

Comments of Edward H. Comer,  
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Before the Federal Communications Commission  
Superstorm Sandy Field Hearing  
New York, New York February 5, 2012

Good afternoon. My name is Edward H. Comer. I am Vice President, General Counsel and Corporate Secretary at the Edison Electric Institute (“EEI”). I am pleased to participate in this hearing to examine new challenges to the nation’s communications networks in the wake of Superstorm Sandy, and to help provide recommendations and action to improve network resiliency. The issues that the Federal Communications Commission (“FCC” or “Commission”) is examining regarding the reliability, resiliency and continuity of communications networks are of vital importance to electric utilities, which also faced unique challenges during and after Superstorm Sandy as well as other emergency situations.

EEI is the association of the United States investor-owned electric utilities and industry associates worldwide. Its U.S. members serve nearly 95 percent of all customers served by the shareholder-owned segment of the U.S., about 70 percent of all electricity customers, and generate about 70 percent of the electricity delivered in the U.S. EEI frequently represents its U.S. members before Federal agencies, courts and Congress in matters of common concern, and has filed comments before the Commission in various proceedings affecting the interests of its members. Electric utilities are among the nation's largest users of communications services and operate some of the largest private communications networks. As the Commission acknowledged in the National Broadband Plan, electric utilities use a variety of networks, including wired and wireless, licensed and unlicensed, private and commercial, fixed and mobile,

broadband and narrowband. Moreover, the Smart Grid is a national priority and broadband and advanced infrastructure will play an important role in achieving our country's announced goals of energy independence and efficiency.<sup>1</sup> Obviously, in turn, telecommunications providers, like virtually all of our modern society, rely heavily upon electricity to power their innovative technologies.

### **Interdependency of Electric and Telecommunications Sectors**

The United States' communications networks and its electric grids are integrally linked. Electric utilities depend upon communications networks and services to carry out their core mission of safely, and reliably delivering electric service to our consumers. Reliable communications systems are vital to support a multitude of utility responsibilities, including maintenance, remote control and monitoring, dispatch of field crews in service territories, and communication with customer meters. Electric utilities further depend on communications systems for various internal uses that include mapping for remote locations and pinpointing outages or other problems, transmitting schematics, blueprints and other data to field crews, and maintaining video surveillance to prevent copper theft and to provide overall security throughout the grid. Further, these networks are vital for internal communications between offices to improve operational efficiency and to quickly and effectively respond to weather and other emergency events.

In order to meet an electric utility's public safety and reliability needs, communications systems must provide electric utilities sufficient real-time coverage and capacity in both rural and urban areas—particularly after severe weather events. In addition, our communications

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<sup>1</sup> National Broadband Plan at 249, 251.

systems must comply with rigorous mandatory and enforceable Reliability Standards adopted by the Federal Energy Regulatory Commission (“FERC”) and the North American Electric Reliability Corporation (“NERC”). Compliance with these standards requires utilities to have reliable, secure communications systems capable of handling large amounts of data and traffic with an extremely low level of latency.

During disasters, such as Superstorm Sandy, utilities rely on communications networks for communication with and among service crews in the field to support their efforts to maintain or quickly restore electric service. In addition to essential voice communication between operational staff and line workers in the field, electric utilities use the communication infrastructure to provide critical situational awareness data. Such data enables utilities to determine the status of substations, transmission/distribution protective devices and line sectionalizing devices. This data is critical in enabling a utility to determine the scope and magnitude of the damage after a major event, which enables the utility to more efficiently evaluate the damage assessment and the number and skill sets of the mutual assistance crews being brought to bear for the restoration effort. In these instances, utilities work closely with public safety entities, telecom carriers and first responders. Under these circumstances, communications networks must operate at a level of reliability expected of networks that support first responder communications.

