STATE OF MARYLAND

BEFORE THE PUBLIC SERVICE COMMISSION

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

REBUTTAL TESTIMONY OF

PAUL CHERNICK

ON BEHALF OF

THE OFFICE OF PEOPLES COUNSEL

Resource Insight, Inc.

OCTOBER 18, 2016

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

A: Yes.

Q: What is the subject of your rebuttal testimony?

A: This testimony updates my direct testimony on the effect of AMI-related load reductions on PJM's load forecasts, by providing PJM's response to OPC's questions specific to DPL load reductions.

Q: What information did the OPC request from PJM?

A: As I stated in my direct (at 34), I asked PJM to rerun its 2016 Load Report regression equations and forecast for the RTO and DPL with the following increases in DPL's contribution to RTO daily peak:

1. Increasing each peak by 0.22% in 2015, to model the forecast increase if the uniform reductions that DPL claims for the CVR and EMT programs had not existed. This is equivalent to an increase in the peak by about 8 MW.

2. Increasing load on the PESC days by DPL's estimate of the DP savings, as shown in Table 1, to roughly model the effect if the DP program had not existed.

3. Increasing load on by the average DP savings on each of the five highest RTO coincident peaks, to model the best case scenario where the DP program would have in fact performed on each of the coincident peak days.

Table 1: DP Load Reductions

Event Date	MW
7/29/2015	62.5
8/2/2015	48.8
9/8/2015	55.6

Q: What results did PJM provide?

A: PJM responded to my questions on October 13, 2016, and PJM's response is provided in Exhibit PLC-R-1. Table 2 shows PJM's base 2016 forecast for the DPL zone and the effects of removing DPL's claimed savings from the PJM forecast for DPL zone contribution to daily load for each of the cases I requested.

Table 2: Effect of Load Reductions on PJM Forecast of DPL Load at PJM Peak

	Official 2016 Forecast	CVR/ EMT 0.22% 2015	DP Actual 2015	DP Best Case 2015	Forecast Change as % Load Change		
					CVR/ EMT	DP Actual	DP Best Case
2016	3,838	3,839	3,838	3,839	11.8%	0%	1.8%
2017	3,878	3,879	3,878	3,879	11.7%	0%	1.8%
2018	3,907	3,907	3,907	3,907	0.0%	0%	0%
2019	3,916	3,917	3,916	3,916	11.6%	0%	0%
2020	3,917	3,917	3,917	3,917	0.0%	0%	0%
2021	3,908	3,909	3,908	3,909	11.6%	0%	1.8%
2022	3,912	3,913	3,912	3,913	11.6%	0%	1.8%
2023	3,926	3,927	3,926	3,927	11.6%	0%	1.8%
2024	3,941	3,942	3,941	3,941	11.5%	0%	0%

As PJM notes in its cover email, "these impacts are to be considered immaterial."

PJM's rerun of its forecast model indicate that each megawatt of uniform load reduction (such as those claimed by DPL for the CVR and EMT programs) in 2015 reduced the DPL zonal load forecast by an average of about 9%. In contrast, the much larger reductions that DPL claims from the DP program for the ESD days in 2015 generate no reductions in the PJM forecast, or at best less than half a megawatt (or 1% of the reductions) in any year. Even if DPL had managed to target the DP program to hit all five of the days with the highest PJM loads, the change in the DPL zonal forecast would have rounded off to zero in half the years and one megawatt in the other half, for an average of about 1% of the DP load reduction.

The PJM cover email in Exhibit PLC-R-1 notes that "DPL peaks are typically defined by THI values above 82. [Most of the 2015 ESDs and PJM peak days] are not representative of a typical peak day,…which may have contributed to diluting some of the impact." In other words, DPL's AMI programs for 2015 had very little effect on the forecast. The AMI program operations in some future years might reduce the load forecast more than the 2015 programs did, but the BGE and Pepco results I discussed in my direct testimony indicate only modest effects even with three years of programs, including some hotter days.

Q: What do these results imply about the reasonableness of DPL's assumption that the AMI programs would reduce capacity obligation megawatt for megawatt?

