

# California Public Utilities Commission



## **Reliability Standards for Telecommunications Emergency Backup Power Systems and Emergency Notification Systems**

**Pursuant to Public Utilities Code 776, 2872.5 and 2892  
Respectfully Submitted  
December 2007**

**Report to the California Legislature**

**MEMORANDUM**

**Date:** November 15, 2007

**To:** The Commission

**From:** Timothy Alan Simon  
Commissioner

**Subject:** Report to the Legislature in Compliance with Assembly Bill 2393

**Summary and Recommendation**

On September 29, 2006, Assembly Bill 2393 (AB 2393, Ch. 776, Stats 2006), Levine, "Telecommunications: Emergency Service" was signed into law. It directed the Commission to investigate the need for performance reliability standards for back-up power systems installed on the property of residential and small commercial customers and telecommunications service providers. It also required the Commission to determine whether standardized notification systems and protocols should be utilized for emergency notification systems. To satisfy these requirements, on April 12, 2007, the Commission opened Rulemaking (R) 07-04-015. The Communications Division (CD) was charged with performing the investigation. CD hired a consultant, SAIC/Telcordia Technologies, Inc., to assist in the investigation. CD's investigation is ongoing.

The legislative concerns embodied in AB 2393 could not have been more timely. Adopted in part in response to concerns raised in the aftermath of Hurricane Katrina, soon after the initiation of this proceeding our nation suffered the violence at Virginia Tech. Most recently California experienced wildfires

raging over large portions of Southern California calling into question our preparedness for emergencies, both in terms of our means of emergency communications and back up capabilities for our telecommunications system. I will be holding a workshop on January 9, 2008 that will focus on the performance of the landline and wireless services during the recent firestorm. This workshop will review the ways in which cities, localities and communication carriers responded to the challenges posed by the fires as well as identifying and addressing the communication barriers to best practices for first responders during times of emergency. The goal of the workshop is to identify the next steps toward improving our ability to maintain network performance in future crises.

While all this has been occurring, the Federal Communications Commission (FCC) has itself taken steps to deal with some of these same issues, an effort we are following closely. I am proud of the fact that California has by this legislation and our efforts in implementing it again proven to be a leader.

AB 2393 requires the Commission to send a report on its investigation to the Legislature before January 1, 2008. The attached report, intended to comply with the legislation, describes progress to date and plans for completion. I recommend the Executive Director be directed to convey the attached report to the Legislature in compliance with that directive.

### **Investigative Approach**

AB 2393 directed the Commission to:

1. Consider the need for performance reliability standards for backup power systems located on the property of residential and small commercial customers.

The Commission is to develop and implement performance reliability standards if the benefits of the standards exceed the costs. (Public Utilities Code § 776);<sup>1</sup>

2. Consider, in consultation with the Office of Emergency Services (OES) and the Department of General Services (DGS), whether standardized notification systems and protocols should be utilized to facilitate notification of affected members of the public about local emergencies. (§ 2872); and

3. Consider, in consultation with the OES and the DGS, the need for performance reliability standards for back-up power systems on the telecommunications service provider's premises to enable telecommunications networks to function during an electrical outage. The Commission is to develop and implement performance reliability standards if the benefits of the standards exceed the costs. In addition, the Commission is to determine whether the FCC's National Reliability and Interoperability Committee's Best Practices (Best Practices) for back-up systems have been implemented by telecommunications service providers. (§ 2892.1). The Commission is also to investigate the feasibility of replacing diesel back-up power systems with zero greenhouse gas emission fuel cells.

In support of R. 07-04-015, CD held three technical workshops addressing the subject matter. The first workshop, held on June 5, 2007, addressed back-up power systems on residential and small commercial customers' property. The second workshop, held on June 6, 2007, addressed back-up power systems on service provider premises. The third workshop, held on June 19, 2007, addressed emergency notification systems.

Subsequently, CD issued information requests to augment the information garnered from the above workshops. The informational requests were intended

---

<sup>1</sup> All section references are to the Public Utilities Code unless otherwise indicated.

to obtain additional information in each area of investigation, and to provide the opportunity for input from entities who did not attend the workshops.

CD followed-up the informational requests with additional questions because the information received at the workshops and in responses to the initial informational requests was insufficient to perform the necessary analyses. In furtherance of its investigation, CD visited telecom service provider locations. CD is continuing its investigation and plans to perform a statistical analysis of the data received. As required by AB 2393, the Commission will conclude its investigation and issue a final report by June 30, 2008.

### **Main Issues**

The four main issues associated with AB 2393 are as follows.

#### **Issue 1: Backup Batteries Installed on the Property of Residential & Small Commercial Customer Premises**

Recent technological changes in telecommunications systems have changed the way voice service is delivered to customers. Fiber-optic cable is being rapidly deployed to homes and small businesses, replacing copper wire. Fiber-optic cable can carry far more information than traditional copper wire, providing consumers with a host of benefits, from increased Internet speeds to clearer sounding phone calls. However, unlike copper wire, fiber-optic cable does not carry its own electrical charge. Instead, it requires an independent power source. While a traditional telephone will continue to function during a blackout or power outage, a phone connected to a fiber-optic cable will not function without some means of back-up power.

To provide power during a power outage, back-up battery systems have been installed in homes and small commercial facilities when fiber-optic cable is

deployed. Currently, however, there is a lack of standards applicable to these backup batteries. Residential or small commercial customers receiving service through fiber optic cable often do not know that communications service will not function during a power outage without back-up power. Customers also may not know the availability, benefits and limitations of battery back-up power systems, or the maintenance requirements.

To help resolve these issues, CD is investigating performance reliability criteria for such battery back-up power systems, including whether the benefits of any recommended standards exceed the costs. In addition, CD is investigating the need for programs to educate consumers about these systems.

## **Issue 2: Lack of Standardization in Emergency Notification Systems**

New communications technologies enable authorities to notify the public in an emergency by a phone call or text message delivered to land-line or wireless devices, including cell phones. However, what is emerging is not a unified system. Manufacturers are developing emergency notification systems that require proprietary software and are targeted toward those living in a particular area. Without common communications standards and protocols, individual people and emergency notification systems may be unable to communicate with other systems or with the public outside the targeted area. As an example, if two adjacent counties have different and incompatible systems, and an emergency affects parts of both counties, the individual county notification systems may not be able to act cooperatively resulting in, at best, inefficient operation and, at worst, some people not being notified.

Across California, a number of communities have successfully deployed emergency notification systems, some of them being very sophisticated, while

others have only rudimentary public notification systems, such as air raid sirens. CD is investigating whether standardized notification systems and protocols should be required, whether the current state of technology will support a systemic, statewide rollout of notification systems, and whether the random activation of emergency communications systems cause network congestion sufficient to hinder emergency communications.

### **Issue 3: Level of Implementation of Best Practices by the Different Telecom Industry Segments**

The Best Practices include 52 individual practices addressing back-up power, of which 28 address generator deployment. The Best Practices were developed over many years and were based largely on the practices of large incumbent local exchange carriers who had developed redundant power systems for their central offices. For various reasons, the Best Practices have not been implemented uniformly nationwide. In its investigation, CD seeks to determine to what degree the Best Practices have been implemented by California telecommunications service providers.

### **Issue 4: Feasibility of the Use of Zero Greenhouse Gas Emission Fuel Cell Systems for Back-Up Power Systems Located in Telecommunications Service Provider Facilities**

There is a desire for back-up power systems that are designed to run on more environmentally friendly fuels or designed to run with lower emissions. Back-up power systems based on fuel cell technology are being contemplated to replace diesel generators in service provider facilities such as central offices. However, fuel-cell systems are not considered a mature technology for such uses. To evaluate the feasibility of their use, CD will evaluate their cost, the cost of built-in redundancy in the back-up system to ensure the expected high reliability for telecommunications networks, and the resulting benefits. While

committed to achieving energy efficiency and environmentally friendly emergency power, this cannot supersede public safety. Back-up power capacity literally saves lives.

### **Report Structure**

The report summarizes the steps taken to date and specifies the further actions that will be taken to complete the requirements of AB 2393. The report is structured as follows;

- Section 1 is the executive summary.
- Section 2 describes the background, scope, and purpose of the report.
- Section 3 describes the approaches and steps taken thus far to address the issues identified AB 2393.
- Section 4 outlines follow-up activities and includes a brief review of the cost/benefit analysis approach that will be pursued.
- Section 5 provides a list of acronyms used in the report.
- Section 6 includes appendices that contain the questions prepared for the workshops, the informational requests and the Best Practices.

Attachment

## Table of Contents

Issue 1: Backup Batteries Installed on the Property of Residential & Small Commercial Customer Premises.....	4
Issue 2: Lack of Standardization in Emergency Notification Systems .....	5
Issue 3: Level of Implementation of Best Practices by the Different Telecom Industry Segments.....	6
Issue 4: Feasibility of the Use of Zero Greenhouse Gas Emission Fuel Cell Systems for Back-Up Power Systems Located in Telecommunications Service Provider Facilities .....	6
1.1 Background .....	3
1.1.1 Legislation: Assembly Bill No. 2393 .....	4
1.1.2 Order Instituting Rulemaking (OIR) to Implement AB 2393.....	5
1.2 Scope .....	6
1.2.1 Issue 1: Backup Batteries Installed on the Property of Residential & Small Commercial Customer Premises.....	6
1.2.2 Issue 2: Lack of Standardization in Emergency Notification Systems .....	7
1.2.3 Issue 3: Level of Implementation of the NRIC Backup Power Best Practices by the Different Telecom Industry Segments.....	8
1.2.4 Issue 4: Feasibility of the Use of Zero Greenhouse Gas Emission Fuel Cell Systems .....	8
1.3 Initial Requests .....	9
1.4 Technical Workshops.....	9
1.4.1 June 5, 2007 Technical Workshop .....	10
1.4.1.1 Questions Prior to the June 5 <sup>th</sup> Technical Workshop.....	10
1.4.1.2 June 5 <sup>th</sup> Technical Workshop Participants .....	11
1.4.2 June 6, 2007 Technical Workshop .....	12
1.4.2.1 Questions Prior to the June 6 <sup>th</sup> Technical Workshop.....	13
1.4.2.2 June 6 <sup>th</sup> Technical Workshop Participants .....	13
1.4.3 June 19, 2007 Technical Workshop .....	15
1.4.3.1 Questions Prior to the June 19 <sup>th</sup> Technical Workshop.....	15
1.4.3.2 June 19 <sup>th</sup> Technical Workshop Participants .....	16
1.5 Information Requests.....	17
1.5.1 Information Request 1 .....	18
1.5.2 Information Request 2 .....	19
1.5.3 Information Request 3 .....	20
1.6 Questionnaire.....	21
1.6.1 Questionnaire Description .....	21
1.6.2 Data Collection Process .....	22
1.7 Site Visits.....	23
1.7.1 Typical Agenda of the Site Visit at a Telecom Service Provider .....	23
1.7.2 Highlights from the Central Office / Headend Site Visits.....	24
1.7.3 List of Companies Where the Site Visits Took Place.....	24
1.8 Recent Federal Communications Commission (FCC) Actions Relevant to AB 2393 .....	25

1.8.1	FCC Review of Backup Power .....	25
1.8.1.1	Summary of FCC Activities Related to Backup Power .....	25
1.8.1.2	Latest FCC Rules on Backup Power (FCC 07-177) .....	28
1.8.2	FCC Review of the Emergency Alert System.....	30
1.8.3	FCC Summit on Network Surge Management .....	31
1.8.4	Commercial Mobile Service Alert Advisory Committee (CSMAAC).....	32
1.8.4.1	Background information on the WARN Act.....	32
1.8.4.2	Background information on the CSMAAC .....	33
1.9	Findings and Analysis of Information .....	34
1.9.1	Pre-workshop Questions & Workshop Presentations.....	34
1.9.2	Information Request Responses.....	34
1.9.3	Information Gathered During Site Visits.....	34
1.9.4	Questionnaire Responses.....	35
1.10	Approach to Cost-Benefit Analysis .....	35
	APPENDIX A: ORDER INSTITUTING RULEMAKING TO IMPLEMENT AB 2393.....	37
	APPENDIX B: WORKSHOPS – SCOPE, AGENDA, TIMELINE.....	48
	APPENDIX C: LIST OF INFORMATIONAL REQUESTS .....	59
	APPENDIX D: CPUC QUESTIONNAIRE .....	77
	APPENDIX E: FCC 07-177, ORDER ON RECONSIDERATION.....	99
	APPENDIX F: FCC COMMUNICATIONS SECURITY, RELIABILITY & INTEROPERABILITY COUNCIL (CSRIC).....	136
	APPENDIX G: FCC'S CMAAC REPORT .....	138
	APPENDIX H: WILD FIRES IN SOUTH CALIFORNIA AND BAY AREA EARTHQUAKE .....	139
	<b>AT&amp;T Press Release: “AT&amp;T Wireless Network Continues to Perform at Near-Normal Levels” .....</b>	<b>139</b>
	<b>TRINSIGHT “Networks largely unaffected by wildfires, carriers report” .....</b>	<b>141</b>
	<b>SJ Mercury News “Critics say cell phone system isn’t ready for next big earthquake” .....</b>	<b>142</b>
	<b>SF Chronicle: “Quake calls jammed cell phone networks” (10/30/07) .....</b>	<b>144</b>

On September 29, 2006, Governor Schwarzenegger approved California Assembly Bill No. 2393 (AB 2393 (Ch. 776, Stats 2006), Levine “Telecommunications: Emergency Service”), with provisions directing the California Public Utilities Commission (Commission or CPUC) to:

1. Consider the need for performance reliability standards, and to develop and implement performance reliability standards, for backup power systems installed on the property of residential and small commercial customers by a facilities-based provider of telephony services, upon determining that the benefits of the standards exceed the costs (Pub. Util. C. § 776)
2. Open an investigation, in consultation with the Office of Emergency Services (OES) and the Department of General Services (DGS), to determine whether standardized notification systems and protocol should be utilized by the above-described entities to facilitate notification of affected members of the public of local emergencies (Pub. Util. C. § 2872.5), and
3. Open an investigative or other appropriate proceeding, in consultation with the OES and the DGS, to identify the need for telecommunications service systems not on the customer’s premises to have backup electricity to enable telecommunications networks to function and to enable the customer to contact a public safety answering point operator during an electrical outage, to determine performance criteria for backup systems, and to determine whether certain recommendations for backup systems have been implemented by telecommunications service providers operating in California (Pub. Util. C. § 2892.1) and with
4. Appropriate \$596,719 for costs incurred by the commission in the implementation of this bill.

Pursuant to AB 2393 (Ch. 776, Stats. 2006), in April of 2007, the Commission opened an Order Instituting Rulemaking (OIR) (R. 07-04-015 ) to investigate current practices for telecommunications backup power systems and emergency notification systems. In this investigation, the Commission established processes and procedures to develop a record on these issues, which will enable it to make determinations as laid out in the statute.

In support of R. 07-04-015, the CPUC Communications Division (CD) staff has:

1. Pursued a search in the areas of power backup systems, battery suppliers, and emergency notification systems to identify knowledgeable individuals and organizations with the ability to provide information to the CPUC related to AB 2393. These individuals and organizations were invited to participate in related meetings and provide input to the proceedings
2. Engaged the contractor collaboration of SAIC/Telcordia to assist CD accomplish the AB 2393 requirements.
3. Organized three (3) technical workshops for Subject Matter Experts (SMEs), as directed by R. 07-04-015, on:
  - Backup power systems on residential and small commercial customer properties (held on June 5, 2007)
  - Backup power systems not installed on customer premises (held on June 6, 2007)
  - Emergency notification systems (held on June 19, 2007).

4. Issued three (3) information requests to augment the information and data garnered from the above workshops. Specifically, these informational requests were intended to:
  - Provide parties and those who were interested in this proceeding an additional opportunity to comment on issues discussed at the above workshops
  - Inform the Commission in its:
    - Consideration of the development of performance reliability standards for backup power systems
    - Analysis of the costs and benefits and technical feasibility of developing and implementing performance reliability criteria for backup power systems
    - Review of current standards and protocols regarding emergency notification systems and proposals for improving such systems.
5. Issued follow-up questions to information requests because the data received from the industry during the June 5<sup>th</sup> and 6<sup>th</sup> technical workshops and responses to Information Requests 1 and 2 was insufficient to perform analysis and draw conclusions regarding the implementation of the “NRIC<sup>2</sup> Power-Related Best Practices” in California.
6. Arranged site visits to telecom service provider locations to validate the best practices that the providers asserted to have implemented in their networks.

Due to the need to incorporate a discussion of the WARN Act’s<sup>3</sup> Advisory Committee’s report of proposed standards and protocols to the Federal Communications Commission (FCC), which was released on October 15, 2007, CD is still working on its analysis of the sufficiency of current performance reliability standards, emergency notification system standards, and the related cost/benefits for both. The WARN Act is relevant to the part of the proceeding implementing Public Utilities Code § 2872.5, relating to standardized notification systems and protocols for public notification of local emergencies.

Federal rules adopted on these subjects will have a direct impact on telecommunications services providers that operate nationally and in California. Consequently, it would be premature to issue a report without taking into full consideration the federal rules that will be adopted later this year. Federal rules will also impact the CD’s cost/benefit analysis and the outcome of potential state rules, because service providers operating in California will have to absorb the costs of any such new federal rules, which in turn would impact CD’s cost/benefit analysis of additional state rules. Also, there is a need to define a “reference case” (i.e., “a standardized approach”) in order to determine the incremental impacts and associated costs by adopting different technologies for Emergency Notification Systems. Accordingly, the analysis being undertaken by the CD pursuant to AB 2393 is not yet complete.

In a subsequent analysis, the CD will:

---

<sup>2</sup> Network Reliability & Interoperability Council

<sup>3</sup> The Warning, Alert and Response Network Act (WARN Act), which was enacted on October 13, 2006, is aimed at integrating emergency alerts and enabling the participation of wireless providers in the Emergency Alert System (EAS). <http://www.fcc.gov/pshs/cmsaac/docs/pdf/WARNactextract.pdf>

- Perform a statistical analysis of the data for the implementation of the NRIC Power-related Best Practices provided by the telephone carriers. The goal is to develop a generic view of the level of implementation, effectiveness, and cost for power backup related best practices. This analysis will be performed for the different industry segments: large carriers, small carriers, wireless, and Cable TV.
- Develop consumer-oriented information for *Calphoneinfo.com*. The CD will develop a comprehensive set of consumer-oriented information to be posted on the “California’s Consumer Education Information” web site (<http://www.calphoneinfo.com/>) regarding the battery backup systems at residential and small commercial customer premises. The information will include choices the consumers can make about technologies providing telephone service during emergencies, backup power equipment in their homes, service provider vs. customer responsibilities for maintaining backup power at customer premises, and related consumer issues.
- Validate backup power best practices via site visits. The CD will continue to validate implementation of best practices by service providers via site visits to their locations.
- Complete the overall analysis and provide technical details for CPUC Commissioners to:
  - develop a view on the sufficiency of current backup power related standards/requirements implemented in the networks
  - determine the need for standards and protocols for notification systems.
- Review and analyze WARN-related documents and briefings published by FCC to integrate information into CPUC considerations for technical analysis, cost/benefit analysis, and final recommendations.
- Investigate recent California wild fires and earthquake for AB 2393 associated issues. (NOTE: While this report was in editorial review, California experienced large scale wild fires in the greater Los Angeles and San Diego areas, and a 5.6 Richter scale earthquake in the San Francisco Bay Area on October 30, 2007 at 8:00 pm). CD recognizes the importance of these events as scenarios that can provide key learning on issues under investigation as part of AB 2393. Towards this end, CD will undertake investigations for both these events involving the telecommunications service providers and notification service providers over the next few months. A discussion of the observations will be included in the 2008 follow-up analysis.

AB 2393 mandated a report to the legislature by January 2008 with regard to each of the three designated study topics. This is the report.

Our subsequent report, due to the Commission in early 2008, will contain our findings and analysis of the record compiled during the investigation of issues related to AB 2393.

## 1.1 Background

A central battery system was deployed by telecommunications providers in the 1920s to improve network operations, performance and reliability. As a result, batteries and generators located in the telecommunications service provider’s Central Office (CO) were able to power both the central office and the customer’s telephone in the event of a power outage assuming the telephone system is otherwise intact. The same continues to be true today for customers receiving land-line telephone service from a facilities-based provider of telephony services (telephony provider) through copper wires. However,

newer communications transmission technologies, including fiber optic and coaxial cable, require distributed backup power systems, both in the network and at the customer's premise, in order to have this capability.

To discuss these issues, an informational hearing was held by the California Assembly Utilities and Commerce Committee in Los Angeles on October 28, 2005. During the hearing, an extensive dialogue took place among the Committee and representatives of the telephone industry, state agencies, and local governments. Among the participants were SureWest, AT&T (formerly SBC), Verizon, the CPUC, and officials with various cities and counties. The hearing, which was convened to discuss the readiness of the telephone systems in California, highlighted a number of deficiencies in the current system pertaining to the adequacy of backup power in the emerging networks.

Assembly Bill No. 2393 is the result of that hearing.

### **1.1.1 Legislation: Assembly Bill No. 2393**

AB 2393 added §§ 776, 2872.5, and 2892.1 to the Public Utilities Code, added three study areas, and provided related funding. In particular, AB 2393 requires CPUC to:

1. **[Public Utilities Code § 776]:** Consider the need for performance reliability standards, and to develop and implement performance reliability standards, for backup power systems installed on the property of residential and small commercial customers by a facilities-based provider of telephony services, upon determining that the benefits of the standards exceed the costs. Those standards shall do all the following:
  - a. Establish minimum operating life.
  - b. Establish minimum periods of time during which a telephone system with a charged backup power system will provide the customer with sufficient electricity for emergency usage.
  - c. Establish means to warn a customer when the backup power system's charge is low or when the system can no longer hold a charge.
2. **[Public Utilities Code § 2872.5]:** Open an investigation, in consultation with the Office of Emergency Services and the Department of General Services, to determine whether standardized notification systems and protocol should be utilized by the above-described entities to facilitate notification of affected members of the public of local emergencies. The bill prohibits CPUC from establishing standards for notification systems or standard notification protocol unless it determines the benefits of the standards exceed the cost.
3. **[Public Utilities Code § 2892.1]:** Open an investigative or other appropriate proceeding, in consultation with the Office of Emergency Services and the Department of General Services, to identify the need for telecommunications service systems not on the customer's premises to have backup electricity to enable telecommunications networks to function and to enable the customer to contact a public safety answering point operator during an electrical outage, to determine performance criteria for backup systems, and to determine whether certain recommendations for backup systems have been implemented by telecommunications service providers operating in California. The bill requires the commission to develop and implement performance reliability standards if it determines doing so is in the public interest and determines that the benefits of the standards exceed the costs. The bill requires the commission to determine the feasibility of the use of zero greenhouse gas emission fuel cell systems to replace diesel backup power systems.

### 1.1.2 Order Instituting Rulemaking (OIR) to Implement AB 2393

On April 12, 2007, CPUC opened R. 07-04-015 (see Appendix A) addressing standards for telecommunications backup power systems and emergency notification systems pursuant to AB 2393.

The OIR identified procedural steps to implement §§ 776, 2872.5, and 2892.1 of the Public Utilities Code. Excerpts of those plans and procedures are set forth below.

To this end, CD was directed to convene technical workshops of subject matter experts (SMEs) in each of the three (3) areas to inform the Commission on this matter. The purpose of the technical workshops was to develop a record on the three areas mentioned in R. 07-04-015.

The workshops were followed by Information Requests seeking more detailed information and data related to the above mentioned three areas. The Information Requests also directed parties to support their recommendations with cost/benefit analyses. The OIR stated that:

“while the bill concerns itself with only backup power, a cost/benefit analysis should be viewed holistically. For example, there is no customer benefit if power is maintained/restored but the lines are flooded under water”.

The Information Requests were sent to all facilities-based telephony service providers, users of emergency notification systems (such as law enforcement agencies, fire protection agencies, public health agencies, public environmental health agencies, city or county emergency services planning agencies), and other interested parties. Upon receipt of the responses to the Information Requests, the OIR directed CD to compile the information into a report that:

1. Identifies the concerns and issues that the Commission must address, including current best practices and the technical feasibility of establishing battery backup requirements;
2. Identifies recommendations presented by the parties and their level of support;
3. Identifies a recommended course of action, as well as any other viable options;
4. Discusses the costs and benefits of implementing the recommended course of action;
5. Proposes a definition of small businesses for the purpose of this investigation; and
6. Identifies any concerns or issues that remain to be addressed.

The OIR also provided that a draft report (i.e., the draft report with the subsequent analysis) would be sent to the parties for comment. Upon receipt of the comments, CD, in consultation with the assigned Commissioner, will prepare a revised draft report, which would be provided to the parties for comment.<sup>4</sup> A proposed decision, which adopts a final report, would then be prepared.

---

<sup>4</sup> For any or all of these three workshop topics, the OIR permits the CD to evaluate a range of possible recommendations with varying costs and benefits. Option A, for example, may have some benefits but relatively high costs. Option B may be the opposite with several other options falling in between. All possible

## 1.2 Scope

The scope of this report is to describe the major issues raised by AB 2393, the processes and procedures followed by the CD to investigate these issues and the related federal public safety rulings, and the status today.

Major issues raised by AB 2393 are:

### 1.2.1 Issue 1: Backup Batteries Installed on the Property of Residential & Small Commercial Customer Premises

This issue is related to the Public Utilities Code § 776.

In adopting AB 2393, the Legislature Assembly was concerned if consumers had sufficient backup power during power outages for making and receiving emergency communications. Their concern stems from the fact that recent technological changes in telecommunications systems have changed the way voice service is delivered to customers. Fiber-optic cable is being rapidly deployed to homes and small businesses, replacing copper wire. The benefit of fiber-optic cable is that it can carry far more information than traditional copper wire, providing consumers with a host of benefits, from increased Internet speeds to clearer sounding phone calls. However, the deployment of fiber optics does present a power challenge. Unlike copper wire, fiber-optic cable does not carry its own electrical charge. Instead, it requires an independent power source. While a traditional telephone will continue to function during a blackout or power outage due to power received from the central office, a phone connected to a fiber-optic cable will not function without some means of back-up power. For example, if an earthquake or other physical disaster knocked out power, it would disable a new fiber optic phone system.

In an effort to provide continuity for phone service during a power outage, backup battery systems have been installed in homes and small offices when fiber-optic cable is deployed. Currently, however, there is a lack of standards to regulate these backup batteries. A residential or small commercial customer often does not know:

- Why the backup battery was installed
- How long the phones can operate under backup power
- Power outages, without back up power may hinder his/her ability to have available communications to reach E-9-1-1
- What the maintenance requirements are for such backup power systems
- Potential risks from such backup power systems
- Where to find information to Frequently Asked Questions (FAQs) regarding these backup batteries.

To help resolve these issues, the challenge is to determine:

---

recommendations may be feasible, and CD will specify its recommended options in accordance with the requirements of §§ 776, 2872.5 and 2892.1.

- Appropriate performance reliability criteria for backup power systems installed on the property of residential and small commercial customer by a telephone service provider
- Whether benefits of any recommended power back-up power criteria/standards exceed the costs
- What programs are needed to educate consumers; for example:
  - A face-to-face interaction between the installer of the backup power systems and the consumer
  - Left-behind brochures
  - Bill inserts
  - Tailored information for consumers with special needs (e.g., deaf, disabled, visually impaired, medical condition requiring medical devices which require power) regarding options available to extend the life of the battery in their homes
  - Generic consumer-oriented information that could be posted on “California’s Consumer Education Information” web site (<http://www.calphoneinfo.com/>) regarding the battery back-up systems at residential and small commercial customer premises (e.g., choices the consumers can make about technologies providing telephone service during emergencies, back-up power equipment in their homes, service provider vs. customer responsibilities for maintaining back-up power at customer premises, etc.).

### **1.2.2 Issue 2: Lack of Standardization in Emergency Notification Systems**

This issue is related to the Public Utilities Code § 2872.5.

New communications technologies enable authorities to notify the public in an emergency by a phone call or text message delivered to land-line or wireless devices, including cell phones and text pagers. What is emerging is not, however, a unified system.

Without common communication protocols, manufacturers are developing emergency notification systems that require proprietary software. Each system remains targeted toward those living in a particular area, resulting in an archipelago of “islands,” with people unable to communicate with those who may be across county or municipal boundaries. Consequently, an escape route recommended by one county may lead those fleeing onto a road that is impassable in the next county.<sup>5</sup>

Across California, a number of communities have successfully deployed emergency notification systems, some of them being very sophisticated, while others have only rudimentary public notification systems, such as air raid sirens.

To help resolve these disparities, the challenge is to determine:

- Whether standardized notification systems and protocols should be used by entities that are authorized to use automatic dialing devices to facilitate notification of affected members of the public in the event of local emergencies

---

<sup>5</sup> Timothy Alan Simon, “Coordination is Vital for Warning Systems,” The Sacramento Bee, August 12, 2007.

- Whether the current state of technology will support a systemic, statewide rollout of notification systems or whether communities should continue their deployment of point solutions
- Whether the random activation of emergency communications systems cause network congestion sufficient to hinder emergency communications.

### **1.2.3 Issue 3: Level of Implementation of the NRIC Backup Power Best Practices by the Different Telecom Industry Segments**

This issue is related to the Public Utilities Code § 2892.1.

Today, the FCC's National Reliability and Interoperability Council (NRIC) has 700+ Best Practices on its website. Fifty-two address issues of backup power and twenty-eight address generator deployment. These best practices were developed over many years and were based largely on the practices of large incumbent local exchange carriers who had developed redundant power systems for their central offices. For various reasons, these best practices have not been implemented uniformly nationwide.

In its investigation, the CD sought to determine:

- Whether the Best Practices recommended by NRIC for backup systems have been implemented by telecommunications service providers operating in California, and
- To what degree they have been implemented.

### **1.2.4 Issue 4: Feasibility of the Use of Zero Greenhouse Gas Emission Fuel Cell Systems**

This issue is related to the Public Utilities Code § 2892.1.

There is a need for backup power systems that are designed to run on more environmentally friendly fuels or designed to run with lower emissions. Backup power systems based on fuel cell technology are being contemplated to replace diesel generators. However, given that fuel-cell systems are not considered mature technology (at least for telecom users), there may be additional considerations to factor in, such as:

- Technology in early stages of maturity tends to correspond to higher costs – as deployment volumes increase, costs decrease
- Cost of built-in redundancy in back-up systems to help maintain and ensure the expected high reliability for telecommunications networks
- Benefits and savings of possible back-feeding power into the grid from fuel-cell system when it is not required to power telecommunications services.

Thus, the challenge is to assess of the feasibility of zero greenhouse gas emission fuel cell systems to replace diesel generators for backup power systems in the Central Office, the outside plant, and the customer premises.

Pursuant to AB 2393 the Commission initiated the OIR to investigate current practices for telecommunications back-up power systems and emergency notification systems. To this end, CD undertook a series of actions to solicit input from the interested parties. In particular, it:

1. Pursued an extensive search to obtain the names of companies and their key contact people knowledgeable about the power backup systems, battery suppliers, and emergency notification systems to inform them and solicit information from these SMEs for the purpose of the investigation
2. Organized three (3) technical workshops of SMEs, as directed by R. 07-04-015, on:
  - Backup power systems on residential and small commercial customer properties (held on June 5, 2007)
  - Backup power systems not installed on customer premises (held on June 6, 2007)
  - Emergency notification systems (held on June 19, 2007)
3. Issued three (3) Information Requests to augment the information garnered from the above workshops and provided an additional opportunity to comment on the major issues under OIR 07-04-015.
4. Issued a questionnaire (in a spreadsheet form) to supplement information received from the industry during the June 5<sup>th</sup> and 6<sup>th</sup> Workshops and the responses to Information Requests 1 and 2. This step was necessary because the record was insufficient to enable the CD to do a meaningful analysis and draw conclusions regarding the implementation of the “NRIC Power-Related Best Practices” in California.
5. Arranged a number of site visits at telecom service provider services and customer premises to have a first hand look at the backup power systems and equipment deployed.
6. Followed (and continues to follow) FCC proceeding for Notification Systems.

The next sections contained more detailed information about the above four (4) activities.

### 1.3 Initial Requests

CD prepared pre-workshop questions for participants in order to obtain the most thorough and accurate data at the workshops. (See details in Section 3.3.1.2, 3.3.2.2, and 3.3.3.2 below).

### 1.4 Technical Workshops

In a letter sent on May 21, 2007 (see Appendix B), CD laid out the scope, schedule, and procedure for conducting three technical workshops of SMEs envisioned by the OIR. These technical workshops were held in the Commission’s Auditorium, at 505 Van Ness Avenue, in San Francisco, as follows:

- 9 am to 3:30 pm – June 5, 2007  
Back-up Power Installed on the Property of Residential and Small Commercial Customers
- 10 am to 4:30 pm – June 6, 2007  
Back-up Power Systems Not Installed on the Customer’s Premises

- 10 am to 4:30 pm – June 19, 2007  
Emergency Notification Systems.

The workshops were available via video Webcast (<http://www.californiaadmin.com/cgi-bin/cpuc.cgi>) and via telephone. Also, the workshops were transcribed and transcriptions were made available to interested parties.

#### **1.4.1 June 5, 2007 Technical Workshop**

The June 5, 2007 technical workshop, “*Back-up Power Systems Installed on the Property of Residential and Small Commercial Customers*”, focused on the need for performance reliability standards for back-up power systems installed on the property of residential and small commercial customers. Consideration of any standards will address the following factors: minimum operating life, minimum time period in which a telephone system with a charged back-up power system will provide the customer with sufficient electricity for emergency usage, and a means to warn the customer when the back-up system’s charge is low or when the system can no longer hold a charge.

The workshop was designed to achieve a broad overview of:

- How back-up power currently is provided to residential and small commercial customers
- Concerns and issues related to back-up power systems on the property of residential and small commercial customers
- Definition(s) of “small commercial customer” for the purpose of this investigation.

##### **1.4.1.1 Questions Prior to the June 5<sup>th</sup> Technical Workshop**

Pre-workshop questions were prepared and distributed to the following participants:

- (i) Service providers of “voice” communications that require back-up battery at the customer service
- (ii) Manufacturers/suppliers of back-up batteries and associated units at the customer premise
- (iii) User groups (and their advocates) of “voice” communications that require back-up battery at the customer premise.

Examples of key questions about “back-up battery and associated equipment at the customer premise” include:

- Who is responsible for procuring/replacing the back-up power system (the service provider, customer, etc.)?
- What is the minimum operating life of the back-up battery?
- What is the minimum time period for which a telephone system with a charged back-up power system can provide the customer with sufficient electricity for emergency usage (stand by time, actual call time, etc.)?
- How long does it take to recharge a fully discharged battery after utility power is restored?
- What is the means of providing alarms (e.g., indicator lights, audible signals, vibration signal from pager, etc.) to the customer on the status of the back-up power unit?
- Are there special alarming considerations for the population with disabilities?

- Are components with shorter lifetimes (e.g., batteries) readily available from local retail stores or do they require special purchase from qualified suppliers?
- Can the battery withstand environment stress, such as water damage, fire, mild/modest earthquakes, etc.
- Do you have monitoring and alarming systems for those back-up power systems so that you can determine if they are fully charged or working properly? If so, please describe them.
- How many centers across the state are you using to monitor the back-up power systems?
- Do you currently (or are you planning to) charge customers for monitoring and alarming services associated with back-up power system?
- Have you done or are you aware of any cost/benefit analysis related to the issue of back-up power systems at the residential and small commercial customer premises?
- What are the different battery types that are currently available for use at customer locations?

*(Appendix A contains a complete set of the pre-workshop questions.)*

#### **1.4.1.2 June 5<sup>th</sup> Technical Workshop Participants**

The following companies (in an alphabetical order) responded to the pre-workshop questions:

- AT&T
- California Cable & Telecommunications Association
- Comcast
- U.S. TelePacific Companies
- Cox California Telecom, LCC
- Frontier
- Pac-West Telecomm, Inc.
- Qwest Communications
- SureWest
- Time Warner Cable Information Services
- Verizon California Inc.
- Verizon Wireless.

The following companies (in an alphabetical order) made presentations at the June 5<sup>th</sup> technical workshop:

- AT&T
- Cable Labs
- Cox California Telecom, LCC
- SureWest
- Verizon.

The following companies participated at the June 5<sup>th</sup> technical workshop:

- AT&T
- Cable Labs
- California Cable & Telecommunications Association
- Comcast
- U.S. TelePacific Companies
- Cox California Telecom, LCC
- Frontier
- Loens
- Kerman Telephone
- SureWest
- Time Warner Cable Information Services
- US Cellular
- Verizon California, Inc.
- Volcano Communications.

#### **1.4.2 June 6, 2007 Technical Workshop**

The June 6, 2007 technical workshop, “*Back-up Power not installed on the Customer’s Premises*”, focused on whether there is a need for the CPUC to develop and implement performance reliability criteria for back-up power systems that are not installed on customers’ premises.

Traditional telecommunications service providers generally install back-up power on their property so their networks can operate in an electrical or power outage.<sup>6</sup> In addition to ensuring network reliability and operational efficiencies, minimizing communications service disruptions is widely beneficial for public safety and economic sustainability. These back-up systems are often batteries supplemented by diesel-powered electric generators that recharge the batteries,

The CPUC has also been asked to determine the feasibility of replacing diesel generators with zero greenhouse gas emission fuel cell systems.

The purpose of this workshop was to develop a broad overview of:

- How back-up power not installed on customers’ premises currently is provided
- Concerns and issues related to back-up power systems that are not installed on customers’ premises

---

<sup>6</sup> Within the AB 2393 legislation, “telecommunications service” means voice communication provided by a telephone corporation as defined in Public Utilities Code §234, voice communications provided by a provider of satellite telephone services, voice communications provided by a provider of mobile telephony service as defined in Public Utilities Code 2890.2, and voice communications provided by a facilities-based provider of voice communications utilizing Voice over Internet Protocol (VoIP) or any successor protocol.

- The feasibility of replacing diesel generators with zero greenhouse gas emission fuel-cell systems.

#### 1.4.2.1 Questions Prior to the June 6<sup>th</sup> Technical Workshop

Pre workshop questions were prepared and distributed to the following participants:

- (i) ILECS/CLECs
- (ii) Cable TV companies providing telecommunications service
- (iii) Manufacturers/suppliers of back-up power equipment

Key questions for “back-up power systems not installed on the customer premise” included:

- What underlying technology (e.g., copper wires, fiber-optic cable, coaxial cable, wireless, satellite, etc.) is currently used? Are you planning to introduce any new technologies in the next five years?
- Currently, do you have best practices/requirements/specifications for back-up power systems on your network? Please identify where in your network the back-up power systems are located, such as Central Office, Digital Loop Carrier systems, Remote Switches/Digital Terminals, Cable Headends, etc.
- Have you implemented your best practices/requirements/specifications consistently across the State of California? As an example does every Central Office or Headend installation have back up power or have you done a “per site” analysis to determine what needs to be implemented?
- To what extent have you implemented the best practices recommended by the FCC-sponsored Network Reliability and Interoperability Council (NRIC) published in December 2005?
- What type of energy storage technologies are you currently using for back-up power systems not installed at the customer’s premises? (e.g., Nickel Cadmium [NiCad], Lithium Metal Polymer [LMP] valve regulated lead acid [VRLA], etc.)
- What type of energy generation technologies are you currently using for back-up power systems not installed at the customer’s premises? (e.g., diesel generator, propane generator, fuel cells, solar, wind, etc.)
- What future technologies do you envision for the back-up power systems (either energy storage and energy generation) not installed at customer’s premises?
- Have you done (or are you aware of) any assessment regarding the feasibility of using zero greenhouse gas emission fuel cell systems to replace diesel generators for back-up power systems not installed on customer’s premises? Do you have any cost/benefit analysis related to that issue? If yes, please, share such a study (or aspects of the study)?
- What are the emerging battery technologies that will potentially be available commercially (at retail locations) in the next five years?

(See Appendix B for a complete list of the pre-workshop questions for this issue.)

