TELECOMMUNICATIONS SERVICE OUTAGES: ENSURING A RELIABLE LIFELINE FOR CALIFORNIANS

Wednesday, January 8, 2020
9 a.m. in Room 4203

Presentation for Senate Energy, Utilities and Communications Committee of state authority over communications services as it relates to public safety and outages (i.e., hardening or resiliency [e.g. redundancy, backup power, and defensible space]; improved outage reporting; and service quality regulation):

- The CPUC's response to telecommunications outages (e.g. letters from President Batjer and the Pre-hearing conference)
- The CPUC's authority on telecommunications in the case of outages and its role in responding to recent outages.
- Background on and status of the Network Reliability Investigations
- Insights on challenges and opportunities based on outages.

No more than 10-15 minutes per speaker. The entire panel should be no more than 45 minutes long. Presentation order:

1. **Helen Mickiewicz,** Assistant General Counsel, California Public Utilities Commission
2. **Commissioner Cliff Rechtschaffen,** California Public Utilities Commission
3. **President Marybel Batjer,** California Public Utilities Commission

Part 1: Introduction to Communications Networks and Overview of Authority

Thank you, Chair Hueso and Senators, for inviting me here to speak to you today. My name is Helen Mickiewicz, and I am an Assistant General Counsel at the California Public Utilities Commission, where I have worked for 33 years, mostly in the area of communications. I have been asked to set the communications stage for you today.

Not that long ago, most consumers had traditional voice service provided over landlines by AT&T, which later became Pacific Bell, and GTE California, which later became Verizon, and a host of smaller rural telephone companies. Mobile service was the new technology and Voice over Internet Protocol (VoIP), which allows a user to make voice calls using a broadband internet connection, did not exist. The landscape today is dramatically different. While many customers still have traditional phone service in California, VoIP has become the dominant wireline service, and millions of customers have opted for wireless service.

Ten years ago, the FCC adopted a National Broadband Plan, which envisioned transitioning the nation's entire communications network to one that is Internet-based.

That transition, driven by changes in technology already underway, has created artificial distinctions in how we regulate different services and technologies.

"Telecommunications" means, simply, the transmission of information from one point to another. The CPUC historically has regulated voice and data services because both involved transmitting "information" from one customer to another. The network used to transmit this information is made up of fiber optic lines, copper wire, remote terminals, backhaul trunks, generators, and other equipment that we refer to as "facilities." Over time, new services were developed and those, too, used these same facilities. For example, VoIP service and broadband service can be provided over the copper wires that made up the original voice telephone network. Conversely, traditional telephone service can be provided over fiber optic lines. Further, except for the portion of the "transmission" from the cell tower to your mobile phone, wireless service also is provided over the same facilities as the wireline network.

When we refer to a service provider as "facilities-based," we simply mean that the provider controls or operates the equipment over which the transmission travels. The provider may own the facilities or lease them – either way, the provider is responsible for those facilities.

The CPUC's ability to regulate specific services is dictated by state and federal law, and California shares with the federal government authority to regulate communications services and providers. California law historically was technology-neutral – meaning state laws applied to all services transmitting information over communications facilities, whether those services were using wires or were wireless. Section 233 of the Public Utilities Code states specifically that a "telephone line" includes all facilities and equipment used to provide telephone service, "with or without the use of transmission wires." Under state law, the CPUC regulated all aspects of traditional telephone service and, initially, wireless service as well. As competition began to unfold beginning in the 1990's, the CPUC responded by changing the way it regulated traditional phone service – eliminating price regulation and allowing the providers to replace tariffs with customer service agreements.

In 1993, a change in federal law limited how states can regulate wireless service, even though California law puts wireless service under CPUC jurisdiction. The legislation Congress enacted constrained state authority by prohibiting states from regulating wireless rates and entry into the market. That same statute, however, reserved to the states authority to regulate "other terms and conditions" of wireless service. When wireless service came along, the CPUC deemed wireless providers to be "telephone corporations" under section 234 of the Public Utilities code, imposing on them all the rights, duties, and obligations of other CPUC licensees. In a decision the CPUC issued implementing the 1993 change in federal law, the Commission required wireless providers to obtain a wireless registration or "WIR" number from the CPUC.

