STATE OF MARYLAND

BEFORE THE PUBLIC SERVICE COMMISSION

Application of Delmarva Power and Light Company For Adjustments to its Retail Rates for the Distribution of Electric Energy	**)** **)** **)** **)**	**Case No. 9424**

SURREBUTTAL TESTIMONY OF

PAUL CHERNICK

ON BEHALF OF

THE OFFICE OF PEOPLES COUNSEL

Resource Insight, Inc.

OCTOBER 28, 2016

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Q: Are you the same Paul Chernick who filed direct and rebuttal testimony in this proceeding?

A: Yes.

Q: What is the subject of your surrebuttal testimony?

A: In this testimony, I respond to the rebuttal testimony of DPL witnesses Karen Lefkowitz, Mario Giovannini, Ahmad Faruqui and Bryan Clark.

I. Responses to Lefkowitz Rebuttal

Q: To what issues in Ms. Lefkowitz's rebuttal do you respond?

A: Ms. Lefkowitz asserts the following positions, in opposition to the OPC's direct testimony:

- That the DP bill credits are not program costs, based on the Commission decision in Order No. 87591 to treat rebate costs as transfer payments in a similar program.
- That the AMI programs have avoided or deferred investments in transmission and distribution (T&D).
- That her treatment of annualization for the T&D avoided costs was correct.

Q: Are any of these positions correct?

A: Ms. Lefkowitz is correct that the Commission Order No. 875914 did in fact treat customer rebate costs as a transfer payment for BGE. As I explained in my direct testimony (at 10–14), Pennsylvania, New York, and California recognize that rebates for demand response are customer costs, and even DPL's witness Dr. Faruqui has previously explained that the need for a rebate payment is evidence that customers are bearing costs of participation. The

Commission will need to decide whether to continue the BGE treatment of rebates, in the light of the evidence provided in this proceeding. Ms. Lefkowitz gives the Commission no reason to ignore the costs and discomfort of the participants in the DP program.

Q: Have the AMI programs deferred any T&D projects?

A: No. My direct testimony also shows that there were no T&D projects avoided in the years which DPL claims large avoided capital costs; this observation is corroborated by Staff Witness Ratushny (28).

The DP program affects load in only a few days each summer, and various parts of the T&D system experiences peaks at a wide variety of hours. For the 60 distribution substations for which DPL provided 2014 peak-load data (OPC DR 5-11 Attachment D), only 14 peaked on a summer afternoon from noon to 7 PM, and those 14 peaks were spread over nine days. Similarly, for the 60 substations for which DPL provided 2015 peak-load data (ibid.), only 14 peaked on a summer afternoon from noon to 7 PM, and those 14 peaks were spread over ten days, none of which were the DP program days. Feeders and portions of the transmission system would experience their peak loads on even a wider variety of hours. Using the DP program to mitigate peak T&D loads would be difficult, even if DPL devoted the program to mitigating T&D peaks, rather than participating in the PJM wholesale markets.

In any case, DPL has not identified any projects that were deferred due to the AMI programs. The few distribution projects that DPL has deferred were deferred prior to the start of the AMI programs, and could not have been deferred by the programs. DPL's AMI demand reduction programs have

not even been operational long enough to have affected past planning decisions.

Q: Could the DPL AMI programs defer T&D benefits in the future?

A: The EMT and CVR programs might do so, if they actually save energy in all or most of the high-load hours, but the DP program cannot.

Just to be clear, my direct testimony recognized that energy-efficiency programs (conceivably including the EMT and CVR programs in the future) can produce T&D benefits. Those benefits happen to be zero so far for DPL's AMI deployment, and will always be zero for the DP program.

Q: Did Ms. Lefkowitz substantively address your explanation of her error in the carrying charge?

A: No. She simply repeated her claim that including inflation in the carrying charge and then escalating that carrying charge does not double-count inflation:

> Because the avoidance of transmission and distribution costs consists of the deferral or avoidance of new equipment/facilities for a period of time rather than a single project for the duration of the cost effectiveness period, it is necessary to apply an inflation rate to account for the increasing costs of deferred transmission and distribution over time. (Lefkowitz Rebuttal at 43–44)

Her response contains no analysis or computations for including inflation in the carrying charge and then further escalating the resulting price. My direct testimony (at 46–49) provided specific numerical examples that explain her error. She has not identified any error in my analysis or cited any authority that supports her double-counting of inflation.