#### 1.4.2.2 June 6<sup>th</sup> Technical Workshop Participants

The following companies (in an alphabetical order) responded to the pre-workshop questions:

- AT&T
- CA-CLEC LCC
- California Cable & Telecommunications Association
- Comcast
- U.S. TelePacific Companies
- Cox California Telecom, LCC
- Frontier
- Pac-West Telecomm, Inc.
- Qwest Communications
- SureWest
- Sprint
- T-Mobile
- Verizon California, Inc.
- Verizon Wireless.

The following companies made presentations at the June 6<sup>th</sup> technical workshop:

- AT&T / AT&T Mobility
- Verizon California, Inc.

The following companies participated at the June 6<sup>th</sup> technical workshop:

- AT&T / AT&T Mobility
- Cable Labs
- Comcast
- U.S. TelePacific Companies
- Cox California Telecom, LCC
- Kerman Telephone
- Loens
- Sprint
- SureWest
- Time Warner Cable Information Services
- T-Mobile
- Verizon California, Inc.
- Verizon Wireless
- Volcano Telephone.

### 1.4.3 June 19, 2007 Technical Workshop

The June 19, 2007 technical workshop, “*Emergency Notification Systems*” focused on automatic notification devices used in emergency notification systems by law enforcement agencies, fire protection agencies, public health agencies, public environmental health agencies, city or county emergency services planning agencies, and private for-profit agencies operating under contract with, and at the direction of, one or more of these agencies. These automatic devices store designated phone numbers and disseminate a prerecorded voice and text message to those designated phone numbers in the event of an emergency.

In consultation with OES and DGS, the Commission will (i) determine the standards and protocols currently in use by those entities that operate such systems and (ii) obtain and consider the operating entities’ and other interested parties’ recommendations for improving emergency notification systems, which shall include an assessment of the costs and benefits of requiring standards and protocols for these systems.

The purpose of this technical workshop was to receive a broad overview of:

- Concerns and issues related to emergency notification systems, including funding and statutory modifications needed to facilitate such notification.

#### 1.4.3.1 Questions Prior to the June 19<sup>th</sup> Technical Workshop

Pre-workshop questions were prepared and distributed along with the workshop agenda. Specific questions covered the following topics:

- (i) Standards
- (ii) Technology
- (iii) Emergency Notification System User Perspective
- (iv) Cost/Benefit Analysis.

Key questions for telephone service providers included:

- If the Common Alerting Protocol (CAP) is adopted, will your company create a gateway for notification systems to connect to the Public Switched Telephone Network (PSTN) and its Internet services?
- Is there a need for a common gateway at the PSTN, Internet, and wireless level, on some type of geographic basis, at which local notifications systems can interconnect, either to receive emergency alerts or send emergency alerts? Why or why not?
- Please expand on your interactions with local agencies and notification systems vendors, what has worked, and what hasn’t, regarding their implementation, operation, and relevant (real) examples of any incidents in which your network was drastically affected by call volume.
- What do you, as a local service provider, recommend to automatic dialing notification system vendors regarding how to efficiently work with you? Do you have a single point of contact that such notification system vendors can call prior to testing their service?
- Have you, as a local service provider providing service to a variety of local agencies with notifications systems, established any type of FAQs or best practices defining how either the local agency or notification system user can work with you? If yes, please provide these to the Commission.

- What approach would you suggest for the facilitation, coordination and cooperation between the notification system users and service providers?
  - Would you recommend the use of some type of forum at which emergency notification system users and telecommunication service providers operating in the State of California could exchange information and point of contact information for testing purposes? Is there an existing forum or industry body that could facilitate such interaction? (Some representative forums may include the Association of Public-Safety Communications Officials, COMCARE<sup>7</sup>, telecommunications standards organizations, business continuity or disaster recovery organizations).
- If the FCC's Commercial Mobile Service Alert Advisory Committee (CMSAAC), which is specifically charged with the task of developing (and recommending to the FCC) technical standards and protocols for the voluntary transmission of emergency alerts by CMS providers, finishes its task, what's next? If you are a mobile phone company, do you expect that your company will offer some type of gateway service based on the adopted protocols?

#### **1.4.3.2 June 19<sup>th</sup> Technical Workshop Participants**

The following companies (in an alphabetical order) responded to the pre-workshop questions:

- AT&T
- Comcast
- U.S. TelePacific Companies
- Cricket
- Disability Rights Advocate
- Pac-West Telecomm, Inc.
- Small LECs
- Sprint
- SureWest
- T-Mobile
- Verizon California, Inc.
- Verizon Wireless.

The following companies presented at the June 19<sup>th</sup> technical workshop:

- Comcast
- Cricket
- Disability Rights Advocate
- NTI

---

<sup>7</sup> <http://www.comcare.org/>

- T-Mobile
- Verizon California, Inc.

The following companies participated at the June 19<sup>th</sup> technical workshop:

- 3n
- AT&T
- Comcast
- U.S. TelePacific Companies
- Cricket
- Disability Rights Advocate
- Frontier
- Loens
- NTI
- Sprint
- T-Mobile
- Verizon California, Inc
- Volcano Telephone.

## 1.5 Information Requests

To augment the information garnered from the technical workshops, CD issued three (3) Information Requests on June 29, 2007 (see Appendix C). The Information Requests were intended to provide an additional opportunity to comment on the three major issues under review: (i) back-up power systems on residential and small commercial customer properties, (ii) back-up power systems not installed on the customer's premises, and (iii) Emergency Notification Systems. While response to these informational requests was voluntary, CD encouraged parties to respond as fully as possible in order to facilitate the Commission in its consideration of:

- Whether to develop performance reliability standards for back-up power systems
- The standards and protocols currently in use by those entities that operate Emergency Notification Systems
- The operating entities' and other interested parties' recommendations for improving emergency notification systems.

The CD implemented procedures for handling responders' proprietary information, pursuant to Public Utilities Code Section 583 and General Order 66-C available at:

[www.cpuc.ca.gov/published/Graphics/644.pdf](http://www.cpuc.ca.gov/published/Graphics/644.pdf) .

The Information Requests were distributed electronically to telecommunications service providers and other interesting parties in CD's "Service List 2" on June 29, 2007. The original due-date for responses was July 20, 2007. This date was extended to July 27, 2007, to accommodate late responses. Some questionnaires were returned at the end of August. Additional correspondence with some of the

responding companies for clarification or missing information to their responses lasted until September 26, 2007.

### **1.5.1 Information Request 1**

Information Request 1, “*Section 776 [AB 2393(1)]: Back-up Power Systems Installed on the Property of Residential and Small Commercial Customer*”, requested more detailed information to:

- (a) Clarify the nature of existing back-up power systems on residential and small commercial customer properties
- (b) Identify current Best Practice for installing back-up power systems on residential and small commercial customer properties
- (c) Provide details on any relevant existing state or federal standards or protocols, as well as any state or federal action that gives the recommendations of standard-setting agencies the force of law
- (d) Address the concerns and issues that the Commission must consider, including the costs, benefits, and technical feasibility of establishing battery back-up requirements on residential and small commercial customer properties
- (e) Identify recommendations presented by the parties and their level of support
- (f) Assess whether any jurisdictional issues prevent the Commission from pursuing certain recommendations on installing back-up power systems on residential and small commercial customer properties
- (g) Identify a recommended course of action, as well as any other viable options
- (h) Discuss the costs and benefits of implementing the recommended course of action
- (i) Propose a definition of small businesses for the purpose of this investigation
- (j) Identify any concerns or issues that remain to be addressed.

The final number of responses to Information Request 1 was as follows:

<b>Industry Segment</b>	<b>Number of Responses</b>
Large LECs	3
Small LECs*	1
Wireless	3
Cable TV	2
Other parties	2
<b>Total</b>	<b>11</b>

\*NOTE: One was a collective response filed on behalf of 14 small LECs

### 1.5.2 Information Request 2

Informational Request 2, “*Section 2892.1 [AB 2393(3)]: Back-up Power Systems not installed on the Customer’s Premises*” requested more detailed information to:

- (a) Clarify the nature of existing back-up power systems
- (b) Identify current best practices
- (c) Provide details on any relevant existing state or federal standards or protocols, as well as any state or federal action that gives the recommendations of standard-setting agencies the force of law
- (d) Address the concerns and issues that the Commission must consider, including the costs, benefits, and technical feasibility of establishing back-up requirements and an assessment of the feasibility of zero greenhouse gas emission fuel cell systems to replace diesel generators for such back-up power systems
- (e) Identify recommendations presented and their level of support
- (f) Assess whether any jurisdictional issues prevent the Commission from pursuing certain recommendations
- (g) Identify a recommended course of action, as well as any other viable options
- (h) Discuss the costs and benefits of implementing the recommended course of action
- (k) Identify any concerns or issues that remain to be addressed.

The final number of responses to Informational Request 2 was as follows:

Industry Segment	Number of Responses
Large LECs	3
Small LECs*	1
Wireless	3
Cable TV	2
Other parties	2
<b>Total</b>	<b>11</b>

\*NOTE: One was a collective response filed on behalf of 14 small LECs

### 1.5.3 Information Request 3

Informational Request 3, “*Section 2872.5 [AB 2393(2)]: Emergency Notification Systems*,” requested more detailed information to:

- (a) Clarify the nature of existing emergency notification systems
- (b) Identify current best practices
- (c) Provide details on any relevant existing state or federal standards or protocols, as well as any state or federal action that gives the recommendations of standard-setting agencies the force of law
- (d) Identify the policy concerns and issues that the Commission must address, including funding of emergency notification systems and any necessary statutory modifications needed to facilitate such notification
- (e) Assess whether any jurisdictional issues prevent the Commission from pursuing certain recommendations
- (f) Identify recommendations presented and their level of support
- (g) Identify a recommended course of action, as well as any other viable options
- (h) Discuss the costs and benefits of implementing the recommended course of action
- (l) Identify any concerns or issues that remain to be addressed.

The final number of responses to Information Request 3 was as follows:

Industry Segment	Number of Responses
Large LECs	3
Small LECs*	1
Wireless	3
Cable TV	2
<b>Total</b>	<b>12</b>

\*NOTE: One was a collective response filed on behalf of 14 small LECs

## 1.6 Questionnaire

### 1.6.1 Questionnaire Description

The CD followed-up the informational requests with additional questions aimed at collecting statistical information on the implementation of the FCC Network Reliability Interoperability Council (NRIC) Power-related Best Practices and to assess the effectiveness and costs to implement those Best Practices.<sup>8</sup> There are 98 Best Practices related to Power for all segments of the telecom industry (wireline, wireless, cable, satellite, and equipment providers). The questionnaire, which was provided in a spreadsheet form, referenced all 98 Best Practices. 52 of them (highlighted in yellow and blue colors in the CPUC corresponding spreadsheet found in Appendix D) appear to be related to backup power systems. From those 52 Best Practices, 28 (highlighted in blue in the CPUC corresponding spreadsheet found in Appendix D) appear to address generator deployment.

At the top of each questionnaire, there was a place to enter the company's name. The first column (**Column A**) of the spreadsheet contained the NRIC Best Practice identifying number as given in [www.nric.org](http://www.nric.org). **Column B** gave a summary description of the Best Practice. **Column C** provided a source(s) for the recommendation as stated in [www.nric.org](http://www.nric.org). Columns D through G were to be filled by the respondents.

In **Column D**, companies were asked to rate the effectiveness of the recommendation in enhancing network reliability and preventing or reducing outages. A scale of 1 to 5 was used with the following interpretation:

<sup>8</sup> The NRIC website ([www.nric.org](http://www.nric.org)) has a link to the FCC website (<https://www.fcc.gov/nors/outage/bestpractice/BestPractice.cfm>) for the Best Practices mentioned in AB 2393.

5	The practice is definitely effective in preventing or reducing outages based, for example, on quantifiable measurements and experience
4	Based on intuitive opinions or anecdotal evidence, the practice is effective in preventing or reducing outages
3	The practice is somewhat, or moderately, effective in preventing or reducing outages
2	The practice is only slightly effective in preventing or reducing outages
1	The practice is basically ineffective in preventing or reducing outages
0	The company does not know the effectiveness of the practice

**Column E** dealt with the company’s implementation of each NRIC Best Practice related to power. A company was asked to indicate whether the Best Practice is: implemented (Y), not implemented (N), is under consideration (C), or zero (0) if the company does not know whether the practice has been considered or implemented at this stage.

**Column F** asked each company to rate the cost to implement a practice. The choices were: Very Low (VL), Low (L), Moderate (M), High (H), Very High (VH), and Zero (0). A Very Low rating suggests that there is essentially no additional cost above the normal costs of doing business for implementing the Best Practice. A Very High rating suggests major capital or operating expenditures will be required. A zero (0) rating suggests that the company does not know the relative cost to implement the Best Practice.

**Column G** was for any comments by the respondent. For example, if the particular Best Practice does not apply to a particular segment of the industry (e.g., wireless), then the company might comment that the Best Practice is Non-Applicable (NA).

### 1.6.2 Data Collection Process

The questionnaires were distributed electronically to telecommunications service providers (wireline, wireless, and Cable TV Industry segments) on August 27, 2007. The original due-date for responses was September 7, 2007. This date was extended to September 14, 2007, to include as many responses as possible. Some questionnaires were returned at the end of September. Of the companies which received questionnaires, 12 responded (one of those was a collective response filed on behalf of 14 small LECs).

The final number of returned questionnaires was as follows:

<b>Industry Segment</b>	<b>Number of Responses</b>
Large LECs	2
Small LECs*	4
Wireless	4
Cable TV	2
<b>Total</b>	<b>12</b>

\*NOTE: One was a collective response filed on behalf of 14 small LECs

The companies were asked to provide their responses in electronic form, and all responders did so.

## 1.7 Site Visits

CD arranged a number of site visits at telecom service provider services and customer premises to have a first hand look at the backup power systems and equipment deployed.

### 1.7.1 Typical Agenda of the Site Visit at a Telecom Service Provider

The telecom companies hosted CD personnel at an Executive Briefing Center for a 30-60 minute presentation (see typical agenda below). At the conclusion of the presentation, there was a general tour of the central office (CO) with emphasis on managing power on the telecommunications network. The tour usually lasted about 30-90 minutes.

A typical agenda included:

- The Wireline Network Overview
- The Wireless Network Overview
- Historical Background
- Issues Being Addressed at the Federal Level
- E911 and its Relationship to Emergency Notification
- Emergency Notification Applications and Systems
- Customer Education / Consumer Awareness.

### 1.7.2 Highlights from the Central Office / Headend<sup>9</sup> Site Visits

Over many decades, the telecommunications industry has developed many redundant power systems for central offices. In the event of a power failure and/or the loss of individual pieces of power equipment, the communications facility will continue operations for hours. By that time, permanent restoration can be achieved. In particular:

- Telecom network equipment operates on Direct Current (DC) power, backed up by multiple strings of batteries and multiple redundant Alternating Current (AC) to Direct Current (DC) rectifiers. The DC power is converted from the power grid which is backed up by a generator.
- In the case of a power failure, landline phones will continue to operate on battery power until the generator starts or the power grid is restored.
- Hours of battery reserve time are determined by whether a back-up generator has been installed at the Central Office or the Headend. The line size of the Central Office or the Headend, along with the presence of critical services and several other factors determines if an office has a generator installed or is served by a portable generator.
- Back-up generators typically have a minimum of 72 hours of diesel fuel.
- Portable generators may be dispatched to Central Offices / Headends to supplement batteries if travel is possible.
- As technology evolves, companies consider updating their equipment to more environmentally friendly and/or efficient models.
- If possible, a Central Office / Headend will have:
  - More than one connection to the power grid – if one cable is cut, the office can operate on the other power connection
  - Additional stationary generators
  - Call rerouting for other than local calls.

### 1.7.3 List of Companies Where the Site Visits Took Place

Following is a list of the companies (in an alphabetical order) whose facilities the Commissioner(s) and CD personnel visited as part of the AB 2393 related activities.

- AT&T
- Cox
- Comcast
- Frontier

---

<sup>9</sup> A cable head-end (or headend) is the facility at a local cable TV office that originates and communicates cable TV services and cable modem services to subscribers. When a cable company provides Internet access to subscribers, the head-end includes the computer system and databases needed to provide Internet access. The most important component located at the head-end is the cable modem termination system (CMTS), which sends and receives digital cable modem signals on a cable network and is necessary for providing Internet services to cable subscribers.

- SureWest
- Verizon California
- Verizon Wireless.

Frontier and Verizon California site visits included tours of customer premises where they had installed battery backup systems for the offered telecommunications services.

## **1.8 Recent Federal Communications Commission (FCC) Actions Relevant to AB 2393**

The FCC has under consideration proceedings looking at both back-up power and emergency notifications systems the outcome of which may have a direct bearing on the CPUC investigation pursuant to AB 2393. Any federal rules adopted on these subject matters will have a direct impact on the telecommunications service providers in California as well as nationwide. Those rules will also impact the cost/benefit analysis and outcome of any additional state rules. For example, if the FCC mandates certain rules to enhance the backup power on the network side, then the telecom service providers in California will have to follow the FCC rules and absorb the additional cost as “part of doing business”. Thus, the cost/benefit analysis required by AB 2393 to implement Public Utilities Code §2892.1, must take into consideration any final FCC rules.

Ongoing proceedings at the FCC regarding the standardization of the Emergency Notification Systems, may also impact CD’s investigation pursuant to the implementation of Public Utilities Code § 2872.5. It may be premature for CD to do a cost/benefit analysis of that topic given all the uncertainties involved. There is a need to define a “reference case” (i.e., “a standardized approach”) in order to determine the incremental impacts and associated costs of adopting different technologies for Emergency Notification Systems.

A review of the relevant FCC proceedings is set forth in Sections 3.6.1-3.6.4 below.

### **1.8.1 FCC Review of Backup Power**

FCC activities on backup power are relevant to the part of the proceeding implementing Public Utilities Code § 2892.1 (but not § 776).

#### **1.8.1.1 Summary of FCC Activities Related to Backup Power**

Below is background information on the FCC activities related to backup power dating back to January 2006. It is important to understand the interactions between the FCC and the telecommunications service providers at the Federal level to be able to put things into perspective at the State level. Similar arguments were presented by the telecommunications service providers at the FCC and at the CPUC hearings/workshops/summits regarding backup power rules, recommendations, and practices. While these interactions took place a few months apart, the underlying issue is that the telecommunications service providers must address backup power for emerging network architectures. During the CPUC workshops and in the responses to the CPUC informational requests, the telecom service providers made a strong statement that they prefer to have one set of rules nationwide for backup power.

Thus, the FCC rules for backup power may become the “de facto” rules applicable to their networks in California. If that happens, then the telecommunications service providers in California will come far along in meeting the concerns raised in AB 2393 for backup power in the network (Public Utilities Code §2892.1). However, these FCC rules do not address backup power at residential and small commercial

customer premises (i.e., the part of the proceeding implementing Public Utilities Code § 776 related issues.)

#### **1.8.1.1.1 FCC Communications Security, Reliability and Interoperability Council**

There is a possibility that, when FCC publishes the charter of the newly formed Communications Security, Reliability and Interoperability Council (CSRIC or Council (see Appendix F in this document)), there may be a Focus Group on “backup power systems at the customer premises”. Despite repeated calls to the FCC, it is not possible to confirm that such Focus Group may be established. Thus, at this point there is not an active Council or Focus Group that may address Best Practices for the part of the proceeding implementing Public Utilities Code § 776.

Given that CSRIC replaced NRIC, any update or addition to the NRIC best practices mentioned in AB 2393 (Public Utilities Code §2892.1) will be discussed in that newly established Council.

#### **1.8.1.1.2 FCC Actions on Independent Panel Reviewing the Impact of Hurricane Katrina on Communications Networks**

Below is background information on the actions taken by the FCC thus far on the recommendations of the “Independent Panel Reviewing the Impact of Hurricane Katrina on Communications Networks”.

**Excerpt from pages 1-3 of the FCC’s Order on Reconsideration of the Independent Panel Reviewing the Impact of Hurricane Katrina on Communications Networks FCC 07-177 (see Appendix E of this document for entire FCC Report)**

[http://hraunfoss.fcc.gov/edocs\\_public/attachmatch/FCC-07-117A1.pdf](http://hraunfoss.fcc.gov/edocs_public/attachmatch/FCC-07-117A1.pdf)

## **II. Background**

- 1) In January 2006, FCC Chairman Kevin J. Martin established the Katrina Panel pursuant to the Federal Advisory Committee Act, Public Law 92-463, as amended.<sup>10</sup> The mission of the Katrina Panel was to review the impact of Hurricane Katrina on communications infrastructure in the areas affected by the hurricane and to make recommendations to the FCC regarding ways to improve disaster preparedness, network reliability and communications among first responders such as police, fire fighters, and emergency medical personnel.<sup>11</sup> The Katrina Panel submitted its report on June 12, 2006.<sup>12</sup> The Katrina Panel’s report described the impact of the worst natural disaster in the Nation’s history, as well as the overall public and private response and recovery efforts. The FCC’s goal is to take the lessons learned from that disaster and build upon them to promote more effective, efficient response and recovery efforts, as well as heightened readiness and preparedness.
- 2) The FCC issued a Notice of Proposed Rulemaking (*Notice*) on June 19, 2006 inviting comment on what actions the FCC should take to address the Katrina Panel’s recommendations.<sup>13</sup> On July 26, 2006, the FCC issued a Public Notice asking commenters to address the applicability of the

---

<sup>10</sup> 5 U.S.C. App. 2 (1988).

<sup>11</sup> See the Katrina Panel Charter available at <http://www.fcc.gov/eb/hkip/HKIPCharter.pdf> (last visited September 9, 2007); see also the Notice of Establishment of the FCC’s Independent Panel Reviewing the Impact of Hurricane Katrina on Communications Networks, 71 Fed. Reg. 933 (2006).

<sup>12</sup> Independent Panel Reviewing the Impact of Hurricane Katrina on Communications Networks, *Report and Recommendations to the Federal Communications Commission*, June 12, 2006 (Katrina Panel Report).

<sup>13</sup> *Recommendations of the Independent Panel Reviewing the Impact of Hurricane Katrina on Communications Networks*, Notice of Proposed Rulemaking, EB Docket No. 06-119, 21 FCC Rcd 7320 (2006) (*Notice*).

Katrina Panel's recommendations to all types of natural disasters (*e.g.*, earthquakes, tornadoes, hurricanes, forest fires) as well as other types of incidents (*e.g.*, terrorist attacks, influenza pandemic, industrial accidents).<sup>14</sup> The Public Notice also asked parties to address whether the Panel's recommendations are broad enough to take into account the diverse topography of our Nation, the susceptibility of a region to a particular type of disaster, and the multitude of communications capabilities a region may possess.<sup>15</sup> The FCC received over 100 comments and reply comments in response to the *Notice*.

- 3) In June 2007, the FCC released the *Katrina Panel Order* directing the Public Safety and Homeland Security Bureau (PSHSB) to implement several of the recommendations made by the Independent Panel Reviewing the Impact of Hurricane Katrina on Communications Networks (Katrina Panel).<sup>16</sup> Among other things, the FCC adopted a rule requiring some communications providers to have emergency/backup power. The backup power rule adopted specifically states:

Local exchange carriers (LECs), including ILECs and CLECs, and commercial mobile radio service (CMRS) providers must have an emergency backup power source for all assets that are normally powered from local AC commercial power, including those inside central offices, cell sites, remote switches and digital loop carrier system remote terminals. LECs and CMRS providers should maintain emergency backup power for a minimum of 24 hours for assets inside central offices and eight hours for cell sites, remote switches and digital loop carrier system remote terminals that are normally powered from local AC commercial power. LECs that meet the definition of a Class B company as set forth in Section 32.11(b) (2) of the Commission's rules and non-nationwide CMRS providers with no more than 500,000 subscribers are exempt from this rule.<sup>17</sup>

- 4) On August 2, 2007, the FCC released an Order that extended the effective date of Section 12.2 of the FCC's rules, the backup power rule adopted in the *Katrina Panel Order*, to October 9, 2007.<sup>18</sup> The FCC did so on its own motion in order to provide additional time to consider the issues raised by Cellular Telecommunication Industry Association (CTIA) in its Motion for Administrative Stay and to hear from other concerned parties on the issues raised in that motion.<sup>19</sup>
- 5) As indicated above, seven petitions were filed seeking reconsideration and/or clarification of the backup power rule adopted by the FCC in the *Katrina Panel Order*.<sup>20</sup> The petitioners assert that the FCC should rescind, modify and/or clarify the backup power rule adopted in the *Katrina Panel Order*. The FCC also received five timely comments to these petitions and several

---

<sup>14</sup> *Recommendations of the Independent Panel Reviewing the Impact of Hurricane Katrina on Communications Networks*, 21 FCC Rcd 8583 (2006) (*July 26 Public Notice*).

<sup>15</sup> *Id.*

<sup>16</sup> *Katrina Panel Order*, 22 FCC Rcd 10541 (2007).

<sup>17</sup> 47 C.F.R. § 12.2.

<sup>18</sup> *Recommendations of the Independent Panel Reviewing the Impact of Hurricane Katrina on Communications Networks*, Order, EB Docket No. 06-119, WC Docket No. 06-63, 22 FCC Rcd 14246 (*Delay Order*).

<sup>19</sup> See CTIA's Motion for Administrative Stay filed July 31, 2007; NextG's Request for Partial Stay of the Commission's Back Up Power Rule filed July 31, 2007 and Errata filed August 1, 2007; and PCIA's Comments in Support of Stay Requests filed August 2, 2007. See also CTIA's Motion for Administrative Stay filed September 24, 2007.

<sup>20</sup> As noted before, one of these petitions was subsequently withdrawn.

additional *ex parte* comments.

### **1.8.1.2 Latest FCC Rules on Backup Power (FCC 07-177)**

Below are the latest FCC rules on backup power on the network side (i.e., “backup power systems not installed on the Customer’s Premise” according to the AB 2393 terminology). They have not been published yet in the Federal Register.

**Excerpt from pages 23 to 26 of the FCC’s Order on Reconsideration of the Independent Panel Reviewing the Impact of Hurricane Katrina on Communications Networks FCC 07-177 (see Appendix E of this document for entire FCC Report)**

**[http://hraunfoss.fcc.gov/edocs\\_public/attachmatch/FCC-07-117A1.pdf](http://hraunfoss.fcc.gov/edocs_public/attachmatch/FCC-07-117A1.pdf)**

## **Part 12: Redundancy of Communications Systems**

### **§12.2 Backup Power**

- (a) Except to the extent set forth in Section 12.2(b) and Section 12.2(c)(4) of the Commission’s rules, local exchange carriers, including incumbent local exchange carriers and competitive local exchange carriers (collectively, LECs), and commercial mobile radio service (CMRS) providers, as defined in Section 20.9 of the Commission’s rules, must have an emergency backup power source (*e.g.*, batteries, generators, fuel cells) for all assets necessary to maintain communications that are normally powered from local commercial power, including those assets located inside central offices, cell sites, remote switches and digital loop carrier system remote terminals. LECs and CMRS providers must maintain emergency backup power for a minimum of twenty-four hours for assets that are normally powered from local commercial power and located inside central offices, and eight hours for assets that are normally powered from local commercial power and at other locations, including cell sites, remote switches and digital loop carrier system remote terminals. Power sources satisfy this requirement if they were originally designed to provide the minimum backup power capacity level required herein and the provider has implemented reasonable methods and procedures to ensure that the power sources are regularly checked and replaced when they deteriorate. LECs that meet the definition of a Class B company as set forth in Section 32.11(b)(2) of the Commission’s rules and non-nationwide CMRS providers with no more than 500,000 subscribers are exempt from this rule.
- (b) LECs and CMRS providers are not required to comply with paragraph (a) for assets described above where the LEC or CMRS provider demonstrates, through the reporting requirement described below, that such compliance is precluded by:
  - (1) Federal, state, tribal or local law;
  - (2) Risk to safety of life or health; or
  - (3) Private legal obligation or agreement.
- (c) Within six months of the effective date of this requirement, LECs and CMRS providers subject to this section must file reports with the Chief of the Public Safety & Homeland Security Bureau.
  - (1) Each report must list the following:
    - (i) Each asset that was designed to comply with the applicable backup power requirement as defined in paragraph (a);
    - (ii) Each asset where compliance with paragraph (a) is precluded due to risk to safety of life or health;

- (iii) Each asset where compliance with paragraph (a) is precluded by a private legal obligation or agreement;
  - (iv) Each asset where compliance with paragraph (a) is precluded by Federal, state, tribal or local law; and
  - (v) Each asset that was designed with less than the emergency backup power capacity specified in paragraph (a) and that is not precluded from compliance under paragraph (b).
- (2) Reports listing assets falling within the categories identified in paragraphs (c)(1)(ii) through (iv) must include a description of facts supporting the basis of the LEC's or CMRS provider's claim of preclusion from compliance. For example, claims that a LEC or CMRS provider cannot comply with this section due to a legal constraint must include the citation(s) to the relevant law(s) and, in order to demonstrate that it is precluded from compliance, the provider must show that the legal constraint prohibits the provider from compliance. Claims that a LEC or CMRS provider cannot comply with this section with respect to a particular asset due to a private legal obligation or agreement must include a description of the relevant terms of the obligation or agreement and the dates on which the relevant terms of the agreement became effective and are set to expire. Claims that a LEC or CMRS provider cannot comply with this section with respect to a particular asset due to risk to safety of life or health must include a description of the safety of life or health risk and facts that demonstrate a substantial risk of harm.
- (3) For purposes of complying with the reporting requirements set forth in paragraphs (c)(1)(i) through (v), in cases where more than one asset necessary to maintain communications that are normally powered from local commercial power are located at a single site (*i.e.*, within one central office), the reporting entity may identify all of such assets by the name of the site.
- (4) In cases where a LEC or CMRS provider identifies assets pursuant to paragraph (c)(1)(v), such LEC or CMRS provider must comply with the backup power requirement in paragraph (a) or, within 12 months from the effective date of this rule, file with the Commission a certified emergency backup power compliance plan. That plan must certify that and describe how the LEC or CMRS provider will provide emergency backup power to 100 percent of the area covered by any non-compliant asset in the event of a commercial power failure. For purposes of the plan, a provider may rely on on-site and/or portable backup power sources or other sources, as appropriate, sufficient for service coverage as follows: a minimum of 24 hours of service for assets inside central offices and eight hours for other assets, including cell sites, remote switches, and digital loop carrier system remote terminals. The emergency backup power compliance plans submitted are subject to Commission review.
- (5) Reports submitted pursuant to this paragraph must be supported by an affidavit or declaration under penalty of perjury and signed and dated by a duly authorized representative of the LEC or CMRS provider with personal knowledge of the facts contained therein.
- (6) Information filed with the Commission pursuant to subsection (c) of this rule shall be automatically afforded confidentiality in accordance with the Commission's rules.
- (7) LECs that meet the definition of a Class B company as set forth in Section 32.11(b)(2) of the Commission's rules and non-nationwide CMRS providers with no more than 500,000 subscribers are exempt from this reporting requirement.

## 1.8.2 FCC Review of the Emergency Alert System

FCC activities on Emergency Alert System are relevant to the part of the proceeding implementing Public Utilities Code § 2872.5

In addition to the WARN Act requirements that dictates the Commercial Mobile Service Alert Advisory Committee (CMSAAC) develop and recommend technical standards and protocols to the Commission by October 12, 2007 (see Section 3.7.4 below), there is a parallel development underway at the FCC.

That parallel development is the Review of the Emergency Alert System, First Report and Order and Further Notice of Proposed Rulemaking, EB Docket No. 04-296, 20 FCC Rcd 18625 (2005). In a separate action on May 31, 2007, the Commission adopted a Second Report and Order and Further Notice of Proposed Rulemaking in the EAS preceding that addresses some of the Katrina Panel's recommendations. See [FCC Takes Action To Further Strengthen Nation's Emergency Alert System, News Release](#), (May 31, 2007) ("EAS News Release").<sup>21</sup> This news release states "The Commission's Order promotes the development of fully digital Next Generation technologies and delivery systems that will better serve the American public. The Order requires EAS participants to accept messages using Common Alerting Protocol (CAP), the groundwork for Next Generation EAS delivery systems, no later than 180 days after FEMA announces its adoption of standards in each case.

The Commission has provided a news release but has not yet published its Order, in which the Commission is to "explore the technical and financial viability of expanding the EAS to other technologies, such as wireless services and the Internet." Until the EAS order is released, it is not known:

- What will be the impact of this parallel FCC EAS review on our work effort?
- Whether the FCC will issue guidance that may impact our work effort.

**Excerpt from pages 33 to 34 of the FCC's Recommendations of the Independent Panel Reviewing the Impact of Hurricane Katrina on Communications Networks  
FCC 07-107**

[http://hraunfoss.fcc.gov/edocs\\_public/attachmatch/FCC-07-107A1.pdf](http://hraunfoss.fcc.gov/edocs_public/attachmatch/FCC-07-107A1.pdf)

### **D. Emergency Communications to the Public**

**103. Revitalize and Publicize the Emergency Alert System.** The Katrina Panel suggests a number of recommendations to revitalize and publicize the existing Emergency Alert System ("EAS"). To facilitate and complement the use of the existing EAS, the Katrina Panel recommends that the Commission should: (a) educate state and local officials about EAS, its benefits, and how it can be best utilized; (b) develop a program for educating the public about the EAS and promote community awareness of potential mechanisms for accessing those alerts sent during power outages or broadcast transmission failures; (c) move expeditiously to complete its proceeding to explore the technical and financial viability of expanding the EAS to other technologies, such as wireless services and the Internet, recognizing that changes to communications networks and equipment take time to implement; (d) consistent with proposed legislation, work with Congress and other appropriate federal departments and agencies to explore the technical and financial viability of establishing a comprehensive national warning system that complements existing systems and

---

<sup>21</sup> [http://hraunfoss.fcc.gov/edocs\\_public/attachmatch/DOC-273458A1.pdf](http://hraunfoss.fcc.gov/edocs_public/attachmatch/DOC-273458A1.pdf)

allows local officials to increase the penetration of warnings to the public as well as target, when necessary, alerts to a particular area; (e) work with the DHS and other appropriate federal agencies on pilot programs that would allow more immediate evaluation and testing of new notification technologies; and (f) work with the Department of Commerce to expand the distribution of certain critical non-weather emergency warnings over National Oceanic and Atmospheric Administration (NOAA) weather radios to supplement the EAS.<sup>22</sup>

104. We agree that we should encourage state, tribal and local governments to use EAS as a mechanism to deliver emergency alerts. Accordingly, we direct PSHSB to engage in outreach efforts to educate state, tribal and local governments about the EAS. In addition, we direct PSHSB to take steps to educate the public about EAS. We also note that PSHSB has coordinated with DHS on EAS issues, including issues related to the development of a state-of-the-art public alert and warning system. We direct PSHSB to continue those efforts.

105. Finally, on the issue of expanding the scope of EAS to include new technologies, as the Katrina Panel acknowledges, this issue is already the subject of our ongoing EAS rulemaking proceeding.<sup>23</sup> In addition, pursuant to the recently enacted WARN Act,<sup>24</sup> the Commission established an advisory committee -- the Commercial Mobile Service Alert Advisory Committee -- to develop and recommend technical standards and protocols by which commercial mobile service (CMS) providers may voluntarily transmit emergency alerts. The Committee has a diverse membership, including over forty representatives from the wireless and broadcast industries, public safety, equipment manufacturers, organizations representing people with disabilities and the elderly, FEMA and NOAA. Thus far, the Committee has held three full Committee meetings and a number of informal working group meetings. The Commission expects that the Committee will meet its statutory deadline of submitting recommendations to the Commission by October 12, 2007.

### 1.8.3 FCC Summit on Network Surge Management

FCC activities on Network Surge Management are relevant to the part of the proceeding implementing Public Utilities Code § 2872.5.

The Federal Communications Commission's Public Safety and Homeland Security Bureau (PSHSB) held a Summit on Communications Network Surge Management in Emergencies on September 25, 2007. The Summit examined how communications networks are managed during mass emergency situations, as well as what the public can do to help ensure that they are able to effectively use their wireless commercial devices during such incidents. As part of this summit there was a roundtable discussion to examine the wireless carriers' ability to increase capacity remotely, at the scene of an incident, as well as the actions the public can take to help ensure their effective use of commercial wireless devices in emergencies.

*Moderator:* Jeffery Goldthorp Chief of FCC Communications Systems Analysis Division, PSHSB

*Panelists:*

---

<sup>22</sup> Katrina Panel Report at 40.

<sup>23</sup> Review of the Emergency Alert System, First Report and Order and Further Notice of Proposed Rulemaking, EB Docket No. 04-296, 20 FCC Rcd 18625 (2005). We note that, in a separate action on May 31, 2007, the Commission adopted a Second Report and Order and Further Notice of Proposed Rulemaking in the EAS proceeding that addresses some of the Katrina Panel's recommendations. See FCC Takes Action To Further Strengthen Nation's Emergency Alert System, News Release, May 31, 2007 ("EAS News Release").

<sup>24</sup> The Warn Act establishes a framework by which commercial mobile service providers may voluntarily transmit emergency alerts.

Jim Bugel, AT&T  
Greg Roark, Carolina West Wireless  
Libby Beaty, National Assoc. of Telecommunication Officers and Advisors  
Lise Hamlin, Resource Center for Deaf and Hard of Hearing Persons  
Randy Ames, Sprint  
Diane Wesche, Verizon Wireless.

The panelists at this summit expressed similar positions on the issue potential network to the positions heard during the CPUC Workshops.

#### **1.8.4 Commercial Mobile Service Alert Advisory Committee (CMSAAC)**

The Warning, Alert and Response Network Act (WARN Act) is relevant to the part of the proceeding implementing Public Utilities Code § 2872.5. The FCC established the Commercial Mobile Service Alert Committee (CMSAAC) pursuant to Section 603 of the WARN Act. The purpose of CMSAAC was to develop recommendations on technical standards and protocols to facilitate the ability of commercial mobile service providers to transmit emergency alerts to their subscribers to the extent such providers elect to do so.

##### **1.8.4.1 Background information on the WARN Act**

The WARN Act, which was enacted on October 13, 2006, requires that the FCC establishes a Committee to develop and recommend technical standards and protocols for the voluntary transmission of emergency alerts by Commercial Mobile Service (CMS) providers within one year from the date of enactment (i.e., October 12, 2007). The Committee must develop and submit to the Commission recommendations:

- For protocols, technical capabilities, and technical procedures through which electing CMS providers receive, verify, and transmit alerts to subscribers;
- For the establishment of technical standards for the priority transmission of alerts by electing CMS providers to subscribers;
- For relevant technical standards for devices and equipment and technologies used by electing CMS providers to transmit emergency alerts to subscribers;
- For the technical capability to transmit emergency alerts by electing CMS providers to subscribers in languages in addition to English, to the extent practicable and feasible;
- Under which electing CMS providers may offer subscribers the capability of preventing the subscriber's device from receiving emergency alerts, or classes of such alerts, (other than an alert issued by the President), consistent with section 602(b)(2)(E) of the WARN Act;
- For a process under which CMS providers can elect to transmit emergency alerts if—
  - Not all of the devices or equipment used by such provider are capable of receiving such alerts; or
  - The provider cannot offer such alerts throughout the entirety of its service area; and
- As otherwise necessary to enable electing CMS providers to transmit emergency alerts to subscribers.<sup>25</sup>

---

<sup>25</sup> WARN Act § 603(c).

#### **1.8.4.2 Background information on the CMSAAC**

Pursuant to Section 603 of the WARN Act, the FCC established CMSAAC, which was enacted on October 13, 2006. CMSAAC's mission is to develop recommendations on technical standards and protocols to facilitate the ability of CMS providers to voluntarily transmit emergency alerts to their subscribers. The Committee must develop and submit its recommendations to the Commission within one year of the enactment of the WARN Act.

The CMSAAC held their last meeting on October 3, 2007 during which the CMSAAC finalized their report "Commercial Mobile Alert Service Architecture and Requirements". As of November 1, 2007, the CMSAAC report has not been publicly released.

