SPONSOR: Eric Easton

PUBLIC UTILITY COMMISON OF TEXAS REQUEST NO.: PUC-RFI01-126

QUESTION:

Mobile Generation

Provide the following information for mobile generation facilities already under lease or procured before July 8, 2024:

- a. The size, in MWs, of each deployed mobile generation facility;
- b. The length of time needed to move each deployed mobile generation facility from storage to its designated staging area;
- c. the length of time needed to move each mobile generation facility from staging to its deployment location;
- d. An explanation for how and where the mobile generation facility was used; and
- e. If a mobile generation facility was not used, an explanation as to why

ANSWER:

Please see attached file PUC-RFI01-126 - Beryl.xlsx

SPONSOR: Eric Easton

RESPONSIVE DOCUMENTS: PUC-RFI01-126 - Beryl

Page 1 of 1

(a) The size, in MWs, of each deployed mobile generation facility;	(b) The length of time needed to move each deployed mobile generation facility from storage to its designated staging area;	(c) the length of time needed to move each mobile generation facility from staging to its deployment location;	(d) An explanation for how and where the generation facility was used;
		Approximately 48 hours to demob at current substation location and driving time to new location. 48 hours to make ready for operation at the new location. For load shed application, since units will remain	
		at connected substation locations, make ready	
		time is 2-4 hours depending on the time it takes	
15 x 32 MW	Storage site and staging site were same	to warm up the units	
		Approximately 4 hours of demob at current	
		substation location and driving time to new	
		for operation	
		For load shed application, since units will remain	
		at connected substation location, make ready	
		time is 2-4 hours depending on the time it takes	
5 M/M	Storage site and staging site were same	to warm up the units	
5 14144	Storage site and staging site were same	Approximately 4 hours of demob at current	
		substation location and driving time to new	
		location and approximately 6-8 hrs to make ready	
		for operation	
		For load shed application, since units will remain	
		at connected substation location, make ready	
		time is 2-4 hours depending on the time it takes	
5 MW	Storage site and staging site were same	to warm up the units	
		Approximately 4 hours of demob at current	
		substation location and driving time to new	
		location and approximately 6-8 hrs to make ready	
		for operation	
		For load shed application, since units will remain	
		at connected substation location, make ready	
		time is 2-4 hours depending on the time it takes	Deployed to a senior/assisted living to ter
5 MW	Storage site and staging site were same	to warm up the units	service
		Approximately 4 hours of demob at current	
		substation location and driving time to new	
		for energian	
		For load shed application, since units will remain	
		at connected substation location, make ready	
		time is 2-4 hours depending on the time it takes	Diployed as a mid-span application to res
5 MW	Storage site and staging site were same	to warm up the units	circuit section which includes a senior/as
		Approximately 4 hours of demob at current	
		substation location and driving time to new	
		location and approximately 6-8 hrs to make ready	
		for operation	
		For load shed application, since units will remain	
		at connected substation location, make ready	
		time is 2-4 hours depending on the time it takes	Deployed to a water bottling facility to te
5 MW	Storage site and staging site were same	to warm up the units	service
		Driving time to new location from storage site ± 15	Deployed to an Emergency Call Center to
		minutes for loading and 2 hrs to make ready for	service
1 MW	Storage site and staging site were same	operation	Redeployed to a Medical Facility (vaccine

the mobile

(e) If a mobile generation facility was not used, an explanation as to why

Units placed in substation primarily for load shed support. Did not experience load shed or transmission level outages that required substation application

Did not deploy during Beryl as a suitable location was not identified or locations did not meet the technical criteria

Did not deploy during Beryl as a suitable location was not identified or locations did not meet the technical criteria

emporarily restore

store service to a ssisted living facility.

emporarily restore

o temporarily restore

e storage) as backup

1 MW	Storage site and staging site were same	Driving time to new location from storage site + 15 minutes for loading and 2 hrs to make ready for operation Driving time to new location from storage site + 15 minutes for loading and 2 hrs to make ready for	Deployed to a non-Profit Organization Housing Families with Seriously III Children to temporarily restore service Redeployed to a senior/assisted living to temporarily restore service
500 kW	Storage site and staging site were same	operation Driving time to new location from storage site + 15 minutes for loading and 2 hrs to make ready for	Deployed to a cooling center to temporarily restore service
500 kW	Storage site and staging site were same	operation	Deployed to a medical facility to temporarily restore service
400 kW	Storage site and staging site were same	Driving time to new location from storage site + 15 minutes for loading and 2 hrs to make ready for operation Driving time to new location from storage site + 15	Deployed to a medical facility to temporarily restore service Redeployed to water bottling facility Redeployed to a cooling center to temporarily restore service
400 kW	Storage site and staging site were same	minutes for loading and 2 hrs to make ready for operation Driving time to new location from storage site + 15 minutes for loading and 2 hrs to make ready for	Deployed to a community center to temporarily restore service
400 kW	Storage site and staging site were same	operation Driving time to new location from storage site + 15 minutes for loading and 2 hrs to make ready for	Deployed to a cooling center to temporarily restore service
400 kW	Storage site and staging site were same	operation	Deployed to a water facility to temporarily restore service

Docket No. 56822 PUC-RFI01-126 - Beryl Page 2 of 2

PUBLIC UTILITY COMMISON OF TEXAS REQUEST NO.: PUC-RFI01-127

QUESTION:

Mobile Generation

Please describe all situations in which the TDU's leased or procured mobile generation facilities were deployed before Hurricane Beryl. If applicable, please describe how those previous deployment situations differed from the use cases initially contemplated by the TDU.

