

**Before the  
Federal Communications Commission  
Washington, DC 20554**

In the Matter of )  
 )  
Reliability and Continuity of Communications ) PS Docket 11-60  
Networks, Including Broadband Technologies )

**COMMENTS OF APCO**

The Association of Public-Safety Communications Officials-International, Inc. (“APCO”) hereby submits the following comments in response to the Commission’s *Public Notice*, DA 12-1153, released July 18, 2012, in the above-captioned proceeding regarding “9-1-1 Resiliency and Reliability in Wake of June 29, 2012, Derecho Storm in Central, Mid-Atlantic, and Northeastern United States.”

Founded in 1935, APCO is the nation’s oldest and largest public safety communications organization. Most APCO members are state or local government employees who manage and operate communications systems for police, fire, emergency medical, forestry conservation, highway maintenance, disaster relief, and other public safety agencies. APCO appears regularly before the Commission on a wide range of public safety communications issues.

The June 29, 2012, storms cut off electricity to millions, caused substantial property damage, and, most regrettably, loss of life. As discussed in the *Public Notice*, the storms also led to widespread and unusually extended disruptions to 9-1-1 service in several areas, especially in the Northern Virginia suburbs of Washington, DC. APCO commends the efforts of its members in all of the impacted areas who were forced to operate public safety answering points (PSAPs) under severe and frustrating constraints imposed by the network outages. APCO also

looks forward to continuing to work with local exchange carriers (LECs) regarding outage issues as we migrate from current technologies to future next generation 9-1-1 solutions.

APCO is still in the process of gathering information to help identify the causes of the outages and necessary steps to prevent or, at least mitigate, similar occurrences in the future. Some of APCO's findings will be presented below, but additional information is still forthcoming. All parties, including PSAPs, LECs, wireless and broadband carriers, state regulatory authorities, and the FCC also need to make an in-depth assessment of what happened in this and similar situations to determine if existing rules and guidelines (including best practices) were followed, and whether additional rules and guidelines are needed.

On August 13, 2012, Verizon released a report detailing its view of the causes of the network outages and failures in Northern Virginia, including problems with communications with Public Safety Answering Points (PSAPs).<sup>1</sup> As Verizon acknowledges, and as reported to APCO by PSAP managers in Northern Virginia, power losses in a Verizon Central Office, backup power failures, and delays in dispatching maintenance crews contributed to at least a portion of the 9-1-1 outages that occurred. APCO takes exception, however, to Verizon's suggestion that PSAPs might have been better off not activating network controls. APCO believes that the PSAPs acted appropriately to save life and property using the best information they had available to them at the time.

#### *Current Best Practices*

The *Public Notice* seeks information regarding relevant best practices that applied, or should have applied, to the June 29 outages. The APCO/NENA Public Safety Answering Point Service Capability Rating Scale is an American National Standard that addresses many of the

---

<sup>1</sup> "Verizon, 911 Service and the June 29, 2012, Derecho" (Aug. 13, 2012).

areas that governing authorities and PSAP managers must consider when assessing their level of preparedness and survivability against a wide range of natural and man-made events.<sup>2</sup> The rating scale may be used as a tool to evaluate current capabilities and to identify capabilities that are missing or not fully developed. The Standard references other best practices such as those developed by the Network Reliability and Interoperability Council (NRIC) VII, Institute of Electrical and Electronics Engineers (IEEE), National Fire Protections Association (NFPA) and the Commission on Accreditation for Law Enforcement Agencies (CALEA).

Section 3.2.10.2.1 of the APCO/NENA PSAP Service Capability Rating Scale; Status Monitoring of the Network Elements, states that “Network paths are monitored and alarmed 24x7 by the network element providers.” However, interviews with PSAP managers whose centers were impacted by the June 29 storm indicate that Verizon’s network operations center (NOC) personnel did not appear to be fully aware of the status of the relevant central office equipment failures or the status of 9-1-1 call delivery in Northern Virginia. A failure of power *and* backup power at a telephone central office should have resulted in an immediate alarm state at the NOC and should have generated an urgent response by carrier maintenance crews and technicians to resolve issues and restore generator power.