As part of a massive effort to modernize the electric grid, this nation's electric utilities, with billions of dollars of Federal assistance, have made significant investment in the deployment of Smart Grid technology. This technology relies upon telecommunications technology to help expedite real-time system monitoring and controls. One of the benefits of this investment is a grid that enables utilities to be far more responsive in times of emergency. Smart

Grid technology enables utilities to more efficiently and effectively locate, troubleshoot, isolate and repair outages by providing utilities with information and the ability to automatically isolate fault locations. Smart Grid technology aids in the restoration efforts by providing utilities with tools and information that facilitates storm response and restoration by facilitating efficient situational awareness, damage assessment and storm restoration. For example, a utility with widespread deployment of smart meters can immediately identify the path of a tornado by tracking outages on a mapping program. This capability has expedited the delivery of all kinds of emergency services to affected areas, not only electric restoration services.

Finally, virtually all electric utilities use a wide variety of landline, wireless and internet-based communications services and devices to interact with their customers. For example, for a long time, utilities have used automated telephone dialing systems to disseminate information to their customers about outage and account information. Electric utilities now also use internet websites to inform and interact with their customers regarding services and events. Electric utilities provide their customers wireless and smart phone “apps” to do things like report outages and downed wires, monitor utility restoration efforts, pay bills, and check account information. Most of these identify outages and related information. Utilities also increasingly rely upon social media (*e.g.*, Facebook and Twitter) to manage their communications with customers and track customer impacts and concerns, especially during storms.

Furthermore, EEI and its members rely upon telecommunications services to coordinate industry activities during these types of large scale disasters. All these tools help expedite communications and emergency response activities.

### **Electric Utility Mutual Assistance Programs**

During storms like Superstorm Sandy and other emergency events, the electric utility industry deploys a mutual assistance programs that is unique in many ways. In part, this has arisen from the fact that the electric transmission grid is an interdependent machine (actually three such transmission grids in the continental United States), composed of thousands of different operators. Our industry has found common cause to work together to operate the system reliably and resiliently, and to defend it and to facilitate restoration when power is disrupted. This is true of the largest investor-owned utilities in EEI's membership, and includes all segments of the industry down to the smallest rural cooperative. We are particularly proud of our mutual assistance program, in which utilities voluntarily send staff and equipment to help others recovery from emergencies. Attached is a brief description of our Mutual Assistance Program.

Superstorm Sandy resulted in power outages to almost 10 million customers in 21 states and the District of Columbia, including about 95% of the customers on Long Island alone. This vastly exceeded the number of outages experienced from the next largest storm, . Providing for the restoration of electric power from this storm, , has been the biggest single task the electric utility industry has ever undertaken, involving almost 70,000 people in about a two week time period. Utilities from as far as the West Coast and Canada sent thousands of workers and equipment to assist in storm recovery. A few days before the storm made landfall, EEI, working with the Department of Energy ("DOE"), the Federal Emergency Management Association ("FEMA") and other federal agencies, initiated daily utility CEO conference calls to assure that the highest executive levels within both utilities and the federal government addressed utility emergency response preparations and needs. DOE Secretary Chu participated in these calls and on October 30 President Obama, together with Secretary Chu and FEMA Administrator Craig

Fugate participated to assure processes were in place to expedite recovery and avoid unnecessary bureaucratic delays. This led to our industry working directly with FEMA, with a senior EEI officer stationed in FEMA headquarters, to help coordinate utility efforts with the federal government. Soon after landfall in New York and New Jersey, based on damage reports given on our calls, it quickly became apparent that there was a need for an unprecedented number of utility responders and that there would be a need (and adequate time) to bring in help from all over the country. Utilities throughout the nation and Canada responded. The federal government was instrumental in helping transport some of these crews and equipment across the nation and in minimizing potential bureaucratic impediments to efficient transport of crews and trucks. Federal utilities, as well as cooperative and publicly owned utilities also contributed much assistance. Actual coordination of the release and assignment of utility resources were made on a daily basis and often several times a day among the nine voluntary utility Regional Assistance Groups ("RMAGs") across the U.S. In addition, many agreements and protocols, including an EEI-sponsored agreement addressing basic payment, safety, liability and similar issues during emergency response activities, were already in place to facilitate this voluntary mutual assistance effort.