ANSWER:

Please see the list below describing the TEEEF deployments prior to Hurricane Beryl

September, 2021	Lake Jackson	Following the widespread power outages resulting from Hurricane Nicholas, a 5MW TEEEF unit was deployed to Lake Jackson Civic Center which was being used as a cooling and water distribution center to temporarily restore power while the distribution circuits were being rebuilt.
January, 2023	Pasadena	A 5MW TEEEF was used to provide temporary service to Pasadena ISD school following damages resulting from a tornado.
June, 2023	Spring	Two 5MW TEEEF units were deployed to locations near Spring, TX following damages resulting from a microburst. Both TEEEF units were connected to sections of two different distribution circuits as a mid-span deployment to temporarily restore service to several customers. Total number of customers restored by both deployments was 344.
August, 2023	Pelican Island	Two 5MW TEEEF units were deployed to Pelican Island as backup following an incident when a barge caused damages to one of the two circuits providing power to the island. The outage lasted for a few months. With limited access to the island, a potential failure to the remaining circuit would have resulted in leaving the island without power for an extended period of time.
May, 2024	Greater Houston Area	Thirteen TEEEF deployments were made following damages and significant outages resulting from the Derecho event in May, 2024. All deployments were point use, providing temporary service to single customer locations. Types of locations energized on TEEEF include police/public safety, hospital and medical facilities, senor living facility, cooling centers and schools.

SPONSOR: Eric Easton

PUBLIC UTILITY COMMISON OF TEXAS REQUEST NO.: PUC-RFI01-128

QUESTION:

Mobile Generation

Please provide the following information on power restoration plans or procedures regarding critical infrastructure facilities.

- a. Did the TDU develop a list of critical infrastructure facilities within the TDU's service territory?
- b. Did the TDU develop emergency preparedness plans in collaboration with critical infrastructure facilities in its service territory?
- c. Did the TDU develop a list of routes for use in reaching critical infrastructure facilities during an emergency or significant power outage?
- d. Did the TDU identify the specific steps it would take to energize critical infrastructure facilities in its service territory with mobile generation facilities?
- e. Did the TDU pre-position mobile generation facilities at critical infrastructure facilities in its service territory to respond to significant power outages in a timely manner?

ANSWER:

- a. Yes, CenterPoint Houston maintains a list of Critical Infrastructure facilities within the its Service territory.
- b. The company's emergency preparedness plan and prioritization of critical infrastructure facilities is informed by obtaining a list of critical infrastructure facilities directly from cities within its service territory. Customers can also self-identify as a critical load customer on the company's website. In an effort of continuous improvement, the company is developing processes to establish pre-hurricane season communications on preparedness with these customers and will continue the plan of communicating with these customers prior to, during, and after the impact of a major storm event.
- c. As a general matter, the Company develops alternative geographic routes and routes for serving customers with electric service based on real-time assessments of damage to the system and service territory during an emergency situation or significant power outage.

In terms of geographic routes to allow the Company to deploy personnel and resources to critical infrastructure facilities during an emergency or significant power outage, the Company did not develop a list of alternative routes for reaching critical infrastructure facilities in advance. Due to the Company's familiarity with its service territory and locations of such facilities, Company personnel are generally aware of alternative routes (and can instruct mutual assistance crews as needed) to reach critical infrastructure facilities and modify transportation plans depending on the location of the facility and the location and extent of any damage to roads surrounding the facility.

In terms of routing electricity to a specific load, System Planning considers multiple factors such as breaker settings, wire size, system accessibility, and loading in that configuration. Even with analysis in advance, in an emergency situation, the Company still must analyze the alternate routes for serving a customer for any damage and consider issues such as potential load swings on the new route.

Page 1 of 2

- d. Yes. CenterPoint Houston has processes and procedures outlining steps to energize critical infrastructure facilities in its service territory with TEEEF. A list of critical infrastructure facilities within the CenterPoint Houston electric service territory that were without power was generated shortly after Hurricane Beryl passed through the region. These facilities were prioritized for TEEEF according to the "General Framework for Small-United Mobile Generation Deployment" (attached).
- e. CEHE did not pre-position TEEEF facilities at critical infrastructure facilities prior to Beryl due to the uncertainty in area of impact. Instead, it positioned the smaller units at designated staging locations along with dedicated transport and worked with customers and through its priority list to transport them quickly as needed.

SPONSOR:

Rina Harris

RESPONSIVE DOCUMENTS:

PUC-RFI01-128 - General Framework for Small-United Mobile Generation Deployment

General Framework for Small-United Mobile Generation Deployment			
General Priority Level*	Category	Examples of Category	
1	Hospital	100 Bed In-Patient Hospitals, Cancer Treatment, Level 1 Trauma Center	
2	Emergency Services / HAS	City/County Emergency Management, Police, Fire/Ambulatory Facilities, Critical Airport Facilities, etc.	
3	Cooling Centers	Cooling Centers designated by local cities	
4	Senior/Assisted Living	Services Support	
5	Small ERs/Dialysis	Out-Patient Care Facilities, Dialysis Clinics, Small ER Centers	
6	Clinics/Pharmacy	Urgent Care, Clinics, Commercial Pharmacies	
. 7	Grocery Stores	Major Grocery Store Chains	
8	Hardware Stores/Commercial	Commercial facilities that support logistics/supply chain, community, individual relief and restoration efforts	

*General Priority Levels as Guidance for Mobile Generation Deployment

PUBLIC UTILITY COMMISON OF TEXAS REQUEST NO.: PUC-RFI01-129

QUESTION:

Mobile Generation

Please provide the following information regarding drills, procedures, and plans to use mobile generation facilities.

- a. Did the TDU develop operating plans or procedures for the deployment of mobile generation? If so, please describe the TDUs strategy for deploying its mobile generation.
- b. Did the TDU assign specific personnel to manage, either directly or indirectly, the operation and deployment of its mobile generation facilities?
- c. Did the TDU conduct personnel trainings or preparedness drills for the operation of its mobile generation facilities?
- d. Please describe any plans or procedures developed in coordination with other TDUs or mutual assistance groups for the operation or deployment of mobile generation.

