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February 5, 2009

VIA FEDERAL EXPRESS

Public Utilities Commission of Ohio  
Attention: Renee Jenkins  
Docketing Division  
180 E. Broad Street, 10th Floor  
Columbus, OH 43215

PUCO

RECEIVED-DOCKETING DIV  
2009 FEB -6 AM 10:28RE: DP&L ESP Filing, Case No. 08-1094-EL-SSO *et al.*

Dear Ms. Jenkins:

Enclosed are: (1) fourteen (14) copies of The Dayton Power and Light's Notice of Filing Depositions; and (2) deposition transcripts of:

- a. Gonzalez, Wilson
- b. Ibrahim, Amr A.
- c. Duann, Daniel J.
- d. Yankel, Anthony J.
- e. McClelland, Barry E.
- f. Pullins, Steven W. ✓
- g. Fein, David I.
- h. Woolridge, J. Randall
- i. Bowser, Joseph G.
- j. Sawmiller, Daniel J.
- k. Murray, Kevin M.
- l. Dickstein, Shelley J. (awaiting transcript)
- m. Frye, Mark R. (awaiting transcript)
- n. Higgins, Kevin C. (awaiting transcript)

Very truly yours,



R. Holtzman Hedrick

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Enclosures



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BEFORE THE PUBLIC UTILITIES COMMISSION OF OHIO

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 In the Matter of the Application of )  
 The Dayton Power and Light Company ) Case No.  
 for Approval of Its Electric Security ) 08-1094-EL-SSO  
 Plan )  
 )

In the Matter of the Application of ) Case No.  
 The Dayton Power and Light Company ) 08-1095-EL-ATA  
 for Approval of Revised Tariffs )  
 )

In the Matter of the Application of ) Case No.  
 The Dayton Power and Light Company ) 08-1096-EL-AAM  
 for Approval of Certain Accounting )  
 Authority Pursuant to Ohio Rev. Code )  
 Section 4905.13 )  
 )

In the Matter of the Application of ) Case No.  
 The Dayton Power and Light Company ) 08-1097-EL-UNC  
 for Approval of Its Amended Corporate )  
 Separation Plan )  
 )

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DEPOSITION of STEVEN W. PULLINS, called  
 as a witness at the instance of Dayton Power and Light,  
 taken pursuant to Notice, on the 3rd of February, 2009,  
 at Horizon Energy Group, 2126 Southwood Drive,  
 Maryville, Tennessee, before Thomas J. Dorsey,  
 Registered Professional Reporter and Notary Public for  
 the State of Tennessee.

## 1 APPEARANCES:

2 FOR DAYTON POWER AND LIGHT:  
 3 CHARLES J. FARUKI, ESQ.  
 4 (VIA TELEPHONE)  
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 7 Dayton, Ohio 45402  
 8 cfaruki@ficlaw.com  
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## 10 FOR THE OHIO CONSUMER COUNCIL:

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 13 (VIA TELEPHONE)  
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## 21 ALSO PRESENT:

22 Daniel Duann, (Via Telephone)  
 23 Stacia Harper, (Via Telephone)  
 24  
 25

## 1 INDEX

2 Examinations Page

3 STEVEN W. PULLINS

5 EXAMINATION BY MR. FARUKI: 4

1 STEVEN W. PULLINS,

2 having first been duly sworn, was examined and  
 3 testified as follows:

## 4 EXAMINATION BY MR. FARUKI:

5 Q. Good morning, Mr. Pullins, how are you?

6 A. I'm fine, thank you.

7 Q. My name is Charlie Faruki, we met by

8 telephone a few minutes ago, and we're doing this

9 deposition by telephone, so if you have any difficulty

10 understanding any of my questions either because of the

11 phone connection or because of the way I word them, I

12 want you to let me know; is that agreeable?

13 A. That's agreeable.

14 Q. Have you been deposed before?

15 A. No, I have not.

16 Q. Very briefly, I want you to make sure to

17 articulate your answers verbally so the court reporter

18 can get them and the people on the telephone can hear

19 them. If you don't understand any of my questions,

20 please tell me, and I'll try to rephrase it. And if

21 you need a break at any time, let me know. Is that

22 agreeable?

23 A. Yes, that's agreeable.

24 Q. Tell me your full name and where you

25 work.

1 A. My name is Steven W. Pullins. And I am  
 2 the president of Horizon Energy Group.

3 Q. Would you tell us what that is?

4 A. Horizon Energy Group is a small

5 consulting -- energy consulting firm focused on Smart

6 Grid technologies and strategies and integration, as

7 well as the integration of renewables into the grid.

8 Q. Are you an owner of the firm or the owner  
 9 of the firm?

10 A. I am one of the owners of the firm.

11 Q. When was the firm founded?

12 A. The firm was founded in 2005 and

13 registered in November of 2005.

14 Q. Can you describe your customer base for  
 15 us?

16 A. Our customer base is primarily electric  
 17 and gas utilities in the United States and Europe, plus  
 18 the Department of Energy at the National Energy  
 19 Technology Laboratory where I lead the nation's effort  
 20 to modernize the grid under the modern grid strategy  
 21 team.

22 Q. I see a reference on your testimony to  
 23 that. I think it's as a consultant with the Department  
 24 of Energy; is that correct?

25 A. That's correct.

1 Q. So do you consider your full-time job to  
2 be with Horizon Energy Group?

3 A. Yes. My full-time work is with the  
4 Horizon Energy Group.

5 Q. Okay. Before we go further, tell me what  
6 materials you have in front of you.

7 A. I have my direct testimony in front of  
8 me, and I have some draft answers to questions that  
9 were asked over the weekend by Dayton Power and Light.  
10 And I have book 2, the customer conservation and energy  
11 management program, book 2 under the filing. I have  
12 that in hard copy.

13 Q. Right. Okay. Tell me the second item  
14 you mentioned, draft answers to questions, I'm not sure  
15 what those are.

16 A. You're asking me about the questions that  
17 I mentioned. On Friday night, we received or I  
18 received some questions from Dayton Power and Light  
19 about some of the answers in my direct testimony, and I  
20 spent some time over the weekend working on answers to  
21 those questions. And I have those written down, so  
22 I've got those in front of me.

23 Q. I see; okay.

24 MR. FARUKI: I'm getting a little  
25 feedback. Are you, Mike, getting that?

1 MR. IDZKOWSKI: Yeah, I'm getting  
2 something. It's almost like an echo.

3 MR. FARUKI: If that becomes a problem,  
4 maybe we'll have to redial.

5 MR. IDZKOWSKI: Sure, let me know. I  
6 mean, it's not bothering us to the point where we  
7 can't hear everybody, but it sounds almost like  
8 it's a repeat echo.

9 BY MR. FARUKI:

10 Q. I'm going to ask a few more questions,  
11 Mr. Pullins, about page 1 of your testimony if I can.

12 Your engagement here is with the Office  
13 of Consumers' Counsel; is that right?

14 A. Yes, my contract is with the OCC.

15 Q. And do you have an hourly rate you're  
16 charging them, or a flat fee?

17 A. I have an hourly rate that I'm charging.

18 Q. And what is that?

19 A. That's \$180 per hour.

20 Q. When did your engagement begin?

21 A. My engage -- our engagement or our  
22 company's engagement, Horizon Energy Group, began with  
23 the Office of Consumer Counsel on December 12 of 2008.

24 Q. On page 1 at lines 15 and 16, you say  
25 you've worked with more than 20 utilities. Do you see

1 that reference?

2 A. Yes, I see that.

3 Q. Over what period of time are you talking  
4 about there?

5 A. In line 15 and 16 and then on to 17, I  
6 have worked with more than 20 utilities in the Smart  
7 Grid strategies, renewable strategies, power system  
8 optimization, operations transformation, RTO/ISO,  
9 operational processes, AMI, Smart Grid technologies,  
10 strategic and resource planning. Those 20 utilities,  
11 that would be from 2002 until now.

12 Q. How many of those utilities were ones in  
13 which you've worked on AMI and Smart Grid technologies  
14 as opposed to other subjects?

15 A. So you're asking me how many of those  
16 utilities I've worked with over the last several years  
17 are directly related to AMI and Smart Grid?

18 Q. Yes. That is, how much of your work with  
19 those 20 -- or let me phrase that a little better.

20 Of the 20 utilities to which you have  
21 referenced, how many of those were engagements that  
22 were directly related to AMI or Smart Grid technology?

23 A. Okay. I'm going to -- the list is a  
24 little long, so I'm going to write it down as I go.

25 Q. That's fine. If it's easier for you, you

1 can take a minute and write those down and then tell  
2 me. Whatever's easier.

3 A. That would be easier. I'll take a minute  
4 to write those down.

5 Q. Okay. I don't have a problem being  
6 quiet, so I'll do that.

7 A. All right. I think I have the complete  
8 list here. All right.

9 Q. Okay. Go ahead.

10 A. Of those utilities that I've worked with  
11 over the last several years, the ones where I've worked

12 with them directly related to AMI/Smart Grid  
13 technologies and strategies are San Diego Gas &  
14 Electric, Southern California Edison, Puget Sound  
15 Energy, Consumers Energy, Entergy, American Electric  
16 Power and Allegheny Power as part of the West Virginia  
17 Smart Grid implementation plan. Tennessee Valley  
18 Authority, Salt River Project, Taiwan Power.

