PUBLIC UTILITIES COMMISSION
505 VAN NESS AVENUE
SAN FRANCISCO, CA 94102-3298

May 9, 2008

Agenda ID # 7613
Quasi-Legislative

TO PARTIES OF RECORD IN RULEMAKING 07-04-015

This is the proposed decision of Commissioner Timothy Alan Simon. It will not appear on the Commission's agenda for at least 30 days after the date it is mailed. The Commission may act then, or it may postpone action until later.

When the Commission acts on the proposed decision, it may adopt all or part of it as written, amend or modify it, or set it aside and prepare its own decision. Only when the Commission acts does the decision become binding on the parties.

Parties to the proceeding may file comments on the proposed decision as provided in Article 14 of the Commission's Rules of Practice and Procedure (Rules), accessible on the Commission's website at www.cpuc.ca.gov. Pursuant to Rule 14.3, opening comments shall not exceed 15 pages.

Comments must be filed either electronically pursuant to Resolution ALJ-188 or with the Commission's Docket Office. Comments should be served on parties to this proceeding in accordance with Rules 1.9 and 1.10. Electronic and hard copies of comments should be sent to ALJ O'Donnell at jpo@cpuc.ca.gov and Commissioner Simon's advisor Phyllis White at prw@cpuc.ca.gov. The current service list for this proceeding is available on the Commission's website at www.cpuc.ca.gov.

/s/ ANGELA K. MINKIN
Angela K. Minkin, Chief
Administrative Law Judge

ANG:avs

Attachment

Decision **PROPOSED DECISION OF COMMISSIONER SIMON**
(Mailed 5/9/2008)

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.	Rulemaking 07-04-015 (Filed April 12, 2007)

DECISION ADDRESSING STANDARDS FOR TELECOMMUNICATIONS BACKUP POWER SYSTEMS AND EMERGENCY NOTIFICATION SYSTEMS PURSUANT TO ASSEMBLY BILL 2393

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DECISION ADDRESSING STANDARDS FOR TELECOMMUNICATIONS BACKUP POWER SYSTEMS AND EMERGENCY NOTIFICATION SYSTEMS PURSUANT TO ASSEMBLY BILL 2393

1. Summary

This decision concludes a proceeding that has examined several topics involving backup power supply for telecommunications systems and notification to the public of emergencies using those systems. It was initiated at the direction of legislation enacted in response to Hurricane Katrina and other disasters. Recent events, including the April 16, 2007 shootings at the Virginia Polytechnical Institute and State University and the 2007 Southern California fire storms have highlighted its importance. We provide a report to the Legislature that analyzes these topics and provides recommendations to enhance the reliability of our telecommunications network and its ability to notify the public in case of emergencies.

Assembly Bill (AB) 2393, signed into law on September 29, 2006, added §§ 776, 2872.5 and 2892.1 to the Public Utilities Code.[1] Sections 776 and 2892.1 address backup power systems while § 2872.5 addresses emergency notification systems.

Section 776 requires the Commission to consider the need for performance reliability standards for backup power systems installed on a residential or small commercial customer's property by a facilities-based telecommunications service provider, and to develop and implement them if the benefits of the standards exceed the costs.

[1] All section references are to the Public Utilities Code.

We intend to require facilities-based service providers to provide and maintain at least eight hours of backup power at the customer's premises.[2] Therefore, we direct our Communications Division to prepare for our consideration a rulemaking to address this matter more comprehensively.

Section 2892.1 requires the Commission, in consultation with the Office of Emergency Services and the Department of General Services, to determine the need for backup power systems, other than those located on the customer's premises, and to determine performance criteria. The Commission is also to determine whether the best practices for backup power systems recommended by the Federal Communications Commission's Network Reliability and Interoperability Council in December 2005 (Best Practices) have been implemented by service providers. In addition, the Commission is required to determine the feasibility of using zero greenhouse gas emission fuel cell systems to replace diesel generators for such backup power systems.

Since this section was signed into law, the Federal Communications Commission issued an order that requires local exchange carriers and commercial mobile radio service providers to have 24 hours of emergency backup power for central offices and 8 hours for cell sites, remote switches and digital loop carrier system remote terminals.[3] The order provides exemptions for smaller providers. We have no reason to believe that the federal requirement is

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[2] As used herein regarding backup power systems on the customer's premises, backup power refers to the amount of backup power necessary to maintain the capability of making a call, not continuous talk time.

[3] When used in connection with facilities other than those located on the customer's premises, the amount of backup power refers to power needed to continue operating the telecommunications network, including ongoing usage by customers.

unreasonable. However, it is not yet in effect and may be changed. Therefore, we find that California should not separately establish such requirements at this time. Instead, it should actively participate in the development of the federal requirements. When such requirements are established, California will be in a much better position to determine whether additional standards are needed.

As to Best Practices, there has been substantial implementation by most service providers. However, there is some room for improvement by the small local exchange carriers and we encourage their implementation of the Best Practices.

Fuel cell systems for backup power are far more costly than diesel backup power systems. Additionally, diesel backup power systems are not a significant cause of greenhouse gases because they are used infrequently. Thus we do not recommend fuel cells as a preferred means of providing backup power at this time.

Section 2872.5 requires the Commission, in consultation with the Office of Emergency Services and the Department of General Services, to determine whether there should be design and operation standards for notification systems used by entities, such as police, firefighters and emergency medical personnel, that are authorized to use automatic dialing devices to notify the public in the event of local emergencies. The Commission is not to establish standards unless the benefits exceed the costs.

California's emergency notification systems should be compatible with systems in other states and with federal requirements when they are established. Therefore, we find that California should not separately establish standards at this time. Instead, it should actively participate in the development of the federal

requirements. When such standards are established, California will be in a much better position to determine whether additional standards are needed.

Through AB 2231, the Office of Emergency Services is required to examine policies, procedures and a framework to enhance public access to emergency alerts. We provide guidance to our Communications Division to continue the cooperation established with the Office of Emergency Services in this proceeding with respect to enhancing emergency alerting in California.

