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1 DELMARVA POWER & LIGHT COMPANY
2 TESTIMONY OF CHARLES R. DICKERSON
3 BEFORE THE DELAWARE PUBLIC SERVICE COMMISSION
4 IN THE MATTER OF THE INVESTIGATION BY THE
5 DELAWARE PUBLIC SERVICE COMMISSION
6 INTO IMPLEMENTATION OF DYNAMIC PRICING
7 DOCKET NO. 09-311

8 1. Q: Please state your name and position, and business address.

9 A: My name is Charles R. Dickerson, Vice President Customer Care for Pepco
10 Holdings, Inc., ("PHI"), I am testifying in this proceeding on behalf of Delmarva Power
11 & Light Company ("Delmarva" or "the Company"). My business address is Edison
12 Place, 701 9th Street, N.W., Washington, D.C. 20068-0001.

13 2. Q: What are your responsibilities in your role as Vice President, Customer Care?

14 A: I am responsible for all aspects of customer care, including meter reading, billing,
15 credit, customer care centers, and program marketing.

16 3. Q: Please describe your educational and professional background.

17 A: Since joining PHI in 1989, I have served in numerous roles including Manager for
18 Customer Operations Division, Director – Diversity & HR Strategic Planning, VP – Gas
19 Delivery for Delmarva, and VP of Strategic Planning and Chief Risk Officer. I earned a
20 B.S. degree in Mechanical Engineering and a M.S. in Applied Management, both from
21 the University of Maryland.

1 4. Q: What is the purpose of your testimony?

2 A: The purpose of my testimony is to provide an overview of the Company's
3 education and customer engagement plans with regard to dynamic pricing and also to
4 provide general information on best practices in the industry.

5 5. Q: When will Delmarva residential customers be introduced to dynamic pricing?

6 A: Starting with the first quarter of 2012, the Company proposes to begin the
7 implementation for the 7,000 residential customers who participated in the Advanced
8 Metering Infrastructure ("AMI") Field Acceptance Test Standard Offer Service ("SOS")
9 customers. These customers will be defaulted to the Dynamic Pricing Rider ("Rider
10 DP") which is based on a critical peak rebate pricing plan, one form of dynamic pricing.
11 During the first six months of 2012, Delmarva will provide educational materials to these
12 residential SOS customers using targeted communications. The goal is to educate
13 customers about dynamic pricing, encourage customers to set their preferences for
14 notification of critical peak events, and to learn how to earn rebates by reducing energy
15 use during critical peak events.

16 Beginning in 2013, the educational effort will be expanded for all Delmarva
17 residential SOS customers, which will allow the Company to use other educational
18 channels above and beyond direct communications, such as mass media and social media.
19 Delmarva also plans to partner with community-based organizations, including social
20 service agencies, special interest groups, faith-based organizations and non-English
21 speaking advocacy groups for more face-to-face outreach. This will enable the Company
22 to provide education more effectively to customers belonging to distinct marketing

1 segments such as customers with low incomes, seniors, and diverse ethnic groups.
2 However, the goals of these enhanced education efforts will be the same as for the earlier
3 effort in 2012 – educate customers about Dynamic Pricing, encourage customers to set
4 preferences for notification of critical peak events, and learn how to earn rebates by
5 reducing energy usage during critical peak events.

6 **Q: When will Delmarva's non-residential customers be introduced to dynamic pricing?**

7 **A:** Beginning in 2013, Delmarva proposes to introduce dynamic pricing to non-
8 residential customers served under SOS rates who participated in the AMI Field
9 Acceptance Test. Thus, an estimated 800 small and 200 medium non-residential
10 customers would be placed under these rates in 2013. Delmarva will provide targeted
11 educational materials to these non-residential customers in early 2013 to prepare them for
12 the rate change. Similar to residential customers, non-residential customers will be
13 invited to set their preferences for notification of critical peak events and learn how to
14 reduce energy during events.

15 In 2014, the Rider DP is proposed to become the default pricing plan for all SOS
16 small and medium non-residential customers served by Delmarva. The education
17 channels for additional non-residential SOS customers is expected to primarily include
18 direct mail, direct customer contact, and social media that would begin in early 2014.

19 **Q: Why is the Company proposing to offer customers only one dynamic pricing plan**
20 **initially?**

21 **A:** Customers will be introduced to a number of new concepts through Rider DP, and
22 starting with one dynamic pricing plan is expected to provide the customers sufficient

1 time to learn about dynamic pricing in general, how to reduce energy use during critical
2 peak events, their benefits from participation, and what tools are provided by Delmarva
3 to assist them. A rebate rate form of dynamic pricing is expected to be initially more
4 appealing to a broader range of customers.

5 Customers taking service under Rider DP will be educated about critical peak
6 events and learn that the Company is asking customers to reduce energy use during these
7 events. In return, the Company will offer a significant rebate for each kWh reduced by
8 residential or business customers during critical peak events.

9 Customers will also be encouraged to establish their preference for email, phone,
10 or text notifications from the Company to alert them to upcoming critical peak events. In
11 addition, customers will have access to detailed information on the "My Account" web
12 portal, including a preliminary calculation of rebates earned during previous critical peak
13 events. For each critical peak event, customers may log onto "My Account" the next day
14 to view their performance during the event.

15 The customer bill format will also be changed to provide detailed information on
16 each critical peak event during the billing period, and the credit applied to their electric
17 bill based on the rebates earned for energy usage reduction during the events. The new
18 bill format will also contain additional information regarding energy use for all Delmarva
19 customers.