#### *Keeping PSAPs Informed*

A major issue for PSAPs on June 29 was the lack of outage reports and related communications from their local carriers. In critical times of outages when systems fail, it is imperative that there be direct contact with an on-call representative of the LEC . However, managers from several of the impacted PSAPs reported to APCO that they did not receive timely, accurate or complete information regarding the network outages or restoration efforts.

---

<sup>2</sup>APCO 9-1-1 Standards can be found at: <http://apcointl.org/resources/9-1-1-resources/standards/apco-standards-for-download.html>.

As Verizon acknowledges in its report, the normal means of such communication was itself disrupted by the outages. PSAP managers report that Verizon resorted to sending wireless text messages to PSAPs, though many of the messages lacked clarity or useful information. This suggests that telecommunications carriers need to establish hardened and redundant links to disseminate outage information to PSAPs in their service areas. Specifically, the Commission should require all carriers to utilize and regularly test an emergency notification system that can be used to ensure timely notifications are made to appropriate public safety communications officials should any situation occur that may impact the delivery of or ability to make 9-1-1 calls, the delivery of 9-1-1 location information, or the delivery of other communication lines (*i.e.* 10 digit lines or carrier supported text-to-9-1-1). LECS that utilize automated calling procedures should also have a backup plan to be used when their automated systems fail. The backup plan should include response telephone numbers and escalation lists.

APCO previously raised the issue of network outage reporting to PSAPs in a related proceeding, in which we stated that:

PSAPs should be given immediate information that a service provider is experiencing outages that affect the delivery of 9-1-1 calls. Without such information, PSAPs are in the dark and unable to take steps to mitigate the potential public harm of 9-1-1 calls not being answered. For example, informed of an outage expected to last a considerable time period, a PSAP and other local officials could inform the public to use alternative means to reach 9-1-1 on a temporary basis. First responders in the impacted area could also be placed on high alert, and closely monitor locations prone to emergencies, such as busy highways and high crime areas. Outage reports could also alleviate unnecessary and resource-consuming troubleshooting efforts by the PSAP when there is a sudden stoppage of 9-1-1 calls from a telecommunications provider. Contingency plans could also be instituted to re-route calls to back-up PSAPs where possible or, in some cases, to intercept calls at the service provider's facilities. Timely notification is critical to institute such steps rapidly and without creating further disruption to the 9-1-1 system.<sup>3</sup>

---

<sup>3</sup> *Ex Parte* Letter from APCO International President Gregg Riddle in Docket 11-82 (Nov. 7, 2011).

APCO further indicated that it

would support and participate in an industry-wide effort to identify effective and efficient means of providing necessary outage information to PSAPs without releasing sensitive information or compromising public safety. A first step may be for the FCC to convene a working group of interested parties to define requirements, best practices and methods of early, accurate and informative notifications. State PUCs and PSCs should also be part of the dialogue. One specific approach that should be explored is to deliver outage information to PSAPs through a secure and reliable network such as the National Law Enforcement Telecommunications System (NLETS), which provides connections to all states and the vast majority of law enforcement agencies in the United States.<sup>4</sup>

The events of June 29, 2012, further support the need for such efforts to address outage reporting directly to PSAPs.

### *Testing*

For years, LECs have known that they have had problems with their generators and uninterrupted power supplies (UPS). These items should be tested under load weekly, just as is done by most PSAPs.<sup>5</sup> LECs should be required to report the results of their tests to the Public Safety & Homeland Security Bureau (PSHSB) within 3 business days, and complete a successful retest and report within 24 hours. LECs should also provide semi-annual documentation of preventive maintenance inspections for UPS and batteries. This report should also be sent to PSHSB.