In 2006, in response to expanding competition in the video market, the Legislature enacted the Digital Infrastructure and Video Competition Act (DIVCA), which gave

licensing authority to the CPUC, but afforded the Commission little oversight of the service, other than a simplified license review process. Each franchise the CPUC issues under DIVCA is for ten years, and the renewal process does not allow the Commission to review the franchisee's performance at any point.

After a protracted battle of ten years, the FCC determined in 2018 that broadband service should be exempt from all state regulation, even though broadband service also travels over the same facilities as traditional phone service and wireless service and provides essential access to necessary services such as 911, de-energization maps and evacuation information. Several parties, including the CPUC, challenged the FCC's decision to preempt states from regulating broadband service. In a decision issued October 1, 2019, the D.C. Circuit Court of Appeals reversed the portion of the FCC's order that preempted the states, and none of the Internet Service Providers filed a further appeal of the D.C. Circuit's decision.

Section 710 has sunset, as of eight days ago, leaving open the opportunity for the CPUC to exercise its authority to ensure that 9-1-1 service is available throughout the state and actually delivered, even in times of disasters. Although the Governor's Office of Emergency Services has responsibility to implement the 9-1-1 system, it does not have jurisdiction over the entities that carry the 9-1-1 traffic, transmitting the emergency call from the distraught consumer to the dispatch center and from there to the relevant first responder. That falls squarely under CPUC jurisdiction. As you will hear from President Batjer and Commissioner Rechtschaffen, many network failures require the abilities of both the CPUC and OES to remedy.

Now that I have set the stage with this introduction, Cmr Rechtschaffen is going to discuss the Commission's existing service quality rules for the CPUC as well as the recent Network Exam.

Part 2: Service Quality Oversight and the Network Exam

Commissioner Rechtschaffen to present on the Commission's existing service quality rules for the CPUC as well as on the Network Exam:

Thank you, Chair Hueso and Senators, for inviting me here to speak to you today. My name is Cliff Rechtschaffen, and I am a Commissioner at the California Public Utilities Commission. I will provide you with an overview of the Commission's existing service quality oversight and pending investigations.

Existing Service Quality Oversight:

The Commission's existing service quality rules require telephone companies to report three main service quality measures – customer trouble reports, customer service answer time and the amount of time customers are out of service. These rules only apply to the

traditional voice telephone services provided by companies like AT&T and Frontier; they do not apply to wireless, Voice over Internet Protocol (VoIP), cable video or internet outages.

The out of service measure is an important indicator for public safety, because it measures the ability for people to contact 911 and emergency services. The measure requires the carriers to restore 90% of service outages for regular telephone service within 24 hours or less on a statewide average. This is not an impossible standard to meet, yet the largest service providers routinely fail to meet these requirements.[1]

In 2017, AT&T's statewide average for service restoral was 48% and Frontier's was 63%. In 2018, AT&T's was 56% and Frontier was 78%. Poor service quality limits the public's ability to communicate on a daily basis, to participate in society and the economy, to contact 9-1-1, or to receive communications during an emergency.

Pursuant to a penalty program established in 2017, the CPUC fined these companies for failing to meet these requirements. As permitted by the program, in lieu of paying fines into the state General Fund, the companies opted instead, to invest twice the amount of the fines into Commission-monitored projects to improve parts of their network that demonstrated poor service quality. In total, these companies have been required to invest more than 16 million dollars in the past two years in specific parts of their networks which were failing.