20 **8. Q: Please describe the quality assurance process for billing for dynamic pricing?**

21 **A:** Delmarva is keenly aware that the success of dynamic pricing depends in great
22 part on our ability to bill customers accurately under Rider DP. The Company will

1 continue a rigorous process of reviewing bills before they are presented to customers. In
2 addition, the Company continues to monitor the experience of other utilities to ensure that
3 Delmarva has a plan to avoid problems that have emerged in other jurisdictions. We are
4 training our billing employees to work with customers to address any concerns that may
5 arise.

6 **9. Q: What steps are you planning to take to inform and educate customers about the**
7 **dynamic pricing program?**

8 **A:** Market and consumer research are the foundation of a successful education plan.
9 The education plan for the dynamic pricing program will be based on the prior and
10 ongoing research and customer segmentation studies. Additionally, Delmarva is tracking
11 best practice strategies for other dynamic pricing education efforts.

12 During the phase-in of dynamic pricing, customer education will be focused on
13 using direct mail, bill messaging and bill inserts to target the initial group of customers.

14 Following the initial phase-in period, customer education will be enhanced to
15 include radio, print, cable and the Internet for broader outreach and to cover all
16 customers. Delaware is a unique market for advertising and marketing with mass
17 communications as it has overlapping media messaging from three of the top ten
18 Designated Market Areas (“DMAs”); New York/New Jersey, Baltimore and
19 Philadelphia. As described earlier, with the broader outreach, Delmarva will partner with
20 community-based organizations, allowing the Company to deliver written materials and
21 other forms of information to customer segments that are less reliant on more
22 “traditional” forms of communication.

1 **10. Q: What would be the key elements in your education plan and how would they work?**

2 A: Introducing customers to dynamic pricing will be accomplished by executing a
3 thoughtful, integrated communications and education plan to inform and teach customers
4 about the new pricing plan. Delmarva has initiated the first stage of its AMI educational
5 effort which will allow the Company to transition seamlessly into education for dynamic
6 pricing. While traditional methods of communication such as direct mail, web based
7 education, print and paid media support will be at the core of the education plan for
8 dynamic pricing, Delmarva knows that communicating the changes brought by dynamic
9 pricing requires more than a one-size-fits-all education plan. A higher level of
10 community-based engagement will be used to help personalize the education. This
11 approach will be particularly important to the seniors and hard-to-reach customers.

12 Information and results garnered from the AMI customer education program also
13 will guide the dynamic pricing education program. Using measurements and results of
14 the AMI selection of media outlets, strategic partnerships, creative and interactive web,
15 message testing and collateral, Delmarva will have a proven record of the most effective
16 outlets for education of the dynamic pricing program. This includes identifying and
17 testing effective keywords and messages, measuring the effectiveness of specific media
18 outlets such as radio, on-line and publications and reviewing partner activities and call
19 center interactions.

20 Recent research on what content assists consumers in being successful at peak
21 reduction indicates that providing appliance level usage data supports success in peak
22 reduction (usage was 6% lower in simulations than for those households that had whole

1 house data).¹ This is one of the rationales for providing appliance level usage estimates
2 in Delmarva's "My Account" web portal and recommending that customers register for
3 My Account in early communications.

4 **11. Q: How will the phase-in of dynamic pricing improve the education effort?**

5 A: A phased approach allows education tools and resources to be refined prior to
6 their application to the entire population. The Company will carefully monitor the
7 success of its education efforts for each market segment. For example, more cautious
8 customers may respond better to testimonial endorsements by neighbors or by receipt of
9 information by trusted organizations such as community service or faith-based groups.

10 **12. Q: What lessons have you learned from your experience in the pilot program in the**
11 **District of Columbia for customer education and marketing?**

12 A: PowerCentsDCTM was a trial to evaluate customer acceptance of dynamic pricing
13 and smart thermostats enabled by the deployment of smart meters. Customers were
14 placed on one of three pricing plans: critical peak pricing, critical peak rebates and hourly
15 pricing. The program was awarded Outstanding Achievement in Pricing and Demand
16 Response by the Association of Energy Service Professionals². The program has also
17 been studied and lauded for its design and implementation.³

18 From a customer satisfaction perspective, 86 percent of critical peak rebate
19 ("CPR") participants would recommend these pricing plans. Importantly, based on PHI's

¹ Herter, Karen, and Seth Wayland. 2009. Behavioral Experimentation with Residential Energy Feedback through Simulation Gaming. California Energy Commission, PIER Buildings End-Use Energy Efficiency Program, p22.

² Award recipients are listed on the AESP web site at: <http://aesp.org/displaycommon.cfm?an=1&subarticlenbr=114>

³ See also PowerCentsDCTM Final Program Report, September 2010.

1 analysis, all CPR participants surveyed with incomes of less than \$25,000 annually would
2 recommend the CPR plan to their friends and family. It is notable that the vast majority
3 of customers were able to save money, irrespective of income.

4 In terms of demonstrating the efficacy of dynamic pricing rates to reduce peak
5 consumption, PowerCentsDC™ was a resounding success. Customers of all rate classes
6 and economic groups responded to critical events, reducing usage consistently and as
7 expected. These savings show that the Company can effectively educate customers and
8 drive response to innovative rate structures through direct messaging and community
9 outreach. Furthermore, as smart thermostats and other enabling technology become more
10 popular with consumers, the savings become easier to attain with less direct action
11 necessary by customers.

12 The PowerCentsDC™ results suggest that if all Delmarva Power SOS customers
13 were given the opportunity to try dynamic pricing with as few enrollment barriers to
14 participate as possible, a high percentage of customers will appreciate the opportunity.

