

**BEFORE THE  
COMMITTEE ON  
PUBLIC SERVICES AND CONSUMER AFFAIRS**

*Of the*

**COUNCIL OF THE DISTRICT OF COLUMBIA**

**PUBLIC ROUNDTABLE ON PEPCO'S OUTAGE AND  
RESTORATION EFFORTS FOLLOWING THE JUNE 29, 2012  
STORM**

*Testimony Of*

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**July 13, 2012**

Good afternoon Chairperson Alexander and members of the Committee on Public Services and Consumer Affairs. I am Sandra Mattavous-Frye, Esq., People's Counsel for the District of Columbia.<sup>1</sup>

Thank you for providing the Office of the People's Counsel ("OPC" or "Office") with the opportunity to appear before the Committee to present testimony at today's roundtable on the Pepco

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<sup>1</sup> D.C. Code § 34-804 (2011).

outages and restoration efforts following the June 29, 2012 Summer Storm.

## **Introduction**

This hearing could not be more timely or necessary. Consumers are frustrated and angry that once again, in the middle of the summer, they were without power for an extended period of time. They are frustrated because it has become a seasonal ritual, “not if, but when will the power go out.” They are angry, because despite promises made by the utility to improve, nothing changes. For DC residents it is a bad remake of “Ground Hog Day.” Trees are felled, lines are down, communication is poor and restoration is inexplicably slow, over and over again.

As you are aware, on June 29, 2012, at about 10:30 PM, a major storm with sustained winds of 70 MPH hit the District of Columbia. At the peak of the storm, Pepco reported 63,849 District customers were without power, which is 24.8% of the total 257,440 electric consumers

served by Pepco in the District.<sup>2</sup> The impact on District residents, however, was far greater, as the outage directly or indirectly touched the everyday lives of all of our residents. Something has to change; we cannot continue to replay this cycle of power outages, delayed restoration and consumer suffering. We need to shift gears to find and get on the right road.

My testimony is organized in the following manner:

1. First, I will identify and discuss critical issues.
2. Second, I present OPC's recommendations.
3. Third, I will raise questions to consider.

## **Discussion**

### **I. CRITICAL ISSUES**

There are several issues that must be addressed as we discuss the current state of affairs related to Pepco performance during outages and its restoration process. Most would agree that Pepco's performance for

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<sup>2</sup> Pepco Press Release July 2, 2012

far too long has been poor to terrible, resulting in public inconvenience and putting the health and welfare of DC residents at risk.

Pepco cannot be blamed for storms, particularly unexpected or sudden ones. But, part of being a prudent utility is being prepared to respond when the unexpected occurs, and Pepco can and should be held responsible for how well it responds in the aftermath of major storm-related outages. It is the “quid pro quo” that comes with the financial protection given a regulated monopoly.

### **A. Electric Distribution System and Storm Restoration**

Attached to my testimony is an Exhibit for the Committee’s review is a simple diagram that illustrates a typical electric power system. Essentially it explains how power is generated and ultimately delivered to consumers.

Pepco serves approximately 80,000 District consumers by means of overhead feeders. If 63,849 customers were without power, it is reasonable to conclude that the vast majority of overhead feeders lost power. Even customers with underground service to their homes lost

power because the source of the power came from overhead power lines feeding electricity to their neighborhoods or streets. When these lines are damaged by trees, the power is lost to all consumers served by the feeder regardless of the type of service.

This Office has long championed the need for improvement in electric reliability in the District. We have noted in numerous filings with the Public Service Commission (“PSC”) over the past decade that Pepco is obligated by law to provide safe, adequate and reliable electric service at just and reasonable rates to its District customers and that the Company must be held accountable when it fails to provide such safe and reliable service.<sup>3</sup> In fact, on June 25, 2012, we filed a Petition with The PSC, asking them to initiate an investigation into the electric service outage that occurred on June 22, 2012, which caused 18,000 outages in the District of Columbia. We have also testified before the Council regarding reliability issues and offered recommendations. Among other efforts, we continue to push for penalties and benchmarks to define adequate electric service. OPC strongly believes that benchmarks are

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<sup>3</sup> D.C. Code 34-11101(a) (2001)

necessary to convey to Pepco the *minimum* level of reliability expected by the community. We also believe meaningful penalties should be imposed on the utility for failure to provide quality service.

