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September 23, 2019

*Via ECFS*
Lisa M. Fowlkes
Bureau Chief
Public Safety and Homeland Security Bureau
Federal Communications Commission
445 Twelfth Street, SW
Washington, DC 20554

> Re: <u>Promoting Network Reliability During Disasters</u>, PS Docket No. 19-251

Dear Ms. Fowlkes:

I am writing in response to your letter dated September 12, 2019, seeking information regarding mitigation measures that Sprint Corporation ("Sprint") initiates in response to California energy providers' planned events to de-energize portions of their electric distribution infrastructure during periods of high fire threat ("Power Shutoff Event" or "PSE").[1] You have asked that Sprint discuss its contingency plans that help to support communications between public safety officials and impacted communities, outreach efforts to Sprint's customers, coordination with public safety officials and electric utilities, as well as other efforts to maintain the operation of its network during PSEs. Additionally, you inquired whether Sprint has incorporated industry best practices, and if so, which are most useful when responding to PSEs.

Sprint shares the Bureau's and the California Public Utilities Commission's ("CPUC") concerns regarding the broad-sweeping damage and destruction created by recent wildfires in California. We applaud your collective efforts to prevent further devastating and deadly wildfires, by supporting electric utility de-energization efforts during high fire threat conditions, encouraging effective and timely communications between electric utilities, impacted customers, telecommunications providers and public safety agencies.

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[1]  Letter from Lisa M. Fowlkes, Bureau Chief, Public Safety and Homeland Security Bureau, Federal Communications Commission, to Ray Rothermel, Counsel-Legal/Government Affairs, Federal Regulatory, Sprint Corporation (dated Sept. 12, 2019).

Consistent, effective and timely communication between electric utilities, telecommunications carriers, public safety officials and impacted communities is essential to mitigate network impacts. In anticipation of increasing occurrences of PSEs in California, Sprint is collaborating with Pacific Gas and Electric, Southern California Edison, San Diego Gas and Electric, the CPUC, the California Office of Emergency Services ("Cal OES"), public safety, and local governmental agencies in areas that have already experienced de-energization events and natural disasters. Sprint has requested that electric utilities provide notice of anticipated PSEs at least 24 hours in advance and then follow-up notices in increasing intervals leading up to the power shutoff. Electric utility notices must include mapping information that Sprint can overlay on its network facility maps to identify potentially impacted sites. Electric utilities should provide estimates of the anticipated duration of the PSE, and regular updates thereto. Such advanced notice enables Sprint to develop a response plan that is appropriate for and tailored to the specific circumstance at hand. In some cases, Sprint sends vendors to fuel fixed generators, deploys portable generators to locations that can accommodate such equipment, sends cell sites on wheels ("COWs"), satellite cell sites on light trucks ("SatCOLTs"), or portable satellite systems ("VSATs"), or makes other network adjustments to minimize site outages. If a PSE continues for long period of time or coincides with a wildfire, Sprint has notification protocols in place with multiple California state agencies, Cal OES, the California Utilities Emergency Association ("CUEA"), the Federal Emergency Management Agency ("FEMA"), and local contact points within the communities that are impacted by the incident. Sprint's network team produces an impact report including information such as the number of impacted sites and estimates for bringing impacted facilities back on-air, mitigation efforts underway, other assistance that Sprint is providing to emergency responders, the American Red Cross and displaced members of the community.

Sprint's strategy for customer outreach when responding to business interruptions is based on industry best practices, and includes cross functional teams of experts. These teams conduct periodic training and annual preparedness exercises including communication to consumers. During a significant PSE or disaster incident, Sprint often establishes a dedicated web landing page that includes a breadth of information such as: event status details, status of Sprint network operations, details regarding Sprint's disaster assistance options, contact information for Sprint Customer Support and other instructions. Additionally, Sprint provides outreach on a regular basis to the American Red Cross and participates in mobile text-to-donate programs designed to assist impacted Californians.

Sprint endeavors to maintain a reliable national network that can withstand the type of events that lead to short-term commercial power outages and small-scale site impacts. Many of Sprint's cell sites are equipped with battery backup as an alternative power source when commercial power is temporarily interrupted. The duration of the back-up power varies due to

considerations such as the number of batteries at the location, the temperature, age of the batteries and other factors. Cell sites with battery backup power generally provide an average of seven hours following loss of commercial power. In various areas of the country, where there is sufficient space, and where air quality emissions regulations permit, Sprint hardens some of its sites with fixed generators. Sprint also maintains a fleet of portable generators that can be rapidly deployed to areas experiencing an extended loss of commercial power. To ensure fast response times and adequate capacity for fueling resources, Sprint maintains contractual relationships with large disaster recovery refueling vendors.