15 **13. Q: Can you describe other successful education efforts elsewhere in the nation to**
16 **introduce customers to new pricing plans?**

17 **A:** Salt River Project (“SRP”) in Arizona serves 25 percent of its customers under
18 various time-of-use (“TOU”) pricing plans. SRP offers a web portal that uses customer
19 friendly language to assist customers in making decisions. SRP also provides a typical
20 profile for a customer who successfully saves money on each pricing plan. The profiles
21 are based on information a customer would easily know or have access to, such as “Is
22 your August bill over \$200?” Delmarva is planning to incorporate customer friendly

1 language and to focus on information easily accessible to customers in our education
2 plans.

3 SRP provides customers with energy tips provided by other customers via a
4 customer blog on the company web portal. Customers considering moving to a TOU
5 pricing plan can read about the experiences of other customers on each TOU rate plan to
6 use in their decision making. Delmarva is planning to provide similar opportunities for
7 its customers that are eligible for dynamic pricing.

8 **14. Q: How will you measure the success of your education effort?**

9 **A:** The Company will rely on several methods to measure success of our education
10 efforts. The first metric will be how many customers set their preferences for notification
11 of events by calling our customer call center or via the "My Account" web portal.
12 Another key metric will be to measure energy reductions during critical peak events.
13 Additional metrics will include:

- 14 a. Analyzing the use of the "My Account" web portal for new activations
15 b. Call center inquiries about dynamic pricing,
16 c. Partner activation outreach and face-to-face participation
17 d. Program sign-ups for bill-to-date.

18 In addition, the Company will conduct ongoing research to learn which customers
19 are actively participating and perceived barriers to participation. Delmarva has
20 contracted Market Strategies International ("MSI") to provide ongoing customer market
21 research for its customer education program around dynamic pricing. As part of this

1 relationship, MSI has helped propose and guide Delmarva through its recommended
2 market research activities that impact customer education.

3 To date, Delmarva has already contracted and conducted a baseline customer
4 survey to gauge knowledge and interest level in AMI programs (Q4 2010). This baseline
5 study will be repeated after the launch of the dynamic pricing education campaign to
6 measure our levels of success and satisfaction with the program. Additionally, customer
7 research will be conducted beforehand to test messages and communications to ensure
8 they resonate with customers, encourage customers to provide contact information for
9 critical peak event notifications, and drive customers to act by reducing energy use during
10 critical peak events. Customer research will be conducted to determine the
11 communications channels that will most effectively deliver these messages.

12 In addition, Delmarva is working with MSI on a segmentation study for Delaware
13 in the first half of 2011. Results from this study will help guide and drive education
14 communication activities and messaging around dynamic pricing. Providing testimonials
15 of early adopters to encourage others will be a critical element in making the program
16 successful.

17 **15. Q: How will customers be notified of a critical peak event?**

18 **A:** Customers will be able to select from two of three different channels of
19 notification that a critical peak will occur; phone call, text message or email. The
20 customer will be able to select their preferences by logging into the "My Account" web
21 site or by calling the Delmarva Call Center and speaking to a customer service
22 representative. Delmarva will make a reasonable attempt to notify customers of an

1 anticipated Critical Peak Event by 8 P.M. the day prior to the event; although same day
2 unexpected emergency events may occur. Communications through media channels will
3 also be utilized to inform customers of an event.

4 If the customer does not select any notification preference, Delmarva will notify
5 customers by phone messages using contact numbers available from the Company
6 records. For customers who prefer to not be contacted about events, customers may opt
7 out of notification by calling the customer call center or via "My Account".

8 **16. Q: How will customers be able to review their results?**

9 **A:** Delmarva will provide summaries of details of customer response to critical peak
10 events and rebates earned on their bill and in "My Account". Both channels will use the
11 same terms to make it easier for customers to compare their bill with the information
12 provided on "My Account." On the bill and on "My Account", Delmarva will provide
13 information for each critical peak event, including regularly scheduled events and
14 emergency events. In addition, on "My Account", customers will have access to details
15 of their past bills as well as the current bill.

16 Since most customers look at their electric bills on a monthly basis, Delmarva
17 considers bills for all customers to be a key educational opportunity. Customer bills will
18 include information on how much energy customers reduced on critical peak days and the
19 dollar amount of rebates earned. Customers will be encouraged to log in to "My
20 Account" the day after a critical peak event to receive feedback about how much they
21 reduced and the rebate earned during the event. Customers will also be able to access
22 through "My Account" more detailed information on their hourly usage.

1 Delmarva is also planning to provide a "Bill-to-Date" function as of the day
2 before on "My Account" for all customers with AMI. Delmarva's affiliate utility has
3 experience with this function through the PowerCentsDC™ project.

4 Providing an AMI enabled Bill-to-Date function is emerging as an industry best
5 practice. For example, Reliant, an energy supplier based in Texas, sends customers a
6 weekly email with a bill-update for all customers who sign up for the service. To date,
7 175,000 Reliant customers have signed up for this weekly email service. Pacific Gas &
8 Electric ("PG&E") now provides a Bill-to-Date update on the PG&E "My Account" web
9 portal for all customers with AMI. Delmarva expects that the provision of the Bill-to-
10 Date may encourage more customers to access "My Account." The Bill-to-Date will also
11 be available to customer service representatives for customers who prefer to call rather
12 than visit the Company web portal. Delmarva will consider other options of providing
13 Bill-to-Date and other useful information to customers to improve customer engagement.

