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SOAH DOCKET NO. 473-25-11558
PUC DOCKET NO. 57579

APPLICATION OF CENTERPOINT ENERGY HOUSTON ELECTRIC, LLC FOR APPROVAL OF ITS 2026-2028 TRANSMISSION AND DISTRIBUTION SYSTEM RESILIENCY PLAN	**§ § § § §**	**BEFORE THE STATE OFFICE OF ADMINISTRATIVE HEARINGS**

April 7, 2025

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TABLE OF CONTENTS

Description **Page**

CENTERPOINT ENERGY HOUSTON ELECTRIC, LLC
PUC DOCKET NO. 57579
SOAH DOCKET NO. 473-25-11558

PUBLIC UTILITY COMMISSION OF TEXAS
REQUEST NO.: PUC-RFI04-01

QUESTION:

Please explain which parts of the electric system experience the most frequent damage during a major weather event. In your response, please first identify the types of major weather events that cause the most frequent damage to your system. Secondly, for each event type identified, please specify which group (such as transmission, distribution and/or substation) typically experiences the most damage. Lastly, please explain what specific equipment/part(s) from each group experience the most frequent damage for that specific major weather event type.

ANSWER:

The transmission system does not have as much equipment and typically does not suffer as much damage but can be impacted by extreme wind, water, and temperature resiliency events such as hurricanes, tornadoes, derechos, flooding, drought, and cold. The impact to customers is greater when transmission structures and poles are damaged (often more people affected by outages on the transmission system).

Substations do not typically sustain damage in extreme wind events as they are confined to a small footprint. Substations however are moresusceptible to high water and drought conditions. Outages within these substations can affect many customers as well, although not typically as significant as a transmission outage as transmission lines have higher voltages and can provide power to more customers overall.

During most extreme weather events, the distrubution system is subject to the most damage, because of its current design (e.g., wooden poles and when it was constructed), the degree, severity and frequency of resiliency events in our service area, it represents a larger portion of our geographically dispersed electrical system, and the number of devices necessary to operate and segment the grid, including transformers, fuse cutouts, IGSD's, crossarms, and capacitor banks to name a few. Outages typically impact smaller groups of customers as the distribution system distributes the energy directly to customers (as opposed to groups as seen with transmission and substation) and this equipment is lower and more likely to be impacted from treefall, debris, wildfire, and flooding conditions.

SPONSOR:
Eric Easton

RESPONSIVE DOCUMENTS:
None

CENTERPOINT ENERGY HOUSTON ELECTRIC, LLC
PUC DOCKET NO. 57579
SOAH DOCKET NO. 473-25-11558

PUBLIC UTILITY COMMISSION OF TEXAS
REQUEST NO.: PUC-RFI04-02

QUESTION:

Please explain which type of CenterPoint transmission structures (i.e. steel lattice, steel monopole, wood pole, etc.) experience the most frequent damage from major weather events. Also, please compare the vulnerability of tangent structures to angle type structures.

ANSWER:

Please see response to TIEC 1-10 (n).

Approximately 75% of structure failures in resiliency events dating back to Hurricane Ike in September of 2008 have been on wood transmission structures.

This contrasts with the fact that wood transmission structures make up approximately 7% of structures in CenterPoint Houston's transmission system as of 1/1/2025, and wood transmission structures made up approximately 30% of structures in CenterPoint Houston's transmission system in 2008.

Based on a preliminary analysis, tangent structures represent 108 (97%) of the 111 transmission structure failures in resiliency events dating back to Hurricane Ike in September of 2008. Dead-end structures (including angle structures) represent the remaining 3 (3%) transmission structure failures in resiliency events during the same period. Dead-end structures (including angle structures) make up approximately 16% of the total structures in CenterPoint Houston's transmission system while Tangent structures make up the remaining approximately 84% of the total structures.

SPONSOR:
David Mercado

RESPONSIVE DOCUMENTS:
None

CONFIDENTIAL

CENTERPOINT ENERGY HOUSTON ELECTRIC, LLC
PUC DOCKET NO. 57579
SOAH DOCKET NO. 473-25-11558

PUBLIC UTILITY COMMISSION OF TEXAS
REQUEST NO.: PUC-RFI04-03

QUESTION:

For the purpose of responding to major weather events, please explain in detail any written working strategies or agreements with neighboring utilities to provide assistance in order to reduce the duration and severity of outages.