A: The PJM forecasters have produced results for DPL similar to the results I reported for BGE and Pepco in my direct testimony. PJM's results indicate that load reductions from DPL's 2015 CVR and EMT programs would reduce the DPL zonal forecast, and hence DPL capacity responsibility, by only about 9% of the achieved 2015 load reductions. Even if there were no other errors in DPL's estimates of avoided capacity costs, its estimates of the avoided capacity costs from these programs would be overstated by a factor of more than 10. The reductions from the DP program, even if they were perfectly timed, would have essentially no effect on DPL capacity responsibility and would avoid nearly zero capacity costs.

Q: Does PJM's response to your questions indicate that DPL's AMI programs would reduce total PJM capacity requirements and mitigate capacity prices?

A: No. If anything, the PJM results indicate that the AMI programs increased PJM capacity requirements and hence capacity prices. Table 3 summarizes the PJM results for the PJM forecast. The PJM system forecast actually *increases* by an average of 31% of the CVR and EMT program reductions, and by 5% to 7% of the DP program reductions, depending on the accuracy of DPL's targeting of the Energy Saving Days. I do not know why this counter-intuitive effect occurs, but it may result from the relatively mild 2015 weather in the DPL zone. At best, the PJM analysis suggests that no capacity price mitigation would result from DPL's AMI programs.

Table 3: Effect of Load Reductions on PJM Peak Forecast

	Official 2016 Forecast	CVR/EMT 0.22% 2015	DP Actual 2015	DP Best Case 2015	Forecast Change as % Load Change		
					CVR/EMT	DP Actual	DP Best Case
2016	152,130	152,128	152,126	152,128	-23.7%	-7.2%	-3.6%
2017	154,148	154,149	154,148	154,149	11.7%	0.0%	1.8%
2018	155,910	155,908	155,908	155,908	-23.3%	-3.6%	-3.6%
2019	156,956	156,954	156,953	156,953	-23.2%	-5.4%	-5.4%
2020	156,887	156,883	156,882	156,882	-46.4%	-9.0%	-9.0%
2021	157,357	157,354	157,353	157,354	-34.9%	-7.2%	-5.4%
2022	157,987	157,982	157,981	157,982	-58.1%	-10.8%	-9.0%
2023	159,972	158,970	158,969	158,970	-23.2%	-5.4%	-3.6%
2024	159,991	159,986	159,985	159,985	-57.7%	-10.8%	-10.8%

Q: Does this conclude your rebuttal testimony?

A: Yes

Data Request Cited in Testimony

PLC-R-1

Question 1 - How would the 2016 Load Report regression equations and forecast for the RTO and DPL zone have changed if each DPL contribution to RTO daily peak had been higher by 0.22% in 2015?

2016 Forecast

	2016	*2017*	*2018*	*2019*	*2020*	*2021*	*2022*	*2023*	*2024*	*2025*	*2026*	*2027*	*2028*	*2029*	*2030*	*2031*
DPL	3,838	3,878	3,907	3,916	3,917	3,908	3,912	3,926	3,941	3,966	3,977	3,982	4,003	4,023	4,027	4,038
PJM RTO	152,130	154,148	155,910	156,956	156,887	157,357	157,987	158,972	159,991	160,946	161,890	162,988	164,147	165,393	166,412	167,467

2016 Alternate Forecast

	2016	*2017*	*2018*	*2019*	*2020*	*2021*	*2022*	*2023*	*2024*	*2025*	*2026*	*2027*	*2028*	*2029*	*2030*	*2031*
DPL	3,839	3,879	3,907	3,917	3,917	3,909	3,913	3,927	3,942	3,966	3,978	3,983	4,004	4,023	4,027	4,039
PJM RTO	152,128	154,149	155,908	156,954	156,883	157,354	157,982	158,970	159,986	160,944	161,888	162,983	164,138	165,384	166,405	167,465

Difference

	2016	*2017*	*2018*	*2019*	*2020*	*2021*	*2022*	*2023*	*2024*	*2025*	*2026*	*2027*	*2028*	*2029*	*2030*	*2031*
DPL	1	1	-	1	-	1	1	1	1	-	1	1	1	-	-	1
PJM RTO	(2)	1	(2)	(2)	(4)	(3)	(5)	(2)	(5)	(2)	(2)	(5)	(9)	(9)	(7)	(2)

