the builders to install an air  
18 source heat pump.

19 A. Uh-huh.

20 Q. Because if the developer puts in  
21 those hundred lots, getting back \$500 a lot,  
22 that's \$50,000.

23 A. Sure.

24 Q. So the builder puts in an air source heat  
25 pump, and the homeowner, the purchaser of that house,

1       **that costs an extra \$1,300 for them to buy that**  
2       **house.**

3               **Now, if a family -- let's take a typical**  
4       **family of four, two children in school, mom and dad**  
5       **go to work, children go to school, and mom and dad**  
6       **want to be energy efficiency. So they take -- this**  
7       **is during the wintertime. And they turn their**  
8       **thermostat down to 6-- they don't turn it down; it**  
9       **just, as they walk in, it just does it itself.**

10       A.     Right.

11       Q.     You guys sell those; you've been --

12       A.     Sure.

13       Q.     -- selling them for years.

14       A.     Sure.

15       Q.     And it turns that temperature down to 64.

16       A.     Okay.

17       Q.     And then it's set that when the kids get  
18       **home from school at 4:00, at three o'clock that gas**  
19       **comes on and ramps it back up to 70.**

20       A.     Okay.

21       Q.     Where's the heat pump come into that play?

22       A.     If it were not as cold, the heat pump  
23       would be serving that --

24       Q.     Heat pump's not going to ramp it up in an  
25       **hour. It's impossible. I've had heat pumps in**

1 several of my homes. So does a heat pump work in  
2 that condition? Would a heat pump take the  
3 temperature, if it's 30 degrees aside or 30-- 40  
4 degrees.

5 A. Okay.

6 Q. Is a heat pump able to take it from 64,  
7 let's say a 2,500 foot house which is that 300,000  
8 range, from 64 to 70 in the span of one hour as  
9 natural gas could?

10 A. I -- I don't know the answer to that  
11 because of the time element, because I don't know how  
12 quickly the ramp rate would be compared of the two.  
13 But as a personal heat pump owner with gas backup, I  
14 would say that it does recover and achieve what  
15 you're trying to do. I just don't know the time  
16 element of it. If it could be done within that hour,  
17 I don't know.

18 I mean, you know, just the -- just the  
19 sheer difference of the temperature coming out of the  
20 vents is going to give gas an advantage in that  
21 scenario because you're probably pushing out 90, 95  
22 degree air. I don't know for sure, but in the heat  
23 pump situation, you're probably in the 80 degree  
24 range. Both of them will get you up to your set  
25 point on the -- on the thermostat; I just don't know

1 about the time element.

2 **Q. Well, concerning the -- as you mentioned**  
3 **earlier, the price of natural gas today, is the**  
4 **homeowner paying \$1,300 for a heat pump? Is that --**  
5 **is that beneficial to that homeowner?**

6 A. Well, I mean --

7 **Q. Or is it beneficial to the company, I**  
8 **know.**

9 A. Well, I mean, it -- it's tough to say on  
10 the economic side because the, you know, the gas  
11 prices have fluctuated quite dramatically, but I --

12 **Q. Okay. Let's project it forward.**  
13 **Projected forward gas prices are supposed to be very**  
14 **stable. Would you agree?**

15 A. That's my understanding.

16 **Q. Yeah. And for the last several years**  
17 **they've been very stable.**

18 A. The thing I would offer is that at some  
19 point you have to factor in also the efficiency at  
20 the home. Most heat -- most gas heat that you're  
21 going to just install, developer, entry-level kind of  
22 quality, it going to be in an 80 to 85 percent --

23 **Q. Most -- I would disagree with you.**

24 A. Okay.

25 **Q. In that industry right now in the retail**



1 market of 350 to 400 is the average market right now.

2 A. Okay.

3 Q. I know in my area, GMO-serviced territory,  
4 Lee's Summit. And most buildings in my survey, the  
5 majority of builders were putting it at a lower high  
6 efficiency, 91, 92.

7 A. Okay.

8 Q. But taking that into account, if it was  
9 a 92 percent high efficiency furnace or a 91, is it  
10 beneficial to that buyer to pay \$1,300 additional for  
11 an air source heat pump?

12 A. I would offer as a home-- from a homeowner  
13 perspective, I think it is. And the reason I would  
14 say is that currently we do offer a price  
15 differential for that electric heating service. Now,  
16 that differential has eroded over the years, but --

17 Q. I'm talking about new construction.

18 A. I am. I am. So when you go on as a  
19 customer, as a homeowner, and you have that heat  
20 pump, you qualify for our all -- our heating rate  
21 which gives you a lower winter rate than the other  
22 customer who installed gas who's under the generally  
23 available residential rate.

24 Q. Do you do that -- does KCP&L GMO do that  
25 automatically?

1           A.     Yes.  That's part of the transition from  
2     the subdivision development to that homeowner.  So we  
3     know what the heating source is.

4           **Q.     So does KCP&L GMO, do they inspect every**  
5     **single house that's being -- that's built?**

6           A.     I know under our GMO process we did have  
7     inspections and since January we have incorporated  
8     that in the KCPL side.  So as I understand it, yes,  
9     that someone from KCPL is aware of the heating source  
10    for that lot as part of the subdivision development  
11    process.

12          **Q.     So, and what is the rate differential?**

13          A.     I don't -- I think it's around two or  
14    three cents, but I'm not sure if that -- it's subject  
15    to check, but that's a rate that's existed in our  
16    territories for quite a while, both GMO and KCPL.

17                 And so that customer, back to your  
18    scenario, although they had a higher up-front cost,  
19    over the life of that unit will see a better rate for  
20    their electric service that -- that will help offset  
21    that original investment.

22          **Q.     Even though it won't -- it's not very -- I**  
23    **mean, it doesn't get used during the colder spell of**  
24    **the winter.**

25          A.     Again subject to scenarios, that is

1 correct. Now, you know, if you have -- you mentioned  
2 a ground source heat pump.