ANSWER:

Please see attachments:
PUC RFI04-03 Attachment 1
PUC RFI04-03 Attachment 2 - SEE MA Guidelines 2022 Final 12.1.22
PUC RFI04-03 Attachment 3 - 20240626-National-Mutual-Aid-Agreement

SPONSOR:
Nathan Brownell

RESPONSIVE DOCUMENTS:
PUC RFI04-03 Attachment 1 CONFIDENTIAL.PDF
PUC RFI04-03 Attachment 2 - SEE MA Guidelines 2022 Final 12.1.22 CONFIDENTIAL.PDF
PUC RFI04-03 Attachment 3 - 20240626-National-Mutual-Aid-Agreement CONFIDENTIAL.PDF

CENTERPOINT ENERGY HOUSTON ELECTRIC, LLC
PUC DOCKET NO. 57579
SOAH DOCKET NO. 473-25-11558

PUBLIC UTILITY COMMISSION OF TEXAS
REQUEST NO.: PUC-RFI04-04

QUESTION:

Please explain in detail why CenterPoint is requesting to implement TripSaver components in their resiliency plan when these devices are a direct replacement of lateral fuses, which are typically part of a service quality (SAIDI, SAIFI) improvement plan. Also, please explain what benefit TripSaver will have during a major weather event if transmission and/or distribution circuits are inoperable.

ANSWER:

CenterPoint is not requesting to implement TripSaver components in the 2026-2028 SRP. TripSavers were included in the Company's prior resiliency plan (Docket No. 56548), but were removed from this filing because implementation will be completed prior to 2026.

SPONSOR:
Nathan Brownell

RESPONSIVE DOCUMENTS:
None

CENTERPOINT ENERGY HOUSTON ELECTRIC, LLC
PUC DOCKET NO. 57579
SOAH DOCKET NO. 473-25-11558

PUBLIC UTILITY COMMISSION OF TEXAS
REQUEST NO.: PUC-RFI04-05

QUESTION:

In reference to the Micro grid Pilot Project (PP-I), please answer the following question:

a. Provide all the technical challenges CenterPoint can potentially have by implementing and connecting to a microgrid to its system.
b. Has CenterPoint determined if the microgrid pilot will be overhead or underground or a combination of the two?
c. What type of customers will benefit from these microgrids? Please explain if the customer base will be residential, commercial or some other type?
d. At what voltage will they operate and what size loads will they serve?
e. Provide the type of sources that will feed these micro grids?
f. Please explain how CenterPoint intends to use these microgrids. Will they be used only during emergencies such a major weather event, load shedding events? Or as part of daily operations?

ANSWER:

a. The implementation of a microgrid within the Company's system include challenges such as voltage regulation and imbalance, frequency regulation, power quality, protection, generation to load balancing, phase to load balancing, microgrid boundaries, safety, detection of downed power lines, single circuits vs. multiple circuits within island, changes to fault current, bypass routes for customers downstream of a microgrid, studies for microgrid, hot line tag coordination, multiple generators, communications/telemetry, fuse coordination, control of generation and equipment within microgrids, load switching, synchronization, and other generation along circuits.

b. Current consideration is to keep the existing facilities intact (whether overhead, underground, or a combination) and design the island based on existing infrastructure, installing the necessary IGSD, monitoring, communications/telemetry, control, and protective equipment.

c. The microgrid could house residential, commercial, and possibly even industrial customers. The type of customers who would receive the most benefit would likely be residential customers as they most often do not have backup generation available at their homes and suffer the most when load shed occurs.

d. This will be highly dependent on responses to the RFP, but the intention of a utility scale microgrid could be to operate at 12 kV or 35 kV dependent on location of the equipment (i.e. generator may have an output of 480 V but use a transformer to step up the voltage to 12 kV or 35 kV) and to be oversized for the proposed load to be picked up to account for loads turning on and off within the island.

e. The generation could be a mixture of solar, battery, natural gas or other technologies that are capable of sustaining the load for an extended period (i.e. at least 10 days).

f. The current consideration is for load shed events. Microgrids also provide value during weather events provided any damages to the distribution system does not affect the ability of the microgrid to operate. The intention is not to leverage these for daily operations. However, the microgrid developer/generator owner/operator could have an opportunity to enroll within certain ERCOT markets that do not impede the ability for the microgrid to operate when called upon.