This proceeding is closed.

2. Legislative Background

A central battery system was deployed by telecommunications service 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 wireline service from a facilities-based provider through copper wires. However, newer communications transmission technologies, including fiber optic and coaxial cable, do not provide power to the customer's telephone. Thus they may require distributed backup power systems, both in the network and at the customer's premises, in order to have this capability.

Section 776 [AB 2393(1)] requires the Commission to consider the need for 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. The Commission is to develop and implement such standards if the benefits of the standards exceed the costs.

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.

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. The Commission is not to establish standards unless the benefits of the standards 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.

As noted above, providers of telecommunications service generally install backup power systems on their own 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 operator (911 service) during an electrical outage. These backup power systems are often batteries supplemented by diesel-powered electric 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 wellbeing.

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. 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.

The Commission is also to determine whether the Best Practices for backup power systems have been implemented by service providers. In addition, 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.[4]

[4] 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 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.

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

3. Procedural Background

AB 2393 (AB 2393, Ch. 776, Stats 2006), Levine, "Telecommunications: Emergency Service" was signed into law on September 29, 2006, and became effective on January 1, 2007. The Commission opened this rulemaking on April 12, 2007.

The Communications Division (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 gathered at the workshops and provide the opportunity for input from

individuals and organizations who did not attend the workshops. In addition, CD visited service provider locations.[5]

AB 2393 required the Commission to send a report on its investigation to the Legislature before January 1, 2008. On December 6, 2007, the Commission instructed the Executive Director to send the required report to the Legislature. The report addressed the process we followed in this investigation up to that point, but did not reach any conclusions regarding the issues being considered.

The Final Analysis Report (FAR) is the final report prepared by CD and its consultants in this proceeding. It provides analyses of the topics identified in AB 2393 and options for addressing them. On April 11, 2008, a draft FAR was mailed to the service list for comment. Based on the comments received on the draft, the FAR was revised and is included herein as Attachment A. This decision adopts the FAR for transmittal to the Legislature and addresses the next steps the Commission should take.

The Commission is committed to ensuring that communications systems are available during emergencies. As part of that commitment, the Commission, on January 9, 2008 conducted a post-firestorm workshop in San Diego.[6] The purpose of the workshop was to review communication issues and challenges posed by the 2007 firestorms in San Bernardino County and to share the lessons learned. The Commission staff will issue a report addressing the performance of communications networks and emergency notification systems during the

[5] The Commission sought the participation of service providers, equipment venders, public agencies and others with an interest in emergency backup power and notification systems in this proceeding.

[6] Pursuant to an Assigned Commissioner's ruling dated April 12, 2008.

firestorms and the practices and procedures used by local entities, vendors and service providers. The report will include recommendations to improve emergency notification, response and communications facilities restoration in California.

In addition to the above, the Commission's staff is currently participating in the AB 2231 Alert and Warning Work Group convened by OES on March 27, 2008.[7]

4. Issues

The FAR breaks down the issues as follows:

- Issue 1: Backup batteries installed on the property of residential and small commercial customers;
- Issue 2: Standardization of emergency notification systems and protocols;
- Issue 3: Backup power on the telecommunications network;
- Issue 4: Level of implementation of Best Practices by the different telecom industry segments; and
- Issue 5: Feasibility of the use of zero greenhouse gas emission fuel cell systems for backup power systems located at telecommunications service provider facilities.

We will address the issues in this order.

[7] AB 2231 (Ch.764, Stats 2006), Pavley, required the Director of OES to convene a working group to consider and make recommendations with respect to a system for the transmission of emergency alerts to the public through a public-private partnership.

5. Issue 1: Backup Batteries Installed on the Property of Residential and Small Commercial Customers

5.1. FAR Analysis

Electrical power is a key to ensuring end-to-end telecommunications service. A central battery system was deployed in the 1920s to improve network operations, performance, and reliability. As a result, batteries and generators located in the service provider's central office were able to power both the central office equipment and the customer's telephone in the event of a power outage (assuming the telephone system was otherwise intact). The same continues to be true today for customers receiving wireline telephone service from a facilities-based service provider through copper wires. However, newer communications transmission technologies, including fiber-optic and coaxial cable, require distributed backup power systems, in the network and at the customer's premises, in order to maintain service because they otherwise may not be able to power the customer's telephone.

The primary power to operate the central office is provided by the electric utility. A system of batteries and diesel generators located at the central office ensures a continuous source of power in the event that the commercial power is interrupted.

The network is designed with a 99.99% availability objective for the link from the central office to the customer. To meet this very high reliability objective, the traditional telecommunications service providers paid a great deal of attention to the design and implementation of the backup power plant at the central office. How each type of provider attempts to achieve high reliability is discussed below.

Wireline Services: Traditional telephone service does not require power at the customer's premises since the telephone obtains power through the

copper wires from the central office. However, some customer-owned equipment, such as caller identification boxes and cordless phones, require electric utility power to operate.

Cable Television (CATV) Services: For traditional CATV systems, if power is interrupted at the house, the television will not operate. Therefore, there is no need for extensive backup facilities to keep broadcasting the TV signal. As CATV companies move to expand their service offerings to include voice, data, and video, they are putting in place powering schemes similar to those provided by the traditional telecommunications service providers. These include backup power at headend locations (the equivalent of a central office) with batteries at some remote sites.

Broadband Services and Fiber Architectures: For these systems, the portion of the network close to the customer's premises is considerably different from traditional telephony. For Fiber-To-The-Building or Fiber-To-The-Curb systems, where the provider's fiber optic system is not connected directly to the customer's premises, the backup power units are usually contained within an enclosure located in close proximity to, or inside, the customer's premises. For Fiber-to-the-Home or Fiber-To-The-Premises systems, where the provider's fiber optic system runs all the way to the customer's premises, the battery backup is located on the customer's premises.

Most, but not all, broadband service providers provide backup at the customer's premises. Four to 20 hours of battery backup were typically cited by parties. Most CATV systems provide 4-5 hours of battery backup in the modem used to provide Voice over Internet Protocol telephone service.

