

**BEFORE THE
FEDERAL COMMUNICATIONS COMMISSION
WASHINGTON, D.C. 20554**

In the Matter of:

Improving Wireless Network Resiliency
through Encouraging Coordination with
Power Companies.

PS Docket No. 11-60

**COMMENTS
OF THE CALIFORNIA PUBLIC UTILITIES COMMISSION**

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I. INTRODUCTION

The California Public Utilities Commission (CPUC) submits these comments in response to the January 3, 2019 Public Notice of the Federal Communications Commission's (FCC) Public Safety and Homeland Security Bureau (Bureau) seeking comment on improving wireless network resiliency through encouraging coordination with power companies (Public Notice). This is the second notice the Bureau has issued in a series that seeks comment on the effectiveness of the Wireless Resiliency Cooperative Framework (Framework) for purposes of restoring communications during and following disasters.¹ The FCC stated in its public notice that it is "interested from hearing from . . . governments at all levels . . ." ² The California Public Utilities Commission has information that is relevant to the FCC's inquiry.

The Public Notice included 24 questions, many of them with several subparts. We will focus our comments on providing information and recommendations on the following six questions: Question A, *Best Practices*; Question B(2), *Preparation and Response Coordination*; Question C(3), *Prioritization of Restoration and Information Sharing*; Questions E(3), E(5) and E(6), *Government Coordination and Commission Efforts*.

II. DISCUSSION

A. Best Practices Regarding Disaster Coordination, Preparation & Restoration

The FCC seeks information about existing best practices pertaining to disaster coordination, preparation and restoration between communications providers and power companies.³ We have several rulemakings open that address aspects of coordination between

¹ Public Notice, p. 1.

² *Id.* at pp. 1-2.

³ *Id.*, Question A, Best Practices, p. 2.

utilities and communications providers. One existing best practice that we currently utilize is the availability of timely information which describes the impact of disasters on communications facilities. We adopted a requirement for the communications providers to give us this information under our state authority.⁴ The FCC may wish to adopt a nationwide rule ordering communications providers to share information with state and local authorities in a timely fashion.

B. Coordination Between Power Companies and Communications Providers

The FCC’s Public Notice asks what formal or informal industry or intergovernmental forums exist to promote coordination and planning between communications providers and power companies.⁵ We have opened several proceedings addressing, at least in part, coordination and joint planning between communications providers and power companies. Power companies and communications providers have participated in these proceedings.

1. R.18-12-005, Order Instituting Rulemaking to Examine Electric Utility De-Energization of Power Lines in Dangerous Condition

We recently opened Rulemaking (R.) 18-12-005 to examine our “rules allowing electric utilities under the [CPUC’s] jurisdiction to de-energize power lines in case of dangerous conditions that threaten life or property in California.”⁶ R.18-12-005 will examine issues such as the conditions in which planned and proactive de-energization is practiced, ensuring power companies coordinate with state and local first responders and align their systems with the

⁴ CPUC General Order (GO) 133-D, Rules Regarding Telecommunications Services. GO 133-D § 4 requires all communications providers, including wireless communications providers, to give information regarding major service outages.

⁵ Public Notice, Question B(2), Preparation and Response Coordination, p. 2.

⁶ R.18-12-005, p. 1.

Standardized Emergency Management System framework (SEMS), and ensuring those affected are properly notified before and when de-energization occurs.⁷ This will require the coordination of power companies with communications providers to ensure proper notification and the mitigation of impact on vulnerable populations.⁸

This rulemaking includes reviewing ESRB-8, an Electric Safety and Reliability Branch Resolution we adopted on July 12, 2018.⁹ ESRB-8 requires power companies to notify and communicate with representatives from communications providers, consumers, and local governments that may be affected by the de-energization event.¹⁰ The de-energization or shutting off of electricity is part of the State’s efforts to “protect public safety” through the “prevention of fires caused by strong winds” that may damage power lines.¹¹

2. R.18-03-011, Order Instituting Rulemaking Regarding Emergency Disaster Relief Program

In March 2018, we opened R.18-03-011, *Order Instituting Rulemaking Regarding Emergency Service Disaster Relief Program to Support California Residents*. We initiated R.18-03-011 “to adopt comprehensive post-disaster consumer protection measures for all utilities under the [CPUC’s] jurisdiction.”¹² On November 1, 2018, the CPUC and the California Office of Emergency Services held a Joint Emergency Disaster Relief Workshop for Electric and Natural Gas Utilities in R.18-03-011. During this workshop, participants discussed de-

⁷ *Id.* at p. 2.