ANSWER:

- a. Yes. CenterPoint Houston follows established procedures for deployment of TEEEF facilities. These are documented in the TEEEF Annex in the Emergency Operations Plan publicly filed with PUC in Docket 53385 as well as internal documents developed by various teams. Procedures for deployment of TEEEF have been in development through stakeholder engagements from internal teams and from input provided by generator operator. These procedures are being reviewed and modified as needed based on lessons learned and feedback received from each team during deployments or discussions. See the Company's filing in Docket 53885 for the EOP plan and the attached document "TEEEF Procedures(Draft)_HighlyConfidential.pdf" showing internal procedures for TEEEF deployment. See also the responses to question 1-133 and 1-128(d) for additional information about the deployment prioritization.
- b. Yes. CenterPoint Houston has created a team whose EOP responsibility is to coordinate deployment of TEEEF. This team performs the technical review of potential locations, coordinates transport, fueling and other logistics for TEEEF deployments. The team also directs CenterPoint Houston operations teams, mutual assistance crews or TEEEF operators as needed to perform TEEEF connections and operation.
- c. Yes. CenterPoint Houston performs periodic training as part of EOP drills and tabletops to prepare for deployment and operation of TEEEF. This drill team includes engineering teams, operations teams, generator operators, and other internal teams that supports TEEEF deployment logistics. Engineering and operations teams have also created training videos and procedural documents to assist with connection and operation of TEEEF units.
- d. CenterPoint Houston and another TDU had scheduled a joint session to exchange lessons learned and best practices which had to be cancelled due to Hurricane Beryl landfall. This session will be rescheduled for a later time. CenterPoint Houston is looking forward to working with other TDUs and exploring avenues to exchange knowledge and developed best practices through a coordinated effort.

SPONSOR: Eric Easton

RESPONSIVE DOCUMENTS: PUC-RFI01-129 - TEEEF Procedures(Draft)_HighlyConfidential

PUBLIC UTILITY COMMISON OF TEXAS REQUEST NO.: PUC-RFI01-130

QUESTION:

Mobile Generation

Please provide the following information regarding each mobile generation facility borrowed during Hurricane Beryl as part of a mutual assistance program or agreement.

- a. How the original request for mobile generation facilities through mutual assistance was made;
- b. The size, in MW, of each borrowed mobile generation facility;
- c. The date the mutual assistance program or agreement was entered;
- d. The date the borrowed mobile generation facility was deployed;
- e. The duration, in hours, of the borrowing agreement. Describe whether this duration was for a fixed number of hours or a specific number of operating hours;
- f. The identity of the original owner or lessor of the mobile generation facility subject to the mutual assistance program or agreement; and
- g. Whether obtained mobile generation facilities were used during, or in power restoration efforts following, Hurricane Beryl.
 - i. If the mobile generation facility was not deployed, provide an explanation as to why the mobile generation facility was not deployed; and
 - ii. If the mobile generation facility was deployed, provide an explanation of how it was used.

ANSWER:

Please see attached document PUC-RFI01-130 - Beryl.xlsx.

SPONSOR: Eric Easton

RESPONSIVE DOCUMENTS: PUC-RFI01-130 - Beryl.xlsx

Page 1 of 1

(a) How the original request for mobile generation facilities through mutual assistance was made;	(b) The size of the acquired mobile generation facility in MWs;	(c) The date the agreement was entered	(d) The date the acquired mobile generation facility was deployed	(e) The duration of the agreement	(f) The identify of the original owner or lessor of the mobile generation facility subject to the mutual assistance program or agreement
Phone call	560 kW	Units were received under Mutual assistance agreement. No separate agreement was entered in to for the generators. The units arrived on 7/12/2024	7/13/2024	Units were received under Mutual assistance agreement. No separate agreement was entered in to for the generators. The units were released on 7/19/2024	AEP
Phone call	560 kW	Units were received under Mutual assistance agreement. No separate agreement was entered in to for the generators. The units arrived on 7/12/2024	7/14/2024	Units were received under Mutual assistance agreement. No separate agreement was entered in to for the generators. The units were released on 7/19/2024	AEP
Phone call	560 kW	Units were received under Mutual assistance agreement. No separate agreement was entered in to for the generators. The units arrived on 7/12/2024	7/14/2024	Units were received under Mutual assistance agreement. No separate agreement was entered in to for the generators. The units were released on 7/19/2024	AEP
Phone call	560 kW	Units were received under Mutual assistance agreement. No separate agreement was entered in to for the generators. The units arrived on 7/12/2024		Units were received under Mutual assistance agreement. No separate agreement was entered in to for the generators. The units were released on 7/19/2024	AEP
Email and Phone call	625 kW	Units were received under Mutual assistance agreement. No separate agreement was entered in to for the generators. The units arrived on 7/11/2024	7/12/2024	Units were received under Mutual assistance agreement. No separate agreement was entered in to for the generators. The units were released on 7/16/2024	Oncor
Email and Phone call	625 kW	Units were received under Mutual assistance agreement. No separate agreement was entered in to for the generators. The units arrived on 7/12/2024	7/12/2024	Units were received under Mutual assistance agreement. No separate agreement was entered in to for the generators. The units were released on 7/16/2024	Oncor
Email and Phone call	625 kW	Units were received under Mutual assistance agreement. No separate agreement was entered in to for the generators. The units arrived on 7/12/2024	7/13/2024	Units were received under Mutual assistance agreement. No separate agreement was entered in to for the generators. The units were released on 7/18/2024	Oncor
Email and Phone call	625 kW	Units were received under Mutual assistance agreement. No separate agreement was entered in to for the generators. The units arrived on 7/12/2024	7/13/2024	Units were received under Mutual assistance agreement. No separate agreement was entered in to for the generators. The units were released on 7/18/2024	Oncor
Email and Phone call	1.2 MW	Units were received under Mutual assistance agreement. No separate agreement was entered in to for the generators. The units arrived on 7/10/2024	7/11/2024	Units were received under Mutual assistance agreement. No separate agreement was entered in to for the generators. The units were released on 7/16/2024	Oncor
Email and Phone call	1.2 MW	Units were received under Mutual assistance agreement. No separate agreement was entered in to for the generators. The units arrived on 7/10/2024	7/10/2024	Units were received under Mutual assistance agreement. No separate agreement was entered in to for the generators. The units were released on 7/16/2024	Oncor
Email and Phone call	1.2 MW	Units were received under Mutual assistance agreement. No separate agreement was entered in to for the generators. The units arrived on 7/10/2024	7/10/2024	Units were received under Mutual assistance agreement. No separate agreement was entered in to for the generators. The units were released on 7/18/2024	Oncor
Email and Phone call	1.2 MW	Units were received under Mutual assistance agreement. No separate agreement was entered in to for the generators. The units arrived on 7/10/2024	7/10/2024	Units were received under Mutual assistance agreement. No separate agreement was entered in to for the generators. The units were released on 7/18/2024	Oncor