14 **17. Q: How will Company employees be used to help customers understand and take**
15 **advantage of the program?**

16 **A:** Delmarva is planning to use a tiered approach to enable the Company to help
17 educate customers about dynamic pricing and respond to customer inquiries. The first
18 tier is comprised of our current customer call representatives, who will assist customers
19 with more basic inquiries. These representatives will be trained to assist customers to
20 select critical peak event notification method -- email, text, or phone. They can also
21 answer basic questions about dynamic pricing.

1 The second tier will consist of Energy Advisors, to provide Delmarva residential
2 and small non-residential customers more assistance to reduce their energy use, and
3 manage their energy spending, and to assist them with using the new features of the “My
4 Account” web portal.

5 The third tier will be the Energy Engineering Team. This team will consist of
6 employees with a higher level of technical skills and will provide more solutions-oriented
7 information to residential and commercial customers who have complex questions or are
8 looking for more consultative help.

9 **18 Q : Please describe the training that employees will undergo to prepare for their new**
10 **roles?**

11 **A:** Customer Care employees, whether primarily customer-facing or not, will receive
12 training and be tested, as needed, to ensure that employees have a basic knowledge of
13 dynamic pricing and other AMI related customer programs. Planned methods of
14 education include an informational intranet site, workshops, and rely upon Company
15 managers, supervisors, and “change agents” to facilitate discussion.

16 **19. Q: How will the dynamic pricing program be branded?**

17 **A:** The branding of the dynamic pricing program has yet to be finalized. Delmarva is
18 working closely with an outside education communications firm to develop a brand name
19 for dynamic pricing. The proposed brand name will subsequently be tested in focus
20 groups and through a series of market research surveys to ensure that it resonates
21 positively with customers.

1 20. Q: Does this conclude your testimony?

2 A: Yes, it does.

**TESTIMONY OF
JOSEPH F. JANOCHA**

1 responsible for the design and administration of electric rates for the ACE
2 subsidiary. In March 2005, I was promoted to Regulatory Affairs Manager,
3 responsible for rate design and administration for PHI's Delmarva Power & Light
4 (DPL) and ACE subsidiaries. I assumed my current position in January 2011. In
5 this capacity, I am responsible for the development and administration of electric
6 and gas delivery rates, as well as tariff surcharges, for all of PHI's utility
7 subsidiaries.

8 **4. Q: What is the purpose of your testimony?**

9 A: The purpose of my testimony is to present rate design and tariffs for the
10 Company's proposed dynamic pricing rate. The dynamic pricing rate and tariffs
11 include a Critical Peak Rebate ("CPR") pricing structure for Delmarva Power's
12 residential, small commercial and medium commercial customers.

13 **5. Q: Please describe the proposed tariffs.**

14 A: The Company's proposed tariff pages are provided as Schedule JFJ-1.
15 Dynamic Pricing Rider "DP" is a Rider to the residential and small and medium
16 commercial schedules listed in the "Applicability" paragraph. Rider DP modifies
17 the SOS Generation portion of the bill by specifying CPR as the default pricing
18 structure. The CPR pricing structure is designed to give customers strong
19 incentives to reduce consumption during the times when the cost of producing
20 electricity is highest. After an initial period of participation on CPR, consisting
21 of all or part of the CPR effective period of May 1 through September 30, a
22 customer will have the option to take service under the applicable Standard Offer
23 Service ("SOS") rates delineated in Rider SOS. The customers would be able to

1 exercise this option at any time during the period of October 1 through April 30
2 following initial CPR participation. Customers will be able to switch to a Third
3 Party Supplier ("TPS") at any time.

4 **6. Q: Why is Rider DP only applicable to customers taking Standard Offer**
5 **Service?**

6 A: The Rider is limited to customers taking Standard Offer Service to avoid
7 interfering with the workings of the competitive market. The Company
8 anticipates that competitive suppliers may develop their own dynamic pricing
9 offerings as the implementation of AMI is completed in the Company's Delaware
10 service territory.

11 **7. Q: Please describe the CPR pricing structure.**

12 A: Under CPR, the SOS Generation Service portion of the individual
13 customer's bill is modified by a credit calculated by applying the price shown in
14 the CPR table to the difference between actual kWh consumption and a Customer
15 Base Line ("CBL") level of consumption during Critical Peak Periods designated
16 by the Company. For each critical peak event, there will be no penalty if the
17 Customer's usage is above the CBL. All kilowatt-hour usage, including the kWh
18 actually consumed during Critical Peak periods, will be priced at the normally
19 applicable Rider SOS rate. The development of these prices will be discussed in a
20 later section of this testimony.

21 **8. Q: How will the CBL be determined for CPR?**

22 A: The CBL will be calculated for each critical peak event as the hourly
23 average of the customer's usage during similar hours for the three days with the

1 highest peak usage during the prior 30-day period. Weekends, holidays, the day
2 before the critical peak event and critical peak days are not included in this
3 calculation.

4 9. Q: Please describe the mechanism for determining the Critical Peak
5 Period.

6 A: The Critical Peak Periods will be based on Critical Peak Events,
7 which may be called under conditions including, but not limited to, higher than
8 normal PJM day-ahead Locational Marginal Prices (LMPs), or during PJM
9 emergencies. Each Critical Peak Event could occur between the hours of 12 p.m.
10 through 8 p.m., and could last a maximum of 6 hours. The Company will make a
11 reasonable attempt to notify Customers of an anticipated Critical Peak Event by 8
12 p.m. of the day prior to an event. Customers will receive an automated phone
13 call, email, or text message, or combination thereof, at the customer's option,
14 notifying them that a critical peak event will occur on the following day.
15 Customers may also contact the Company's customer service via a toll free
16 number for pricing information, or visit the Company website.

