

**Before the  
Federal Communications Commission  
Washington, D.C. 20554**

In the Matter of	)	PS Docket No. 14-174
Ensuring Customer Premises Equipment Backup	)	
Power for Continuity of Communications	)	
	)	
Technology Transitions	)	GN Docket No. 13-5
	)	
Policies and Rules Governing Retirement Of	)	RM-11358
Copper Loops by Incumbent Local Exchange	)	
Carriers	)	
	)	
Special Access for Price Cap Local Exchange	)	WC Docket No. 05-25
Carriers	)	
	)	
AT&T Corporation Petition for Rulemaking to	)	RM-10593
Reform Regulation of Incumbent Local Exchange	)	
Carrier Rates for Interstate Special Access	)	
Services	)	

**Reply Comments of AARP**

March 9, 2015

Trevor R. Roycroft, Ph.D.  
Economic Consultant

David Certner  
Legislative Counsel and  
Legislative Policy Director  
Government Affairs  
AARP  
601 E Street, NW  
Washington, DC 20049

## Table of Contents

Introduction.....	1
CPE Backup Power.....	3
Opening Comments of other Parties are Consistent with AARP’s CPE Recommendations .....	4
The Commission Should Encourage Technology Advancement .....	6
The Relationship between CPE Backup Power and Network Backup Power.....	6
CPE Backup Power Requirements are Consistent with Carrier Practices .....	8
Conclusion .....	10

## Introduction

AARP respectfully submits these Reply Comments for the FCC's consideration, and thanks the Commission for the opportunity to participate in this important proceeding regarding the transition to broadband networks. In opening comments, AARP supported the general spirit of the NPRM. For example, with regard to customer notice, AARP proposed that the NPRM's proposed §51.332(b)(3)(1) notice requirement should be changed to read (added text underlined):

For purpose of this section, an affected retail customer is anyone who will need new or modified customer premise equipment, who will experience changes to line power arrangements, who will experience changes in the functionality of or access to third-party devices or services, or who will otherwise be negatively impacted by the planned network change. The contents of any such notification must comply with the requirements of paragraph (c) of this section.

On the matter of customer notice, consistent with AARP's position in opening comments, Public Knowledge, et al. note that carriers are not likely to be aware of the specific circumstances facing consumers:

Public Interest Commenters support the Commission's proposal to require ILECs to notify retail customers during the network change notification process. The Commission should require that such notices be delivered to all customers in an affected area, because the ILECs by their own admission do not necessarily know what CPE or third-party services each customer uses. Notices must therefore be sent to all potentially affected customers that include a description of the types of CPE or third-party services that may not be supported after the network change, so customers have meaningful notice of how network changes will impact them.<sup>1</sup>

Similarly, Communication Workers of America observe:

Even with a fiber upgrade, however, adequate customer notice is extremely important.

---

<sup>1</sup> Comments of Public Knowledge, Appalshop, Benton Foundation, Center For Media Justice, Center for Rural Strategies, Common Cause, The Greenlining Institute, Media Action Center, Media Literacy Project, National Consumer Law Center, on behalf of its low-income clients, New America's Open Technology Institute, Rural Broadband Policy Group, and Turn (The Utility Reform Network) (hereinafter, "*Public Knowledge, et al.*"), February 5, 2015 Comments, p. 32.

For example, AT&T cautions that many, but not all, medical alert monitoring services are compatible with U-verse and that customers should "notify your medical alert provider of your switch to U-verse Voice service and your scheduled U-verse installation date."<sup>2</sup>

The customer notice requirement proposed by AARP is appropriate.

On the matter of technology assessment associated with the technology transition, in Opening Comments AARP encouraged the Commission to take notice of the CTC Technology & Energy report that was distributed by Public Knowledge.<sup>3</sup>

- AARP noted that there is no question that call functionality should be considered broadly, and should encompass the impact of Section 214 discontinuance on third-party CPE and competitively provided services such as alarms, medical alerts, and other equipment that relies on TDM-based technology.
- AARP is in full agreement with the CTC Technology & Energy report which states:

The IP-transitioned phone network must be tested to verify that users have the same access to 911 as do users of the current public switched telephone network, and that all calls to the public safety answering point (PSAP) accurately deliver the callers' fixed locations.<sup>4</sup>
- The NPRM requests comment on the use of ("x, y") coordinates as being equivalent to the civic addresses associated with Automatic Location Identification (ALI). AARP believes that such an approach is inappropriate as ("x, y") coordinates are decidedly inferior to ALI database information in multi-tenant buildings. 911 services must not be compromised as part of the IP transition.
- Section 214 discontinuance associated with voice services may also be affecting broadband DSL services, and the Commission must consider the impact of discontinuance on the provision of broadband.