> [MAY SKIP SECTION FOR TIME]:
> To provide more detail there are several different types of outage reports that the CPUC, FCC, and Cal OES require:
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> As just mentioned, the CPUC requires telephone service providers to submit quarterly service quality reports on traditional telephone service, including time out of service, answer time, and trouble reports. Providers also must submit reports of major service outages when they occur.
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> The CPUC's Major Service Interruption (MSI) reporting is based on the FCC's Network Outage Reporting System (NORS). These reports require all carriers to report on large service outages. The specific criteria vary depending on the type of facilities impacted, the number of customers impacted, and the length of the actual outage. The residential standard is an outage lasting at least 30 minutes for 900,000 user minutes, which is a combination of the number of users affected and length of time out of service.
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> The FCC may activate the Disaster Information Reporting System (DIRS), which is a *voluntary* reporting system that enables communications providers to report on the status of impacted infrastructure and provide situational awareness information during times of crisis. The October PSPS events were the first time

[1] Staff has observed with the carrier representatives in the regular CPUC/carrier meetings that increasing the technician time allowed for maintenance and repair work improves the results.

the FCC activated DIRS for California. The FCC activates DIRS in consultation with the Department of Homeland Security and had previously only activated for hurricanes and large storms.

And finally, Cal OES is in the process of implementing SB 670 from last year, which is intended to provide even more timely information to emergency responders. They have proposed rules available for comment now. I will let Director Ghilarducci speak more to this requirement in his testimony.

Network Exam:
In 2013, the Commission ordered an examination of the infrastructure networks of AT&T California and Frontier – the state's two major land line providers – as a result of their consistent failure to meet existing service quality metrics. The report covers the period from 2010 to 2017.

Some of the Key Findings of the Network Exam Include:
Wireline service quality has steadily deteriorated, with the number of outages increasing and service restoration times getting longer.

The networks are not resilient. Both companies have cut back on preventative maintenance expenditures and are not maintaining networks to withstand environmental and weather-related conditions. As a result, there is a strong relationship between bad weather and service outages. We saw this in the PSPS events and with the wildfires.

Both companies have been disinvesting in infrastructure for their traditional land line operations and moving money into other business areas, such as broadband.

AT&T has focused its investments on providing service in higher-income communities. As a result, AT&T's customers in lower income areas experience more outages and worse service.

Finally, there is a direct relationship between the amount of competition in an area and the service quality results. Areas with limited or no competition experience lower service quality results. – meaning that customers who likely don't have access to alternative service providers (usually rural, less populated areas), and therefore rely on traditional phone service the most, are the ones who suffer most from poor service

[BACKUP SECTION WITH SPECIFIC FINDINGS OF NETWORK EXAM]:

1. Service Quality has deteriorated - Both carriers exhibited a higher relative number of outages and longer time required to restore service for outages lasting more than 24 hours.

2. Demonstrated lack of resiliency - AT&T and Frontier are not maintaining networks to withstand environmental and weather-related conditions (i.e., service goes out when it rains). Networks are not robust, and both companies have cut back on preventative maintenance expenditures.

3. Disinvestment in Plain Old Telephone Service (POTS) - AT&T and Frontier are investing very little into infrastructure that supports only Time Division

Multiplexing (TDM) service. Both companies are relying on price increases and customer inertia to maintain revenue stream.

4. Direct relationship between amount of competition and service quality results - Areas with limited or no competition experience lower service quality results. Both AT&T and Frontier put more investment and attention in areas with higher rates of competitive offerings. In other words, it is customers who likely don't have access to alternative service providers (usually rural, less populated areas), and therefore rely on traditional phone service the most, are the ones who suffer most from poor service quality.

5. AT&T is focusing on higher income communities - AT&T wire centers serving areas with the lowest household incomes exhibit higher trouble report rates and longer out-of-service durations than areas in higher income communities.

6. Increased investment in broadband improves traditional phone service quality - AT&T and Frontier areas with higher broadband investment have a higher level of traditional phone service quality and better performance on all service quality reports.

Network Exam Next Steps:
The Commission has released a summary and redacted portions of this report (which is available on our web page). We are committed to releasing unredacted versions of the full report, however AT&T and Frontier have filed very sweeping confidentiality claims. We have been reviewing each of these claims over the past few months. We hope to release a less redacted version soon.