17 10. Q: Please describe the development of the CPR prices.

18 A: Work sheets showing the development of the CPR prices are
19 attached as Schedule JFJ-2. The first step in the development of the prices shown
20 in the tariff tables was to develop a Base Critical Peak Price, which is the sum of
21 PJM capacity and energy prices intended to be representative of those that would
22 be anticipated under high cost conditions in the Delmarva PJM Zone during the
23 rate effective period.

1 The energy component of the Base Critical Peak Price is the average of
2 the 60 highest PJM LMPs during the summer of 2010, adjusted for line losses to
3 the user level. The energy component is \$0.30/kWh at the low voltage level and
4 \$0.29/kWh at the high voltage level.

5 The capacity component of the Base Critical Peak Price is based on the
6 average of the PJM Base Residual Auction Results for years 2012-2013 and 2013-
7 2014, adjusted for line losses to the user level and spread over the 60 hours of
8 potential exercise of Rider DP. The capacity component is \$1.34/kWh at the low
9 voltage level and \$1.31/kWh at the high voltage level.

10 The total Base Critical Peak Price is \$1.64/kWh at the low voltage level
11 and \$1.60/kWh at the high voltage level. For rate simplicity, it was determined to
12 disregard the minor differences due to voltage levels and use the same Base
13 Critical Peak Price for all classes of \$1.60/kWh. The Base Critical Peak Price is
14 then used directly as the CPR. In addition, there is a \$1.00 floor per kwh reduced
15 on the Critical Peak Rebate, in order to ensure customer response if capacity and
16 energy prices are low. The nature of this default option virtually guarantees that
17 the Customer will be better off if responding to the price, and will be no worse off
18 if not responding.

19 **11. Q: Please describe the Company's plan to update Rider DP.**

20 **A:** As stated in the Annual Update paragraph of Rider DP, the Company will
21 update the CPR stated in the tariff tables in an annual filing on March 1. Updated
22 prices will reflect the most recently available PJM capacity and energy market
23 prices.

1 **12. Q: Please explain how the Company will achieve revenue neutrality under the**
2 **proposed dynamic pricing mechanism.**

3 A: After September 30 of each year, the Company will evaluate the CPR
4 program by rate class. The Company will evaluate the amount billed for the
5 period May 1 through September 30 versus the amount that would have been
6 billed for the same consumption using standard SOS rates. In the event that
7 emergency critical peak events occur during other times of the year, these event
8 days will be included in the annual evaluation. This calculation will include all
9 resulting PJM demand response market earnings and bill credit amounts paid.
10 The difference will be incorporated into the SOS Procurement Cost Adjustment
11 (“PCA”), which would be filed on or about March 31st of the following year.

12 **13. Q: How will the Company account for the dynamic pricing components?**

13 A: Using the AMI technology, the Company will collect data regarding
14 Critical Peak Events, Critical Peak Period and non-Critical Peak Period
15 consumption, and usage for each participant in each program. This will allow the
16 Company to keep a total of amounts collected or credited during event periods as
17 well as non-event periods making the true-up calculations described above
18 feasible.

19 **14. Q: Have you reviewed the Commission’s Minimum Filing Requirements in**
20 **context of this filing?**

21 A: Yes, I did. Although this is not a request for a rate increase, the Company
22 has included an Application and Testimony, along with proposed tariffs as
23 required by the Commission’s Minimum Filing Requirements.

1

2 15. Q: Does this conclude your testimony?

3

A: Yes, it does.

DYNAMIC PRICING
RIDER "DP"

A. Applicability

For the period June 1, 2012 – May 31, 2013:

This Rider is applicable to customers who:

1. Take electric service under Service Classifications R, Space Heating R, R-TOU-ND;
2. Receive Standard Offer Service under Rider SOS;
3. Have Advanced Metering Infrastructure (AMI) System smart meters furnished by the Company; and
4. Are included in the Field Acceptance Test Program.
5. Customers currently taking service under Rider PM (Peak Management Rider) would not be eligible to take service under Rider DP.

For the period June 1, 2013 – May 31, 2014:

This Rider is applicable to customers who:

1. Take electric service under Service Classifications R, Space Heating R, R-TOU-ND;
2. Receive Standard Offer Service under Rider SOS;
3. Have Advanced Metering Infrastructure (AMI) System smart meters furnished by the Company; and
4. Take electric service under Service Classifications SGS-ND, MGS, LGS and GSP and are included in the non residential Field Acceptance Test Program.
5. Customers currently taking service under Rider PM (Peak Management Rider) and/or Rider HPS (Hourly Priced Service) would not be eligible to take service under Rider DP.

Effective June 1, 2014:

This Rider is applicable to customers who:

1. Take electric service under Service Classifications R, Space Heating R, R-TOU-ND, SGS-ND, MGS, LGS and GSP;
2. Receive Standard Offer Service under Rider SOS; and
3. Have Advanced Metering Infrastructure (AMI) System smart meters furnished by the Company.
4. Customers currently taking service under Rider PM (Peak Management Rider) and/or Rider HPS (Hourly Priced Service) would not be eligible to take service under Rider DP.

B. Pricing Options

Rider "DP" is applicable to the SOS Supply portion of the customer's bill.

All customers served under Rider "DP" will be placed on a Critical Peak Rebate (CPR) pricing structure. After an initial period of participation on CPR, consisting of all or part of the CPR effective period of May 1 through September 30, a customer has the option to take service under the applicable standard SOS rates delineated in Rider SOS. The customer can exercise this option at any time during the period of October 1 through April 30 following initial CPR participation.