Public Knowledge, et al. introduce the CTC Technology & Energy report in this proceeding.<sup>5</sup>

---

<sup>2</sup> Communication Workers of America Comments, p. 10.

<sup>3</sup> "A Brief Assessment of Engineering Issues Related to Trial Testing for IP Transition," January 13, 2014. Available at: <https://www.publicknowledge.org/files/CTC-PK%20PSTN%20Report.pdf>

<sup>4</sup> *Id.*, p. 20.

<sup>5</sup> Public Knowledge, et al. February 5, 2015 Comments, p. 9, referencing "A Brief Assessment of Engineering Issues Related to Trial Testing for IP Transition," CTC Technology & Energy (Jan. 2014), <https://www.publicknowledge.org/files/CTC-PK PSTN Report.pdf>

AARP urges the Commission to pay close attention to the framework provided therein.

The bulk of AARP's February 5, 2015 comments addressed issues associated with CPE backup power. AARP supported the general direction identified in the NPRM, but advocated for a minimum of 12 hours of CPE battery backup provided and maintained by voice service providers. Thus, the bulk of this reply will address that issue. As will be discussed below, the record points to the appropriateness of twelve-hour CPE backup power requirements, and other AARP's recommendations.

### **CPE Backup Power**

AARP's recommendations with regard to CPE backup power are as follows:

- The Commission should require wireline broadband network service providers that also provide voice services be responsible for the deployment and maintenance of voice-enabling CPE that delivers at least 12 hours of standby time.
- The Commission should test CPE backup power capabilities of devices used by broadband providers, or made available through competitive CPE markets, and should publish side-by-side comparisons of CPE backup power performance on its website in a format that enables consumer understanding of CPE capabilities.
- The Commission should utilize smart disclosure techniques to inform consumers and should establish a "performance mark," similar to the Energy Star rating that describes CPE backup power performance.
- The Commission should encourage the development of standardized, modular, and non-proprietary CPE backup power solutions, so that the current maze of vendor-specific battery power is unified to a more simplified approach. Standardization and modularity of CPE backup power will also encourage market forces to more readily deliver benefits through the exploitation of scale economies in production and distribution of backup batteries.
- The Commission should work with stakeholders to promote customer education associated with CPE backup power. In the same manner that fire departments promote

the replacement of batteries in smoke alarms, the Commission should engage fire safety organizations and first responders to promote awareness of battery backup issues associated with communications CPE.

- The Commission should also encourage the development of backup power solutions that rely on alternative energy sources, such as solar power.

AARP advances a more robust requirement for CPE backup power duration—12 hours rather than the NPRM's proposed 8 hours—for a number of reasons: power outages may be for extended periods, CPE may directly or indirectly impact a consumer's ability to reach first responders, or to be located by first responders,<sup>6</sup> and batteries naturally degrade during their service lives.<sup>7</sup>

#### **Opening Comments of other Parties are Consistent with AARP's CPE Recommendations**

Ad Hoc Telecommunications Users advocate for 24 hours of CPE backup power, a period longer than AARP's 12-hour recommendation:

In this regard, the Commission's tentative proposal to limit carrier obligations to eight hours of backup power, with the burden on customers to arrange for longer outages, is insufficient. Power outages routinely exceed eight hours in ice or wind storms and similar severe conditions. Power outages also often occur at night so that customers may not discover them until more than eight hours have passed. The Commission should adopt a standard that obligates carriers to provide backup power for at least 24 hours.<sup>8</sup>

Similarly, National Association of State 911 Administrators also sees 24 hours as a reasonable period:

The Commission proposes to make providers responsible for provisioning backup power during the first eight hours of an outage. NASNA believes that eight hours is not long enough. Twenty-four hours would be more useful and account for the fact that consumers

---

<sup>6</sup> AARP, February 5, 2015 Comments, p. 8-12.

<sup>7</sup> Alarm Industry Communications Committee, February 5, 2015 Comments, p. 6. See also, CSRIC Working Group 10B Report, Best Practice 14, p. 21. "Service providers should work with their vendors to provide a mechanism to monitor battery status and determine whether the battery is degraded. This can be through remote monitoring of batteries as part of the service offered to consumers or through LEDS visible to consumers."