3 **Q. I just -- I didn't want to go that way.**

4 A. Okay.

5 **Q. I made that mistake.**

6 A. Okay. I was just going to say, because  
7 it's not subject to those same limitations, so it  
8 operates through all seasons without limitation.

9 **Q. Right. Completely -- yeah. I don't even**  
10 **want to get into that.**

11 A. Okay. Because what happens is just the  
12 air, you lose the energy that the heat pump's trying  
13 to draw out. When you get to freezing, as you get  
14 colder, there's less energy in that air that it can  
15 claim. So that's where it starts to lose that  
16 efficiency.

17 COMMISSIONER KENNEY: Okay. That's all  
18 the questions I have for you. Thank you.

19 THE WITNESS: All right.

20 JUDGE PRIDGIN: Commissioner Kenney,  
21 thank you. Any further bench questions?  
22 Mr. Chairman? Commissioner Hall?

23 COMMISSIONER HALL: I think just a few.

24 CROSS-EXAMINATION BY COMMISSIONER HALL:

25 **Q. Good morning.**

1 A. Good morning.

2 Q. In your direct testimony, you refer to the  
3 Commission's prior order in ER-2016-02-- 285.

4 A. Yes, sir.

5 Q. Where the Commission said, In the next  
6 rate case, KCPL shall file a line extension tariff  
7 designed to account for geographic areas where there  
8 is underutilized distribution infrastructure; is that  
9 correct?

10 A. Yeah. I think that that's in my other  
11 testimony though, not the supplemental addressing --

12 Q. That's correct.

13 A. Okay. Okay. I gotcha. Okay.

14 Q. Okay.

15 A. You moved over there. I'm with you now.

16 Q. Okay. I was just wondering if you could  
17 explain to me the extent to which the tariff  
18 submitted in this case complies with that direction.

19 A. Yes. The tariff that we've proposed was  
20 language that would augment our line extension  
21 policies and would set out provisions for determining  
22 circuits that are underutilized within some  
23 preestablished constraints. And what those  
24 preestablished constraints largely are are to capture  
25 known situations where an underutilized circuit is an

1 acceptable situation.

2 There are times when it's okay that that  
3 circuit is underloaded. It could be simply just that  
4 load is coming, it's just a time lag. There could be  
5 other design requirements that are needed to allow a  
6 circuit to be a backup or redundant service to help  
7 with our reliability.

8 But we would, on an annual basis,  
9 determine those circuits that are underutilized and  
10 then make that list available to developers,  
11 builders, people who are -- who are coming into our  
12 system so that they can make a judgment on whether  
13 they would want to locate on those circuits to receive  
14 some additional discount in their line extension  
15 process.

16 **Q. What would that additional discount be?**

17 A. What we -- on the residential side I  
18 believe we waived the rest of the -- the  
19 nonrefundable cost, and I believe it's like a 10  
20 percent at or for the commercial or the  
21 nonresidential line extension work.

22 We -- we offered in that way because we  
23 think that that's the point in time where you can  
24 match the incentive with the person who's making the  
25 decision to help us with that underutilized circuit.

1 If you do something later or you do something  
2 separate, you start to disconnect the incentive from  
3 the decision maker. So we felt that that was the  
4 point where the rubber meets the road and helps us  
5 deal with what the Commission has brought forth in  
6 that provision.

7 **Q. Did you model that approach on any other**  
8 **utility practice?**

9 A. Not to our known -- our knowledge. We --  
10 we did not research this. This was the result of  
11 some brainstorming we did within our operations  
12 teams.

13 **Q. And what was the response by the other**  
14 **parties in this case to that proposal?**

15 A. Staff felt that it did not address an  
16 adaptive reuse element that was perceived to be part  
17 of the workshop discussions. I know we've worked  
18 with them to some degree to see if there's some  
19 alternative way to approach this. But our current  
20 positions are as filed.

21 **Q. And you're still in discussions with Staff**  
22 **on that issue?**

23 A. Yes.

24 **Q. Okay. So that's the incentive for**  
25 **residential customers. How about for nonresidential**

1 **customers?**

2 A. Yeah. That's that 10 percent. There's a  
3 construction allowance factor that we allow if they  
4 locate on an underutilized circuit. It's somewhat  
5 similar to a provision that we have in our EDR  
6 tariffs as well, our economic development rider  
7 tariffs, where if a company locates on an  
8 underutilized circuit, there's a provision there as  
9 well. So it's -- it's kind of in a similar vein.

10 **Q. So is there -- is there a map somewhere**  
11 **that shows those underutilized circuits?**

12 A. No. This would be our first year of doing  
13 that, so we don't have anything today. This would be  
14 on a go forward with effective dates from this case.

15 **Q. Are you aware where the underutilized**  
16 **circuits are --**

17 A. I'm not.

18 **Q. -- generally?**

19 A. No, I'm not. I mean, I --

20 **Q. Do you know if they're clustered?**

21 A. No. The little that I do know is that a  
22 lot of them tend to be rural is -- is what I've been  
23 told. I don't have geographic locations. As part of  
24 our discussions on this matter, there has been some  
25 early effort to try to identify locations. But I

1 don't have that available to me today.

2 CHAIRMAN HALL: Okay. Thank you.

3 THE WITNESS: You're welcome.

4 JUDGE PRIDGIN: Any further bench  
5 questions? Commissioner Rupp?

6 CROSS-EXAMINATION BY COMMISSIONER RUPP:

7 **Q. Where are we at on time of use rates?**

8 A. I think we have proposals in this case for  
9 time of use rates in two forms, a direct time of use  
10 and a time of use demand rate.

11 **Q. And have the studies that you were**  
12 **directed to do in the last rate case, have those been**  
13 **completed?**

14 A. Yes.

15 **Q. Okay. And there was some testimony filed**  
16 **by Dr. Marke that stated that there was a study that**  
17 **was done in 2015, you paid \$25,000 for it, but no one**  
18 **can find the information. Where is that at?**

19 A. Some of those questions, if I may, I might  
20 need to differ to some other witnesses. I -- I'm not  
21 one of the primary time of use witnesses. So, I  
22 mean, I don't know that I can answer your question.