The June 29, 2012, storm raises critical issues that must be addressed:

- 1) Pepco's apparent inability to restore electric service within a reasonable time after a storm
- 2) Pepco's reliance on outside restoration contractors
- 3) Pepco's inability to accurately communicate with its customers during critical events
- 4) The use and effectiveness of the smart meters during the Storm

**1. Pepco's apparent inability to restore electric service within a reasonable time after a storm**

**a. Planning for Storm Restoration**

Pepco has a Crisis Management Plan (CMP) and an accompanying Incident Response Plan (IRP) which provide processes and procedures

for Pepco to respond to and recover from any type of crisis.<sup>4</sup> The IRP defines a Serious Incident as an event causing outages affecting more than 50,000 but less than 100,000 customers and typical restoration times of less than three days.<sup>5</sup> A Serious Incident (Level 3) activates the Incident Management Team (IMT). If the restoration time is expected to be more than three days, then a Catastrophic Incident (Level 4) is declared and the PHI (Pepco) Incident Support Team (IST) is activated. The primary difference between the two categories is that a Serious Incident anticipates marshaling PHI (Pepco) resources to the incident site whereas a Catastrophic Incident plans on using mutual aid resources such as contract construction crews and contract tree trimmers to help with restoration. In the coming weeks, it will be important to determine when PHI (Pepco) activated its Catastrophic Incident plan, how long it relied on its Serious Incident Plan, and generally how Pepco management responded to the damage caused by the storm. By our calculations, the Report is due to the PSC on July 30, 2012.

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<sup>4</sup> Page 1-5 of CMP dated 6/8/11

<sup>5</sup> Page 3-16 IRP dated 7/6/11

A strong line of thunderstorms formed in Iowa on Friday afternoon, June 29, 2012, and by 10:30 PM that evening the line of storms referred to as a “Derecho,” passed through Virginia, the District and Maryland. OPC believes the lack of forewarning is one of the reasons, but by no means the only reason, for the slow restoration of power. The fact is, the lack of advance warning is quite normal for summer storms in this area and Pepco should plan accordingly.

The lack of warning forced Pepco during the initial stages of the storm, to rely primarily on its existing resources which may have been stretched far too thinly between jurisdictions during the early hours of the storm. The Commission has recently enacted outage reporting standards that separate reporting of Pepco’s reliability performance and restoration efforts in the District from those efforts in Maryland. This information when provided should be helpful in making an assessment.

**b. Vegetation Management (Right of Way Maintenance)**

The Derecho storm and its accompanying high winds caused damage to trees which in turn caused damage to electric lines. As a general rule,

the greater the separation between the power lines and the trees, the better the resulting reliability. Pepco employs a two-year tree trimming cycle in the District, which means the Company prunes trees away from its power lines to remove two years of anticipated growth. The actual amount of trimming depends on the species of tree. Fast-growing species routinely require more aggressive trimming. The tree trimming process is done in coordination with the District Department of Transportation (DDOT).