<sup>8</sup> Ad Hoc Telecommunications Users, February 5, 2015 Comments, p. 6.

in the midst of a power outage due to a natural disaster or other emergency will likely have urgent communication needs that may take time to accomplish.<sup>9</sup>

NASUCA, pointing to findings in a 2008 California Public Utility Commission report,<sup>10</sup> states:

NASUCA notes that the CPUC report was issued in September, 2008 and it is quite possible that more efficient back-up power options that would allow for a longer period of support during a power outage are now available. NASUCA agrees with the Commission that "a longer time period—such as the twenty-four hours afforded by Verizon's devices—could provide consumers with sufficient time to attend to other time sensitive matters that may arise during the course of a natural disaster or other emergency."<sup>11</sup>

Pennsylvania Public Utility Commission states:

The Pa. PUC is generally aware that both telecommunications carriers and CATV providers of fixed wireline VoIP services are or may be experimenting with distributed backup power battery packs with increased output duration of more than eight (8) hours. However, the Pa. PUC continues to believe that the common standard of backup power output for eight (8) hours is still prevalent among the installed residential consumer base of these distributed battery packs. As the respective durations of regional commercial power outages during the June 2012 derecho and Hurricane Sandy demonstrated, the Pa. PUC questions whether the eight (8) hour standard is adequate to ensure the reliability and availability of 911 services for residential end-users, including the provision of retail broadband access services, during prolonged commercial power outages.<sup>12</sup>

AT&T provides information that indicates that an eight-hour standard is insufficient:

The capacity of any battery is affected by multiple factors, including battery age, usage patterns, and environmental conditions. Batteries will degrade slowly over time; therefore, even when a battery is designed to provide eight hours of standby time, the battery will not maintain that standard as it ages and will provide less and less standby time over the span of its projected lifetime.<sup>13</sup>

These comments, and common sense, points to the need for a backup power requirement that exceeds eight hours, and AARP's twelve-hour proposal is a reasonable approach.

---

<sup>9</sup> National Association of State 911 Administrators, February 5, 2015 Comments, p. 2.

<sup>10</sup> "CPUC Final Analysis Report, May 9, 2008, Reliability Standards for Telecommunications Emergency Backup Power Systems and Emergency Notification Systems," <http://www.cpuc.ca.gov/NR/rdonlyres/3196E853-F0F8-4CCC-ADB5-1C1870CFCCA6/0/FinalAnalysisReportMay92008.pdf>

<sup>11</sup> NASUCA, February 5, 2015 Comments, p. 10.

<sup>12</sup> Pennsylvania Public Utility Commission, February 5, 2015 Comments, p. 7, emphasis added.

<sup>13</sup> AT&T, February 5, 2015 Comments, p. 8.

### **The Commission Should Encourage Technology Advancement**

The Commission should also adopt the twelve-hour requirement to encourage technology improvements. While Fiber to the Home Council Americas (hereinafter “*FTTH Americas*”) notes that eight hours of backup power “is an industry-accepted de facto standard for telecommunications backup,”<sup>14</sup> AARP notes batteries with twelve-hour capabilities are currently available.<sup>15</sup> *FTTH Americas* also notes that improvements in battery technology are ongoing:

One ONT manufacturer we spoke with reported an eight and a half hour battery life using a computational algorithm that takes into account worst-case situations. Another manufacturer reported eleven hours of life, based on measurement. The same manufacturer also reported that its battery could automatically cut the power supply with four hours of life remaining at which point the subscriber could decide whether and when to restore the backup supply and use the remaining power.

Yet another manufacturer reports promising laboratory work and predicts that four rechargeable AA batteries could eventually last up to three days in standby mode. This is achieved by using advanced, low-power circuitry, and intelligently shutting down unused circuits, as well as restructuring data to minimize superfluous processing. While this product is not on the market yet, it exemplifies private industry’s great progress in response to competitive pressures.<sup>16</sup>

By adopting a twelve-hour requirement, the Commission will encourage beneficial innovation in associated with battery and backup power technologies.

### **The Relationship between CPE Backup Power and Network Backup Power**

AARP’s Opening Comments highlighted the critical interrelationship between CPE backup power and the resiliency of network facilities.<sup>17</sup> AARP emphasized that it is important that the Commission recognize that robust CPE backup power requirements will only deliver their full benefits if they are matched with robust central office backup power requirements. To provide the needed foundation of network reliability, the Commission should take steps to ensure that

---

<sup>14</sup> Fiber to the Home Council Americas, February 5, 2015 Comments, Technical Appendix title “The Superior Performance and Technical Characteristics of Fiber to the Home Networks,” p. 12.