C. Billing

Critical Peak Rebate Billing - CPR

Under CPR, the SOS Generation Service portion of the customer's bill will be modified by a credit calculated by applying the Critical Peak Rebate to the difference between actual kWh consumption and a Customer Base Line (CBL) level of consumption during certain high cost hours designated by the Company. All kilowatt-hour usage, including the kWh actually consumed during Critical Peak periods, will be priced at the normally applicable Rider SOS rate.

CPR CRITICAL PEAK REBATE PRICES
(Effective June 1, 2012)

Rate	Critical Peak Rebate (\$/kWh)
R	\$ 1.60
RSH	\$ 1.60
R-TOU-ND	\$ 1.60
SGS	\$ 1.60
MGS	\$ 1.60
LGS	\$ 1.60
GSP	\$ 1.60

DYNAMIC PRICING
RIDER "DP" – (continued)

D. Terms and Conditions

1. Meter Reading

The hourly readings of the Smart Meter will be aggregated into the Critical Peak and non-Critical Peak periods designated by the Company, to the nearest multiple of the meter constant, and bills rendered accordingly.

2. Customer Base Line (CBL)

The CBL is calculated as the average of the customer's use during similar critical peak hours for the three days with the highest use during the prior 30-day period. Weekends, the day prior to a critical peak event, and critical peak days are not included in this calculation.

3. Critical Peak Events

The Company may call for up to 15 Critical Peak events annually. Events will normally be called on weekdays during the period from May 1 through September 30. Each Critical Peak Event may occur from 12 p.m. through 8 p.m., and last a maximum of 6 hours. Critical Peak Events may be called in situations including, but not limited to, when day-ahead LMP prices are higher than normal. Critical Peak Events may also be called during periods of PJM or Company system emergencies, which may occur at any time during the year.

E. Notification

The Company will make a reasonable attempt to notify Customers of an anticipated Critical Peak Event by 8 p.m. of the day prior to an event. Customers will receive an automated phone call, email, or text message, or combination thereof, at the customer's option, notifying them that a critical peak event will occur on the following day. Customers may also contact Delmarva Power customer service via a toll free number for pricing information or visit the Delmarva Power website at www.delmarva.com.

F. Annual Update

The Company will update the Critical Peak Rebates stated above in an annual filing on March 1 to reflect the most recently available PJM capacity and energy market prices. Adjustments resulting from customer response to the price signals and net proceeds from participating in PJM demand response programs will be reflected in the annual Procurement Cost Adjustment (PCA) update.

Delmarva Power & Light - Delaware Electric
Critical Price Calculation

CLASS	ENERGY LOSS FACTOR	ENERGY CRIT PRICE	CAPACITY LOSS FACTOR	CAPACITY CRIT PRICE	TOTAL CRIT PRICE
RESIDENTIAL	1.0636813	\$ 0.30	1.0636813	\$ 1.34	\$ 1.64
RES SPACE HEAT	1.0636813	\$ 0.30	1.0636813	\$ 1.34	\$ 1.64
Res TOUN D	1.0636813	\$ 0.30	1.0636813	\$ 1.34	\$ 1.64
SGS	1.0636813	\$ 0.30	1.0636813	\$ 1.34	\$ 1.64
MGS	1.0636813	\$ 0.30	1.0636813	\$ 1.34	\$ 1.64
LGS	1.0636813	\$ 0.30	1.0636813	\$ 1.34	\$ 1.64
GSP	1.0402971	\$ 0.29	1.0402971	\$ 1.31	\$ 1.60

CRITICAL MARGINAL PRICE AT GENERATION LEVEL

\$ 75.686901 per kW year
\$ 1.261448 per kWh
(\$139.83/MW-DAY average of '11/'12 and '12/'13 Base Residual Auction Results, spread over 60 hours)

ENERGY \$ 0.280808 (AVERAGE OF DPL ZONE 2010 60 HIGHEST HOURS)

**TESTIMONY OF
STEPHEN L. SUNDERHAUF**

1 **DELMARVA POWER & LIGHT COMPANY**
2 **TESTIMONY OF STEPHEN L. SUNDERHAUF**
3 **BEFORE THE DELAWARE PUBLIC SERVICE COMMISSION**
4 **IN THE MATTER OF THE INVESTIGATION BY THE**
5 **DELAWARE PUBLIC SERVICE COMMISSION**
6 **INTO IMPLEMENTATION OF DYNAMIC PRICING**
7 **DOCKET NO. 09-311**

8 **1. Q: Please state your name, position and address.**

9 **A:** My name is Stephen L. Sunderhauf. I am the Manager of Program Design
10 and Evaluation for Pepco Holdings, Inc. ("PHI"). I am testifying in this
11 proceeding on behalf of Delmarva Power & Light Company ("Delmarva" or the
12 "Company"). My business address is Edison Place, 701 9th St., N.W.,
13 Washington, D.C. 20068-0001.

14 **2. Q: What are your responsibilities in your role as Manager of Program Design**
15 **and Evaluation for PHI?**

16 **A:** I currently serve as the Manager of the Program Design and Evaluation
17 Department within the Customer Care Group of PHI. My current responsibilities
18 include the oversight of program design and regulatory issues related to energy
19 efficiency, conservation, demand response and renewable energy sources on
20 behalf of the Potomac Electric Power Company, Atlantic City Electric Company,
21 and Delmarva.