19 Q. Sorry, what was that one?

20 A. Taiwan Power.

21 Q. Oh, T-A-I-W-A-N?

22 A. Yes.

23 Q. Okay. Thank you. Go ahead.

24 A. And Great River Energy. And Scottish  
25 Power.

1 Q. Were the last three that you mentioned  
2 foreign companies?

3 A. Taiwan Power -- two of the last three are  
4 foreign companies. Taiwan Power is in Taiwan, the  
5 Republic of China, and some people have referred to it  
6 as Formosa in the past. Great River Energy is in  
7 Minnesota. And Scottish Power is in Scotland.

8 Q. And the Salt River Project is where?

9 A. Salt River Project is in the central  
10 Arizona area near Phoenix.

11 Q. Consumers Energy is where?

12 A. Consumers Energy is in Michigan, south  
13 central, west central Michigan.

14 Q. Entergy is where?

15 A. Entergy is in Louisiana, Arkansas, Texas,  
16 and a little sliver of Mississippi.

17 Q. Then you have told us that you worked  
18 with AEP and Allegheny Power as part of the West  
19 Virginia Smart Grid project; is that right?

20 A. That's close. The West Virginia Smart  
21 Grid implementation plan is a project that I am leading  
22 with the State of West Virginia energy office, the West  
23 Virginia University, Allegheny Power, and American  
24 Electric Power, RDS which is Research and Development  
25 Solutions which is the contractor, the prime technical

1 contractor, to the National Energy Technology  
2 Laboratory. And the National Energy Technology  
3 Laboratory is part of that team as well as the  
4 Department of Energy's Office of Electricity Delivery  
5 and Energy Reliability.

6 Q. Do you have an engagement with AEP apart  
7 from the West Virginia project?

8 A. I do not have an engagement with AEP  
9 apart from that West Virginia project.

10 Q. The same question, sir, about Allegheny  
11 Power, do you have an engagement with them apart from  
12 or separate from the West Virginia project?

13 A. I do not.

14 Q. Have you done any Smart Grid work for a  
15 utility in Ohio? I don't mean to ask if you've been  
16 engaged by a utility in Ohio, but, rather, separate  
17 from this engagement, have you done Smart Grid work in  
18 Ohio?

19 A. Our modern grid strategy team, which is,  
20 as you can see on page 2 of my testimony, that the  
21 Ohio -- or the Public Utility Commission of Ohio in  
22 2007 asked our team to participate in a series of  
23 workshops on AMI, and my business partner, Joe Miller,  
24 who is also on the modern grid strategy team, he was  
25 our -- the modern grid strategy team's lead person on

1 that effort with the Public Utility Commission of Ohio.  
2 And through those series of workshops on AMI and partly  
3 on Smart Grid, Joe had the opportunity to interface on  
4 AMI/Smart Grid issues with all four of the  
5 investor-owned utilities in the State of Ohio, as well  
6 as other interested stakeholders in that process.

7 Q. Did you come to Ohio to work on that  
8 project?

9 A. I did not participate in that effort in  
10 Ohio; however, I did indirectly participate, since  
11 being the team leader, it's my responsibility to assure  
12 that Joe Miller and Bruce Renz, who was also on that  
13 effort who's a former American Electric Power  
14 executive, were meeting the needs of the Public Utility  
15 Commission of Ohio, as well as making sure that the  
16 advice that we gave or that the team gave to the Public  
17 Utility Commission of Ohio was consistent with our  
18 modern grid strategy goals and the Office of  
19 Electricity Delivery and Energy Reliability, which is  
20 part of the Department of Energy.

21 Q. Can you tell me how much time you spent  
22 approximately on this engagement for the Office of  
23 Consumers' Counsel?

24 A. You're asking me basically how many hours  
25 that we have spent on this, that I have spent on this?

1 Q. Yes, sir.

2 A. Approximately 120 hours.

3 Q. Were other people from your firm  
4 involved, or was it you alone?

5 A. There were two other people involved in  
6 the research and dissecting various work papers from  
7 our firm, one was Joe Miller, and the other is one of  
8 our engineers, Alex Zheng. And they worked under my  
9 they provided draft input to me as I developed the  
10 testimony personally.

11 Q. Can you tell me Alex's full name again?

12 A. Alex Zheng, Z-H-E-N-G.

13 Q. Okay. Thank you.

14 Would you turn to page 24 of your  
15 testimony?

16 A. Okay. I'm there.

17 Q. I'd like to direct your attention, sir,  
18 to lines 19 and 20. I see it runs over on to 25. You  
19 have a statement that says, "The DP&L AMI/Smart Grid  
20 program as filed has most of the merits of a good, cost  
21 effective AMI/Smart Grid program that addresses the  
22 program characteristics of a Smart Grid commonly  
23 envisioned by industry, policy and technology leaders."

24 I'd like to ask you a few questions about  
25 that statement. When you say it "has most of the

1 merits of a good, cost effective AMI/Smart Grid  
2 program," can you elaborate?

3 A. I'm sorry, I think your flipping of the  
4 pages -- I didn't catch all of your last part of your  
5 statement there.

6 Q. Oh, sure. That wasn't me flipping, but  
7 I'll be glad to read it. I focused on 19 and 20 in  
8 this statement. And my question is, when you refer to  
9 "most of the merits of a good, cost effective AMI/Smart  
10 Grid program," I'm asking what you mean by that.

11 A. Okay. What I mean by most of the merits  
12 or the merits of a good, cost effective AMI/Smart Grid  
13 program, would be consistent with the principal  
14 characteristics of a Smart Grid that the modern grid  
15 strategy team has developed over the last three and a  
16 half years. And those seven principal characteristics  
17 you can read in more detail about on the modern grid  
18 website which is part of the NETL website.

19 But basically those seven characteristics  
20 are that a modernized grid or a Smart Grid, which  
21 includes AMI as a part of it, will engage and motivate  
22 the consumer to participate. It will accommodate a  
23 wide variety of generation and storage options. It  
24 will provide the power quality necessary for a digital  
25 society in the 21st century. It will --

1 Q. Let me interrupt you. Tell me that one  
2 again.

3 A. Provide the power quality for a 21st  
4 century digital economy.

5 Q. Okay. Thank you. I interrupted you. Go  
6 ahead. That was number 3, I take it?

7 A. That was number 3.

8 Number 4 is enable markets. This is  
9 being able to enable markets whether they're regulated  
10 or unregulated or competitive. Whether they're  
11 wholesale or retail. In other words, it provides  
12 infrastructure and fundamentals for the proper  
13 operation and/or enablement of a market or several  
14 markets.

15 It will resist attack, both natural  
16 events and man-made attack.

17 It will operate assets with higher asset  
18 utilization and operate more efficiently.

19 It will self-heal; in other words,  
20 anticipate and take action to respond to events or  
21 impending events. So we normally refer to that as  
22 self-heals.

23 So those are the seven principal  
24 characteristics of a Smart Grid that have been  
25 forwarded to the nation and through the industry by our

1 modern grid strategy team over the last three and a  
2 half years. And we have worked for and gained  
3 consensus across the industry on those seven principal  
4 characteristics.

5 And those characteristics of a Smart Grid  
6 are really a vision and a set of functional qualities  
7 that are necessary to put a Smart Grid in place in the  
8 nation so that we can reap the benefits both from  
9 operational efficiencies and new services, as well as  
10 reducing the cost or mitigating the cost to the  
11 consumer, and providing some of the benefits to the  
12 society at large that we need to provide or be part of  
13 in the energy space.

14 So my point is, is that the DP&L  
15 AMI/Smart Grid program as it's filed today has most of  
16 those merits.

17 Q. Okay. Thank you for elaborating on that.  
18 I understand.

19 A couple of questions about these  
20 functional qualities that you mentioned.

21 You said accommodate a wide variety of  
22 storage options; is that right?

23 A. Not quite. What I said was it  
24 accommodates a wide variety of generation and storage  
25 options.

1 Q. Thank you. And will you elaborate on  
2 that, tell me what you mean?

3 A. Okay. I'm happy to elaborate on that.

4 What we mean by that is that in the  
5 future and actually even today, there are more and more  
6 generators being attached to the grid in the form of  
7 wind and natural gas-based generation, coal, and in  
8 even some -- well, and some renewables like wind, also  
9 geothermal, and now some solar plants.

10 In addition, there are also many, many  
11 backup generators available at commercial and  
12 industrial sites in the United States, roughly 78  
13 percent of all businesses in the United States have a  
14 backup generator. And that's an additional, pent-up  
15 capacity that is waiting to be exercised. And the  
16 Smart Grid needs to be able to recognize that there are  
17 options and programs that are going to -- that are  
18 happening today and will grow over time across the  
19 nation to utilize those idle assets in the generation  
20 of electricity. And those are primarily at the  
21 distribution system level, electrical distribution  
22 system level. And the only way to move those resources  
23 into the grid and provide benefit, not only to the  
24 utility, but also to the consumers, is to make the grid  
25 more intelligent and more nimble to be able to

1 accommodate that. And we're talking about from a  
2 national perspective, moving from about 30,000  
3 generating nodes on the electric grid, to probably a  
4 half a million or maybe a million over the next decade.  
5 So it's a substantial change. And today's grid is not  
6 capable of handling that level of complexity and  
7 sophistication. And the Smart Grid will be able to do  
8 that.