Twenty-one percent (21%) of the service outages on Pepco's District distribution system in 2011 were attributed to trees, thirty-four percent (34%) were related to equipment failure. Trees ranked second only to failed equipment as the most common cause of outages.<sup>6</sup>

Increasing the separation between trees and power lines is, in the short run, the most cost-effective, means of improving reliability. OPC has advocated that a four-year trim cycle be investigated for use in the District. The goal would be to obtain greater separation of power lines from trees without destroying the trees. This is the trimming cycle

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<sup>6</sup> 2012 Consolidated Report page 249

currently in place in Maryland. Expanding from a two-year cycle to a four-year cycle will require Pepco to increase the trimming zone around the power lines.<sup>7</sup>

We are all aware that there has been strong public opposition to Pepco's Vegetation Management program. Without a doubt, DC loves its trees. Pepco must coordinate with DDOT and DDOT's **Urban Forestry Administration** (DDOT UFA), which must agree with Pepco's proposed tree trimming methods. It is our understanding that the Chief Forester of the District of Columbia has the final decision-making authority regarding any issue pertaining to a tree in public space.<sup>8</sup> UFA is obligated to give greater weight to the concerns of citizen groups than to Pepco regarding tree trimming/pruning.<sup>9</sup>

Pepco noted in 2010 that outages caused by trees during major storms increased in frequency for the years 2008 to 2010.<sup>10</sup> Pepco initiated an Enhanced Integrated Vegetation Management (EIVM)

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<sup>7</sup> Evaluation of the Reliability and Quality of the Electric Distribution System of Potomac Electric Power Company Final Report Maryland PSC Case 9240 Page 37

<sup>8</sup> Vegetation Management Plan for Utility Tree Pruning, Pepco March 16, 2005

<sup>9</sup> Vegetation Management Plan for Utility Tree Pruning, Pepco March 16, 2005

<sup>10</sup> Pepco's Response to Order 16096 page 7

program in 2010.<sup>11</sup> This program requires Pepco to “remove additional hazards outside of the normal utility envelope of clearance, to include overhanging limbs, undergrowth, and trees outside of the utility right-of-way that pose a credible threat to continuity of service.”<sup>12</sup>

Unfortunately, OPC’s analysis revealed the EIVM program had little or no success in reducing sustained outages in 2011.<sup>13</sup> So while on its face, the EIVM holds promise with the removal of so-called danger trees, the program’s initial results, in OPC’s opinion, have been disappointing.

Utilities such as Pepco track outages by their cause, including equipment failure, weather and trees. Trees inside the right-of-way indicate the need for improved tree trimming while trees outside the right-of-way indicate outages beyond the control of the utility. Pepco’s methods for categorizing outages<sup>14</sup> is important because the conclusions to be made based upon a post-storm analysis of the causes of outages will be adversely affected by inconsistent or incorrectly

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<sup>11</sup> Pepco’s Reliability Enhancement Plan filed September 30, 2010

<sup>12</sup> Pepco’s Response to Order 16096 page 7

<sup>13</sup> OPC Comments on 2012 Consolidated Report

<sup>14</sup> OPC Comments on 2012 Consolidated Report

recorded outage causes. Clearly, vegetation management is an important component of any discussion regarding reliability, but we must consider the totality of the cause.

## **2. Pepco's Reliance on Outside Crews to Restore Service**

According to a recent Pepco press release,<sup>15</sup> Pepco requested mutual aid assistance early Saturday morning, June 30, and by Monday morning, July 2, seven hundred (700) contract crew members had arrived. Although the Office has not had the benefit of the details a formal investigation would reveal, it appears that significant progress in restoring electric service to customers did not occur until after outside assistance arrived. This raises the following questions:

- 1) Does Pepco maintain a significantly large and appropriately trained and equipped work force for initial recovery from major outages? Is Pepco's response delayed because it must arrange for outside contractors and mutual aide assistance where other utilities are able immediately to respond with in-house employees?

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<sup>15</sup> Pepco Press Release, July 7, 2012 5:45 p.m.

2) Why did mutual aid assistance crews require 48 hours to respond? When did Pepco request outside assistance, and did the Company delay in doing so such that other regional utilities were able to call on assistance from closer utilities, thus expediting their system restorations, while Pepco's efforts were delayed because of the additional time it took to get remote crews, *e.g.*, from Canada, Florida and Oklahoma, to the District?

