



Filing Receipt

Filing Date - 2024-09-25 03:33:25 PM

Control Number - 56822

Item Number - 186

DOCKET NO. 56822

**INVESTIGATION OF EMERGENCY § PUBLIC UTILITY COMMISSION
PREPAREDNESS AND RESPONSE BY §
UTILITIES IN HOUSTON AND § OF TEXAS
SURROUNDING COMMUNITIES §**

**RESPONSE TO STAFF’S FIRST REQUEST FOR INFORMATION TO
TARGETED TELECOMMUNICATION UTILITIES QUESTION
NOS. STAFF 1-1 THROUGH 1-16**

Charter Fiberlink TX-CCO, LLC d/b/a Spectrum, Time Warner Cable Information Services (Texas), LLC d/b/a Spectrum, and Time Warner Cable Business LLC – IXC, (collectively the “Charter Certificated Entities” or “Charter”)¹ together provide the below responses to Commission Staff’s Request for Information. Charter stipulates that its responses may be treated by all parties as if they were filed under oath by the entities named above.

Before responding to these requests, some clarification and a technical legal objection are in order. Charter understands that the “Targeted Telecommunications Utilities” were selected based on their provision of various services in the greater Houston area. Charter Communications, Inc. is one of the nation’s leading connectivity companies, offering broadband, video, VoIP, and wireless services through various affiliates (including the Charter Certificated entities) to nearly 32 million customers across the country, including 3.5 million customers in 644 Texas communities. However, Charter has a limited footprint and few customers in Harris County, mostly in portions of Spring, and none in Houston itself. As for other counties adjacent to Harris County, we offer service in Conroe, Chambers County, and the Golden

¹ Charter Communications, Inc. is a publicly traded corporation with many operating subsidiaries. Charter’s certificated subsidiaries offering various communications service under the Spectrum brand name in Texas include the following:

- Time Warner Cable Business Services, LLC (SPCOA No. 60670 and IXC Certificate No. IX130005)
- Charter Fiberlink TX-CCO (IXC Certificate No. IX040008 and SPCOA No. 60726)
- Spectrum Gulf Coast, LLC (SICFA Certificate No. 90008)

Triangle area (Jefferson County). Those areas were impacted to a limited extent by Hurricane Beryl, but not to the extent felt by residents of Harris County. We do not currently offer service to residents in Galveston, Brazoria, Fort Bend, San Jacinto, Walker, or Liberty counties. Given this context we respond below.

As for a legal objection, the various services provided by the Charter Certificated Entities and their affiliates (internet service, video, and VoIP) are not regulated by the Commission, such that these questions exceed the Commission's authority to require a response. But because of Hurricane Beryl's significant impact and threat to public safety, Charter believes that it is important to cooperate with these requests subject to any legal or jurisdictional objections, to better help the Commission and relevant stakeholders understand the impacts, challenges, and lessons learned from Hurricane Beryl and improve storm preparedness and response in the future.

Staff 1-1 Did you experience any disruption of service or service outages within the Impacted Area due to damage caused by Hurricane Beryl? If so, please describe the nature and causes of the outages, the duration of any outages, facilities affected by the outages, and efforts made by you and any involved third parties to restore service to customers in the Impacted Area.

RESPONSE: Yes. The Houston area was most heavily impacted by Beryl. Charter does not provide service in most of the Houston area. We experienced outages (a) impacting our customers' premises and our facilities directly related to the storms in the areas in Spring, Conroe, and the Golden Triangle (Jefferson County) where we provide service, and also experienced (b) a short-term outage in other parts of Texas that resulted in large part from commercial power loss impacting a co-location facility in Harris County that helps Charter serve those other parts of Texas (see our response to Staff 1-2 below). Our services are dependent on electric power, both to power our facilities and to power the home networks and devices that use our video, broadband, and voice services. Therefore, the third parties on which we depend upon to restore service are power companies. In this outage event, Entergy and CenterPoint are the electric service providers in the Charter service areas impacted by Beryl: CenterPoint in Spring, and Entergy in Conroe and the Golden Triangle area.

The confidential spreadsheet attached as Exhibit A shows each outage event by location, with outage start time and end time, with counts of impacted customers separated out by service (VoIP, broadband, and video).

Sponsoring Witness: Rachael Martin, Brian Tritz.