For a given battery capacity, the amount of reserve time for a device depends on its power usage expressed in watts. The usage varies depending on

whether the device is on standby where the device is ready to make a call, or in active use. The delivery of traditional telephone service over copper wires normally consumes 1-2 watts. Many other devices can use more power. A digital subscriber line modem can consume 5 watts in standby, and 6 watts in operation. A cordless phone or answering device can consume 2-3 watts in standby, and 3-4 watts in operation. To reduce energy consumption and maximize reserve time during an outage, TV and data services must be disconnected as soon as possible.

How long a battery will supply power to the customer also depends on the customer's use during a power outage. If the customer makes multiple calls to friends, family, the local power company or local officials, the load is large and the battery will drain fast. If provided with sufficient education, customers will be able to conserve their backup power during a power outage or emergency situation by making only necessary calls.

Other factors that affect how long a battery can provide power, in order of impact, include:

Operational Modes – Greater use of sleep, idle and standby modes will reduce the load on the battery.

Battery Type – Some types of battery have more capacity for a given size than others.

Battery Age and Quality of Manufacture – As batteries age, their capacity to store energy is reduced. Lower quality batteries will deteriorate faster.

Battery Temperature – A battery exposed to cold conditions will be able to provide power for a lesser amount of time than at moderate temperatures.

Design of Customer Equipment – Some savings are possible through selection of more energy-efficient devices, however the savings are usually small.

In order to evaluate the implications of establishing minimum performance standards for backup power it is necessary to assess the tradeoffs between the impact of electrical power outages on customers and the costs of providing sufficient battery backup time to minimize the interruption of telecommunications service.

Using California electric utility statistics from the last 10+ years, a number of significant outage events were profiled, including heat waves, wind storms, wild fires, earthquakes, floods, human error and lightning. Based on the analysis of this information, the risk of a customer losing telephone service during an outage event decreases from 6.8 % for systems with four hours of backup power, to 3.9% for systems with eight hours of backup power.[8] The addition of more battery capacity to achieve 15-20 hours of backup will further reduce the risk from the 3.9% to roughly 2.0%.

Extended power outages (greater than 14 hours) are caused by large or state-wide outage events such as wind-storms, extensive floods or large earthquakes where not only power is lost but widespread physical damage to telecommunications plant and customer equipment is likely. In such a case, the telecommunications network may be disrupted such that the customer is unable to make a call regardless of amount of backup power available to the customer. Based on the above data, the FAR concludes that eight hours of backup is more

[8] The hours of backup indicated here refer to the ability to make a call rather than continuous talk time. The risk percentages are the proportions of the electric utility's customers who loose power for more than the specified time during an outage event.

than sufficient for the vast majority of the power outages. The FAR also finds that, since most consumers have multiple telecommunications means available to them (*e.g.*, both wireline service and cell phone service) it is less likely that all of their telecommunications services will be lost simultaneously.

Based on commercially available products used by carriers today, there are several options available to increase the amount of backup power at the customer's premises. Where service is provided to the customer's premises over fiber optic cable, each customer's premises will have an optical network terminal (ONT). The inclusion of a standard battery backup unit (BBU) with the ONT costs approximately $15 and provides 6.5 hours of backup power at a load of 10 watts.[9] The next level of protection involves the addition of a basic external battery pack. This would cost another $20 per unit and extend the available backup power to 13 hours assuming the same load. Finally, to achieve more than 13 hours of backup, a high-capacity battery pack would be required at a cost of $50 per unit ($30 over the basic pack).[10]

This cost analysis is based on an anticipated load of 10 watts in the event of a power outage. Energy is required to (1) monitor battery status and alarm systems, (2) signal the presence and status of the customer to the network, and (3) provide service. The assumed 10 watt load is representative of the higher loads reported for various current Fiber-to-the Home systems. If the load is reduced, the hours of backup power will increase for the same cost. For instance, the use of the standard ONT/BBU device that would provide 6.5 hours of backup at a 10 watt load may yield approximately 10 hours of backup power at a

[9] Inclusion of the BBU costs $15 over and above the cost of the ONT.

6 watt load. Decreasing the load on the battery through using low-power standby modes and idle settings on customer equipment is more cost-effective and permanent than simply adding extra batteries.

5.2. FAR Recommendations/Options

Backup Time: Backup times currently provided by service providers vary from 4 to 20 hours. The backup time should not exceed the backup time of the service provider's network. Having a long battery backup time requirement at the customer's premises serves no purpose if the provider's network is down.

The FAR offers the following options for backup time:

1.) No minimum backup requirement.

This option recognizes that current implementation of the Best Practices and industry contingency plans have proven adequate to provide emergency telecommunications services in many power outage situations.[11]

2) Set a minimum backup power requirement of four hours for the telephone to be available for emergency use, not four hours of talk time. This matches the general industry backup capacity for remote terminals that serve the customer premises.[12]

3) Set a minimum backup power requirement of eight hours for the telephone to be available for emergency use, not eight hours of talk time. This would match the recent Federal Communications Commission (FCC)

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[10] Estimated wholesale prices.

[11] Best Practices are addressed in Issue 4.

[12] Remote terminals are equipment on the provider's network that are located between the central office, or equivalent for other types of providers, and the customer's premises.

requirement of Order 07-177 for eight hours of backup power at remote terminals.[13]

The FAR states that if either option 2 or 3 is selected, the Commission should allow an exemption to the requirement for mitigating circumstances such as unreasonably high cost to the provider or customer.

Contingency options could include enhanced battery capacity at the customer's premises with monitoring and replacement by the service provider for a fee or offering a cell phone for emergency use.

Minimum Operating Life: Battery useful life depends on the quality of the battery, the environment in which the battery is located (temperature, etc.), how often the battery is discharged and recharged, and the load on the battery when used. Battery useful life can vary from 1 to 10 years. If the service provider remains the battery owner and is responsible for maintenance, the Commission may need to address the providers' battery maintenance programs.