Once the final report "Commercial Mobile Alert Service Architecture and Requirements" is released, we will analyze this report with respect to its applicability to standardization of notification systems and protocols (specifically, reference architecture, security, reliability, performance, and interface protocols for alerts) that should be utilized to facilitate notification of affected members of the public of local emergencies. Appendix G is the placeholder for the final version of the CMSAAC Report.

For further information about the Committee, please visit the Committee's website at [www.fcc.gov/pshs/cmsaac](http://www.fcc.gov/pshs/cmsaac).

Having completed the “information gathering” process, the next step is to analyze the information, derive a findings, make appropriate observations, and identify options.

## **1.9 Findings and Analysis of Information**

Due to the need to incorporate a discussion of the WARN Act’s Advisory Committee’s report of proposed standards and protocols to the FCC, which was released on October 15, 2007, the substantive findings and analysis of those findings is not presented in this report. They will be included in the subsequent report due in early 2008.

CD is still working on its analysis of the sufficiency of current performance reliability standards, emergency notification system standards, and the related cost/benefits for both. The WARN Act is relevant to the part of the proceeding implementing Public Utilities Code § 2872.5. Federal rules adopted on these subjects will have a direct impact on telecommunications services providers that operate nationally and in California. Consequently, it would be premature to issue a report without taking into full consideration the federal rules that would be adopted later this year.

Federal rules will also impact the CD’s cost/benefit analysis and the outcome of potential state rules, because service providers operating in California will have to absorb the costs of any such new federal rules, which in turn would impact CD’s cost/benefit analysis of whether there should be additional state rules. In addition, CD’s analysis will develop a “reference case” or standardized approach to analyze the cost/benefits of different technologies for emergency notification systems. Any new federal rules regarding these systems will impact the analysis in this matter, as well. Accordingly, CD has yet to complete the analysis pursuant to AB 2393.

### **1.9.1 Pre-workshop Questions & Workshop Presentations**

Based on the information received, one of the benefits will be that important information could be posted on the “California’s Consumer Education Information” web site (<http://www.calphoneinfo.com/>) regarding the battery back-up systems at residential and small commercial customer premises (e.g., choices the consumers can make about technologies providing telephone service during emergencies, back-up power equipment in their homes, service provider vs. customer responsibilities for maintaining back-up power at customer premises, etc.).

The study will place an emphasis on providing consumer awareness and education materials from the good start-up material gathered during this process and the systematic analysis that will follow.

### **1.9.2 Information Request Responses**

To get some meaningful results from information request responses, it may be necessary to analyze the information per company and per industry segment. Based on the information received, the study will address the issue of a definition of “small business” that will be widely accepted. The study will also identify any concerns or issues that remain to be addressed.

### **1.9.3 Information Gathered During Site Visits**

The information and the notes gathered during the site visits will be used to validate statements made by the companies during the workshop presentations as well as in their responses to the pre-workshop questions, the informational requests, and the NRIC-related questionnaire. In some cases, during the

visits we were able to get clarifications or updated information from those companies. Thus, we have a better view of their practices regarding backup power and their plans for alternate resources of energy.

#### 1.9.4 Questionnaire Responses

A statistical analysis of the data for the implementation of the NRIC Power-related Best Practices, which was collected via the questionnaires, will be pursued. For each questionnaire, the initial aggregation may be a table with average ratings of each of the Best Practices. In addition, graphs of the average level of implementation, effectiveness, and cost may be developed. These graphs will present one variable at a time.

The above analysis will be pursued (i) over the entire set of responses, and (ii) per industry segment (Large LECs, Small LECs, Wireless, and Cable TV) to get some meaningful results given the idiosyncrasies of each industry segment.

A composite graph, which simultaneously exhibits the effectiveness, the cost, and the level of implementation, may be a useful way in analyzing the implementation of the Best Practices by the telecommunications service providers. These graphs may be used to draw conclusions about the degree of implementation and the reasons that prevent the full implementation of the NRIC Power-related Best Practices.

#### 1.10 Approach to Cost-Benefit Analysis

In the R. 07-04-015, there are three areas where a cost/benefit analysis is required before standards may be implemented:

- Backup power systems installed on customer premises
- Emergency notification systems
- Backup power systems not installed on the customer premise.

The objective of the cost/benefit analyses that will be pursued is to provide a structured framework for the development of a detailed financial business impact analysis associated with this OIR. As such, the study will discuss the various considerations to be taken into account for the creation of the various cost/benefit business case components. The information provided by the service providers provides the necessary data to perform this analysis for the backup power reliability performance standards and zero emission systems. However, due to ongoing work at the FCC regarding the standardization of the Emergency Notification Systems, it may not be possible to do a cost/benefit analysis of that topic given all the uncertainties involved. There is a need to define a “reference case” (i.e., a standardized approach) in order to determine the incremental impacts by adopting different technologies for Emergency Notification Systems.

AAPC	American Association of Paging Carriers
AB	Assembly Bill
AC	Alternating Current
ALJ	Administrative Law Judge
CAP	Common Alerting Protocol

CD	Communication Division
CLEC	Competitive Local Exchange Carrier
CMRS	Commercial Mobile Radio Service
CMS	Commercial Mobile Service
CMSAAC	Commercial Mobile Service Alert Advisory Committee
CO	Central Office
CPUC	California Public Utilities Commission
CSRIC	Communications Security, Reliability and Interoperability Council
CTIA	Cellular Telecommunications Industry Association
DAS	Distributed Antenna System
DC	Direct Current
DGS	Department of General Services
DHS	Department of Homeland Security
EA	Economic Area
EAS	Emergency Alert System
ENS	Emergency Notification System
FAQ	Frequently Asked Questions
FCC	Federal Communications Commission
FEMA	Federal Emergency Management Agency
FiOS	Fiber Optic System (Verizon)
FTE	Full-Time-Equivalent
FTTH	Fiber-To-The-Home
FTTP	Fiber-To-The Premises
FTTx	Fiber To The x (Node/Curb/Home/Premises)
IFC	Installed First Cost
ILEC	Incumbent Local Exchange Carrier
LEC	Local Exchange Carriers

LMP	Lithium Metal Polymer
MEA	Metropolitan Economic Area
NA	Not Applicable
NENA	National Emergency Number Association
NICad	Nickel Cadmium
NOAA	National Oceanic and Atmospheric Administration
NOC	Network Operations Center
NRIC	Network Reliability Interoperability Council
OES	Office of Emergency Services
OIR	Order Instituting Rulemaking
ONT	Optical Network Terminal
OSHA	Occupational Safety & Health Administration
OSP	Outside Plant
OSS	Operations Support System
PSHSB	Public Safety and Homeland Security Bureau
PSTN	Public Switched Telephone Network
SAIDI	System Average Interruption Duration Index
SAIFI	System Average Interruption Frequency Index
SME	Subject Matter Expert
TCO	Total Cost of Ownership
UPS	Uninterruptible Power Supply
VoIP	Voice over Internet Protocol
VRLA	Valve Regulated Lead Acid

## **Appendix A: Order Instituting Rulemaking to Implement AB 2393**

ALJ/JPO/sid

**Mailed 4/17/2007**

**BEFORE THE PUBLIC UTILITIES COMMISSION OF THE STATE OF CALIFORNIA**

Rulemaking on the Commission's Own Motion into  
Reliability Standards for Telecommunications  
Emergency Backup Power Systems and Emergency  
Notification Systems Pursuant to Assembly Bill 2393.

FILED  
PUBLIC UTILITIES COMMISSION  
APRIL 12, 2007  
SAN FRANCISCO, CALIFORNIA  
RULEMAKING 07-04-015

**ORDER INSTITUTING RULEMAKING  
TO IMPLEMENT ASSEMBLY BILL 2393**

**Summary**

With this decision, the Commission initiates a rulemaking addressing standards for telecommunications backup power systems and emergency notification systems pursuant to Assembly Bill (AB) 2393 (Ch. 776, Stats 2006).

**AB 2393**

AB 2393 added §§ 776, 2872.5 and 2892.1 to the Public Utilities Code.<sup>1</sup> A copy is included as Attachment A.

A central battery system was deployed by telecommunications providers in the 1920s to improve network operations, performance and reliability. As a result, batteries and generators located in the provider's central office were able to power both the central office and the customer's telephone in the event of a power outage assuming the telephone system is otherwise intact. The same continues to be true today for customers receiving land line service from a facilities-based provider of telephony services (telephony provider) through copper wires. However, newer communications transmission technologies, including fiber optic and coaxial cable, may require distributed backup power systems, both in the network and at the customer's premise, in order to have this capability.

Section 776 [AB 2393(1)] requires the Commission to consider the need for performance reliability standards, and to develop and implement performance reliability standards for backup power

systems installed on the property of residential and small commercial customers by a facilities-based provider of telephony services, if the benefits of the standards exceed the costs. In any event, the Commission must provide a report to the legislature on the results of this investigation by January 1, 2008. Any standards are to include: minimum operating life, minimum time period in which a telephone system with a charged backup power system will provide the customer with sufficient electricity for emergency usage, and a means to warn the customer when the backup system's charge is low or when the system can no longer hold a charge. In developing any such standards, the Commission is to consider current best practices and the technical feasibility of establishing battery backup requirements. We note that AB 2393 and § 776 do not define "small commercial customer." Thus, one of our tasks is to establish a definition.

Automatic dialing-announcing devices are used in emergency notification systems by law enforcement agencies, fire protection agencies, public health agencies, public environmental health agencies, city or county emergency services planning agencies, and private for-profit agencies operating under contract with, and at the direction of, one or more of these agencies. These are automatic devices that store phone numbers and disseminate a prerecorded message to those phone numbers in the event of an emergency.

Section 2872.5 [AB 2393(2)] requires the Commission, in consultation with the Office of Emergency Services (OES) and the Department of General Services (DGS), to determine whether standardized notification systems and protocols should be used by entities that are authorized to use automatic dialing devices to facilitate notification of affected members of the public in the event of local emergencies.<sup>2</sup> The Commission is not to establish standards for notification systems or protocols unless the benefits of the standards or protocols exceed the costs. The Commission is also required to provide any recommendations it may have for funding notification systems and any statutory modifications needed to facilitate notification of affected members of the public during local emergencies. In any event, the Commission must provide a report to the legislature on the results of this investigation by January 1, 2008.

As noted above, providers of telecommunications service generally install backup power systems on their property so that their systems can operate when the electric utility serving the property has a power outage. The backup power systems are designed to enable the telecommunications networks to function and customers to contact a public safety answering point (PSAP) operator during an electrical outage. These backup power systems are often batteries supplemented by diesel-powered electric

---

<sup>1</sup> All section references are to the Public Utilities Code.

generators, which recharge the batteries. In addition to telephony providers' own motivation to ensure network reliability and operational efficiencies, minimizing communications service disruptions is widely beneficial for public safety and economic sustainability.

Section 2892.1 [AB 2393(3)] requires the Commission, in consultation with OES and DGS, to determine the need for such backup power systems not located on the customer's premises and to determine performance criteria. The Commission is also to determine whether the best practices recommended by the Network Reliability and Interoperability Council in December 2005 (Best Practices) for backup power systems have been implemented by providers of telecommunications service.<sup>3</sup>

If the Commission determines it is in the public interest, it is required to develop performance reliability standards for such backup power systems and implement the standards if the benefits exceed the costs. In developing such standards, the Commission is to consider current best practices and technical feasibility for establishing battery backup requirements.

In addition to the above, the Commission is required to determine the feasibility of the use of zero greenhouse gas emission fuel cell systems to replace diesel generators for such backup power systems.<sup>4</sup> In any event, the Commission must provide a report to the legislature on the results of this investigation by January 1, 2008.

Section 2892.1(a) provides that for the purposes of § 2892.1, "telecommunications service" means voice communication provided by a telephone corporation as defined in § 234, voice communications provided by a provider of satellite telephone services, voice communications provided by a provider of mobile telephony service as defined in § 2890.2, and voice communications provided by a facilities-based provider of voice communications utilizing voice over Internet Protocol or any successor protocol.

As noted above, the Commission is required to report to the Legislature on the above results of each investigation before January 1, 2008, and complete this proceeding within 18 months of AB 2393's effective date, i.e., June 30, 2008.

## **Backup Power Systems Installed on the Property of Residential and Small Commercial Customers--Plan of Action**

---

<sup>2</sup> Our staff has been in contact with the staff of OES and DGS regarding this rulemaking, and we look forward to their continued participation.

<sup>3</sup> Network Reliability and Interoperability Council (NRIC) VII, Focus Group 1C, "Analysis of the Effectiveness of Best Practices Aimed at E9-1-1 and Public Safety, F Report," December 2005. [http://www.nric.org/meetings/docs/meeting\\_20051216/FG1C\\_Dec%2005\\_Final%20Report.pdf](http://www.nric.org/meetings/docs/meeting_20051216/FG1C_Dec%2005_Final%20Report.pdf) . We note that best practices no. 7-7-5204 on p.59 recommends that backup power systems should be located on site when appropriate.

<sup>4</sup> Section 42801.1 of the California Health and Safety Code defines greenhouse gas as including carbon dioxide, methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride.

Section 776 addresses backup power systems installed on the property of residential and small commercial customers by telephony providers. The first step in the investigation will be to determine the telephony providers' current practices regarding backup power systems, including the feasibility of establishing such systems where they do not exist. The second step will be to obtain the telephony providers' and other interested parties' recommendations for reliability standards and the associated costs and benefits.

To this end, the Commission's Communications Division (CD) is directed to convene a technical workshop of subject matter experts to inform the Commission on this matter. The workshop to discuss "back up power installed on the property of residential and small commercial customers" will be held June 5, 2007. CD will provide timely notice on the Commission's Calendar and to the service list.

The outcome of the workshop will be an informational request that will seek more detailed information, concerns and issues related to backup power systems on the property of residential and small commercial customers. The request will direct respondents to provide recommendations along with associated implementation costs and benefits. While the bill concerns itself with only backup power, a cost/benefit analysis should be viewed holistically. For example, there is no customer benefit if power is maintained/restored but the lines are flooded under water.

The request will be sent to all facilities-based telephony providers and other interested parties. Upon receipt of the responses to the request, CD will compile the information into a report that:

- (a) Identifies the concerns and issues that the Commission must address, including current best practices and the technical feasibility of establishing battery backup requirements;
- (b) Identifies recommendations presented by the parties and their level of support;
- (c) Identifies a recommended course of action, as well as any other viable options;
- (d) Discusses the costs and benefits of implementing the recommended course of action;
- (e) Proposes a definition of small businesses for the purpose of this investigation; and
- (f) Identifies any concerns or issues that remain to be addressed.

The draft report will be sent to the parties for comment. Upon receipt of the comments, CD, in consultation with the assigned Commissioner, will prepare a revised draft report, which will be provided to the parties for comment.<sup>5</sup> A proposed decision, which adopts a final report, then will be prepared.

---

<sup>5</sup> For any or all of these three workshop topics, CD may evaluate a gradation of possibilities with varying costs and benefits. Option A, for example, may have some benefits but relatively high costs. Option B may be the opposite

## **Emergency Notification Systems--Plan of Action**

Section 2872.5 addresses standardized notification systems and protocols for emergency notification systems. The first step in the investigation will be, in consultation with OES and DGS, to determine the standards and protocols currently in use by those entities that operate such systems. The second step will be to obtain the operating entities' and other interested parties' recommendations for standards and protocols, and the associated costs and benefits.

To this end, CD is directed to convene a technical workshop of subject matter experts to inform the Commission on this matter. The workshop to discuss "emergency notification systems" will be held June 19, 2007. CD will provide timely notice on the Commission's Calendar and to the service list.

The outcome of the workshop will be an informational request that will seek more detailed information, concerns and issues that must be addressed to establish emergency notification systems. The request will direct respondents to provide recommendations along with associated implementation costs and benefits.

The request will be sent to all facilities-based telephony providers, users of emergency notification systems (such as law enforcement agencies, fire protection agencies, public health agencies, public environmental health agencies, city or county emergency services planning agencies), and other interested parties. Upon receipt of the responses to the request, CD will compile the information into a report that:

1. Identifies the concerns and issues that the Commission must address, including funding of notification systems and any necessary statutory modifications needed to facilitate such notification;
2. Identifies recommendations presented and their level of support;
3. Identifies a recommended course of action, as well as any other viable options;
4. Discusses the costs and benefits of implementing the recommended course of action; and
5. Identifies any concerns or issues that remain to be addressed.

The draft report will be sent to the parties for comment. Upon receipt of the comments, CD, in consultation with the assigned Commissioner, will prepare a revised draft report, which will be provided to the parties for comment.<sup>6</sup> A proposed decision, which adopts a final report, then will be prepared.

---

with several other options falling in between. All possibilities may be feasible, and CD will specify its recommended options in accordance with the requirements of §§ 776, 2872.5 and 2892.1.

<sup>6</sup> As explained in greater detail in footnote 5, CD may evaluate a gradation of possibilities, and it will specify its recommended options in accordance with the requirements of §§ 776, 2872.5 and 2892.1.

## **Backup Power Systems Not Installed on the Customer's Premises -- Plan of Action**

Section 2892.1 addresses backup power systems not located on the customer's premises. The first step in the investigation will be to determine the telecommunications service providers' current standards and practices applicable to their backup power systems. The second step will be to obtain the telecommunications service providers' and other interested parties' recommendations for reliability standards, and the associated costs and benefits.

To this end, CD is directed to convene a technical workshop of subject matter experts to inform the Commission in this matter. The workshop to discuss "backup power systems not installed on the customer's premises" will be held June 6, 2007. CD will provide timely notice on the Commission's Calendar and to the service list.

The outcome of the workshop will be an informational request that will seek more detailed information, concerns and issues related to backup power systems that are not installed on the customer's premises. The request will direct respondents to provide recommendations along with associated implementation costs and benefits.

The request will be sent to all telecommunications service providers and other interested parties. Upon receipt of the responses to the request, CD will compile the information into a report that:

1. Identifies the concerns and issues that the Commission must address, including whether the best practices have been implemented, and an assessment of the feasibility of zero greenhouse gas emission fuel cell systems to replace diesel generators for such backup power systems;
2. Identifies recommendations presented and their level of support;
3. Identifies a recommended course of action, as well as any other viable options;
4. Discusses the costs and benefits of implementing the recommended course of action; and
5. Identifies any concerns or issues that remain to be addressed.

The draft report will be sent to the parties for comment. Upon receipt of the comments, CD, in consultation with the assigned Commissioner, will prepare a revised draft report, which will be provided to the parties for comment.<sup>7</sup> A proposed decision, which adopts a final report, then will be prepared.

## **Existing Standards or Protocols**

---

<sup>7</sup> As explained in greater detail in footnote 5, CD may evaluate a gradation of possibilities, and it will specify its recommended options in accordance with the requirements of §§ 776, 2872.5 and 2892.1.

It is possible that there are existing standards or protocols addressing the matters covered by AB 2393. Therefore, we ask the respondents to provide information on any relevant existing state or federal standards or protocols, including citations, as well as any state or federal action that gives the recommendations of standard-setting agencies the force of law.

## **Respondents**

For purposes of this proceeding, all California certificated telephony providers, users of emergency notification systems, and providers of telecommunications service (as defined in § 2892.1.(a)) are respondents.

## **Service List**

The Executive Director shall serve copies of the rulemaking on respondents to this proceeding.

While we have attempted to identify and serve this rulemaking on all respondents, we may have missed some. Therefore, we ask those receiving this rulemaking to share it with any respondents who may not have been served.

We invite broad participation in this proceeding. Those who seek party status, including respondents, or wish to monitor this proceeding may do so by informing the Commission's Administrative Law Judge (ALJ) Process Office ([process\\_office@cpuc.ca.gov](mailto:process_office@cpuc.ca.gov)) of his or her intent to participate and providing the following information:

- a. Name and organization represented, if any
- b. Address
- c. Telephone number
- d. E-mail address
- e. Assignment to the appearance, state service, or information only category.

In order to be included on the initial service list of this proceeding, parties should so inform the ALJ Process Office no later than April 30, 2007.

While all respondents identified in the OIR will be bound by the outcome of this proceeding, only those who notify us of their wish to be on the service list will be accorded service by others until final rules are proposed and/or a final decision issued.

The initial service list will be posted on the Commission's website at [www.cpuc.ca.gov](http://www.cpuc.ca.gov) and will be updated periodically. Parties should use the website service list for service of all filings.

All filings in this proceeding may be made electronically according to Rule 1.10 of the Commission's Rules of Practice and Procedure (Rules). Consistent with those rules, a hard copy of all pleadings shall be concurrently served on the assigned ALJ.

## Jurisdiction

AB 2393 addresses matters related to the reliability of a wide variety of telecommunications services during an emergency, and directs the Commission to undertake the tasks specified therein. Yet the Commission's jurisdiction regarding telecommunications rates and services is subject to limitations depending on the type of telecommunications services being provided.<sup>8</sup>

In the course of this rulemaking, the Commission may identify the need for standards in an area that is not within the Commission's jurisdiction. In such a case, the Commission may recommend state or federal legislation or the adoption of an appropriate standard by the state or federal agency with the necessary jurisdiction. We will invite parties' comments on when jurisdictional issues dictate use of these alternate measures, if any are necessary.

The Commission requests the full cooperation of all respondents and interested parties with CD in carrying out its tasks as described herein.

The participation of a provider of a communications service will not constitute an admission of jurisdiction. Any participating party, however, shall provide information requested by the Commission.

## Preliminary Scoping Memo

This rulemaking is instituted for the purpose of implementing AB 2393, as described herein.

This rulemaking is preliminarily determined to be a quasi-legislative proceeding, as that term is defined in Rule 1.3(d) of the Rules. It is preliminarily determined that this proceeding shall be conducted through a written record, and hearings are not necessary.

Respondents and other interested parties are invited to participate in workshops and comment opportunities, as described above.

Rule 6.2 provides that comments may be filed on an Order Instituting Rulemaking addressing the category, need for hearings, issues, or schedule. In particular, we invite comments on how information for this investigation may be best obtained and whether workshops are needed. Comments shall be filed no later than May 4, 2007.

Pursuant to Rule 17.1(a)(2), Notices of Intent to claim compensation shall be filed no later than June 4, 2007.

The schedule is as follows:

Rulemaking Issued

April 12, 2007

---

<sup>8</sup> See, e.g., *In re Vonage Holdings Corp.*, 19 F.C.C.R. 22404, 22424 at ¶ 31 (preempting state regulation of VoIP service offered by Vonage); *Minnesota Public Utilities Comm'n v. Federal Communications Comm'n*, 2007 U.S. App. LEXIS 6448 (8th Cir. 2007) (recognizing that the FCC decision in *Vonage* precludes state regulation to the same extent for other "services 'having basic characteristics similar to DigitalVoice service'") (quoting *id.* at 22424, ¶ 32).

Request to be placed on service list	April 30, 2007
Comments on the rulemaking	May 4, 2007
Workshop scope/agendas mailed	May 25, 2007
Notices of Intent to claim compensation filed	June 4, 2007
Workshop—§ 776	June 5, 2007
Workshop—§ 2892.1	June 6, 2007
Workshop—§ 2872.5	June 19, 2007
Informational requests mailed	July 13, 2007
Responses to informational requests filed	August 15, 2007
CD draft report mailed <sup>9</sup>	October 17, 2007
Comments on draft report filed	November 6, 2007
Reply comments on draft report filed	November 21, 2007
CD revised draft report mailed	December 11, 2007
Comments on revised draft report filed	December 21, 2007
Commission's report to the Legislature	December 31, 2007
Reply comments on revised draft report filed	January 14, 2008
Proposed decision mailed	April 11, 2008
Proposed decision on Commission's Agenda	May 2008

### **Exempt from Public Review**

Pursuant to Rule 14.7, no public review or comment is required for an Order Instituting Rulemaking.

**IT IS ORDERED** that:

1. A rulemaking is instituted for the purpose of addressing standards for telecommunications backup power systems and emergency notification systems pursuant to Assembly Bill 2393.
2. This rulemaking is preliminarily determined to be a quasi-legislative proceeding, as that term is defined in Rule 1.3(d) of the Commission's Rules of Practice and Procedure.
3. All California certificated telephony providers, users of emergency notification systems, and providers of telecommunications service (as defined in Public Utilities Code Section 2892.1.(a)) are respondents to this rulemaking.
4. The temporary service list for this proceeding shall include the respondents, the Office of Emergency Services, and the Department of General Services.
5. The schedule is as set forth herein.

---

<sup>9</sup> CD's draft report will be a single document addressing §§ 776, 2872.5 and 2892.1. All reports, comments and reply comments are to be filed and served on all parties.

6. Those who seek party status or wish to monitor this proceeding shall do so by informing the Commission's Administrative Law Judge (ALJ) Process Office ([process\\_office@cpuc.ca.gov](mailto:process_office@cpuc.ca.gov)) of his or her intent to participate and providing the following information:
  - a. Name and organization represented, if any
  - b. Address
  - c. Telephone number
  - d. E-mail address
  - e. Assignment to the appearance, state service, or information only category.

In order to be included on the initial service list of this proceeding, parties shall so inform the ALJ Process Office no later than April 30, 2007.

7. The assigned Commissioner and/or the assigned ALJ shall have ongoing oversight of the service list and may institute changes to the list or the rules governing it, as needed.
8. The assigned Commissioner and/or the assigned ALJ may modify the process and schedule established herein as necessary.

This order is effective today.

Dated April 12, 2007, at San Francisco, California.

MICHAEL R. PEEVEY  
President  
DIAN M. GRUENEICH  
JOHN A. BOHN  
RACHELLE B. CHONG  
TIMOTHY ALAN SIMON  
Commissioners

[R0704015 Attachment A - Assembly Bill 2393](#)

## Appendix B: Workshops – Scope, Agenda, Timeline

STATE OF CALIFORNIA

ARNOLD SCHWARZENEGGER, *Governor*

---

### PUBLIC UTILITIES COMMISSION

505 VAN NESS AVENUE

SAN FRANCISCO, CA 94102-3298



May 21, 2007

To: All Interested Parties in Order Instituting Rulemaking (R.) 07-04-015

In this letter, the Communications Division (CD) lays out the scope, agenda and procedures for conducting three technical workshops of subject matter experts, as directed by R.07-04-015.

Pursuant to Assembly Bill (AB) 2393 (Ch. 776, Stats. 2006), the Commission initiated this Rulemaking to investigate current practices for telecommunications back-up power systems and emergency notification systems. The Commission will adopt performance standards for these systems only if technically feasible and the benefits exceed the costs. The Commission is required to provide a report to the Legislature on the results of its investigation before January 1, 2008.

To this end, technical workshops will be held in the Commission's Auditorium, at 505 Van Ness Avenue, in San Francisco, as follows:

- 9 am to 3:30 pm – June 5, 2007  
Back-up Power Installed on the Property of Residential and Small Commercial Customers
- 10 am to 4:30 pm – June 6, 2007  
Back-up Power Systems Not Installed on the Customer's Premises
- 10 am to 4:30 pm – June 19, 2007  
Emergency Notification Systems.

The workshops will be available via video Webcast at: <http://www.californiaadmin.com/cgi-bin/cpuc.cgi> and via telephone at 1-866-687-1443, when prompted, enter the participant pass code – 737358. The workshops will also be transcribed and transcriptions will be made available to interested parties.

**Appendix A** outlines the agenda for these workshops. **Appendix B** sets forth workshop questions. Please respond to the Appendix B workshop questions by May 31, 2007 with copy to the proceeding service list.<sup>10 11</sup> Electronic service is encouraged. Consistent with Commission

---

<sup>10</sup> The service list is available at [http://www.cpuc.ca.gov/published/service\\_lists/R0704015\\_75408.htm](http://www.cpuc.ca.gov/published/service_lists/R0704015_75408.htm).

<sup>11</sup> Information indicated to be proprietary and confidential will be restricted from public disclosure pursuant to Public Utilities Code Section 583 and General Order 66-C available at [www.cpuc.ca.gov/published/Graphics/644.pdf](http://www.cpuc.ca.gov/published/Graphics/644.pdf).

rules, a hard copy must be provided concurrently to Assigned Administrative Law Judge Jeffrey P. O'Donnell. An additional hard copy is requested to be provided to Simin Litkouhi of the CD staff.

Please include in your responses the names of technical experts and legal representatives, who will attend the workshop(s) in person, and identify the name of your technical presenter. Please indicate if you intend to make a presentation.

The Commission invites broad participation in this proceeding and will provide specialized accommodation for requests received by May 29, 2007.

### **WORKSHOP SCOPE**

#### **June 5, 2007 from 9:00 am to 3:30 pm in the Commission Auditorium Back-up Power Systems Installed on the Property of Residential and Small Commercial Customers**

The Commission is to consider the need for performance reliability standards if the benefits exceed the costs and if technically feasible to develop and implement performance reliability standards for back-up power systems installed on the property of residential and small commercial customers. Consideration of standards will address: minimum operating life, minimum time period in which a telephone system with a charged back-up power system will provide the customer with sufficient electricity for emergency usage, and a means to warn the customer when the back-up system's charge is low or when the system can no longer hold a charge.

The purpose of this workshop is to receive a broad overview of:

- How back-up power currently is provided to residential and small commercial customers,
- Concerns and issues related to back-up power systems on the property of residential and small commercial customers, and
- Definition(s) of "small commercial customer" for the purpose of this investigation.

The outcome of this workshop will be an informational request that will seek more detailed information, that:

- (a) Clarifies the nature of existing back-up power systems;
- (b) Identifies current best practices;
- (c) Provides details on any relevant existing state or federal standards or protocols, as well as any state or federal action that gives the recommendations of standard-setting agencies the force of law;
- (d) Addresses the concerns and issues that the Commission must consider, including the costs, benefits, and technical feasibility of establishing battery back-up requirements;
- (e) Identifies recommendations presented by the parties and their level of support;
- (f) Assesses whether any jurisdictional issues prevent the Commission from pursuing certain recommendations;

- (g) Identifies a recommended course of action, as well as any other viable options;
- (h) Discusses the costs and benefits of implementing the recommended course of action;
- (i) Proposes a definition of small businesses for the purpose of this investigation; and
- (j) Identifies any concerns or issues that remain to be addressed.

**June 6, 2007 from 10:00 am to 4:30 pm in the Commission Auditorium Back-up Power Systems not installed on the Customer's Premises**

Telecommunications service providers generally install back-up power on their property so their networks can operate in an electrical outage.<sup>12</sup> In addition to ensuring network reliability and operational efficiencies, minimizing communications service disruptions is widely beneficial for public safety and economic sustainability. In consultation with the Governor's Office of Emergency Services (OES) and the California Department of General Services (DGS), the Commission will determine whether the benefits exceed the costs and if it is technically feasible for the Commission to develop and implement performance reliability criteria back-up power systems that are not installed on customers' premises.

As these back-up systems are often batteries supplemented by diesel-powered electric generators that recharge the batteries, the Commission is also to determine the feasibility of replacing diesel generators with zero greenhouse gas emission fuel cell systems.

The purpose of this workshop is to receive a broad overview of:

- How back-up power not installed on customers' premises currently is provided,
- Concerns and issues related to back-up power systems that are not installed on customers' premises, and
- The feasibility of replacing diesel generators with zero greenhouse gas emission fuel cell systems.

The outcome of the workshop will be an informational request that will seek more detailed information, that:

Clarifies the nature of existing back-up power systems;

1. Identifies current best practices;
2. Provides details on any relevant existing state or federal standards or protocols, as well as any state or federal action that gives the recommendations of standard-setting agencies the force of law;
3. Addresses the concerns and issues that the Commission must consider, including the costs, benefits, and technical feasibility of establishing back-up requirements and an assessment of

---

<sup>12</sup> Within the AB 2393 legislation, "telecommunications service" means voice communication provided by a telephone corporation as defined in Public Utilities Code § 234, voice communications provided by a provider of satellite telephone services, voice communications provided by a provider of mobile telephony service as defined in Public Utilities Code § 2890.2, and voice communications provided by a facilities-based provider of voice communications utilizing Voice over Internet Protocol (VoIP) or any successor protocol.

the feasibility of zero greenhouse gas emission fuel cell systems to replace diesel generators for such back-up power systems;

4. Identifies recommendations presented and their level of support;
5. Assesses whether any jurisdictional issues prevent the Commission from pursuing certain recommendations;
6. Identifies a recommended course of action, as well as any other viable options;
7. Discusses the costs and benefits of implementing the recommended course of action; and
8. Identifies any concerns or issues that remain to be addressed.

**June 19, 2007 from 10:00 am to 4:30 pm in the Commission Auditorium Emergency Notification Systems**

Automatic notification devices are used in emergency notification systems by law enforcement agencies, fire protection agencies, public health agencies, public environmental health agencies, city or county emergency services planning agencies, and private for-profit agencies operating under contract with, and at the direction of, one or more of these agencies. These are automatic devices that store phone devices and disseminate a prerecorded voice and text message to those phone numbers in the event of an emergency. In consultation with OES and DGS, the Commission will (i) determine the standards and protocols currently in use by those entities that operate such systems and (ii) obtain and consider the operating entities' and other interested parties' recommendations for improving emergency notification systems, which shall include an assessment of the costs and benefits of requiring standards and protocols for these systems.

The purpose of this workshop is to receive a broad overview of:

- Concerns and issues related to emergency notification systems, including funding and statutory modifications needed to facilitate such notification:

The outcome of the workshop will be an informational request that will seek more detailed information, of the concerns and issues that must be addressed to establish emergency notification systems, that:

1. Clarifies the nature of existing emergency notification systems;
2. Identifies current best practices;
3. Provides details on any relevant existing state or federal standards or protocols, as well as any state or federal action that gives the recommendations of standard-setting agencies the force of law;
4. Identifies the policy concerns and issues that the Commission must address, including funding of emergency notification systems and any necessary statutory modifications needed to facilitate such notification;
5. Assesses whether any jurisdictional issues prevent the Commission from pursuing certain recommendations;
6. Identifies recommendations presented and their level of support;
7. Identifies a recommended course of action, as well as any other viable options;
8. Discusses the costs and benefits of implementing the recommended course of action; and
9. Identifies any concerns or issues that remain to be addressed.

For further information about these workshops, contact CD staff:

- Simin Litkouhi at (415) 703-1865 or [sim@cpuc.ca.gov](mailto:sim@cpuc.ca.gov)
- Phyllis White at (415) 703-1955 or [prw@cpuc.ca.gov](mailto:prw@cpuc.ca.gov)

Very Truly Yours,

John M. Leutza, Director

Communications Division

**APPENDIX A (OF CPUC ANNOUNCEMENT)**

**WORKSHOP AGENDA**

**Tuesday, June 5, 2007**

**Back-up Power Systems at Residential & Small Commercial**

**Customer Premises**

9:00 – 9:05	Welcome & acknowledgement of other officials	Simin Litkouhi, CPUC
9:05 – 9:15	Opening Remarks	Commissioner Simon
9:15 – 12:00		10 min presentations by Stakeholders & Interested Parties with 5 min Q&A
12:00- 1:00		Lunch Break
1:00 – 3:15		10 min presentations by Stakeholders & Interested Parties with 5 min Q&A
3:15 – 3:30	Closing Remarks	Simin Litkouhi, CPUC

**Wednesday, June 6, 2007**

**Back-up Power Systems not installed on the Customer's Premises**

10:00 – 10:05	Welcome & acknowledgement of other officials	Simin Litkouhi, CPUC
10:05 – 10:15	Opening Remarks	Commissioner Simon
10:15 – 12:00		10 min presentations by Stakeholders & Interested Parties with 5 min Q&A
12:00- 1:00		
1:00 – 4:15		10 min presentations by Stakeholders & Interested Parties with 5 min Q&A
4:15 – 4:30	Closing Remarks	Simin Litkouhi

**WORKSHOP AGENDA**

**Tuesday, June 19, 2007**

**Emergency Notification Systems**

10:00 – 10:05	Welcome & acknowledgement of other officials	Simin Litkouhi, CPUC
10:05 – 10:15	Opening Remarks	Commissioner Simon
10:15 – 12:00		10 min presentations by Stakeholders & Interested Parties with 5 min Q&A
12:00- 1:00		Lunch Break
1:00 – 4:15		10 min presentations by Stakeholders & Interested Parties with 5 min Q&A
4:15 – 4:30	Closing Remarks	Simin Litkouhi

**APPENDIX B (OF CPUC ANNOUNCEMENT)**

**Workshop Questions**

**Back-up Power Systems at Residential & Small Commercial Customer Premises**

**(June 5, 2007 Workshop)**

1. Please identify the nature of your business and your interest in this workshop.
2. For providers of “voice” communications that require back-up battery at the customer premise what underlying technology (e.g., copper wires, fiber-optic cable, coaxial cable, wireless, satellite, etc.) is currently used? Are you planning to introduce any new technologies in the next five years?
3. Currently, do you have Best Practices/Requirements/Specifications for back-up power systems at residential and small commercial customer premises? If so, please provide a broad overview of these Best Practices.
4. For non-facilities-based service providers offering voice telephony services/applications (and the related terminal equipment) who is responsible for the power back-up systems at the residential and small commercial customer premises?
  - If you do not consider yourself responsible for the battery back-up systems, what specific agreement do you have between the facilities-based provider and the customer to assure availability of back-up power during emergency situations?
5. Currently, are you involved with any federal, state, local government and/or industry standard bodies in requirements/standards development activities regarding the back-up power systems at residential and small commercial customer premises for emergency situations?
  - If yes, please provide a broad overview of your involvement.
6. Back-up battery and associated equipment at the customer premise details:
  - Who is responsible for procuring/replacing the back-up power system (the service provider, customer, etc.)?
  - What is the minimum operating life of the back-up battery?
  - What is the minimum time period for which a telephone system with a charged back-up power system can provide the customer with sufficient electricity for emergency usage (stand by time, actual call time, etc.)?
  - How long does it take to recharge a fully discharged battery after utility power is restored?
  - What is the means of providing alarms (e.g., indicator lights, audible signals, vibration signal from pager, etc.) to the customer on the status of the back-up power unit?
  - Are there special alarming considerations for the population with disabilities?
  - Are components with shorter lifetimes (e.g., batteries) readily available from local retail stores or do they require special purchase from qualified suppliers?
  - Can the battery withstand environment stress, such as water damage, fire, mild/modest earthquakes, etc.
7. As a telephony service provider, if you are responsible for back-up power systems at the residential and small commercial customer premises:
  - (iv) Do you have monitoring and alarming systems for those back-up power systems so that you can determine if they are fully charged or working properly? If so, please describe them.
  - (v) How many centers across the state are you using to monitor the back-up power systems?

- (vi) Do you currently (or are you planning to) charge customers for monitoring and alarming services associated with back-up power system?
8. Have you done or are you aware of any cost/benefit analysis related to the issue of back-up power systems at the residential and small commercial customer premises?
  - If yes, please share such a study (or aspects of the study).
9. For manufactures of back-up batteries and associated units:
  - What are the different battery types that are currently available for use at customer locations?
  - What are the emerging battery technologies that will potentially be available commercially (at retail locations) in the next five years?
10. What are other significant challenges being faced today in the operation and management of these back-up power systems at residential and small commercial customer premises?
11. Are there any other regulations, such as from the FCC, EPA, etc that service providers are required to comply with that CPUC should take into consideration in the context of this proceeding?