Staff 1-2 Did you experience any disruption of service or service outages in areas of Texas outside the Impacted Area due to damage caused by Hurricane Beryl? If so, please describe the nature and causes of the outages, the duration of any outages, facilities affected by the outages, and efforts made by you and any involved third parties to restore service to customers in those affected areas.

RESPONSE: As noted in response to Staff 1-1, we experienced a short-term outage in other parts of Texas that resulted in large part from commercial power loss impacting a co-location facility that supports infrastructure that helps Charter serve those other parts of Texas. On July 8, the impact of the storm caused power loss in a co-location facility in the Houston area where Charter leases space from a third-party communications provider to support its backhaul network. The backup power available for that facility was unable to sufficiently power HVAC facilities in that location, causing equipment there to overheat and stop functioning after several hours. That event did not directly disrupt service, but put Charter in a loss of redundancy or “LOR” situation. On July 9, a fiber event at another third-party communications provider facility disrupted the redundant backhaul that serves a significant portion of Texas, resulting in an outage for a large number of our Texas customers for a few hours on July 9. We worked with the third-party communications provider that owns these collocation facilities to accomplish needed repairs, and service was restored within a few hours. The confidential spreadsheet attached as Exhibit B shows this event, with outage start time and end time, with counts of impacted customers separated out by service (VoIP, broadband, and video).

Sponsoring Witness: Rachael Martin, Brian Tritz

Staff 1-3 If any outages due to a third-party infrastructure issue were caused by the impact of Hurricane Beryl, please identify the third party and describe the issue(s) and what steps were taken to resolve it and restore service to customers.

RESPONSE: Please see responses to Staff 1-1 and 1-2.

Sponsoring Witness: Rachael Martin, Brian Tritz.

Staff 1-4 Please describe the extent of any structural damage to your facility(s) due to Hurricane Beryl.

RESPONSE: Charter did not experience any reported structural damage as a result of Hurricane Beryl.

Sponsoring Witness: Rachael Martin, Mike Matson

Staff 1-5 Please identify the total number of customers affected by Hurricane Beryl-related outages, categorized by service type and zip code.

RESPONSE: We do not generally track outages by zip code in Texas. Confidential Exhibit A tracks outage events by trouble ticket, which is identified to a city and county.

Sponsoring Witness: Rachael Martin, Brian Tritz.

Staff 1-6 Please provide a timeline outlining the progression of any Hurricane Beryl-related outages experienced by your utility from the initial disruption to complete restoration.

RESPONSE: Confidential Exhibit A shows each reported trouble ticket with its duration from initial disruption to complete restoration.

Sponsoring Witness: Rachael Martin, Brian Tritz.

Staff 1-7 Please identify any challenges or obstacles that hindered your service restoration efforts.

RESPONSE: In most instances, and also in connection with the outages caused by Hurricane Beryl, the primary obstacle to restoring our video, broadband, and voice services is electric power outages and the time it takes to resolve those outages. A secondary challenge or obstacle is ensuring that storm cleanup efforts are well-coordinated so that restoration activities do not cause damage to Charter facilities. During Hurricane Beryl, the primary driver of delays in service restoration for our customers was not having commercial power in our facilities or at their premises for an extended period of time.

In addition, the loss of redundancy within the Houston co-location, a critical third-party communications provider facility in which we lease co-location services from a communications provider, lost commercial power and each of its two redundant generators subsequently failed. When efforts to restore functionality to the generators proved unsuccessful, the communications provider that owns the co-location facility brought in replacement generators of the proper size from other markets. In the case of the generator supporting Charter's equipment, the replacement was sourced from Tulsa. While the company had network redundancy in place to withstand the loss of this facility, the extended period of power loss left the network in a more vulnerable state to other impacts such as the fiber event described in response to Staff 1-2, as well as overheating issue due to lack of proper cooling. This was challenging due to the amount of equipment that had failed from overheating, and the need to source replacements from various depots across the country. The co-location event intersected with a secondary third-party fiber event, resulting in the outage impact to end user customers. There were no significant challenges or obstacles observed in connection with the secondary event, and when that event was resolved we were able to provide service, albeit without the redundancy typically engineered for that facility and path until the Houston co-location issues were resolved.

Sponsoring Witness: Rachael Martin, Mike Matson.

Staff 1-8 Please describe any communications you had with AEP, CenterPoint, Entergy, or TNMP in advance of Hurricane Beryl concerning potential loss of power or electric service.

RESPONSE: None of these providers reached out to our Network Operations or Government Affairs teams prior to Hurricane Beryl's arrival.