II. Responses to Giovannini Rebuttal

Q: To what issues in Mr. Giovannini's rebuttal do you respond?

A: Mr. Giovannini responds to about a dozen of my corrections in Pepco's estimates of PJM market benefits.

Q: Please describe the errors in Mr. Giovannini's rebuttal that require only brief responses.

A: I describe each of Mr. Giovannini's claims below, with a brief response to each. I identify Mr. Giovannini's points using the numbering of his answers.[1]

A5: Mr. Giovannini correctly summarizes my argument stating that DPL has overstated the value of capacity price mitigation by roughly $12 million. Mr. Giovannini does not disagree with any part of my recommendation for a reduced price-mitigation value. He simply points out that a method similar to DPL's was accepted in the Commission's Order No. 87591in the BGE rate case decision.

A10: Mr. Giovannini asserts that dynamic-pricing load reductions will result in reduced capacity obligation for Delmarva Power customers based on his mere conjecture "that PJM's load forecasts for Delivery Year 2020/21 and beyond will reflect the demand reduction capability of the dynamic pricing program due to the full scale pre-existing operation of the program since the summer of 2015 and PJM's specific awareness of DPL's DP program during the summers of 2015 and 2016." Mr. Giovannini is free to expect whatever he wants, but the PJM load forecast for DPL was not affected by the 2015 DP load

[1] Mr. Giovannini does not identify the sections of my testimony to which he is responding, but I believe that I have determined what he is referring to.

reductions, as I demonstrated in my Rebuttal (at 2). The minimal impact the DP reductions have in the PJM forecast is similar to the impacts found in both BGE (Case No. 9406) and PEPCo (Case No. 9418). As I stated in my Rebuttal at 4, DPL's DP load reductions actually increased PJM capacity requirements by 5%–7% of the DP load reductions, which would increase capacity prices.

Mr. Giovannini appears to believe that PJM will change its rules to recognize on the demand side the sporadic and unreliable demand resources that it has phased out of the capacity supply market. He supposes that PJM will reverse course on its market changes and push those changes through the PJM stakeholder process. The generators will certainly oppose any changes that would reduce capacity requirements and prices. Since generation companies control most of the distribution companies (including now Pepco and DPL), the distributors are unlikely to be effective advocates for reducing generation revenues.

A11: Mr. Giovannini seems to be confused about my point that DPL has done a poor job of calling DP events on PJM peak days. I am not suggesting that DPL activate DP events only on PJM peak days. However, if the goal of the program is to reduce DPL's zonal capacity obligation and the PJM capacity prices, the program must affect PJM's load forecast. Reducing the PJM forecast would require that DPL's load reduction occur during PJM's peak load days and DPL's hottest days, many times a year for many years. DPL's failure to do so means that the DP program has not avoided capacity costs or mitigated capacity prices.

Mr. Giovannini asserts that after 2020, "Delmarva Power will target PJM peak load hours for DP events." DPL has not demonstrated

that it can effectively target such peak load hours, and the PJM results that I provided in my rebuttal shows that event perfect targeting of the five days with the highest PJM loads in 2015 would only have reduced the DPL forecast by about 1 percent of the load reduction.

A12: Mr. Giovannini criticizes a few references in my direct testimony to the limitations of EWR program benefits, noting that the EWR program shares the limitations of the DP program. My testimony did not remove any benefits due to the EWR program.

A13: Mr. Giovannini notes that DPL recognizes that a load reduction from the CVR and EMT programs cannot possibly affect capacity obligations and capacity prices until four years after the reduction. He appears to be proud that DPL did not repeat a timing error from its Case No. 9156 filing. I agree with him that DPL has slightly improved this part of its analysis.

A14: Mr. Giovannini disputes my finding that DPL has overstated future capacity prices beginning with PJM delivery year 2020/2021. There are two separate issues here. Mr. Giovannini is correct that DPL escalated capacity prices "at a[n] assumed annual inflation rate of 2.1% per year compared with 2016 dollars," but he fails to acknowledge that he escalated the average of 2016/17 through 2019/20 prices as if those prices were all in 2016 dollars, as I have explained in my Direct (at 31, footnote 25). Nor does he offer any justification for assuming additional inflation from the 2020/21 price in June–December 2020 to the 2020/21 price in January–May 2021. In addition, Mr. Giovannini does not respond to my observation that not using the most recent 2019/20 price as a starting point is an unexplained departure from the standard practice of DPL and Pepco.