If the customer is the owner, there is a risk that the batteries will not be replaced on an appropriate schedule, resulting in reduced capacity or failure.

One of the more effective options is to educate customers on the pros and cons of backup battery ownership, care, and maintenance; so as to help the customer make appropriate purchasing or service decisions.

Battery Status: Some battery status monitoring systems have colored lights to indicate system status. Others have audio signals, although the alarm is often not particularly loud. If the BBU or CATV modem which does the monitoring looses power, the customer may not realize or notice problems with

[13] *See* Issue 3; Backup Power on the Telecommunications Network.

battery status until telecommunications service is lost. The FAR suggests that options for improving the battery status indicators include customer education to make the customer aware of the availability and capabilities of backup battery service. The FAR also notes that the options for monitoring and alarms will increase the load on the battery and decrease the available backup time.

The FAR offers the following options:

- Require a series of announcement options to be offered to the customer. Options could include brighter or flashing lights for deaf or hearing impaired customers, and variable volume or pitch for blind, visually-impaired, or hearing-impaired customers.
- Require a text or voice message to be automatically sent from the battery monitoring system to a specific telephone number.

Customer Education: As noted above, customer education is a critical factor in maximizing the potential of backup power systems. Providing accurate, relevant information to the customer is an effective tool to use in helping maintain telecommunications during emergencies.

The FAR offers the following options:

- Make such information available on the Commission's web site.
- Require the service provider to disclose battery backup system performance.
- Specify how such information may be provided to consumers such as through advertising materials, brochures, the provider's website, bill inserts, tailored information for consumers with special needs (*e.g.,* hearing or visually impaired), etc. The FAR states that information buried in service agreements is not an effective means of communication.

The FAR states that the information provided to the customer should include:

- Why the backup power was installed.
- What the backup power does and does not do.
- How long the phones can operate under backup power.
- The need for backup power to call E-911 in power outages.
- What the maintenance requirements are.
- Potential risks from such backup power systems.
- Where to find additional information.
- Battery replacement information.
- A recommendation that the customer should consider having an alternative means of communication.

The FAR also states that education programs should address the special needs of groups such as the deaf, disabled, or visually impaired regarding the options available to them to extend the life of the backup battery.

Other Options: The FAR says that the Commission may wish to consider encouraging service providers to offer optional services for disabled or other disadvantaged Californians. Examples could include:

- Partially subsidizing the cost of additional battery backup capacity at the customer's premises.
- Providing low cost backup service such as a cell phone for emergencies.
- Offering incentives to community service groups to assist disabled customers in emergencies.

5.3. Discussion

Customers may not know whether their telephone is capable of operating during a power outage without battery backup, much less the limitations of such backup if required. Therefore, customers whose telephone is

incapable of operating during a power outage without battery backup must be made aware of this limitation and educated about the available options for backup power.

During a power outage, it is reasonable to require some amount of backup power to make necessary calls. As discussed in Issue 3, during a power outage, telecommunications systems remote components currently have 4-8 hours of backup power and may be required to have 8 hours of backup power if federal requirements are implemented.[14] It is not useful to require backup power on the customer's premises that provides service when the telecommunications network is out of service. Thus a reasonable range of backup power at the customer's premises is 4-8 hours.

During an outage, customers should not use their telephones, except when necessary, to conserve backup power and allow the telecommunications system to be used for emergency services. Thus any requirement should pertain to the telephone being available for necessary use as opposed to continuous talk time.

The FAR indicates that backup power facilities are in many cases part of the service provider's facilities. In addition, customers may not have the ability to install, monitor or maintain such equipment. Thus it is reasonable to require that the service provider be responsible for backup power equipment, including monitoring, maintenance and replacement.

For these reasons, we intend to require service providers to provide and maintain at least eight hours of backup power on the customer's premises. In

[14] Backup power for the telecommunications system remote components is intended to provide for continued operations, including ongoing usage by customers.

addition, there will need to be a customer education plan to provide the necessary information to customers. The record in this proceeding is not sufficient to implement these requirements. For example, there may be implementation issues that require different types of solutions. In addition, persons with disabilities may have special backup power needs that should be addressed. Therefore, we direct CD to prepare for our consideration a rulemaking to address these matters. CD may, at its discretion, use workshops to facilitate development of the rulemaking.

6. Issue 2: Standardization of Emergency Notification Systems and Protocols

6.1. FAR Analysis

AB 2393 requires the Commission to open an investigation to determine whether standardized notification systems and protocols should be utilized to facilitate notification of affected members of the public of local emergencies.

Sections 2871 to 2876 define the parameters for the connection and use of Automatic Dialing Announcing Devices (ADADs). They were written to regulate mass dialing for non-emergency uses, and exempt various entities, including those using it for emergency notification. Since they were written, telecommunications technology has evolved such that the requirements in those sections may be out of date.

AB 2393 requires the Commission to determine whether standardized notification systems and protocols should be used by entities that are authorized to use ADADs to facilitate notification of affected members of the public in the event of local emergencies. The current set of notification systems work and save lives. However, there may be issues regarding optimization, performance, and operations of notification systems.

An important consideration is whether activation of emergency communications systems during an emergency causes network congestion sufficient to hinder such communications. While such congestion is possible, the FAR found no specific evidence that random activation of notification systems causes sufficient congestion to hinder emergency communications. However, other activities (such as mass dialing of 911) are more of a problem. The FAR finds that, through an education process, those who use the notification systems to broadcast alerts (alert initiators) could be made aware that they may need to throttle back their notification alert system in order to lessen any adverse impacts on service providers.

The FAR finds that notification system vendors, in general, are not familiar with the § 2875 requirement to notify the telephone service provider in writing of the intended use of ADAD equipment. In addition, service providers seem to lack clearly defined policies for ADAD users (*i.e.*, which individual or organization to call within their company and what information should be exchanged with respect to § 2875). The FAR recommends that California encourage alert initiators to comply with §§2871-2876 and the service providers' guidelines.