As with any effort of this magnitude, our industry looks to find lessons we can learn to perform better the next time. EEI is currently engaged in such an effort, and is coordinating with our federal partners as well.

The utility industry's voluntary commitment to assist each other in emergencies reflects a deep belief in the essential nature of our service and the importance of providing reliable service at reasonable costs. Our industry is extremely proud of its tradition of voluntary mutual

assistance and the long hard work our crews do, which is often under extremely difficult conditions, to help restore electric service during emergencies such as Superstorm Sandy.

Our partnership helped remove bureaucratic barriers and expedited the recovery effort. Our interdependence in operations and reliability as well as our mutual assistance efforts to restore power following storms now extends to the industry-wide recognition of our shared interests in addressing threats to the interconnected grid, including cybersecurity.

### **The Need for Resiliency Applies to Both the Electric and Telecommunications Industries**

Because electric utility operations are designed to operate with an extremely high level of reliability, we design our systems for resiliency, particularly at the generation and transmission levels in many different respects. Reliability is so important that our bulk power operations must meet standards developed by the North American Electric Reliability Corporation (NERC), as approved by the Federal Energy Regulatory Commission. Regretfully, serious storms and other emergency events do cause electric outages, most often at the distribution level, that is, where wires on poles deliver electricity to homes and businesses. While our industry continues to apply cost-effective resiliency measures, there is no single and certainly no cheap solution. Many mention undergrounding as a solution, but the experiences in Hoboken, New Jersey and New York demonstrate the vulnerability of underground electric systems to flooding.

This makes it prudent for customers that have their own needs for reliable power supplies to assure that their systems are resilient. This may require them to invest in redundant power supply options. Thus, commercial communications networks should expect to continue to require adequate back-up power solutions for appropriate facilities and, given recent storm

experience and the high demand that customers put on telecommunications during emergency events, perhaps even need more back-up than in the past.

We are pleased that the Commission has initiated this inquiry into the issue of ensuring that commercial telecommunications networks have sufficient ability to maintain emergency communications in the event of major storms and extended electric service outages. Lack of sufficient backup power is one of the most significant reservations voiced by utilities as a basis for their preference for using their own communications networks rather than commercial networks to support their functions. As the Department of Energy concluded in its Report entitled, *Communications Requirements of Smart Grid Technologies*, “[t]hese back-up power issues warrant further study...the record in this [DOE] proceeding demonstrates...[that] there is a gap between the utilities’ and commercial service provider industries’ relative assessment of the sufficiency of the back-up power capabilities in commercial networks.”<sup>2</sup> For example, the DOE noted that many utility facilities, in addition to being able to withstand extreme weather conditions, have backup power for 72 hours, and some utilities requires all sites to have batteries with an absolute minimum capacity of eight hours and a generator with on-site fuel capable of power the site for several days.<sup>3</sup> While it may be that the concept of one-size-fits-all will not work for backup power, as suggested by DOE, the Commission should study this issue.

### **Utility Access to Spectrum**

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<sup>2</sup> Department of Energy *Communications Requirements of Smart Grid Technologies* at 44 (Oct. 5, 2010) (“*Communications Requirements Report*”)

<sup>3</sup> *Id.* at 44. The backup power needs of utilities can be even more substantial depending on the site and the application. For example, some remote sites have propane tanks with enough fuel to power that site for weeks.

EEI urges the Commission to ensure that utilities have access to adequate spectrum, such that they may develop their own communications networks that satisfy their reliability needs.<sup>4</sup> As discussed above, because commercial networks do not always meet the reliability and security standards of utilities, private internal networks likely will be essential in some areas. In other areas and for some utility functions, commercial solutions work well. Availability of adequate spectrum will ensure that electric utilities can maintain flexibility to deploy private networks that address their unique needs, while also allowing utilities to utilize commercial networks as their communications needs require. Further, access to spectrum by utilities is in the interest of the general public to the extent that it permits utilities to develop networks in line with their unique business needs, and enables utilities to operate and restore critical services in a timely manner.