<sup>15</sup> AARP, February 5, 2015 Comments, p. 21, footnote 51.

<sup>16</sup> FTTH Americas, February 5, 2015 Comments, Technical Appendix, “The Superior Performance and Technical Characteristics of Fiber to the Home Networks,” p. 14.

<sup>17</sup> AARP, February 5, 2015 Comments, pp. 8-13.

wireline and wireless networks are engineered to provide reliable service in the face of commercial power outages. To that end, AARP recommended:

The Commission should promote networks that continue to function when commercial power fails. The Commission should apply the 2007 rules associated with wireline and wireless service backup power. These rules will address central office backup power requirements at the 72 percent of central offices that were excluded from consideration in the 911 Reliability Order. Furthermore, as the 2007 rules addressed cell site backup power, the performance of wireless networks will also improve. This will support wireless networks playing an important role in providing a fail-safe emergency communications network.<sup>18</sup>

Other parties recognized the relationship between network performance during commercial power outages, and CPE backup power. For example, New York Public Service Commission provided evidence regarding next-generation IP-based networks in that state:

Cable television providers often provide full backup power to their master headends and hub sites using generators and uninterruptable power supplies (UPS). Line equipment such as fiber optic nodes and distribution amplifiers can be served by pole mounted battery backup power supplies. These devices provide limited backup power (up to eight hours depending on loading) to strand and pedestal mounted network elements, and also provide an access point for portable generators to supplement battery power once it has been depleted. *For instance, in the Capital District Region of New York State, up to 85% of IP-based line equipment has backup powering capabilities. However some locations in Western New York State have as little as 30% of IP-based line equipment serviced by backup power.*<sup>19</sup>

Thus, New York Public Service Commission recommends that the FCC ensure that networks continue to function during commercial power outages:

Accordingly, the NYPSC supports the FCC's position that reasonable steps should be taken to safeguard consumer access to communications throughout a power outage. Backup power ensures that customers can remain in contact during emergencies that result in power outages. *Where line equipment normally requires commercial power, the FCC should require that companies provide contingent backup power to ensure that network availability is maintained during commercial power outages. This should also*

---

<sup>18</sup> AARP, February 5, 2015 Comments, pp. 4-5.

<sup>19</sup> New York Public Service Commission, February 5, 2015 Comments, p. 4, emphasis added.

*include facilities based interconnected Voice over Internet Protocol (VoIP) and fixed wireless service specific to a customer's location.*<sup>20</sup>

AICC also emphasizes the importance of network reliability:

AICC urges the Commission to expand a backup power requirement in two ways. First, broadband network facilities also should have backup power. All broadband networks should be required to provide twenty-four (24) hours of standby power supply capacity for communications equipment that is field deployed and twenty-four (24) hours of standby power supply capacity for communications equipment located at the central office or its equivalent. Second, these requirements also should apply to wireless broadband networks and services. Under this proposal, for example, every cell site in a wireless system should have a mandatory twenty-four (24) hours of power backup.<sup>21</sup>

ADT also notes the importance of network reliability:

[B]roadband network providers—both fixed and wireless—should provide eight hours of standby power supply capacity for communications equipment that is deployed in the field and 24 hours of standby power for communications equipment located at ISPs'/ILEC's or like providers premises (i.e., the central office or its equivalent), including cell sites. Moreover, ADT supports AICC's argument that battery backup at customers' premises should consist of rechargeable batteries, with the service provider monitoring the health of those batteries and advising consumers when to replace them.<sup>22</sup>

As AARP noted in opening comments,<sup>23</sup> CPE backup power is one piece of the puzzle, however, the larger issues of central office backup power and broadband network reliability still need to be addressed. Given the focus in the current NPRM on the performance of CPE during power outages, it is important to keep in mind that even the best CPE backup power will be all but useless if the central office to which that CPE is connected fails due to insufficient backup power.

### **CPE Backup Power Requirements are Consistent with Carrier Practices**

Some carriers, or industry associations, indicate that CPE backup power requirements should not be imposed. Adtran alleges that any CPE backup power requirement would create “an

---

<sup>20</sup> New York Public Service Commission, February 5, 2015 Comments, p. 4.

<sup>21</sup> AICC, February 5, 2015 Comments, p. i.

<sup>22</sup> ADT, February 5, 2015 Comments, p. 5.