Another concern is whether Pepco's employees have the necessary specialized training and useable equipment to effectively restore overhead outages. I have included a table summarizing the total miles of overhead feeders and underground feeders in the District.<sup>16</sup>

Roughly 80,000 District customers are served from the overhead system and 160,000 customers are served by the underground system.

Voltage	Overhead Feeders (Number)	Underground Feeders (Number)	Total Feeders	Overhead (Miles)		Underground (Miles)		System (Miles)
				Length	%	Length	%	
4 kV	92	47	139	199.6	57%	150	43%	349.6
13 kV	98	538	636	453	23%	1480.7	77%	1933.7
<b>Total</b>	<b>190</b>	<b>585</b>	<b>775</b>	<b>652.6</b>	<b>29%</b>	<b>1630.7</b>	<b>71%</b>	<b>2283.3</b>

<sup>16</sup> Pepco's Response to OPC analysis of Pepco's Distribution System in the District of Columbia FC 766, dated Feb. 26, 2010.

I have also included a graph in Exhibit 2 that compares the restoration of electric service for five recent storms that affected the District of Columbia. One graph shows the total number of customers out of service and the duration of the restoration efforts in hours. The second graph shows the same data as a percentage of customers without power. The summer storm of July 2010 required 36 hours to restore service to 75% of the customers. The Derecho storm of June 29, 2012 required 84 hours to restore electric service to 75% of the customers without service. The mutual assistance arrived in force 58 hours after the storm and within 26 hours the 75% target value was achieved.

It is essential to have the resources readily available to physically restore power. The question to be answered: does Pepco have sufficient resources to effectively begin a major restoration effort?

### **3. The Effectiveness of Pepco's Communications with Customers During the Storm.**

#### **a. Estimated Time of Restoration ("ETR")**

A consistent challenge that defies resolution is Pepco's inability to effectively communicate with its customers during major outages. Pepco reported in its 2012 Consolidated Report that it has an improvement process called Emergency Restoration Improvement Project (ERIP).<sup>17</sup> The ETR is critical information communicated to the public during major and non-major outages. According to Pepco, the improvements include training, use of mobile data terminals (MTD), development of a new ETR process based on customer feedback and creation of a new ETR Manager.

Unfortunately, for the June 29, 2012, storm outage, much to the dismay of its customers, Pepco's website did not provide ETR values for several days and then published only a "Global Restoration" estimate of when power to all customers would be restored. When power was restored by this date, Pepco had a "mission accomplished moment" congratulating itself on a job well done. This global restoration approach further fueled consumer anger and frustration. From the consumer's perspective, the scant information provided was at best useless, and at worst misleading. Accurate restoration estimates are extremely important

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<sup>17</sup> 2012 Consolidated Report, page 140

to customers who are trying to manage their individual crises caused by the lack of power. OPC will continue to push for fact based reasonable and useful service restoration estimates for customers.

#### **4. The effectiveness of Smart Meters during the Storm**

Pepco indicates that it has nearly completed deployment of 100 percent of its smart meters on electric services in the District. One of the advantages of the smart meters is their ability to communicate with an electric utility's command and control center. When there is a loss of voltage to a meter (an outage), the meter is designed to communicate the problem to the control center. When a group of meters in a neighborhood all call in, the utility's Outage Management System (OMS) could predict which fuse, breaker or fault has occurred. This could greatly reduce restoration time. However, in a major event in which nearly every overhead feeder is without power, this type of information is generally not useful. As the restoration effort proceeds, the presence of voltage at the smart meters could help determine which portions of the system lack power and eliminate the need for "call

backs” from the utility to verify that power is restored. OPC understands some customers were livid about the “robo-calls” from Pepco at all hours of the night to verify the customer’s power was back on. Pepco should be asked to report on the use and effectiveness of the smart meters during this outage incident. Another form of a “smart grid” project at Pepco is their automated sectionalizing and restoration (ASR) program. If there is a fault on “Feeder A,” a portion of that feeder is isolated and the remaining customers are automatically switched to “Feeder B”. This advanced system can work well in the more limited outages that have plagued specific areas of Pepco’s distribution system, but it is likewise of little use in a major event when both feeders are out of service.