9 In addition to that, we have new tools  
10 that can help us reshape the load, especially the peak  
11 load, and one of those tools is storage. And by -- for  
12 the same reason as we need to put more intelligence  
13 into the grid to accommodate backup generation that's  
14 out there at the commercial and industrial consumer  
15 sites, that same reason exists for storage. As we put  
16 more and more storage on to the grid such as industrial  
17 scale storage; for example, American Electric Power's  
18 chemical substation battery in Charleston, West  
19 Virginia. And taking a look at plug-in hybrid electric  
20 vehicles which are also, when connected to the grid in  
21 a vehicle-to-grid mode, have storage capacity that can  
22 be beneficial to, not only the person who owns that  
23 particular vehicle with its storage capabilities, but  
24 also beneficial to the utility and taking advantage of  
25 that storage capability.

1 Q. With regard to the first of the principal  
2 characteristics or functional qualities you listed  
3 including AMI and part of the grid so as to engage and  
4 motivate consumers to participate, is it your view that  
5 the utility needs to have a Smart Grid in order to  
6 enable consumers to participate in controlling their  
7 own energy usage?

8 A. All right. There's a -- there seems to  
9 be a couple questions in that. Can you maybe break  
10 those thoughts out for me a little bit so I can grasp  
11 them a little bit more cleanly?

12 Q. I'll try.

13 A. Okay.

14 Q. Let me ask it this way: How does a Smart  
15 Grid engage and motivate consumers to participate in  
16 controlling their own energy usage?

17 A. Okay. A Smart Grid and AMI, advanced  
18 metering infrastructure, as part of the Smart Grid,  
19 because it's a subset of the Smart Grid, that's a  
20 necessary element for -- let me say it again. AMI is  
21 part of the Smart Grid. The Smart Grid engages and  
22 motivates the consumer in a few different ways. And it  
23 requires technology introduction, and integration in a  
24 smart way to make that happen.

25 So here's how a Smart Grid, you know,

1 with AMI as part of it, enables or engages and  
2 motivates the consumer: If you want to engage the  
3 consumer to be aware of their energy usage so that they  
4 can take action themselves, then you need to be able to  
5 provide that consumer, not only information about their  
6 usage at particular times of the day, but also what  
7 that energy costs at particular times of the day. That  
8 information is also valuable to the utility for load  
9 planning, load research, helping to or providing that  
10 information into demand response programs such that  
11 those programs can be enacted when we approach a peak  
12 on a particular hour of the day, and then action can be  
13 taken as far as curtailing or moderating some energy  
14 usage in a broad spectrum of homes or commercial  
15 businesses or industrial businesses who have decided to  
16 participate in such demand response programs. So  
17 that's the second way.

18 So the first way is through better  
19 information, and making that available to people so  
20 people and businesses can make decisions.

21 The second way is through enabling  
22 programs that allow the utility to take some action  
23 that has minimal impact on the consumer, whether it's  
24 residential, commercial or industrial, but enables a  
25 large, positive impact on reducing the peak.

1 The third way of engaging this consumer  
2 and motivating this consumer by using a Smart Grid  
3 strategy with AMI included, is the ability to address  
4 outages and power quality events. If you have a more  
5 intelligent system and you have the information flowing  
6 from that more intelligent system back to the utility's  
7 network operations center or system control center, how  
8 ever you want to define that point of decision-making  
9 within the utility, we can take that information and  
10 anticipate. We can trend certain information and  
11 anticipate certain outages that are impending. And  
12 therefore take action, because now we have information  
13 that tells us something, we can take action before that  
14 outage actually occurs. But let's say an outage -- so  
15 that would be the third way.

16 Let's say an outage occurs anyway for  
17 some reason, even in like the wind storms that came  
18 through Ohio as a result of the hurricane last fall,  
19 like I think it was, having more intelligence in the  
20 grid allows the utility to understand exactly where the  
21 outages exist as opposed to having a general sense of  
22 where the outages exist. And that's important, because  
23 the utility can say I know that that line is out  
24 between, you know, point A and point B; therefore, all  
25 of the rest of the segments of that particular

1 distribution circuit and other distribution circuits  
2 that are on that particular distribution substation can  
3 be reenergized, because there's no fault there. And a  
4 Smart Grid knows that there's no fault on these other  
5 sections.

6 So it's a matter of, you know, clearing  
7 some relays, and putting those nonfaulted sections of  
8 those distribution circuits and substations back on  
9 line immediately, where in the past, that's taken hours  
10 and probably days to fully investigate and understand  
11 that before that decision can be made.

12 So that's the fourth way, which is the  
13 ability with a Smart Grid, we have the ability to, when  
14 an event happens, an outage happens, we can better  
15 isolate the outage and restore everything else that's  
16 nonaffected. And that is a great improvement on the  
17 system average interruption duration index, a lot of  
18 people call that SAIDI, and that's what -- that's a  
19 major area of benefit, not only for the utility, but  
20 also for consumers.

21 The fifth area, and I can go on, but I'm  
22 going to stop at number 5, the fifth area is when you  
23 have a more intelligent grid, you're able to understand  
24 power quality events. I have more details coming from  
25 the smart meters, I have more details and data of

1 interest coming from the distribution, the relays and  
2 smart switches out on the distribution system, and the  
3 smart relays that I have in the substations. And that  
4 information properly flowing up into the utility's data  
5 management and decision-making processes can enable a  
6 utility to understand where the power quality issues  
7 are more completely and more directly. As opposed to  
8 waiting for customers to come to them and tell them  
9 there's a power quality issue, the utility knows it in  
10 advance, and can take action that minimizes that effect  
11 on the consumers on a daily basis or an hourly basis or  
12 whatever, whatever the particular power quality issue  
13 happens to be.

14 So those are --

15 Q. Would you agree --

16 A. Those are examples of how engaging and  
17 motivating the consumer to participate in the Smart  
18 Grid program generates benefit for the consumer, and,  
19 additionally, for the utility.

20 Q. Would DP&L's proposed Smart Grid have  
21 these benefits for consumers?

22 A. Well, what I've said is that as filed,  
23 they would have most of those benefits that's been  
24 described. And that's potentially a very good step in  
25 the right direction. There are some specific areas,

1 and I'm pointing -- I'd like to point you to page 25,  
2 there are some specific areas such as the cost data and  
3 analysis and benefits adjustments that still need to be  
4 addressed before the Public Utility Commission of Ohio  
5 approval can be recommended and the program proceed.  
6 And there's a list of what I think are -- and my  
7 analysis shows, are some areas that need to be improved  
8 to enable, enable this program to be acceptable, in my  
9 opinion.

10 Q. Do you agree that the last three of these  
11 benefits that you mentioned, the ability to address  
12 outages before it occurs, being able to isolate the  
13 effected event and restore service to nonaffected  
14 customers, and understanding power quality events, do  
15 you agree that those are benefits that go to improved  
16 reliability for customers?

17 A. If a utility puts the right Smart Grid  
18 strategy and implementation together that includes  
19 those technologies, those key technologies that support  
20 the principal characteristics that I mentioned earlier,  
21 the seven principal characteristics, and if, you know,  
22 those things are done in a correct way consistent with  
23 the vision that we see for a Smart Grid, then it's --  
24 and those things are, you know, reviewed and approved  
25 by the commission, then I think we're -- I think it's

1 possible that Dayton Power and Light could generate  
2 lots and lots of benefits for themselves in the  
3 operational area, as well as the consumers.

4 And we'd have to explore that whole  
5 rollup of and list or portfolio of consumer benefits  
6 and the operational benefits, or, I should say  
7 consumer/societal benefits, you know, that would come  
8 out of that particular program to see if it is indeed  
9 generating the benefits that were planned or estimated  
10 in the front end.

11 Q. You referred to identifying or providing  
12 information to consumers about their usage at various  
13 times in the day and their costs at various times of  
14 the day.

15 Is the provision of that sort of  
16 information to customers essential for the customer to  
17 be able to exercise some control over their own energy  
18 usage?

19 A. You're asking me -- I think you're asking  
20 me if the AMI and Smart Grid are necessary to  
21 provide -- are necessary technology elements to be  
22 installed to enable consumers to take advantage of  
23 usage information and varying rates at different times  
24 of the day. Is that what you're asking?

25 Q. That was going to be my next question,



1 but go ahead with that one. That's fine.  
 2 A. There are several -- well, first of all,  
 3 we're talking about -- I don't want to get into the  
 4 discussion of energy efficiency programs and demand  
 5 response programs, because that's not what I've  
 6 researched in this particular filing. But from a  
 7 general sense of enablement by AMI and a Smart Grid,  
 8 the AMI and the Smart Grid, if done in a way that meets  
 9 the seven characteristics of a Smart Grid, will provide  
 10 that information to the consumers about their usage and  
 11 about the time, the pricing at a particular time of  
 12 day.

13 Q. And --

14 A. And many people --

15 Q. I'm sorry, go ahead. I thought you were  
 16 done.

17 A. And many people refer to that as  
 18 time-of-use rates.

19 Q. And what is the purpose of providing that  
 20 type of information to the customer? By "that type,"  
 21 I'm talking about the items you mentioned, their usage  
 22 at various times of the day and costs.

23 A. Well, both the theory and the experience  
 24 in other parts of the country is that when people --  
 25 when consumers -- and this is residential, commercial

1 and industrial consumers have access to their energy  
 2 usage information in near realtime and they have access  
 3 to the time-based rates in realtime or near realtime,  
 4 they modify behavior. And that results in an overall  
 5 reduction of usage.

6 Now, again, that's from a general  
 7 perspective. This is learned information and observed  
 8 information through our work with other utilities or  
 9 through my work with other utilities, and my work on  
 10 the modern grid strategy team. I haven't looked at  
 11 that particular aspect in the DP&L filing, basically  
 12 chapter 2. I've only focused on chapter 3 and 4 and  
 13 the executive summary, chapter 1.