22 **3. Q: Please describe your educational and professional background.**

23 **A:** I have 29 years of professional experience within the U.S. electric utility
24 industry, including more than 25 years at PHI, where I have served in a variety of
25 capacities and am currently the Manager of the Program Design and Evaluation

1 Department. I earned a B.A. degree in economics from Bucknell University, an
2 M.S. degree in management from Carnegie-Mellon University, and a J.D. degree
3 from the George Washington University Law School. I am a member of the
4 Maryland Bar and the Association of Energy Services Professionals.

5 **4. Q: What is the purpose of your testimony?**

6 A: The purpose of this testimony is to summarize the work the Company has
7 conducted to quantify the benefits of demand response associated with
8 Delmarva's proposed dynamic pricing rate. In addition, my testimony will
9 address the structure and implementation of this program. I have updated the
10 program impact analysis originally conducted by the Company during 2007. The
11 conclusions of my testimony reflect these updates.

12 **5. Q: How will Delmarva's dynamic pricing tariffs benefit customers?**

13 A: The benefits from dynamic pricing accrue to customers in several ways.
14 First, as more accurate pricing is introduced into the market and peak demand is
15 reduced, the costs of generating and supplying electricity could be reduced. For
16 example, expensive peaking generators will not need to run as frequently, some
17 distribution infrastructure improvements may be deferred, and other new
18 generation facilities may be delayed or even avoided completely. These savings
19 will benefit all Delmarva electricity customers, whether or not they actively
20 participate in dynamic pricing. The other market response is shorter term, but
21 also significant – Delmarva's dynamic pricing program will mitigate wholesale
22 energy and capacity costs within the regional wholesale electricity market.

1 6. Q: How did you estimate the demand reductions that would be achieved
2 through a critical peak rebate form of dynamic pricing?

3 A: Delmarva has worked with pricing and modeling experts within the Brattle
4 Group to estimate the demand reductions that will be achieved through
5 customers' price elasticity response to the proposed critical peak rebate rate. The
6 Company has performed a detailed study of projected energy and demand savings
7 attributable to dynamic pricing in the Company's Delaware service territory based
8 upon load reduction impacts from available and applicable industry studies. The
9 residential impacts of dynamic pricing programs in Delaware were estimated by
10 adapting the Pricing Impact Simulation Model ("PRISM") to the price elasticities
11 obtained through the Baltimore Gas & Electric dynamic pricing pilot. These
12 estimates were adjusted for Delaware specific load shapes and weather
13 conditions.

14 The decision to use the results of the BGE study rather than those of
15 Delmarva's utility affiliate in the District of Columbia were due to the greater
16 similarity of residential customer demographics in Delaware and in Maryland
17 versus the residents of a large city. A summary of demographic similarities and
18 differences is presented in Table 1 below.

19 **Table 1**

	MD	DE	DC
Homes Built Post 1980	40.5%	47.4%	11.9%
Homes Built Pre 1980	59.5%	52.6%	88.1%
Single Family Detached Homes	51.7%	57.4%	12.7%
Apartments (20+ Units)	7.4%	4.3%	32.3%
CDD (65+)	1,226	1,139	1,547

1 The non-residential customer impacts were estimated through the PRISM
2 developed through the elasticities estimated from the extensive California
3 dynamic pricing pilots. These estimates were adjusted for Delaware specific load
4 shapes and weather conditions.

5 **7. Q: Did you account for existing and future energy efficiency and conservation**
6 **programs in Delaware?**

7 **A:** Yes, Delmarva's dynamic pricing impact study accounted for projected
8 energy efficiency and conservation savings expected to be achieved by the
9 Delaware Sustainable Energy Utility. These initiatives lessen the estimated
10 demand savings that will be achieved by dynamic pricing programs.

11 **8. Q: Did you account for existing and future utility provided direct load control**
12 **programs?**