A15: Mr. Giovannini disagrees that DPL's claimed $200/MWh value overstates the price of energy during the PESC hours. DPL did not earn any actual PJM energy market revenue in 2014 or 2015, has not demonstrated that it will receive energy revenue in the future or that it will be able to select hours with market energy prices anywhere near this $200/MWh. Mr. Giovannini claims the $200 value is a reflection of PJM prices during emergency event hours, when "the emergency PJM strike price will be in excess of $1,000 per MWh" (Giovannini Rebuttal at 7), but does not provide any evidence that such emergencies will be frequent in the summer or that DPL will be able to schedule the PESC hours to capture that price with any regularity.

Mr. Giovannini also claims that "the actual average LMP value of the highest 16 hours over each of 2013, 2014, 2015 and 2016 was $286 per MWh" (ibid.). His selection of sixteen hours annually appears to be tied to DPL's plan to operate the DP program on four days each summer, for four contiguous hours. Mr. Giovannini computed the $286/MWh average by selecting a set of hours that are incompatible with the operation of the PESC program:

- About 40% of the hours occurred outside of the normal PESC event hours of 2 PM to 6 PM. The high-priced hours were as early as the hour ending 11 AM and as late as 9 PM.
- While DPL plans to operate the DP program four times a year, Mr. Giovannini selected hours from eight days in 2013 and 2014, eleven days in 2015 and ten days in 2016, for an average of 9.25 days annually. Each of those days would have an average of 1.7 hours in the high-priced group. Mr. Giovannini assumed that the 16 annual hours could be sample

- Three of the hours occurred in May, outside the seasonal operation of the PESC program.

Mr. Giovannini assumed that DPL could perfectly forecast the high- priced days and hours, designate individual event hours from 10 AM to 9 PM, on up to 11 days annually, including May, and that customers would be able to respond. These assumptions are far-fetched.

A16: Mr. Giovannini responds to my demonstration that DPL ignored the effect of out-of-state load on Maryland energy prices by stating that "Maryland policymakers are understandably concerned with energy market prices within the state" (Rebuttal at 8). Of course Maryland cares about energy prices in Maryland; I did not suggest that prices outside Maryland be included in the analysis. Mr. Giovannini's response completely misses my simple point that the prices within the state of Maryland (about which the Commission cares) are dictated by loads in surrounding states and throughout the PJM footprint, as I demonstrate in my direct testimony (at 57–59).[2]

III. Responses to Faruqui Rebuttal

Q: To what issues in Dr. Faruqui's rebuttal do you respond?

[2] Mr. Giovannini did not say a word in defense of his assumptions that the DPL prices would not be affected by Delaware loads, or that Pepco prices would not be affected by DC loads, or the Potomac Edison prices would not be affected by loads in the Virginia, West Virginia and Pennsylvania portions of the Allegheny Power zone.

A: I respond to Dr. Faruqui's rebuttal on the treatment of the DP program incentives, and his claim that DPLs biased analysis of DP load reductions is accurate.

A. The DP Incentives Reflect Real Participant Costs

Q: What is Dr. Faruqui's dispute with your testimony on the costs of the DP program incentives?

A: Dr. Faruqui responds to my direct (and that of OPC Witness Max Chang) with a number of claims and characterizations, none of which stand up to scrutiny. First, he characterizes the costs that the DP participants endure in exchange for a credit of $1.25/kWh as a "hassle factor" that "some analysts" have argued "should be counted as a cost." He accepts that "a portion of the incentive payment is sometimes used as a proxy for the hassle factor cost, there is no direct relationship between the two. This is an arbitrary assumption." (Faruqui Rebuttal at 7).

Dr. Faruqui's first maneuver here is to characterize the customer costs as being merely a "hassle," a mere nuisance. Perhaps he believes that the participants in the program simply spend a few minutes hassling with turning off unneeded lights or dealing with balky blinds on south-facing windows, to receive a significant incentive on an event day. In order to produce the savings that DPL claims its participants achieve, they must endure more than just a bit of hassle, rearranging their schedules and turning up their thermostats on hot and humid days.

Second, he says that "some analysts" have counted demand-response rebates as a proxy for customer cost, without mentioning that he is one of those analysts, as demonstrated in Exhibits PLC-4 and PLC-5 to my direst testimony.