Open communications between the service provider and alert initiator is essential. When a service provider does not expect a mass notification or the mass notification is not programmed in a way to avoid system congestion, the service provider may be forced to block calls to prevent congestion or a widespread telecommunications outage. If, instead of balancing the desire to send mass notifications with the service provider's need to manage traffic to avoid system overload, alert initiators ignore service provider warnings of blocked calls and system congestion they impose a greater burden on the

network. This illustrates the need for further dialogue between service providers and alert initiators.

New communications technologies enable local authorities to notify the public in an emergency by a phone call or text message delivered to wireline 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 with people unable to communicate with those who may be across county or municipal boundaries. For example, an escape route recommended by one county may lead people onto a road that is impassable in the next county.

Given the embryonic nature of standards and other federal initiatives, the lack of maturity of systems and operational experience of statewide systems, the FAR concludes that the current state of technology can not support a statewide rollout. However, there are activities at the federal level that should be considered.

6.2. Federal Activities

6.2.1. Warning, Alert and Response Network (WARN) Act

The WARN Act established the Commercial Mobile Service Alert Advisory Committee (CMSAAC) to develop recommendations on technical standards and protocols to facilitate commercial mobile radio service (CMRS) transmission of emergency alerts. It is intended to establish a framework by which CMRS providers may voluntarily transmit emergency alerts. It required

the CMSAAC to develop and recommend standards and protocols related to the Emergency Alert System (EAS) to the FCC by October 12, 2007.[15] The resulting CMSAAC report was submitted to the FCC on October 12, 2007. Subsequently, on April 9, 2008, the FCC in a First Report and Order (FCC 08-99 in PS Docket No. 07-287), adopted technical standards, protocols and procedures to enable CMRS providers to transmit emergency messages to customers. Implementation requires that a federal entity be designated to collect and transmit alerts to wireless carriers. However, no such entity has yet been designated.

6.2.2. FCC Review of the Emergency Alert System

On May 31, 2007 in the Review of the Emergency Alert System, EB Docket No. 04-296, the FCC adopted a Second Report and Order and Further Notice of Proposed Rulemaking that addresses some of the Katrina Panel's recommendations.[16] The order is intended to promote the development of digital technologies and delivery systems for emergency alerts. The order requires EAS participants to accept messages using the Common Alerting Protocol, which is to

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[15] EAS is designed to provide the President of the United States with the ability to address the public in the event of a national emergency. Beginning in 1993, the President allowed state and local emergency information to be transmitted using EAS. Since then, EAS has been used to transmit local emergency messages using TV and radio broadcast stations, cable and wireless cable systems. In October 2005, the FCC expanded EAS to require participation by digital television broadcasters, digital broadcast radio, digital audio radio service and digital broadcast satellite. EAS is regulated by the FCC and administered by the Department of Homeland Security through the Federal Emergency Management Agency.

[16] The Katrina Panel was established by the FCC in January 2006. It was tasked with reviewing the impact of Hurricane Katrina on telecommunications and media infrastructure, including public safety communications, reviewing the sufficiency of the recovery effort with respect to this infrastructure, and making recommendations to the FCC for improving disaster preparedness, network reliability and communications among first responders. Its report was submitted to the FCC on June 12, 2006.

be the groundwork for next generation EAS systems. The order has not yet been published. In a news release, the FCC stated that it will explore the technical and financial viability of expanding the EAS to other technologies such as wireless and the Internet.

6.3. FAR Options/Recommendations

The FAR offers the following options for consideration:

1. The FAR suggests that the national standards in the area of mass wireless notification should be allowed to fully unfold before considering specific standards or protocols for California.
2. While waiting for the national standards to develop, OES could consider hosting a workshop to draft an optional set of minimum and model criteria for notification systems. The intent would be to share the procurement and operational experience of those who have such systems, rather than to develop standards. At the individual discretion of the various institutions with notification systems, the optional criteria could be utilized in procuring and implementing notification systems. Such criteria should consider the needs of persons with disabilities.
3. California could consider promoting more communications between service providers, alert initiators and vendors. This could include encouraging service providers to work with alert initiators and vendors to (1) provide a single point of contact at each service provider to work with the alert initiators to educate them on the service provider's concerns and (2) develop a set of guidelines for system installation and operation to minimize any impacts on the service provider's network.

6.4. Discussion

The intent of § 2872.5 was to determine whether standardized notification systems and protocols should be adopted. Emergency alerts can be

generated at the local, state and federal levels. Depending on how large a geographic area needs to be alerted, there may be multiple alert systems using a variety of communications mediums (wireline and wireless telecommunications systems, radio, television, etc.). It is essential that these systems be able to interact in a manner that facilitates notification of the appropriate people as soon as possible with the necessary information. Therefore, there should be some form of standards to facilitate this interaction.

As demonstrated by AB 2393 and AB 2231, we acknowledge the leadership of the California Legislature to be out front in pursuing the development of improved emergency notification systems. However, the FCC has also begun taking actions relevant to such standards. Since compatibility with federally established standards and protocols is essential, California should not separately establish standardized systems and protocols at this time.

Instead, we will actively participate in the development of the federal requirements. When such requirements are established, California will be in a much better position to determine whether additional standards and protocols are needed. Towards this end, we expect CD to monitor the development and implementation of federal standards and keep us apprised of significant developments.

We further expect CD to continue the cooperation established with OES in this investigation with respect to enhancing emergency alerting in California.[17]

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[17] Two California emergency alert workshops were convened in August 2007 to bring together government and industry subject matter experts to review current efforts and discuss California's emergency alert systems and capabilities, with specific focus on wireless systems. These workshops were part of a comprehensive effort by the Lieutenant Governor, OES and the Commission to examine policies, procedures and a

Footnote continued on next page

In that regard, we expect CD to continue to actively participate in the OES AB 2231 Alert and Warning Work Group effort to develop recommendations for the Legislature concerning policies, procedures and protocols that will lay the framework for an improved warning system for the public.[18]

7. Issue 3: Backup Power on the Telecommunications Network

7.1 FAR Analysis

This issue considers the backup power on the service provider's network, which covers both (1) the main switching centers (wireline central offices, wireless switching centers, and CATV headends), and (2) outside plant (OSP) facilities not housed in the central office.[19] OSP facilities include all the facilities between the central office and the customer premises. OSP remote terminals are powered from the electric utility grid.