### **Back-up Power Systems Not Installed on the Customer's Premises**

#### **(June 6, 2007 Workshop)**

1. Please identify the nature of your business and your interest in this workshop.
2. For providers of "voice" communications that require back-up battery at the customer premise what underlying technology (e.g., copper wires, fiber-optic cable, coaxial cable, wireless, satellite, etc.) is currently used? Are you planning to introduce any new technologies in the next five years?
3. Currently, do you have best practices/requirements/specifications for back-up power systems on your network? Please identify where in your network the back-up power systems are located, such as Central Office, Digital Loop Carrier systems, Remote Switches/Digital Terminals, Cable Headends, etc.
  - If you have such best practices/requirements/specifications, provide a broad overview of these Best Practices?
  - Are you willing to share detailed best practices/requirements/specifications (or relevant aspects of them) with the CPUC as part of the follow-on information request?
4. Have you implemented your best practices/requirements/specifications consistently across the State of California? As an example does every Central Office or Headend installation have back up power or have you done a "per site" analysis to determine what needs to be implemented?
5. To what extent have you implemented the best practices recommended by the FCC-sponsored Network Reliability and Interoperability Council (NRIC) published in December 2005?
6. What type of energy storage technologies are you currently using for back-up power systems not installed at the customer's premises? (e.g., Nickel Cadmium [NiCad], Lithium Metal Polymer [LMP] valve regulated lead acid [VRLA], etc.)
7. What type of energy generation technologies are you currently using for back-up power systems not installed at the customer's premises? (e.g., diesel generator, propane generator, fuel cells, solar, wind, etc.)
8. What future technologies do you envision for the back-up power systems (either energy storage and energy generation) not installed at customer's premises?
9. Currently, are you involved with any federal, state, local government and/or industry standard bodies in requirements/standards development activities regarding the back-up power systems not installed on customer premises?

- If yes, please, provide a broad overview of your involvement.
10. Have you done (or are you aware of) any assessment regarding the feasibility of using zero greenhouse gas emission fuel cell systems to replace diesel generators for back-up power systems not installed on customer's premises? Do you have any cost/benefit analysis related to that issue? If yes, please, share such a study (or aspects of the study).
    - Other energy generator systems could include solar, wind, and bio-diesel (not zero emission).
    - Other storage systems could include batteries, flywheels, etc.
  11. For manufactures of back-up power equipment:
    - What are the emerging battery technologies that will potentially be available commercially (at retail locations) in the next five years?
    - Are you involved in standard setting bodies? If so, please summarize your involvement?
  12. What are other significant challenges being faced today in the operation and management of these back-up power systems at network sites?
  13. Are there any other regulations, such as from the FCC, EPA, etc that service providers are required to comply with that CPUC should take into consideration?

### **Emergency Notification Systems**

**(June 19, 2007 Workshop)**

1. Please, identify the nature of your business and your interest in this workshop.
2. As a stakeholder in emergency notification systems, besides responding to common threats (e.g., fire, earthquake, flooding, and local attacks/shootings) what do you view is the purpose of emergency notification systems?

#### **STANDARDS**

3. Are you involved with government or industry standards setting bodies on any aspects of standards for notification systems? (A representative sample of industry bodies involved in this subject includes, but is not limited to: ITU-T, ATIS, CTIA, 3GPP, OASIS, COMCARE, etc.).
  - If you are involved in standards, please summarize your involvement.
4. Besides the Common Alerting Protocol (CAP), do you know of other efforts to provide an open, non-proprietary digital message format for all types of alerts and notifications? If so, please describe them
5. Please describe any standards, requirements and/or objectives you have for emergency notification systems?
6. What are the issues, pros and cons, for standardizing Warning Messages? (e.g., benefits of machine-readable Warning Messages for information integration with other sources, decision making, automated translation, easy dissemination, building situational awareness during a crisis; ensuring the recipient understands the message, etc.)
7. What are the issues, pros and cons, related to standardizing the features, parameters and capabilities of notification systems?
8. Identify any other relevant issue(s) that should be addressed in order to properly consider standardization of emergency notification systems and protocols? (e.g., interoperability of hazard-warning technologies, challenges of implementing multi-lingual warnings across a set of different technologies, localizing the warning message, establishing alerting procedures, implementing a user interface for emergency message generation, and using a template for structuring upstream data to support situational awareness for emergency managers.)

#### **TECHNOLOGY**

9. Is there a way to distribute warnings consistently over all available means of communications? Do the different application level protocols allow for a diverse and extensible array of multimedia messages or are standards needed to enable these capabilities?
10. What technologies or applications are available for geographically targeting messaging?
11. For persons who use cell phones and the Internet as their primary means of communication, how can you ensure that the right warning messages get to the right people irrespective of their location or end user device?
12. How should emergency information sharing and data exchange be facilitated and coordinated between local, state, tribal, national and industry organizations that provide emergency response and management services?
13. How do existing emergency notification systems take into account the communications needs of people with disabilities who use non-standard methods of communication in? What improvement is needed?
  - What standards or protocols should be adopted for emergency notification systems?

#### EMERGENCY NOTIFICATION SYSTEM USER PERSPECTIVE

14. What is your experience as a user of notification system(s) in the following areas:
  - System availability, capacity, performance and reliability
  - Available capabilities
  - Security
  - Shortfalls/areas of improvement
15. Do you see the need for standards? If so, in what specific areas?
16. How do you ensure the privacy of the persons on the notification lists?

#### COST/BENEFITS

17. Have you done or are you aware of any assessment regarding the standardization of emergency notification systems and protocols? Do you have any cost/benefit analysis related to that issue? If yes, please, share the study (or aspects of the study).

## Appendix C: List of Informational Requests

### **INFORMATIONAL REQUEST 1**

(Follow-up to Workshop held on June 5, 2007)

#### **Section 776 [AB 2393(1)]:**

#### **Back-up Power Systems Installed on the Property of Residential and Small Commercial Customers**

These informational requests are intended to provide parties and those who are interested in this proceeding an additional opportunity to comment on issues concerning back-up power systems on residential and small commercial customer properties. While response to these informational requests is voluntary, we encourage parties to respond as fully as possible in order to facilitate the Commission in its consideration of whether to develop performance reliability standards for these back-up power systems.

#### **Instructions for Responding to this Informational Request**

Please respond to this Informational Request questions by July 20, 2007 with copy to the proceeding service list.<sup>13</sup> Electronic service is encouraged. Consistent with Commission rules, a hard copy must be provided concurrently to Assigned Administrative Law Judge Jeffrey P. O'Donnell. An additional hard copy is requested to be provided to Simin Litkouhi of the CD staff.

#### **Handling of Responders' Proprietary Information**

Information indicated to be proprietary and confidential will be restricted from public disclosure pursuant to Public Utilities Code Section 583 and General Order 66-C available at: [www.cpuc.ca.gov/published/Graphics/644.pdf](http://www.cpuc.ca.gov/published/Graphics/644.pdf) .

### **Introduction**

The Commission is to consider the need for performance reliability standards if the benefits exceed the costs and if technically feasible to develop and implement performance reliability standards for back-up power systems installed on the property of residential and small commercial customers. Consideration of standards will address: minimum operating life, minimum time period in which a telephone system with a charged back-up power system will provide the customer with sufficient electricity for emergency usage, and a means to warn the customer when the back-up system's charge is low or when the system can no longer hold a charge.

The purpose of the related workshop (held on June 5, 2007) was to receive a broad overview of:

- How back-up power currently is provided to residential and small commercial customers,
- Concerns and issues related to back-up power systems on the property of residential and small commercial customers, and

---

<sup>13</sup> The service list is available at: [http://www.cpuc.ca.gov/published/service\\_lists/R0704015\\_75408.htm](http://www.cpuc.ca.gov/published/service_lists/R0704015_75408.htm) .

- Definition(s) of “small commercial customer” for the purpose of this investigation.

The outcome of the June 5, 2007 workshop is this voluntary informational request, which seeks more detailed information to:

- a. Clarify the nature of existing back-up power systems
- b. Identify current Best Practices
- c. Provide details on any relevant existing state or federal standards or protocols, as well as any state or federal action that gives the recommendations of standard-setting agencies the force of law
- d. Address the concerns and issues that the Commission must consider, including the costs, benefits, and technical feasibility of establishing battery back-up requirements
- e. Identify recommendations presented by the parties and their level of support
- f. Assess whether any jurisdictional issues prevent the Commission from pursuing certain recommendations
- g. Identify a recommended course of action, as well as any other viable options
- h. Discuss the costs and benefits of implementing the recommended course of action
- i. Propose a definition of small businesses for the purpose of this investigation
- j. Identify any concerns or issues that remain to be addressed.

## **Questions**

### **Category A: Participation in Related CPUC Activities**

1. Did you participate at the CPUC Workshop on “Back-up Power Systems Installed on the Property of Residential and Small Commercial Customers” that was held on June 5, 2007 in San Francisco, California?
  - a. If yes, do you have any additional input or comments on the presentations and discussions that took place there?
  - b. If not, you may view the corresponding Workshop webcast at <http://www.californiaadmin.com/cgi-bin/cpuc.cgi> . This may be useful to do prior to answering some questions in this informational request.
2. Did you have a written response to the related CPUC questions mailed before the above workshop<sup>14</sup>?
  - a. If yes, do you have any additional comments or clarifications to make regarding your earlier response?
  - b. If you did not respond to the CPUC questions mailed before the workshop, and would like to respond to those questions, you may provide such response now, and/or respond to the questions in this informational request?

### **Category B: Trends and Future Technologies**

---

<sup>14</sup> Workshop questions at <http://www.cpuc.ca.gov/static/hottopics/2telco/r0704015workshopnotification.pdf>

3. What trends and emerging technologies do your company or your battery supplier company(ies) envision for the back-up power supply at the residential and small commercial customer premises?
  - a. Please provide examples of such technologies that you have considered but not adopted.
  - b. Please elaborate on the pros and cons of such technologies as seen from your company's perspective.
4. At the ITU-T Standards Organization<sup>15</sup> an issue was recently introduced regarding alternative back-up power conservation modes at the Optical Network Terminal (ONT). The issue addresses methods for dramatically reducing battery drain that could extend ONT back-up power beyond a few hours to a period of several days.
  - a. Please provide any comments/remarks about the methods mentioned (e.g., power shedding and "sleep mode") to extend back-up battery operation.
  - b. If you are aware of any similar activities in any other Standards/Professional Organizations or your battery supplier company(ies) please describe them.

### **Category C: Consumer Awareness & Education**

5. If you offer IP telephony, to the extent you do so, do you educate your customers about the nature of IP telephony and the fact that if the power goes out, voice service will go out unless the consumer has a back-up source of power, such as a charged battery? How do you educate them? Where is this information contained (e.g., script for installation personnel, customer installation booklet, customer representative script, instruction manual)?
6. For back-up power systems installed at residential and small commercial customer premises, do you educate the consumer (e.g., leave-behind informational brochures, manuals, a quick demo during installation, Internet-based information sites, etc.) on battery alarms and replacement?
  - a. Please provide specific examples of such material.
  - b. Can you provide demo equipment of your customer premises back-up power systems to the CPUC that will be used for educational and public display purposes during the coming weeks? (NOTE: It refers to the equipment shown at the workshop on June 5, 2007 either in viewgraphs or on carry-on displays).
  - c. What are your current or future plans to educate consumers with special needs (e.g., deaf, disabled, visually impaired) regarding options available to extend the life of the battery in their homes?
  - d. Please propose generic consumer information that could be posted on "California's Consumer Education Information" web site (<http://www.calphoneinfo.com/>) regarding the battery back-up systems at residential and small commercial customer premises (e.g., choices the consumers can make about technologies providing telephone service during emergencies, back-up power equipment in their homes, service provider vs. customer responsibilities for maintaining back-up power at customer premises, etc.).

### **Category D: Best Practices**

---

<sup>15</sup> May 11, 2007 Interim Meeting of the ITU-T Study Group 15, Working Party (WP) 1, Question 2, Working Document LF18 titled "ONT Back-up Power Considerations".

7. If you are able and willing to do so, please provide your company's documented Best Practices for back-up power systems at residential and small commercial customer premises. (Please indicate if such information should be treated as proprietary or if it could be shared with the public.)
8. Do you know any governmental agency, non-governmental organization, company, or any other entity that has or is drafting Best Practices for back-up power systems at residential and small commercial customer premises?
  - a. If yes, please provide references.
  - b. If not, please indicate the appropriate entity (e.g., agency, organization) that should develop such Best Practices.

### **Category E: Definitions**

9. Regarding the working definition for "small commercial/business customer" that was adopted for this information request<sup>16</sup>:
  - a. Do you believe this is an appropriate definition for the Order Instituting Rulemaking (OIR) to implement Assembly Bill (AB) 2393?
  - b. If not, what definition would you propose and what is your rationale?
10. If your company or organization has a definition for the term "emergency usage", what is it?
  - a. How does that definition apply to the OIR to implement AB 2393?
  - b. If not, do you want to propose a definition for "emergency usage" that should apply to this OIR to implement AB 2393?

### **Category F: Back-up Power Systems Standards/Requirements/Objectives**

11. If you are a Service Provider procuring the back-up power system at residential and small commercial customer premises, what assumptions are used by your company regarding grid power outages (e.g., length of outages and Quality-of-Grid-Power supplied)?
12. Please provide your current performance reliability standards/requirements/ objectives for back-up power systems installed on the property of residential and small commercial customers. What suggestions do you have regarding those standards/requirements/objectives that should be proposed as part of this OIR for the legislature to address, including:
  - a. Minimum operating life
  - b. Minimum time period in which a telephone system with a charged back-up power system will provide the customer with sufficient electricity for emergency usage
  - c. A means to warn the customer when the back-up system's charge is low or when the system can no longer hold a charge?

### **Category G: Concerns or Issues**

13. Please comment on any health, safety, environmental, and liability issues regarding the ownership of back-up power systems at residential and small commercial customer premises that have not already been discussed.

---

<sup>16</sup> For the purposes of responding to the informational request, "small business customer" is defined as a business customer with no more than five access lines, none of which belongs to a larger entity (<http://www.cpuc.ca.gov/EFILE/RULINGS/69259.htm>).

14. Please identify any other concerns or issues that should be addressed in order to properly consider back-up power systems at residential and small commercial customer premises?

**Category H: Cost/Benefit Analysis**

15. Whether or not you are responsible or not for back-up power systems at the residential and small commercial customer premises, if you have done any cost/benefit analysis related to that issue, please provide copies of any studies you have, whether prepared by you or others. (Please indicate if such information should be treated as proprietary.)

Additional Information Needed for Cost/Benefit Analysis:

This section highlights some of the information required to conduct cost/benefit analyses for back-up power systems installed at residential and small commercial customer premises.

**Inquiries:**

- I. Describe the current processes, methods, and procedures used to provide customer premises back-up power for non-traditional access services, such as FTTx:
  - a. How is the back-up power solution provisioned? What does it consist of?
  - b. Are components with shorter lifetimes (e.g., batteries) readily available from local hardware or supermarket stores or do they require special purchase from qualified suppliers?
  - c. How is the proper functioning of the back-up power system tested/monitored? List tasks, level of resources (e.g., FTE personnel) devoted to this activity, frequency of tests performed. Is it proactive or reactive?
  - d. What repair and/or maintenance activities are performed?
  - e. What tasks, if any, is the responsibility of the end user? For example in the case of a smoke alarm, is the homeowner expected to test the back-up power on a regular basis?
  - f. If end user performs a maintenance operation incorrectly or fails to do required action, does that impair any service or warranty obligations?
  - g. Which, if any, of these tasks are automated (under the control of an Operations Support System [OSS])? If not, why? What would prevent a carrier from mechanizing testing and monitoring activities?
- II. Provide data or statistics on the number of back-up power incidents, both forecasted as well as actual reported problems per month (minimal time window is three years; please indicate the time window reported).
- III. What is the estimated cost (per incident) of a “truck roll” to a customer location to diagnose and repair a back-up power system issue?
- IV. What are other challenges being faced today in the management of these back-up power systems at residential and small commercial customer premises?
- V. The following data items (pertaining to incidence of power outages in your network in California) may provide valuable insights to the CPUC to get a sense of the scale of the implications of back-up power solutions:

- a. Has your telecommunications network experienced outage incidences in the past three years?
- b. What is the average number of outages and duration by geographic locations?
- c. Please provide totals segregated by:
  - i. Type of incident (e.g., power grid problems, weather-related issues [earthquakes, storms, floods, ice], other causes [vandalism], etc.)
  - ii. Number of affected users per outage
  - iii. Average outage duration and 90% upper quantile
  - iv. Specific geographic area (or statewide).
- d. If available, please provide data on power outage :
  - i. Outage = complete loss of service with number of times and durations
  - ii. Cumulative indexes such as SAIDI (System Average Interruption Duration Index) or SAIFI (System Average Interruption Frequency Index) values.

VI. Potential costs associated with the adoption of performance and reliability standards for customer premises back-up power systems may include:

- a. Incremental cost of proposed power solutions relative to existing systems being deployed.
  - i. Estimated cost of premises uninterruptible power supply (UPS) units with various functional configurations:
    - Reserve duration levels (e.g., 2 through x hours)
    - Visual signals, audible signals, transmission of signal data to management system
    - Alarm set (operating on battery, battery missing, replace battery, low battery)
    - Other.
- b. Cost of retrofitting existing deployments with new conforming standard equipment (not only the cost of the units, but also the effort to dispatch a technician to replace the unit).
- c. Efforts devoted to the planning, testing, procurement overhead of new solutions.

VII. Potential costs associated with the operational aspects of installing, operating, and monitoring back-up power systems at the residential and small commercial business customer may include:

- a. What are the average loaded labor rates associated with personnel involved in the following operational functions:
  - i. Customer care
  - ii. Outside plant technician
  - iii. Dispatcher
  - iv. Field-craft supervisor
  - v. Network Operations Center (NOC) technicians.

- b. What is the estimated level of effort in Full-Time-Equivalents (FTEs) required to conduct the necessary planning and testing in preparation for such a deployment?

## **INFORMATIONAL REQUEST 2**

**(Follow-up to Workshop held on June 6, 2007)**

### **Section 2892.1 [AB 2393(3)]:**

#### **Back-up Power Systems Not Installed on the Customer's Premises**

These informational requests are intended to provide parties and those who are interested in this proceeding an additional opportunity to comment on issues concerning back-up power systems not installed on customer premises. While response to these informational requests are voluntary, we encourage parties to respond as fully as possible in order to facilitate the Commission in its analysis of the costs and benefits and technical feasibility of developing and implementing performance reliability criteria for such back-up power systems.

#### **Instructions for Responding to this Informational Request**

Please respond to this Informational Request questions by July 20, 2007 with copy to the proceeding service list<sup>17</sup> Electronic service is encouraged. Consistent with Commission rules, a hard copy must be provided concurrently to Assigned Administrative Law Judge Jeffrey P. O'Donnell. An additional hard copy is requested to be provided to Simin Litkouhi of the CD staff.

#### **Handling of Responders' Proprietary Information**

Information indicated to be proprietary and confidential will be restricted from public disclosure pursuant to Public Utilities Code Section 583 and General Order 66-C available at: [www.cpuc.ca.gov/published/Graphics/644.pdf](http://www.cpuc.ca.gov/published/Graphics/644.pdf).

#### **CPUC Participation at FCC on the Proceedings under the WARN Act**

CPUC is actively following the FCC proceedings under the WARN act and will study the findings and recommendations of the independent panel reviewing the Impact of Hurricane Katrina on Communications Networks for applicability to this proceeding.

### **Introduction**

Telecommunications service providers generally install back-up power on their property so their networks can operate in an electrical outage.<sup>18</sup> In addition to ensuring network reliability and operational

---

<sup>17</sup> The service list is available at: [http://www.cpuc.ca.gov/published/service\\_lists/R0704015\\_75408.htm](http://www.cpuc.ca.gov/published/service_lists/R0704015_75408.htm).

<sup>18</sup> Within the AB 2393 legislation, "telecommunications service" means voice communication provided by a telephone corporation as defined in Public Utilities Code § 234, voice communications provided by a provider of satellite telephone services, voice communications provided by a provider of mobile telephony service as defined

efficiencies, minimizing communications service disruptions is widely beneficial for public safety and economic sustainability. In consultation with the Governor's OES and the California DGS, the Commission will determine whether the benefits exceed the costs and if it is technically feasible for the Commission to develop and implement performance reliability criteria back-up power systems that are not installed on customers' premises.

As these back-up systems are often batteries supplemented by diesel-powered electric generators that recharge the batteries, the Commission is also to determine the feasibility of replacing diesel generators with zero greenhouse gas emission fuel cell systems.

The purpose of the related workshop (held on June 6, 2007) was to receive a broad overview of:

- How back-up power not installed on customers' premises currently is provided,
- Concerns and issues related to back-up power systems that are not installed on customers' premises, and
- The feasibility of replacing diesel generators with zero greenhouse gas emission fuel cell systems.

The outcome of the workshop is this informational request, which seeks more detailed information, to:

- a. Clarify the nature of existing back-up power systems
- b. Identify current best practices
- c. Provide details on any relevant existing state or federal standards or protocols, as well as any state or federal action that gives the recommendations of standard-setting agencies the force of law
- d. Address the concerns and issues that the Commission must consider, including the costs, benefits, and technical feasibility of establishing back-up requirements and an assessment of the feasibility of zero greenhouse gas emission fuel cell systems to replace diesel generators for such back-up power systems
- e. Identify recommendations presented and their level of support
- f. Assess whether any jurisdictional issues prevent the Commission from pursuing certain recommendations
- g. Identify a recommended course of action, as well as any other viable options
- h. Discuss the costs and benefits of implementing the recommended course of action
- i. Identify any concerns or issues that remain to be addressed.

## **Questions**

### **Category A: Participation in Related CPUC Activities**

1. Did you participate at the CPUC Workshop on "Back-up Power Systems Not Installed on the Customer's Premises" that was held on June 6, 2007 in San Francisco, California?
  - a. If yes, do you have any additional input or comments on the presentations and discussions that took place there?

---

in Public Utilities Code § 2890.2, and voice communications provided by a facilities-based provider of voice communications utilizing Voice over Internet Protocol (VoIP) or any successor protocol.

- b. If not, you may view the corresponding workshop webcast at <http://www.californiaadmin.com/cgi-bin/cpuc.cgi> . This may be useful to do prior to answering some questions in this Informational Request.
2. Did you submit a written response to the related CPUC questions mailed before the above Workshop?
  - a. If yes, do you have any additional comments or clarifications to make regarding your earlier response?
  - b. If you did not respond to the CPUC questions mailed before the workshop, and would like to respond to those questions, you may provide such response now, and/or respond to the questions in this Informational Request?

### **Category B: Trends and Future Technologies**

3. For the trends and emerging technologies that your company or your battery supplier company(ies) envision for the back-up power supply not installed on customer premises:
  - a. Please provide some information about studies, forums/standards organizations addressing such technologies?
  - b. If you have considered but not adopted (or partially adopted) such technologies can you elaborate on the pros and cons as seen from your perspective? [NOTE: To the extent that you have already commented on this issue, there is no need to provide the same information. If you have additional comments on this issue, please respond].

### **Category C: Best Practices**

4. Please provide any Best Practices for back-up power systems not installed on customer premises as part of this rulemaking process? Please indicate if such information should be treated as proprietary or if it could be shared with the public.
5. As a facility based service provider to what extent have you adopted and followed the Network Reliability and Interoperability Council – VII (NRIC – VII, [www.nric.org](http://www.nric.org) ) best practices:
  - a. All of them
  - b. Most of them
  - c. Some of them
  - d. None of them
6. Do you know of any governmental agency, non-governmental organization, company, or any other entity that has or is drafting Best Practices for back-up power systems not installed on customer premises?
  - a. If yes please provide references
  - b. If not, please indicate the appropriate entity (e.g., agency, organization) that in your view should develop such Best Practices.

### **Category D: Back-up Power Systems Standards/Requirements/Objectives**

7. Given that recent FCC rules on back-up power (FCC 07-107, 47 C.F.R. 12.1, 12.2, and 12.3 released on June 8, 2007) require that telecom service “providers must have an emergency back-up power source for all assets that are normally powered from local AC commercial including those inside central offices, cell sites, remote switches digital loop carrier system remote terminals”:

- a. What percentages of the above mentioned assets in your company in the California have back-up power systems currently?
  - b. What plans do you have to comply with the above FCC rules (e.g., timeline for 100% compliance per asset category mentioned above)?
  - c. What factors are hindering you from 100% compliance currently?
  - d. What actions/measures are you taking to overcome those factors?
8. Please provide your company's performance reliability standards/requirements/ objectives for back-up power systems not installed on customer premises. What suggestion do you have for reliability standards/requirements/objectives that should be proposed as part of this OIR to the California legislature to address:
- a. Cell sites
  - b. Remote switches, and
  - c. Digital loop carrier system remote terminals
9. For the base station backhaul interconnection what percentage of base station outages is attributed to:
- a. Loss of power of the CLEC/ILEC backhaul network segment?
  - b. Loss of the CLEC/ILEC backhaul segment due to other reasons (e.g., cable dig-ups)?

#### **Category E: Concerns or Issues**

10. For current and emerging technologies of back-up power systems, please comment on any health, safety, environmental, and liability issues regarding the ownership of back-up power systems not installed on customer premises that have not already been discussed?
11. Please identify your company's concerns or issues that should be addressed in order to properly consider back-up power systems not installed on the customer's premises?

#### **Category F: Cost/Benefit Analysis**

12. Please provide any data relating to back-up power system outages (e.g., FCC-reportable outages) that you are willing to share with CPUC as part of this rulemaking process.
13. Regardless of your position on replacing existing diesel generators being used in telecom central offices with zero-greenhouse-gas-emission fuel cell systems, if you have any cost/benefit analysis related to that issue, please provide copies of any such studies you have, whether prepared by you or others. (Please indicate if such information should be treated as proprietary).

#### Additional Information Needed for Cost/Benefit Analysis:

This section highlights some of the information required to conduct cost/benefit analyses for replacing existing diesel generators being used in telecom central offices with zero-greenhouse-gas-emission fuel-cell systems. The evaluation of diesel generators vs. zero-emission-fuel cells would center on comparing the Total Cost of Ownership (TCO) for each of the alternatives over a study horizon (several years covering the life of the systems). Two distinct cases need to be considered:

- (1) An existing diesel generator (in operation) is replaced by a fuel-cell system, and
- (2) A new central office location is being deployed and a choice between the two needs to be made.

In order to establish a baseline, the following type of information is required. Please provide any available information in support of developing the baseline.

**Inquiries:**

- I. Describe a typical (representative) diesel generator system currently used to support the network's back-up power needs.
  - a. Size, capacity, configuration.
- II. What is the Installed First Cost (IFC) of such representative diesel generator system for a central office site?
  - a. How is this total first cost broken down into its components?
    - Site preparation, planning and engineering, equipment capital investment (for a given capacity size), installation labor, testing and cutover activity
- III. What are the ongoing operational expenses associated with such a representative system?
  - a. How much effort is devoted to operate and maintain diesel generators? (e.g., Full time equivalents, average loaded salary rates of associated staff)
    - What activities are carried out as part of the ongoing operation and maintenance?
  - b. What is the level and expense of fuel consumption, on average? (e.g., x gallons of fuel annually at a cost of \$y)
    - What is the estimated cost of parts and labor associated with repairs to (a representative) diesel generator unit?
  - c. What costs and savings are possible by switching to more environmentally friendly fuels (bio-diesel, low sulfur diesel)?
- IV. What is the cost of measures related to safety and security for the operation of diesel generators?
  - a. OSHA<sup>19</sup> compliance costs
  - b. Pollution control measures
  - c. Any other costs?

A similar set of data is required for a zero-emission fuel-cell system in order to conduct the financial comparisons. The fuel cells will be evaluated against newer and improved diesel generators that are designed to run on more environmentally friendly fuels or designed to run with lower emissions.

---

<sup>19</sup> OSHA: Occupational Safety & Health Administration

However, given that fuel-cell systems are not considered mature technology (at least in the telecom space), there may be additional considerations to factor in, such as:

- The cost of training personnel in the operation and maintenance of these systems
- Technology in early stages of maturity tends to correspond to higher costs – as deployment volumes increase, costs decrease
- Cost of built-in redundancy in back-up system to help maintain and ensure the expected high reliability for telecommunications network
- Benefits and savings of possible back-feeding power into the grid from fuel-cell system when it is not required to power telecommunications services.

Please provide any available information for the zero-emission fuel-cell systems for the items mentioned above.

### **INFORMATIONAL REQUEST 3**

**(Follow-up to Workshop held on June 19, 2007)**

#### **Section 2872.5 [AB 2393(2)]: Emergency Notification Systems**

These informational requests are intended to provide parties and those who are interested in this proceeding an additional opportunity to comment on issues concerning emergency notification systems. While response to these informational requests are voluntary, we encourage parties to respond as fully as possible in order to facilitate the Commission in its review of current standards and protocols regarding emergency notification systems and proposals for improving such systems.

#### **Instructions for Responding to this Informational Request**

Please respond to this Informational Request questions by July 20, 2007 with copy to the proceeding service list.<sup>20</sup> Electronic service is encouraged. Consistent with Commission rules, a hard copy must be provided concurrently to Assigned Administrative Law Judge Jeffrey P. O'Donnell. An additional hard copy is requested to be provided to Simin Litkouhi of the CD staff.

#### **Handling of Responders' Proprietary Information**

Information indicated to be proprietary and confidential will be restricted from public disclosure pursuant to Public Utilities Code Section 583 and General Order 66-C available at: [www.cpuc.ca.gov/published/Graphics/644.pdf](http://www.cpuc.ca.gov/published/Graphics/644.pdf) .

#### **CPUC Participation at FCC on the Proceedings under the WARN Act**

---

<sup>20</sup> The service list is available at: [http://www.cpuc.ca.gov/published/service\\_lists/R0704015\\_75408.htm](http://www.cpuc.ca.gov/published/service_lists/R0704015_75408.htm) .

CPUC is actively following the FCC proceedings under the WARN act and will study the findings and recommendations of the independent panel reviewing the Impact of Hurricane Katrina on Communications Networks for applicability to this proceeding.

## **Introduction**

Automatic notification devices are used in emergency notification systems by law enforcement agencies, fire protection agencies, public health agencies, public environmental health agencies, city or county emergency services planning agencies, and private for-profit agencies operating under contract with, and at the direction of, one or more of these agencies. These are automatic devices that store phone numbers and disseminate a prerecorded voice and text message to those phone numbers in the event of an emergency. In consultation with OES and DGS, the Commission will (i) determine the standards and protocols currently in use by those entities that operate such systems and (ii) obtain and consider the operating entities' and other interested parties' recommendations for improving emergency notification systems, which shall include an assessment of the costs and benefits of requiring standards and protocols for these systems.

The purpose of related workshop (held on June 19, 2007) was to receive a broad overview of:

- Concerns and issues related to emergency notification systems, including funding and statutory modifications needed to facilitate such notification:

The outcome of the workshop is this voluntary informational request, which seeks more detailed information of the concerns and issues that must be addressed to establish emergency notification systems. The information is needed to:

- a. Clarify the nature of existing emergency notification systems
- b. Identify current best practices
- c. Provide details on any relevant existing state or federal standards or protocols, as well as any state or federal action that gives the recommendations of standard-setting agencies the force of law
- d. Identify the policy concerns and issues that the Commission must address, including funding of emergency notification systems and any necessary statutory modifications needed to facilitate such notification
- e. Assess whether any jurisdictional issues prevent the Commission from pursuing certain recommendations
- f. Identify recommendations presented and their level of support
- g. Identify a recommended course of action, as well as any other viable options
- h. Discuss the costs and benefits of implementing the recommended course of action
- i. Identify any concerns or issues that remain to be addressed.

## **Questions**

### **Category A: Participation in Related CPUC Activities**

1. Did you participate at the CPUC Workshop on "Emergency Notification Systems" that was held on June 19, 2007 in San Francisco California?

- a. If yes, do you have any additional input or comments on the presentations and discussions that took place there?
  - b. If not, you may view the corresponding workshop webcast at <http://www.californiaadmin.com/cgi-bin/cpuc.cgi> . This may be useful to do prior to answering some questions in this Informational Request.
2. Did you submit a written response to the related CPUC questions mailed before the above Workshop<sup>21</sup>?
- a. If yes, do you have any additional comments or clarifications to make regarding your earlier response?
  - b. If you did not respond to the CPUC questions mailed before the workshop, and would like to respond to those questions, you may provide such response now, and/or respond to the questions in this Informational Request?
3. During the workshop some comments were made that use of cell phones as a response to an emergency notification message may cause call blockage to the wireless service providers' facilities.
- (a) Please provide specific examples of such occurrences?
  - (b) Please provide the number of such occurrences in California during the last three years?

### **Category B: For Telephone Service Providers**

4. If the CAP is adopted, will your company create a gateway for notification systems to connect to the Public Switched Telephone Network (PSTN) and its Internet services?
5. Is there a need for a common gateway at the PSTN, Internet, and wireless level, on some type of geographic basis, at which local notifications systems can interconnect, either to receive emergency alerts or send emergency alerts? Why or why not?
6. Please expand on your interactions with local agencies and notification systems vendors, what has worked, and what hasn't, regarding their implementation, operation, and relevant (real) examples of any incidents in which your network was drastically affected by call volume.
7. What do you, as a local service provider, recommend to automatic dialing notification system vendors regarding how to efficiently work with you? Do you have a single point of contact that such notification system vendors can call prior to testing their service?
8. During the workshop, a statement was made that "Autodialer users should be required to work with network providers to establish efficient interconnections". Could you, as a service provider, provide clarification on what is meant by the term "efficient interconnections"? Additionally, please provide any best practice regarding "efficient interconnection" that your company shares with the users of notification/autodialer systems.
9. Have you, as a local service provider providing service to a variety of local agencies with notifications systems, established any type of FAQs or best practices defining how either the local agency or notification system user can work with you? If yes, please provide these to the Commission.
10. What approach would you suggest for the facilitation, coordination and cooperation between the notification system users and service providers?

---

<sup>21</sup> Workshop questions at <http://www.cpuc.ca.gov/static/hottopics/2telco/r0704015workshopnotification.pdf>

- Would you recommend the use of some type of forum at which emergency notification system users and telecommunication service providers operating in the State of California could exchange information and point of contact information for testing purposes? Is there an existing forum or industry body that could facilitate such interaction? (Some representative forums may include the Association of Public-Safety Communications Officials, COMCARE<sup>22</sup>, telecommunications standards organizations, business continuity or disaster recovery organizations).
11. If the FCC's CMSAAC, which is specifically charged with the task of developing (and recommending to the FCC) technical standards and protocols for the voluntary transmission of emergency alerts by CMS providers, finishes its task, what's next? If you are a mobile phone company, do you expect that your company will offer some type of gateway service based on the adopted protocols?
  12. States such as Virginia and Louisiana recently initiated programs with notification system vendors for state wide systems. Louisiana's is a limited pilot program through December 2007, and is a DHS WARN pilot project using CAP and supported by the vendor MyStateUSA<sup>23</sup>. In March, 2007, Virginia approved a single vendor as the state appointed notification vendor for Virginia communities<sup>24</sup>. The award allows Virginia cities, towns, and counties to purchase the system at pre-negotiated prices. Given that AT&T and Verizon operate in these states, how will you deal with the myriad of interconnection issues with these notification systems being initiated on a state wide basis? Is there anything you, as a service provider, is doing with notification system vendors in these states that could be shared with CPUC?

### Category C: For Specific Companies

#### For Verizon:

13. We noticed since June 2003, Verizon has been offering a Dialogic notification system for federal agencies in the Washington DC area via WITS2001<sup>25</sup>. WITS2001 is the Washington Interagency Telecommunications System [contract](#) between Verizon & GSA serving Federal agencies in the National Capital Region. For system capabilities and solutions, see the [WITS2001 Brochure](#).
  - How can Verizon leverage its experience offering a notification system in the Washington DC area to better work with local notification system vendors and local agencies that already have systems in place?
  - How does Verizon coordinate with mass dialing from these Verizon supported systems?

---

<sup>22</sup> <http://www.comcare.org/>

<sup>23</sup> See DHS presentation from 2006, <http://2006.xmlconference.org/proceedings/212/slides-overview.pdf> and Louisiana press release <http://www.ohsep.louisiana.gov/newsrelated/statewideeas32207.htm>

<sup>24</sup> REVERSE 911®, announced in March 2007 that it was approved as the state appointed notification vendor for Virginia communities as a result of a new contract award from The Commonwealth of Virginia Information Technologies Agency (VITA). The award allows cities, towns, and counties to purchase the REVERSE 911® system at pre-negotiated pricing. The state-approved contract provides exclusive pricing for Virginia agencies without the steps of individual bidding processes.

<sup>25</sup> [http://www22.verizon.com/enterprisesolutions/Default/VerizonBusiness.jsp?industry=federal&filePath=/Anonymous/Federal/CC\\_WITS2001.html](http://www22.verizon.com/enterprisesolutions/Default/VerizonBusiness.jsp?industry=federal&filePath=/Anonymous/Federal/CC_WITS2001.html)

- Could such coordination parameters be adopted for other notification system providers as well?
14. During your workshop presentation, Verizon cited an example in which Santa Barbara notified Verizon prior to testing a notification system. Could you provide additional details on the nature of the Santa Barbara system test, and how did Santa Barbara know whom to contact at Verizon?

**For NTI:**

15. During your presentation at the CPUC workshop on June 19, 2007, Miami Dade County was cited as a recent example in which you worked with the local telephone company. Could you provide additional details on what transpired with the local telephone company, what type of information was exchanged, were tests conducted, who is the customer and telephone service provider point of contacts?
16. Please provide additional information on your performance criteria, including Service Level Agreements (SLAs). How were these parameters derived, and have they been verified under load conditions?

**Category D: For Vendors of Notification Systems**

17. If CAP is adopted as a standard protocol, will your emergency notification system support this protocol?
18. What do you, as a notification system vendor, recommend to your customers as to how to interconnect and work with local telecommunication service providers? Do you have best practices or FAQs?
19. Have you, as a notifications system vendor, established any type of FAQs or best practices defining how either the customer local agency should operate the system in a way that interconnects to the local network in a non-disruptive fashion? If yes, please provide them to us.
20. Is there a need for best practices that define procedures in how a notification system should connect to a local service provider?
21. Are there states that provide best practices in the area of emergency notification solutions, for example, the State of Connecticut was cited as a possible example during the workshop?
22. What would you suggest for the facilitation, coordination, and cooperation between the notification system users and service providers?
  - Would you recommend the use of some type of forum at which emergency notification system vendors and telecommunication service providers operating in the State of California could exchange information and point of contact information for testing purposes? Is there an existing forum or industry body that could facilitate such interaction?
23. Could you provide a list of your emergency notification system customers in the State of California and a point of contact for each?

**Category E: Questions for Local Users**

Note: Examples of local users include counties, municipalities, schools, etc. currently using a notification system.

24. Please expand on your interactions with telecommunications service providers in California - how do you work with the local telecommunications provider to ensure your system interfaces with the service provider with high quality and low disruption to the network?
25. How and where do you typically connect to the service provider? Is there a need for a common gateway at the PSTN, Internet, and wireless level, on some type of geographic basis, at which local notification systems can interconnect, either to receive emergency alerts or send emergency alerts?
26. Are you satisfied with the system's performance?
27. To what extent did the notification system meet your expectations as a local user, as described to you by the vendor (in the areas of GIS performance, system availability, reliability, delivery capacity)? How it did not meet those expectations?
28. How well did the system meet your needs in actual emergencies?
29. If you have ever overloaded the system with a large delivery request of notifications, how did the system perform?
30. How do you ensure the privacy of the contact information?
31. How do you secure the system? Is access to it controlled and, if so, how?
32. As a local user what is your opinion based on the operational use of your system, regarding standardization? What, if any, aspects of the notification system should be standardized?

### **Category F: Related to Section 2875 of the California Public Utilities Code**

Section 2875<sup>26</sup> of the California Public Utilities Code states:

“No person shall connect any automatic dialing-announcing service to any telephone line without first making written application to the telephone corporation within whose service area telephone calls through the use of such device are proposed to be placed. In such application, the person shall provide information as to the type of automatic dialing-announcing device proposed to be connected, the time of day such telephone calls are proposed to be placed using such device, the anticipated number of calls proposed to be placed during the specified calling period, the average length of a completed call, and such additional information as the corporation or the commission may require. Upon receiving such an application for service, the corporation shall review the furnished information and, if it appears that calling patterns would create a traffic overload condition or the service would be detrimental to the services of other customers of the corporation, it may deny the application or modify the application and grant the application as so modified.”