Sprint is investing in and prioritizing efforts to make its network more reliable and resilient, and better able to withstand interruptions created by PSEs and disasters. Network improvement activities include, but are not limited to the following:

- adding cell sites and thereby expanding Sprint's coverage footprint in various areas and densifying its network in other areas by providing greater overlap between cell sites, often allowing neighboring sites to compensate for sites that are inoperative following an emergency event;

- upgrading facilities and equipment, thus making the network more efficient and capable of handling larger volumes of traffic;

- increasing fiber deployments for more reliable backhaul and to lessen microwave dependencies (Sprint is in the process of converting thousands of cell sites from microwave to fiber backhaul);

- upgrading existing equipment to leverage multiple spectrum bands;

- adding macro cell site installations and initial 5G equipment deployment activities;

- adding antenna Remote Electronic Tilts ("RETs") that allow for real-time adjustments to antenna direction, coverage span and propagation for network optimization or to prevent interference with COWs, SatCOLTs, and VSATs, or to otherwise respond to site outages;

- diversifying fuel vendors to increase availability and reliability of refueling services for Sprint's fixed and mobile backup generators;

- acquiring additional backup generators; purchasing and installing backup batteries for new sites and purchasing and installing replacement batteries for those that are no longer operating at their full potential;

- acquiring additional COWs, VSATs and SatCOLTs to increase Sprint's national fleet, which is ready for deployment in response to disasters (collectively, "network enhancement activities").

These network enhancement activities help to harden Sprint's network, making it less susceptible to impacts resulting from large-scale PSEs and natural disaster events. They also create greater resiliency within Sprint's network, and can often enable a more rapid response to mitigate the duration of cell site outages. These investments provide flexibility and offer a wide variety of tools at Sprint's disposal; this agility is necessary in order to react to the specific and unique conditions of each protracted and wide-scale PSE or emergency event.

Sprint's Emergency Response Team ("ERT") is typically first on the scene during emergency events. The ERT maintains "mobile emergency command centers," which are fully equipped with large inventories of devices such as cell phones, push-to-talk handsets, air cards, hotspots, Wi-Fi access points, small cell equipment, and other specialized gear. Working with Sprint's network teams on the ground, the ERT assists first responders, public safety officials and government agencies with voice and data services before, during and after major emergencies. In the case when outages and emergencies can be predicted, Sprint's ERT pre-stages essential resources such as SatCOLTs, COWs, VSATs, and recovery resources (such as equipment, fuel, mobile generators, etc.) inside and outside the projected impacted areas to enable rapid deployment and minimize any service disruptions. Sprint is committed to ensuring that all of its customers receive reliable service and Sprint's public safety customers have the tools they need to timely and effectively respond to emergencies.

As a common practice within the telecommunications industry, Sprint's Network Operations Center ("NOC") monitors all cell sites and switch locations across its nationwide network. The NOC is staffed on a 24-hour basis, 365 days of the year. Sprint has established plans for recovering critical network functions, including all network operations, in the event of outages. Sprint responds to each event using an all-hazard approach, which incorporates industry-accepted principles that are the basis for Sprint's business continuity program. Sprint has adopted key principles from standards set by organizations such as the Disaster Recovery Institute International, ASIS Organizational Resilience Standard, FEMA, Business Continuity Institute ("BCI"), American National Standards Institute ("ANSI"), National Fire Protection Association ("NFPA") 1600, International Organization for Standardization ("ISO") 27001 and ISO 22301 and

several U.S. Military Specifications ("Mil-Spec") standards. In large scale events, Sprint's Network Services' implementation of the Incident Command System ("ICS"), stays true to the principles of ICS. This enables Sprint to leverage this best practice in wide-scale responses, using common terminology and standard organizational structures to communicate efficiently internally and with external customers such as public safety agencies, as many of these agencies also utilize ICS. In anticipation of and during emergency situations, Sprint teams train on and deploy in standard ICS sections, branches, units and strike teams, and emphasize span of control, comprehensive resource management, and other ICS principles. Collectively, these industry best practices provide useful guidance when preparing for and responding to outage events and disasters.

Sprint shares the Bureau's commitment and interest in ensuring that wireless telecommunications customers and public safety officials are prepared for PSEs. As noted above, Sprint has protocols and plans in place to mitigate the effects that PSEs have on its network. Sprint coordinates with public safety officials, power companies and its customers in the event of PSEs and other emergencies to collaborate, share information, set expectations and ensure awareness about network impacts and available resources. Various industry best practices, standards and industry specifications are the building blocks for the protocols that Sprint follows before, during and following PSEs or other emergency events. Although each PSE and emergency is unique, and presents differing challenges and response strategies, Sprint stands ready to assign the appropriate resources and utilize its expertise to help ensure minimal wireless network interruption.

Please contact me if you have further questions or concerns.

Sincerely,

*/s/ Ray Rothermel*

Ray Rothermel
Counsel – Legal/Government Affairs
Sprint Corporation