Batteries have been traditionally used as the backup power source for OSP remote terminals supplying up to eight hours of backup power. With increasing demands for connectivity and higher service expectations, the required amount of backup power for OSP remote terminals has increased over

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framework for public-private partnerships with providers of mass communications systems to enhance public access to emergency alerts.

[18] OES is the chief responding state agency for all California disasters. Over the course of the next year, members specified in AB 2231, subject matter experts, stakeholders and interested parties will meet to discuss how to enhance the alert, notification and warning system in California. The first meeting was held on March 27, 2008 at OES headquarters.

[19] When used in connection with facilities not on the customer's premises, the amount of backup power refers to power needed to continue operating the telecommunications network, including ongoing use by customers.

the last decade. Deployment of higher capacity battery systems has increased to meet this increased backup power need. The wide range of climates and locales for OSP remote terminals place environmental, thermal, and pollution stresses on the equipment, including the batteries. More recently new types of batteries have been introduced as backup power sources with higher capacities.

Various industry guidelines generally require a minimum of four hours, with a design objective of eight hours, of backup power at remote terminals. The design objective is usually cited as eight hours at a fixed call rate with consideration given to the time necessary to install additional backup power or other measures to keep the terminals operational.

Most CATV and wireless systems use similar design guidelines and batteries for providing power backup. Currently, there is greater variability in the amount of backup power at wireless sites and the need for backup power is reduced because their architecture may allow for re-configuration of the coverage zone for a specific cell site to reduce outage impact.

The FAR finds that most service providers have at least four hours of backup power with larger providers having greater than eight hours of backup power at over 90% of their remote locations. The FAR reaches the following general conclusions:

- A minimum reserve of at least four hours of battery backup power is standard for remote terminals.
- Most remote terminals of wireline providers are designed to have eight hours of backup power.
- Most wireless remote terminals have emergency power backup, with 80% having four or more hours of backup power.

The FAR notes that some smaller providers rely on the incumbent provider's network as their backup plan for the service they offer, while medium

sized wireless companies design for a minimum of four hours of backup power with some having more.

The FAR finds that industry standards for battery backup power for remote terminals provide for a minimum of 3-4 hours with a design objective of 8 hours. The FAR states that the current backup capacity and design criteria used for remote terminal and central office facilities have proven successful in providing emergency communications in more than 95% of power outages.

The FAR states that providing additional backup power at central offices by increasing fuel supplies for the backup generators would require larger fuel tanks with commensurate environmental safeguards and hazard reduction protocols. The additional costs of such increased fuel capacity are far greater than the alternate approach of having an efficient fuel delivery schedule and contingency plans in case of an emergency. Similarly, the cost of permanently adding battery capacity at a remote terminal is higher than having a contingency plan for delivery of new batteries or portable generators.

7.2. FCC Backup Power Rule

In January 2006, the FCC established the Katrina Panel to review the impact of Hurricane Katrina on the telecommunications infrastructure in the affected area and make recommendations on ways to improve disaster preparedness, network reliability and communications among first responders (police, firefighters, emergency medical personnel, etc.). The Katrina Panel released its report on June 12, 2006. On June 19, 2006, the FCC issued a Notice of Proposed Rulemaking inviting comments on what actions it should take regarding the Katrina Panel's recommendations. On July 26, 2006, the FCC issued a public notice asking those providing comments on the Notice of Proposed Rulemaking to address the applicability of the recommendations to all

types of natural and man-made disasters and whether the panel's recommendations are broad enough to take into account other geographic regions, the susceptibility of various regions to particular types of disasters and the communications capabilities of the regions. In June 2007, the FCC released the Katrina Panel Order directing its Public Safety and Homeland Security Bureau to implement several of the panel's recommendations. As a result, the FCC adopted, in Order 07-177, a backup power rule.

The backup power rule requires local exchange carriers (LECs), including incumbent local exchange carriers and competitive local exchange carriers, and CMRS providers to have emergency backup power for all assets normally powered by the serving electric utility. The assets include central offices, cell sites, remote switches and digital loop carrier system remote terminals. LECs and CMRS providers are required to have 24 hours of emergency backup power for central offices and 8 hours for cell sites, remote switches and digital loop carrier system remote terminals. Class B LECs and non-nationwide CMRS providers serving no more than 500,000 customers are exempt.[20] Additionally, compliance is not required where compliance is precluded by federal, state, tribal or local law or legal obligation, or where there is a safety or health risk.

A number of petitions for reconsideration have been filed and the rules have not yet been published in the Federal Register. Thus the rules are not yet in force, and may be modified.

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[20] Class B companies are those companies having revenues from regulated telecommunications operations that are less than an indexed revenue threshold. The 2006 threshold was $134 million.

7.3. FAR Options/Recommendations

The FAR suggests that industry design standards are useful for emergency planning:

- 24 hours of fuel storage at the central office facilities with contingency plans for rapid resupply of fuel as needed, and
- Four hours (minimum) of backup power at remote terminals with an objective of 8 hours at critical sites.

There may be mitigating circumstances that prevent achieving these design objectives. Regulatory compliance conflicts can easily arise with Federal Environmental Protection Agency rules, local fire codes, hazardous materials loadings and building safety rules. Many remote terminals may be located in restricted rights-of-way, have prohibitions in lease agreements, have limited floor loadings on roof tops, or have other restrictions that limit the addition of heavy batteries with toxic compounds to the site. In addition, a wireless service provider may have flexibility at cell sites that allows boosting the power of adjacent sites to enhance the coverage area, or have roaming agreements with other carriers. For a CATV or wireline service provider, acceptable contingency plans may entail rapid response repair crews that can be dispatched for restoration of service, or some other emergency response plan to re-route traffic and maintain service.