33. As a vendor or a public entity using an emergency notification system, have you ever made a written application to the telephone corporation pursuant to Section 2875 of the California Public Utilities Code prior to implementing your system? If so, please provide feedback on the results of such an application?
34. As a local telephone corporation, have you ever received applications from vendors or end users of emergency notification systems Section 2875 of the California Public Utilities Code? If so, please provide feedback regarding the nature of such applications? For any of those applications did your network experience traffic issues or overloads? When and why?

---

<sup>26</sup> <http://www.leginfo.ca.gov/cgi-bin/waisgate?WAISdocID=01436612864+1+0+0&WAIAction=retrieve>

35. As a local telephone corporation, what, if any procedures have you put in place to facilitate applications from vendors or end users of emergency notification systems pursuant to Section 2875 of the California Public Utilities Code?

**Category G: General Questions**

36. Please discuss whether you believe there is a need for additional education for consumers on these issues, and if so, what type? Are entities with emergency notification services providing their end users, including those with special needs, enough information on how to enroll and take advantage of the notification system?
37. Identify any policy concerns and issues that the Commission must address, such as funding of emergency notification systems, any necessary statutory modifications needed to facilitate such notification, etc.
38. Are you aware of any jurisdictional issues that prevent the Commission from pursuing certain recommendations?

**Category H: Cost/Benefit Analysis**

39. What major factors could you suggest that need to be taken into consideration in any cost/benefit analysis study regarding the standardization of emergency notification systems and protocols?
40. Regardless of your position on the standardization of emergency notification systems and protocols, if you have done any cost/benefit analysis related to that issue, please provide a copy of your analysis.
41. What tangible benefits do you expect will materialize as a result of standardizing notification systems and protocols?

## Appendix D: CPUC Questionnaire

### NRIC Power-Related Best Practices: CPUC Questionnaire Description

The first column (**Column A**) of the spreadsheet contains the NRIC Best Practice identifying number as given in [www.nric.org](http://www.nric.org). **Column B** gives a summary description of the Best Practice. **Column C** provides a source(s) for the recommendation as stated in [www.nric.org](http://www.nric.org). Columns D through G are to be filled by the respondents.

In **Column D**, companies are asked to rate the effectiveness of the recommendation in enhancing network reliability and preventing or reducing outages. A scale of 1 to 5 is used with the following interpretation:

5	The practice is definitely effective in preventing or reducing outages based, for example, on quantifiable measurements and experience
4	Based on intuitive opinions or anecdotal evidence, the practice is effective in preventing or reducing outages
3	The practice is somewhat, or moderately, effective in preventing or reducing outages
2	The practice is only slightly effective in preventing or reducing outages
1	The practice is basically ineffective in preventing or reducing outages
0	The company does not know the effectiveness of the practice

**Column E** deals with the company's implementation of each NRIC Best Practice related to power. A company is asked to indicate whether the best practice is implemented (Y), not implemented (N), is under consideration (C), or zero (0) if the company does not know whether the practice has been considered or implemented at this stage.

**Column F** asks each company to rate the cost to implement a practice,. The choices are Very Low (VL), Low (L), Moderate (M), High (H), Very High (VH), and Zero (0). A Very Low rating suggests that there is essentially no additional cost above the normal costs of doing business for implementing the Best Practice. A Very High rating suggests major capital or operating expenditures will be required. A zero (0) rating suggests that the company does not know the relative cost to implement the Best Practice.

**Column G** is for any comments by the respondent. For example, if the particular Best Practice does not apply to a particular segment of the industry (e.g., wireless), then the company might comment that the Best Practice is Non-Applicable (NA).

NOTE: In the [www.nric.gov](http://www.nric.gov) website, 98 Best Practices are related to Power for all segments of the telecom industry (wireline, wireless, cable, satellite, and equipment providers). 52 of them (highlighted in yellow and blue colors in the CPUC corresponding spreadsheet) appear to be related to backup power systems. From those 52 Best Practices, 28 (highlighted in blue) appear to address generator deployment.

**Industry Role(s):**

**Keyword(s):** Power

98 Best Practices are

found.

**Company Name:**

Number	Description	Reference	Effectiveness Rating (1-5) ("0" Don't know)	Has been implemented? (Y=Yes, N=No, C=Is under consideration) ("0" Don't know)	Relative Cost to Implement (VL, L, M, H, VH) ("0" Don't know)	Comments (e.g., NA for non-applicable)
<a href="#">7-6-0761</a>	Network Operators and Service Providers should conduct periodic verification of the office synchronization plan and the diversity of timing links, power feeds and alarms.	Best Practice recommended by the NRSC Timing Outage Task Force Report - March 6, 2002	-	-	-	
<a href="#">7/6/5131</a>	Network Operators should provide appropriate security for emergency mobile trailers (both pre- and post-deployment) in order to protect against a coordinated terrorist attack on emergency communications capabilities.		-	-	-	
<a href="#">7/6/5133</a>	Network Operators should protect the identity of locations where emergency mobile trailers and equipment are stored.		-	-	-	
<a href="#">7/6/5210</a>	Network Operators, Service Providers and Property Managers should discourage use of Emergency Power Off (EPO) switches between the primary battery supplies and the main power distribution board. EPO switches are not recommended for use in traditional -48V DC battery plants.		-	-	-	

<a href="#">7/6/5231</a>	Network Operators, Service Providers, Equipment Suppliers and Property Managers should develop documentation for the restoration of power for areas of critical infrastructure including such things as contact information, escalation procedures, restoration steps and alternate means of communication. This documentation should be maintained both on-site and at centralized control centers.		-	-	-	
<a href="#">7-7-0464</a>	Network Operators and local municipalities should cooperate on zoning issues that affect reliability of communication networks serving the public good (e.g., noise from emergency backup power generators, aesthetics of tower placement, public safety and health concerns).		-	-	-	
<a href="#">7-7-0492</a>	Network Operators should provide back-up power (e.g., some combination of batteries, generator, fuel cells) at cell sites and remote equipment locations, consistent with the site specific constraints, criticality of the site, the expected load and reliability of primary power.		-	-	-	
<a href="#">7-7-0493</a>	Network Operators and Property Managers should consider placing fixed power generators at cell sites, where feasible.		-	-	-	
<a href="#">7-7-0494</a>	Network Operators and Property Managers should consider including a provision in cell-site contracts for back-up power.		-	-	-	

<a href="#">7-7-0495</a>	Network Operators and Property Managers should consider pre-arranging contact information and access to restoral information with local power companies.		-	-	-	
<a href="#">7-7-0496</a>	Network Operators and Property Managers should consider storing their portable generators at critical sites that are not otherwise equipped with stationary generators.		-	-	-	
<a href="#">7-7-0497</a>	Network Operators and Property Managers should consider connecting the power load to portable generators where they are stored, and configuring them for auto-engage in the event of a failover.		-	-	-	
<a href="#">7-7-0498</a>	Network Operators and Property Managers should consider alternative measures for cooling network equipment facilities (e.g., powering HVAC on generator, deploying mobile HVAC units) in the event of a power outage.		-	-	-	
<a href="#">7-7-0499</a>	Network Operators and Service Providers should consider ensuring that the back-haul facility equipment located at the cell site is provided with backup power duration is equal to that provided for the other equipment at the cell site.		-	-	-	
<a href="#">7-7-0543</a>	Service Providers should establish agreements with Property Managers for both regular and emergency power.		-	-	-	
<a href="#">7-7-0549</a>	Network Operators should develop an engineering design for critical network elements and inter-office facilities that addresses		-	-	-	

	diversity, and utilize management systems to provision, track and maintain that inter-office and intra-office diversity.					
<a href="#">7-7-0622</a>	Network Operators, Service Providers, and Property Managers should use ANSI T1.311-1998 Standard for Telecommunications Environmental Protection, DC Power Systems for key equipment locations (e.g., routers, central office switches, and other critical network elements) to reduce fires associated with DC power equipment.	For ANSI T1.311 1998 go to : <a href="https://www.atis.org/atis/docstore/search.asp?order_by=document_number&amp;committee=2">https://www.atis.org/atis/docstore/search.asp?order_by=document_number&amp;committee=2</a> . Scroll down to T1.311, click, then follow prompts.	-	-	-	
<a href="#">7-7-0623</a>	Network Operators and Service Providers using Valve Regulated Lead Acid (VRLA) batteries should perform annual maintenance by performing a discharge test or by using an ohmic test instrument.	The aging properties of these batteries can lead to thermal runaway that may cause a fire. See SR-NWT-001307	-	-	-	
<a href="#">7-7-0624</a>	Network Operators, Service Providers, and Property Managers are encouraged to establish case history files, by equipment category for rectifiers, to facilitate decisions to replace such equipment with more efficient equipment based on failure trends.		-	-	-	
<a href="#">7-7-0625</a>	Network Operators, Service Providers and Property Managers should consider placing electric utility transformers external to buildings.		-	-	-	
<a href="#">7-7-0627</a>	Network Operators, Service Providers and Property Managers should exercise, service, and calibrate AC circuit breakers per manufacturers' recommendations.		-	-	-	

<a href="#">7-7-0634</a>	Network Operators, Service Providers and Property Managers together with the Power Company and other tenants in the location, should verify that aerial power lines are not in conflict with hazards that could produce a loss of service during high winds or icy conditions.		-	-	-	
<a href="#">7-7-0635</a>	Network Operators, Service Providers, and Property Managers should ensure that AC surge protection is provided at the power service entrance to minimize the effects caused by lightning or extremely high voltages.	TR-NWT-001011 "Generic Requirements for Surge Protection Devices"	-	-	-	
<a href="#">7-7-0644</a>	Network Operators, Service Providers, and Property Managers should use over-current protection devices and fusing.		-	-	-	
<a href="#">7-7-0648</a>	Network Operators, Service Providers and Property Managers should ensure certified inspection of boilers & fuel storage units.		-	-	-	
<a href="#">7-7-0650</a>	Network Operators, Service Providers and Property Managers should place strong emphasis on human activities related to the operation of power systems (e.g., maintenance procedures, alarm system operation, response procedures, and training) for operations personnel.		-	-	-	

<a href="#">7-7-0651</a>	<p>Network Operators, Service Providers and Property Managers should consider providing diversity within power supply and distribution systems so that single point failures (SPOF) are not catastrophic. For large battery plants in critical offices, consider providing dual AC feeds (odd/even power service cabinets for rectifiers). Transfer switches should be listed to a UL standard for Transfer Switch Equipment. When transfer breaker systems are used, they must be mechanically and electrically interlocked.</p>		-	-	-	
<a href="#">7-7-0652</a>	<p>Network Operators, Service Providers, Equipment Suppliers and Property Managers should adhere to the following applicable power engineering design standards; Telcordia GR-513-CORE (Power - LSSGR section 13), Telcordia GR-63-CORE (NEBS), Telcordia GR-295-CORE (Isolated Ground Planes), Telcordia GR-1089-CORE (Electromagnetic Compatibility), and ANSI T1.311 (DC power Systems).</p>		-	-	-	
<a href="#">7-7-0653</a>	<p>Network Operators, Service Providers and Property Managers should retain complete authority about when to transfer from the electric utility and operate standby generators.</p>		-	-	-	
<a href="#">7-7-0654</a>	<p>Network Operators, Service Providers and Property Managers should not normally enter into power curtailment or load sharing</p>		-	-	-	

	contracts with electric utilities.					
<a href="#">7-7-0655</a>	Network Operators, Service Providers and Property Managers should coordinate hurricane and other disaster restoration work with electrical and other utilities as appropriate.		-	-	-	
<a href="#">7-7-0656</a>	Network Operators and Service Providers should establish a general requirement for power conditioning, monitoring and protection for sensitive equipment.		-	-	-	
<a href="#">7-7-0657</a>	Network Operators, Service Providers and Property Managers should design standby generator systems for fully automatic operation and for ease of manual operation, when required.		-	-	-	
<a href="#">7-7-0658</a>	Network Operators, Service Providers and Property Managers should maintain adequate fuel on-site and have a well-defined re-supply plan. Generator life support systems (e.g., radiator fan, oil cooler fan, water transfer pumps, fuel pumps, engine start battery chargers) should be on the essential AC bus of the generator they serve.		-	-	-	
<a href="#">7-7-0660</a>	Network Operators, Service Providers and Property Managers should have a plan that is periodically verified for providing portable generators to offices with and without stationary engines.		-	-	-	

<a href="#">7-7-0662</a>	Network Operators, Service Providers and Property Managers should exercise power generators on a routine schedule in accordance with manufacturer's specifications. For example, a monthly 1 hour engine run on load, and a 5 hour annual run.		-	-	-	
<a href="#">7-7-0663</a>	Network Operators, Service Providers and Property Managers should coordinate scheduled power generator tests with all building occupants to avoid interruptions.		-	-	-	
<a href="#">7-7-0664</a>	Network Operators, Service Providers and Equipment Suppliers should provide indicating type control fuses on the front of the power panels, including smaller distribution panels.		-	-	-	
<a href="#">7-7-0665</a>	Network Operators, Service Providers and Property Managers should provide and maintain accurate single line drawings of AC switch equipment on-site.		-	-	-	
<a href="#">7-7-0667</a>	Network Operators, Service Providers and Property Managers should keep circuit breaker racking/ratchet tools, spare fuses, fuse pullers, etc. readily available.		-	-	-	
<a href="#">7-7-0668</a>	Network Operators, Service Providers and Equipment Suppliers and Property Managers should clearly label the equipment served by each circuit breaker and fuse.		-	-	-	
<a href="#">7-7-0669</a>	Network Operators, Service Providers, and Property Managers should develop and/or provide appropriate emergency procedures for		-	-	-	

	AC transfer.					
<a href="#">7-7-0671</a>	Network Operators, Service Providers and Property Managers should design and implement a preventive maintenance and inspection program for electrical systems.		-	-	-	
<a href="#">7-7-0672</a>	Network Operators and Service Providers should provide a minimum of 3 hours battery reserve for central offices equipped with fully automatic standby systems.		-	-	-	
<a href="#">7-7-0673</a>	Network Operators and Service Providers should provide temperature compensation on the rectifiers (or some method to detect/prevent thermal runaway), when valve regulated batteries are used.		-	-	-	
<a href="#">7-7-0674</a>	Network Operators, Service Providers and Property Managers should initiate or continue a modernization program to ensure that outdated power equipment is phased out of plant. They should consider the capabilities of smart controllers, local and remote monitoring, and alarm systems when updating their power equipment. Power monitors and smart controllers should be integrated into engineering and operational strategies.		-	-	-	
<a href="#">7-7-0675</a>	Network Operators, Service Providers and Property Managers should, for new installations, consider using multiple small battery plants in place of single very large plants, and consider using multiple battery strings in		-	-	-	

	each plant.					
<a href="#">7-7-0676</a>	Network Operators and Service Providers should not use low voltage disconnects or battery disconnects at central office battery plants.		-	-	-	
<a href="#">7-7-0677</a>	Network Operators, Service Providers and Property Managers should only use rectifier sequence controllers where necessary to limit load on the backup power generator.		-	-	-	
<a href="#">7-7-0679</a>	Network Operators, Service Providers and Equipment Suppliers should provide diverse power feeds for all redundant links (e.g., SS7, BITS clocks) and any components identified as critical single points of failure (SPOF) in transport and operations of the network.		-	-	-	
<a href="#">7-7-0680</a>	Network Operators, Service Providers, Equipment Suppliers and Property Managers should provide protective covers on vulnerable circuit breakers which power critical equipment.		-	-	-	
<a href="#">7-7-0681</a>	Network Operators, Equipment Suppliers and Property Managers should ensure that fuses and breakers meet quality Level III reliability per Technical Reference (SR-332), Reliability Prediction Procedure for Electronic Equipment.		-	-	-	
<a href="#">7-7-0682</a>	Network Operators, Service Providers, Equipment Suppliers and Property Managers should ensure that		-	-	-	

	power wire, cable, and signaling cables used in communications locations meet NEBS.					
<a href="#">7-7-0683</a>	Network Operators, Service Providers and Equipment Suppliers should not mix DC power cables, AC power cables and telecommunications cables wherever possible.		-	-	-	
<a href="#">7-7-0684</a>	Network Operators, Service Providers and Property Managers should verify DC fusing levels throughout the power supply and distribution system, especially at the main primary distribution board, to ensure that fuses and breakers are not loaded at more than 80% of their rated ampacity. Diode OR'ed arrangements require additional special overcurrent protection considerations. In addition, protector size should never exceed cable ampacity.		-	-	-	
<a href="#">7-7-0685</a>	Network Operators should have detailed methods and procedures to identify protection required around energized DC buses.		-	-	-	
<a href="#">7-7-0689</a>	Network Operators and Service Providers should provide a separate battery discharge alarm for all critical infrastructure facilities, and where feasible, periodically (e.g., every 15 minutes) repeat the alarm as long as the condition exists.		-	-	-	
<a href="#">7-7-0690</a>	Network Operators and Property Managers should consider providing power alarm redundancy so that no single point alarm system failure will lead to a		-	-	-	

	network power outage.					
<a href="#">7-7-0692</a>	Network Operators, Service Providers and Equipment Suppliers should consider using fail-safe, normally closed contacts that open for an alarm, for critical alarms produced by single contacts (one on one).		-	-	-	
<a href="#">7-7-0693</a>	Network Operators, Service Providers and Property Managers should emphasize the use of Methods Of Procedures (MOPs), vendor monitoring, and performing work on in-service equipment during low traffic periods.		-	-	-	
<a href="#">7-7-0694</a>	Network Operators and Service Providers should check for current flow in cables with AC/DC clamp-on ammeters before removing the associated fuses or opening the circuits during removal projects.		-	-	-	
<a href="#">7-7-0695</a>	Network Operators, Service Providers and Property Managers should develop and test plans to address situations where normal power backup does not work (e.g., commercial AC power fails, the standby generator fails to start, automatic transfer switch fails).		-	-	-	
<a href="#">7-7-0696</a>	Network Operators, Service Providers and Property Managers should use infrared thermography to check power connections and cabling in central offices when trouble shooting, during installation test and acceptance, and every 5 years.		-	-	-	

<a href="#">7-7-0697</a>	<p>Network Operators, Service Providers and Equipment Suppliers should employ an Ask Yourself program as part of core training and daily operations. This initiative is intended to reinforce the responsibility every employee has to ensure flawless network service. (See Reference/Comments for additional details).</p>	<p>Employees should stop and resolve problems when they can't answer yes to any of the following questions: Do I know why I'm doing this work? Have I identified and notified everybody who will be directly affected by this work? Can I prevent or control a service interruption? Is this the right time to do this work? Am I trained and qualified to do this work? Are work orders, MOPs, and supporting documentation current and error-free? Do I have everything I need to quickly restore service if something goes wrong? Have I walked through the procedure?</p>	-	-	-	
<a href="#">7-7-0699</a>	<p>Network Operators, Service Providers, Equipment Suppliers and Property Managers should design standby systems (e.g., power) to withstand harsh environmental conditions.</p>		-	-	-	
<a href="#">7-7-0700</a>	<p>Network Operators, Service Providers and Equipment Suppliers should consider the need for power expertise/power teams.</p>		-	-	-	
<a href="#">7-7-0701</a>	<p>Network Operators, Service Providers and Property</p>		-	-	-	

	Managers should provide security for portable generators.					
<a href="#">7-7-0702</a>	Network Operators and Service Providers should minimize dependence on equipment requiring AC power feeds in favor of DC-powered components.		-	-	-	
<a href="#">7-7-0703</a>	Network Operators and Service Providers and Property Managers should secure remote power maintenance systems to prevent unauthorized use.		-	-	-	
<a href="#">7-7-0760</a>	Network Operators and Service Providers should maintain records that accurately track the diversity of internal wiring for office synchronization, including timing leads and power.	Best Practice recommended by the NRSC Timing Outage Task Force Report - March 6, 2002	-	-	-	
<a href="#">7-7-0773</a>	Network Operators, Service Providers and Property Managers should perform annual capacity evaluation of power equipment, and perform periodic scheduled maintenance, including power alarm testing.		-	-	-	
<a href="#">7-7-0774</a>	Network Operators, Service Providers and Equipment Suppliers should provide warning signs to indicate precautions to be taken when powering on circuits that require special procedures.		-	-	-	
<a href="#">7-7-0819</a>	For the deployment of Residential Internet Access Service, Network Operators should provide backup power for broadband network equipment when economically and technically practical.		-	-	-	

<a href="#">7-7-1028</a>	Network Operators, Service Providers and Property Managers should engage in preventative maintenance programs for network site support systems including emergency power generators, UPS, DC plant (including batteries), HVAC units, and fire suppression systems.		-	-	-	
<a href="#">7-7-1029</a>	Network Operators and Service Providers should periodically review their portable power generator needs to address changes to the business.		-	-	-	
<a href="#">7-7-1033</a>	Network Operators should develop a strategy for deployment of emergency mobile assets such as Cell on Wheels (COWs), cellular repeaters, Switch on Wheels (SOWs), transportable satellite terminals, microwave equipment, power generators, HVAC units, etc. for emergency use or service augmentation for planned events (e.g., National Special Security Event (NSSE)).		-	-	-	
<a href="#">7-7-1067</a>	Network Operators, Service Providers and Property Managers should consider, in preparation for predicted natural events, placing standby generators on line and verifying proper operation of all subsystems (e.g., ice, snow, flood, hurricanes).		-	-	-	
<a href="#">7/7/5041</a>	Network Operators, Service Providers, Equipment Suppliers and Property Managers should establish and implement policies and procedures to secure and restrict access to power, environmental, security, and	Examples of power and environmental systems: HVAC, standby emergency power, generators, UPS.	-	-	-	

	fire protection systems.					
<a href="#">7/7/5042</a>	Network Operators, Service Providers and Property Managers should establish and implement policies and procedures to secure and restrict access to fuel supplies.		-	-	-	
<a href="#">7/7/5058</a>	<b>Back-up Power:</b> Network Operators, Service Providers, Equipment Suppliers and Property Managers should ensure that all critical infrastructure facilities, including the security equipment, devices and appliances protecting it, are supported by backup power systems (e.g., batteries, generators, fuel cells).	Some local regulations and building codes may influence the options available.	-	-	-	
<a href="#">7/7/5076</a>	Network Operators and Service Providers should ensure and periodically review intra-office diversity of critical resources including power, timing source and signaling leads (e.g., SS7).	SS7 - Signaling System 7. Example: where CCS links traverse D4 channels banks, the D4 channel bank are often shelves in bays. The first level of diversity is that the CCS links are on different interfaces to different D4 channel banks, the channel banks aggregate link (DS-1) connects to diverse M13 multiplexes or DCS frames, continuing through the multiplexing	-	-	-	

		levels across diverse transport paths. This could be called NE diversity.				
<a href="#">7/7/5197</a>	Network Operators, Service Providers, and Property Managers should periodically inspect, or test as appropriate, the grounding systems in critical network facilities.	See NRIC BP 0636 (verify grounding arrangements). GR-1089 Electromagnetic Compatibility and Electrical Safety - Generic Criteria for Network Telecommunications Equipment, Telcordia, Oct 31, 2002, <a href="http://www.telcordia.com/support/access.html">http://www.telcordia.com/support/access.html</a> ; National Electric Code, NEC-AAC, 2002, <a href="http://www.nfpa.org/codes/NFPA_Codes_and_Standards">http://www.nfpa.org/codes/NFPA_Codes_and_Standards</a>	-	-	-	
<a href="#">7/7/5203</a>	Network Operators, Service Providers, and Property Managers should develop, maintain and administer a comprehensive program to sustain a reliable power infrastructure.		-	-	-	

<a href="#">7/7/5204</a>	Service Providers, Network Operators and Property Managers should ensure availability of emergency/backup power (e.g., batteries, generators, fuel cells) to maintain critical communications services during times of commercial power failures, including natural and manmade occurrences (e.g., earthquakes, floods, fires, power brown/black outs, terrorism). The emergency/backup power generators should be located onsite, when appropriate.		-	-	-	
<a href="#">7/7/5206</a>	Network Operators, Service Providers and Property Managers should maintain sufficient fuel supplies for emergency/backup power generators running at full load to allow for contracted refueling.	See NRIC BP 0658.	-	-	-	
<a href="#">7/7/5207</a>	Network Operators, Service Providers and Property Managers should take appropriate precautions to ensure that fuel supplies and alternate sources of power are available for critical installations in the event of major disruptions in a geographic area (e.g., hurricane, earthquake, pipeline disruption). Consider contingency contracts in advance with clear terms and conditions (e.g., Delivery time commitments, T&Cs).	See NRIC BP 0658.	-	-	-	
<a href="#">7/7/5208</a>	Network Operators, Service Providers, Equipment Suppliers and Property Managers should ensure that electrical work (e.g., AC and high current DC power distribution) is performed by		-	-	-	

	qualified technicians.					
<a href="#">7/7/5209</a>	Network Operators, Service Providers and Property Managers should restrict access to the AC transfer switch housing area, ensure that scheduled maintenance of the transfer switch is performed, and ensure that spare parts are available.		-	-	-	
<a href="#">7/7/5211</a>	Network Operators, Service Providers and Property Managers should disable power equipment features that allow switching off of power equipment from a remote location (i.e. dial up modem). During severe service conditions, such features may be activated to allow a degree of remote control.		-	-	-	
<a href="#">7/7/5212</a>	Network Operators, Service Providers and Property Managers should consider placing generator sets and fuel supplies for critical sites within a secured area to prevent unauthorized access, reduce the likelihood of damage and/or theft, and to provide protection from explosions and weather.		-	-	-	
<a href="#">7/7/5213</a>	Network Operators, Service Providers and Property Managers should, where feasible, place fuel tanks in a secured and protected area. Access to fill pipes, fuel lines, vents, manways, etc. should be restricted (e.g., containment by fencing, walls, buildings, buried) to reduce the possibility of unauthorized access.		-	-	-	

<a href="#">7/7/5214</a>	Network Operators, Service Providers and Property Managers should consider placing all power and network equipment in a location to increase reliability in case of disaster (e.g., floods, broken water mains, fuel spillage). In storm surge areas, consider placing all power related equipment above the highest predicted or recorded storm surge levels.		-	-	-	
<a href="#">7/7/5216</a>	Network Operators, Service Providers and Property Managers should consider providing secure pre-constructed exterior wall pathways for mobile generator connections or tap box connections.		-	-	-	
<a href="#">7/7/5229</a>	Network Operators, Service Providers and Property Managers should have controlled access to comprehensive facility cabling documentation (e.g., equipment installation plans, network connections, power, grounding and bonding) and keep a backup copy of this documentation at a secured off-site location.		-	-	-	
<a href="#">7/7/5232</a>	Network Operators, Service Providers, and Property Managers should test fuel reserves used for standby or backup power for contamination at least once a year or after any event (e.g., earth tremor, flood) that could compromise the integrity of the tank housing, fill pipe or supply pipe.	These tests should include inspection for water, sediment, organic contaminants, and any other items that may inhibit the peak performance of the standby/backup generator.	-	-	-	

<a href="#">7/7/5241</a>	Network Operators, Service Providers and Equipment Suppliers should consider placing access and facility alarm points to critical or sensitive areas on backup power.		-	-	-	
<a href="#">7/7/5275</a>	Network Operators, Service Providers and Equipment Suppliers should consider backup power capabilities for Command and Control (Crisis Teams) so that communications and access to critical systems can be maintained in the event of a significant disruption to commercial power.	This could include, but is not limited to, moving crisis team personnel to locations where there exists long-term power backup, installing generator backup at certain critical sites, etc.	-	-	-	
<a href="#">7/7/5281</a>	Network Operators, Service Providers and Property Managers with buildings serviced by more than one emergency generator, should design, install and maintain each generator as a stand alone unit that is not dependent on the operation of another generator for proper functioning, including fuel supply path.		-	-	-	

## Appendix E: FCC 07-177, Order on Reconsideration

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

In the Matter of	)	
	)	
Recommendations of the Independent Panel	)	EB Docket No. 06-119
Reviewing the Impact of Hurricane Katrina on	)	WC Docket No. 06-63
Communications Networks	)	
	)	

### ORDER ON RECONSIDERATION

**Adopted: October 2, 2007**

**Released: October 4, 2007**

By the Commission:

## I. INTRODUCTION

1. In this Order, we consider six petitions for reconsideration and/or clarification (Petitions)<sup>27</sup> of the Order that adopted Section 12.2 of the Commission’s rules which requires that certain local exchange carriers (LECs), including incumbent LECs (ILECs) and competitive LECs (CLECs), and commercial mobile radio service (CMRS) providers have an emergency backup power source for all assets that are normally powered from local AC commercial power.<sup>28</sup> For the reasons set forth below, we grant in part and deny in part the Petitions. We modify Section 12.2 to address several meritorious issues raised in the Petitions. This modification will facilitate carrier compliance and reduce the burden on LECs and CMRS providers, while continuing to further important homeland security and public safety goals.

## II. BACKGROUND

---

<sup>27</sup> See Petition for Clarification or, Alternatively, Reconsideration filed by The American Association of Paging Carriers (AAPC) on August 10, 2007 (AAPC Petition); Petition for Reconsideration filed by the DAS Forum on August 10, 2007 (DAS Forum Petition); Petition for Clarification and Reconsideration filed by MetroPCS Communications, Inc. (MetroPCS) on August 10, 2007 (MetroPCS Petition); Petition for Clarification or Reconsideration filed by NextG Networks, Inc. (NextG) on August 10, 2007 (NextG Petition); Petition for Reconsideration filed by PCIA – The Wireless Infrastructure Association (PCIA) on August 10, 2007 (PCIA Petition); and Petition for Clarification and/or Reconsideration filed by The United States Telecom Association on August 10, 2007 (USTelecom Petition). See also *Petitions for Reconsideration and Clarification of Action in Rulemaking Proceeding*, Public Notice, Report No. 2827 (rel. Aug. 14, 2007). CTIA also filed a Petition for Reconsideration but withdrew its Petition on September 28, 2007. See Petition for Reconsideration filed by CTIA – The Wireless Association® (CTIA) on August 10, 2007 (CTIA Petition).

<sup>28</sup> *Recommendations of the Independent Panel Reviewing the Impact of Hurricane Katrina on Communications Networks*, Order, 22 FCC Rcd 10541 (2007) (*Katrina Panel Order*). See also 47 C.F.R. § 12.2.

2. In January 2006, Chairman Kevin J. Martin established the Katrina Panel pursuant to the Federal Advisory Committee Act, Public Law 92-463, as amended.<sup>29</sup> The mission of the Katrina Panel was to review the impact of Hurricane Katrina on communications infrastructure in the areas affected by the hurricane and to make recommendations to the Commission regarding ways to improve disaster preparedness, network reliability and communications among first responders such as police, fire fighters, and emergency medical personnel.<sup>30</sup> The Katrina Panel submitted its report on June 12, 2006.<sup>31</sup> The Katrina Panel's report described the impact of the worst natural disaster in the Nation's history, as well as the overall public and private response and recovery efforts. The Commission's goal is to take the lessons learned from that disaster and build upon them to promote more effective, efficient response and recovery efforts, as well as heightened readiness and preparedness.
3. The Commission issued a Notice of Proposed Rulemaking (*Notice*) on June 19, 2006 inviting comment on what actions the Commission should take to address the Katrina Panel's recommendations.<sup>32</sup> On July 26, 2006, the Commission issued a Public Notice asking commenters to address the applicability of the Katrina Panel's recommendations to all types of natural disasters (*e.g.*, earthquakes, tornadoes, hurricanes, forest fires) as well as other types of incidents (*e.g.*, terrorist attacks, influenza pandemic, industrial accidents).<sup>33</sup> The Public Notice also asked parties to address whether the Panel's recommendations are broad enough to take into account the diverse topography of our Nation, the susceptibility of a region to a particular type of disaster, and the multitude of communications capabilities a region may possess.<sup>34</sup> The Commission received over 100 comments and reply comments in response to the *Notice*.
4. In June 2007, the Commission released the *Katrina Panel Order* directing the Public Safety and Homeland Security Bureau (PSHSB) to implement several of the recommendations made by the Independent Panel Reviewing the Impact of Hurricane Katrina on Communications Networks (Katrina Panel).<sup>35</sup> Among other things, the Commission adopted a rule requiring some communications providers to have emergency/backup power. The backup power rule adopted specifically states:

Local exchange carriers (LECs), including incumbent LECs (ILECs) and competitive LECs (CLECs), and commercial mobile radio service (CMRS) providers must have an emergency backup power source for all assets that are normally powered from local AC commercial power, including those inside central offices, cell sites, remote switches and digital loop carrier system remote terminals. LECs and CMRS providers should maintain emergency backup power for a minimum of 24 hours for assets inside central offices and eight hours for cell sites, remote switches and digital loop carrier system remote

---

<sup>29</sup> 5 U.S.C. App. 2 (1988).

<sup>30</sup> See the Katrina Panel Charter *available at* <http://www.fcc.gov/eb/hkip/HKIPCharter.pdf> (last visited September 9, 2007); *see also* the Notice of Establishment of the Commission's Independent Panel Reviewing the Impact of Hurricane Katrina on Communications Networks, 71 Fed. Reg. 933 (2006).

<sup>31</sup> Independent Panel Reviewing the Impact of Hurricane Katrina on Communications Networks, *Report and Recommendations to the Federal Communications Commission*, June 12, 2006 (Katrina Panel Report).

<sup>32</sup> *Recommendations of the Independent Panel Reviewing the Impact of Hurricane Katrina on Communications Networks*, Notice of Proposed Rulemaking, EB Docket No. 06-119, 21 FCC Rcd 7320 (2006) (*Notice*).

<sup>33</sup> *Recommendations of the Independent Panel Reviewing the Impact of Hurricane Katrina on Communications Networks*, 21 FCC Rcd 8583 (2006) (*July 26 Public Notice*).

<sup>34</sup> *Id.*

<sup>35</sup> *Katrina Panel Order*, 22 FCC Rcd 10541 (2007).

terminals that are normally powered from local AC commercial power. LECs that meet the definition of a Class B company as set forth in Section 32.11(b)(2) of the Commission's rules and non-nationwide CMRS providers with no more than 500,000 subscribers are exempt from this rule.<sup>36</sup>

5. On August 2, 2007, the Commission released an Order that extended the effective date of Section 12.2 of the Commission's rules, the backup power rule adopted in the *Katrina Panel Order*, to October 9, 2007.<sup>37</sup> The Commission did so on its own motion in order to provide additional time to consider the issues raised by CTIA in its Motion for Administrative Stay and to hear from other concerned parties on the issues raised in that motion.<sup>38</sup>
6. As indicated above, seven petitions were filed seeking reconsideration and/or clarification of the backup power rule adopted by the Commission in the *Katrina Panel Order*.<sup>39</sup> The petitioners assert that the Commission should rescind, modify and/or clarify the backup power rule adopted in the *Katrina Panel Order*. The Commission also received five timely comments to these petitions and several additional *ex parte* comments.

### III. DISCUSSION

7. Petitioners argue that the Commission should rescind or substantially modify the backup power rule.<sup>40</sup> Among other things, several petitioners assert that the rule should be modified to implement the Network Reliability and Interoperability Council (NRIC) best practice as recommended by the Katrina Panel and that the Commission should clarify that the rule applies only to assets directly related to the provision of critical communications services.<sup>41</sup> Finally, some petitioners argue that, if the Commission wants to pursue implementation of a backup power rule, it should issue a Notice of Inquiry or Notice of Proposed Rulemaking.<sup>42</sup>
8. Administrative Procedure Act (APA) Notice and Comment. Several petitioners contend that the Commission's adoption of the backup power rule violated the Administrative Procedure Act (APA)<sup>43</sup> by failing to provide adequate notice that it was considering the adoption of that rule and failing to provide opportunity to comment.<sup>44</sup> They argue that the *Notice* was too general to adequately support the backup power rule ultimately adopted and that the final rule deviates too sharply from the initial proposals to satisfy the notice and comment requirements.<sup>45</sup> Petitioners contend that the *Notice* never discussed the backup power issue in terms of a potential mandate and only asked how the Commission could best encourage implementation of the Katrina Panel's

---

<sup>36</sup> 47 C.F.R. § 12.2.

<sup>37</sup> *Recommendations of the Independent Panel Reviewing the Impact of Hurricane Katrina on Communications Networks*, Order, EB Docket No. 06-119, WC Docket No. 06-63, 22 FCC Rcd 14246 (*Delay Order*).

<sup>38</sup> See CTIA's Motion for Administrative Stay filed July 31, 2007; NextG's Request for Partial Stay of the Commission's Back Up Power Rule filed July 31, 2007 and Errata filed August 1, 2007; and PCIA's Comments in Support of Stay Requests filed August 2, 2007. See also CTIA's Motion for Administrative Stay filed September 24, 2007.

<sup>39</sup> As noted before, one of these petitions was subsequently withdrawn.

<sup>40</sup> See, e.g., AAPC Petition at 1-5; PCIA Petition at 8, 19-20; T-Mobile September 4, 2007 Comments in Support of Petitions for Reconsideration (T-Mobile Reply) at 16-18; USTelecom Petition at 1-13.

<sup>41</sup> See, e.g., USTelecom Petition at 3.

<sup>42</sup> See, e.g., PCIA Petition at 5.

<sup>43</sup> See 5 U.S.C. § 553(b) (APA requirements relating to notice).

<sup>44</sup> See, e.g., PCIA Petition at 3-4, 15-19; T-Mobile Reply at 8; USTelecom Petition at 9-13.

<sup>45</sup> *Id.*

backup power recommendation that the Commission encourage the implementation of *NRIC VII Recommendation 7-7-5204*.<sup>46</sup> Petitioners also assert that the *Notice* did not suggest that the physical scope of the backup power recommendation might extend to all cell sites other remote assets or that the Commission intended to select a specific durational requirement for emergency power, let alone an eight- or twenty-four hour standard.<sup>47</sup>

9. Section 553(b) and (c) of the APA requires agencies to give public notice of a proposed rule making that includes “either the terms or substance of the proposed rule or a description of the subjects and issues involved” and to give interested parties an opportunity to submit comments on the proposal.<sup>48</sup> The notice “need not specify every precise proposal which [the agency] may ultimately adopt as a rule”; it need only “be sufficient to fairly apprise interested parties of the issues involved.”<sup>49</sup> In particular, the APA’s notice requirements are satisfied where the final rule is a “logical outgrowth” of the actions proposed.<sup>50</sup>
  
10. In this instance, the Commission provided adequate notice in compliance with the APA regarding the backup power rule. The Katrina Panel Report repeatedly stated that the lack of adequate backup power for communications facilities was a critical problem after Katrina that caused communications network interruptions and hampered recovery efforts.<sup>51</sup> These findings provided the context for the Report’s recommendation that the Commission encourage the NRIC best practice that states: “[s]ervice providers, network operators and property managers should ensure availability of emergency/backup power (e.g., batteries, generators, fuel cells) to maintain critical communications services during times of commercial power failures . . . .”<sup>52</sup> In the *Notice*, the Commission noted that the Katrina Panel observed significant challenges to maintenance and restoration of communications services after Hurricane Katrina, due in part to problems with access to key resources such as power and/or generator fuel.<sup>53</sup> The Commission also noted that the Katrina Panel recommended that the Commission encourage the implementation of certain NRIC best practices intended to promote the reliability and resiliency of the 911 and E911 architecture, including a recommendation that service providers and network operators should “ensure” availability of emergency backup power capabilities (located on-site, when

<sup>46</sup> See, e.g., T-Mobile Reply at 5; USTelecom Petition at 9-13.

<sup>47</sup> See, e.g., MetroPCS Petition at 6-7; PCIA Petition at 3-4, 15-19; T-Mobile Reply at 5, 8; US Telecom Petition at 9-13.

<sup>48</sup> See 5 U.S.C. § 553(b), (c).

<sup>49</sup> *Nuvio Corp. v. FCC*, 473 F.3d 302, 310 (D.C. Cir. 2006) (internal quotations omitted).

<sup>50</sup> *Public Service Commission of the District of Columbia v. FCC*, 906 F.2d 713, 717 (D.C. Cir. 1990).