Third, Dr. Faruqui asserts that assuming a relationship between the costs and the incentives is "arbitrary," even though he demonstrated the underlying economic logic for that conclusion in Appendix C of the report I attached as Exhibit PLC-5.

Fourth Dr. Faruqui claims that "market research and customer surveys" are needed to fully understand the "true extent" of the customer costs. I agree that DPL was negligent in not exploring this topic with its customers, especially if Dr. Faruqui warned DPL that market research and customer surveys were needed to quantify the costs that he had identified in previous research. Surely, he is not suggesting that DPL should be rewarded for not even attempting to understand the burden its program placed on its customers. While he notes that Mr. Chang and I did not cite any market research and customer surveys to support particular values of customer costs (Faruqui Rebuttal at 8) , he cannot be seriously suggesting that the OPC should have commissioned those studies of DPL's customers; DPL bears the burden of demonstrating that its AMI program is cost-effective, with all costs properly considered.

Fifth, Dr. Faruqui suggests that AMI offers additional non-monetary benefits that could offset participants' discomfort, such as by giving them the ability to control their thermostat remotely with their smart phone (Faruqui, at 8). Of course, customers could invest in internet-connected thermostats without the AMI program and enjoy the pleasure Dr. Faruqui believes they would derive from those thermostats. Most DP participants probably do not have wifi thermostats, and if any customers did buy them in response to the DP program, DPL failed to include those costs.

Q: What is your assessment of Dr. Faruqui's claim that his support for including participant costs in his PGE and EnerNoc reports is not relevant to this case?

A: Dr. Faruqui's attempts to backtrack on his prior positions have no substance. He knew in January 2015 and January 2016 that the need for demand-response rebates indicated that customers were bearing costs from the program, as elegantly illustrated in the graphs on pages 142 and 143 of Exhibit PLC-5. Whether a study is specific or general, estimating cost-effective potential or evaluating a program, the underlying economic reality, which Dr. Faruqui has recognized, is the same.

Q: Does Dr. Faruqui's rebuttal rehabilitate DPL's assumption that its customers bear no cost for participating in the DP program?

A: No.

B. DPL's Biased Estimate of DP Load Reductions

Q: Does Dr. Faruqui accurately describe the DP program analysis?

A: Not really. In his Answer 19 (Rebuttal at 11–12), Dr. Faruqui makes a series of claims, which I deal with sequentially:

- "Delmarva Power chose to select a 'participant group' to gauge the effectiveness of the load-reducing capability of the program." DPL did not select a group to participate in the program, nor did it engage in any analysis to determine whether customers who happened to have lower load on PESC days were participating in any meaningful sense.
- "Viewing the program from a participant perspective will most effectively capture the real impact of the program." This sentence is

meaningless jargon, since it depends on a definition of "participant" that has little connection to actual behavior.

- "The program's success should be characterized as how effective it is in incenting customers to achieve a reduction in their electric consumption behavior." I agree. Dr. Faruqui and DPL have not measured the effectiveness of the program in incenting customers.
- "Therefore, it would be misleading to characterize the load-reducing capability of the program with the inclusion of non-participating customers….The non-participating customers are not engaged in the program, and therefore should not affect how the load-reducing success of the program is characterized."[3] The fact is that many of the so-called participants are not engaged, but just happened to have lower usage on PESC days. DPL makes no effort to account for these customers.

Q: Does Dr. Faruqui acknowledge that the "participants" include customers who did not respond to the DP program?

A: Interestingly, he does admit that the participants include load reductions unrelated to the program (Faruqui Rebuttal at 12):

> DPL's CBL approach identifies three types of customers as engaged in the program:
>
> i) customers who responded to the DP signal and intentionally reduced their load on the event day;
>
> ii) customers who did not respond to the DP signal but …reduce[d] their load on the event day due to reasons unrelated to the event day (i.e., being on vacation on the event days);

[3] Dr. Faruqui's position—that a corporation can count the results it likes and ignore the results it does not like—would be unacceptable in advertising, drug trials, environmental compliance, and almost every other context.

iii) customers who did not respond to the DP signal but [had lower] load on the event day due [to] higher-than-usual consumption profiles on the baseline days (i.e., visiting in-laws during the baseline period)." (Faruqui rebuttal A15, formatted for clarity)

Q: So does Dr. Faruqui admit that DPL's reported results are overstated?