(g) i. If the mobile generation facility was not deployed, provide an explanation as to why the mobile generation facility was not deployed.	(g) ii. If the mobile generation facility was deployed, provide an overview of how it was used.
	Used to pick up load for point of use customers.
	Used to pick up load for point of use customers.
	Used to pick up load for point of use customers.
was not identified or locations did not meet the technical criteria. It was more efficient and faster to deploy another AEP unit which was configured for the correct voltage level needed than deploying this unit.	
	Used to pick up load for point of use customers.
	Used to pick up load for point of use customers.
	Used to pick up load for point of use customers.
	Used to pick up load for multiple customers on circuit.
	Used to pick up load for point of use customers.
	Used to pick up load for point of use customers.
	Used to pick up load for point of use customers.
	Used to pick up load for point of use customers.

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Docket No. 56822 PUC-RFI01-130 - Beryl Page 2 of 2

PUBLIC UTILITY COMMISON OF TEXAS REQUEST NO.: PUC-RFI01-131

QUESTION:

Mobile Generation

When mobile generation facilities are offered to other TDUs during significant power outages, what information does the loaning TDU require from the borrowing TDU related to the probable operation of the mobile generation?

ANSWER:

When CenterPoint Houston reached out to other utilities to request TEEEF as part of mutual assistance, the context around use of TEEEF to aid restoration of service was provided. The loaning utility informed CenterPoint Houston of the TEEEF units that were in their possession that could be loaned. The loaning utility asked CenterPoint Houston for the size and quantity of units that CenterPoint Houston would like to request and also asked for the delivery or staging location to transport the units to. When CenterPoint Houston offered its TEEEF units to other utilities to aid in service restoration, a similar process was followed. No additional information was required by the loaning TDU.

SPONSOR:

Eric Easton

PUBLIC UTILITY COMMISON OF TEXAS REQUEST NO.: PUC-RFI01-132

QUESTION:

Mobile Generation

Please describe if any mobile generation facilities in the TDU's control were deployed in the service territories of municipally owned utilities or electric cooperatives during Hurricane Beryl.

ANSWER:

No TEEEFs in CenterPoint Houston's control were deployed in service territories of municipally owned utilities or electric cooperatives during Hurricane Beryl.

SPONSOR:

Eric Easton

PUBLIC UTILITY COMMISON OF TEXAS REQUEST NO.: PUC-RFI01-133

QUESTION:

Mobile Generation

Please describe how the determination was made regarding when and where to deploy or redeploy each mobile generation facility during, or in response to, Hurricane Beryl.

ANSWER:

Please see attached document Beryl_TEEEF_Deployment.pdf on details regarding deployment of TEEEF during post-Beryl restoration.

SPONSOR:

Eric Easton

RESPONSIVE DOCUMENTS: PUC-RFI01-133 - Beryl_TEEEF_Deployment

PUC-RFI01-133

General Process for Temporary Emergency Electric Emergency Facility Deployment

CEHE's Emergency Operations Plan details the general process for deployment of temporary emergency electric energy facilities (TEEEF or temporary generation facilities).¹ Based on system needs, and in coordination with appropriate government officials and regulators, CEHE will determine the potential sites where TEEEF units may be deployed. In making its determination, CEHE will consider good utility practice, system conditions, event-specific circumstances, and customer needs during each event. Depending on the type of the event, deployments are done at the substations where units are pre-staged as in the case of a generation adequacy event or deployed either at substations for events affecting transmission facilities or at distribution for events affecting distribution facilities. For significant events that primarily affect service to distribution facilities, small temporary generation facilities are typically used closer to customer's point of service. The following table summarizes the process detailed in CEHE's EOP under which smaller temporary generation facilities (i.e., 5 MW and less) are deployed.²

Level	Trigger	Action Items
1: Notification	Internal communication about a potential	Vendor is notified about possible
	event that may cause significant power	deployment
	outages	
2: Preparation	Internal communication about an	Vendor is contacted about an expected
	impending event that may cause	event and directed to prepare for
	significant power outages and	potential deployment
	expectation of small load support	
3: Pre-	Internal review and discussion about	Vendor is directed to ready facilities
deployment	potential deployment sites	and personnel for deployment and to
		arrange for transportation and
		permitting if necessary
4: Deployment	Deployment sites are determined and the	Vendor is directed to transport and
	decision to deploy units is made	mobilize facilities to deployment sites;
5: Recall	Facilities are recalled or redeployed	Facilities recalled or redeployed

Prior to, during, and after deployment, the following internal CEHE teams provide support:

- <u>Deployment Team</u>: Oversees the deployment, dispatch, and operation of temporary generation facilities
- <u>Distribution Control Operations</u>: Assists operations through switching orders, isolation of circuits, and load reduction
- <u>Substation Operations and Major Underground</u>: Supports temporary generation facilities operation at substations (including set-up and recall)
- Procurement: Procures materials and supplies needed to support temporary generation facilities
- Fleet: Procures fuel and fuel tanks
- Environmental: Provides support for environmental issues and permitting
- Safety: Works on site to verify that the operation of the temporary generation facilities and the

¹ CEHE's Emergency Operations Plan was filed with the Commission on March 15, 2024 in Project No. 53385.