14 Q. Well, you saw in portions that you read  
 15 that there are certain statutory targets or goals that  
 16 the legislature in Ohio has set forth? Did you see  
 17 reference to that?

18 A. I'm sorry --

19 MR. IDZKOWSKI: Where are you citing,  
 20 Charlie?

21 MR. FARUKI: I'm not citing a page, it's  
 22 all over the company filing.

23 BY MR. FARUKI:

24 Q. I'm asking you, Mr. Pullins, if you have  
 25 seen the references to the goals or targets set by the

1 law in Ohio that the utility needs to meet?

2 MR. IDZKOWSKI: Well, I'm going to object  
 3 to the general nature of the question. He's being  
 4 asked to find or remember specific cites or  
 5 references in very extensive filing. If he can  
 6 answer questions about specific references, I  
 7 think that's appropriate, but you're asking him to  
 8 comment on whatever he remembers about the filing  
 9 and certain references in that filing. Can you be  
 10 a little more specific?

11 MR. FARUKI: You're either  
 12 misunderstanding or mischaracterizing my question.

13 MR. IDZKOWSKI: Well, I'm not trying to  
 14 mischaracterize it, I'm just trying to get to what  
 15 you want.

16 MR. FARUKI: Let me finish.

17 BY MR. FARUKI:

18 Q. My question is, do you remember seeing  
 19 references to the fact that the law in Ohio has set  
 20 targets that the utility has to meet? I'm not  
 21 interested in whether you know the percentages, I'm  
 22 just asking, do you understand that the law has set  
 23 targets that the utility has to meet?

24 A. I understand that the law has established  
 25 targets for certain aspects of performance and

1 enablement of new services.

2 Q. Okay. And you -- I'm sorry, I'm getting  
 3 a lot of feedback. Can you understand me okay?

4 A. I can understand you perfectly.

5 Q. Okay. Thanks.

6 MR. IDZKOWSKI: We're getting some of  
 7 that feedback, too, Charlie. It's almost like an  
 8 echo a second or a couple seconds after you state  
 9 something. So if that happens, it may go away.

10 MR. FARUKI: Maybe I'll speak more  
 11 slowly.

12 BY MR. FARUKI:

13 Q. Mr. Pullins, you're aware that the  
 14 legislature in Ohio set various targets or goals for  
 15 the electric utilities to reduce energy consumption  
 16 over a period of time and that fact regardless of  
 17 whether you know particular percentages; is that right?

18 A. Yes, I am aware of that, but I am not --  
 19 I haven't studied that in detail. So I'm just not  
 20 familiar with the details and the requirements, and,  
 21 you know, the levels and the prerequisites to that.

22 Q. Yes. I wasn't going to ask about that  
 23 level of detail.

24 My question is, do you have an opinion on  
 25 whether Smart Grid technology would be of assistance to

1 an electric utility in trying to meet such goals?

2 A. I have an opinion based on my experience  
3 with other utilities who are -- who have developed, and  
4 I have led efforts to develop those Smart Grid  
5 strategies, including AMI, to address state-established  
6 goals around renewables and energy efficiency and  
7 conservation and demand response and things like that,  
8 all of those tools that we try to instill to improve  
9 the grid situation. I am aware of those and have an  
10 opinion about that based on those other places.

11 And that opinion is that a Smart Grid is  
12 essential to realizing those goals. But I haven't  
13 looked at the DP&L case specifically around the  
14 question of whether or not DP&L, if it puts in place a  
15 good AMI/Smart Grid program, can actually achieve  
16 those -- any of those state mandates. I have not  
17 looked at that.

18 MR. FARUKI: Charlie, I wondered if  
19 somebody joined. Did anybody join our  
20 conversation? I guess not. Are you still there?  
21 We've lost them.

22 THE WITNESS: This is Steve and Tom.  
23 We're still here.

24 MR. IDZKOWSKI: Okay. Good.

25 MR. POULOS: Charlie?

1 MR. IDZKOWSKI: Charlie, are you there?

2 MR. FARUKI: This is Charlie. My line  
3 suddenly went blank, so I had to dial in.

4 MR. IDZKOWSKI: Okay.

5 MR. FARUKI: Are we all still here?

6 MR. IDZKOWSKI: We are here at the OCC.  
7 Steve, are you still there?

8 THE WITNESS: Yes, we are still here.

9 MR. FARUKI: Okay. Off the record.

10 (Discussion off the record.)

11 (Recess taken.)

12 MR. FARUKI: Okay. Let's go back on the  
13 record.

14 I had asked the court reporter to read  
15 back to Mr. Pullins your answer before our line  
16 disconnected, and then my question is going to be  
17 whether you were finished or not.

18 (Requested portion of record read.)

19 MR. FARUKI: Thank you, Tom.

20 BY MR. FARUKI:

21 Q. Mr. Pullins, were you finished?

22 A. Yes, I was finished with that answer.

23 Q. Okay. Thank you. Would you look at  
24 page 2 of your testimony?

25 A. Okay.

1 Q. On line 14, you say that you have  
2 conducted four Smart Grid studies in the U.S.

3 Can you tell me when and where those  
4 were?

5 A. Okay. I've conducted four Smart Grid  
6 studies in the U.S., three of which I led, and I'm  
7 currently leading the fifth.

8 The four is the Tennessee Valley  
9 Authority System Optimization Program, that was early,  
10 that was 2002-2003 before we attached the label called  
11 Smart Grid.

12 Did one for the San Diego region which is  
13 called the San Diego Smart Grid Study. And I mentioned  
14 that earlier, that's -- that was -- or maybe I  
15 mentioned it earlier, I'm not sure. But that study was  
16 commissioned by the University of San Diego's Energy  
17 Policy Initiative Center and co-funded by San Diego  
18 Gas & Electric and the Utility Consumer Action Network,  
19 the local intervenor, who co-funded that project, and I  
20 led that effort.

21 The third was the Puget Sound Energy  
22 Green Enabling Grid, it was a Smart Grid program  
23 focused on how to enable renewables and more green type  
24 strategies within the Puget Sound territory. That was  
25 in 2006.

1 The San Diego Smart Grid Study which I  
2 failed to give you the time there, the timing on that,  
3 that was also 2006.

4 And then the fourth one was working with  
5 San Diego Gas & Electric specifically on their Smart  
6 Grid plan underneath their utility of the future  
7 initiative, and that was focused on specific Smart Grid  
8 application, a suite of applications, and planning  
9 those implementations and developing the business cases  
10 and the requirements around that. And that started in  
11 2006 and carried over through much of 2007.

12 So those are the four.

13 And then last summer we began the West  
14 Virginia Smart Grid implementation plan. And we should  
15 be finished with that probably April of this year.

16 Q. The four Smart Grid studies, to make sure  
17 I have them right, that you reference on line 14 are  
18 briefly TVA, the San Diego region, Puget Sound Energy,  
19 and San Diego Gas & Electric which was related to their  
20 or accompanied by their utility of the future? Are  
21 those the four?

22 A. Yes.

23 Q. Okay. Thank you. Have you led to  
24 completion any Smart Grid project?

25 A. Led to -- are you saying led to

1 completion as far as fully implemented Smart Grid?

2 Q. Yes, sir. Yes, sir.

3 A. No, I have not led to completion any  
4 Smart Grid effort.

5 Q. Have you made a study in any of the work  
6 that you reference in your testimony of variances  
7 between initial estimates and final expenditures on a  
8 Smart Grid project?

9 A. Can you ask that again, please, rephrase?

10 Q. I can have the reporter read it back for  
11 you, that might be easier.

12 MR. FARUKI: Tom, would you do that.

13 (Requested portion of record read.)

14 A. I understand the question now. No, I  
15 have not.

16 Q. Let me ask a question about the utilities  
17 that you have worked with, and I'm still on page 2,  
18 Mr. Pullins.

19 Are any of these utilities ones that you  
20 consider similar to DP&L in size and service area?

21 A. All of these, the utilities that I've  
22 worked with that's in this list or, I'm sorry, related  
23 to these Smart Grid studies shown in line 14 and 15,  
24 are larger than Dayton Power and Light. And similar is  
25 a very hard -- hard to quantify. I would say in many

1 ways they're similar, but, I mean, they're different  
2 parts of the country, so, that has an effect. I can't  
3 really offer an opinion on how similar they are.

4 Q. Let me ask you whether economies of scale  
5 affect the costs of implementation of a Smart Grid. I  
6 can give you an example if you'd like, but let me ask  
7 the general question first.

8 A. Well, in general, economies of scale when  
9 you're doing a hardware-software integration project do  
10 matter. It's typically though not -- if you're looking  
11 at it as a cost input, it's not necessarily tied to how  
12 many meters and how many customers there are in the  
13 particular service territory or a particular utility.  
14 Sometimes it matters more how many things you're  
15 rolling out. Am I doing --

16 Q. Let me ask -- I'm sorry, I thought you  
17 were finished.

18 A. Go ahead.

19 Q. When you did your work in this case, did  
20 you make any attempt to adjust the utilities' costs,  
21 the instances that you were referencing, to account for  
22 much higher meter density than DP&L has?

23 A. We or I looked at that not in detail, but  
24 I looked at that compared to data that I had about AMI,  
25 the typical costs of an AMI program from several other

1 utilities that I have information on, and what -- you  
2 know, if there's an economy of scale, you would suspect  
3 that the larger number or the utilities that have a  
4 larger meter count would have a lower cost than those  
5 who are lower. And that's -- the data does not support  
6 that.