23 **Q. All right. Well, then who would be the**  
24 **appropriate person to ask?**

25 A. I believe that we have Darri n Ives, Kim



1 Winslow, and Marisol Miller who are available to use  
2 discuss the TOU proposals in their entirety and they  
3 would --

4 COMMISSIONER RUPP: Okay. Will they be  
5 testifying?

6 JUDGE PRIDGIN: If you want them to.

7 COMMISSIONER RUPP: And when will that  
8 be?

9 I'm told that later today we might have a  
10 better idea of what time I -- and when I would be  
11 able to ask those questions.

12 THE WITNESS: My apologies. I was  
13 expecting line extension, so I'm -- I apologize.

14 COMMISSIONER RUPP: That's quite all  
15 right. I just wanted to make sure and threw it up.

16 THE WITNESS: Okay.

17 JUDGE PRIDGIN: All right. Thank you.  
18 Any -- excuse me. Any cross for this witness?

19 MR. JOHNSON: No questions.

20 MR. SMITH: No questions.

21 JUDGE PRIDGIN: I see no volunteers.  
22 Very good. Redirect?

23 MR. STEINER: I really just want to  
24 clarify. Commissioner Kenney, you said there's a  
25 possibility you wanted something in the brief about

1 the breakdown of the quarter-mile free extension.  
2 And I wasn't sure exactly what you're requesting  
3 there or if you're requesting.

4 COMMISSIONER KENNEY: I can't remember.

5 MR. STEINER: Okay.

6 COMMISSIONER KENNEY: We can -- I'll let  
7 you know later.

8 MR. STEINER: Thank you.

9 COMMISSIONER KENNEY: All right. Thank  
10 you.

11 JUDGE PRIDGIN: If there's nothing  
12 further for this witness, you may step down.

13 THE WITNESS: Thank you.

14 JUDGE PRIDGIN: And was that the only  
15 Company witness on line extension?

16 MR. STEINER: That's right.

17 JUDGE PRIDGIN: All right. And, Staff,  
18 did you have a line extension witness?

19 MR. JOHNSON: Yes, thank you, Judge.  
20 Staff calls Sarah Lange.

21 JUDGE PRIDGIN: All right. Ms. Lange, if  
22 you'll come forward and be sworn please.

23 (Witness sworn.)

24 JUDGE PRIDGIN: Thank you very much. You  
25 may have a seat. Mr. Johnson, when you're ready,

1 sir.

2 SARAH LANGE, having been first duly sworn,  
3 testified as follows:

4 DIRECT EXAMINATION MR. JOHNSON:

5 Q. Good morning, Ms. Lange.

6 A. Good morning.

7 Q. Could you please state your name and spell  
8 your last name for the court reporter.

9 A. Sarah L. K. Lange, L-a-n-g-e.

10 Q. And are you the same Sarah Lange that  
11 contributed to the staff direct class cost of service  
12 report?

13 A. Yes.

14 Q. Marked as Staff Exhibit 204?

15 A. Yes.

16 Q. And provided rebuttal testimony marked as  
17 Staff Exhibit 223?

18 A. I provided rebuttal in both CCOS and --  
19 sorry. In both revenue requirement and rate design.  
20 And I did also contribute to the staff cost of  
21 service report.

22 Q. Thank you, Ms. Lange. Did you provide  
23 surrebuttal covering line extension policies?

24 A. Yes.

25 Q. Marked as Staff Exhibit 234, both public

1           **and confidential?**

2           A.     Yes.

3           **Q.     And I apologize; I forgot to ask you this**  
4 **earlier. By whom are you employed and in what**  
5 **capacity?**

6           A.     The Missouri Public Service Commission.  
7 I'm a regulatory economist three in the rate and  
8 tariff department.

9           **Q.     Thank you. And in terms of your line**  
10 **extension testimony, do you have any corrections to**  
11 **make to that testimony?**

12          A.     Not to the line extension portions, no.

13          **Q.     And if you were to provide the same**  
14 **testimony today, would it be the same?**

15          A.     Yes.

16                 MR. JOHNSON: Judge, Ms. Lange has  
17 additional testimony to offer later in the case so  
18 I'm going to hold off on offering these, this  
19 testimony on exhibits.

20                 JUDGE PRIDGIN: Thank you. Any bench  
21 questions? Commissioner Kenney?

22                 COMMISSIONER KENNEY: Yes, thank you.

23                 CROSS-EXAMINATION BY COMMISSIONER KENNEY:

24                 **Q.     Good morning.**

25                 A.     Good morning.

1           **Q.     Regarding what was discussed first on**  
2 **the -- what is Staff's position on KCPL GMO's**  
3 **extension policy regarding their free service up to a**  
4 **quarter mile for four houses or under and requiring**  
5 **payment and deposits for five homes or greater?**

6           A.     That's generally consistent with the other  
7 electric utilities in the state. And I guess to get  
8 at what I think you're asking about, I would  
9 generally agree with Mr. Lutz's characterization as  
10 to some of the reasoning behind that having to --

11           **Q.     What is the reasoning behind that?**

12           A.     I would take the reasoning behind that to  
13 be the, I guess likelihood for lack of a better word,  
14 that all of those five homes will be built if  
15 multiple lots are being developed simultaneously.

16           **Q.     And is I imagine those lines would be --**  
17 **if they had to run a line extension of a quarter**  
18 **mile, I know it would be -- I'm thinking the cost on**  
19 **a per-house basis, if you -- I understand -- I can --**  
20 **I can agree with Company's position that whether**  
21 **those homes are built or not in the future, and we**  
22 **can just look back to the past five, six, seven**  
23 **years, but on a cost-per-home basis, I would think it**  
24 **would be much higher to run one line for a quarter**  
25 **mile versus running -- I mean, you got poles, you got**

1 **line versus running for a new subdivision.**

2 A. As far as the poles and line, that -- that  
3 wouldn't surprise me. As you said earlier, I think  
4 it probably has more to do with the pedestals and the  
5 transformers. But I think that's -- I do think that  
6 is a legitimate concern to look into is the  
7 reasonableness of those -- how those two policies  
8 interact.