² Larger temporary generation facilities (i.e., 30 MW and above) are deployed under a similar process.

site are safe

- <u>Security</u>: Provides security at sites where temporary generation facilities are deployed
- Transaction Management and AMS Technologies: Provides support for retail billing issues

In addition to the process outlined in CEHE's Emergency Operations Plan, CEHE also has a general framework to prioritize the deployment of smaller temporary generation facilities to critical facilities. CEHE coordinates with customers to determine potential deployment needs. The following table summarizes this framework.

Priority	Category
1	Hospitals: Level 1 trauma center, 100+ bed in-patient
	hospital, cancer treatment center
2	Emergency Services/Airport: City and County
	Emergency Management, First Responder Facilities
	(Police, Fire Ambulatory), Airport Facilities
3	Cooling Centers
4	Senior/Assisted Living
5	Small Emergency Rooms/Dialysis
6	Clinics/Pharmacy
7	Grocery Stores
8	Commercial facilities that support logistics, supply
	chain, and community and individual relief and
	restoration efforts

When deploying TEEEF to a specific site, CEHE also considers operational factors such as: (1) road access to transport a unit to a site; (2) whether there is sufficient physical space to operate the unit; (3) whether the unit is of a sufficient size to meet a customer's needs; (4) voltage considerations; (5) phasing compatibility; and (6) confirmation from the customer's electrician that the customer's facilities are electrically intact and can be safely served by a unit.

Temporary Emergency Electric Energy Facility Deployment During Hurricane Beryl Restoration

Prior to Hurricane Beryl making landfall on July 8, 2024, CEHE began preparations to deploy TEEEF units to aid its restoration efforts. On July 5, 2024, CEHE directed the 3rd party vendor and prepared internal resources for possible TEEEF deployment. On July 7, 2024, CEHE reviewed its current list of critical facilities such as hospitals, cooling centers, water treatment plants, etc. As soon as it was safe to do so after Hurricane Beryl had departed our service area, CEHE began deploying resources to begin the damage assessment and restoration process. As part of this process, options for TEEEF deployment were evaluated for transmission, substation and distribution applications based on level of damage. CEHE reviewed outages that affected critical customers and developed plans to prioritize restoration for these critical facilities. Additionally, CEHE received communication from community stakeholders, including city and county officials, regarding the outage status on their key facilities. The CEHE internal team responsible for evaluating and deploying TEEEF units began the technical review of potential critical facilities from both the sources listed above to assess feasibility of deployment by considering factors such as those listed above and determined sites where temporary generation facilities can be deployed. Finally, CEHE procured additional TEEEF from its vendors and through the mutual assistance process.

Docket No. 56822 PUC-RFI01-133 – Beryl_TEEEF_Deployment.pdf Page 3 of 5

Once a critical facility was identified and confirmed as suitable for a TEEEF unit, CEHE engaged with the customer on potential TEEEF deployment and conveyed expectations, including the need to have the customer's electrician on site during both the TEEEF unit's connection and disconnection. CEHE coordinated with internal stakeholders, the logistics team, and mutual assistance teams as needed to transport and connect TEEEF units to customer sites. Once a TEEEF unit was enroute to a deployment site, CEHE utilized internal and external resources to coordinate the installation of temporary fencing and site security to ensure safety and to schedule periodic refueling for the unit. After a TEEEF unit was connected and running, CEHE verified proper phasing sequencing between the unit and the customer's facility or distribution circuit and continued adding load, coordinating with the customer's electrician when needed. In two deployments, TEEEF units were connected mid-span, i.e., on a distribution system conductor and not at the customer's point of delivery, thus allowing the TEEEF units to provide electricity to multiple customers. Permits to transport 5MW temporary generation facilities were acquired by the transportation company; however, the Disaster Declaration issued by the Acting Governor on July 6, 2024 also waived the permit requirements to transport the units. Smaller units (i.e., less than 5 MW) do not require special permits to transport. At times, TEEEF units that were transported to certain customer sites could not be deployed as utility service was restored before connections were made or customer had existing back-up generator service their facility. When this happened, the unit was rerouted to the next customer location identified if compatible or returned to the staging site awaiting further review of locations.

Once system restoration efforts were completed and electricity was restored, CEHE then coordinated with the same stakeholders to safely disconnect TEEEF. By July 18, 2024, the TEEEF units that were deployed were recalled, and the TEEEF units that were procured through mutual assistance were released.

The following table summarizes the TEEEF units that CEHE had on hand and were procured during restoration following Hurricane Beryl.

Date	Units	
On hand	2 x 500 kW	
	2 x 1 MW	
	5 x 5 MW	
July 7	4 x 400 kW	
July 10	4 x 1.2 MW*	
July 12	3 x 230 kW	
	2 x 200 kW	
	4 x 560 kW*	
	1 x 625 kW*	
July 13	3 x 625 kW*	
*Mutual assistance unit		

The following table summarizes the process under which TEEEF were deployed to aid in restoration after Hurricane Beryl.

Level	Trigger	Actions Taken
1: Notification	Monitoring of Hurricane Beryl	Vendors are notified about possible
(June 27-July 7)		deployment
2: Preparation	Internal determination to prepare for	Vendors are contacted to prepare for
(July 5)	potential deployment	potential deployment

		Fage 4 01 J
3: Pre-	Internal review and discussion about	Review list of critical facilities that may
deployment	potential deployment sites	be candidates for TEEEF units is
(July 7)		compiled
		Four additional 400 kW TEEEF units
		Engagement with critical facilities
4: Deployment	TEEEF units are deployed at twenty-eight	Continued engagement with critical
(July 8-17)	(28) sites throughout CEHE's service area	facilities
		Assess outages that impacted critical
		facilities
		Seventeen additional TEEEF units
		procured
		Coordinate transportation and
		connection of units
		Installation of temporary fencing;
		arrange for periodic refueling of units
5: Recall	Units are recalled	Units are recalled and mutual
(July 16-18)		assistance units are released
	1	

There was a total of thirty-one (31) deployments of TEEEF units at twenty-eight (28) sites throughout CEHE's service area. The following table summarizes the sites at which TEEEF units were deployed.