A: No. He claims that the second-stage analysis, extending the baseline to the entire summer, with a weather correction, would minimize "the influence of the random load variations" (Dr. Faruqui Rebuttal at 13, line 13) and "dampen the average load impact that is derived from the panel regression model" (ibid at lines 21-22).

Q: Is he correct that the second-stage analysis "minimizes" and "dampens" the error in DPL's initial identification of participants in the DP?

A: If by "minimizes" and "dampens" he means "makes somewhat smaller," he is correct that using a larger baseline would catch some of DPL's errors. On the other hand, the larger baseline may also increase the claimed savings from some customers in Dr. Faruqui's categories (ii) and (iii).[4]

Unfortunately, the second-stage regression cannot identify customers in categories (ii) and (iii), since the regression only accounts for weather (OPC DR 13-8 Attachment D). Thus, the second-stage analysis does not "minimize" the error in the sense of making it vanishingly small or "dampen" the error in the sense of eliminating it. DPL and Dr. Faruqui have no idea how badly they have overestimated the DP savings by selecting a biased sample of the customer base.

Q: How does the DPL's selection biases distort the claimed savings from DPL's AMI program?

[4] The weather-normalization may also increase apparent savings.

A: As Dr. Faruqui admits, DPL has no idea who is participating. Some participants will participate and exert additional effort to achieve greater results, some will choose to not participate and however for some reason they are recognized as improving; Dr. Faruqui would treat all those subjects as successes for the treatment.

It may be helpful to imagine the effect of applying Dr. Faruqui's approach to an EE program in which DPL cannot identify the participants. For example, DPL could pay retailers to display and discount LED light bulbs, and then claim all weather-adjusted usage reductions by residential customers as being due to the LED program, while ignoring all customers whose usage increased, on the grounds that they are not "engaged participants." I doubt that the Commission would accept that method for EE evaluation, and I hope it will not accept that biased method for DP evaluation.

If DPL thought that the DP program was actually resulting in load shifts of the magnitude it claims, it could confirm that, by including all customers and eliminating its selection bias.

Q: How does Dr. Faruqui respond to your example comparing two similar days in August, illustrating random variations in the DPL residential response to PESC events?

A: Dr. Faruqui goes off on a tangent, claiming that my comparison is irrelevant because I contextualized the analysis by supposing that DPL forgot to inform customers as to an event day. (Faruqui Rebuttal at 15) It should be clear to Dr. Faruqui that I was not accusing DPL of forgetting to issue announcements of event days.

Perhaps he would have been more comfortable with an alternative description, such as this:

> Suppose that DPL cared whether all their claimed savings were real and compared two non-event days, to measure the level of false positives in an untreated control group.

Unfortunately, neither DPL nor Dr. Faruqui ever carried out this standard test of the efficacy of the program.

Q: Did Dr. Faruqui have any other quibbles with your analysis?

A: For some reason, Dr. Faruqui asserts that DPL does not "randomly call PESC events" and that:

> Delmarva Power only calls PESC events for one or more of the following purposes: PJM request, in response to high wholesale energy market prices, in response to transmission and/or distribution supply constraints, in response to high load conditions, for required test purposes, and/or to maintain high levels of customer DP Program engagement." (Faruqui Rebuttal at 15).

DPL has not identified the reasons for calling any of its events (other than required tests, but I cannot find any mention on PJM's web site of PJM requesting that DPL call a PESC event, and my direct testimony demonstrated that DPL was not efficiently targeting high-load days. The last of Dr. Faruqui's listed purposes—"to maintain high levels of customer DP Program engagement"—could justify calling a PESC event almost any day.

Q: Are the two July days you used in your example similar to the PESC event days called in 2015?

A: Yes. The two days I chose are similar to the PESC event days that DPL called in 2015. Both July 21st and July 29th were as hot as or hotter than the PESC event days called in 2015, as shown in Table S-1. DPL could have called events on either of these days. The PESC event dates in 2015 were all

called for high wholesale energy market prices, high load conditions and DP program engagement (OPC DR 40-4). As shown in Table S-1, the comparison dates I chose are generally higher in price and load than the PESC event days. There is no reason to consider the two dates I used for comparison to be unrepresentive of the types of days on which DPL calls events. I selected the two days for the similarity in their weather, to minimize load differences due to weather.