9 **Q. You heard the discussion I had regarding**  
10 **the distribution materials --**

11 A. I believe so.

12 **Q. -- where -- does Ameren supply the**  
13 **conduit?**

14 A. It does vary among utilities.

15 **Q. I know KCP&L and GMO do not supply**  
16 **conduit. In my looking at Ameren's tariff -- let me**  
17 **see if I can find it.**

18 A. Yeah. I know I specifically looked at  
19 that, but sitting here right now I don't recall with  
20 certainty which way it works. So for non-- oh, here  
21 we are.

22 **Q. So here's what I have on -- I don't -- I**  
23 **don't have the tariff number, but it says, The**  
24 **conduit system installation by applicant will consist**  
25 **of conduit, manholes, pulling boxes, transformer**

1 pads, switch gear pads, pedestal bases, and other  
2 required subservice structures. All such materials  
3 be provided by Company at no cost to the applicant,  
4 excluding subdivisions in the large lot deal.

5 Now, does it benefit the Company to supply  
6 all the materials?

7 A. I think there's two ways of coming at  
8 this. There's -- there's a -- I guess to me there's  
9 two parts of this equation when it comes to the  
10 balance between the customer applying for new service  
11 and the customers who have service. If I'm a  
12 developer and I have excavation equipment and  
13 personnel on hand to install that conduit, I would  
14 probably rather have my folks install it at the rate  
15 I'm paying them for their other work than necessarily  
16 have it run through the utility.

17 Q. I think you misunderstood my question.

18 A. I may have.

19 Q. Yeah. But I under-- and I do understand  
20 what you're saying. And both companies, both Ameren  
21 and KCPL require that, the installation.

22 Is there a benefit that the Company  
23 provide all materials, conduit also? One provides  
24 conduit, one doesn't. Is it beneficial for the State  
25 to have a single policy?

1           A.     I mean, this is the kind of thing that  
2 does vary among service territories. So without a  
3 rulemaking, typically what is -- what is done in one  
4 utility's tariff may vary from what's done in another  
5 utility's tariff.

6           **Q.     Okay. Do new subdivisions bring in new**  
7 **customers for companies?**

8           A.     I -- generally. I mean, you -- you can  
9 have kind of a net loss issue. We saw a little bit  
10 of this in the Empire area after the tornado which of  
11 course is an extraordinary event, but sometimes you  
12 have just where housing stock is replaced and there's  
13 not a significant change in the number of ultimate  
14 customers. But generally, yes.

15          **Q.     So generally, yeah, that would be a bene--**  
16 **a net benefit to the Company in general if they have**  
17 **more customers?**

18          A.     There would tend to be more revenue  
19 associated with more customers, yes.

20          **Q.     Okay. In KCPL and GMO, once the conduit**  
21 **is supplied, once it's installed, once they run their**  
22 **line, it becomes the Company's, correct?**

23          A.     Well, this is where we get into some  
24 accounting details that I'll give you my best  
25 understanding of but may not get completely accurate.



1 My understanding is that those -- those  
2 items of plant become the Company's responsibility to  
3 maintain. But if they were, in fact, paid for or  
4 contributed, that there's an accounting treatment  
5 that removes the value or an equivalent amount of  
6 value of that plant from the rate-based calculation.

7 **Q. Okay. So that was my next question. So**  
8 **are you saying they do not get a return on plant and**  
9 **service on those items?**

10 A. Here's where we get into a level of  
11 detail that's far beyond me, but my understanding is  
12 that there will be an offsetting adjustment so they  
13 will -- both yes and no. They will, my understanding  
14 is, return -- a return on and earned appreciation on  
15 that literal investment, but that there will be an  
16 offsetting adjustment made at another account that  
17 will back that out of the revenue requirement  
18 calculation. And Mark Oligschlaeger is who I've  
19 spoken with a bit on this. So he --

20 **Q. Yeah.**

21 A. -- he would --

22 A. My CPA guy, I'm not going to even go  
23 further. My CPA tells me that I'm continuing  
24 education for him every day, so. If you understand  
25 that.

1 All right. In your testimony regarding  
2 heat pumps.

3 A. Yes.

4 **Q. Were you -- on page 7 of your surrebuttal,**  
5 **were you discussing air source heat pumps in that**  
6 **area?**

7 A. I appreciate the nuance that you put in  
8 the testimony this morning. My -- my understanding,  
9 and I would defer to Mr. Lutz on this, is that for  
10 purposes of this up-front calculation, air source,  
11 ground source, and resistance would generally have  
12 the same line extension calculation; it would just be  
13 whether or not that customer is applicable for some  
14 of KCPL's special discounted rates that would vary,  
15 is my understanding. But I frankly would defer to  
16 Mr. Lutz on that.

17 **Q. Okay. On page 7 you came with up some**  
18 **up-front costs, and you came up with a -- on page --**  
19 **on line 2 of a value of 1,550 per home, 950**  
20 **refundable, 600 nonrefundable.**

21 **Where do you come up with those numbers?**

22 A. I sent an email to Mr. Lutz and we tried  
23 to talk through an example to make sure that I was  
24 trying to get an understanding on this.

25 **Q. Because my understanding, I don't -- those**

1       **numbers, from the individuals I've talked to, they**  
2       **don't resonate.**

3           A.       This was intended as an example of how the  
4       calculation works.

5           **Q.       Okay. Do you know what items were within**  
6       **that refundable amount, what the Company takes into**  
7       **consideration?**

8           A.       So I -- I have a copy of the Electric  
9       Service Guide for Residential Construction.

10          **Q.       Okay.**

11          A.       To be -- to be blunt, I haven't had an  
12       opportunity to review this in detail, but my  
13       understanding is that a summary of how those items  
14       work is -- is contained in here. I don't know how  
15       much it gets into particular end uses.