⁸ *Id.*

⁹ *Id.* at p. 3.

¹⁰ ESRB-8, p. 7.

<http://docs.cpuc.ca.gov/PublishedDocs/Published/G000/M218/K186/218186823.PDF>.

¹¹ *Id.* at p. 2.

¹² R.18-03-011, p. 1.

energization and its impact on communications providers.¹³ This forum provided an opportunity for power companies, communications providers, and other stakeholders to coordinate and communicate the protocols and procedures that would be conducive to effective preparation and response to a disaster. Communications providers informed policymakers in the workshop of the challenges they face in utilizing the information provided by power companies prior to grid de-energization.¹⁴

3. R.15-06-009, Order Instituting Rulemaking Regarding Policies, Procedures and Rules for Regulation of Physical Security for the Electric Supply Facilities of Electrical Corporations Consistent with Public Utilities Code Section 364 and to Establish Standards for Disaster and Emergency Preparedness Plans for Electrical Corporations and Regulated Water Companies Pursuant to Public Utilities Code Section 768.6

On June 11, 2015, we opened R.15-06-009 to “establish policies, procedures, and rules for the regulation of physical security risks to the electric supply facilities of electrical corporation” and “to establish standards for disaster and emergency preparedness plans.”¹⁵ The Assigned Commissioner issued a Phase II Scoping Memo in this proceeding on May 31, 2018 soliciting stakeholder input on best practices for power companies to communicate with government agencies and other utilities during emergencies.¹⁶ R.15-06-009 is examining existing protocols by which power companies communicate with communications providers. This proceeding is also reviewing the process in place for power companies to address situations

¹³ R.18-03-011, November 1, 2018 Workshop Transcript at pp. 117-118, 208-209, 324-340.

¹⁴ *Id.*

¹⁵ R.15-06-009, ALJ Ruling Requiring Parties to Respond to Questions Prior to the First Workshop in Phase II of This Proceeding, p. 1.
<http://docs.cpuc.ca.gov/PublishedDocs/Efile/G000/M224/K463/224463634.PDF>.

¹⁶ *Id.*, p. 2.

in which communications providers' networks are unavailable or inaccessible.¹⁷ The written comments and workshops in Phase II have served, and will continue to serve, as a forum for utilities to coordinate and exchange ideas and for us to evaluate the effectiveness of existing disaster preparedness plans and procedures.

C. Power Companies Sharing Information with Communications Providers

The FCC asks what information that power companies possess before and during disasters would be helpful to communications providers.¹⁸ In California, notification of an outage is currently given through emails from the power company to the communications providers.¹⁹ At the November 1, 2018 Workshop in R.18-03-011, stakeholders discussed the impact of de-energization on communications providers, including problems with the current system of emails. Stakeholders stated that email communication was not universally seen as a best practice because of the number of emails (e.g., ensuring that the email does not get “missed”), formatting differences, and the difficulties of maintaining correct and up to date contact information. Communications providers reported that receiving as much advance notice as possible, along with precise location information pertaining to the power-off or de-energization down to the circuit level, is valuable to them.²⁰ Specifically, communications providers have requested two main pieces of information from the electric utilities: (1) meter identification numbers for their cell sites and other communications infrastructure; and (2) shapefiles which show the location of both planned outages and actual outages.

¹⁷ *Id.*

¹⁸ Public Notice, Question C(3), Prioritization of Restoration and Information Sharing, p. 3.

¹⁹ R.18-03-011, November 1, 2018 Workshop Transcript, pp. 80-83, 117.

²⁰ *Id.* at pp. 117-118.

D. Facilitating and Improving Availability of Power During Emergencies

The Public Notice requests information about what steps other agencies are taking (jointly or independently) to facilitate and improve the availability of power during disasters.²¹ California has rules requiring a power company to notify us “as soon as practicable after a decision to de-energize facilities and within 12 hours after the last service is restored.”²² Under California’s rules, the power company also is required to submit a report to the CPUC explaining the decision to shut off power, impacts on customers, and other pertinent information.²³ We will further examine these rules in the R.18-12-005.