Table S-1: Comparison of Example Days to Event Days

Date	PESC Event	Daily Average THI	Peak Hour Average THI	PJM Daily Peak Load (MW)	Peak Hour	DPL RT Average LMP ($/MWh)
7/30/2015	Yes	77.3	78.9	134,524	15	$32.10
8/3/2015	Yes	73.8	78.1	133,436	17	$41.69
9/9/2015	Yes	77.2	81.3	131,701	16	$66.71
7/21/2015	No	77.9[3]	80.5[2]	132,103[1]	17	$42.59[2]
7/29/2015	No	77.8[3]	81.4[3]	142,225[3]	17	$52.15[2]

Superscripts = number of PESC events that my comparison dates exceeded, for the particular measure

Q. How does Dr. Faruqui incorrectly characterize your summary of Brattle's approach to weather normalization of load for DPL's second stage of consumer participation analysis?

A: Dr. Faruqui (Rebuttal at 16) says that "The use of all non-event [weekdays] significantly increases the precision of the weather normalization of load," compared to the crude customer baseline that DPL uses in selecting participants. He is correct that the second stage of the analysis normalizes for weather, and thus is better weather-normalized than the customer baseline method. He goes on to claim that:

> The inclusion of all non-event days actually takes a more conservative approach to calculating the impact of the event day. This is because after controlling for weather using the wider sample of non-event days, the model may find that some customers who were included as 'participants' actually increased their consumption. (ibid)

Dr. Faruqui appears to be claiming that the weather-normalization process would reduce the PESC savings estimates. That would be true if the PESC day were much milder than the baseline days, identifying some weather-related load reductions as program-related. In that case, the weather-normalization would tend to decrease the estimated savings, reducing DPL's overestimate of savings. On the other hand, if the PESC day is hotter than the customers' baseline days, weather-normalization would tend to increase the savings estimates. Dr. Faruqui has access to all the data on customer baseline, the load differences from the baseline days to the PESC day, and the regression results for each customer and PESC day. He could have provided evidence regarding the percentage of customers and events for which the weather-normalization produces lower (or higher) savings estimates than the DPL customer baseline. He offers no such evidence.

But whether the weather-normalization reduces or increases the estimated savings is a minor issue, compared to the underlying overestimate due to DPL's biased selection of data.

Q: Would the weather normalization in the second-stage regression model correct for the error DPL introduces by suppressing the large portion of the data that is unfavorable for DPL's preferred result?

A: No. Even perfect weather normalization will not identify and eliminate the load reductions from customers whom DPL identifies in the first stage as participants, but whose reductions on PESC days resulted from non-program factors, such as vacations. Nor can the weather normalization bring back into

the analysis the customers whose usage increased from their baseline days to the PESC days, whom DPL removed from the analysis.

IV. Response to Clark Surrebuttal

Q: To what portion of Mr. Clark's surrebuttal will you be responding?

A: Mr. Clark asserts that transmission and distribution projects may have been avoided by the AMI programs without ever appearing in DPL's plans.

> Both PJM and Delmarva Power annually review and update its load forecast and Delmarva Power makes adjustments in its plans to construct future facilities. Energy reductions that are occurring as a result of AMI-related programs…are reducing both peak demands and annual energy usage and are resulting in lower load growth. This lower growth rate has eliminated the need for future construction projects and is resulting in avoiding Transmission and Distribution (T&D) investments. In other words, if there is no load growth, there are no identified infrastructure projects to cancel. These projects are eliminated before the need is ever identified. (Clark Rebuttal at 20–21)

Q: Is it true that the "AMI-related programs…are reducing…peak demands"?

A: Only in a very restricted sense, that does not translate into reduced T&D investment. The DP program (which accounts for 83% of DPL's claimed T&D savings) has reduced some loads, but not the peak loads on substations or transmission lines, and cannot be counted on to reduce future peak loads on any T&D equipment. The sporadic load reductions from the DP programs have little effect on the PJM load forecast and DPL will not be counted as a firm resource after May 2020, so the DP program will not affect future PJM planning. And as I explained in my direct testimony (at 50–51), the timing of transmission planning makes it unlikely that the DP program could have

avoided transmission projects prior to 2020, especially projects that never appeared in expansion plans.