16          **Q.       Well, as you review that, does it have any**  
17       **breakdowns on it?**

18          A.       So there are kind of standard prices for  
19       moving service drops, replacing an existing overhead  
20       service drop with an underground, new permanent  
21       underground service from overhead distribution,  
22       conversion to existing overhead service to  
23       underground service, additional charge for a new  
24       secondary pedestal is required, and on and on.

25                    These standard prices do not include the

1 end use. That comes in in the other part of the  
2 calculation.

3 **Q. All right. So you don't have it there in**  
4 **front of you?**

5 A. I do not.

6 **Q. All right. I'm sure you heard me**  
7 **discussing the value of an air source heat pump.**

8 A. Yes.

9 **Q. And I'm sure you heard me mention that the**  
10 **cost of an air source heat pump would be**  
11 **approximately \$1,300 greater than an air conditioner**  
12 **on a home valued at approximately 300,000 in the**  
13 **Kansas City market. Do you recall that?**

14 A. Those numbers don't shock me.

15 **Q. Okay. And as I noted, as I -- did you**  
16 **hear me mention that in the Lee's Summit market, that**  
17 **a -- the vast majority of all developers require**  
18 **their builders to install ground source heat pumps --**  
19 **or air source heat pumps?**

20 A. That -- I don't know that myself, but that  
21 doesn't shock me.

22 **Q. And their -- and would it surprise you**  
23 **that their reasoning is because they get a rebate**  
24 **of \$500 for that?**

25 A. Again, I -- I don't know that, but that

1 would n' t shock me.

2 **Q. Okay. Do you know how an air source heat**  
3 **pump operates?**

4 A. Generally.

5 **Q. Do you know if it's possible on an outside**  
6 **temperature at 40 degrees to ramp up temperature**  
7 **from 64 degrees to 70 degrees within an hour span**  
8 **using an air source heat pump?**

9 A. That gets to a level of HVAC engineering  
10 that's well beyond me. I -- I frankly don't know. I  
11 think it would depend on the size of the house,  
12 whether you're using presumably, you know, ducted  
13 air, whether or not that --

14 **Q. Let's take -- let's take a**  
15 **newly-constructed, 2,400 square foot, two story, four**  
16 **bedroom, three and a half bath home in the Lee's**  
17 **Summit market that has brand new ductwork, has a 91**  
18 **percent high efficiency gas-fired furnace and has**  
19 **a 14 SEER air source heat pump. Do you think -- do**  
20 **you have any idea whether that would heat a home**  
21 **from 64 degrees to 70 degrees within one hour?**

22 A. I certainly can't do that calculation  
23 sitting here today. It -- I don't know.

24 **Q. If I told you that in -- if I told you**  
25 **that in my personal house, that that's impossible to**

1 ramp it up that fast? What I'm getting at is that  
2 the homeowners in Lee's Summit are paying \$1,300 in  
3 the Kansas City GMO market for an ace -- or a  
4 ground -- or an air source heat pump that is  
5 inefficient in today's energy efficiency markets.  
6 **Would that surprise you?**

7 A. Generally I think that Missouri is kind of  
8 identified as being on sort of the northern edge of  
9 where air source makes sense from a -- from a  
10 complete energy and complete energy-out perspective.  
11 I -- I don't know the details of that, but, you know,  
12 we are kind of where, if you look at heating degree  
13 days, cooling degrees days, and days where we're kind  
14 of below, you know, an acceptable trigger point, I  
15 could see how there -- it may or may not be the, you  
16 know, absolute lowest energy-in option.

17 **Q. Okay. Does an air source heat pump versus**  
18 **an air conditioner produce any benefit during the**  
19 **summer?**

20 A. My understanding is that air source heat  
21 pumps can be more efficient during the summer, again  
22 depending on the outside --

23 **Q. Than an --**

24 A. -- air temperature --

25 **Q. -- air conditioner?**

1           A.     -- than an air condition, depending on a  
2 lot of variables, that, again, are beyond what I'm  
3 comfortable giving you a certainty on today.

4           **Q.     Okay. So would you say you don't really**  
5 **know?**

6           A.     On that particular question, correct, I  
7 don't know.

8           COMMISSIONER KENNEY: Okay. Okay. Thank  
9 you very much.

10           JUDGE PRIDGIN: Thank you. Any further  
11 bench questions? Mr. chairman? Commissioner Hall?

12 CROSS-EXAMINATION BY COMMISSIONER HALL:

13           **Q.     Good morning.**

14           A.     Good morning.

15           **Q.     I am confused by your testimony in your**  
16 **rebuttal on page 14, starting at page 14.**

17           A.     Give me a moment. I actually don't have  
18 that page printed out with me as I didn't think we  
19 were getting to that issue today. I apologize.

20           **Q.     Yeah. I was concerned I wouldn't have an**  
21 **opportunity to discuss line extension other than**  
22 **today, so that's why I'm doing it now.**

23           A.     Sure. Okay. My lawyer's presented a  
24 copy.

25           **Q.     Okay. You are critical of KCP&L's**

1       **proposed underutilized distribution infrastructure**  
2       **revision because you believe that it's going to --**  
3       **it's going to incent Greenfield development?**

4           A.     I think it would under many circumstances  
5       restore a -- restore the reduction of a disincentive,  
6       to make it as confusing as possible.

7           **Q.     Well, you succeeded.**

8                   **You were in the hearing room when Mr. Lutz**  
9       **was explaining the basis of the tariff, correct?**

10          A.     Correct.

11          **Q.     And my understanding is that there will be**  
12       **a discount for development in areas where there's**  
13       **underutilized circuits; is that correct?**

14          A.     That is correct, with the caveat of how  
15       underutilized is defined.

16          **Q.     So explain that.**

17          A.     So my understanding of the focus of the  
18       Commission's workshop was to look at reutilization of  
19       as much infrastructure as possible in areas where  
20       infrastructure was not being utilized, including  
21       things like service drops and secondary distribution  
22       lines.

23                   What the Company's initial proposal would  
24       do would not get to that level of detail and would  
25       put that benefit in where a new transformer may need



1 to be added and new service lines may need to be  
2 added.