7 Q. Not just a larger meter count though,  
8 isn't an important economic fact the density of  
9 population in a service territory?

10 A. Most of the utilities that I've worked  
11 with in AMI and Smart Grid, they all have a mixture of  
12 density, they all have vertical urban, urban, suburban,  
13 and rural areas. So I haven't -- I wouldn't consider  
14 that a differentiator for Dayton Power and Light.

15 Q. To give you an example, if you have a  
16 hundred meters in a square mile versus 3,000 meters in  
17 a square mile, do you agree that economies of scale  
18 would dictate that the cost per meter in the 3,000 per  
19 square mile group would be less?

20 A. The cost of the meter will be the same.  
21 The cost of the installation may be different, higher  
22 or lower. I don't think the data supports that.

23 Q. Why do you say that?

24 A. Because when you're looking at -- again,  
25 so you're looking at meters, communications and

1 installation as maybe some potential variables there.  
2 The meters are the same, it's a device, it doesn't care  
3 where it goes. The communications matters, but it more  
4 depends topology and topography than it does a density  
5 factor. And looking at installation costs, you might  
6 think that it takes more time to install a meter in a  
7 rural setting as opposed to a downtown metropolitan  
8 setting, but the data doesn't bear that out. Even  
9 though it takes a while to get to a rural location to  
10 install a meter and test it, it also takes a while to  
11 get, you know, through the neighborhood or through a  
12 couple different neighbors to get to the point in a  
13 dense urban or vertical urban environment to install  
14 and test that meter. So I don't think there's  
15 sufficient data in the industry that would bear out, at  
16 least I have not seen sufficient data that would bear  
17 out that there's a difference in cost between a less  
18 dense AMI and a more dense AMI.

19 Q. When you compare DP&L's cost in its  
20 filing to the cost in other utilities, do you know  
21 whether the meters installed by these other utilities  
22 were gas and electric capable or just electric capable?

23 MR. IDZKOWSKI: Are you saying does he  
24 know the types of meters that he studied, the  
25 other ones that he's studied separate from DP&L?

1 MR. FARUKI: Yes.  
 2 THE WITNESS: I can say in San Diego and  
 3 in Consumers Energy and in Puget Sound, we looked  
 4 at -- Puget Sound Energy, there were electric  
 5 meters, and there were gas meters in the program.  
 6 In all of those cases though, the meter on the --  
 7 the gas meter itself was not being changed out,  
 8 there was a device being added to that gas meter  
 9 that communicated usage information to the nearest  
 10 electric meter, and then that electric meter  
 11 transported or communicated the information back  
 12 up through the head end, which is the data -- the  
 13 predata collection system of the AMI into the  
 14 meter data management system.  
 15 BY MR. FARUKI:  
 16 Q. Did you take --  
 17 A. But --  
 18 Q. Sorry, were you done?  
 19 A. I'm done.  
 20 Q. You paused, and I wasn't sure if you were  
 21 finished.  
 22 Would you take a look at page 4?  
 23 A. Okay.  
 24 Q. With regard to your answer to question 7,  
 25 when you are talking about AMI being one of the four

1 milestones in delivering the Smart Grid, in particular,  
 2 the sentence that is on lines 11, 12 and 13 -- let me  
 3 ask you this: You talk about the four functions that  
 4 AMI delivers, and this is, again, on lines 11 to 13.  
 5 And my question is simply, are each of those four  
 6 functions necessary for an operable AMI system?  
 7 A. This -- this is my -- this is my  
 8 definition based of an AMI, and those four functions  
 9 are necessary. And this definition's based on our  
 10 work, our modern grid strategy team's work. So I --  
 11 Q. My --  
 12 A. -- subscribe to that, to that definition.  
 13 Q. My question is, just so I get a clear  
 14 answer on my record, sir, is it your opinion that these  
 15 four functions are necessary to an operable AMI system?  
 16 MR. IDZKOWSKI: Was that operable or  
 17 optimal, Charlie?  
 18 MR. FARUKI: Operable, O-P-E-R-A-B-L-E.  
 19 MR. IDZKOWSKI: Thank you.  
 20 THE WITNESS: Yes, that's my opinion.  
 21 BY MR. FARUKI:  
 22 Q. When you say in line 13 "transactional  
 23 function," what do you mean there? Is that a billing  
 24 function, or something else?  
 25 A. I actually give a little bit, a refined

1 answer to that. If I can point you to the bottom of  
 2 the page 4. Starting with 22, line 22.  
 3 Q. Oh, I see. Thank you.  
 4 A. Okay. Data management connection to  
 5 integration transactional systems on the next page.  
 6 For customer information, billing, outage data, asset  
 7 management, and other knowledge-based purposes.  
 8 Q. On page 5, line 19, you begin a sentence  
 9 by saying, "When DP&L's costs are adjusted to reflect  
 10 the standard AMI scope." Do you see that?  
 11 A. On line 19?  
 12 Q. Yes, sir.  
 13 My question is just, what do you mean by  
 14 the phrase "adjusted to reflect the standard AMI  
 15 scope"?  
 16 A. What I mean on "adjusted to reflect the  
 17 standard AMI scope," is trying to generate an  
 18 apples-to-apples comparison between the costs, the AMI  
 19 costs in DP&L's filing, to my body of experience around  
 20 several other utilities who have also gone through this  
 21 scope definition of AMI. And to match DP&L's scope --  
 22 or in an attempt to match DP&L's scope to these others  
 23 that are consistent, I have to take out most of the IT  
 24 systems that are included and costed in the DP&L case.  
 25 So what that means is, is that if I take those IT

1 systems that I don't think are part of the standard AMI  
 2 scope based on my experience and what I've done with  
 3 other utilities, that's the adjustment that I'm talking  
 4 about, so that I can get an apples-to-apples comparison  
 5 between what DP&L's spending on the same elements of a  
 6 AMI program that other utilities are spending.  
 7 Q. Can you tell me more specifically what  
 8 you took out? You say you took out most of the IT  
 9 systems. What was that that you omitted or took out?  
 10 A. Okay. If I can point you to page 23, and  
 11 that table 8.  
 12 Q. Yes, I have that.  
 13 A. Okay. This is -- and the reason I draw  
 14 your attention to this table, because this is a  
 15 complete listing of the IT systems that are in the  
 16 filing. If you look in the middle of that table, it  
 17 says, "meter data and load management system."  
 18 Q. Yes, sir.  
 19 A. Okay. That's what the typical AMI at an  
 20 investor-owned utility includes, and the other  
 21 particular IT costs are not typically included in the  
 22 AMI system.  
 23 Q. So if I'm reading this table correctly  
 24 and understanding your last answer correctly, when you  
 25 say you took out most of the IT systems, does that mean

1 that you took out everything in this table other than  
2 the meter data and load management system numbers?

3 A. Yes.

4 Q. Okay. I was going to ask you later about  
5 this table.

6 While we're on it, your variance  
7 explanation, three items where you say on target over  
8 on the right column. And when you say on target, what  
9 are you trying to indicate there?

10 A. I'm trying to indicate that based on my  
11 look at what those particular systems normally cost on  
12 the data that we're knowledgeable about, the DP&L cost  
13 for that IT system seems to be on target.

14 Q. Said differently, are you saying that  
15 that seems to be reasonable?

16 A. I wouldn't say that necessarily.

17 What I would say is that it's -- based on  
18 the limited information on exactly what's included in  
19 the scope of those IT systems that DP&L is costing and  
20 where we could find and understood from past  
21 experience, you know, again, an apples-to-apples  
22 comparison of that scope from others, that seemed to be  
23 on target or consistent. You know, I really can't say  
24 that it's, you know, appropriate or proper or anything  
25 like that at this point.

1 Q. All right. You're not expressing an  
2 opinion on that question one way or the other?

3 A. No.

4 Q. The market price total capital cost  
5 estimate column in column 3 of table 8, what was the  
6 source, or what were the sources for those figures?

7 A. Well, it's based on our research that we  
8 did and associated with this, and it comes from some  
9 different reports. There's some -- if you take a look  
10 at some of the reports described in the footnotes on  
11 page 24.

12 Q. Are those reports the sources for the  
13 market price total capital cost estimate numbers?

14 A. Not all of them, but some of them.

15 Q. Tell me more specifically what your  
16 sources are for that market price total capital cost  
17 estimate column.

18 A. On the home energy displays row, we  
19 did -- we looked at -- we did a market search out there  
20 on available home energy displays and used the same  
21 number of home energy displays that DP&L is using. On  
22 the CIS/billing, some of that information is from some  
23 various articles, one of which is listed at the bottom  
24 of page 24. It's footnote 10. Plus some discussions  
25 with other industry professionals who install CIS and

1 billing systems.

2 On the eServices, we looked at, again, it  
3 was a similar research done in the industry through  
4 different catalogs and Internet searches on those  
5 systems that others provide for eServices. And the  
6 2 million to 3.25 million range is the range that we  
7 found through that work, through that analysis.

8 The MDMS or the next row, the meter data  
9 and load management system, I had specific numbers from  
10 previous bids and work at other utilities that I've  
11 participated in. And I had that number from there.

12 And then on the advanced outage  
13 management, we had specific utility advanced outage  
14 management system in mind on that one, and we had data,  
15 we had cost data on that from -- and it's the outage  
16 management system from Advanced Control Systems out of  
17 Atlanta, Georgia.