E. FCC Coordination with Federal and State Agencies

The FCC asks whether it should coordinate with federal and state agencies to strengthen the ability of communications networks and systems to survive commercial power failures.²⁴ We urge the FCC to provide support to the states through coordination but to do so in a manner that considers the unique nature of each state’s natural disasters, as well as the existing protocols, procedures, and infrastructure in place to prepare for and respond to these disasters. We request that FCC involvement not hinder efforts by state agencies to advance policy that strengthens communications network resiliency.

²¹ Public Notice, Question E(3), Government Coordination and Commission Efforts, p. 6.

²² Resolution ESRB-8, *Resolution Extending De-Energization Reasonableness, Notification, Mitigation and Reporting Requirements in Decision 12.04-024 to All Electric Investor Owned Utilities*, p. 1.
<http://docs.cpuc.ca.gov/PublishedDocs/Published/G000/M217/K801/217801749.PDF>

²³ *Id.* at pp. 3-4.

²⁴ Public Notice, Question E(5), Government Coordination and Commission Efforts, p. 5.

F. Emergency Communications Providers' Access to Reliable Power

The Public Notice asks what actions would ensure that emergency communications providers have access to reliable power during catastrophic events.²⁵ When a natural disaster disrupts the delivery of electricity to Public Safety Answering Points (PSAPs), these facilities must rely on back-up power in the form of local generation and/or energy storage systems to meet their power needs. We recommend that the FCC strengthen its rules regarding the availability of back-up power for Originating Service Providers and 9-1-1 Service Providers during natural disasters.

Power supply needs for PSAP communications services require thorough design and planning. Since 9-1-1 communications are considered a critical function, those elements within a PSAP should be designed and tested to operate on hardened generators as part of facility management. Appendix A provides the guidance issued by the California State 9-1-1 office and its specific examples of:

- 1) PSAP Environmental Facility Requirements,
- 2) 9-1-1 Customer Premise Equipment Warranty,
- 3) Electrical, Grounding, and UPS [uninterruptable power source].

For example, before PSAP equipment is installed, a Site Certification Document should be included in the Statement of Work. This is a document that describes the building and environmental changes which the PSAP must make to accommodate the new or updated 9-1-1 communication system. The PSAP should work closely with its 9-1-1 Customer Premise

²⁵ Public Notice, Question E(6), Government Coordination and Commission Efforts, p. 6.

Equipment vendor to ensure the PSAP's facility meets the environmental and electrical requirements.²⁶

In addition, in 2018 the CPUC developed rules “to strengthen customer notification requirements before de-energization events and ordered utilities to engage local communities in developing de-energization programs.”²⁷ Furthermore, we directed the power companies to “convene De-Energization Informational Workshops” so that the power companies may “explain, and receive feedback on, the utilities’ de-energization policies and procedures.”²⁸ These workshops will allow for better planning for power outages during disaster by affected parties.

The utility or power company is required to notify the CPUC “as soon as practicable after it decides to de-energize facilities, and to notify the CPUC within 12 hours after all electric service is restored.”²⁹ Power companies are also required to submit a report explaining the decision to shut off power, impacts on customers, and other pertinent information.³⁰ This decision is subject to our review as part of our jurisdiction over balancing the need for safety with the availability of power during disasters. We will reassess these rules as a part of our rulemaking in R.18-12-005.

²⁶ *State of California 9-1-1 Branch, Contract language within IFB 8500-2016 11/14/2016 Addendum 3, SOW, Section 1.9.2 Site Survey. See Appendix A.*

²⁷ See <http://www.cpuc.ca.gov/deenergization/>.

²⁸ ESRB-8 at p. 2.

<http://docs.cpuc.ca.gov/PublishedDocs/Published/G000/M217/K918/217918600.PDF>

²⁹ *Id.*

³⁰ *Id.*

III. CONCLUSION

The CPUC appreciates this opportunity to provide comments to the FCC on improving wireless network resiliency through encouraging coordination with power companies. We hope that the information provided helps the FCC develop proposals that will promote a more resilient infrastructure in the face of a major storm or other disastrous event and expedite restoration efforts.