3 **Q. But there's -- there is some -- okay. So**  
4 **how would you fix the KCP&L proposal to address the**  
5 **concerns you just raised?**

6 A. So I would add a geographic identification  
7 of areas where there is known potential for adaptive  
8 reuse.

9 **Q. Well, define adaptive reuse.**

10 A. So adaptive reuse is taking something the  
11 Company already has in service and either using it,  
12 you know, as it was used or using it for a different  
13 purpose.

14 So the example here would be if you have a  
15 former commercial or industrial area where the load  
16 is left, to either revitalizing that area to more  
17 commercial uses or perhaps industrial uses or perhaps  
18 converting, you know, the -- the good example here is  
19 warehouse being converted into residential housing,  
20 you know, that kind of thing where you -- you won't  
21 necessarily be able to use everything the Company has  
22 in place, but you will be taking advantage of  
23 infrastructure, you know, as much infrastructure as  
24 possible that the Company already has in place.

25 **Q. So if there is additional load in areas**

1       **where there are underutilized circuits, that to some**  
2       **extent from your perspective does address the overall**  
3       **concern of the workshop, doesn't it?**

4           A.     Well, adding any load anywhere would  
5       address it to --

6           **Q.     Well, adding load where there is**  
7       **underutilized circuits. I mean, there's certainly**  
8       **going to be a need for less infrastructure to serve**  
9       **load where there is overutilized circuit or no**  
10       **circuits exist versus a place where you have**  
11       **underutilized circuits.**

12          A.     Yes. I think it's a question of how much,  
13       I guess how much capital you are looking to have  
14       invested or restored to service. So, for example, a  
15       transformer that costs \$20,000, to install that, you  
16       know, on a -- on an underutilized circuit, you're  
17       still investing \$20,000 versus if you're in an area  
18       where that transformer already exists, you're  
19       avoiding that investment.

20          **Q.     So would there -- would there be ways of**  
21       **defining underutilized circuits and ways of crafting**  
22       **the discount that would address at least a portion of**  
23       **your concern?**

24          A.     Yes, absolutely.

25          **Q.     Okay. So how would you define**

1           **underutilized circuit.**

2           A.       I -- to be careful about what I can and  
3           can't say here in light of settlement or settlement  
4           discussions I should say --

5           **Q.       You know, I don't want to get into**  
6           **settlement discussion. I want to know what's in your**  
7           **brain as to how you would craft underutilized -- a**  
8           **definition of underutilized circuits so as to**  
9           **effectuate the goals of the workshop, which I**  
10          **appreciate you keeping at the forefront of that**  
11          **brain.**

12          A.       So the way that I would do that is sitting  
13          at a document on my computer that has a lot of kind  
14          of precise language in it that I am not comfortable  
15          attempting to recite today.

16          **Q.       Okay. Well, then I'll just say I want you**  
17          **to go forth and conquer.**

18          A.       Okay.

19                   COMMISSIONER HALL: Thank you.

20                   THE WITNESS: Thank you.

21                   JUDGE PRIDGIN: Commissioner Hall, thank  
22          you. Commissioner Rupp, any questions? Any cross?

23                   MR. SMITH: No cross from OPC.

24                   JUDGE PRIDGIN: Redirect?

25                   MR. JOHNSON: No, thank you, Judge.

1 JUDGE PRIDGIN: Ms. Lange, thank you very  
2 much. You may step down.

3 Is that the final witness on this issue?  
4 Ready to move on to net metering then. Mr. Steiner,  
5 if you want to call your witness.

6 MR. STEINER: Drew Robinson. We're going  
7 to have to do him by phone as we indicated so we need  
8 to call him up.

9 JUDGE PRIDGIN: I don't recall that; I'm  
10 sorry. I don't recall the request for -- I have no  
11 problem with it; I just don't recall you telling or  
12 asking --

13 MR. STEINER: I thought it was on our  
14 issues list, but.

15 MR. JOHNSON: I apologize, Judge, but we  
16 had discussed that late last week. It was late in  
17 the day.

18 JUDGE PRIDGIN: Okay. I understand.

19 Madam Court Reporter, do you have a phone  
20 up there by you?

21 COURT REPORTER: No.

22 JUDGE PRIDGIN: I'll tell you what, if  
23 you don't -- oh, there we are.

24 COMMISSIONER HALL: Where do you want it?  
25 Just right over here?

1 JUDGE PRIDGIN: Thank you. We can put a  
2 mic on it.

3 MR. STEINER: 913.963.6019.

4 MR. ROBINSON: Good morning, this is  
5 Drew.

6 JUDGE PRIDGIN: Good morning, this is Ron  
7 Pridgin; I am with the Missouri Public Service  
8 Commission.

9 MR. ROBINSON: Hi, Ron.

10 JUDGE PRIDGIN: Good morning. Got you on  
11 speaker phone. Can people in the hearing room hear  
12 fairly well? All right. I believe I need to swear  
13 in this gentleman then and you'll have some -- this  
14 is Mr. Robinson; is that correct?

15 MR. ROBINSON: That's correct.

16 JUDGE PRIDGIN: All right. Very good.

17 (Witness sworn.)

18 JUDGE PRIDGIN: Thank you, sir.

19 Mr. Steiner, when you're ready.

20 DREW ROBINSON, having been first duly sworn,

21 testified as follows:

22 DIRECT EXAMINATION BY MR. STEINER:

23 **Q. Please state your name for the record.**

24 **A.** My name is Drew Robinson.

25 **Q. Mr. Robinson, where do you work?**

1 A. I work at Kansas City Power & Light.

2 Q. **And what is your position there?**

3 A. My position is the manager of renewables.

4 Q. **Thank you. Did you cause to be filed**  
5 **surrebuttal testimony in this matter which has been**  
6 **previously marked as Exhibit 160?**

7 A. I did.

8 Q. **Do you have any changes or corrections to**  
9 **that testimony?**

10 A. I do not.

11 Q. **If I were to ask you today the questions**  
12 **in that testimony, would your answers be the same**  
13 **today?**

14 A. They would.

15 MR. STEINER: Thank you. Judge, I would  
16 offer this exhibit as -- into evidence and tender the  
17 witness for cross-examination and questions.