18 Q. You're done?

19 A. I'm done. The rest of those are NA. We  
20 didn't search those out.

21 Q. Yes, sir.

22 MR. FARUKI: Mike, I'll make a request  
23 for the documents that he consulted or would  
24 support those figures.

25 MR. IDZKOWSKI: Are you going to send an

1 e-mail on that, Charlie?

2 MR. FARUKI: I will.

3 MR. IDZKOWSKI: Okay.

4 BY MR. FARUKI:

5 Q. Mr. Pullins, take a look, please, at your  
6 discussion of all-in costs which I think sort of begins  
7 at the bottom of page 5 and goes on to page 6. I have  
8 a couple of questions about your all-in costs.

9 First of all, how do you use that term,  
10 which you use repeatedly of all-in costs? Could you  
11 give me your definition or use of it?

12 A. That in my opinion is the -- and how we  
13 use it, how our company and how the modern grid  
14 strategy team uses that, is related to basically the  
15 four functions that are listed up in or shown and  
16 described up in lines 11 through 13 in answer 9. So  
17 it's the meters, the end-to-end two-way communications  
18 infrastructure, remote connect/disconnect switches,  
19 consumer portal interface, and integration of the meter  
20 data management system.

21 Q. So the all-in costs would be the costs to  
22 provide the functions that you list in lines 11 through  
23 13 on page 5?

24 A. Yes.

25 Q. Okay. Thank you.

1 I take it then that the all-in costs do  
 2 not include societal benefits; is that right?  
 3 A. Well, all-in cost is a cost, societal  
 4 benefit is a benefit calculation.  
 5 Q. And when you compare these all-in  
 6 numbers, do the all-in numbers include the DA or  
 7 distribution automation costs that DP&L has calculated?  
 8 MR. IDZKOWSKI: Is that a term, Charlie,  
 9 they use?  
 10 MR. FARUKI: It is. Used in the file,  
 11 yes, sir.  
 12 MR. IDZKOWSKI: Yes. Do you know where  
 13 you're referencing, or just generally all?  
 14 MR. FARUKI: I think it's throughout the  
 15 discussion. It's one of the listed acronyms,  
 16 Mike, and it's throughout the discussion of DP&L's  
 17 Smart Grid.  
 18 THE WITNESS: Can I ask for the question  
 19 to be repeated?  
 20 MR. FARUKI: I'll have the court reporter  
 21 do it. He'll do a better job than I will.  
 22 (Requested portion of record read.)  
 23 THE WITNESS: No, they do not include  
 24 distribution automation or substation automation.  
 25 These are all in AMI system costs.

1 BY MR. FARUKI:  
 2 Q. Okay. Would you go over to page 26?  
 3 A. Page 26?  
 4 Q. Yes, sir, two six.  
 5 A. Okay.  
 6 Q. 17 you reference an accountability plan.  
 7 Would you tell me what you mean by that?  
 8 A. What I mean is pretty much what's stated  
 9 here. You know, "Given the multiyear schedule for full  
 10 implementation of these programs, an accountability  
 11 plan should be put in place to monitor both costs and  
 12 benefits for both DP&L and its customers. Appropriate  
 13 performance measurements will ensure that both DP&L and  
 14 its customers realize the expected benefits for the  
 15 costs estimated in the filing. This accountability  
 16 plan should be developed in a collaborative fashion.  
 17 Some elements that should be considered include:  
 18 Establishment of a collaborative working group to  
 19 oversee the accountability plan; metrics to track the  
 20 achievement of operational and societal benefits over  
 21 time, actual spending versus estimates, deployment  
 22 progress versus scheduled progress; periodic reporting  
 23 by Dayton Power and Light on its deployment progress,  
 24 issues and their resolutions, other items as requested  
 25 by the working group; and establishment of a true-up

1 mechanism to adjust for differences between actual  
 2 prudent cost and/or benefits and those costs and/or  
 3 benefits initially assumed. The purpose of this  
 4 true-up is to ensure that both DP&L and its customers  
 5 are held accountable to the guarantees and commitments  
 6 made for these programs."  
 7 So that's --  
 8 Q. Would you tell me which of the -- let me  
 9 ask it a little bit easier. Can you identify for me  
 10 every utility of which you were aware that developed  
 11 and implemented a Smart Grid program with such an  
 12 accountability program?  
 13 MR. IDZKOWSKI: Do you understand the  
 14 question, Steve?  
 15 THE WITNESS: I understand the question.  
 16 What other utilities have established an  
 17 accountability plan in association with their AMI  
 18 and Smart Grid programs. I cannot think of any  
 19 right now that have such an accountability plan.  
 20 BY MR. FARUKI:  
 21 Q. On page 26, you say, "This accountability  
 22 plan should be developed in a collaborative manner."  
 23 Identify every utility of which you are aware that has  
 24 developed an accountability plan in a collaborative  
 25 manner.

1 A. I --  
 2 MR. IDZKOWSKI: What line was that,  
 3 Charlie?  
 4 MR. FARUKI: 26, lines 20 and 21.  
 5 THE WITNESS: Yeah, 20 and 21.  
 6 As I stated, I do not know of an  
 7 investor-owned utility that's developed an  
 8 accountability plan.  
 9 There are utilities who have some of the  
 10 elements of that in how they're working with state  
 11 and local consumer groups, and there's  
 12 collaborative efforts associated with that. And a  
 13 really good example of that is Southern California  
 14 Edison. But I'm not aware of a specific  
 15 accountability plan that's published at Southern  
 16 California Edison.  
 17 BY MR. FARUKI:  
 18 Q. Go back to page 7.  
 19 A. Okay.  
 20 Q. Would you examine the IT numbers looking  
 21 at your table 2, can you examine the IT numbers that  
 22 DP&L included as part of the total AMI costs? Did you  
 23 include the home energy displays and geographic  
 24 information system or GIS as part of those costs?  
 25 A. Looking at the row for IT and the cost

1 components of table 2 where we show the first summary  
2 of 9 percent and the DP&L filing of 21 percent, if you  
3 look in the remarks section, what we were considering  
4 were the IT systems that are listed in chapter 3 and  
5 the GIS. The home energy displays were not part of  
6 that cost.

7 Q. Okay. And can you identify the utilities  
8 that are associated with these identified costs that  
9 you're talking about?

10 A. Can you hold on a second? I want to  
11 check something real quick.

12 Q. Sure. If you can tell me when you're  
13 ready.

14 A. Okay. Okay. I was just checking to make  
15 sure that the IT systems on that IT row, that IT  
16 system, 95.8 million there --

17 Q. Yes.

18 A. -- did not include the home energy  
19 displays, and it does not; okay.

20 Q. Okay.

21 A. All right. Okay. I'm ready now for the  
22 next question.

23 MR. FARUKI: Let me have our reporter  
24 read that back to you.

25 (Requested portion of record read.)

1 THE WITNESS: All right. So you're  
2 talking about table 2?

3 BY MR. FARUKI:

4 Q. Well, yes, and the general description or  
5 the testimony surrounding table 2, yes.

6 A. Okay.

7 Q. In other words, table 2 is part of a  
8 discussion that you have in answer to question 11.

9 A. Right.

10 All right. The basis for comparison in  
11 table 2 is from the FERC staff report of August 2006.  
12 And that's briefly discussed on page 6, lines 15 and  
13 16, okay, and then over on to page 7 at the top. And  
14 the utilities -- that was a very substantial report  
15 that was done by the Federal Energy Regulatory  
16 Commission staff, and that included 986 municipal  
17 utilities, 537 cooperatives, 203 investor-owned  
18 utilities, and 74 power marketers, and then several other  
19 organizations. And we use -- I have data on nine  
20 utilities that I focus on, there are nine  
21 investor-owned utilities, and that's Rochester Gas &  
22 Electric, Pacific Gas & Electric, New York State  
23 Electric & Gas, San Diego Gas & Electric, Consolidated  
24 Edison in New York, Public Service Electric & Gas of  
25 New Jersey, PEPSCO, Potomac Electric, Southern

1 California Edison, and Consumers Energy. And all nine  
2 of our data points fall within that; in other words,  
3 all of those utilities where we have some more specific  
4 data about AMI costs are included in the FERC staff  
5 report of August 2006.

6 Q. And where did you get the information on  
7 the nine that you just listed?

8 A. Most of that information came from public  
9 filings or public presentations made by certain  
10 utilities about their all-in meter cost and what that  
11 includes. And so we've just been keeping track over  
12 time of that over the last couple years. And that  
13 helps us -- helps us understand where the industry's  
14 heading on the general costs of AMI on a per-meter  
15 basis.

16 MR. FARUKI: Mike, I'll ask for a copy of  
17 that information that he consulted with regard to  
18 the nine utilities.

19 And also for a copy of the August 2006  
20 FERC report he references.

21 MR. IDZKOWSKI: I will try to get that if  
22 those exists. If he has those in a document.

23 BY MR. FARUKI:

24 Q. Is there a utility that has completely  
25 implemented a Smart Grid project for which you have the

1 costs?

2 A. No, there is not a utility that has -- in  
3 the United States that has completely implemented a  
4 Smart Grid program that includes all of the four  
5 milestones, the advanced meeting infrastructure,  
6 advanced distribution operation, advanced transmission  
7 operations, and advanced asset management.

8 Q. On the bottom of page 8, you are asked a  
9 question, is DP&L underestimating the operational  
10 benefits of AMI/Smart Grid deployment, then on page 9  
11 you answer that question yes with an explanation. Do  
12 you see that?