Question 2 - How would the 2016 Load Report regression equations and forecast for the RTO and DPL have changed if each DPL contribution to RTO daily peak had been higher by the following amounts:

Event Date	**MW**
7/29/2015	62.5
8/2/2015	48.8
9/8/2015	55.6

2016 Forecast

	2016	*2017*	*2018*	*2019*	*2020*	*2021*	*2022*	*2023*	*2024*	*2025*	*2026*	*2027*	*2028*	*2029*	*2030*	*2031*
DPL	3,838	3,878	3,907	3,916	3,917	3,908	3,912	3,926	3,941	3,966	3,977	3,982	4,003	4,023	4,027	4,038
PJM RTO	152,130	154,148	155,910	156,956	156,887	157,357	157,987	158,972	159,991	160,946	161,890	162,988	164,147	165,393	166,412	167,467

2016 Alternate Forecast

	2016	*2017*	*2018*	*2019*	*2020*	*2021*	*2022*	*2023*	*2024*	*2025*	*2026*	*2027*	*2028*	*2029*	*2030*	*2031*
DPL	3,838	3,878	3,907	3,916	3,917	3,908	3,912	3,926	3,941	3,966	3,977	3,982	4,003	4,022	4,027	4,038
PJM RTO	152,126	154,148	155,908	156,953	156,882	157,353	157,981	158,969	159,985	160,944	161,887	162,982	164,137	165,383	166,405	167,464

Difference

	2016	*2017*	*2018*	*2019*	*2020*	*2021*	*2022*	*2023*	*2024*	*2025*	*2026*	*2027*	*2028*	*2029*	*2030*	*2031*
DPL	-	-	-	-	-	-	-	-	-	-	-	-	-	(1)	-	-
PJM RTO	(4)	-	(2)	(3)	(5)	(4)	(6)	(3)	(6)	(2)	(3)	(6)	(10)	(10)	(7)	(3)

Question 3 - How would the 2016 Load Report regression equations and forecast for the RTO and DPL have changed if the DPL load had been higher by 55.6 MW on each of the five highest RTO Coincident Peaks?

PJM 2015 RTO
Coincident Peaks (5CP)

Date	Hour
7/28/2015	17
7/20/2015	17
7/29/2015	17
9/3/2015	17
8/17/2015	15

2016 Forecast

	2016	*2017*	*2018*	*2019*	*2020*	*2021*	*2022*	*2023*	*2024*	*2025*	*2026*	*2027*	*2028*	*2029*	*2030*	*2031*
DPL	3,838	3,878	3,907	3,916	3,917	3,908	3,912	3,926	3,941	3,966	3,977	3,982	4,003	4,023	4,027	4,038
PJM RTO	152,130	154,148	155,910	156,956	156,887	157,357	157,987	158,972	159,991	160,946	161,890	162,988	164,147	165,393	166,412	167,467

2016 Alternate Forecast

	2016	*2017*	*2018*	*2019*	*2020*	*2021*	*2022*	*2023*	*2024*	*2025*	*2026*	*2027*	*2028*	*2029*	*2030*	*2031*
DPL	3,839	3,879	3,907	3,916	3,917	3,909	3,913	3,927	3,941	3,966	3,978	3,983	4,004	4,023	4,027	4,038
PJM RTO	152,128	154,149	155,908	156,953	156,882	157,354	157,982	158,970	159,985	160,944	161,888	162,983	164,138	165,384	166,405	167,464

Difference

	2016	*2017*	*2018*	*2019*	*2020*	*2021*	*2022*	*2023*	*2024*	*2025*	*2026*	*2027*	*2028*	*2029*	*2030*	*2031*
DPL	1	1	-	-	-	1	1	1	-	-	1	1	1	-	-	-
PJM RTO	(2)	1	(2)	(3)	(5)	(3)	(5)	(2)	(6)	(2)	(2)	(5)	(9)	(9)	(7)	(3)