18 JUDGE PRIDGIN: All right. Thank you. I  
19 believe that's Exhibit 160; is that correct?

20 MR. STEINER: That's right.

21 JUDGE PRIDGIN: Any objections? Hearing  
22 none, Exhibit 160 is admitted.

23 (Exhibit 160 was received into evidence.)

24 JUDGE PRIDGIN: Bench questions?  
25 Commissioner Rupp? Any bench questions?

1 Mr. Chairman.

2 COMMISSIONER HALL: No questions.

3 JUDGE PRIDGIN: All right. Thank you. I  
4 don't believe we have any questions for this witness.  
5 All right. Mr. Robinson, thank you very much.  
6 Appreciate your appearance by phone. Thank you, sir.

7 THE WITNESS: Thank you very much.

8 JUDGE PRIDGIN: And we had a Staff  
9 witness on this issue as well; is that correct?

10 MS. MERS: Yes, we do. Staff would call  
11 Cedric Cunigan to the stand.

12 JUDGE PRIDGIN: All right. Mr. Cunigan,  
13 if you'll come forward and be sworn please, sir.

14 (Witness sworn.)

15 JUDGE PRIDGIN: Thank you, sir. You may  
16 have a seat. Ms. Mers, when you're ready.

17 CEDRIC CUNIGAN, having been first duly sworn,  
18 testified as follows:

19 DIRECT EXAMINATION BY MS. MERS:

20 **Q. Would you please state and spell your name**  
21 **for the record.**

22 A. Cedric C. Cunigan, C-e-d-r-i-c and then  
23 Cunigan is C-u-n-i-g-a-n.

24 **Q. And who are you employed by and in what**  
25 **capacity?**

1           A.     The Missouri Public Service Commission.  
2     I'm a utility engineering specialist three.

3           **Q.     And did you prepare or cause to be**  
4     **prepared rebuttal testimony that has been marked as**  
5     **Exhibit 219 and surrebuttal testimony that's been**  
6     **marked as Exhibit 229?**

7           A.     Yes.

8           **Q.     Do you have any corrections to that**  
9     **testimony?**

10          A.     No.

11          **Q.     And is that testimony true and accurate to**  
12     **the best of your knowledge and belief?**

13          A.     Yes.

14          **Q.     And if I asked you the same questions**  
15     **today, would your answers be the same?**

16          A.     Yes.

17                 MS. MERS: At this time I'd move to admit  
18     Exhibit 219 and 229 and tender the witness for cross.

19                 JUDGE PRIDGIN: 219 and 229 have been  
20     offered. Any objections? Hearing no objections, 219  
21     is admitted; 229 is admitted.

22                 (Exhibit 219 and Exhibit 229 were  
23     received into evidence.)

24                 JUDGE PRIDGIN: Any bench questions?  
25     Commissioner Rupp? Mr. Chairman?



1 CHAIRMAN SILVEY: No.

2 JUDGE PRIDGIN: Any bench questions?

3 COMMISSIONER RUPP: No.

4 JUDGE PRIDGIN: Mr. Cuni -- Cuni gan,  
5 excuse me, thank you very much. You may step down.

6 Did I understand upon completion of these  
7 Commission issues, the parties wanted to take a break  
8 to talk about some of the remaining rate design  
9 issues?

10 MR. STEINER: That's correct, your Honor.

11 JUDGE PRIDGIN: And I think I floated the  
12 idea and I'm, I guess looking for guidance. I think  
13 I kind of floated the idea of the parties breaking  
14 the remainder of the day, but we got through these  
15 issues rather quickly and I -- I want to give you  
16 time to talk and at the same time kind of keep things  
17 moving. So I'm unsure if you would like to continue  
18 to try your unresolved issues today or if you need  
19 more time to talk. And so I guess I -- I'm kind of  
20 looking to the parties for guidance.

21 MR. STEINER: Judge, if we could maybe  
22 break now until after lunch and then we could come  
23 back and give you a status report and let you know  
24 then kind of where things stand on the term sheets  
25 and the rest of the schedule.

1 JUDGE PRIDGIN: That's certainly fine  
2 with me. One o'clock, 1:30, something in that range?

3 MR. STEINER: Either one, Judge.

4 JUDGE PRIDGIN: Let's -- since it's about  
5 a quarter to 10:00, let's shoot for one o'clock. And  
6 then hopefully we'll have some guidance from the  
7 parties on what issues you want to try when.

8 MR. STEINER: Thank you.

9 JUDGE PRIDGIN: Anything else before we  
10 go off the record? All right. We will stand in  
11 recess until 1:00 p.m. Thank you; we're off the  
12 record.

13 (A recess was taken.)

14 JUDGE PRIDGIN: Good afternoon. We are  
15 back on the record. Counsel, what were you able to  
16 accomplish during the break?

17 MR. FISCHER: Judge, I think we have made  
18 substantial progress on the remaining issues that  
19 weren't already associated with that revenue  
20 requirement stipulation. Before I go there, I'd like  
21 to thank the parties for staying at the negotiating  
22 table to get as much done as we've done so far.  
23 We've spent a lot of evenings last week and then over  
24 the weekend.

25 But we have agreed, I believe, to a term

1 sheet that will resolve most of the remaining  
2 revenue -- or rate design issues, and we are trying  
3 to translate that into a stipulation and agreement  
4 which would hopefully be filed later tonight. At  
5 this point there are still a couple, maybe three  
6 issues that would need to be tried, and that would  
7 include revenue allocations, commercial industrial  
8 rate design, and depending on how the revenue  
9 allocation decision was made, there could be a  
10 residential rate design issue also dealing with  
11 customer charges and the residential rate design that  
12 would need to be addressed. But those would be the  
13 only outstanding issues that are not subject to the  
14 stipulations and agreements.

15 And other counsel can chime in and  
16 confirm that that's their understanding, but that --  
17 and we also are hoping to have a revised list of  
18 issues that would show you a little bit better who  
19 the witnesses are that are left and how much time  
20 it's likely to take, but I think we're in pretty good  
21 shape.