<sup>23</sup> AARP, February 5, 2015, Comments, p. 12.

impossible burden on the carriers.”<sup>24</sup> National Cable & Telecommunications Association asserts that consumers should be “free to make their own choices” regarding backup power options.<sup>25</sup> AT&T asserts that “an eight-hour backup power standard would provide little (if any) value.”<sup>26</sup> These arguments ignore both key public safety objectives and successful carrier practices. As AARP discussed in its opening comments, the public health and safety benefits of improved CPE performance during commercial power outages will be substantial. Reliable broadband networks will have an immediate impact on innovation, public health, and public safety.<sup>27</sup> AARP also illustrated the interrelationship between CPE backup power and other public safety issues being considered by the Commission. The interrelated nature of decisions regarding CPE backup power, which will directly and indirectly impact 911 services, must contribute to the Commission’s decision. As noted by AARP, wireless 911 location accuracy can be positively affected by CPE backup power.<sup>28</sup>

Important information regarding broadband provider practices, and customer receptiveness to the automatic provisioning of CPE backup power is provided by *FTTH Americas*. *FTTH Americas* is generally opposed to the NPRM’s backup power proposal: “Given the responsible behavior of FTTH providers and the lack of demonstrable harm, the Commission should not impose new regulations mandating battery backup power for fixed voice services.”<sup>29</sup> However, as noted above, parties such as Adtran and National Cable and Telecommunications are not willing to deploy battery backup, thus rules are appropriate. *FTTH Americas* goes on to provide important evidence of the outcome of responsible behavior, noting that “subscribers are unconcerned about

---

<sup>24</sup> Adtran, February 5, 2015 Comments, p. 20.

<sup>25</sup> National Cable & Telecommunications Association, February 5, 2015 Comments, p. 5.

<sup>26</sup> AT&T, February 5, 2015 Comments, p. 20.

<sup>27</sup> AARP, February 5, 2015 Comments, p. 26.

<sup>28</sup> AARP, February 5, 2015 Comments, pp. 8-9.

<sup>29</sup> *FTTH Americas*, February 5, 2015 Comments, p. 20.

switching from line-powered copper loops to FTTH infrastructure with battery backup for their voice service.”<sup>30</sup> In other words, customers are satisfied when next generation services exhibit characteristics similar to legacy services. *FTTH Americas* also provides the descriptions of some service providers’ actions with regard to the provisioning of backup power.

When GVTC provides VoIP service over its FTTH network, it installs a device with backup power next to the ONT. This device enables voice service during power outages.<sup>31</sup>

JEA supplies the battery with the ONT installation. Each battery is monitored by the PON element management system. In the event the battery is low or not holding a charge, an “alarm” is created, and the information is relayed to the network control center through operational reporting processes. JEA then sends a technician to replace the battery. . .<sup>32</sup>

C Spire’s FTTH network uses Gigabit Passive Optical Network (“PON”) technology. It currently places the Optical Network Terminal (“ONT”) on the outside of each premises to convert optical to electronic signals, and it has plans to begin installing interior ONTs. C Spire installs its battery backup as an independent unit directly next to the ONT. . . C Spire supplies the battery with the ONT installation. . .<sup>33</sup>

The components of carrier practices described above clearly represent “responsible behavior,” and AARP applauds companies that follow such responsible practices. AARP believes that consumers will be more agreeable to adopting new technologies if those technologies provide robust performance, and carriers take responsibility for ensuring that performance. However, the record clearly demonstrates that not all service providers are so inclined, thus standards, such as those proposed by AARP are appropriate.

## **Conclusion**

AARP believes that the Commission has appropriately linked important components of the transition to broadband networks in this proceeding, and AARP encourages the Commission to

---

<sup>30</sup> *FTTH Americas*, February 5, 2015 Comments, p. 19.

<sup>31</sup> *FTTH Americas*, February 5, 2015 Comments, supporting Declaration of George O’Neal, p. 4.

<sup>32</sup> *FTTH Americas*, February 5, 2015 Comments, supporting Declaration of Ben Lovins, p. 4.

<sup>33</sup> *FTTH Americas*, February 5, 2015 Comments, supporting Declaration of Alan Jones, p. 3.

adopt the recommendations of AARP that have been provided in AARP's opening comments. However, AARP also reminds the Commission that it must not lose sight of the larger issues associated with IP transition, especially those associated with the underlying reliability of broadband networks. The next generation public network must offer reliability similar to the legacy PSTN, otherwise, consumers, competition, and innovation will be harmed.