[Obstruction and Excessive Claims of Confidentiality:]
I want to highlight a challenge that we have with our continued work on transparency. The commission published this white paper "Safety Principles for Communications Providers" in spring of 2019. In May, AT&T, Sprint, T-Mobile and Verizon filed a motion to strike this document from the record citing "inaccuracies and inflammatory assertions." I would say these assertions ring even truer today after the communications failures exhibited during recent PSPS events. We haven't ruled on the motion, and will continue to publish useful and easy to understand, publicly accessible, documents which describe the state of communications in California.

Going forward we will be looking closely into the issues highlighted by the network exam, including evaluating the current service quality metrics and the effectiveness of the current penalty mechanisms. We will also consider what service quality issues exist for other types of communications services.

I'd like to also note that some of the inequities identified in the Network Exam for traditional telephone service are being identified for broadband and other services as well. For example, in a recent study by the University of Southern California indicating that in Los Angeles County, competition and the fastest broadband services are less likely in low-income areas and communities of color.

These recent findings are troubling. Consistent with our statutory mandates, the Commission will continue with these investigations and work to ensure that all Californians have fair access to essential services.

Thank you for the opportunity to address you today.

Part 3: PSPS Impacts and Pre-Hearing Conference

President Batjer to provide overview of the impact of PSPS, experience at the State Operations Center, the request for information from communications providers, the Prehearing Conference and Phase II of the Disaster Relief Proceeding.

Thank you Chair Hueso and Senators, for inviting me here to speak to you today. My name is Marybel Batjer, and I am the President of the California Public Utilities Commission.

Impact of PSPS Events and Wildfires:

This past October California suffered through multiple wildfires and PSPS events that impacted communications networks. These PSPS events in particular resulted in major impacts to the communications grid. Customers of all services were impacted, whether landline, cable, VoIP or wireless. Carriers reported outages for near half a million wireline customers and almost a million wireless customers.[2] Hundreds of cell sites were out of service for various lengths of time, and wireline facilities also suffered, particularly cable providers. For example, Marin County had 57% of its 280 cellular towers out of service at one point during the PSPS on October 28. In the Bay Area's San Mateo and Contra Costa Counties, 11% of cell towers failed to work, according to reports from the FCC. Sonoma, Lake, Humboldt, Santa Cruz and Calaveras counties had days where over 20% of cell towers were out.

BACKGROUND ON TWO OTHER FIRES:

Napa and Sonoma wildfires, Oct 8 2017 starting about 10pm, 144,987 acres burned
Approximately 100,000 wireline and wireless users impacted and 1 million blocked calls
187 cell sites out of service for the entire fire (not 187 out at one time)

Butte County/Camp Fire, Nov 8 2018 at 6:30am, 153,336 acres burned
Approximately 90,000 wireline and wireless users impacted and 2 million blocked calls
51 cell sites out of service for the entire fire (not 51 out at one time)

[2] 983,596 wireless users were out of service; for wireline, 117,705 wireline traditional telephone users were out of service and 252,633 VOIP customers.

Lack of communications service is not a mere inconvenience—it endangers lives. Californians rely on their phones and the internet, whether wired or wireless, to receive emergency notifications, to contact family and friends, and to reach first responders.

These outages were unexpected given the previous assurances the communications companies provided to the FCC, the State Legislature and the CPUC. These companies have the obligation, as well as the privilege and responsibility, to provide service to their customers. These outages were unacceptable, we must do better, and we can do better.

Letters and Prehearing Conference:
The CPUC is working closely with Cal OES and CALFIRE to ensure that communications customers are able to access these services at all times during an emergency. Our agencies have different roles, but collectively serve to ensure the public's safety. Cal OES and CAL FIRE are responsible for situation management and need specific and actionable information immediately. The CPUC has the responsibility to develop rules to ensure safe and reliable service. The CPUC is working to ensure emergency responders have the information necessary to do their job, and that we have the rules in place to hold service providers accountable.

During the PSPS events I was in the State Operations Center, and I saw firsthand how much improvement is needed. Prior to the intervention from Cal OES Director Mark Ghilarducci, the room for the communications providers was near empty. The engagement and delivery of real-time information during this critical period was simply nonexistent. Clearly, the existing voluntary system is not working. We have clearly seen that communications carrier reporting must be improved, must be more readily and publicly accessible, and the companies themselves must improve situational communication.