13 A. Yes, on page 9.

14 Q. Yes, sir.

15 When you are explaining that DP&L was  
16 underestimating the operational benefits, have you  
17 tried to quantify the amount of that, the amount of the  
18 under-representation or underestimate?

19 A. We have not quantified the  
20 underestimation of the operational benefits. What we  
21 have -- that's not -- I mean, that's really not our  
22 job, that would be DP&L's job. But we did list several  
23 areas where the operational benefits exist but are not  
24 listed or included by DP&L. And if you go to page --  
25 I'm looking for it, I kind of give a summary of that.

1 Yes. Starting at the bottom of page 17  
 2 and carrying over on to page 18, starting in line 10 on  
 3 page 17, certain benefits from AMI/Smart Grid can be  
 4 considered either societal, operational, or both, such  
 5 as the following: Improved asset utilization  
 6 efficiency, enhanced service quality, which includes  
 7 both outage reduction benefits and distribution network  
 8 efficiency. Now, these benefits are included in  
 9 societal benefits, and that's true, but the utility  
 10 operations also benefits from such improvements, and  
 11 those are not included in DP&L's operational benefits  
 12 portfolio.

13 In addition --

14 Q. Are you -- I'm sorry, go ahead.

15 A. In addition, and I'm on page 18, line 5,  
 16 "Other operational benefits that should be included,  
 17 but are not, are listed in DP&L's responses to OCC's  
 18 interrogatories number 360, 362, 368, and 369." And I  
 19 believe those are all at the end -- yes, they're all at  
 20 the end of my testimony included.

21 And this includes 1, use of AMI  
 22 information for the OMS, that's the outage management  
 23 system, to determine outages; 2, use of AMI information  
 24 in the DMS and distribution planning to induce Volt/VAR  
 25 optimization process; 3, use of AMI information to

1 automatically close out work orders; 4, use of AMI  
 2 information to measure existing load under demand  
 3 response and load shedding action; 5, use of the AMI  
 4 system to track power flows in both directions for  
 5 distributed generation and PHEVs, plug-in hybrid  
 6 electric vehicles; 6, use of AMI and OMS to improve  
 7 system metrics, that's SAIDI and SAIFI; and 7, use of  
 8 AMI, OMS and mobile work force management system, MWMS  
 9 to reduce time to dispatch trouble crews and reduce  
 10 outage duration.

11 This is just a sample list, but it shows  
 12 that the currently filed operational benefits portfolio  
 13 is lacking some key benefits. These were benefits not  
 14 in the portfolio that were listed by DP&L staff.

15 Q. Do you recognize that there are  
 16 disagreements within the industry on how societal  
 17 benefits should be calculated?

18 MR. IDZKOWSKI: Can you repeat the  
 19 question, please? We lost the first word or two  
 20 there.

21 MR. FARUKI: Yes, I'd be glad to, Mike.

22 BY MR. FARUKI:

23 Q. Do you agree, sir, that there are  
 24 differences within the industry or disagreements within  
 25 the industry on how societal benefits should be

1 calculated?

2 A. Yes, I agree that there are -- there are  
 3 differences of opinion on that.

4 Q. Go back to page 9 for a minute. And I'll  
 5 focus you on lines 12 through 16.

6 Are the reduction in mainframe O&M costs  
 7 related to additional IT investments?

8 A. Yes. As stated by DP&L in their filing.

9 Q. The same is true with regard to the next  
 10 bullet beginning on line 15?

11 A. Yes. DP&L's filing says that the  
 12 appreciation savings from early retirement of capital  
 13 meters and IT, 8.2 million, is a benefit of the IT  
 14 investments.

15 Q. With regard to -- withdraw that.

16 A. I would also like to add a little bit to  
 17 that. From my testimony --

18 Q. Go ahead.

19 A. Let me find the right place. I want to  
 20 call your attention to this. Give me a moment here to  
 21 find it for you. For me, too.

22 On page 27 under C, "Justification of IT  
 23 Systems Through Operational and Societal Benefits."

24 Q. Yes.

25 A. This relates to our discussion on page 9

1 from lines 12 through 16.

2 Q. Okay. Where DP&L has understated the  
 3 societal benefits associated with the Smart Grid  
 4 solutions in the filing?

5 A. Yes. And specifically on page 27, you  
 6 know, what I'm trying to say here is that a large IT  
 7 systems investment and yielding a small operational --  
 8 or a much smaller operational benefit, it just  
 9 doesn't -- it creates a very, very long payback period.

10 MR. FARUKI: Mike, let's go off the  
 11 record a minute.

12 MR. IDZKOWSKI: Okay.

13 (Discussion off the record.)

14 (Recess taken.)

15 MR. FARUKI: Back on the record.

16 BY MR. FARUKI:

17 Q. Mr. Pullins, I may jump around a little  
 18 bit, but let me ask you about page 15 and the answer to  
 19 question 15.

20 To start with, you believe that the  
 21 operational benefits that DP&L calculated are low; is  
 22 that correct?

23 A. Yes.

24 Q. You said earlier that you had reviewed  
 25 book 2 of DP&L's filing?



1 A. Yes.  
 2 Q. Have you reviewed all of it or some of  
 3 it?  
 4 A. I reviewed a portion of it. I reviewed  
 5 chapter 1, chapter 3, and chapter 4 and the associated  
 6 work papers. And I did not review chapter 2.  
 7 Q. Are you aware that the CCEM or Customer  
 8 Conservation & Energy Management filing by DP&L has a  
 9 heavy component of energy efficiency and reduction in  
 10 demand to meet the targets in the Ohio legislation?  
 11 A. I have not reviewed that chapter 2, so I  
 12 really can't talk to that.  
 13 Q. Okay.  
 14 A. I'm not comfortable talking to that.  
 15 Q. In other words, you don't know?  
 16 A. I don't know, because I didn't review  
 17 chapter 2.  
 18 Q. Do you know whether the studies and  
 19 filings that you are using to compare to the DP&L's  
 20 cost have the same type of energy efficiency objectives  
 21 as those captured in the societal benefits section of  
 22 DP&L's filing?  
 23 MR. IDZKOWSKI: Can you read that  
 24 question back, please.  
 25 MR. FARUKI: Tom, if you would.

1 (Requested portion of record read.)  
 2 THE WITNESS: I only know what the  
 3 societal benefits portfolio related to chapters 3  
 4 and 4 include. I really have not compared that  
 5 portfolio to any portfolio that might be in  
 6 chapter 2.  
 7 BY MR. FARUKI:  
 8 Q. A little more broadly, Mr. Pullins, part  
 9 of your analysis in this case was to evaluate the  
 10 societal benefits that would occur or accrue from the  
 11 company DP&L meeting the statutory targets in Ohio; is  
 12 that accurate?  
 13 A. No. I would like -- my review and role  
 14 was to review the societal benefits and operational  
 15 benefits that accrue from the AMI and Smart Grid  
 16 systems.  
 17 Q. And the principal sources to which you  
 18 compared DP&L were the Southern California and  
 19 San Diego Gas & Electric AMI filings?  
 20 A. From an operational benefits perspective  
 21 and societal benefits perspective, our main comparison  
 22 was with the San Diego Smart Grid Study.  
 23 Q. All right. And as I understand the study  
 24 with regard to San Diego, that plan was to augment the  
 25 San Diego Gas & Electric network with advanced

1 communication solutions distribution automation and  
 2 substation automation benefits; is that right?  
 3 A. Well, there were several technologies  
 4 that were deployed under that Smart Grid solution set.  
 5 The ones that you mentioned were indeed included, but  
 6 there were also additional ones included.  
 7 Q. Was the scope of the San Diego Gas &  
 8 Electric plan similar to DP&L's plan?  
 9 MR. IDZKOWSKI: Did you say -- I'm sorry,  
 10 you're dropping out somewhat, Charlie. Could you  
 11 repeat the question, please?  
 12 MR. FARUKI: Can the court reporter read  
 13 it back.  
 14 THE REPORTER: I missed a word as well.  
 15 MR. FARUKI: Okay.  
 16 BY MR. FARUKI:  
 17 Q. Is the scope of the San Diego plan,  
 18 scope, S-C-O-P-E, of the San Diego the same as that of  
 19 DP&L's for Smart Grid?  
 20 A. It is not exactly the same scope by  
 21 comparing the DP&L, AMI and Smart Grid plan to the  
 22 San Diego Gas & Electric -- I'm sorry, the San Diego  
 23 Smart Grid study. There were additional -- there  
 24 are similarities in the Smart Grid areas, but in the  
 25 San Diego Smart Grid Study, it also included enablement

1 of distributed generation.  
 2 Q. The San Diego Electric Company is  
 3 substantially larger than DP&L; is it not?  
 4 A. It is. Their meter count is about --  
 5 their electric meter count is about 1.4 million.  
 6 Q. Do you know what DP&L's meter count is?  
 7 A. 523,000.  
 8 Q. Are there differences between the service  
 9 area of DP&L and that of San Diego Gas & Electric?  
 10 A. In general, they're similar in that  
 11 San Diego has a large metropolitan area that is located  
 12 in one place, and a lot of rural territory around that  
 13 metropolitan area. Obviously there's a size  
 14 difference, but the profile is from a, if you will,  
 15 a -- where the customers or where the meters are in  
 16 that there's a similarity. There are some other  
 17 differences that I don't think matter in relationship  
 18 to the AMI and Smart Grid. For example, Dayton Power  
 19 and Light has the ability to bring power from all  
 20 around the city from multiple directions, and San Diego  
 21 County is, you know, limited on one side because  
 22 there's an ocean there. From a topology standpoint,  
 23 that's about the only difference. But that would  
 24 affect transmission level, not necessarily the scope  
 25 that we're talking about with Dayton Power and Light.