Site	Count
Community Center	1
Emergency Call Center	1
Jail	1
Hospital/Medical Facility	7
Non-Profit Organization Housing Families	1
with Seriously III Children	
Senior/Assisted Living Facility	9
Cooling Center	4
Water/Sewer Facility	2
Water Bottling Facility	2
Total	28

The following timeline summarizes the dates and times of CEHE's deployment of TEEEF units and the approximate run time for each deployment.

Date	Start	Deployment	
	Time		(Hours)
July 8	8:45 p.m.	1 MW unit deployed to Emergency Call Center	55
	11:00 p.m.	1 MW unit deployed to Non-Profit Organization Housing	38

Docket No. 56822

PUC-RFI01-133 - Beryl_TEEEF_Deployment.pdf

			<u> </u>
		Families with Seriously III Children	
July 9	9:55 a.m.	500 kW unit deployed to Cooling Center	123
	7:30 p.m.	400 kW unit deployed to Cooling Center	117
		500 kW unit deployed to Hospital	117
	9:00 p.m.	400 kW unit deployed to Community Center	114
July 10	12:30 a.m.	400 kW unit deployed to Medical Facility	42
	3:10 p.m.	1.2 MW unit deployed to Medical Facility*	114
	8:45 p.m.	1.2 MW unit deployed to Cooling Center*	88
		1.2 MW unit deployed to Water Facility*	20
July 11	1:20 a.m.	5 MW unit deployed to Senior/Assisted Living Facility	60
	3:44 p.m.	5 MW unit deployed to Senior/Assisted Living Facility ³	43
	5:15 p.m.	400 kW unit deployed to Water Facility (replaced 1 MW unit	135
		previously deployed on July 10th)	
	6:15 p.m.	1 MW unit deployed to Senior/Assisted Living Facility	23
	7:58 p.m.	1.2 MW unit deployed to Jail*	70
	10:45 p.m.	1.2 MW unit deployed to Hospital*	44
July 12	1:30 a.m.	400 kW unit deployed to Water Bottling Facility	27
	4:15 p.m.	625 kW unit deployed to Assisted Living Facility*	66
	8:44 p.m.	625 kW unit deployed to Medical Facility*	696
	9:06 p.m.	5 MW unit deployed to Water Bottling Facility	60
July 13	10:50 a.m.	625 kW unit deployed to Water Bottling Facility* (replaced 400	46
		kW unit previously deployed on July 11th)	
	12:50 p.m.	230 kVA/130 kVA unit deployed to Medical Facility	0.4
	2:39 p.m.	230 kVA/130 kVA unit deployed to Medical Facility	48
	2:40 p.m.	625 kW unit deployed to Assisted Living Facility*4	3
	3:41 p.m.	560 kW unit deployed to Medical Facility* (replaced 230	19
		kVA/130 kVA unit previously deployed on same day)	
	6:00 p.m.	400 kW unit deployed to Cooling Center	51
July 14	3:40 p.m.	560 kW unit deployed to Assisted Living Facility*	51
	6:20 p.m.	560 kW unit deployed to Assisted Living Facility*	651
	11:45 p.m.	1.2 MW unit deployed to Sewer Facility*	40
July 17	7:25 p.m.	560 kW unit deployed to Assisted Living Facility	22
*Mutual a	assistance unit		

Additionally, a 1 MW unit was deployed to a medical facility as back up, but the unit was not needed.

 $^{^{\}scriptscriptstyle 3}\,$ The connection of the 5 MW unit was mid-span.

 $^{^{\}rm 4}\,$ The connection of the 625 kW unit was mid-span.

PUBLIC UTILITY COMMISON OF TEXAS REQUEST NO.: PUC-RFI01-134

QUESTION:

Mobile Generation

Please describe the number of distribution customers that had power restored by each mobile generation facility leased or procured by the TDU during, or in response to, Hurricane Beryl.

ANSWER:

Please see table below for number of distribution customers that had power restored by each CenterPoint Houston TEEEF unit deployment. Please refer to CenterPoint Houston response on PUC-RFI01-133 for additional details on the deployment.

Utility	TEEEF Unit Capacity	Customer Count Restored	Application
CenterPoint Houston	1 MW	2	2 separate point uses
CenterPoint Houston	1 MW	1	Point use
CenterPoint Houston	230 kW	1	Point use
CenterPoint Houston	230 kW	1	Point use
CenterPoint Houston	400 kW	1	Point use
CenterPoint Houston	400 kW	1	Point use
CenterPoint Houston	400 kW	3	3 separate point uses
CenterPoint Houston	400 kW	1	Point use
CenterPoint Houston	500 kW	1	Point use
CenterPoint Houston	500 kW	1	Point use
CenterPoint Houston	5 MW	1	Point use
CenterPoint Houston	5 MW	367	Mid-Span
CenterPoint Houston	5 MW	1	Point use

"Customer" refers to a meter and, therefore, what is counted as a single customer may be a meter at a senior living facility, cooling center, or other site that actually serves dozens or hundreds of people.

"Point use" refers to the energization of a single customer.

"Mid-Span" refers to the energization of an entire segment of a distribution circuit. In the above instance, mid-span energization was used to energize a critical facility, which had the effect of energizing the other 366 connected to the circuit segment.

SPONSOR: Eric Easton

RESPONSIVE DOCUMENTS: None

Page 1 of 1

PUBLIC UTILITY COMMISON OF TEXAS REQUEST NO .: PUC-RFI01-135

QUESTION:

Mobile Generation

Please describe the number of distribution customers that had power restored by each mobile generation facility obtained through mutual assistance during, or in response to, Hurricane Beryl.

ANSWER:

Please see table below showing number of customers that had power restored through mutual assitance TEEEF units. Please refer to CEHE response on PUC-RFI01-133 for additional details on the deployment.