In principle, the EMT and CVR programs could reduce T&D investments, and the cleared DP capacity could affect the timing of some PJM transmission projects through 2019. But Mr. Clark's claim that load reductions in 2015 would have avoided 2015 projects that were never planned is implausible. By the time that DPL was in a position to determine the effect of the 2015 programs on load (assuming that there was any such effect, and that it was dependent on the AMI investment), any transmission line or substation projects planned for 2015 would be complete, or nearly so. Perhaps those 2015 load reductions would have slightly reduced the need for a project previously planned for 2016 or later, but DPL would almost certainly have previously identified the need for those projects.

Q: Does Mr. Clark's testimony change your conclusion regarding the validity of DPL's estimate of avoided T&D investment from the AMI programs.

A: No. My direct recognized some small potential T&D benefits from the EMT; I believe that estimate is reasonable.

Q: Does this conclude your surrebuttal testimony?

A: Yes.

Exhibit PLC-1

DELMARVA POWER & LIGHT COMPANY
MARYLAND CASE NO. 9424
RESPONSE TO OPC DATA REQUEST NO. 5

QUESTION NO. 11

FOR EACH OF THE DISTRIBUTION SUBSTATIONS IN DPL'S MARYLAND SERVICE AREA PLEASE PROVIDE THE FOLLOWING INFORMATION AT EACH VOLTAGE LEVEL:

A. SUBSTATION ID
B. STATION HIGH AND LOW VOLTAGES
C. STATION CAPACITY (MVA), BY VOLTAGE LEVEL
D. PLEASE PROVIDE THE DATE, TIME AND MEGAWATT LOAD FOR THE ALL-TIME PEAK DEMAND ON EACH DISTRIBUTION SUBSTATION.
E. SUMMER ANNUAL PEAK LOAD, 2010 THROUGH 2016
   I. MAXIMUM MW OR MVA
   II. DATE AND TIME
F. WINTER ANNUAL PEAK LOAD, 2010/11 THROUGH 2016/17
   I. MVA
   II. DATE AND TIME
G. PEAK LOAD ON SUBSTATION FOR EACH MONTH, JANUARY 2010 THROUGH DECEMBER 2016, INCLUDE THE DATE AND TIME.
H. LOAD ON SUBSTATION IN EACH PESC EVENT HOUR ON EACH EVENT DAY AND PJM EVENT DAY IN 2014–2016.
I. NUMBER OF CUSTOMERS SERVED BY CLASS.
J. A LIST OF THE FEEDERS SERVED BY THE SUBSTATION, AND FOR EACH:
   I. FEEDER ID
   II. VOLTAGE
   III. CAPACITY

RESPONSE:

A. See OPC DR 5-11 Attachment A.
B. See OPC DR 5-11 Attachment A.
C. See OPC DR 5-11 Attachment A.
D. See OPC DR 5-11 Attachment B.
E. See OPC DR 5-11 Attachment C.
F. See OPC DR 5-11 Attachment C.
G. See OPC DR 5-11 Attachment D (Electronic Only).
H. See OPC DR 5-11 Attachment E (Electronic Only).
I. See OPC DR 5-11 Attachment F.
J. See OPC DR 5-11 Attachment G.

For Attachment C, please note that the peak loads are for all of Delmarva Power's service territory.

SPONSOR: Bryan L. Clark

Exhibit PLC-1

DELMARVA POWER & LIGHT COMPANY
MARYLAND CASE NO. 9424
RESPONSE TO OPC DATA REQUEST NO. 40

QUESTION NO. 4

Referring to the PESC events called in 2014, 2015, and 2016, please select (from the provided options) for each event, the reason why it was called. If the event was called for a reason other than the ones listed, please indicate so and provide such reason:
a. PJM request
b. High wholesale energy market prices
c. Transmission and or distribution supply constraints
d. High load conditions
e. Test purposes
f. Maintain high levels of customer DP program engagement

RESPONSE:

Delmarva Power activated each PESC event for one or more of the reasons stated in each column below. An "x" indicates the reason for the PESC event. There were no PJM emergency requests for load reduction during the three year period of 2014, 2015, and 2016.

Event Date	PJM Request	High Wholesale Energy Market Prices	T&D Supply Constraints	High Load Conditions	Test	DP Program Engagement
8/27/2014		x		x		x
9/2/2014		x		x		x
7/30/2015		x		x		x
8/3/2015		x		x		x
9/9/2015		x		x		x
9/25/2015					x	
7/8/2016		x		x		x
7/14/2016		x		x		x
9/8/2016		x		x		x
10/20/2016					x	

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