Respectfully submitted,

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APPENDIX A

State of California 9-1-1 Branch, Contract language within IFB 8500-2016 11/14/2016 Addendum 3, SOW, Section 1.9.2 Site Survey

1) PSAP Site Survey for Environmental Facility Requirements

Before PSAP equipment is installed, a Site Certification Document should be included in the Statement of Work. This is a document that describes the building and environmental changes which the PSAP must make to accommodate the new or updated system.

It is the responsibility of the PSAP to work closely with their 9-1-1 CPE vendor to ensure the PSAP's facility meet the environmental and electrical requirements. The following was extracted from the CA 9-1-1 Branch, Contract language within IFB 8500-2016 11/14/2016 Addendum 3, SOW, Section 1.9.2 Site Survey:

- a) As part of the RFO for the PSAP, the Contractor shall prepare a floor plan of the Communications Operations Room showing the location of each item of equipment and detailing the current electrical power, common ground and environmental control facilities. The Contractor shall prepare a floor plan of the Equipment Room showing the location of each item of back-room equipment and detailing the current electrical power and environmental control facilities. The Contractor shall review and comment on the adequacy of the PSAP's facility, including but not limited to, the adequacy of the furniture, lighting, floor plan, environmental control, cabling, demarcation room and equipment room to support the installation of the 9-1-1 system. The PSAP shall permit free access, subject to security restrictions at the site, for the purpose of reviewing facility readiness.
- b) Specifications shall include the operating voltage required, maximum current under peak conditions (in amperes), power consumed (expressed in watts), temperature range within which the equipment is designed to operate, the humidity range within which the equipment offered is designed to operate, grounding required, the equipment heat producing pattern under normal operating conditions (expressed in British Thermal Units (BTUs) for each specific Model Cluster), and the type and number of power receptacles required. All modifications specified to prepare the facilities must be detailed in the Contractor's SOW.
- c) The Contractor shall provide a pre-installation checklist to ensure that the PSAP has met all installation obligations prior to the Contractor installing the equipment. Absence of a pre-installation checklist shall mean that the Contractor is offering equipment that has no Minimum or maximum environmental specifications.
- d) On or before the Facility Readiness Date, the PSAP shall cause the site to be prepared in accordance with the Contractor's site preparation specifications unless the Contractor has agreed to be responsible for such site preparation. The Contractor will

provide a written certification that the modifications detailed on the pre-installation checklist have been completed in accordance with the Contractor's requirements.

2) PSAP 9-1-1 CPE Equipment Warranty

It is the responsibility of the PSAP to closely work with their 9-1-1 CPE vendor to ensure the PSAP's equipment has a warranty. The following was extracted from the CA 9-1-1 Branch, Contract language within IFB 8500-2016 11/14/2016 Addendum 3, SOW, section 1.15.19 Warranty.

- a) The Contractor shall warrant the equipment and software to perform per the manufacturer's specifications for a period of one (1) year after acceptance. The Contractor shall furnish all warranty services and parts for a period of one (1) year beginning on the first day following System Acceptance at no cost to CalOES, provided that such maintenance service or parts are not required because of accident, neglect, misuse, failure of electrical power or air conditioning, humidity control or causes other than ordinary use. Any such service required as a result of erroneous site preparation specifications furnished by the Contractor or otherwise required due to the fault or negligence of the Contractor, shall be provided by the Contractor at no additional charge.
- b) All replaced parts shall be property of the Contractor. Prior to the expiration of the warranty period, whenever equipment is shipped for mechanical replacement purposes, the Contractor shall bear all costs for such shipment including, but not limited to, costs of packing, transportation, rigging, drayage and insurance.

3) PSAP 9-1-1 CPE Electrical, Grounding, and UPS

Electrical, grounding, and UPS engineering requirements are needed for the PSAP 9-1-1 CPE to handle variable power fluctuations as well as outages.

Electrical: The following examples are extracted from contract language. CA 9-1-1 Branch, Contract language within IFB 8500-2016 11/21/2016 Addendum 5, Section 6 Technical Requirements. 6.3.2.2 Electrical Requirements

- a) All 9-1-1 CPE System circuitry shall be protected against damage from electrical overloads and primary power voltage surges by fuses and/or other current limiting devices selected to assure fast and positive protective action.
- b) All power supplies associated with the system common electronics shall have redundancy and shall automatically switch to the redundant power supply when the primary power supply fails. Each power supply shall be designed to operate over an ambient temperature range of 0 – 60 degree C. All power supplies shall have output over-voltage protective circuitry that will automatically shut down in the event of an electrical overload or other negative electrical event.