## **II. RECOMMENDATIONS TO IMPROVE RELIABILITY**

**What can we do to change the game? First it is time to think outside of the box and consider all options.**

## **A. Undergrounding**

Undergrounding is extremely expensive, especially in the District due to its mature neighborhoods (i.e. large trees, streets, sidewalks, and traffic congestion). Undergrounding can be highly disruptive to neighborhoods and commerce. Most of the undergrounding studies indicate increased tree trimming is a more cost effective solution for improving reliability. The Shaw Report issued in 2010, suggests that to improve system reliability, Pepco should selectively underground portions of the main line of a feeder.<sup>18</sup> OPC sees the value of selective undergrounding. The pivotal question for us will be how to equitably share the costs of this undertaking.

There is no question that many citizens of the District of Columbia highly value the aesthetic benefits of the District's trees.

Understandably, our citizens wish to retain our trees and have reliable electric service. Quite frankly, they are entitled to it. While understandable and even laudable, it must be recognized that this

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<sup>18</sup> Reference??

inhibits the increased tree trimming needed for improving reliability. It is time we recognize that each is a worthwhile yet competing goal. I suggest these two goals are not irreconcilable, but the accommodation of both requires difficult choices.

OPC is aware of the recent proposed legislation that seeks to address this complex and thorny issue. I am hopeful that the legislation and proposed action will move the dialogue from the theoretical to a meaningful action plan.

**B. Cross Training Employees and Standby Equipment for Overhead Restoration**

As stated earlier, over 70 percent of Pepco's infrastructure in the District is already underground and two-thirds of customers in the District are served underground. We need to ascertain whether the line personnel are trained and skilled in both underground distribution systems and the overhead systems. It is possible that Pepco overhead crews may not be available to assist in the District. OPC recommends that there be a PSC investigation into the level of cross training currently

provided to underground lineman, in preparation for overhead service restoration and recovery in the District. In addition to the labor force being cross-trained, it is important to have the equipment necessary to utilize this training. Does Pepco have a sufficient number of bucket trucks available to work on overhead systems?

Further, does Pepco need to maintain a larger workforce of full-time employees and contractors to be able to respond to Level 3 or Level 4 events? This question needs to be considered by Pepco and other stakeholders who ultimately must pay for these assets. These questions must be addressed simultaneously with the value and cost of mutual aid assistance provided by other utilities.

### **C. Rethinking Mutual Assistance**

Mutual assistance is extremely useful, but it has historically arrived 24 to 48 hours after the request for help.<sup>19</sup> Mutual assistance is not a substitute for adequately staffed and well trained Pepco line crews, but rather the means by which Pepco (and any electric utility) can obtain the

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<sup>19</sup> Evaluation of the Reliability and Quality of the Electric Distribution System of Potomac Electric Power Company Final Report Maryland PSC Case 9240

additional personnel and equipment needed to respond to extraordinary events, such as major storm outages. This begs the question, “is there another way to expedite mutual aid or contract crews for major events?”

Pepco testified in a hearing regarding the January 26, 2011, ice storm that “companies within mutual assistance agreements are going to be reluctant to release their crews until they understand or they are aware of the fact that their....own service territory is not going to be impacted.”<sup>20</sup>

This of course means that nearby utilities will be less likely to release crews and that mutual assistance companies further away which are not impacted by the weather event will be more likely to release crews.

However, these crews will have 10 to 15 hours or more of travel time to reach the District and may require rest before work can begin.