<sup>51</sup> See Katrina Panel Report at i (“lack of power and/or fuel” was one of the “three main problems that caused the majority of communications network interruptions”); *id.* at 5-6 (“[T]he duration of power outages far outlasted most generator fuel reserves, leading to the failure of otherwise functional infrastructure.”); *id.* at 9 (“In general, cellular/PCS base stations were not destroyed by Katrina, although some antennas required adjustment after the storm. Rather, the majority of the adverse effects and outages encountered by wireless providers were due to a lack of commercial power or a lack of transport connectivity to the wireless switch . . . .”); *id.* at 14 (“While the communications industry has generally been diligent in deploying backup batteries and generators and ensuring that these systems have one to two days of fuel or charge, not all locations had them installed. . . . Where generators were installed and operational, the fuel was generally exhausted prior to restoration of power.”); *id.* at 17 (“Backup generators and batteries were not present at all facilities. Where they were deployed, most provided only enough power to operate particular communications facilities for 24-48 hours – generally a sufficient period of time to permit the restoration of commercial power in most situations, but not enough for a catastrophe like Hurricane Katrina.”).

<sup>52</sup> *Id.* at 39.

<sup>53</sup> *Notice*, 21 FCC Rcd at 7323.

appropriate).<sup>54</sup> The Commission sought comment on how the Commission can best encourage implementation of these recommendations consistent with our statutory authority and jurisdiction and welcomed further suggestions on measures that could be taken to strengthen 911 and E911 infrastructure and architecture.<sup>55</sup> The Commission also invited "broad comment on the Independent Panel's recommendations and on the measures the Commission should take to address the problems identified" and to build upon the lessons learned from Hurricane Katrina and promote greater resiliency and reliability of communications infrastructure, heightened readiness and preparedness, and more effective, efficient response and recovery efforts, in the future.<sup>56</sup>

11. Further, in the *Notice*, the Commission sought comment on whether it should rely on voluntary consensus recommendations or whether it should rely on other measures for enhancing readiness and promoting more effective response efforts.<sup>57</sup> The *Notice* also invited comment on whether the Katrina Panel's observations warranted additional measures or steps beyond the report's specific recommendations and welcomed suggestions and recommendations of different actions or additional measures beyond the Katrina Panel's recommendations.<sup>58</sup> In its report and recommendations, the Katrina Panel found that the lack of power and/or fuel was one of three main problems that caused the majority of communications network interruptions and significant impediments to the recovery effort in the aftermath of Hurricane Katrina.<sup>59</sup> The Katrina Panel Report also noted that during and after the hurricane, the power needed to support the communications networks was generally unavailable throughout the region and that backup batteries and generators were required for communications systems to continue to operate.<sup>60</sup> The Katrina Panel further noted that "the majority of the adverse effects and outages encountered by wireless providers were due to a lack of commercial power or a lack of transport connectivity to the wireless switch."<sup>61</sup> Additionally, the Katrina Panel Report stated that "[w]ireless providers cited security for their personnel, access and fuel as the most pressing needs and problems affecting restoration of wireless service" and that the loss of power in the wireline telephone network also had a huge impact on the ability of public safety systems to function.<sup>62</sup> The Katrina Panel noted that electric utility networks had a high rate of survivability following Hurricane Katrina due, in part, to the fact that they were built with significant onsite backup power supplies (batteries and generators).<sup>63</sup> Although the Katrina Panel found that "the communications industry has generally been diligent in deploying backup batteries and generators and ensuring that these

---

<sup>54</sup> *Id.* at 7326. *See also* Katrina Panel Report at 39 (recommending that, in order to ensure a more robust E911 service, the FCC should encourage the implementation of the following NRIC best practice:

Service providers, network operators and property managers should ensure availability of emergency/backup power (*e.g.*, batteries, generators, fuel cells) to maintain critical communications services during times of commercial power failures, including natural and manmade occurrences (*e.g.*, earthquakes, floods, fires, power brown/blackouts, terrorism). The emergency/backup power generators should be located onsite, when appropriate. *See NRIC VII Recommendation 7-7-5204.*)

<sup>55</sup> *Id.*

<sup>56</sup> *Id.* at 7320, 7322.

<sup>57</sup> *Id.* at 7322.

<sup>58</sup> *Id.*

<sup>59</sup> Katrina Panel Report at i, 13, 17-18 (problems with maintaining and restoring power for communications infrastructure significantly affected the recover process).

<sup>60</sup> *Id.* at 14.

<sup>61</sup> *Id.* at 9.

<sup>62</sup> *Id.* at 7, 9.

<sup>63</sup> *Id.* at 12.

systems have one to two days of fuel or charge,” it also noted that not all locations had such backup batteries or generators installed and that, because all locations were not able to exercise and test the backup equipment in any systemic fashion, some generators and batteries did not function during the crisis.<sup>64</sup> Although the power outages during and after Hurricane Katrina were exceptionally long, the Panel’s observations clearly emphasized the importance of power supply to resiliency of communications networks.

12. Taken together, the questions raised in the *Notice* as well as the Katrina Panel Report’s findings regarding the lack of emergency power were sufficient to put interested parties on notice that the Commission was considering how to address the lack of emergency backup power, including through the possible adoption of an emergency backup power rule. Specifically, the *Notice* sought comment on how the Commission could best encourage implementation of various NRIC best practices, including ensuring the availability of emergency backup power.<sup>65</sup> Even if that language were not read to propose a mandatory rule, the *Notice* still gave ample notice that this was a possibility. The *Notice* specifically inquired about “whether [the Commission] should rely on voluntary consensus recommendations, as advocated by the [Katrina] Panel, or whether [it] should rely on *other measures* for enhancing readiness and promoting more effective response efforts,”<sup>66</sup> a line of inquiry that the Commission reiterated in the *July 26 Public Notice*.<sup>67</sup> Moreover, the D.C. Circuit has held that the ultimate adoption of a mandatory rule can constitute the logical outgrowth of a voluntary standard.<sup>68</sup> Thus, because parties could have anticipated that the rule ultimately adopted was “possible,” it is considered a “logical outgrowth” of the original proposal, and there is no violation of the APA’s notice requirements.<sup>69</sup>
13. Indeed, we note that the National Emergency Number Association (NENA) did propose a backup power requirement in response to the *Notice*.<sup>70</sup> In addition, St. Tammany Parish Communications District 1 told the Commission that “[v]oluntary consensus measures . . . have fallen short many times” and that “it is imperative that [wireline] and wireless telephone providers be required to demonstrate they have adequate backup procedures in place.”<sup>71</sup> Carriers also commented on the importance of having backup power. CTIA observed that wireless carriers “must ensure network reliability and reliance” and that, to do so, they “provision their cell sites and switches with batteries to power them when electrical grids fail” and “maintain permanent generators at all of the switches and critical cell sites, as well as an inventory of backup power

<sup>64</sup> *Id.* at 14, 17-18.

<sup>65</sup> *Notice*, 21 FCC Rcd at 7326 ¶ 16 (emphasis added).

<sup>66</sup> *Notice*, 21 FCC Rcd at 7322 ¶ 7 (emphasis added).

<sup>67</sup> *July 26 Public Notice*, 21 FCC Rcd at 8583; *see also* Separate Statement of Commissioner Copps (“I am especially pleased that we seek comment on whether voluntary implementation is enough or whether we need to consider other measures.”).

<sup>68</sup> *See New York v. EPA*, 413 F.3d 3, 44 (D.C. Cir. 2005) (EPA’s adoption of certain mandatory environmental requirements following earlier proposal of a “menu of alternatives” approach by which state governments would be allowed to choose any or all of these requirements, was a “readily foreseeable outcome[] that could result from the proposal” and thus was the logical outgrowth of that proposal).

<sup>69</sup> *See Northeast Maryland Waste Disposal Authority v. EPA*, 358 F.3d 936, 951 (D.C. Cir. 2004) (discussing APA notice requirements and the “logical outgrowth” test).

<sup>70</sup> *See* NENA’s August 7, 2006 comments in response to the *Notice* at 6. *Cf. Rybachek v. EPA*, 904 F.2d 1276, 1288 (9<sup>th</sup> Cir. 1990) (finding that final rule was “logical outgrowth” of earlier proposal where agency issued NPRM mentioning only the possibility of case-by-case imposition of environmental requirements but issued final rule mandating these requirements after public comments recommended mandates).

<sup>71</sup> Comments of St. Tammany Parish Communications District 1, at 1-2.

generators to recharge the batteries during extended commercial power failures.”<sup>72</sup> USTA likewise gave examples of telephone companies that had already deployed backup power capabilities that enabled their cell networks to remain in operation for several days after a loss of main power.<sup>73</sup> In light of these comments, we do not find credible the argument that the *Notice* failed to apprise parties that the Commission would address the issue of backup power in this proceeding.

14. Petitioners’ argument that the Commission did not give adequate notice that it might select a specific durational requirement for emergency power, such as twenty-four or eight hours, also lacks merit. Had we adopted a general backup power requirement that did not require a minimum amount of backup power, we would have risked creating an illogical and meaningless requirement that would have allowed providers to have only one minute of backup power. Thus, parties should have realized that an emergency backup power mandate would inevitably include a specific durational requirement.
15. Statutory Authority. PCIA asserts that Section 1 of the Communications Act, the statutory authority upon which the Commission adopted the backup power rule, is patently inadequate statutory authority.<sup>74</sup> PCIA contends that Section 1 of the Communications Act, as amended, (the “Act”)<sup>75</sup> is only a general grant of jurisdiction that, absent other specific authority, does not authorize the Commission to impose requirements to maintain backup power at cell sites.<sup>76</sup> PCIA argues that the Commission’s ancillary authority under Section 1 of the Act does not empower it to act where such action would be “ancillary to nothing.”<sup>77</sup>
16. The Commission’s Section 1 ancillary jurisdiction covers circumstances where: (1) the Commission’s general jurisdictional grant under Title I covers the subject of the regulations, and (2) the regulations are reasonably ancillary to the Commission’s effective performance of its statutorily mandated responsibilities.<sup>78</sup> This two-part test for ancillary jurisdiction was developed by the Supreme Court in *Southwestern Cable*.<sup>79</sup>

---

<sup>72</sup> CTIA–The Wireless Association Comments (“CTIA Comments”) at 8.

<sup>73</sup> Comments of the United States Telecom Association at 5-6.

<sup>74</sup> PCIA Petition at 15-16.

<sup>75</sup> 47 U.S.C. § 151.

<sup>76</sup> PCIA Petition at 15-16 (citing *Am. Library Ass’n v. FCC*, 406 F.3d 689 and *Motion Picture Assn of America, Inc. v. FCC*, 309 F.3d 796).

<sup>77</sup> PCIA Petition at 15 (citing *Am. Library Ass’n*, 406 F.3d at 702 and *United States v. Southwestern Cable Co.*, 392 US 157, 178 (1968)). PCIA further states that it “agrees with CTIA that the Commission’s reliance on only Section 1 is an insufficient statutory basis to sustain the new regulation,” citing the CTIA July 31, 2007 Motion for Stay at 8-11. CTIA also states that Section 1, standing alone, is not the type of clear expression of Congressional intent that is necessary to impose such a heavy obligation on the wireless industry and, indeed, this would be particularly anomalous in the context of CMRS, which since its inception has been largely deregulated at the federal level (citing *Nat’l Ass’n of State Util. Consumer Advocates v. FCC*, 457 F.3d 1238, 1245 (11th Cir. 2006) (describing the “the pro-competitive, deregulatory framework for [wireless service providers] prescribed by Congress.”) (quotation omitted)). See CTIA’s July 31, 2007 Motion for Stay at 10-11. Finally, CTIA asserts that, even in cases in which the Commission has relied on Section 1 in addition to other provisions of Title I of the Act, such as Section 4(i), 47 U.S.C. § 154(i), to adopt regulations pursuant to its ancillary authority, the courts have routinely rejected such efforts. See CTIA’s July 31, 2007 Motion for Stay at 9-11.

<sup>78</sup> *United States v. Southwestern Cable Co.*, 392 U.S. 157, 177-78 (1968) (*Southwestern Cable*) (upholding the FCC regulatory authority over cable television).

<sup>79</sup> *Id.* This test was subsequently applied by the Supreme Court in *United States v. Midwest Video Corp.*, 406 U.S. 649 (1972) (*Midwest Video I*) and *United States v. Midwest Video Corp.*, 440 U.S. 689 (1979) (*Midwest Video II*).

17. To fulfill the first prong of the ancillary jurisdiction test, the subject of the regulation must be covered by the Commission’s general grant of jurisdiction under Title I of the Communications Act, which encompasses “all interstate and foreign Communication by wire or radio.”<sup>80</sup> In the instant rule making, this first prong of the ancillary jurisdiction test is met because the backup power rule adopted by the Commission in the *Katrina Panel Order* pertains to the provisioning of “interstate and foreign commerce in communication by wire and radio.”<sup>81</sup> The second prong of the ancillary jurisdiction test requires that the subject of the regulation must be reasonably ancillary to the Commission’s effective performance of its statutorily mandated responsibilities.<sup>82</sup> It cannot seriously be disputed that the backup power requirement is “reasonably ancillary to the effective performance” of the Commission’s responsibilities to promote public safety. Section 1 itself makes clear that one of the Commission’s missions is to “make available . . . [a] wire and radio communication service with adequate facilities . . . for the purpose of *promoting safety of life and property* through the use of wire and radio communications.” 47 U.S.C. § 151 (emphasis added). Section 1 thus requires the Commission to “consider public safety” and to “take into account its *duty* to protect the public.” *Nuvio Corp. v. FCC*, 473 F.3d 302, 307 (2006); *see also id.* at 311 (Kavanaugh, J., concurring) (“the FCC possesses statutory authority . . . to address the public safety threat by banning providers from selling voice services until the providers can ensure adequate 911 connections”). And as this Court has recognized, it is well “within the Commission’s statutory authority” to “‘make such rules and regulations . . . as may be necessary in the execution’” of its section 1 responsibilities.<sup>83</sup> Section 303(r) also provides ample authority to support the Commission’s action here. Section 303(r) provides that the Commission may “[m]ake such rules and regulations . . . as may be necessary to carry out the provisions of this Act.”<sup>84</sup>
18. The presence of a backup power source installed by all local exchange carriers (LECs), including incumbent LECs (ILECs) and competitive LECs (CLECs), as well as commercial mobile radio service (CMRS) providers for all assets that are normally powered from local commercial power including those inside central offices, cell sites, remote switches and digital loop carrier system remote terminals will facilitate communication for the purposes of national defense and the promotion of “safety of life and property” during emergencies. Communications networks cannot operate without a power source. The Commission must therefore be mindful of an adequate power supply, particularly in emergencies, if it is to discharge its core responsibilities under Section 1 of the Communications Act to regulate communications for the promotion of national defense, public safety and the protection of property. If commercially supplied power is incapacitated, the communications network will also fail. The backup power rule adopted by the Commission is a short-term attempt to sustain communication in a severe emergency for the purposes of promoting the Commission’s salient purpose pursuant to Section 1 to regulate interstate communications by wire and radio.
19. PCIA’s reliance on the broadcast flag ruling by the U.S. Court of Appeals for the District of Columbia (Court) is misplaced. In that case, the Court found that the Commission had not satisfied the second prong of the ancillary jurisdiction test because the restriction on recording digital television programs that were transmitted by cable or over-the-air broadcast exceeded the Commission’s authority to regulate the transmission of communications by wire and radio given

<sup>80</sup> *Southwestern Cable*, 392 U.S. at 167. *See also Am. Library Ass’n*, 406 F.3d at 693.

<sup>81</sup> 47 U.S.C. § 151.

<sup>82</sup> *Southwestern Cable*, 392 U.S. at 178.

<sup>83</sup> *Rural Telephone Coalition v. FCC*, 838 F.2d 1307, 1315 (D.C. Cir. 1988) (quoting 47 U.S.C. § 154(i)).

<sup>84</sup> 47 U.S.C. § 303(r). *See also* 47 U.S.C. § 332.

that the restriction pertained to a regulation imposed outside the course of the act of transmitting the communication.<sup>85</sup> In this case, by contrast, backup power is necessary for the communication to be transmitted at all.

20. Arguments Regarding Lack of Record Support, Consideration of Important Factors or Reasoned Basis for Rule. Petitioners contend that the backup power rule is arbitrary and capricious because the Commission failed to explain why a mandatory obligation including an inflexible minimum 8 or 24 hour period was necessary and why it rejected less restrictive alternatives to the rule, such as a voluntary best practices regime as recommended by the Katrina Panel.<sup>86</sup> Several petitioners also allege that the Commission failed to consider the impact of the rule, failed to consider important aspects of the very problem it sought to redress, and failed to explain why present carrier preparedness plans are inadequate.<sup>87</sup> Additionally, several petitioners argue that the backup power rule adopted lacks record support.
21. Petitioners argue that there is no record evidence to support the backup power mandate in general, or the eight or 24-hour minimum in particular.<sup>88</sup> Some petitioners note that the comments described in the Order when discussing the backup power rule do not concern CMRS providers at all, do not suggest any mandatory minimum standard, or have nothing to do with backup power.<sup>89</sup> However, the rule adopted by the Commission enjoyed strong factual support. First, as described *supra* at ¶ 11, the Katrina Panel repeatedly emphasized the importance of power supply to resiliency of communications networks. Further, it noted that backup generators and batteries were not present at all facilities.<sup>90</sup> Additionally, the Katrina Panel Report stated that power for radio base stations and battery/chargers for portable radio devices are carefully planned for public safety systems; however, “generators are typically designed to keep base stations operating for 24 to 48 hours.”<sup>91</sup> This language, along with the Katrina Panel’s recognition that 24-48 hours is generally a sufficient time to permit the restoration of power in most situations,<sup>92</sup> clearly provides support for requiring LECs and CMRS providers to maintain backup power for a minimum of 24 hours for assets located inside central offices. The 24 hour requirement imposes relatively less burden while still generally providing sufficient time for restoration of commercial power or for carriers to allocate additional power sources. Further, the Commission recognized the burdens of ensuring longer durations of backup power at other locations, which have subsequently been detailed by petitioners, and reasonably required only 8 hours of backup power for such locations, including, but not limited to, cell sites, remote switches and digital loop carrier system remote terminals.<sup>93</sup> This will provide at least eight hours for commercial power restoration or carrier

<sup>85</sup> *Am. Library Ass’n*, 406 F.3d at 703-704.

<sup>86</sup> *See, e.g.* PCIA Petition at 6; September 4, 2007 Comments of Sprint Nextel (Sprint Nextel Reply) at 4; USTelecom Petition at 3, 10-12.

<sup>87</sup> *See, e.g.* NextG Petition at 2-13; T-Mobile Reply at 8; USTelecom Petition at 2-3, 7-13.

<sup>88</sup> *See, e.g.*, MetroPCS Petition at ii, 4, 6-7; PCIA Petition at 15-18; USTelecom Petition at 9-13.

<sup>89</sup> *See, e.g.*, DAS Forum Petition at 5-7; Sprint Nextel Reply at 2-3; USTelecom at 12 (noting that NENA’s comments addressed only wireline providers central offices and did not discuss any specific time frame for backup power and that St. Tammany Parsh’s comments discussed only backup procedures and made no mention of backup power.).

<sup>90</sup> Katrina Panel Report at 17.

<sup>91</sup> *Id.* at 7. NENA further states that its representative on the Katrina Panel urged that wireless sites should include generators with a minimum of five days fuel supply and backup battery systems rated for a minimum of eight hours. *See* NENA’s September 11, 2007 Comments at 1-3.

<sup>92</sup> *Id.* at 17.

<sup>93</sup> 47 C.F.R. § 12.2.

actions to obtain additional backup power sources.<sup>94</sup>

22. Additionally, the Katrina Panel’s recommendation was that the Commission encourage the implementation of the NRIC VII Recommendation 7-7-5204. That recommendation states that “[s]ervice providers, network operators and property managers should ensure availability of emergency/backup power. . .” The terms “service providers” and “network operators” clearly include CMRS providers. In the *Katrina Panel Order*, the Commission noted that NENA recommended that “the FCC or state commissions, as appropriate, require all telephone central offices to have an emergency backup power source.”<sup>95</sup> NENA states that, in its comments in the Katrina Panel Docket, it chose to mention telephone central offices as emblematic, not exhaustive, of critical switching points in wire and wireless networks, and it also endorsed the broader scope of NRIC Recommendation 7-7-5204.<sup>96</sup>
23. The Commission determined that a mandatory backup power requirement would be in the public interest. Although several carriers described their backup power plans, the Katrina Panel Report made clear the importance of backup power for resilient communications and restoration of communications services that have been disrupted. The report further made clear that, although many carriers do have backup power or backup power plans, not all locations have backup power. The Katrina Panel also noted that because those communications providers did not necessarily test and exercise their backup power sources in a systematic fashion, generators and batteries might not function during the crisis.<sup>97</sup> Imposing a backup power rule would ensure that more communications assets have backup power and that providers ensure the availability of this power. Access to communications technologies during times of emergency is critical to the public, public safety personnel, hospitals, and schools, among others. Therefore, because the benefits of ensuring resilient communications during times of crises are so great, the Commission determined that a backup power rule was in the public interest. Moreover, it is important that both LEC and CMRS providers have backup power, because the public, public safety personnel, and hospitals, among others, rely heavily on both types of providers. In fact, many Americans now rely on only a wireless phone and public safety entities, hospitals and others are increasingly relying on wireless technologies.<sup>98</sup> As the Katrina Panel Report and commenters note, lack of commercial power was one of the main causes of wireless outages during Hurricane Katrina, access to fuel was one of the wireless providers’ most pressing needs during that catastrophe, and it is important that both wireless and wireline carriers ensure network reliability and resiliency by

---

<sup>94</sup> In the US Telecom Petition and a Verizon Wireless *Ex Parte*, both providers reported that the majority of their remote sites have backup power. See USTelecom Petition at 2,8 (noting that the vast majority of all network remote terminals have onsite backup battery power typically designed to an eight hour engineering standard, although the actual life of the battery at any point in time depends on numerous factors and some remote terminals are too small to support a battery); Verizon Wireless *Ex Parte* filed September 4, 2007 (stating that Verizon Wireless’ internal design standard is for eight hours or more of backup power (generators, batteries or both) at every cell site where possible, that the majority of its cell sites have on-site generators or batteries capable of providing backup power for much longer than eight hours, that only a small percentage of sites have only batteries that will not last for eight hours, and that only a handful of sites have no on-site backup power at all).

<sup>95</sup> *Katrina Panel Order*, 22 FCC Rcd at 10565 ¶ 76; NENA Comments at 6.

<sup>96</sup> NENA’s September 11, 2007 Comments at 1-3.

<sup>97</sup> *Id.* at 14, 17-18.

<sup>98</sup> See, e.g., *Implementation of Section 6002(B) of the Omnibus Budget Reconciliation Act of 1993, Eleventh Annual Report and Analysis of Competitive Market Conditions With Respect to Commercial Mobile Services*, 21 FCC Rcd 10947, 11010, ¶ 158 (2006) (“In the last three years alone, the total mobile telephone subscriber base has increased 50 percent.”).

provisioning their sites with back up power.<sup>99</sup>

24. Petitioners also allege that the Commission failed to consider burdens and important matters, some of which affect the ability of carriers to comply with the rule. They contend that legal impediments, including contractual obligations and inconsistency with federal, state and local environmental, safety, building and zoning laws will make compliance with the rule difficult, if not impossible and could result in preemption issues regarding state and local laws.<sup>100</sup> Petitioners note that carriers have site leases with contractual obligations that regulate the placement, installation and operation of power sources.<sup>101</sup> Additionally, petitioners assert that compliance with the backup power rule could result in threats to public health and safety. For instance, petitioners state that the installation of a generator and its combustible fuel on the roof of a school or public building, where many transmitters are located, may pose a risk to public health and safety even when in compliance with law.<sup>102</sup> Further, petitioners assert that the Commission failed to properly consider the length of time it would reasonably take for providers to comply with the rule. They contend that compliance will take a significant amount of time and the time allowed by the *Katrina Panel Order* is insufficient, because providers must obtain permits, do site inspections, conduct structural engineering analysis, renegotiate leases, obtain permits, ensure compliance with legal requirements, evaluate backup power needs, and order and install the necessary equipment.<sup>103</sup> Petitioners also assert that compliance will take time because thousands of “non-critical” sites do not have backup power and many of the sites that do have backup power do not have the amount required.<sup>104</sup> As discussed in greater detail below, petitioners also argue that physical and other practical limitations make it difficult or impossible to comply with the backup power rule. Finally, petitioners argue that the Commission did not adequately consider the economic burden the rule will impose.<sup>105</sup>

25. We find that Petitioners’ arguments regarding legal impediments and threat to public health and safety to be compelling and modify Section 12.2 to state that LECs and CMRS providers are not

<sup>99</sup> See, *supra* ¶¶ 11, 13.

<sup>100</sup> See, e.g., DAS Forum Petition at 6-7, 10; MetroPCS Petition at ii, 8-12; PCIA Petition at 9; T-Mobile Reply at 9.

<sup>101</sup> Petitioners state that, in order to comply with the rule, carriers would be required to maintain a large number of battery and fuel-powered generators at cell sites. Because these power systems contain lead, sulfuric acid, oils and flammable liquids, they are subject to a host of federal, state, and local environmental and safety laws that strictly limit their placement and use. They note that, at a multi-carrier site, compliance with the rule could require the addition of several thousand pounds of additional weight, which would implicate local building code limitations. Petitioners note that placement and operation of diesel generators raises environmental issues and implicate federal and state environmental laws are implicated by the rule. They state that state and local government laws and ordinances require permits before installing new diesel generators and issuance of such permits can be delayed while authorities negotiate to address concerns re: noise pollution, ventilation, fuel leakage, etc. Petitioners argue that site leases that contractually limit the placement of such equipment will have to be renegotiated prior to installation. See, e.g., *id.*

<sup>102</sup> See, e.g., DAS Forum at 9; MetroPCS Petition at 8-9; T-Mobile Reply at 10. Because several petitioners refer to the CTIA Petition, we note that CTIA also noted that a rooftop location could expose the equipment to lightning or other weather conditions that could compromise the equipment, making it more susceptible to fuel leakage and fire; that the location of such equipment in a church steeple may not provide adequate ventilation; and that pollutants emitted by diesel generators have been identified as leading contributors to a variety of environmental and health problems. See CTIA Petition at 18-19.

<sup>103</sup> See, e.g., PCIA Petition at 5, 10; T-Mobile Reply at 7, 9, 11-12; USTelecom at 8; Verizon Wireless *Ex Parte* at 2-3.

<sup>104</sup> *Id.*

<sup>105</sup> See, e.g., MetroPCS Petition at 5, 13; NextG Petition at 2-3, 10-15; PCIA Petition at 5; Sprint Nextel Reply at 3-4.

required to meet the backup power requirement if they demonstrate, through the reporting requirement described below, that such compliance is precluded by: (1) federal, state, tribal or local law; (2) risk to safety of life or health; or (3) private legal obligation or agreement. With respect to private legal obligations or agreements, LECs and CMRS providers should make efforts to revise agreements to enable rule compliance where possible, for example through renegotiations or renewals. Obviously, the Commission will disapprove of attempts to circumvent the rule through private agreements. We believe such exemptions are warranted because those impediments create a substantial burden for LECs and CMRS providers to overcome in order to comply with the rule that in some cases may be insurmountable. In the case of risk to safety of life or health, such an exemption is obviously in the public interest. As noted, *supra* at ¶ 7, some petitioners assert that the Commission should clarify that the backup power rule applies only to assets directly related to the provision of critical communications services.<sup>106</sup> We agree that the requirement should be clarified to apply only to assets necessary to the provision of communications services and modify the rule accordingly. We decline, however to limit the rule to “critical” communications services, because, although that term was included in the NRIC best practice recommended by the Katrina Panel, it is not well defined and we believe, for public safety and public interest reasons, all assets necessary to the provision of communications services should have backup power. We also agree with AT&T that on-site power sources satisfy the requirement of this rule if such sources were originally designed to provide the minimum backup power capacity level required herein and the provider has implemented reasonable methods and procedures to ensure that batteries are regularly checked and replaced when they deteriorate.<sup>107</sup> Finally, we find that the requirement should not be limited to assets normally powered from local “AC” commercial power. Regardless of the type of commercial power used, assets necessary to maintain communications should have backup power and be as reliable and resilient as possible. We also note that the NRIC best practice recommended by the Katrina Panel did not limit its recommendation in this way. Accordingly, we delete the reference to “AC” in the rule.

26. While today we address concerns raised by LECs and CMRS providers regarding their obligation to ensure emergency backup power, given the importance of backup power reserves during times of emergency, we will seek information regarding the extent to which LECs and CMRS providers are in compliance with this rule. Accordingly, we also modify Section 12.2 of our rules to require LECs and CMRS providers to file reports with the Commission that identify the following information: (1) an inventory listing of each asset that was designed to comply with the backup power mandate; (2) an inventory listing of each asset where compliance is precluded due to risk to safety or life or health; (3) an inventory listing of each asset where compliance is precluded by private legal obligation or agreement; (4) an inventory listing of each asset where compliance is precluded by Federal, state, tribal or local law; and (5) an inventory listing of each asset designed with less than the required emergency backup power capacity and that is not otherwise precluded from compliance for one of the three reasons identified in paragraph 25,

<sup>106</sup> See, e.g., MetroPCS Petition at 13; NENA September 11, 2007, Comments at 3; NextG Petition at 17; Sprint Nextel Reply at 2; USTelecom Petition at 3.

<sup>107</sup> AT&T *Ex Parte* Notice filed September 27, 2007; see also Verizon Wireless *Ex Parte* filed September 4, 2007 (noting that batteries begin to deteriorate the minute they are installed and, although Verizon Wireless has methods and procedures in place that insure that batteries are regularly checked and replaced when they deteriorate, it cannot guarantee that every battery designed to provide 8 hours of backup power will actually do so).

above.<sup>108</sup> LECs and CMRS providers must file these reports within six months of the effective date of this requirement, and must include a description of facts supporting the basis of the LEC's or CMRS provider's claim of preclusion from compliance. For example, claims that a LEC or CMRS provider cannot comply with the backup power mandate due to a legal constraint must include the citation(s) to the relevant laws and, in order to be deemed precluded from compliance, the law or other legal constraint must prohibit the LEC or CMRS provider from complying with the backup power requirement. The mere need to obtain a permit or other approval will not be deemed to preclude compliance with the backup power requirement. Claims that a LEC or CMRS provider cannot comply with the backup power mandate with respect to a particular asset due to a private legal obligation or agreement must include the relevant terms of the obligation or agreement and the dates on which the relevant terms of the agreement became effective and are scheduled to expire. Claims that a LEC or CMRS provider cannot comply with the backup power mandate with respect to a particular asset due to risk to safety of life or health must include a description of the particular public safety risk and sufficient facts to demonstrate substantial risk of harm. We direct the PSHSB to develop an appropriate auditing program to ensure that carriers' exclusion filings are reasonable and accurate.

27. LECs or CMRS providers identifying assets designed with less than the required emergency backup power capacity and not otherwise precluded from compliance for one of the three reasons listed above must comply with the backup power requirement or file, within 12 months from the effective date of the rule, a certified emergency backup power compliance plan that is subject to Commission review. That plan must describe how, in the event of a commercial power failure, the LEC or CMRS provider intends to provide emergency backup power to 100 percent of the area covered by any non-compliant asset, relying on on-site and/or portable backup power sources or other sources as appropriate. The emergency backup power must be sufficient for service coverage as follows: a minimum 24 hours of emergency backup power for assets inside central offices and eight hours for other assets such as cell sites, remote switches, and digital loop carrier system remote terminals. The provider must be able to ensure backup power is available for 100 percent of the area covered by any non-compliant asset pursuant to the emergency backup power compliance plan on the date that the plan is filed. All reports and plans required by Section 12.2 of the Commission's rules will be automatically afforded confidentiality, because the information in those reports and plans is sensitive, for both national security and/or commercial reasons. This reporting requirement should not be burdensome in light of many LEC and CMRS provider arguments that they already have business continuity plans that address the issue of backup power and in light of the fact that the plan is not due until 12 months after the effective date of the modified rule which will require Office of Management and Budget approval before going into effect. In any event such burdens are outweighed by the importance of having backup power for communications assets.
28. Petitioners argue that the Commission failed to consider the length of time it would reasonably take for CLECs and CMRS providers to comply with the rule and that it will take significant time to evaluate backup power needs, conduct structural engineering analyses, renegotiate leases if needed, prepare necessary applications for permits and other authorizations, ensure compliance with all applicable building codes and environmental regulations, coordinate with counsel, architects, construction personnel and government officials, order and receive the necessary

---

<sup>108</sup> LECs that meet the definition of a Class B company as set forth in Section 32.11(b)(2) of the Commission's rules and non-nationwide CMRS providers with no more than 500,000 subscribers are exempt from the rule and the reporting requirements in paragraphs 26-27.

equipment, and properly install the backup power source.<sup>109</sup> We note that the *Katrina Panel Order* was released on June 8, 2007, almost four months ago, and LECs and CMRS providers have known of the backup power requirement since that time. Further, the modified backup power rule adopted herein will not go into effect until OMB approves the new information collection, giving providers additional time to come into compliance. To the extent LECs and CMRS providers identify non-compliant assets, they will receive even more time to file emergency backup power compliance plans. In addition, the modifications to the rule mitigate these concerns by exempting assets from compliance when precluded by law, private legal obligation or agreement, or risk to safety of life or health and by allowing an emergency backup power compliance plan in cases where assets do not comply with the 8-24 hour rule and are not subject to the exceptions. As such, we believe that it will be feasible for providers to comply with the rule.

29. Several petitioners argue that compliance with the backup power rule is burdensome due to physical and other practical limitations, that the required space might not be available at many sites, and that providers may be forced to modify structures containing cell transmitters or to build new structures.<sup>110</sup> They assert, for example, that roofs and floors need to be designed to support the weight of power sources, that many rooftop cell sites were not engineered with the additional weight requirements made necessary by the backup power rule, and that many of those structures may simply not be able to physically support the weight of additional batteries or a generator.<sup>111</sup> Petitioners also argue that there is not enough space at many cell sites to add additional backup power sources and note that cell transmitters are often placed in locations with limited room, such as building rooftops, church steeples and inside buildings.<sup>112</sup> USTelecom notes that some remote terminals are physically too small to support a backup battery or a battery over a certain size.<sup>113</sup> T-Mobile reports that, in the case of liquid propane-fueled generators, Occupational Safety and Health Administration requirements mandate a 10-foot radius clearance between the liquid propane fuel tank and its ignition source.<sup>114</sup> T-Mobile argues that this could substantially increase the amount of space needed to install a backup power source.<sup>115</sup>
30. We are not convinced that LECs and CMRS providers should be excused from having emergency backup power solely because they have chosen to place their assets at locations with limited weight or space capacities. The ultimate goal of this rule is to ensure that carriers have sufficient emergency backup power, particularly during times of emergencies. We recognize that, in order

<sup>109</sup> See, *supra* n103. Some petitioners also note that the rule will result in an increased demand for batteries and generators that might cause a production strain and limit the timely availability of these resources. However, they have provided no proof in support of these assertions and for the reasons stated in this paragraph, we believe providers will have adequate time to comply with the rule. Moreover, rule modifications we adopt today will decrease the amount of backup power sources that will need to be installed.

<sup>110</sup> See, e.g., DAS Forum Petition at 9, 4-5; MetroPCS Petition at ii, 9-13; T-Mobile Reply at 11; USTelecom Petition at 2; Verizon Wireless *Ex Parte* filed September 4, 2007 at 2-3.

<sup>111</sup> *Id.*

<sup>112</sup> *Id.* PCIA asserts that the backup power rule is at odds with federal efforts to limit the physical presence of cell sites and the policy of promoting collocation. PCIA Petition at 8-10; see also T-Mobile Reply at 10-11. While we recognize the desire to collocate and the flexibility afforded by collocation, the goal of ensuring reliable and resilient communications outweighs any benefits afforded by collocation. Further, the backup power rule, particularly as amended in this Order on Reconsideration, does not necessarily prevent collocation.

<sup>113</sup> USTelecom Petition at 2, 8.

<sup>114</sup> T-Mobile Reply at 11; see also PCIA Petition at 9 (stating that fire codes require safety zones around propane and diesel tanks).

<sup>115</sup> *Id.*

to comply with the rule, some carriers may have to modify sites to accommodate additional equipment or, in some cases, find other, more suitable, locations for their assets. We believe, however, that any such burdens are far outweighed by the ultimate goal of this rule. For similar reasons, we also reject the notion that carriers should be excused from complying with the rule for vague “practical” reasons. Having said this, however, a carrier could be excused from the rule to the extent that the carrier can demonstrate that an asset with purported physical constraints fall into one of the three exceptions listed above. Additionally, where assets do not comply with the 8-24 hour rule and are not subject to the exceptions, we now allow an emergency backup power compliance plan.

31. Although petitioners argue that the economic burden that the backup power rule will impose is substantial, the record before the Commission showed that several carriers have already deployed back-power power capabilities, some of which allow them to remain in operation for several days in the event of a loss of main power.<sup>116</sup> In any event, we find that the benefits of ensuring sufficient emergency backup power, especially in times of crisis involving possible loss of life or injury, outweighs the fact that carriers may have to spend resources, perhaps even significant resources, to comply with the rule.<sup>117</sup> Petitioners assert that compliance may be costly; however, the record does not show that it is “cost-prohibitive” for carriers. Moreover, the rule modifications, including new exemptions described above and the provision that providers file an emergency backup power compliance plan to ensure 100 percent coverage in areas covered by non-compliant assets, will decrease any economic burden substantially. Finally, we find that the goal of ensuring that carriers’ networks have sufficient emergency backup power outweighs the economic burden described by petitioners and particularly the reduced economic burden in light of the rule modifications adopted herein. The need for backup power in the event of emergencies has been made abundantly clear by recent events, and the cost of failing to have such power may be measured in lives lost.
  
32. Some Petitioners argue that, contrary to the ultimate goal of protecting the provision of services, the backup power rule will not advance, but will actually risk undermining, carriers’ emergency preparedness goals and efforts to achieve important business continuity and disaster recovery goals.<sup>118</sup> Petitioners contend that the rule deprives carriers of the flexibility necessary to make intelligent and efficient plans for network resiliency as well as giving carriers the flexibility to respond to disasters in real time while remaining in compliance with the Commissions rules.<sup>119</sup> Petitioners assert that, by diverting manpower and resources away from more appropriate efforts to tailor emergency communications plans, and by denying carriers the ability to move resources away from areas not impacted to those that have been impacted, the rule undermines rather than

---

<sup>116</sup> See, *supra* ¶ 13. See also T-Mobile Reply at 7 (T-Mobile already provides varying degrees of backup power at 95 percent of its cell sites, most have less than 8 hours of power but some have more than 8 hours).

<sup>117</sup> Although its petition has been withdrawn several commenters reference the CTIA Petition, and we note that CTIA asserted that the reasons the Commission gave for encouraging but not requiring other Katrina Panel recommendations apply with equal force to the backup power issue. For instance, like the implementation of diverse 911 circuits, CTIA contends that mandatory minimum backup power is “cost-prohibitive in certain cases.” CTIA Petition at 24, n.33; see also *Katrina Panel Order*, 22 FCC Rcd at 10564-65 ¶ 75. However, the costs of implementing diverse 911 circuits are often shouldered by PSAPs which depend on limited sources of public funding and do not have the financial resources of commercial companies.

<sup>118</sup> See, e.g., MetroPCS Petition at 13; PCIA Petition at 8, 19-20; USTelecom Petition at 1-3, 7-9.