Utility	TEEEF Unit Capacity	Customer Count Restored	Application
AEP	560 kW	2	2 separate point use
AEP	560 kW	1	Point use
AEP	560 kW	1	Point use
Oncor	1.2 MW	1	Point use
Oncor	1.2 MW	1	Point use
Oncor	1.2 MW	3	3 separate point use
Oncor	1.2 MW	1	Point use
Oncor	625 kW	1	Point use
Oncor	625 kW	1	Point use
Oncor	625 kW	1	Point use
Oncor	625 kW	65	Mid-span

SPONSOR:

Eric Easton

PUBLIC UTILITY COMMISON OF TEXAS REQUEST NO.: PUC-RFI01-136

QUESTION:

Mobile Generation

Please describe the number of transmission customers that had power restored by a mobile generation facility leased or procured by the TDU during, or in response to, Hurricane Beryl.

ANSWER:

No transmission customers had power restored through TEEEF that CenterPoint Houston leased.

SPONSOR: Eric Easton

PUBLIC UTILITY COMMISON OF TEXAS REQUEST NO.: PUC-RFI01-137

QUESTION:

Mobile Generation

Please describe the number of transmission customers that had power restored by a mobile generation facility obtained through mutual assistance during, or in response to, Hurricane Beryl.

ANSWER:

No transmission customer had power restored by TEEEF obtained through mutual assistance.

SPONSOR: Eric Easton

PUBLIC UTILITY COMMISON OF TEXAS REQUEST NO.: PUC-RFI01-138

QUESTION:

Mobile Generation

If applicable, please note if any fueling problems arose with deployed mobile generation facilities during, or in response to, Hurricane Beryl. If so, please describe the fueling problems in detail and any action that the TDU took in response.

ANSWER:

There was one instance of a TEEEF unit running out of fuel causing the unit to trip. Once CenterPoint became aware of the trip, refueling was initated immediately and the unit was brought back on within two hours of tripping. A new tracking system for fueling was established and shared with the fuel logistics team to prevent any future challenges with fueling.

SPONSOR: Eric Easton

PUBLIC UTILITY COMMISON OF TEXAS REQUEST NO.: PUC-RFI01-139

QUESTION:

Mobile Generation

Please describe all costs incurred by the TDU that were associated with the deployment of mobile generation facilities during, or in response to, Hurricane Beryl.

ANSWER:

Please see Attachment PUC01-139 for a quantification of costs incurred by CenterPoint Houston through 7/31/24 associated with the deployment of Temporary Emergency Electric Energy Facilities (TEEEF) for Hurricane Beryl. Costs incurred through that date include internal labor, materials and supplies, and associated overheads. It does not include costs for invoices that had not been received as of book close 7/31/24, including costs related to fuel, TEEEF units provided through mutual assistance, etc.

SPONSOR: Jeff Garmon

RESPONSIVE DOCUMENTS: PUC-RFI01-139 - Attachment CenterPoint Energy Houston Electric LLC. TEEEF - Hurricane Beryl Deployment Workorder (112841435) As of 7/31/24

GL Account	GL Account Description	Amount
530999	M&S-Inventory Issued	\$ 176,143
641002	Stores Overhead	976
641003	Transportation OH	15,950
641109	BU PBOH - Benefits	24,371
641110	BU PBOH - Ben. NSC	1,850
641111	BU PBOH - Works Comp	485
641112	BU PBOH-Ben. P/R Tax	8,237
643001	Un labor-ST-IntAlloc	2,449
643002	Un Labor 1 1/2-IntAl	1,051
643003	Un Labor-DBL-Int Act	104,286
Total		\$ 335,797

PUBLIC UTILITY COMMISON OF TEXAS REQUEST NO.: PUC-RFI01-140

QUESTION:

Mobile Generation

Please describe any obstacles that limited the deployment of mobile generation facilities during, or in response to, Hurricane Beryl.

ANSWER:

- Customer voltage levels and availability of generators to support these Many locations identified were single phase 120/240 V locations and there are limited generators capable of this at the levels needed to support. Generators also could not be deployed to services that are on URD loops.
- Spacing for placement of generators Even in cases where customer voltage levels and load values were compatible with available TEEEF units, space availability to place the unit to make necessary connections was also another factor which made TEEEF deployment less feasible.
- Determining location of 5MW generators to be placed for mid-span application Mid-span deployment often required availability of damage assessment reports to identify optimal locations for placement of TEEEF units.
- 4. CEHE had to abandon efforts to deploy 5MW TEEEF at one location due to threats faced by employees and contractors at the location while TEEEF was being connected. Employees were asked to vacate premise due to safety concerns.

SPONSOR: Eric Easton

PUBLIC UTILITY COMMISON OF TEXAS REQUEST NO.: PUC-RFI01-141

QUESTION:

Mobile Generation

Please describe any procedural improvements that the TDU intends to make prior to the next deployment of mobile generation facilities. If available, please reference specific sections of any after action report or lessons learned document the TDU has created.

ANSWER:

CenterPoint Houston implemented several process improvements during Hurricane Beryl on TEEEF deployment. CenterPoint Houston will continue to implement these in future deployments. These changes include:

- . Dedicated standby personnel for transport.
- Expand field crew support by including contract and mutual assistance major underground crews to enable additional deployments each day.
- Improve fueling coordination by utilizing a tracking system shared among teams that support TEEEF deployment and fueling.

Additional measures that CenterPoint Houston will implement include:

- . Use of prior list of reviewed locations to speed up the technical review process.
- Use of new tools to quickly extract information needed to perform technical review such as voltage, transformer configuration, historical loading, etc.
- Use of new geospatial tools to identify areas of high outage impact following hurricane landfall to quickly prioritize and identify areas for deployment.
- Utilize a pre-identified list of critical customer locations developed through coordination between various cities, counties, and customer engagements for faster review of outage impact and TEEEF deployment.
- Develop and utilize a more streamlined process for prioritizing restoration of critical customers including deployment of TEEEF.

CenterPoint Houston has engaged a third party to conduct an independent after-action review of CenterPoint Houston's response to Hurricane Beryl on the CenterPoint Houston transmission and distribution system. CenterPoint Houston will supplement this response if needed based on the results and recommendations of the independent after-action review upon the completion of the review.