Sponsoring Witness: Rachael Martin, Mike Matson, Julia Zinsmeister.

Staff 1-9 Please detail the communication strategies you employed to inform your customers about the outage, restoration progress, and estimated timelines, including communication channels used.

RESPONSE: In advance of landfall, consistent with our regular practice, we initiated hundreds of thousands of proactive customer notifications using the communications method specified by each customer (text, email, voice call).

- Once outages actually began occurring, we provided regular updates to our customers through these same channels.
 - Approximately 700k communications were successfully delivered to customers prior to landfall,
 - Additionally, 151k communications were successfully delivered once outages began occurring.
- During the outage:
 - Once impacted customers are identified through our network monitoring systems or other notification, we notify customers of an outage event using the method of communication they have told us they prefer: email, text, or an automated phone call.
 - An initial declare communication is sent to the customer at the start of the event followed by a clear communication at the end of the event.
 - For customers calling our customer service lines from impacted areas, we implemented a notification in our interactive voice response (IVR) processes that explained the outage to callers.
 - We programmed our Spectrum Storm Center website (<https://www.spectrum.net/page/spectrum-storm-center>) to include information about the outage event relevant to impacted customers and areas.
 - We programmed our online chat functionality to communicate the same messaging to customers that reach out to us through our online chat features.
 - All reactive channels communicate the same messaging based on outage cause/type provided by our internal systems.
 - We made sure our customer service representatives were informed of the event so they could communicate event and outage status to customers.
- A final notice was provided once service was reliably restored.

Sponsoring Witness: Chris Hanlon.

Staff 1-10 Please describe the customer support measures in place to address inquiries, concerns, and complaints related to the outages, specifying the availability of support channels and response times.

RESPONSE: See response to Staff 1-9 above.

Sponsoring Witness: Chris Hanlon

Staff 1-11 Please outline any proactive outreach efforts your utility makes to vulnerable customers (e.g., elderly, disabled) who may require additional assistance during a weather emergency.

RESPONSE: See response to Staff 1-9 above.

Sponsoring Witness: Chris Hanlon

Staff 1-12 Please describe the lessons learned from Hurricane Beryl's impact on your facilities, network infrastructure, and service delivery.

RESPONSE: Consistent with our regular practice after major storms and outage events, Charter is reviewing both redundancy and resiliency enhancements as outcomes from this storm. Additionally, Charter is reviewing our policy regarding inventories and locations of spare network and service delivery parts to determine the feasibility of improvements in making additional quantities of critical equipment available, or quickly transferrable, in a disaster recovery scenario involving large quantities of failures as seen with the HVAC event within the Houston Co-Location.

In the case of the applicable third-party communications provider referred to in response to Staff 1-2, we've seen them (1) accelerate their timing on routing preventative maintenance, (2) make improvements to the location of temporary generator staging, and (3) engage a third-party assurance firm for the purposes of auditing the status of certain critical facilities and the operational practices relating thereto, inclusive of the facility in question. They have also committed to a program of installing 'quick connectors' at certain critical facilities, including the one in question, which would allow for improved time to tie in a temporary generator prospectively.

Sponsoring Witness: Rachael Martin.

Staff 1-13 Please outline any plans or initiatives to enhance your network's resilience to future natural disasters, including specific infrastructure upgrades or redundancy measures.

RESPONSE: Charter has a very resilient network. To that end, Charter has invested more than \$43 billion in infrastructure and technology over the last five years (2019-2023), including more than \$11 billion (and \$1.6 billion in Texas alone) in 2023. We maintain geographically distinct data centers that support our critical platforms. Data centers are highly available, redundant and have carefully calculated capacity and bandwidth. Multiple regional data centers across our footprint help distribute our services closer to our customers and enhance our ability to spread or alleviate excess network load as needed. Each of our data centers is operated at exacting standards for resiliency and redundancy, such as being equipped with redundant power, backup power supply and robust onsite data

backup platforms that provide rapid recovery options. We also can balance network loads across the data centers, which provides additional flexibility to operate critical applications between data centers in the case of any failures.

Our national network consists of a series of national, regional, metro and hub level interconnections. Each of these layers is designed with redundancy and resiliency measures. Our network routers are connected to each other through multiple diverse layers and there is additional redundancy in these connections. As such, there are multiple paths through which we can deliver our reliable services and prepare for outages or maintenance periods.