The FAR recommends that any such mitigating circumstances be documented by the service provider, including a demonstration that an emergency plan is in place. The FAR also recommends providing flexibility to service providers to allow for software engineering and network re-configuration as a response to an emergency.

7.4. Discussion

The intent of § 2892.1 was to determine the need for backup power systems not located on the customer's premises and performance criteria for such systems. Service providers have recognized the need for backup power and installed such systems. The FAR found that most service providers have backup power for 24 hours at central office facilities and 4-8 hours at remote terminals.

Since this section was signed into law, the FCC has issued an order that requires LECs and CMRS providers to have 24 hours of emergency backup power for central offices and 8 hours for cell sites, remote switches and digital loop carrier system remote terminals. The order provides exemptions for smaller providers. We have no reason to believe that the stated federal requirement is unreasonable. However, it is not yet in effect and may be changed.

The Legislature showed foresight in passing this legislation because progress was not being made at the federal level. However, that is no longer the case. Since the FCC has developed requirements, it makes sense for California to actively participate in the further development and implementation of them. When such requirements are established, California will be in a much better position to determine whether additional standards are needed, including whether smaller providers should be exempt. Additionally, only the incremental costs of the California standards as compared to the federal requirements would need to be addressed because the costs of implementing federal requirements will be a cost of doing business for service providers. To facilitate this effort, we expect CD to monitor the development and implementation of the federal requirements and keep us apprised of significant developments.

8. Issue 4: Level of Implementation of Best Practices by the Different Telecommunications Industry Segments

8.1. FAR Analysis

Best Practices provide recommendations regarding system design, construction and operation that are intended to ensure the reliability and interoperability of telecommunications networks, including during emergencies.[21] For example, Best Practice Number 7-7-0701 provides that network operators, service providers and property managers should provide security for portable generators. Best Practice Number 7-7-1029 provides that network operators and service providers should periodically review their portable power generator needs to address changes to the business. There are 98 Best Practices related to power for all segments of the telecommunications industry (wireline, wireless, CATV, satellite, and equipment providers).

To determine whether the Best Practices have been implemented, a questionnaire was prepared and sent to California wireline, wireless, and CATV providers. The questionnaire was aimed at collecting statistical information on the level of implementation, the effectiveness of the Best Practices, and the costs of implementation.

The questionnaires were distributed on August 27, 2007. Eleven providers responded (2 large LECs, 4 small LECs, 3 wireless and

[21] Network Reliability and Interoperability Council (NRIC) VII, Focus Group 1C, "Analysis of the Effectiveness of Best Practices Aimed at E-911 and Public Safety, F Report," December 2005. NRIC is a federal advisory committee to the FCC operating on two-year cycles. The purpose of NRIC-VII was to provide recommendations to the FCC that, if implemented, would ensure the reliability and interoperability of wireless, wireline, satellite, cable and public data networks, including emergency communications.

2 CATV). One of the small LEC responses was a joint response from 14 small LECs. The FAR finds that the responses received adequately represent such providers so that conclusions can be drawn from the results.

Based on the responses, the FAR finds that implementation rates for the Best Practices are 98% for large LECs, 73% for small LECs, 91% for wireless and 93% for CATV. For the Best Practices related only to backup generator deployment, the implementation rates are 98% for large LECs, 70% for small LECs, 90% for wireless and 90% for CATV. As to effectiveness, the great majority of the Best Practices are considered by the providers to be effective to some degree while almost half of the responses indicate they are very effective. Regarding relative cost, most providers consider them to be costly to implement. The responses also indicate that the responding service providers have less understanding of the cost of implementing the Best Practices than they do of their effectiveness or the extent of their implementation.

The difficulty that smaller LECs have in implementing the Best Practices seems to be rooted in the capital costs associated with additional batteries, generators, and other backup hardware.

8.2. FAR Options/Recommendations

The FAR recommends the Commission encourage small LECs to implement the Best Practices and continue participating in FCC and industry sponsored forums for Best Practices. Another option is the use of incentive mechanisms to encourage improvements in backup capacity and contingency planning.

8.3. Discussion

The FAR indicates substantial implementation of the Best Practices. However there is some room for improvement by the small LECs. As

recommended in the FAR, we encourage their implementation. In addition, we require CD to further investigate small LEC implementation, including any reasons for non-implementation, and report the results to the Commission along with recommendations for further action if appropriate. As to incentive mechanisms, it is not clear that they are needed and we decline to offer them at this time.

9. Issue 5: Feasibility of Zero Greenhouse Gas Emission Fuel Cell Systems for Backup Power Systems at Telecommunications Service Provider Facilities

9.1. FAR Analysis

This issue involves an economic comparison between traditional diesel generator and fuel cell backup power systems. The long history of diesel generators allows considerably more accurate information on capital costs and operational costs to be available. This is in marked contrast to the fuel cell cost information, which contains much more conjecture and is, therefore, far less precise. Some of the factors to be considered include:

- Installed First Costs – including site preparation and the basic capital cost of generator equipment & accessories.
- Installation Costs – including planning, engineering and testing.
- Underground Fuel Storage Tank Costs – including monthly monitoring charges.
- Recurring Operational Expenses -– including maintenance, repairs, fuel and monthly tests of the engine or fuel cell.
- Safety and Regulatory Compliance – including monitoring, pollution control and reporting to governmental agencies.

The FAR provides a comparison of the installed first costs and annual recurring expenses for the diesel and fuel cell alternatives on a per kilowatt (kw)

basis. For the diesel alternative, the installed first costs range from about $800 to about $1,400 per kw, while the fuel cell cost estimates vary from about $4,000 to over $20,000 per kw. Even with a 50% improvement in installed first cost, fuel cells are many times more expensive. Annual recurring expense estimates for diesel range from about $5 to about $79 per kw, while the fuel cell expense estimates vary from about $473 to about $504 per kw.