SPONSOR:

Eric Easton

RESPONSIVE DOCUMENTS: None

Page 1 of 1

The following files are not convertible:

PUC-RFI01-017 - A.xlsx PUC-RFI01-017 - B.xlsx
PUC-RFI01-030 - PAS PUC RFI_Email
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PUC-RFI01-044 - smart meters by
PUC-RFI01-068.xlsx
PUC-RFI01-083.xlsx
PUC-RFI01-085 - Poles replaced in
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PUC-RFI01-085 Poles replaced Beryl.xlsx
PUC-RFI01-087 Derecho & Beryl Unique
ction Program Dates.xlsx
PUC-RFI01-091 - Attachment.xlsx
PUC-RFI01-092 - Attachment.xlsx
PUC-RFI01-093 Attachment `1.xlsx
PUC-RFI01-099 - a-d Distribution.xlsx
PUC-RFI01-099 - a-d Transmission.xlsx
PUC-RFI01-100 - Derecho Storm Event
PUC-RFI01-100 - Hurricane Beryl Event
2
PUC-RFI01-115 attachment.xlsx
PUC-RFI01-119 - Attachment 1.xlsx
PUC-RFI01-121 Attachment.xlsx
PUC-RFI01-126 - Beryl.xlsx
PUC-RFI01-130 - Beryl.xlsx
PUC-RFI01-139 - Attachment.xlsx

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Contact centralrecords@puc.texas.gov if you have any questions.

Beryl IVR Messages



Thank you for calling CenterPoint Energy. We have been closely monitoring forecasts and preparing for potential impacts from Hurricane Beryl. Because CenterPoint cannot guarantee an uninterrupted, regular or continuous power supply during a severe weather event, customers who depend on electricity for life-sustaining equipment are encouraged to make alternate arrangements for on-site back-up capabilities or other alternatives in the event of loss of electric service. Sign up for Power Alert Service online at CenterPointenergy.com/PowerAlertService or by using our automated system to receive outage details for your location, estimated restoration times, as available or determined, and community-specific restoration updates. Thank you for calling.



Thank you for calling CenterPoint Energy. Due to inclement weather throughout our service territory, we are currently experiencing an unusually high number of calls resulting in longer than normal hold times. We are aware of power outages in your area and will have service restored as soon as possible. If this is not an emergency, we encourage you to call back at a later time. We recommend signing up for Power Alert Service online at CenterPointenergy.com or by using our automated system. We apologize for any inconvenience and thank you for calling.



Thank you for calling CenterPoint Energy. Beryl made landfall early Monday morning as a Category 1 hurricane with significant impacts to our service territory. Due to the high number of outages, we are currently experiencing an unusually high number of calls resulting in longer than normal hold times. We are aware of power outages in your area. While repairs will be completed as quickly and safely as possible, due to the extent of the damage, agents are presently unable to provide restoration time estimates. If this is not an emergency, such as a wire down or a pole on fire, we encourage you to call back at a later time. Sign up for Power Alert Service online at CenterPointenergy.com/PowerAlertService or by using our automated system to receive outage details for your location, estimated restoration times as available, and community-specific restoration updates. Thank you for calling.



Thank you for calling CenterPoint Energy. We are aware of power outages in your area and have more than 12,000 CenterPoint and mutual assistance crews working diligently to complete repairs as safely and quickly as possible. We understand how important it is for customers to be able to plan around their outages, but due to the extent of the damage, agents are presently unable to provide restoration time estimates. If this is not an emergency, such as a wire down or a pole on fire, we encourage you to call back at a later time. We recommend signing up for Power Alert Service online at CenterPointenergy.com/PowerAlertService or by using our automated system. We apologize for any inconvenience and thank you for calling.



Thank you for calling CenterPoint Energy. Please know that we are working diligently to address the damages to our system caused by Hurricane Beryl as safely and quickly as possible. Progress updates and restoration estimates can be found online at CenterPointEnergy.com slash StormCenter. If this is not an emergency, such as a wire down or a pole on fire, we encourage you to call back at a later time. We recommend signing up for Power Alert Service online at CenterPointEnergy.com slash PowerAlertService or by using our automated system. We apologize for any inconvenience and thank you for calling.



Thank you for calling CenterPoint Energy. Please know that we are working diligently to address the damages to our system caused by Hurricane Beryl as safely and quickly as possible. Progress updates and restoration estimates can be found online at CenterPointEnergy.com slash StormCenter. If this is not an emergency - such as a wire down or a pole on fire – or a request for temporary disconnect and reconnect, we encourage you to call back at a later time. We recommend signing up for Power Alert Service online at CenterPointenergy.com slash PowerAlertService or by using our automated system. We apologize for any inconvenience and thank you for calling.



Thank you for calling CenterPoint Energy. We are currently experiencing an unusually high number of calls resulting in longer than normal hold times. We are aware of Power Outages in your area and will have service restored as soon as possible. If this is not an emergency, we encourage you to call back at a later time.

Derecho IVR Messages



Thank you for calling CenterPoint Energy. Due to inclement weather throughout our service territory, we are currently experiencing an unusually high number of calls resulting in longer than normal hold times. We are aware of power outages in your area and will have service restored as soon as possible. If this is not an emergency, we encourage you to call back at a later time. We recommend signing up for Power Alert Service online at CenterPointenergy.com or by using our automated system. We apologize for any inconvenience and thank you for calling.



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Thank you for calling CenterPoint Energy. Due to the high number of outages, we are currently experiencing an unusually high number of calls resulting in longer than normal hold times. We are aware of power outages in your area and have more than 7,000 lineworkers and vegetation management professionals working diligently to complete repairs as safely and quickly as possible. Due to the extent of the damage, agents are presently unable to provide restoration time estimates. If this is not an emergency, such as a wire down or a pole on fire, we encourage you to call back at a later time. We recommend signing up for Power Alert Service online at CenterPointenergy.com/PowerAlertService or by using our automated system. We apologize for any inconvenience and thank you for calling.



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