Our teams closely track bandwidth demands, including peak periods, and use forecasting tools to inform our capacity management and network planning efforts. We model growth rates of both customers and usage per customer over time, and constantly monitor network traffic patterns, usage rates and utilization of last mile access layer networks. These analyses are continuously assessed in relation to previous days, weeks and years of network activity so we can identify trends and prepare for needed upgrades, as well as future events. These planning efforts directly influence how we invest in new equipment to meet increasing capacity demand. By installing new equipment with existing technologies and introducing new, distributed and efficient technologies, we have been able to enhance the way we bring reliable bandwidth to our customers. We are also focused on performing proactive maintenance to avoid network outages and disruptions. By using artificial intelligence, telemetry and machine learning technologies we can analyze data points regarding network health. This allows us to maintain the network more efficiently with less activity and fewer outages in service transactions impacting the customer experience.

Sponsoring Witness: Rachael Martin

Staff 1-14 Please describe any investments in emergency preparedness and response capabilities, such as backup power systems, redundant communication channels, or disaster recovery plans.

RESPONSE: Charter has taken several key steps to ensure the resilience and continued operations of our critical customer supporting platforms and operational support systems. We continuously monitor and plan for threats that can include high network demand, natural disasters and cyber-related events.

Charter's enterprise risk management process includes the identification, evaluation, classification, confirmation and ongoing monitoring of risks with potential impact on our strategic plans and business objectives. Risks are identified through discussions with executive leaders of each of our business units, and then classified as high, medium or low across three categories: impact, likelihood of occurrence and controls effectiveness. Based on this evaluation, the most pertinent risks for the Company are isolated and discussed with relevant executives and the Audit Committee. Our risk assessment results are shared with the Board on a regular basis. We then monitor and update our risk assessments as needed, depending on changes to our business environment or other factors. For example, we

continue to monitor and manage customer privacy and the cybersecurity of our network. Our process also includes an annual climate risk assessment.

Business continuity risks are multifaceted in nature. Charter has sound and robust business continuity management and disaster recovery governance processes in place, with a framework that includes:

- Business engagement
- Technical resilience, recovery plans and coordination of recovery efforts
- Execution of ongoing exercises and training

We leverage a continual service improvement approach to assess risk to our network. As natural disasters and extreme weather events are unpredictable and can be fast moving, we review, practice and update our Disaster Emergency Action Plan so that we are ready to respond. We conduct regular preventive maintenance and testing of our critical infrastructure that provides services to our customers. We review facilities at risk from extreme weather events and take proactive measures to minimize risk, including relocating facilities in flood-prone areas and using heat-resistant building materials in warmer climates. To ensure the resilience and performance of our network, we also conduct regular exercises and testing of our environments. Our Operations Centers monitor our systems around the clock using multiple state-of-the-art monitoring tools to maintain uninterrupted service. Disaster recovery testing occurs regularly on our internal systems and networks, allowing for a timely recovery of our systems in the event of a disruption. We provide our employees with disaster recovery playbooks and frequent training (e.g., classroom/online learning, tabletop exercises), enabling employees to react to incidents with confidence and in a well-rehearsed manner. If a natural disaster strikes, Charter works quickly to safely conduct field surveys to identify impacted customers and restore connectivity. An incident assessment, including assessing possible scope and impact to the business, is conducted as part of any decision to activate Charter's Emergency Management Plan.

Sponsoring Witness: Rachael Martin

Staff 1-15 Please provide a summary of any vegetation management program run by your utility to ensure adequate right of way clearance for your communications facilities.

RESPONSE: The vast majority of our facilities are attached to poles owned by other parties; Charter owns almost no poles. Thus, our vegetation practices are guided by obligations and responsibilities outlined in those agreements.

Sponsoring Witness: Mike Matson

Staff 1-16 Has your utility conducted any studies that examine the costs and benefits of burying communications facilities in weather-volatile areas of the state? If so, please provide an executive summary from the most recent study.

RESPONSE: Charter has not conducted any studies examine the costs and benefits of burying communications facilities in weather-volatile areas of Texas.

Sponsoring Witness: Mike Matson

Respectfully Submitted,

Mark Foster

Mark Foster
Texas Bar No. 07293850
FosterDanowsky LLP
904 West Ave, Suite 107
Austin, TX 78701
Office: (512) 708-8700
Fax: (512) 697-0058
mfooster@fosterdanowsky.com