### **III. QUESTIONS TO CONSIDER**

- 1) Now that Pepco has fully deployed and activated most of its AMI meters, what tangible improvements can consumers expect in the area of storm restoration?
- 2) Is Pepco’s new AMI infrastructure adequately designed to inform the Company where outages have occurred and more

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<sup>20</sup> Hearing Transcript dated February 28, 2011, page 47

importantly inform the Company when service is restored to a specific customer?

- 3) What database or by what process does Pepco learn that service has been restored?

**The penultimate question is:**

- 4) Has Pepco's lack of investment in the network over the past 10 years contributed to the length of the outages?

**And the final question:**

- 5) If this is the case, why should ratepayers have to shoulder the entire burden for reliability improvements when it was Pepco's shareholders who reaped the financial benefit of Pepco's management decision to not invest in the network?

**Conclusion**

There must be a searching and detailed investigation into each of the points noted in this testimony. Pepco's poor storm restoration performance can no longer be tolerated. I have tried in this testimony to lay out many of the factors which affect a utility's storm restoration response. In candor, several may require the action of District government. But, one thing is clear; Pepco is obligated to design, operate, maintain and restore its electric distribution system in the

District to accommodate those circumstances. The District, like many communities across the nation, has extensive tree coverage. Pepco, therefore, is obligated to design, operate, maintain and, after a storm outage, to restore its system in a manner that is best designed to achieve the safe and reliable service to which District consumers are entitled.