Further, an approach which allows utilities access to spectrum and, in turn, enables utilities to develop their own internal communications networks, will go far in advancing the interests of the public generally by ensuring against the creation of additional interdependencies between different parts of the nation's critical infrastructure: namely, between the electric power industry and the commercial communications industry.

EEI recognizes that in the 4.9 GHz proceeding, the Commission is examining the issue of whether to expand eligibility so that CII entities, including utility companies, should be eligible

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<sup>4</sup> Electric utilities' spectrum needs are detailed in EEI's comments in response to the Department of Energy's request for information regarding utility communications requirements. *See* Comments of EEI, Department of Energy, *Implementing the National Broadband Plan by Studying the Communications Requirements of Electric Utilities to Inform Federal Smart Grid Policy* (July, 2010), available at [http://www.gc.energy.gov/documents/EdisonElectric\\_Comments\\_CommsReqs.pdf](http://www.gc.energy.gov/documents/EdisonElectric_Comments_CommsReqs.pdf); *see also* Reply Comments of EEI (August 2010), available at [http://www.gc.energy.gov/documents/Edison\\_Reply\\_Comms.pdf](http://www.gc.energy.gov/documents/Edison_Reply_Comms.pdf). EEI reaffirms its position taken in those comments regarding electric utilities' need for dedicated spectrum to meet their current and future communications needs.

to hold 4.9 GHz licenses on a primary basis.<sup>5</sup> This would be very helpful. Likewise, in the 3.5 GHz proceeding, the Commission is studying whether to grant utilities priority access to that portion of the band designated for small cell use.<sup>6</sup> This also could be helpful.

### **Coordination of Restoration Activities**

As indicated previously, the electric industry and our members continue to review the Superstorm Sandy experience to learn how to improve emergency response activities in the future. Certainly, one lesson relates to the needs of fuel providers, since the lack of adequate fuel affected many different sectors. Our industry would welcome working with telecom providers in learning where and how more collaboration would expedite or otherwise improve our mutual response efforts. . Since response activities are largely coordinated with federal and state emergency response organizations at the state and local level, we agree with a recent resolution from the National Association of Utility Regulatory Commissions (NARUC) that the restoration efforts of both electric and telecommunications service providers may be enhanced by the improvement of communications, coordination, and the sharing of information among such providers and with State commissions and other appropriate governmental entities.<sup>7</sup>

Finally, given the telecommunications industry's widespread use of utility poles and other facilities, we are pleased that the Commission recently strengthened the pole attachment rules to assure that attachments are made safely – because safety is paramount in all situations but especially during storm restoration.

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<sup>5</sup> *Amendment of Part 90 of the Commission's Rules*, Fourth Report and Order and Fifth Further Notice of Proposed Rulemaking, WP Docket No. 07-100, 27 FCC Rcd. 6377 (2012).

<sup>6</sup> *Amendment of the Commission's Rules with Regard to Commercial Operations in the 3550-3650 MHz Band*, Notice of Proposed Rulemaking and Order, GN Docket No. 12-354 (FCC 12-148 rel. December 12, 2012).

<sup>7</sup> See attached TC-2 National Association of Regulatory Utility Commissions (“NARUC”) Resolution Urging Governmental Agencies to Take Action to Coordinate Emergency Planning to Ensure the Sharing of Outage and Other Critical Information in Emergency Situations.

## Conclusion

We appreciate the opportunity to discuss the electric industry's experiences with service restoration after Superstorm Sandy and our mutual interdependencies with telecommunications providers. We also encourage the FCC to work with the appropriate federal agencies to implement the following recommendations from DOE's *Communications Requirements Report*:

- a) Strengthen representation of utilities' Smart Grid communications needs, particularly in intergovernmental forums.
- b) Review existing representation in spectrum- and communications-related federal government committees to ensure sufficient representation of Smart Grid interests.
- c) Review existing federal programs that address priority of service and emergency restoration to determine whether there are ways that utilities could better utilize such programs.<sup>8</sup>

Finally, we urge the FCC to increase spectrum access for utility communications needs including spectrum sharing and/or leasing.

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<sup>8</sup> *Communications Requirements Report* at 56-60.