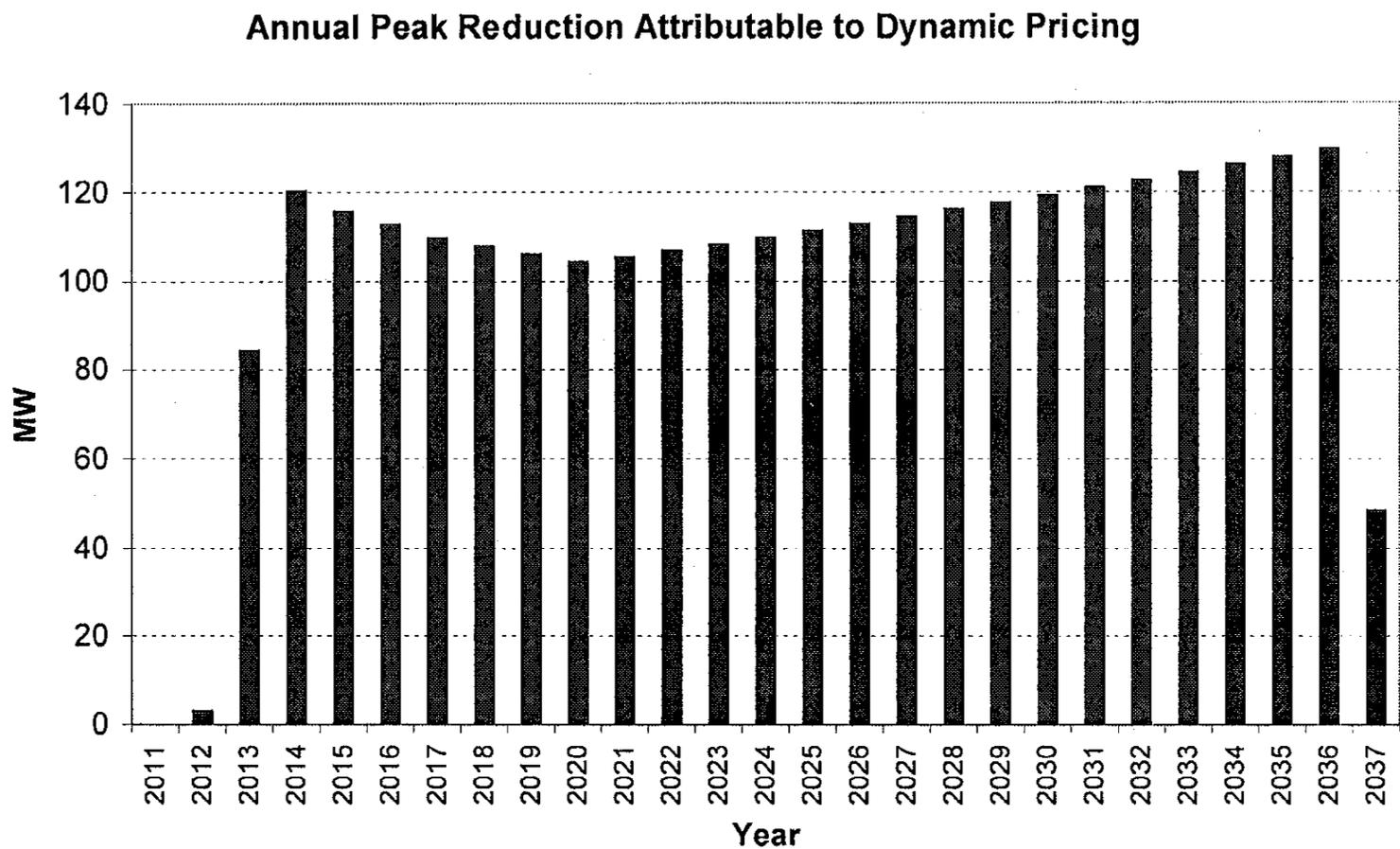
13 **A:** Yes, Delmarva Program's dynamic pricing impact study accounted for the
14 current legacy and expected future direct load control programs in Delaware. The
15 automated savings from this equipment were excluded from the impact
16 calculations.

17 **9. Q: What assumptions were made regarding customer participation in dynamic**
18 **pricing?**

19 **A:** The dynamic pricing deployment scenario for Delaware was analyzed
20 based upon the Company's proposed implementation of the program. It was
21 assumed that customers served under Standard Offer Service ("SOS") rates are
22 defaulted to a Critical Peak Rebate ("CPR") rate structure, as proposed by
23 Delmarva. Seventy-five percent of eligible SOS customers, both residential and

1 non-residential customers, are expected to participate and take action in response
 2 to Rider DP. The estimated demand response is shown in Table 2. Dynamic
 3 pricing is estimated to achieve a reduction in peak demand of 111 MW in
 4 Delaware by the year 2025, shown in Table 2.

5 **Table 2: Projected System Peak Reduction**



Notes:
 1. Decrease in dynamic pricing impacts until 2020 is due to projected increases in participation in EE&C and DLC programs
 2. Impacts in 2037 reflect only C&I enrollment in dynamic pricing

6
 7 **10. Q: Previous Delmarva plans suggested that critical peak pricing (“CPP”) would**
 8 **be available in addition to the proposed critical peak rebate. Why has this**
 9 **approach changed?**

10 **A:** The Company believes that a simplified approach to the introduction of
 11 dynamic pricing is appropriate. Under this approach only one form of dynamic
 12 pricing would be initially introduced by Delmarva to customers, the critical peak
 13 rebate rate form described in Mr. Janocha’s testimony. This approach simplifies

1 the required education for both customers and utility employees. The introduction
2 of a critical peak rebate rate permits the default applicability of the rate because it
3 essentially eliminates the possibility of higher bills compared with existing rates
4 for all customer participants. Over time, alternative dynamic pricing forms that
5 are more complex could be introduced. My estimated peak demand reductions
6 relate directly to a critical peak rebate form of dynamic pricing.

7 **11. Q: Can the dynamic pricing demand reductions be monetized through the**
8 **existing PJM market?**

9 **A:** Yes, the demand reductions may be used within the existing PJM demand
10 response market which includes both capacity and energy. Forecast demand
11 response reductions can be bid into the PJM Reliability Pricing Model ("RPM")
12 Base Residual Auction ("BRA"), the RPM incremental auctions, and/or through
13 bilateral agreements. Successful market bids will receive a monthly capacity
14 payment based upon the market clearing price beginning in the PJM delivery
15 year. High existing capacity prices within the Delmarva region provide a
16 significant financial opportunity. Demand response energy market opportunities
17 also exist through the PJM Emergency and Economic Load Response programs
18 for the payment of achieved energy reductions. PJM market earnings will be used
19 to fund the earned critical peak rebates as described in Mr. Janocha's testimony.

20 **12. Q: Are there other financial benefits that will be obtained through AMI enabled**
21 **dynamic pricing demand reductions?**

22 **A:** Yes, as noted earlier all Delmarva Delaware customers will benefit
23 through the price mitigation of capacity and energy resources. The Company is

1 working with PJM representatives to calculate the achieved price mitigation effect
2 annually.

3 **13. Q: What are the criteria the companies will use to determine critical peak**
4 **events?**

5 **A:** Critical Peak Events may be called in situations including, but not limited
6 to, when day-ahead LMP prices are higher than normal, during periods of PJM
7 system emergencies, and during local system emergencies.

8 **14. Q: Does this conclude your testimony?**

9 **A:** Yes it does.