Exhibit 1

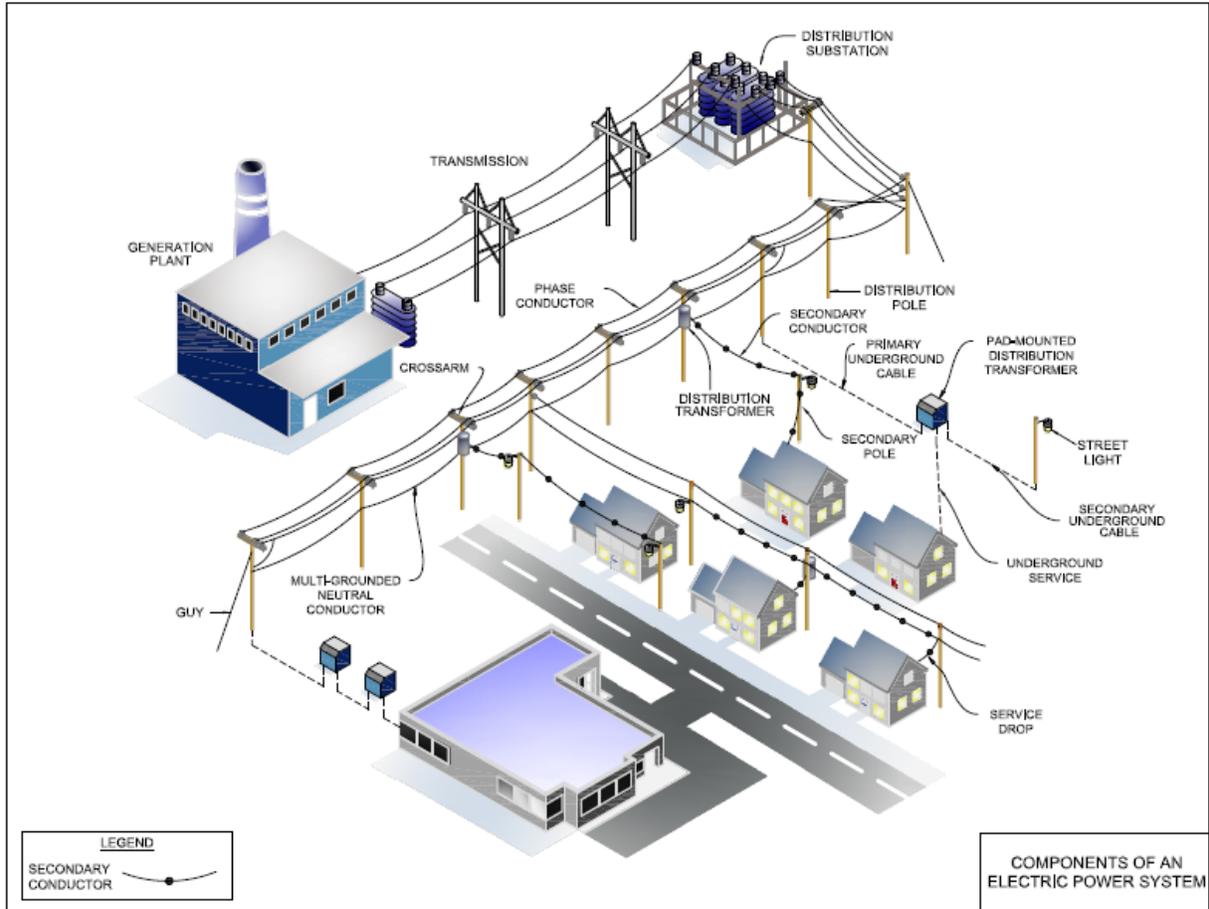
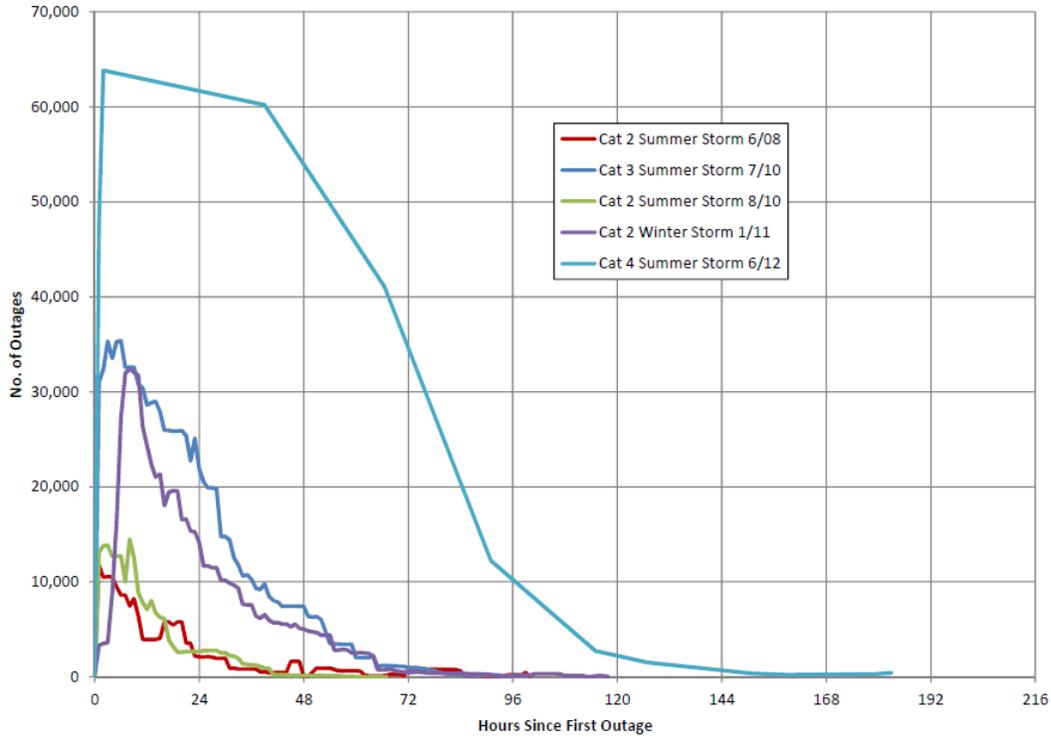


Exhibit 2

**District of Columbia  
Storm Restoration History  
Number of Customers without Power**



**District of Columbia  
Normalized Storm Restoration History  
Percentage of Customers without Power**