<sup>119</sup> See, e.g., MetroPCS Petition at ii, 6-7, 13; PCIA Petition at 8, 19-20; Sprint Nextel Reply at 2-3; USTelecom Petition at 2, 7.

promotes the important goal of public safety.<sup>120</sup>

33. We recognize that carriers need some level of flexibility in the design and deployment of their networks. This need, however, must be balanced with the critical goal of ensuring that communications networks has sufficient backup power, particularly during times of disaster. The modifications we make today strike a fair and equitable balance of these two interests. The modified rule we adopt today will ensure that LECs, including ILECs and CLECs, as well as CMRS providers maintain sufficient level of emergency backup power for assets that are necessary to maintain communications and that are normally maintained by commercial power. At the same time, the modifications adopted herein provide some level flexibility, both in terms of the exceptions provided and the requirements for submission of an emergency backup power compliance plan in cases where providers are not compliant. Moreover, inclusion of on-site back up power does not preclude the ability of carriers to maintain strategic stores of fuel, batteries or other backup equipment in other localities as a further layer of redundancy. Petitioners argue that enforcement could also lead to the termination or disruption of wireless cell sites, threatening the availability of service, including E-911 service.<sup>121</sup> Petitioners further contend that carriers may have little choice but to shut down or move certain transmitters rather than risk operating in violation of the new rule or endangering public health and safety.<sup>122</sup> NENA disagrees and contends that these arguments suggest that cellular providers should be immune from any disruptive regulatory discipline.<sup>123</sup> We believe that the exemptions now provided along with the requirement to develop an emergency backup power compliance plan in cases where assets do not comply with the 8-24 hour rule and are not subject to the exceptions described herein will mitigate these concerns.
34. Paging Carriers. The American Association of Paging Carriers (AAPC) argues that the Commission did not intend to apply the backup power rule to paging carriers and should so clarify. Alternatively, AAPC asserts that, if the Commission did intend for this rule to apply to paging carriers, the Commission should reconsider and exclude paging carriers<sup>124</sup> or instead adopt the Katrina Panel's actual recommendation on this issue, as set forth in the Katrina Panel Report. The backup power rule adopted in the *Katrina Panel Order* requires commercial mobile radio service (CMRS) providers to have emergency backup power. CMRS providers that have no more than 500,000 subscribers are exempt from this rule. Therefore, paging carriers that are CMRS providers with more than 500,000 subscribers must comply with the rule. Paging services are a critical part of emergency response. Many first responders, hospitals and critical infrastructure providers rely on paging services during emergencies.<sup>125</sup> Therefore, it is critical that these

<sup>120</sup> *Id.*

<sup>121</sup> *See, e.g.* MetroPCS Petition at ii, 4, 8-13; PCIA Petition at 6, 12; NextG Petition at 1-3, 13-19.

<sup>122</sup> *Id.*

<sup>123</sup> NENA takes issue with the claim that forced shutdown of non-compliant sites will threaten public safety. NENA asserts this argument suggests that cellular providers should be immune from any disruptive regulatory discipline because so many 9-1-1 callers use wireless phones. NENA notes that wireless carriers made an analogous argument in 1993, during the early consideration of 9-1-1 caller location rules, suggesting that cellular telephony, of itself, was such a boon to 9-1-1 access that precise caller location should not be required. NENA Comments filed September 11, 2007 at 3.

<sup>124</sup> AAPC argues that the rule should not apply to entities defined by Section 20.9(1) and (6) of the rules, or to Narrowband PCS licenses as defined by Section 24.5 of the rules. AAPC Petition at 4. As noted herein, we find that the rule should apply to CMRS providers, as defined in Section 20.9 of the Commission's rules.

<sup>125</sup> *See, e.g.*, Testimony of Bruce Deer, American Association of Paging Carriers before the Independent Panel Reviewing the Impact of Hurricane Katrina on Communications Networks, Meeting Transcript at 123 (March 5, 2006) ("And we realize that today, still, with all of the advent of all of the communications methods of electronic

services be available during crises. Backup power at paging carrier facilities will help ensure the availability of these services. The importance of paging services is further demonstrated by the fact that paging carriers participate in the Commercial Mobile Service Alert Advisory Committee and are subject to the Commission's Part 4 outage reporting rules. For these reasons and those set forth below, we modify Section 12.2 to clarify that the rule applies to CMRS providers, *as defined in Section 20.9 of the Commission's rules.*

35. AAPC argues that the Commission intended to exclude paging carriers from this backup power rule. AAPC asserts that the *Katrina Panel Order* bases the CMRS classification in Section 12.2 on a definition developed for the *E-911 Proceeding*<sup>126</sup> and, because paging carriers do not provide E-911 service, the inference is that the Commission intended to exclude paging carriers from this rule. The parts of the *Katrina Panel Order* cited by AAPC, however, do not define CMRS providers, but instead provide an exemption for non-nationwide CMRS providers with no more than 500,000 subscribers. In a footnote, the Commission merely stated that this exemption is based on the Tier III CMRS definition. AAPC contends that the etymology of the backup power rule supports a finding that the Commission intended to exclude paging carriers and to apply the rule only to entities that are required to provide E-911 service as defined in Section 20.18 of the Commission's rules.<sup>127</sup> AAPC notes that the Katrina Panel made its backup power recommendation "in order to ensure a more robust E-911 service" and that, when requesting public comment on this recommendation, the Commission explained that the Panel "recommends that the Commission encourage the implementation of certain NRIC best practices intended to promote the reliability and resiliency of the 911 and E911 architecture."<sup>128</sup> However, the backup power rule includes no such limitations and, in the *Notice*, the Commission specifically sought comment on whether the Katrina Panel's observations warranted additional measures or steps beyond the report's specific recommendations and welcomed suggestions and recommendations regarding additional measures or actions beyond the Panel's recommendations.<sup>129</sup> The Commission also sought comment on whether it should rely on voluntary consensus recommendations, as advocated by the Katrina Panel, or whether it should rely on other measures for enhancing readiness and promoting more effective response efforts. Further, AAPC argues that the deliberate use of the term "cell sites" in the rule supports the conclusion that the Commission did not intend that the rule apply to paging carriers because paging carriers do not operate cell sites in their networks.<sup>130</sup> The reference to cell sites, however, is only one example of an asset that is normally powered from local commercial power and the assets identified in the

---

forms that hospitals still use predominantly pagers for emergency communications to reach their doctors and their emerging medical staffs."); Testimony of Vincent Kelly, President and Chief Executive Officer, USA Mobility before the Independent Panel Reviewing the Impact of Hurricane Katrina on Communications Networks, Meeting Transcript at 132 ("[P]aging devices continue to play a critical role for first responders and are still used extensively by police [sic] officers, fire fighters, rescue workers. In addition, hospitals and health care clinics as well as government agencies rely heavily on paging services.")

<sup>126</sup> AAPC Petition at 2. In support of this assertion, AAPC cites the *Katrina Panel Order* at ¶ 78 & n. 103, Appendix C (Final Regulatory Flexibility Analysis) at ¶ 27 & nn. 59-60, citing *Revision of the Commission's Rules to Ensure Compatibility with Enhanced 911 Emergency Calling Systems (Order to Stay)*, CC Docket No. 97-102, 17 FCC Rcd 14841, 14848 & ¶ 22 (2002) (the "*E-911 Proceeding*").

<sup>127</sup> AAPC Petition at 3-4.

<sup>128</sup> *Notice*, 21 FCC Rcd 7320, 7326 ¶ 16; Katrina Panel Report at 39.

<sup>129</sup> *Notice*, 21 FCC Rcd at 7320-7323.

<sup>130</sup> AAPC Petition at 4.

rule are not an exhaustive list.<sup>131</sup>

36. AAPC requests, in the event that the Commission did intend to apply the backup power rule to paging carriers, that the rule be modified to ensure that it does not apply to paging carriers. AAPC argues that it is unreasonable to lump paging networks together with other types of CMRS networks for purposes of this rule without considering the particular engineering and cost characteristics of paging networks themselves. Although AAPC argues that applying the requirement to all paging base stations and terminals would be particularly troubling for paging carriers,<sup>132</sup> the burden will be mitigated by the rule modifications adopted herein. Additionally, the burden for paging carriers would not necessarily be any more onerous for paging carriers than for other CMRS providers. Paging providers use a variety of facilities to provide coverage which are, in most cases not that different from the facilities of other CMRS providers. The fill-in facilities employed by paging providers are similar in size and power requirements as those used by other CMRS providers. In many instances, paging providers use high-powered transmitters that are located in multiple transmitter sites. While there may be challenges to overcome such as space, zoning and structural limitations for these facilities, they are no more onerous than those faced by other CMRS providers. In addition, the backup power rule might be less burdensome for paging carriers than for other CMRS providers, because the number of fill-in paging sites that paging carriers deploy is likely less than the more extensive deployment of assets required by other CMRS providers. AAPC asserts that the Commission should define CMRS as those services that are identified in Section 20.18(a) of the Commission's rules, as it did for purposes of Section 605(a) of the WARN Act, where the Commission defined the statutory phrase "commercial mobile service."<sup>133</sup> That definition, however was limited to Section 605(a) of the WARN Act and was done for specific purposes of that section of the Act that are not relevant to the backup power rule.<sup>134</sup> Further, the membership of the Commercial Mobile Service Alert Advisory Committee established pursuant to the WARN Act includes paging carriers. In light of these factors, we decline to modify the rule as suggested by AAPC, and clarify that paging carriers are required to comply.
37. Distributed Antenna System (DAS) Nodes and other non-traditional sites. NextG, MetroPCS and other petitioners ask the Commission to clarify that DAS Nodes and other "non-traditional" sites,

<sup>131</sup> The rule states, in part, that LECs and CMRS providers must have an emergency backup power source for all assets that are normally powered from local commercial power, including those inside central offices, cell sites, remote switches and digital loop carrier system remote terminals. 47 C.F.R. § 12.2.

<sup>132</sup> AAPC notes that, unlike cellular and broadband PCS networks, paging networks make substantial use of simulcasting and "fill-in" transmitters to assure adequate signal penetration in buildings and to cover terrain-shielded areas. AAPC states that, in emergency conditions, not all base stations are usually required to maintain an acceptable level of service. According to AAPC, the design of paging networks involve engineering and cost trade-offs that do not fit neatly into a matrix that the Commission can or should promulgate into law. AAPC acknowledges that paging carriers typically do have backup power sources for their critical base station sites, but they may not have backup power at all sites. AAPC Petition at 4-5.

<sup>133</sup> AAPC Petition at 3, *citing Implementation of a Grant Program for Remote Community Alert Systems Pursuant to Section 605(a) of the Warning, Alert, and Response Network (WARN) Act*, Declaratory Ruling, *PS Docket No. 07-8*, 21 FCC Rcd 7214 (2007).

<sup>134</sup> The reasons this definition was adopted for Section 605(a) included: (1) because including current MSS offerings in the definition of "commercial mobile service" could render meaningless the grant program of Section 605(a), we cannot equate "commercial mobile service" with the Commission's definition of CMRS; (2) defining "commercial mobile service" to include only carriers that are obligated to provide E911 service focuses limited resources on communities that need them most: namely, those communities that have no access to wireless E911 service. *See Id.*

such as cellular repeater sites, micro-cell and pico-cell locations, electric poles, light poles, and flagpoles, are not “cell sites” as the term is used in the Commission’s new backup power rule.<sup>135</sup> In the alternative, these petitioners request that the Commission reconsider and amend the rule to eliminate the backup power requirement for DAS Nodes and other “non-traditional” sites.<sup>136</sup> Other petitioners make similar arguments for “non-traditional” sites and emphasize the burden of complying with the backup power rule due to physical constraints and economic resources.<sup>137</sup> NextG explains that it provides telecommunications services to wireless carriers via a network architecture that uses fiber-optic cable and small antennas mounted in the public rights-of-way on infrastructure such as utility poles, street lights and traffic signal poles. NextG argues that DAS Nodes should not be treated as a cell site because the DAS Node does not include some of the features typically associated with a cell site. The antenna is not associated with a base station or network switching equipment at the DAS Node site.<sup>138</sup> NextG and MetroPCS maintain that even if the Commission does treat the DAS Node as a cell site this equipment should be exempt from the backup power rule because it is “technologically, financially, and politically infeasible” to install eight hours of backup power.<sup>139</sup> DAS Forum argues that the impact due to the loss of power to a portion of a DAS network is far less than the loss of power to a traditional cell site because the balance of the DAS network continues to function when one node is damaged.<sup>140</sup>

38. We decline to exempt DAS Nodes or other sites from the emergency backup power rule.<sup>141</sup> Rather, we believe that to the extent these systems are necessary to provide communications services, they should be treated similarly to other types of assets that are subject to the rule. We note that many of the arguments made by petitioners are similar to the physical constraint arguments raised by other parties. As we stated earlier, we see no reason why LECs and CMRS providers who choose to place assets at locations with limited physical capacities should generally be excused from compliance with the rule. We realize that many providers have begun to use DAS and other small antenna systems as part of their communications networks. That fact alone, however, is far outweighed by the need to ensure a reliable communications network. To the extent petitioners raise concerns regarding legal impediments, private agreement constraints and safety risk issues, we note that the modifications to the rule we make today should address those concerns. DAS Forum and PCIA argue that the backup power rule will adversely impact the public interest and Commission policy goals, because the increased expense of compliance will prevent wireless carriers from further deploying their networks in this manner and that this will decrease capacity, coverage and reliability and affect emergency communications and wireless E911 coverage.<sup>142</sup> Petitioners have not presented sufficient evidence that the backup power rule will prevent wireless carriers from deploying their networks, particularly in light of the reduced burden of compliance that will result from the rule modifications we adopt in this Order on Reconsideration. Moreover, as noted above, the Commission finds that the benefits of

<sup>135</sup> See, e.g., NextG Petition at 8-10, DAS Forum Petition at 3-4, MetroPCS Petition at 12-13, and Independent Telephone and Telecommunications Alliance August 30, 2007 Comments (ITTA Reply) at 1-4.

<sup>136</sup> See, e.g., NextG Petition at 1-3. See also *id.*

<sup>137</sup> See, e.g., MetroPCS Petition at ii; 12-13.

<sup>138</sup> NextG Petition at 1, 8.

<sup>139</sup> NextG Petition at 2-3, 10-13; MetroPCS also argues that compliance would be burdensome, impractical and, in many instances impossible – particularly at remote sites, where MetroPCS claims that it will be forced to discontinue services in some instances. MetroPCS Petition at 4, 8-13.

<sup>140</sup> DAS Forum Petition at 3-5.

<sup>141</sup> We also again clarify that the list in the rule is not exhaustive and the inclusion of the term “cell sites” does not limit the rule’s applicability.

<sup>142</sup> See, e.g., DAS Forum Petition at 3; NextG Petition at 2-4, 10-17.

ensuring backup power for communications assets outweighs any economic burden that LECs and CMRS providers may incur as a result of this rule.

## IV. CONCLUSION

39. For the reason stated above, we deny petitioners' requests that we rescind Section 12.2 of the Commission's rules, but find that the petitioners have presented an adequate basis for modifying this backup power rule as detailed above and in Appendix B.

## V. PROCEDURAL MATTERS

40. Supplemental Final Regulatory Flexibility Analysis. As required by Section 603 of the Regulatory Flexibility Act (RFA), 5 U.S.C. § 604, the Commission has prepared a Supplemental Final Regulatory Flexibility Analysis of the possible impact of the rule changes contained in this Order on Reconsideration on small entities. The Supplemental Final Regulatory Flexibility Act analysis is set forth in Appendix C, *infra*. The Commission's Consumer & Government Affairs Bureau, Reference Information Center, will send a copy of this Order, including the Supplemental Final Regulatory Flexibility Act Analysis, to the Chief Counsel for Advocacy of the Small Business Administration.
41. Final Paperwork Reduction Act of 1995 Analysis. This Order on Reconsideration contains new information collection requirements subject to the Paperwork Reduction Act of 1995 (PRA), Public Law 104-13. It will be submitted to the Office of Management and Budget ("OMB") for review under Section 3507(d) of the PRA. OMB, the general public, and other Federal agencies are invited to comment on the new or modified information collection requirements contained in this proceeding. In addition, we note that pursuant to the Small Business Paperwork Relief Act of 2002, Public Law 107-198, *see* 44 U.S.C. 3506(c)(4), we previously sought specific comment on how the Commission might "further reduce the information collection burden for small business concerns with fewer than 25 employees." In this present document, we have assessed the effects of requiring LECs and CMRS providers to have back-up power or emergency back-up power compliance plans and to file reports regarding compliance with these requirements as set forth in Section 12.2 of our rules. We have specifically exempt LECs that meet the definition of a Class B company set forth in Section 32.11(b)(2) of our rules,<sup>143</sup> and non-nationwide CMRS providers with no more than 500,000 subscribers. We find that this imposes minimal regulation on small entities to the extent consistent with our goal of advancing our public safety mission.
42. Congressional Review Act Analysis. The Commission will send a copy of this Order on Reconsideration in a report to be sent to Congress and the Government Accountability Office pursuant to the Congressional Review Act, *see* 5 U.S.C. 801(a)(1)(A).
43. Alternative Formats. Alternative formats (computer diskette, large print, audio cassette, and Braille) are available to persons with disabilities by sending an e-mail to FCC504@fcc.gov or calling the Consumer and Governmental Affairs Bureau at (202) 418-0530, TTY (202) 418-0432.

## VI. ORDERING CLAUSES

44. Accordingly, IT IS ORDERED, pursuant to Sections 1, 4(i)-(k), 4(o), 201, 218, 219, 301, 303(g),

---

<sup>143</sup> 47 C.F.R. § 32.11(b)(2).

303(j), 303(r), 332, 403, 405, 621(b)(3) and 621(d) of the Communications Act of 1934, as amended, 47 U.S.C. §§ 151, 154(i)-(k), 154(o), 201, 218, 219, 301, 303(g), 303(j), 303(r), 332, 403, 405, 541(b)(3), and 541(d), and Sections 1.3 and 1.106 of the Commission's rules, 47 C.F.R. §§ 1.3, 1.106, that this Order on Reconsideration in EB Docket No. 06-119 and WC Docket No. 06-63 IS ADOPTED.

45. IT IS FURTHER ORDERED, that the Petitions for Reconsideration filed by The American Association of Paging Carriers, the DAS Forum, MetroPCS Communications, Inc., NextG Networks, Inc., PCIA – The Wireless Infrastructure Association (PCIA), and The United States Telecom Association ARE GRANTED to the extent discussed above, and the remainder of those petitions ARE DENIED.
46. IT IS FURTHER ORDERED that Section 12.2 of the Commission's rules IS AMENDED as specified in Appendix B, and Section 12.2 shall be effective on the date of Federal Register notice announcing OMB approval of the information collection now contained in that rule.
47. IT IS FURTHER ORDERED that the Commission's Consumer and Governmental Affairs Bureau, Reference Information Center, SHALL SEND a copy of this Order on Reconsideration, including the Supplemental Final Regulatory Flexibility Analysis, to the Chief Counsel for Advocacy of the Small Business Administration.

FEDERAL COMMUNICATIONS COMMISSION

Marlene H. Dortch  
Secretary

## APPENDIX A

### List of Petitions for Clarification and/or Reconsideration, Comments, and *Ex Parte* Comments

**EB Docket No. 06-119**

**WC Docket No. 06-63**

#### Petitions for Reconsideration

1. American Association of Paging Carriers
2. CTIA-The Wireless Association®<sup>144</sup>
3. The DAS Forum
4. MetroPCS Communications, Inc.
5. NextG Networks, Inc.
6. PCIA-The Wireless Infrastructure Association
7. United States Telecom Association

#### Timely Filed Comments Responding to Petitions for Reconsideration

1. BridgeCom International, Inc.; Broadview Networks, Inc.; Cavalier Telephone, LLC; DeltaCom, Inc.; Eureka Telecom, Inc. d/b/a InfoHighway Communications; IDT Corporation; Integra Telecom, Inc.; McLeodUSA Telecommunications Services, Inc.; Mpower Communications Corp.; Norlight Telecommunications, Inc.; Pacific Lightnet, Inc.; RCN Telecom Services, Inc.; RNK, Inc.; Talk America Holdings, Inc.; TDS Metrocom, LLC; U.S. TelePacific Corp. d/b/a TelePacific Telecommunications
2. Independent Telephone and Telecommunications Alliance
3. National Hydrogen Association
4. Sprint Nextel Corporation
5. T-Mobile USA, Inc.

#### Ex Parte Comments

1. AT&T Services, Inc.
2. Cellular South and Rural Cellular Corporation; Leap Wireless; MetroPCS Communications, Inc.; SunCom Wireless; and United States Cellular Corporation
3. CTIA-The Wireless Association®
4. CTIA-The Wireless Association® and United States Telecom Association
5. The DAS Forum
6. Embarq, United States Telecom Association, Verizon, and Windstream
7. The National Emergency Number Association
8. NextG Networks, Inc.
9. PCIA-The Wireless Infrastructure Association
10. United States Telecom Association
11. Verizon
12. Verizon Wireless

## APPENDIX B

### Final Rule Changes

---

<sup>144</sup> CTIA withdrew this Petition on September 28, 2007.

For the reasons discussed in the preamble, the Federal Communications Commission amends Part 12 of Chapter I of Title 47 of the Code of Federal Regulations (C.F.R.) as follows:

**PART 12 – REDUNDANCY OF COMMUNICATIONS SYSTEMS**

1. Section 12.2 is amended to read as follows:

**§ 12.2 Backup Power.**

- (a) Except to the extent set forth in Section 12.2(b) and Section 12.2(c)(4) of the Commission's rules, local exchange carriers, including incumbent local exchange carriers and competitive local exchange carriers (collectively, LECs), and commercial mobile radio service (CMRS) providers, as defined in Section 20.9 of the Commission's rules, must have an emergency backup power source (*e.g.*, batteries, generators, fuel cells) for all assets necessary to maintain communications that are normally powered from local commercial power, including those assets located inside central offices, cell sites, remote switches and digital loop carrier system remote terminals. LECs and CMRS providers must maintain emergency backup power for a minimum of twenty-four hours for assets that are normally powered from local commercial power and located inside central offices, and eight hours for assets that are normally powered from local commercial power and at other locations, including cell sites, remote switches and digital loop carrier system remote terminals. Power sources satisfy this requirement if they were originally designed to provide the minimum backup power capacity level required herein and the provider has implemented reasonable methods and procedures to ensure that the power sources are regularly checked and replaced when they deteriorate. LECs that meet the definition of a Class B company as set forth in Section 32.11(b)(2) of the Commission's rules and non-nationwide CMRS providers with no more than 500,000 subscribers are exempt from this rule.

(b) LECs and CMRS providers are not required to comply with paragraph (a) for assets described above where the LEC or CMRS provider demonstrates, through the reporting requirement described below, that such compliance is precluded by:

- (1) Federal, state, tribal or local law;
- (2) Risk to safety of life or health; or
- (3) Private legal obligation or agreement.

(c) Within six months of the effective date of this requirement, LECs and CMRS providers subject to this section must file reports with the Chief of the Public Safety & Homeland Security Bureau.

(1) Each report must list the following:

- (i) Each asset that was designed to comply with the applicable backup power requirement as defined in paragraph (a);
- (ii) Each asset where compliance with paragraph (a) is precluded due to risk to safety of life or health;
- (iii) Each asset where compliance with paragraph (a) is precluded by a private legal obligation or agreement;
- (iv) Each asset where compliance with paragraph (a) is precluded by Federal, state, tribal or local law; and
- (v) Each asset that was designed with less than the emergency backup power capacity specified in paragraph (a) and that is not precluded from compliance under paragraph (b).

(2) Reports listing assets falling within the categories identified in paragraphs (c)(1)(ii) through (iv) must include a description of facts supporting the basis of the LEC's or CMRS provider's claim of preclusion from compliance. For example, claims that a LEC or CMRS provider cannot comply

with this section due to a legal constraint must include the citation(s) to the relevant law(s) and, in order to demonstrate that it is precluded from compliance, the provider must show that the legal constraint prohibits the provider from compliance. Claims that a LEC or CMRS provider cannot comply with this section with respect to a particular asset due to a private legal obligation or agreement must include a description of the relevant terms of the obligation or agreement and the dates on which the relevant terms of the agreement became effective and are set to expire. Claims that a LEC or CMRS provider cannot comply with this section with respect to a particular asset due to risk to safety of life or health must include a description of the safety of life or health risk and facts that demonstrate a substantial risk of harm.

(3) For purposes of complying with the reporting requirements set forth in paragraphs (c)(1)(i) through (v), in cases where more than one asset necessary to maintain communications that are normally powered from local commercial power are located at a single site (*i.e.*, within one central office), the reporting entity may identify all of such assets by the name of the site.

(4) In cases where a LEC or CMRS provider identifies assets pursuant to paragraph (c)(1)(v), such LEC or CMRS provider must comply with the backup power requirement in paragraph (a) or, within 12 months from the effective date of this rule, file with the Commission a certified emergency backup power compliance plan. That plan must certify that and describe how the LEC or CMRS provider will provide emergency backup power to 100 percent of the area covered by any non-compliant asset in the event of a commercial power failure. For purposes of the plan, a provider may rely on on-site and/or portable backup power sources or other sources, as appropriate, sufficient for service coverage as follows: a minimum of 24 hours of service for assets inside central offices and eight hours for other assets, including cell sites, remote switches, and digital loop carrier system remote terminals. The emergency backup power compliance plans submitted are subject to Commission review.

(5) Reports submitted pursuant to this paragraph must be supported by an affidavit or declaration under penalty of perjury and signed and dated by a duly authorized representative of the LEC or CMRS provider with personal knowledge of the facts contained therein.

(6) Information filed with the Commission pursuant to subsection (c) of this rule shall be automatically afforded confidentiality in accordance with the Commission's rules.

(7) LECs that meet the definition of a Class B company as set forth in Section 32.11(b)(2) of the Commission's rules and non-nationwide CMRS providers with no more than 500,000 subscribers are exempt from this reporting requirement.

## APPENDIX C

### Supplemental Final Regulatory Flexibility Analysis

- 1) As required by the Regulatory Flexibility Act of 1980, as amended (RFA),<sup>170</sup> an Initial Regulatory Flexibility Analysis (IRFA) was incorporated in the Notice of Proposed Rulemaking (*Notice*) in EB Docket No. 06-119.<sup>171</sup> The Commission sought written public comment on the proposals in this docket, including comment on the IRFA. On June 8, 2007, the Commission released an Order in EB Docket No. 06-119 which included a Final Regulatory Flexibility Analysis (FRFA).<sup>172</sup> In this Order on Reconsideration, the Commission includes a Supplemental FRFA which conforms to the RFA.<sup>173</sup>

#### A. Need for, and Objectives of, the Rules

- 2) In the Order released on June 8, 2007, the Commission adopted a rule requiring local exchange carriers (LECs), other than those that meet the definition of a Class B company as set forth in Section 32.11(b)(2) of the Commission's rules,<sup>174</sup> and commercial mobile radio service (CMRS) providers, other than non-nationwide CMRS providers with no more than 500,000 subscribers, to have an emergency backup power source for all assets that are normally powered from local AC commercial power, including those inside central offices, cell sites, remote switches and digital loop carrier system remote terminals. The Commission received seven petitions seeking reconsideration of this rule on various grounds, including the inability of carriers to comply with the rule due to legal constraints (*i.e.*, other Federal, state and local laws precluding compliance with the Commission's rule), constraints due to private legal obligation or agreement that precludes the ability of carriers to store additional backup equipment necessary to comply with the rule, risk to safety of life or health, physical constraints, and economic burden. In response to the petitions for reconsideration, the Commission amends its rule to exempt assets where the LEC or CMRS provider has demonstrated that it cannot comply with the rule due to federal, state, tribal or local law; risk to safety of life or health; or private legal obligation or agreement. The Commission also amended the rule to require LECs and CMRS providers to file reports that list each asset: (1) that was designed to comply with the applicable backup power requirement; (2) where compliance is precluded do to risk to safety of life or health; (3) where compliance is

---

<sup>170</sup> See 5 U.S.C. § 603. The RFA, *see* 5 U.S.C. §§ 601-12, has been amended by the Small Business Regulatory Enforcement Fairness Act of 1996 (SBREFA), Pub. L. No. 104-121, Title II, 110 Stat. 857 (1996).

<sup>171</sup> See Recommendations of the Independent Panel Reviewing the Impact of Hurricane Katrina on Communications Networks, *Notice of Proposed Rulemaking*, 21 FCC Rcd 7320, 7330, Appendix A (2006).

<sup>172</sup> *Recommendations of the Independent Panel Reviewing the Impact of Hurricane Katrina on Communications Networks*, Order, 22 FCC Rcd 10541 (2007) (*Katrina Panel Order*).

<sup>173</sup> See 5 U.S.C. § 604.

<sup>174</sup> Section 32.11 provides that Class B companies are those companies that have annual revenues from regulated telecommunications operations that are less than the indexed revenue threshold. 47 C.F.R. § 32.11(b)(2). The Wireline Competition Bureau recently announced that the 2006 revenue threshold for Class A to Class B companies is \$134 million. *Public Notice*, "Annual Adjustment of Revenue Thresholds," DA 07-1706 (WCB, April 12, 2007). Although Section 32.11, by its terms, applies only to ILECs, we are applying the same revenue categories to CLECs for the purpose of the exception to this requirement.

precluded by a private legal obligation or agreement; (4) where compliance is precluded by Federal, state, tribal or local law; and (5) that was designed with less than the required emergency backup power capacity and is not precluded from compliance for the reasons stated in (2), (3) or (4). For assets in category (5), LECs and CMRS providers must comply with the backup power requirements or file a certified emergency backup power compliance plan that certifies that the LEC or CMRS provider will ensure 100 percent coverage in each of the areas covered by any non-compliant asset. Further, the Commission clarifies that the rule applies only to assets that are necessary to the provision of communications services that are normally powered from local commercial power. Finally, the Commission clarified that that on-site power sources satisfy the requirement of this rule if such sources were originally designed to provide the minimum backup power capacity level required and the provider has implemented reasonable methods and procedures to ensure that batteries are regularly checked and replaced when they deteriorate.

- 3) Although the rule now requires that LECs and CMRS providers file a report, and in some circumstances a backup power compliance plan, the amendments to the rule significantly reduce the burden on LECs and CMRS providers by providing appropriate relief from the requirement that they have backup power sources for all assets normally powered by commercial power. As noted above, the modified rule exempts assets where compliance is precluded by risk to safety of life or health, private legal obligation or agreement, or federal, state, tribal or local law, and allows providers with non-compliant assets that are not otherwise exempt to file an emergency backup power plan.

#### **B. Summary of Significant Issues Raised by the Public**

- 4) MetroPCS Communications, Inc. (MetroPCS) argues that the Commission's burden estimate in the FRFA regarding wireless carriers was based on mistakes of fact and that compliance is not feasible for MetroPCS, which qualifies as a non-nationwide provider with more than 500,000 subscribers.<sup>175</sup> MetroPCS asserts that the Commission erroneously concluded that the requirement will not create an undue burden because several communications providers reported in their comments that they already maintain emergency backup power.<sup>176</sup> MetroPCS contends that, while backup power at switch sites is common, no wireless service provider has reported that it routinely provides 8 hours of backup power at all remote sites.<sup>177</sup> As noted above, several petitioners argued that the Commission did not adequately consider the burden that the backup power rule would impose on LECs and CMRS providers.

#### **C. Description and Estimate of the Number of Small Entities to Which the Rules Will Apply**

- 5) The RFA directs agencies to provide a description of, and, where feasible, an estimate of, the number of small entities that may be affected by the rules adopted herein.<sup>178</sup> The RFA generally defines the term "small entity" as having the same meaning as the terms "small

---

<sup>175</sup> MetroPCS Petition for Clarification and Reconsideration at 7-8, citing FRFA ¶ 24 and n60.

<sup>176</sup> See FRFA, ¶ 24.

<sup>177</sup> MetroPCS Petition for Clarification and Reconsideration at 7-8. The American Association of Paging Carriers (AAPC) cites parts of the FRFA that are identical to sections in the *Katrina Panel Order* in support of its arguments that Section 12.2 of the Commission's rules should not apply to paging carriers. AAPC Petition for Clarification or, Alternatively, Reconsideration at 2, n1. Those arguments are fully addressed in the Order on Reconsideration.

<sup>178</sup> 5 U.S.C. § 604(a)(3).

- business,” “small organization,” and “small governmental jurisdiction.”<sup>179</sup> In addition, the term “small business” has the same meaning as the term “small business concern” under the Small Business Act.<sup>180</sup> A “small business concern” is one which: (1) is independently owned and operated; (2) is not dominant in its field of operation; and (3) satisfies any additional criteria established by the Small Business Administration (SBA).<sup>181</sup>
- 6) Nationwide, there are a total of approximately 22.4 million small businesses, according to SBA data.<sup>182</sup> A “small organization” is generally “any not-for-profit enterprise which is independently owned and operated and is not dominant in its field.”<sup>183</sup> Nationwide, as of 2002, there were approximately 1.6 million small organizations.<sup>184</sup> The term “small governmental jurisdiction” is defined generally as “governments of cities, towns, townships, villages, school districts, or special districts, with a population of less than fifty thousand.”<sup>185</sup> Census Bureau data for 2002 indicate that there were 87,525 local governmental jurisdictions in the United States.<sup>186</sup> We estimate that, of this total, 84,377 entities were “small governmental jurisdictions.”<sup>187</sup> Thus, we estimate that most governmental jurisdictions are small.
  - 7) In the following paragraphs, the Commission further describes and estimates the number of small entity licensees that may be affected by the rules the Commission adopts in this Order. The rule changes affect LECs, including both incumbent LECs (ILECs) and competitive LECs (CLECs), and CMRS providers.
  - 8) Since this Order applies to multiple services, this FRFA analyzes the number of small entities affected on a service-by-service basis. In the case of CMRS providers, when identifying small entities that could be affected by the Commission’s new rules, this FRFA provides information that describes auctions results, including the number of small entities that were winning bidders. However, the number of winning bidders that qualify as small businesses at the close of an auction does not necessarily reflect the total number of small entities currently in a particular service. The Commission does not generally require that licensees later provide business size information, except in the context of an assignment or a transfer of control application that involves unjust enrichment issues.
  - 9) Cellular Licensees. The SBA has developed a small business size standard for small

---

<sup>179</sup> 5 U.S.C. § 601(6).

<sup>180</sup> 5 U.S.C. § 601(3) (incorporating by reference the definition of “small-business concern” in the Small Business Act, 15 U.S.C. § 632). Pursuant to 5 U.S.C. § 601(3), the statutory definition of a small business applies “unless an agency, after consultation with the Office of Advocacy of the Small Business Administration and after opportunity for public comment, establishes one or more definitions of such term which are appropriate to the activities of the agency and publishes such definition(s) in the Federal Register.” 5 U.S.C. § 601(3).

<sup>181</sup> 15 U.S.C. § 632.

<sup>182</sup> See SBA, Programs and Services, SBA Pamphlet No. CO-0028, at page 40 (July 2002).

<sup>183</sup> 5 U.S.C. § 601(4).

<sup>184</sup> Independent Sector, The New Nonprofit Almanac & Desk Reference (2002).

<sup>185</sup> 5 U.S.C. § 601(5).

<sup>186</sup> U.S. Census Bureau, Statistical Abstract of the United States: 2006, Section 8, page 272, Table 415.

<sup>187</sup> We assume that the villages, school districts, and special districts are small, and total 48,558. See U.S. Census Bureau, Statistical Abstract of the United States: 2006, section 8, page 273, Table 417. For 2002, Census Bureau data indicate that the total number of county, municipal, and township governments nationwide was 38,967, of which 35,819 were small. *Id.*

businesses in the category “Cellular and Other Wireless Telecommunications.”<sup>188</sup> Under that SBA category, a business is small if it has 1,500 or fewer employees.<sup>189</sup> For the census category of “Cellular and Other Wireless Telecommunications,” Census Bureau data for 2002 show that there were 1,397 firms in this category that operated for the entire year.<sup>190</sup> Of this total, 1,378 firms had employment of 999 or fewer employees, and 19 firms had employment of 1,000 employees or more.<sup>191</sup> Thus, under this category and size standard, the majority of firms can be considered small.

- 10) *Broadband Personal Communications Service.* The broadband Personal Communications Service (PCS) spectrum is divided into six frequency blocks designated A through F, and the Commission has held auctions for each block. The Commission has created a small business size standard for Blocks C and F as an entity that has average gross revenues of less than \$40 million in the three previous calendar years.<sup>192</sup> For Block F, an additional small business size standard for “very small business” was added and is defined as an entity that, together with its affiliates, has average gross revenues of not more than \$15 million for the preceding three calendar years.<sup>193</sup> These small business size standards, in the context of broadband PCS auctions, have been approved by the SBA.<sup>194</sup> No small businesses within the SBA-approved small business size standards bid successfully for licenses in Blocks A and B. There were 90 winning bidders that qualified as small entities in the C Block auctions. A total of 93 “small” and “very small” business bidders won approximately 40 percent of the 1,479 licenses for Blocks D, E, and F.<sup>195</sup> On March 23, 1999, the Commission reaucted 155 C, D, E, and F Block licenses; there were 113 small business winning bidders.<sup>196</sup> On January 26, 2001, the Commission completed the auction of 422 C and F PCS licenses in Auction 35.<sup>197</sup> Of the 35 winning bidders in this auction, 29 qualified as “small” or “very small” businesses. Subsequent events concerning Auction 35, including judicial and agency determinations, resulted in a total of 163 C and F Block licenses being available for grant.
- 11) *Specialized Mobile Radio.* The Commission awards “small entity” bidding credits in auctions for Specialized Mobile Radio (SMR) geographic area licenses in the 800 MHz and 900 MHz bands to firms that had revenues of no more than \$15 million in each of the three previous calendar years.<sup>198</sup> The Commission awards “very small entity” bidding credits to firms that

<sup>188</sup> 13 C.F.R. § 121.201, North American Industry Classification System (NAICS) code 517212.

<sup>189</sup> *Id.*

<sup>190</sup> U.S. Census Bureau, 2002 Economic Census, Subject Series: Information, “Establishment and Firm Size (Including Legal Form of Organization),” Table 5, NAICS code 517212 (issued Nov. 2005).

<sup>191</sup> *Id.* The census data do not provide a more precise estimate of the number of firms that have employment of 1,500 or fewer employees; the largest category provided is for firms with “1000 employees or more.”

<sup>192</sup> See Amendment of Parts 20 and 24 of the Commission’s Rules – Broadband PCS Competitive Bidding and the Commercial Mobile Radio Service Spectrum Cap, *Report and Order*, 11 FCC Rcd 7824, 7850-7852 ¶¶ 57-60 (1996); see also 47 C.F.R. § 24.720(b).

<sup>193</sup> See Amendment of Parts 20 and 24 of the Commission’s Rules – Broadband PCS Competitive Bidding and the Commercial Mobile Radio Service Spectrum Cap, *Report and Order*, 11 FCC Rcd 7824, 7852 ¶ 60.

<sup>194</sup> See Letter to Amy Zoslov, Chief, Auctions and Industry Analysis Division, Wireless Telecommunications Bureau, Federal Communications Commission, from Aida Alvarez, Administrator, Small Business Administration, dated December 2, 1998.

<sup>195</sup> FCC News, “Broadband PCS, D, E and F Block Auction Closes,” No. 71744 (rel. January 14, 1997).

<sup>196</sup> See “C, D, E, and F Block Broadband PCS Auction Closes,” *Public Notice*, 14 FCC Rcd 6688 (WTB 1999).

<sup>197</sup> See “C and F Block Broadband PCS Auction Closes; Winning Bidders Announced,” *Public Notice*, 16 FCC Rcd 2339 (2001).

<sup>198</sup> 47 C.F.R. § 90.814(b)(1).