1 Q. Take a look at page 24.  
 2 MR. IDZKOWSKI: What page was that,  
 3 Charlie?  
 4 MR. FARUKI: 24.  
 5 MR. IDZKOWSKI: Four?  
 6 THE WITNESS: 24.  
 7 MR. FARUKI: Two four.  
 8 MR. IDZKOWSKI: Sorry, we're having  
 9 trouble. You're dropping out.  
 10 BY MR. FARUKI:  
 11 Q. On page 24, lines 6 through 13, you  
 12 include a reference to an article in TD World. Do you  
 13 see that reference?  
 14 A. Yes.  
 15 Q. And that was an article about how PECO  
 16 was able to save over \$400,000 using an advanced OMS  
 17 system, outage management system?  
 18 A. Yes.  
 19 Q. You would expect the PECO savings to be  
 20 more than DP&L but expect to see it since PECO has over 20  
 21 2 million meters; is that right?  
 22 A. Well, I think that PECO -- I don't know  
 23 how many meters PECO has.  
 24 Q. Well, you know it's substantially more  
 25 than DP&L, right?

1 MR. IDZKOWSKI: Again, I'm sorry, I  
 2 couldn't get that.  
 3 Q. You know that PECO has substantially more  
 4 meters than does DP&L, correct?  
 5 A. I don't know that for a fact. I believe  
 6 you're right, but I don't know that for a fact.  
 7 MR. FARUKI: Off the record.  
 8 (Discussion off the record.)  
 9 MR. FARUKI: Back on the record.  
 10 BY MR. FARUKI:  
 11 Q. Take a look at page 21, line 19. You say  
 12 at lines 19 and 20, "Finally, monetizing societal  
 13 benefits is a difficult task requiring rigor and  
 14 discipline in the scoping, calculating and sourcing."  
 15 Why do you say that monetizing societal benefits is a  
 16 difficult task?  
 17 A. My -- I believe that monetizing societal  
 18 benefits is a difficult task based on my experience in  
 19 working with this in this area for two reasons. First  
 20 of all, it requires some nontraditional thinking  
 21 compared to investor-owned utilities to look at how  
 22 consumers and society at large benefit from the changes  
 23 that a utility makes in its systems and the attendant  
 24 effect that has, positive or negative, that that has on  
 25 consumers in society. That's one.

1 The second is, is that we as an industry  
 2 have focused for decades on the system side or the  
 3 operational side of the benefits ledger because that's  
 4 how our regulatory structure and regulatory treatment  
 5 has occurred over the years. So we have a larger body  
 6 of work in how we go about calculating operational  
 7 benefits, revenue requirements, things like that, so we  
 8 have a larger library of the ways and the techniques  
 9 and the manner in which we make those calculations. We  
 10 are just beginning to build that library on the  
 11 societal side, on the societal benefits and consumer  
 12 benefits side. So we have a lot less experience in  
 13 that area as an industry. It's no less important, it's  
 14 just that we haven't spent the time to build that and  
 15 justify that and calculate that and source that like we  
 16 have the operational benefits side.  
 17 Over time, our abilities and  
 18 acceptability of the ways in which we monetize societal  
 19 benefits will grow.  
 20 Q. All right. On a different point, you  
 21 suggest that there be some collaborative manner or  
 22 fashion in which information is developed and  
 23 presented. Do you recall that?  
 24 A. I recall that in association with the  
 25 accountability plan. Are you referring to that? Like

1 on page 26, or someplace else?  
 2 Q. No, that's what I have in mind. Page 26,  
 3 line 21. Do you have that in front of you?  
 4 A. I have that.  
 5 Q. Was that something that Consumers'  
 6 Counsel requested you to include in your testimony?  
 7 MR. IDZKOWSKI: I'm going to object. I  
 8 think that could call for a disclosure of an  
 9 attorney-client privileged communication. I think  
 10 Mr. Pullins needs to be aware of that.  
 11 MR. FARUKI: Let me see if I can avoid  
 12 that, Mike. I wasn't trying to get into  
 13 privilege.  
 14 MR. IDZKOWSKI: Yeah, I didn't think so  
 15 initially. I just don't want him to step in on a  
 16 land mine.  
 17 MR. FARUKI: Okay. Well, it would be a  
 18 small land mine, Mike.  
 19 MR. IDZKOWSKI: Yeah, well, my toes are  
 20 as important as my foot, I think.  
 21 BY MR. FARUKI:  
 22 Q. Mr. Pullins, let me just rephrase my  
 23 question. I'm not seeking to get into attorney-client  
 24 privilege.  
 25 Without telling me any privileged

1 discussions with lawyers, was the suggestion of a  
2 collaborative something that OCC requested you to  
3 include?

4 A. The suggestion for example in line 22,  
5 establishment of a collaborative working group?

6 Q. Yes, sir.

7 A. No. That was -- that was a discussion  
8 between Joe Miller and myself. Joe Miller who's my  
9 business partner, and who also worked on research for  
10 this testimony.

11 Q. And the same question about page 28, line  
12 9?

13 A. 28, line 9.

14 Q. Again, without asking you to disclose  
15 anything in the nature of conversation with counsel.

16 MR. IDZKOWSKI: And that's the sentence,  
17 "Once the information is available"? That's the  
18 reference you're --

19 MR. FARUKI: Yes, Mike.

20 MR. IDZKOWSKI: Okay.

21 THE WITNESS: No, that's -- this comes  
22 from our work on Smart Grid studies, and, in  
23 particular, I've got three examples. The  
24 San Diego Smart Grid study was developed in a  
25 collaborative manner with stakeholders. Not just

1 the utility, but representatives of the consumer  
2 space. We did on our Puget Sound Energy Smart  
3 Grid study, there was collaborative workshops, two  
4 of them, that were held in association in process.  
5 In the one that we're doing -- the Smart Grid  
6 implementation plan that we're working in West  
7 Virginia right now, we're also doing that. We've  
8 had collaborative workshops with representatives  
9 of the state beyond the utilities on two  
10 occasions. That's where that -- those concepts  
11 come from.

12 MR. FARUKI: Okay. Mr. Pullins, I think  
13 that's all I have. Thank you for your time.

14 THE WITNESS: Thank you.

15 MR. FARUKI: Off the record.

16 FURTHER THIS DEPONENT SAITH NOT.

17  
18  
19  
20

\_\_\_\_\_  
STEVEN W. PULLINS

21  
22

\_\_\_\_\_  
NOTARY PUBLIC  
MY COMMISSION EXPIRES: \_\_\_\_\_

23  
24  
25

1 CERTIFICATE

2  
3 STATE OF TENNESSEE

4  
5 COUNTY OF KNOX

6 I, Thomas J. Dorsey, Registered Professional  
7 Reporter and Notary Public, do hereby certify that I  
8 reported in machine shorthand the deposition of STEVEN  
9 W. PULLINS, called as a witness at the instance of  
10 The Dayton Power and Light Company, that the said  
11 witness was duly sworn by me; that the reading and  
12 subscribing of the deposition by the witness was not  
13 waived; that the foregoing pages were transcribed under  
14 my personal supervision and constitute a true and  
15 accurate record of the deposition of said witness.

16 I further certify that I am not an attorney or  
17 counsel of any of the parties, nor an employee or  
18 relative of any attorney or counsel connected with the  
19 action, nor financially interested in the action.

20 Witness my hand and seal this the 3rd day of  
21 February, 2009.

22

\_\_\_\_\_  
Thomas J. Dorsey, RPR  
Certified Shorthand Reporter  
and Notary Public  
My Commission Expires:  
September 26, 2012

23

24

25

<p><b>A</b></p> <p><b>abilities</b> 64:17</p> <p><b>ability</b> 21:3 22:13 22:13 24:11 61:19</p> <p><b>able</b> 15:9 17:16,25 18:7 20:4 22:23 24:12 25:17 62:16</p> <p><b>acceptability</b> 64:18</p> <p><b>acceptable</b> 24:8</p> <p><b>access</b> 27:1,2</p> <p><b>accommodate</b> 14:22 16:21 18:1 18:13</p> <p><b>accommodates</b> 16:24</p> <p><b>accompanied</b> 33:20</p> <p><b>account</b> 35:21</p> <p><b>accountability</b> 47:6 47:10,15,19 48:12 48:17,19,21,24 49:8,15 64:25</p> <p><b>accountable</b> 48:5</p> <p><b>Accounting</b> 1:8</p> <p><b>accrue</b> 59:10,15</p> <p><b>accurate</b> 59:12 68:15</p> <p><b>achieve</b> 30:15</p> <p><b>achievement</b> 47:20</p> <p><b>acronyms</b> 46:15</p> <p><b>action</b> 15:20 20:4 20:12,22 21:12,13 23:10 32:18 55:3 68:19,19</p> <p><b>actual</b> 47:21 48:1</p> <p><b>add</b> 56:16</p> <p><b>added</b> 38:8</p> <p><b>addition</b> 17:10 18:9 54:13,15</p> <p><b>additional</b> 17:14 56:7 60:6,23</p> <p><b>additionally</b> 23:19</p> <p><b>address</b> 21:3 24:11 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