Another testing recommendation, based upon input from impacted PSAPs and others, is that there should be best practices or standards that provide for carriers (wireless and wireline) to test any new network components that interface directly or indirectly with PSAPs. This would prevent incompatibility problems caused by the deployment of new network components, and

---

<sup>4</sup> *Id.*

<sup>5</sup> LECs should retrofit their generator sites with an auxiliary generator port which will allow a portable generator to be brought in and substituted when a primary generator fails.

would ensure that new components will work properly under stress when other portions of the network are disrupted. LECs should also provide a minimum of 48 hours notice to the effected PSAPs when they are planning for outages for upgrades or maintenance.<sup>6</sup>

In addition, the Commission should support a plan to require all carriers to perform monthly scheduled load testing of all mission critical components to assure that redundancy and backup systems are adequate and functioning. Testing plans should be provided to the FCC in advance and a report of testing results provided within three days after test completion. The Commission should appoint a workgroup to review carrier proposed test plans and to assess how the plans compare to current relevant standards. The work group should consist of representatives from public safety, PUCs and other relevant subject matter experts.

### *Training*

There may also be a need to provide better education and training for PSAP managers regarding telephone system architecture (both generally, and in their specific situation), so they are better able to evaluate and react to outage information that they may receive. Current standards and best practices provide that 9-1-1 governing authorities must have a clear understanding of the call delivery architecture for their 9-1-1 trunks, and also for any 10-digit telephone lines that terminate at their PSAPs. The architecture should be documented in writing and provided to PSAP managers to develop plans for continuity of operations, disaster recovery and alternate call routing. Trunking diversity and redundancy is expected to be included in a PSAP's operational design documents. The PSAP Service Capability Rating Scale recommends that these items be audited by the System Service Provider on an annual basis.

---

<sup>6</sup> APCO, as an ANSI Standards Development Organization is in a position to work with appropriate parties to develop relevant testing standards that will deliver a higher level of public safety communications service.

## *Planning*

A relevant current Best Practice is in section 3.2.7 of the PSAP Service Capability Rating Scale, which specifies standard survivability criteria for Emergency Communications Plans (ECPs). Such plans should provide “at least basic levels of service ... for up to three days until more permanent changes or repairs can be made.” Section 3.2.8 further specifies development of ECPs “in collaboration with all partners” such as PSAP operations, the E9-1-1 Service Provider, and other relevant parties. Section 3.2.9 recommends that a drill and exercise program be in place to evaluate contingency/continuity of operations plans. Each plan or planning item should be exercised at least annually and an after action and correction process should be in place to evaluate and improve the planning process. APCO believes that regional plans should be developed to address loss of service for critical 9-1-1 infrastructure. The LECs should include annual face-to-face meetings conducted regionally with PSAPs in those regions to review and train on emergency restoration plans. It is unclear to what extent ECPs or similar plans were in place, or had been the subject of drills, in the relevant geographic areas on June 29.

Finally, it is important to note that PSAPs operate not only with 9-1-1 lines, but also with other supporting telephone lines that augment the work of the PSAP center. These supporting telephone lines should be inventoried and included in the LEC emergency response plan and serviced on a priority basis.

APCO plans to work with NENA to update the PSAP Service Capability Rating Scale standard as part of the upcoming ANSI required review process. NG9-1-1 and IP-based E9-1-1 architectures are being deployed and will require a modified approach to assure diversity and redundancy. System Service Providers may include entities other than Local Exchange Carriers and all relevant entities will need to be part of future ECPs, testing and reporting requirements.

NG9-1-1 will provide network and call routing functionality that exceed current E9-1-1 capabilities. The new functionality will help to facilitate increased interoperability during weather related disasters, but is not inclusive of the many operational issues that must be addressed outside of simply re-routing 9-1-1 calls. The receiving agency must still have the capability to take meaningful action (*e.g.* dispatch first responders) to provide help to 9-1-1 callers.

### CONCLUSION

APCO commends the Commission for investigating PSAP outages. The events of June 29 were a wake-up call. Now, service providers, PSAPs, governing authorities, standards bodies, and the FCC must re-evaluate systems, procedures, best practices, standards, and regulations to prevent future disruptions to 9-1-1 operations.

Respectfully submitted,

/s/

Robert M. Gurss  
Regulatory Counsel  
APCO International  
(202) 236-1743 (mobile)  
gurssr@apcomail.org

APCO Government Affairs Office  
1426 Prince Street  
Alexandria, VA 22314  
(571) 312-4400

August 17, 2012