Grounding: In addition, a key component to newer 9-1-1 equipment is proper electrical grounding. Below are some examples of contract language. CA 9-1-1 Branch, Contract language within IFB 8500-2016 11/21/2016 Addendum 5, Section 6 Technical Requirements. 6.3.2.2 Electrical Requirements.

- a) Bidder shall provide the minimum grounding Requirements for their equipment to the PSAP as part of the pre-installation checklist as provided in Appendix A, Statement of Work (SOW). Each IWS and each separate rack or cabinet which is a part of the 9-1-1 CPE System shall have a defined ground point. All components of call processing system shall be connected to a common ground system.
- b) Whenever applicable, the Bidder shall ensure that the common ground of the 9-1-1 CPE System is connected to any master ground system utilized by other technical systems and components within the building or at the PSAP location. This includes, but is not limited to, equipment racks, radio equipment, microwave equipment and Computer Aided Dispatch (CAD) equipment.
- c) Bidder shall test and notify the PSAP if the 9-1-1 CPE System ground is electrically equivalent to the master ground and that there is no voltage potential between the ground used by the 9-1-1 equipment and other technical equipment located at the premise, in order to install CPE.
- d) In the event the building ground does not perform in compliance with the National Electrical Code (NEC), the repair of the building ground is the responsibility of the PSAP.

UPS: Uninterruptable Power Supplies (UPS) are very important for critical equipment to stay operational to bridge the time of outage and the PSAP's generator to start and stabilize with reliable power. A key element is to calculate the load requirements of the critical equipment, in order to provide the proper VoltAmps (VA) for a specified time duration. Also, since battery life of UPS diminishes with temperature, moisture, fumes, ventilation, it is important to ensure PSAPs receive recently manufactured units (i.e. 6 months) for the installation period. Below are requirements for UPS used with California's 9-1-1 CPE Contract. CA 9-1-1 Branch, Contract language within IFB 8500-2016 11/21/2016 Addendum 5, Section 6 Technical Requirements. 6.3.2.3 Uninterrupted Power Supply (UPS).

Bidder shall provide each 9-1-1 CPE System, including each major system component (Intelligent Work Station, servers, routers) adequate power failure backup systems and power conditioning systems to ensure that failures, spikes and brownouts from any source do not damage or shutdown any components of the 9-1-1 CPE System, NENA 04-001, Section 6.

- a) The UPS is not intended to maintain power to the equipment for extended periods of time. The UPS provides power during the interval between when commercial power fails and the PSAP's own emergency power is on-line. Bidder shall provide all 9-1-1 CPE with uninterruptible power for a minimum of 15 minutes.
- b) The UPS operation testing shall be included in the Bidder's SOW, preventive maintenance plan. The UPS equipment shall be replaced whenever the preventive maintenance testing proves that the UPS is not able to provide the CPE with uninterruptible power for a minimum of 15 minutes.

- c) Since battery UPS systems degrade over time, the Bidder shall not reuse an existing UPS. The UPS (if battery based) supplied during installation shall have a manufacture date within six (6) months of the installation date.
- d) Two (2) UPSs shall be provided that are capable of maintaining the backroom Automatic Number Identification (ANI) / Automatic Location Identification (ALI) server and ancillary equipment for 15 minutes under normal load conditions, one being the backup to the other. Each UPS shall condition the power to prevent harmful power spikes and brownouts from damaging the backroom and Intelligent Work Station equipment.
- e) Bidder shall provide a UPS for each Intelligent Work Station capable of maintaining the equipment operational for 15 minutes under normal load conditions, either at each IWS or in the backroom sized appropriately for all Intelligent Work Stations.
- f) The Intelligent Work Station UPS shall condition the power to prevent harmful power spikes and brownouts from damaging the equipment. The UPS equipment shall not be provisioned in any "series" electrical arrangement (where one UPS plugs into other UPS equipment in the power chain).

By mutual written agreement and where superior technical operation can be supported, the requirement to provide individual UPS equipment support may be superseded when the PSAP facility is supported by a robust building-wide operational UPS system that fully supports the operational floor and common backroom technical equipment. Such installations shall be maintained by the PSAP and the CPE Bidder shall not be responsible for the UPS.