One of the fundamental reasons for the above wide ranges of results for fuel cells is the state of fuel cell technology today. Existing fuel cells have limited capacities while most typical telecommunications applications require capacities in the 30 kw (for wireless radio sites) to 1,000 kw (for wireline central offices). In addition, their long term reliability is unproven.

As the fuel cell systems gain acceptance and broader use in all types of sizes and installations, the technical feasibility issues may be resolved. If the relative cost to the service provider can be reduced, fuel cell systems may become more economically attractive.

Currently there are a few demonstration projects which show that some of the capacity and storage problems can be solved. However, the high initial capital costs will limit widespread use of fuel cell systems in telecommunications networks over the next 5-10 years.

9.2. FAR Options/Recommendations

The FAR recommends that the Commission consider encouraging use of clean diesel engines as much as possible to reduce harmful emissions and encouraging field trials of alternate energy (fuel cell, solar and wind). Such actions would have to be done in concert with other federal and state government agencies.

9.3. Discussion

Backup power systems are used only during maintenance testing and when there is an outage. Such outages are infrequent. Because they are rarely operated, there is no reason to believe they are a significant source of pollutants. The FAR demonstrates that fuel cell systems are far more costly than diesel backup power systems. Thus there is no apparent reason to believe that fuel cells should be a preferred means of providing backup power at this time. However, this may change over time as the technology develops.

10. Comments on Proposed Decision

The proposed decision of Commissioner Timothy Alan Simon in this matter was mailed to the parties in accordance with Section 311 of the Public Utilities Code and comments were allowed under Rule 14.3 of the Commission's Rules of Practice and Procedure. Comments were filed on _____, and reply comments were filed on _____ by _____.

11. Category and Need for Hearings

In the order instituting this rulemaking, we preliminarily determined that the category of this proceeding is quasi-legislative and that no hearings were necessary. No party has questioned these preliminary determinations and we confirm them.

12. Assignment of Proceeding

Timothy Alan Simon is the assigned Commissioner and Jeffrey P. O'Donnell is the assigned Administrative Law Judge in this proceeding.

Findings of Fact

1. As described herein, the Commission has completed the tasks specified in AB 2393.

2. Customers may not know whether their telephone is capable of operating during a power outage without battery backup, much less the limitations of such backup if required.

3. During a power outage it is reasonable to require some amount of backup power on the customer's premises to make necessary calls.

4. A reasonable range for backup power on the customer's premises is 4-8 hours.

5. Any backup power requirement for equipment on the customer's premises should pertain to the telephone being available for necessary use as opposed to continuous talk time.

6. Backup power facilities on the customer's premises are often part of the service provider's facilities. Customers may not have the ability to install, monitor or maintain such equipment.

7. It is reasonable to require the service provider be responsible for backup power equipment on the customer's premises, including monitoring, maintenance and replacement.

8. The record in this proceeding is not sufficient to implement the above requirements.

9. Persons with disabilities may have special backup power needs.

10. Implementation rates for the Best Practices are 98% for large LECs, 73% for small LECs, 91% for wireless and 93% for CATV.

11. For the Best Practices related only to backup generator deployment, the implementation rates are 98% for large LECs, 70% for small LECs, 90% for wireless and 90% for CATV.

12. As to effectiveness, the great majority of the Best Practices are considered by the providers to be effective to some degree while almost half of the responses indicate they are very effective.

13. Regarding relative cost, most providers consider the Best Practices to be costly to implement. The responses also indicate that the responding service providers have less understanding of the cost of implementing the Best Practices than they do of their effectiveness or the extent of their implementation.

14. For the diesel backup power, the installed first costs range from about $800 to about $1,400 per kw, while the fuel cell cost estimates vary from about $4,000 to over $20,000 per kw. Even with a 50% improvement in installed first cost, fuel cells are many times more expensive. Annual recurring expense estimates for diesel range from about $5 to about $79 per kw, while the fuel cell expense estimates vary from about $473 to about $504 per kw.

15. Existing fuel cells have limited capacities while most typical telecommunications applications require capacities in the 30 kw (for wireless radio sites) to 1,000 kw (for wireline central offices). In addition, their long term reliability is unproven.

Conclusions of Law

1. The Commission has satisfied the requirements of AB 2393.

2. The Commission should adopt the FAR for transmittal to the Legislature.

3. Customers whose telephone is incapable of operating during a power outage without battery backup, should be made aware of this limitation and educated about the available options for backup power.

4. The Commission should require service providers to provide and maintain at least eight hours of backup power on the customer's premises.

5. There should be a customer education plan to provide the necessary information to customers regarding backup power on the customer's premises.

6. The Commission should direct CD to prepare for our consideration a rulemaking to address the issues regarding backup power on the customer's premises.

7. Regarding implementation of the Best Practices, there is some room for improvement by the small LECs and we encourage their implementation.

8. There is no apparent reason to believe that fuel cells should be a preferred means of providing backup power at this time.

9. The category of this proceeding is quasi-legislative and hearings are not necessary.

10. This order should be effective immediately.

O R D E R

IT IS ORDERED that:

1. The Commission's Communications Division shall prepare an Order Instituting Rulemaking regarding backup power systems on the customer's premises, as described herein, for our consideration.

2. The Final Analysis Report, included herein as Attachment A, is adopted for transmittal to the Legislature.

3. The Commission's Executive Director shall cause a copy of this decision, with Attachment A, to be provided to the appropriate entities within the Legislature.

4. Rulemaking 07-04-015 is closed.

This order is effective today.

Dated _____, at San Francisco, California.

INFORMATION REGARDING SERVICE

I have provided notification of filing to the electronic mail addresses on the attached service list.

Upon confirmation of this document's acceptance for filing, I will cause a Notice of Availability of the filed document to be served upon the service list to this proceeding by U.S. mail. The service list I will use to serve the Notice of Availability of the filed document is current as of today's date.

Dated May 9, 2008, at San Francisco, California.

/s/ ANTONINA V. SWANSEN
Antonina V. Swansen

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Last Updated on 08-MAY-2008 by: AJH
R0704015 INITIALLIST

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