I am the assigned commissioner on the Emergency Disaster Relief Measures proceeding. This proceeding seeks to improve disaster response and create a uniform framework for all the utilities under the Commission's jurisdiction. As part of this proceeding, I sent a letter on November 13 to the largest communications providers in California regarding their performance during the October PSPS events. I asked the communications service providers to report the amount of backup power currently available, to pinpoint locations in their networks that require hardening for wildfire and PSPS events, and I called a public meeting to hear responses from company executives.

On November 18, major wireless, wireline, and cable providers of voice services responded with the amount of backup power their facilities have and the plans in place for refueling generators. In addition, we obtained data on the number of cell sites located in Tier 2 and Tier 3 fire threat areas as well as the amount and type of backup power at these locations. Collectively, this data illustrates the current condition of the resiliency of our communications grid. This information will be used to inform and guide

policy that strengthens our communications grid, prepares it to withstand disasters, and ensures it will remain operational during PSPS events and disasters.

The hearing on November 20 was specifically held to address failures in the communications network infrastructure during wildfires and PSPS events. I made it very clear that their failures were not acceptable. I highlighted the communication issues with the Office of Emergency Services and the need for standards for backup power and public outage reporting.

At the hearing, carriers informed me that they have advanced, AI-powered, automated network operation systems. And yet, we have carriers who have not provided information to our state warning center. If carriers have these advanced systems, why are they not being shared with Cal OES or the public to enhance public safety?

Going forward, this proceeding will focus on the adoption of further rules to address communication network outages during emergency events to keep the communications networks functioning. Specifically,

1. Enabling transparent communication between industry, first responders across the government, and the public in a timely manner during disastrous events.

2. Developing requirements for a resilient and dependable communications grid to further address communications outages during emergency events.

   California Public Advocate's motion in the emergency measures proceeding last spring raised important issues regarding resiliency. They advocated for specific duties for carriers for the delivery of 911 calls, robust battery backup requirements, route diversity, and asked us to improve the reliability of alert and warning systems. We want to bring these proposals into our public process.

In addition, in the De-Energization proceeding, we will refine the PSPS planning and notification guidelines, so communications service providers receive the information they need to minimize the impact of PSPS events on their networks and participate in planning exercises with the Electric IOUs in advance of the wildfire season.

Public Utilities Code Section 710 Sunset

On January 1st, Public Utilities Code Section 710, which deregulated internet-based services, sunset. The Commission takes this restoration of authority and new responsibility seriously. As has been conveyed by my colleagues today and by recent events, there is considerable room for improvement within this industry.

Going forward, the Commission will seek to protect public safety and to ensure quality of service, including continued provision of 9-1-1 and other emergency services vital to public safety as protecting the public health, safety, and general welfare are part of the police power every state possesses.

We are already working to extend the protections provided to the rest of telephone customers to consumers with complaints about their VoIP service.

> BACKGROUND:
> Specifically, a Consumer Affairs Branch representative is assigned to process the complaint, and a letter of acknowledgment is sent within 10 days along with a file case number. After initial review of the complaint, the representative determines if additional information is required and requests it from the telephone company. After completing a review of the case, a closing letter is mailed to the customer explaining the outcome of the complaint. Most cases are resolved within 45 days of filing. Should the customer disagree with the resolution, the customer may file an appeal or file a formal complaint.

Any more substantive changes will have to go through the Commission's formal process, which gives the public and the industry ample notice and opportunity to participate in the development of any regulatory changes.

Well before the next wildfire season starts, we must together determine how we view access to 911, emergency alerts, and emergency response communications. Are these "necessities" that should be accessed unfailingly, even when the power is out? Should it matter if the service is a landline, wireless, or internet-based service?

All of these initiatives are reasonable and within our statutory mandate. They are consumer protections and the essential components of public safety which should be available for all Californians. We should all support these outcomes.

Thank you for the opportunity to address you today.