SPONSOR:
Eric Easton

RESPONSIVE DOCUMENTS:
None

CENTERPOINT ENERGY HOUSTON ELECTRIC, LLC
PUC DOCKET NO. 57579
SOAH DOCKET NO. 473-25-11558

PUBLIC UTILITY COMMISSION OF TEXAS
REQUEST NO.: PUC-RFI04-06

QUESTION:

In reference to your MUG Reconductor Measure (RM-17) and with the notion that your three phase underground systems are fed by an overhead system, please answer the following questions:

a. For all major weather events that affected CenterPoinfs service territory in the past five years, please provide a list of all outages that occurred on the underground system only that did not affect the overhead source.
b. In addition, what part of the underground system was affected (cable, connections and/or equipment)?

ANSWER:

There are no locations identified in RM-17 that would fit the description provided in PUC-RFI04-06. Three phase underground systems fed by an overhead system, including underground complexes fed from overhead and individual three-phase underground customers fed from an overhead terminal pole, are not within the scope of RM-17.

MUG Reconductor (RM-17) is intended to address two type of installations, dedicated underground circuits and underground feeder get-aways.

Most distribution circuits in our service territory include a combination of underground and overhead facilities. The first section of the distribution circuit, called feeder get-away, is most of the time underground medium voltage cable that goes from the substation to a terminal pole in or near the right of way.

Dedicated underground circuits are distribution feeders that have no overhead exposure, the distribution circuit remains underground from the substation to each point of service. Dedicated underground circuits are common in downtown Houston and Texas Medical Center among other areas.

In reference to underground systems only, without any overhead, that were affected during an extreme weather event and that are within the scope of RM-17, please see response below.

For subpart (a), please refer to confidential attachment PUC RFI 04 06 Confidential Outages in dedicated underground areas.pdf for outages in dedicated underground areas during a resiliency event in the past five years.

For subpart (b), please refer to confidential attachment PUC RFI 04 06 Confidential Outages in dedicated underground areas.pdf Failed Equipment column.

It should be noted that not all underground failures will result in customer outages. The Company's engineering design criteria for dedicated underground areas requires the installation of at least two feeders at each point of service. RM-17 will also reduce the number of unplanned outages caused by failed equipment outside of a resiliency event. There were 37 failures outside of resiliency events from 2020 to 2024 in underground areas.

SPONSOR:
Randy Pryor

RESPONSIVE DOCUMENTS:
PUC RFI 04 06 Confidential Outages in dedicated underground areas.pdf

CENTERPOINT ENERGY HOUSTON ELECTRIC, LLC
PUC DOCKET NO. 57579
SOAH DOCKET NO. 473-25-11558

PUBLIC UTILITY COMMISSION OF TEXAS
REQUEST NO.: PUC-RFI04-07

QUESTION:

In Reference to your Emergency Operations Centers (RM-38) and Hardened Service Centers (RM-39), Please provide the following information:

a. How many of each do you currently have within CenterPoint's service territory?
b. If CenterPoint already has at least one of each or more, please explain in detail the added benefit of building more.
c. Would these new assets be used only during major weather events or the entire year?

ANSWER:

a. The Company has one Emergency Operations Center, and 13 total CEHE operated service centers.

b. The proposed facilities, inclusive of an Emergency Operations Center and 4 Hardened Service Centers, give the Company the opportunity to upgrade and harden aged existing service centers to enhance our normal operations and emergency response. Of the 5 proposed new facilities, only two are added facilities, while the remaining three are rebuilds of existing locations. The two new locations will provide for a hardened Emergency Operations Center that enhances the efficiency and effectiveness of The Company's response, and an additional electric service center that will not only create efficiencies in normal daily operations but provide an additional response location in a resiliency event. Hardening the remaining three service center locations will provide an opportunity to replace aged infrastructure, and relocate location as needed to best serve the customer in the area in daily operations and emergency response. Please see response to OPUC RFI1-6 for additional details.

c. These locations would be used the entire year as well as during major weather events.

SPONSOR:
Nathan Brownell

RESPONSIVE DOCUMENTS:
None

CENTERPOINT ENERGY HOUSTON ELECTRIC, LLC
PUC DOCKET NO. 57579
SOAH DOCKET NO. 473-25-11558

PUBLIC UTILITY COMMISSION OF TEXAS
REQUEST NO.: PUC-RFI04-09

QUESTION:

Going back 10 years, please provide the number of times galloping occurred in any part of CenterPoint's system.

ANSWER:

Please see response to PUC RFI 4-8.

SPONSOR:
David Mercado

RESPONSIVE DOCUMENTS:
None

CERTIFICATE OF SERVICE

I hereby certify that on April 7, 2025, notice of the filing of this document was provided to all parties of record via electronic mail in accordance with the Second Order Suspending Rules, filed in Project No. 50664.

Terence Glenn Russell

Terence Russell