- had revenues of no more than \$3 million in each of the three previous calendar years.<sup>199</sup> The SBA has approved these small business size standards for the 900 MHz Service.<sup>200</sup> The Commission has held auctions for geographic area licenses in the 800 MHz and 900 MHz bands. The 900 MHz SMR auction began on December 5, 1995, and closed on April 15, 1996. Sixty bidders claiming that they qualified as small businesses under the \$15 million size standard won 263 geographic area licenses in the 900 MHz SMR band. The 800 MHz SMR auction for the upper 200 channels began on October 28, 1997, and was completed on December 8, 1997. Ten bidders claiming that they qualified as small businesses under the \$15 million size standard won 38 geographic area licenses for the upper 200 channels in the 800 MHz SMR band.<sup>201</sup> A second auction for the 800 MHz band was held on January 10, 2002 and closed on January 17, 2002 and included 23 BEA licenses. One bidder claiming small business status won five licenses.<sup>202</sup>
- 12) The auction of the 1,050 800 MHz SMR geographic area licenses for the General Category channels began on August 16, 2000, and was completed on September 1, 2000. Eleven bidders won 108 geographic area licenses for the General Category channels in the 800 MHz SMR band qualified as small businesses under the \$15 million size standard. In an auction completed on December 5, 2000, a total of 2,800 Economic Area licenses in the lower 80 channels of the 800 MHz SMR service were sold. Of the 22 winning bidders, 19 claimed “small business” status and won 129 licenses. Thus, combining all three auctions, 40 winning bidders for geographic licenses in the 800 MHz SMR band claimed status as small business.
- 13) In addition, there are numerous incumbent site-by-site SMR licensees and licensees with extended implementation authorizations in the 800 and 900 MHz bands. The Commission does not know how many firms provide 800 MHz or 900 MHz geographic area SMR pursuant to extended implementation authorizations, nor how many of these providers have annual revenues of no more than \$3 million or \$15 million (the special small business size standards), or have no more than 1,500 employees (the generic SBA standard for wireless entities, discussed, *supra*). One firm has over \$15 million in revenues. The Commission assumes, for purposes of this analysis, that all of the remaining existing extended implementation authorizations are held by small entities.
- 14) Advanced Wireless Services. In the *AWS-1 Report and Order*, the Commission adopted rules that affect applicants who wish to provide service in the 1710-1755 MHz and 2110-2155 MHz bands.<sup>203</sup> The *AWS-1 Report and Order* defines a “small business” as an entity with average annual gross revenues for the preceding three years not exceeding \$40 million, and a “very small business” as an entity with average annual gross revenues for the preceding three years not exceeding \$15 million. The *AWS-1 Report and Order* also provides small businesses with a bidding credit of 15 percent and very small businesses with a bidding credit

---

<sup>199</sup> *Id.*

<sup>200</sup> See Letter to Thomas Sugrue, Chief, Wireless Telecommunications Bureau, Federal Communications Commission, from Aida Alvarez, Administrator, Small Business Administration, dated August 10, 1999. The Commission notes that, although a request was also sent to the SBA requesting approval for the small business size standard for 800 MHz, approval is still pending.

<sup>201</sup> See “Correction to Public Notice DA 96-586 ‘FCC Announces Winning Bidders in the Auction of 1020 Licenses to Provide 900 MHz SMR in Major Trading Areas,’” *Public Notice*, 18 FCC Rcd 18367 (WTB 1996).

<sup>202</sup> See “Multi-Radio Service Auction Closes,” *Public Notice*, 17 FCC Rcd 1446 (WTB 2002).

<sup>203</sup> Service Rules for Advanced Wireless Services in the 1.7 GHz and 2.1 GHz Bands, WT Docket No. 02-353, *Report and Order*, 18 FCC Rcd 25162 (2003) (*AWS-1 Report and Order*).

of 25 percent.

- 15) *Incumbent Local Exchange Carriers (Incumbent LECs)*. As noted above, a “small business” under the RFA is one that, *inter alia*, meets the pertinent small business size standard (e.g., a telephone communications business having 1,500 or fewer employees), and “is not dominant in its field of operation.”<sup>204</sup> The SBA’s Office of Advocacy contends that, for RFA purposes, small incumbent LECs are not dominant in their field of operation because any such dominance is not “national” in scope.<sup>205</sup> We have therefore included small incumbent local exchange carriers in this RFA analysis, although we emphasize that this RFA action has no effect on Commission analyses and determinations in other, non-RFA contexts. Neither the Commission nor the SBA has developed a small business size standard specifically for incumbent local exchange services. The appropriate size standard under SBA rules is for the category Wired Telecommunications Carriers. Under that size standard, such a business is small if it has 1,500 or fewer employees.<sup>206</sup> According to Commission data,<sup>207</sup> 1,307 carriers have reported that they are engaged in the provision of incumbent local exchange services. Of these 1,307 carriers, an estimated 1,019 have 1,500 or fewer employees and 288 have more than 1,500 employees. Consequently, the Commission estimates that most providers of incumbent local exchange service are small businesses that may be affected by our action.
- 16) *Competitive Local Exchange Carriers (Competitive LECs), Competitive Access Providers (CAPs), “Shared-Tenant Service Providers,” and “Other Local Service Providers.”* Neither the Commission nor the SBA has developed a small business size standard specifically for these service providers. The appropriate size standard under SBA rules is for the category Wired Telecommunications Carriers. Under that size standard, such a business is small if it has 1,500 or fewer employees.<sup>208</sup> According to Commission data,<sup>209</sup> 859 carriers have reported that they are engaged in the provision of either competitive access provider services or competitive local exchange carrier services. Of these 859 carriers, an estimated 741 have 1,500 or fewer employees and 118 have more than 1,500 employees. In addition, 16 carriers have reported that they are “Shared-Tenant Service Providers,” and all 16 are estimated to have 1,500 or fewer employees. In addition, 44 carriers have reported that they are “Other Local Service Providers.” Of the 44, an estimated 43 have 1,500 or fewer employees and one has more than 1,500 employees. Consequently, the Commission estimates that most providers of competitive local exchange service, competitive access providers, “Shared-Tenant Service Providers,” and “Other Local Service Providers” are small entities that may be affected by our action.
- 17) *Cable and Other Program Distribution.* The Census Bureau defines this category as follows: “This industry comprises establishments primarily engaged as third-party distribution systems for broadcast programming. The establishments of this industry deliver

---

<sup>204</sup> 15 U.S.C. § 632.

<sup>205</sup> Letter from Jere W. Glover, Chief Counsel for Advocacy, SBA, to William E. Kennard, Chairman, FCC (May 27, 1999). The Small Business Act contains a definition of “small-business concern,” which the RFA incorporates into its own definition of “small business.” See 15 U.S.C. § 632(a) (Small Business Act); 5 U.S.C. § 601(3) (RFA). SBA regulations interpret “small business concern” to include the concept of dominance on a national basis. See 13 C.F.R. § 121.102(b).

<sup>206</sup> 13 C.F.R. § 121.201, NAICS code 517110.

<sup>207</sup> FCC, Wireline Competition Bureau, Industry Analysis and Technology Division, “Trends in Telephone Service” at Table 5.3, page 5-5 (Feb. 2007). This source uses data that are current as of October 20, 2005.

<sup>208</sup> 13 C.F.R. § 121.201, NAICS code 517110.

<sup>209</sup> *Trends in Telephone Service*, Table 5.3.

visual, aural, or textual programming received from cable networks, local television stations, or radio networks to consumers via cable or direct-to-home satellite systems on a subscription or fee basis. These establishments do not generally originate programming material.”<sup>210</sup> The SBA has developed a small business size standard for Cable and Other Program Distribution, which is: all such firms having \$13.5 million or less in annual receipts.<sup>211</sup> According to Census Bureau data for 2002, there were a total of 1,191 firms in this category that operated for the entire year.<sup>212</sup> Of this total, 1,087 firms had annual receipts of under \$10 million, and 43 firms had receipts of \$10 million or more but less than \$25 million.<sup>213</sup> Thus, under this size standard, the majority of firms can be considered small.

18) *Cable Companies and Systems.* The Commission has also developed its own small business size standards, for the purpose of cable rate regulation. Under the Commission’s rules, a “small cable company” is one serving 400,000 or fewer subscribers, nationwide.<sup>214</sup> Industry data indicate that, of 1,076 cable operators nationwide, all but eleven are small under this size standard.<sup>215</sup> In addition, under the Commission’s rules, a “small system” is a cable system serving 15,000 or fewer subscribers.<sup>216</sup> Industry data indicate that, of 7,208 systems nationwide, 6,139 systems have under 10,000 subscribers, and an additional 379 systems have 10,000-19,999 subscribers.<sup>217</sup> Thus, under this second size standard, most cable systems are small.

19) *Cable System Operators.* The Communications Act of 1934, as amended, also contains a size standard for small cable system operators, which is “a cable operator that, directly or through an affiliate, serves in the aggregate fewer than 1 percent of all subscribers in the United States and is not affiliated with any entity or entities whose gross annual revenues in the aggregate exceed \$250,000,000.”<sup>218</sup> The Commission has determined that an operator serving fewer than 677,000 subscribers shall be deemed a small operator, if its annual revenues, when combined with the total annual revenues of all its affiliates, do not exceed \$250 million in the aggregate.<sup>219</sup> Industry data indicate that, of 1,076 cable operators nationwide, all but ten are

---

<sup>210</sup> U.S. Census Bureau, 2002 NAICS Definitions, “517510 Cable and Other Program Distribution”; <http://www.census.gov/epcd/naics02/def/NDEF517.HTM>.

<sup>211</sup> 13 C.F.R. § 121.201, NAICS code 517510.

<sup>212</sup> U.S. Census Bureau, 2002 Economic Census, Subject Series: Information, Table 4, Receipts Size of Firms for the United States: 2002, NAICS code 517510 (issued November 2005).

<sup>213</sup> *Id.* An additional 61 firms had annual receipts of \$25 million or more.

<sup>214</sup> 47 C.F.R. § 76.901(e). The Commission determined that this size standard equates approximately to a size standard of \$100 million or less in annual revenues. *Implementation of Sections of the 1992 Cable Act: Rate Regulation*, Sixth Report and Order and Eleventh Order on Reconsideration, 10 FCC Rcd 7393, 7408 (1995).

<sup>215</sup> These data are derived from: R.R. Bowker, *Broadcasting & Cable Yearbook 2006*, “Top 25 Cable/Satellite Operators,” pages A-8 & C-2 (data current as of June 30, 2005); Warren Communications News, *Television & Cable Factbook 2006*, “Ownership of Cable Systems in the United States,” pages D-1805 to D-1857.

<sup>216</sup> 47 C.F.R. § 76.901(c).

<sup>217</sup> Warren Communications News, *Television & Cable Factbook 2006*, “U.S. Cable Systems by Subscriber Size,” page F-2 (data current as of Oct. 2005). The data do not include 718 systems for which classifying data were not available.

<sup>218</sup> 47 U.S.C. § 543(m)(2); see 47 C.F.R. § 76.901(f) & nn. 1-3.

<sup>219</sup> 47 C.F.R. § 76.901(f); see Public Notice, *FCC Announces New Subscriber Count for the Definition of Small Cable Operator*, DA 01-158 (Cable Services Bureau, Jan. 24, 2001).

- small under this size standard.<sup>220</sup> We note that the Commission neither requests nor collects information on whether cable system operators are affiliated with entities whose gross annual revenues exceed \$250 million,<sup>221</sup> and therefore we are unable to estimate more accurately the number of cable system operators that would qualify as small under this size standard.
- 20) *Paging*. The SBA has developed a small business size standard for the broad economic census category of "Paging."<sup>222</sup> Under this category, the SBA deems a wireless business to be small if it has 1,500 or fewer employees. Census Bureau data for 2002 show that there were 807 firms in this category that operated for the entire year.<sup>223</sup> Of this total, 804 firms had employment of 999 or fewer employees, and three firms had employment of 1,000 employees or more.<sup>224</sup> In addition, according to Commission data,<sup>225</sup> 365 carriers have reported that they are engaged in the provision of "Paging and Messaging Service." Of this total, we estimate that 360 have 1,500 or fewer employees, and five have more than 1,500 employees. Thus, in this category the majority of firms can be considered small.
- 21) We also note that, in the *Paging Second Report and Order*, the Commission adopted a size standard for "small businesses" for purposes of determining their eligibility for special provisions such as bidding credits and installment payments.<sup>226</sup> In this context, a small business is an entity that, together with its affiliates and controlling principals, has average gross revenues not exceeding \$15 million for the preceding three years.<sup>227</sup> The SBA has approved this definition.<sup>228</sup> An auction of Metropolitan Economic Area (MEA) licenses commenced on February 24, 2000, and closed on March 2, 2000. Of the 2,499 licenses auctioned, 985 were sold.<sup>229</sup> Fifty-seven companies claiming small business status won 440 licenses.<sup>230</sup> An auction of MEA and Economic Area (EA) licenses commenced on October 30, 2001, and closed on December 5, 2001. Of the 15,514 licenses auctioned, 5,323 were sold.<sup>231</sup> One hundred thirty-two companies claiming small business status purchased 3,724 licenses. A third auction, consisting of 8,874 licenses in each of 175 EAs and 1,328 licenses

---

<sup>220</sup> These data are derived from: R.R. Bowker, *Broadcasting & Cable Yearbook 2006*, "Top 25 Cable/Satellite Operators," pages A-8 & C-2 (data current as of June 30, 2005); Warren Communications News, *Television & Cable Factbook 2006*, "Ownership of Cable Systems in the United States," pages D-1805 to D-1857.

<sup>221</sup> The Commission does receive such information on a case-by-case basis if a cable operator appeals a local franchise authority's finding that the operator does not qualify as a small cable operator pursuant to § 76.901(f) of the Commission's rules. See 47 C.F.R. § 76.909(b).

<sup>222</sup> 13 C.F.R. § 121.201, NAICS code 517211.

<sup>223</sup> U.S. Census Bureau, 2002 Economic Census, Subject Series: Information, "Establishment and Firm Size (Including Legal Form of Organization)," Table 5, NAICS code 517211 (issued Nov. 2005).

<sup>224</sup> *Id.* The census data do not provide a more precise estimate of the number of firms that have employment of 1,500 or fewer employees; the largest category provided is for firms with "1000 employees or more."

<sup>225</sup> *Trends in Telephone Service*, Table 5.3.

<sup>226</sup> Revision of Part 22 and Part 90 of the Commission's Rules to Facilitate Future Development of Paging Systems, *Second Report and Order*, 12 FCC Rcd 2732, 2811-2812, paras. 178-181 (*Paging Second Report and Order*); see also Revision of Part 22 and Part 90 of the Commission's Rules to Facilitate Future Development of Paging Systems, *Memorandum Opinion and Order on Reconsideration*, 14 FCC Rcd 10030, 10085-10088, paras. 98-107 (1999).

<sup>227</sup> *Paging Second Report and Order*, 12 FCC Rcd at 2811, para. 179.

<sup>228</sup> See Letter to Amy Zoslov, Chief, Auctions and Industry Analysis Division, Wireless Telecommunications Bureau, from Aida Alvarez, Administrator, Small Business Administration, dated December 2, 1998.

<sup>229</sup> See "929 and 931 MHz Paging Auction Closes," Public Notice, 15 FCC Rcd 4858 (WTB 2000).

<sup>230</sup> *Id.*

<sup>231</sup> See "Lower and Upper Paging Band Auction Closes," Public Notice, 16 FCC Rcd 21821 (WTB 2002).

in all but three of the 51 MEAs commenced on May 13, 2003, and closed on May 28, 2003. Seventy-seven bidders claiming small or very small business status won 2,093 licenses.<sup>232</sup> We also note that, currently, there are approximately 74,000 Common Carrier Paging licenses.

**D. Description of Projected Reporting, Recordkeeping, and Other Compliance Requirements for Small Entities**

- 22) *Backup Power Supply.* The Order on Reconsideration maintains the requirement that LECs and CMRS providers have an emergency backup power source for all assets necessary to maintain communications that are normally powered from local commercial power, including those inside central offices, cell sites, remote switches and digital loop carrier system remote terminals. Under this existing requirement, LECs and CMRS providers, as defined in Section 20.9 of the Commission's rules, must maintain emergency backup power for a minimum of 24 hours for assets inside central offices and eight hours for assets at other locations such as cell sites, remote switches and digital loop carrier system remote terminals that normally are powered from local commercial power.
- 23) In the Order on Reconsideration, the Commission clarifies that the assets subject to the rule are those necessary to ensure communications that are normally powered from local commercial power and that CMRS providers, including paging carriers, as defined in Section 20.9 of the Commission's rules, are subject to the rule. The Commission further exempts assets from the rule where LECs and CMRS providers can demonstrate that they can not comply with the rule due to constraints related to federal, state, tribal or local laws, risk to safety of life or health, or private legal obligations or agreements. LECs and CMRS providers must file a report with the Chief of the Public Safety & Homeland Security Bureau that identifies: (1) each asset that was designed to comply with the applicable backup power requirement; (2) each asset where compliance is precluded due to risk to safety of life or health, private legal obligation or agreements, or federal, state, tribal, or local law; and (3) each asset that was designed with less than the required emergency backup power capacity that is not precluded from compliance under (2). Our expectation is that this requirement will not create an undue additional burden, because the exemptions adopted in the Order on Reconsideration will substantially decrease the burden imposed on LECs and CMRS providers and several communications providers reported in their petitions for reconsideration and other filings that they already maintain some level of emergency backup power.<sup>233</sup> Additionally, the Order on Reconsideration also maintains the previously adopted exemption for LECs that meet the definition of a Class B company as set forth in Section

---

<sup>232</sup> See "Lower and Upper Paging Bands Auction Closes," Public Notice, 18 FCC Rcd 11154 (WTB 2003).

<sup>233</sup> See USTelecom Petition at 2,8 (noting that the vast majority of all network remote terminals have onsite backup battery power typically designed to an eight hour engineering standard, although the actual life of the battery at any point in time depends on numerous factors and some remote terminals are too small to support a battery); Verizon Wireless *Ex Parte* filed September 4, 2007 (stating that Verizon Wireless' internal design standard is for eight hours or more of backup power (generators, batteries or both) at every cell site where possible, that the majority of its cell sites have on-site generators or batteries capable of providing backup power for much longer than eight hours, that only a small percentage of sites have only batteries that will not last for eight hours, and that only a handful of sites have no on-site backup power at all). See also CTIA comments at 8 (observing that wireless carriers "must ensure network reliability and reliance" and that, to do so, they "provision their cell sites and switches with batteries to power them when electrical grids fail" and "maintain permanent generators at all of the switches and critical cell sites, as well as an inventory of backup power generators to recharge the batteries during extended commercial power failures).

32.11(b)(2) of the Commission's rules, and for non-nationwide CMRS providers with no more than 500,000 subscribers. Further, providers identifying assets designed with less than the required backup power capacity and not precluded from compliance for one of the three reasons listed above, must either comply with the backup power requirement or file an emergency backup power compliance plan that certifies that the service providers will ensure 100 percent coverage in each of the areas covered by any non-compliant asset. Filing this plan will presumably be less burdensome than implementing a backup power source for these assets in compliance with the rule. Many providers have also reported that they already have business continuity plans that address the issue of backup power. Finally, the Commission clarified that on-site power sources satisfy this rule if such sources were originally designed to provide the minimum backup power capacity level required by the rule and the provider has implemented reasonable methods and procedures to ensure that batteries are regularly checked and replaced when they deteriorate. This too should lessen the burden on providers.

**E. Steps Taken to Minimize the Significant Economic Impact on Small Entities, and Significant Alternatives Considered**

24) The RFA requires an agency to describe any significant alternatives that it has considered in reaching its proposed approach, which may include (among others) the following four alternatives: (1) the establishment of differing compliance or reporting requirements or timetables that take into account the resources available to small entities; (2) the clarification, consolidation, or simplification of compliance or reporting requirements under the rule for small entities; (3) the use of performance, rather than design, standards; and (4) an exemption from coverage of the rule, or any part thereof, for small entities.<sup>234</sup>

25) *Backup Power Supply.* The Order on Reconsideration does not disturb the previously-adopted exemptions from the requirement for LECs (both ILECs and CLECs) that meet the definition of a Class B company as set forth in Section 32.11(b)(2) of the Commission's rules and non-nationwide CMRS providers with no more than 500,000 subscribers.<sup>235</sup> Thus, for example, paging carriers that are non-nationwide CMRS providers and have no more than 500,000 subscribers will be exempt from this rule. The Order on Reconsideration also provides relief to LECs and CMRS providers subject to the rule for assets where they cannot comply with the rule due to legal and other constraints as described above. Finally, the Order on Reconsideration provides that, for non-compliant assets designed with less than the required emergency backup power capacity that are not otherwise exempt, LECs and CMRS providers must comply with the backup power requirement or submit an emergency backup power compliance plan.

**Report to Congress:** The Commission will send a copy of the Order, including this Supplemental FRFA, in a report to be sent to Congress and the Government Accountability Office pursuant to the Congressional Review Act.<sup>236</sup> In addition, the Commission will send a copy of the Order, including this

---

<sup>234</sup> 5 U.S.C. § 603(c).

<sup>235</sup> Although this subscriber level is based on the Tier III CMRS definition, which is defined as non-nationwide CMRS providers with no more than 500,000 subscribers as of the end of 2001, we note that we are not exempting from this requirement those non-nationwide CMRS providers that have grown to exceed the 500,000 subscriber threshold since 2001 as we believe that such providers are at a size where they should be able to comply with the emergency backup power rule.

<sup>236</sup> See 5 U.S.C. § 801(a)(1)(A).

Supplemental FRFA, to the Chief Counsel for Advocacy of the SBA. A copy of the Order and Supplemental FRFA (or summaries thereof) will also be published in the Federal Register.<sup>237</sup>

---

<sup>237</sup> See 5 U.S.C. § 604(b).

## Appendix F: FCC Communications Security, Reliability & Interoperability Council (CSRIC)

The FCC published on the Federal Register the replacement of Network Reliability & Interoperability Council (NRIC). Below is the related text:

[Federal Register: April 4, 2007 (Volume 72, Number 64)]

[Notices]

Page 16362-16363]

From the Federal Register Online via GPO Access [wais.access.gpo.gov]

DOCID:fr04ap07-67]

-----

### FEDERAL COMMUNICATIONS COMMISSION

Federal Advisory Committee Act; Communications Security, Reliability and Interoperability Council

AGENCY: Federal Communications Commission.

ACTION: Notice of intent to establish.

-----

**SUMMARY:** In accordance with the Federal Advisory Committee Act, the purpose of this notice is to announce that a Federal Advisory Committee, known as the "Communications Security, Reliability and Interoperability Council" (hereinafter the "Council") is being established.

**ADDRESSES:** Federal Communications Commission, Public Safety & Homeland Security Bureau, Attn: Lisa M. Fowlkes, 445 12th Street, SW., Room 7- C753, Washington, DC 20554.

**FOR FURTHER INFORMATION CONTACT:** Lisa M. Fowlkes, Federal Communications Commission, Public Safety & Homeland Security Bureau, 445 12th Street, SW., Room 7-C753, Washington, DC 20554. Telephone: (202) 418-7452, e-mail: [lisa.fowlkes@fcc.gov](mailto:lisa.fowlkes@fcc.gov) <<mailto:lisa.fowlkes@fcc.gov>>.

**SUPPLEMENTARY INFORMATION:** The Chairman of the Federal Communications Commission has determined that the establishment of the Council is necessary and in the public interest in connection with the performance of duties imposed on the Federal Communications Commission ("FCC" or "Commission") by law. The Committee Management Secretariat, General Services Administration concurs with the establishment of the Council.

The purpose of the Council is to provide recommendations to the FCC to ensure optimal security, reliability and interoperability of communications systems, including telecommunications, media and public safety communications systems. This Council will replace the Network Reliability and Interoperability Council (NRIC) and the Media Security and Reliability Council (MSRC). The Council's duties will include: (1) Recommending to the FCC best practices to ensure the security, reliability, operability and interoperability of public safety communications systems; (2) evaluating ways to strengthen the collaboration between communication service providers and public safety agencies during

emergencies; (3) recommending to the FCC ways to improve the Emergency Alert System (EAS), including best practices for EAS; (4) recommending to the FCC steps necessary to better prepare for shifts in communications usage patterns that likely would result from a pandemic flu outbreak; (5) recommending to the FCC technologies and systems that can best facilitate the communication of emergency information to and from hospitals, schools, day care facilities and other facilities that provide vital public services; (6) developing and recommending to the FCC best practices to facilitate the communication of emergency information to the public, including people who do not speak English, individuals with disabilities, the elderly and people living in rural areas; (7) recommending to the FCC methods by which the communications industry can reliably and accurately measure the extent to which key best practices are implemented; (8) reviewing and recommending to the FCC updates of existing NRIC and MSRC best practices; (9) reviewing the deployment of Internet Protocol (IP) as a network protocol for critical next generation infrastructure, including emergency/first responder networks; and (10) reviewing and recommending to the FCC an implementation plan for the "emergency communications internetwork" advocated by NRIC VII, Focus Group 1D in its December 2005 Final Report.

Federal Communications Commission.  
Marlene H. Dortch,  
Secretary.  
[FR Doc. E7-6254 Filed 4-3-07; 8:45 am]

BILLING CODE 6712-01-P

## Appendix G: FCC's CMSAAC Report

The FCC CMSAAC had their last meeting on Oct 3rd, after which their final report was to be issued by Oct 12, 2007. Although the FCC's website ([www.fcc.gov](http://www.fcc.gov)) has not yet posted CMSAAC's final recommendations, one can find a September 24, 2007 draft at the National Public Safety Telecommunications Council (NPSTC) web site:

“Commercial Mobile Alert Service Architecture and Requirements” DRAFT - September 24, 2007

<http://www.npstc.org/documents.jsp>

[http://www.npstc.org/documents/PMG-0035\\_Final\\_Recommendations\\_v0.6.pdf](http://www.npstc.org/documents/PMG-0035_Final_Recommendations_v0.6.pdf)

## Appendix H: Wild Fires in South California and Bay Area Earthquake

While this report was in editorial review, California experienced large scale wild fires. These wild fires affords us an opportunity to obtain actual telecommunications network and emergency notification systems performance and reliability under a time of high usage across a wide area, as well as locally focused high usage. We would consequently investigate how the network behaved in terms of backup power needs and congestion performance from the activation the different emergency notification systems that were deployed in the area.

From the information gathered through press releases and the media, it seems that this was a “non-event” regarding disruption of the telecommunications services. It will take 30 days after the fires are distinguished to know if FCC will get any related telecommunications service outage final reports by the telecom industry.

For the reader’s information we include three different press releases or articles written for these wild fires.

### AT&T Press Release: “AT&T Wireless Network Continues to Perform at Near-Normal Levels”

The press release below was issued by AT&T the morning of October 24, 2007 detailing how our wireless network in California is functioning as a result of the wildfires, as well as additional information on free calls available at all So-CA-owned retail stores.

The source is:

<http://www.att.com/gen/press-room?pid=4800&cdvn=news&newsarticleid=24603>

#### **AT&T Wireless Network Continues to Perform at Near-Normal Levels**

#### **Company Offers Resources and Tips to Community In Response**

#### **To Southern California Wildfires**

#### **Free Calls Available at All Southern California Company-Owned Retail Locations**

**SAN DIEGO, Oct. 24, 2007** — AT&T Inc. (NYSE:T) has announced that the wireless network continues to perform at near-normal levels despite the disruptions created by wildfires in Southern California.

In addition, AT&T is making emergency resources available, including free calling and Internet access in select locations.

AT&T reported that more than 99 percent of its cell sites in Los Angeles, Orange, San Bernardino and Ventura counties are functioning normally as consumers continue to complete calls, send and receive text messages, access e-mail and connect to the Internet.

Although the fires have affected certain cell sites in the Los Angeles, San Bernardino and San Diego areas, AT&T's No.1 priority has been to restore these sites to full capacity as quickly and safely as possible.

In San Diego County, more than 95 percent of the cell sites are functioning normally, with some call congestion in the areas at which fires have forced large-scale evacuations. There are 25 cell sites in all the counties affected by the fires, and AT&T technicians are working around the clock — as conditions permit — to restore service to those sites that are down.

AT&T's is ensuring that its customers in the affected regions in Southern California have continued wireless connectivity to keep them informed, safe and in touch with family, friends and colleagues.

“The need to communicate in a crisis is critical, and AT&T people have worked tirelessly to ensure that our wireless network is working as it should for emergency responders and residents, with only minimal disruption,” said Tammi Terrell, vice president and general manager for AT&T's wireless unit in San Diego.

To assist the community and emergency responders:

- Residents can make free calls at all Southern California AT&T retail store locations. Store locations can be found at <http://www.att.com/wireless>.
- AT&T is setting up communications services at major evacuation centers, such as QUALCOMM Stadium. AT&T is offering free calls as well as access to wireless laptops for Internet access.
- Existing network capacity at QUALCOMM Stadium has accommodated call volumes in and around the facility.
- At Plaza Camino Real in Carlsbad, free Wi-Fi service has been established for evacuees, and free calling will also be made available.
- AT&T is establishing a temporary Cell on Wheels (COW) to enhance network capacity to prepare for an increase in traffic at Plaza Camino Real. Additional capacity has also been added at a mobile command center in Rancho Bernardo.
- AT&T has donated \$50,000 to the American Red Cross.

AT&T has also suggested tips that consumers can use during a crisis.

- **Limit mobile phone calls; use text messaging to communicate with family and friends.**

Echoing the request of city officials and emergency personnel, AT&T suggests that customers limit calls to emergency/family contacts during these busy mobile phone usage times. AT&T recommends sending SMS messages as another method of communicating to family, friends and

others. This will help free up the network so that emergency personnel and 9-1-1 users can communicate without delay.

- **If you're being evacuated, be sure to pack your wireless battery charger.** Have an alternate plan to recharge your battery (e.g., charging via your car charger, extra mobile phone batteries, use of a disposable phone battery). If you've already been evacuated, stop by an AT&T retail location to charge your phone free of charge.
- **Forward your home number to your wireless number.** Because call forwarding is based out of the telephone central office, you will get incoming calls from your landline phone even if your local telephone service is disrupted at your home. In the unlikely event that the central office is not operational, services such as voice mail, call forwarding, remote access call forwarding and call forwarding-busy line/don't answer may be useful.
- **Program all of your emergency contact numbers into your mobile phone.** Numbers should include the police department, fire station and hospital, as well as your family members.
- **If you have a camera phone, take, store and send photos of damaged property to your insurance company from your device.**

Note: This AT&T release and other news announcements are available as part of an RSS feed at [www.att.com/rss](http://www.att.com/rss).

## TRINSIGHT “Networks largely unaffected by wildfires, carriers report”

The source is:

TRInsight, <http://www.tr.com/>  
TRINSIGHT(R) - 10/26/2007

### **CALIFORNIA -- Networks largely unaffected by wildfires, carriers report**

Despite the widespread wildfires in Southern California, Verizon Communications, Inc., and AT&T, Inc., reported that their wireline and wireless networks have remained largely unaffected, although minor outages due to fire damage have occurred.

A Verizon spokesman said yesterday that there are currently 984 lines out of service in its Southern California service area due to the fires, and 15,814 lines are running on generators or batteries. In the Verizon serving area, 16,798 customers are without commercial power, the company added. Also, only a "handful" of the region's cell sites have been affected, Verizon said

Some outages were the result of direct fire damage to Verizon lines and equipment, and others were attributed to drained backup batteries in electronic equipment in areas that lost commercial power, Verizon added. A Verizon spokesman said that the telco has been able to start restoring service in some

damaged areas located in Malibu, where firefighters now have the upper hand. Verizon technicians, however, can't access the Running Springs area, among others, to assess damages and begin repairs.

Meanwhile, AT&T reported that more than 99% of its cell sites in Los Angeles, Orange, San Bernardino, and Ventura counties are functioning normally. Although the fires have affected certain cell sites in the Los Angeles, San Bernardino, and San Diego areas, AT&T said its priority has been to restore these areas to full capacity as soon as possible.

In San Diego County, AT&T Wireless said more than 95% of the cell sites are functioning normally, with some call congestion in the areas at which fires have forced large-scale evacuations. There are 25 cell sites in all the counties affected by the fires, and AT&T said its technicians are working "around the clock" to restore service to those sites that are down. AT&T said its crews have restored service to a total of 27 cell sites since the crisis began Sunday.

As for its wireline service, AT&T said that due to severe burn damage to a nine-mile fiber connection, the communities of Julian and Warner Springs remain isolated -- able to make calls within the community but not beyond. Technicians are currently working to establish a temporary microwave radio link to reconnect service to those areas, AT&T added. The communities of Dulzura and Silverado Canyon also remain isolated and fiber connections there will be "restored as soon as conditions permit."

AT&T said it is establishing "emergency resource staging areas in San Diego County as central points of coordination for materials, technicians, and vehicles involved in the restoration effort."

In addition, AT&T said it is making emergency resources available, including free calling and Internet access in select locations. The telco is allowing residents to make free calls at all Southern California retail locations and has set up communications services at major evacuation centers, such as Qualcomm Stadium.

Verizon said it is also providing evacuees with a range of free calling services, and has donated wireless phones and wireless cards to 16 government agencies throughout Southern California. Verizon said it has also deployed employees equipped with wireless phones, laptops, and wireless cards to Qualcomm Stadium and other locations to allow evacuees to make calls, check e-mail, and charge their wireless devices.

Sprint Nextel Corp. said it is offering customers evacuated to Qualcomm Stadium free universal wireless phone batteries. Sprint is also supporting evacuees by charging phones, assisting with free calls, and providing wireless high-speed Internet access and calling cards.

In addition, T-Mobile USA, Inc., said yesterday it is offering free Wi-Fi service through Oct. 31 at nearly 1,200 "hotspot" locations in Southern California. The service is intended for those who have been displaced from their homes or are seeking refuge from the wildfires. This complimentary service for fire-affected areas in Southern California is for Wi-Fi service only, not T-Mobile voice or other services, the telco said. - Carrie DeLeon, [carrie.deleon@wolterskluwer.com](mailto:carrie.deleon@wolterskluwer.com)

## **SJ Mercury News "Critics say cell phone system isn't ready for next big earthquake"**

The source is:

[http://www.mercurynews.com/ci\\_7337719](http://www.mercurynews.com/ci_7337719)

***SJ Mercury News - Critics say cell phone system isn't ready for next big earthquake***

By [Mike Antonucci](#), Nov 1, 2007

Many cell phone calls failed to get through, while some land lines were briefly spotty. And in the wake of Tuesday's quake, many people were left trying to determine how they should communicate when the next one hits.

Cell phone providers acknowledged brief disruptions in service, but say their systems aren't designed to accommodate the dramatic increases in call volume that occurred in the minutes after Tuesday's 8:04 p.m. Alum Rock quake.

In a bigger disaster, cell phone companies say, people shouldn't count on being able to use their cell phones immediately.

Yet regulatory advocates question if enough attention is being paid to whether the companies are putting enough resources into the network capacity needed when a disaster strikes.

For some, the solution was simple: text messaging.

For others, like 33-year-old Yvette Ostil of San Jose, the refrain was the same for what phone companies said was 30 minutes to an hour after the earthquake: "We kept trying to call my family and all the lines were busy."

The dilemma isn't a new one. During the Minnesota bridge collapse earlier this year, some people on the scene said they couldn't get a connection - even though cell phone carriers said they tried to move quickly to meet the increased demand.

But Regina Costa, telecommunications research director for The Utility Reform Network (TURN) in San Francisco, said little regulatory attention has been paid to how the phone companies are handling network capacity.

An AT&T spokesman acknowledged that the trouble extended to both the company's wired and wireless networks, but the disruption among wireless carriers highlighted the extra risks faced by the growing number of people who rely solely on cell phones.

Verizon Wireless said customers placed 2.3 million calls in Santa Clara County from 8 to 9 p.m. Tuesday, up from a typical average of 300,000 during that hour. There were no power or network failures, but the torrent of activity meant numerous calls failed as "ineffective attempts" because of the congestion.

Sprint Nextel declined to give specific numbers but said its wireless call volume increased tenfold in the San Jose area from 8 to 9 p.m., with the number of blocked calls rising about sevenfold.

To keep phone systems working for people in emergency situations, disaster-preparedness organizations and the wireless carriers urge customers to avoid making unnecessary calls.

"We have to remind ourselves that we may be making matters worse by trying to place a call for a non-urgent matter than to just take a deep breath and let it go for a bit and let the priority communication go first," said Bruce Lee, interim director of the Santa Clara County Office of Emergency Services.

But that may not seem practical to most who believe they would need to make the call to friends or relatives just to determine if there's a problem.

Tuesday night, despite generally little damage and no reports of major injuries, people immediately resorted in droves to their phones.

"There may be a better answer, which is to use text messaging," said Dennis McSweeney, area vice president for Sprint Nextel.

McSweeney and other phone officials said text messages, which can be sent to groups of recipients, take up a much smaller amount of a network's resources, freeing up transmission capacity for urgent calls.

Still, the phone companies, which emphasized the brief nature of Tuesday's problems, insisted that it's neither pragmatic nor economically sensible to build networks that would have enough capacity to cope with rare and extreme events.

Roger Entner, senior vice president-communications sector for IAG Research, said building such a network would be like building a second bridge next to a first one, just in case one or the other collapses.

"You cannot anticipate when and where you have that kind of catastrophic failure, and it would become too expensive for people to afford it," Entner said. He also noted that it's easier to build redundant capacity for landline systems because the location of calls is far more predictable.

But TURN's Costa believes the state's Public Utilities Commission has "abdicated its duty" by leaving the quality of service up to the phone companies.

"The PUC is not paying nearly enough attention to the adequacy of these systems," said Costa, who also said Silicon Valley has a history of being under-networked by Pacific Bell, which is now part of AT&T.

The PUC responded by sending an e-mail, which read in part: "The FCC (Federal Communications Commission) governs rates, the PUC handles 'terms and conditions' of service. The wireless market is very competitive so lower levels of regulation have been deemed appropriate, but the PUC cares about consumers and handles any consumer complaints or fraud issues."

The wireless carriers said they plan for jumps in traffic by tracking their busiest hours and then calculating how much additional capacity they're likely to need at times.

But Jack Tang, executive director of network for Verizon Wireless, said there are a number of challenges to keeping pace with growth in cell phone use, sometimes including community resistance to the placement of transmission towers.

## **SF Chronicle: "Quake calls jammed cell phone networks" (10/30/07)**

The source is:

### **SF Chronicle - Quake calls jammed cell phone networks**

By Ryan Kim <<http://www.sfgate.com/cgi-bin/article.cgi?f=/c/a/2007/11/01/BAK6T4681.DTL>> , Nov 1

In the first real-world disaster test of local cellular networks, thousands of mobile phone users were unable to connect calls in the hour following the 5.6 earthquake that struck the Bay Area shortly after 8 p.m. Tuesday.

Wireless carriers said traffic spiked up to 10 times higher than normal, primarily with calls to family and friends, news outlets and emergency services. The sudden jump in calls overloaded local networks for up to an hour, with service sporadic thereafter. The flood of calls also tied up AT&T's landline phone service.

Local cell phone executives said the temblor was the first big local event to stress the cellular networks so severely.

"This is the first big unplanned test in the Bay Area," said Dennis McSweeney, area vice president for Sprint Nextel. "We have had events that are intensive on the network for a very short amount of time, like the All-Star Game, but those things you see coming. This is the first time where we've been reactive to something so big."

The earthquake itself caused no physical damage to the various wireless networks in the Bay Area. It was all a matter of too many people trying to access a limited amount of bandwidth.

"Our network is designed to withstand peak calling times during commute hours. The spectrum is not unlimited. It's important for people to understand the way wireless works," said Heidi Flato, a spokeswoman for Verizon Wireless.

David Faugno, a 37-year-old Los Gatos high tech executive, said he understands the limits of wireless networks. Nonetheless, he was one of thousands of people trying desperately to place a call Tuesday night.

Faugno was at the Golden State Warriors game in Oakland when he heard about the earthquake, centered just east of San Jose. He said he dialed his home and his wife's cell phone at least 10 times to check on his family but didn't get through for 20 minutes.

"There's a frustration because you don't know if your family is safe or not," he said. "There's no real way to ascertain if there's a lot of damage in your area unless you call, but that's a catch-22 because everyone else is trying to get ahold of people in that area."

Les Bishop, a spokesman for the California Highway Patrol, which handles most cellular 911 calls, said there didn't appear to be a problem with people unable to call 911 Tuesday night. But, he said, mobile phone users should refrain from nonessential calls immediately after an event to free up the network for emergency responders.

Wireless officials said the earthquake serves as practice for the inevitable Big One. They are urging users to use text messages if they have to contact someone because it's more reliable and far less intensive on the network.

"This was a moderate earthquake, with not a lot of damage," said Verizon Wireless' Flato. "If we have another earthquake like 1989, it will only be worse with more people trying to get a hold of 911 and first responders."