22 JUDGE PRIDGIN: Mr. Fischer, thank any.  
23 Any comments from any other counsel? I'm sorry,  
24 Mr. Comley?

25 MR. COMLEY: Judge Pridgin, one of the

1 issues that was a chief concern of my client was the  
2 Indiana models, and one of the issues that has been  
3 resolved by stipulation is the issue concerning that  
4 Indiana model. And I have no other cross-examination  
5 for any witnesses, and I was going to ask if this  
6 would be an appropriate time to seek your leave to be  
7 excused from the balance of the hearing.

8 JUDGE PRIDGIN: That's certainly fine  
9 with me. Any comments or objections?

10 COMMISSIONER HALL: Well, the only  
11 comment I might have is the Indiana model is  
12 something that I am particularly interested in and so  
13 I'd like to see what the stipulation includes, and I  
14 may have a question or too.

15 MR. COMLEY: I'll be back.

16 COMMISSIONER HALL: Based upon -- I mean,  
17 based upon that.

18 MR. COMLEY: I have a conflict over the  
19 last -- Wednesday, Thursday, and Friday, but we'll  
20 try to work something in if that's necessary.

21 JUDGE PRIDGIN: Okay. Did the parties  
22 want to -- I'm sorry. Ms. Whipple.

23 MS. WHIPPLE: Judge Pridgin, I would make  
24 a similar request. My client's issue was only the  
25 real-time pricing tariff. It has been resolved, at

1 least among the parties. And with leave of the  
2 Commission, I would ask to be excused from presence  
3 in the remainder of the hearing.

4 JUDGE PRIDGIN: Any objections or  
5 comments? Those requests are granted. Did the  
6 parties want to try the remaining issues today or  
7 tomorrow or how do you -- how do you want to go from  
8 here?

9 MR. HACK: Judge, we still are hopeful  
10 that we may be able to have further discussions on  
11 those three issues. So what we would like to do  
12 would be give you what we think the hearing would  
13 look like if we don't settle those issues later today  
14 and schedule those to start tomorrow morning. And  
15 then that would give us the rest of the day to try  
16 and make progress and see where we go.

17 One other I guess scheduling item, if I  
18 may, is we -- we would be interested at the right  
19 time in the hearing you, the Commissioners and the  
20 presiding officers' thoughts on if you would like a  
21 stip presentation for the revenue requirement and  
22 pension and OPEB stips that have already been filed.  
23 Obviously you haven't seen the third stip that may be  
24 filed, but just want to put that on the table. Don't  
25 need an answer; I just wanted to put it out there.

1 JUDGE PRIDGIN: Mr. Hack, thank you. I  
2 appreciate that. I've considered that since we had  
3 this entire week set aside for hearing. I was  
4 thinking perhaps Thursday might be a good time. That  
5 would give parties a break Wednesday to go to FRI and  
6 I was thinking maybe Thursday would be a good time  
7 for any bench questions on the stipulations. So what  
8 I'm hearing is the parties would like to continue  
9 negotiating the rest of the day. And if we have any  
10 hearing, it would be tomorrow starting --

11 MR. HACK: 8:30.

12 JUDGE PRIDGIN: 8:30. Okay. I'm sorry.  
13 Commissioner.

14 COMMISSIONER KENNEY: Yes, I had a --  
15 just a clarification. Mrs. Lange, what was the name  
16 of that document you produced from the company? What  
17 was that called regard-- I think it was when we were  
18 discussing the rebate program.

19 MS. LANGE: It was and I took it off of  
20 my clipboard because that portion had concluded. But  
21 if you would like that to be --

22 COMMISSIONER KENNEY: If you could  
23 just -- if you could just email it to my office, so  
24 I could have the name of that document so I could  
25 get -- so I could request a copy of that.

1 MS. LANGE: I think if I -- if I provide  
2 a copy to my attorney, I think she would be happy to  
3 make that an exhibit in the case or offer it as an  
4 exhibit in the case.

5 COMMISSIONER KENNEY: Okay. And then --  
6 okay. That would be great.

7 MS. MERS: We will get to you.

8 COMMISSIONER KENNEY: And do you have the  
9 other section to it also?

10 MS. LANGE: I do. I do need to clarify  
11 with the Company whether or not that's considered  
12 confidential, but I don't believe it is.

13 COMMISSIONER KENNEY: Okay. Thank you  
14 very much.

15 MS. LANGE: Thank you.

16 JUDGE PRIDGIN: Okay. Thank you. What  
17 I'm hearing is that the parties want to keep talking  
18 and we will resume with whatever issues need to be  
19 tried tomorrow morning at 8:30. And then perhaps  
20 Thursday would be a good time for any bench questions  
21 on the stipulations.

22 Any -- anything further from counsel or  
23 from the bench before we adjourn for the day? Okay.  
24 Hearing nothing, we will stand in recess until 8:30  
25 tomorrow morning. Thank you. We're off the record.

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(Whereupon, the hearing was adjourned  
until September 25, 2018 at 8:30 a.m.)

(Office of Public Counsel Exhibits 300C,  
301, 302, 303C, 304C, 305C, 306, 307, 308, 309C, 310,  
311, 312, 313, 314, 315C, 316C, 317C, 318C, 319, 320,  
321C, and 322C were marked for identification.)

(Kansas City Power & Light Exhibit 149  
was marked for identification.)



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CERTIFICATE

I, Shelley L. Mayer, a Certified Court Reporter, CCR No. 679, the officer before whom the foregoing deposition was taken, do hereby certify that the witness whose testimony appears in the foregoing deposition was duly sworn by me; that the testimony of said witness was taken by me to the best of my ability and thereafter reduced to typewriting under my direction; that I am neither counsel for, related to, nor employed by any of the parties to the action in which this deposition was taken, and further, that I am not a relative or employee of any attorney or counsel employed by the parties thereto, nor financially or otherwise interested in the outcome of the action.

  
\_\_\_\_\_  
Shelley L. Mayer, CCR

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