Control Number: 32182

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TXU
Electric Delivery

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**Travis Besier, P.E.**
Project Manager
Regulatory Affairs

January 17, 2006

Mr. Brian Almon, Director of Engineering
Electric Division, Commission Staff
Public Utility Commission of Texas
1701 N. Congress
Austin, TX 78711



Subject: **Project No. 32182**: PUC Investigation of Methods to Improve Electric and Telecom Infrastructure that will Minimize Long Term Outages and Restoration Costs associated with Gulf Coast Hurricanes

Dear Mr. Almon:

TXU Electric Delivery Company appreciates the opportunity to respond to the requests and participate in this project. Attached please find the responses of TXU Electric Delivery Company to the requests for information as requested in the Commission's letter dated December 22, 2005. The Company also plans to make a presentation at each of the three workshops scheduled for this project and looks forward to participating in the round table discussions. If you have any questions or require further information, please call me at 214-486-4917.

Sincerely,

Travis Besier

Travis Besier, P.E.
Regulatory Project Manager

cc: Ken Keller

Enclosure

REQUEST:

Please provide the following information regarding transmission lines damaged by Hurricane Rita.

Total number of lines in the system and the number of lines sustaining damage

Total number of structures in each type before the hurricane and the number of structures repaired or replaced by voltage class.

- Wood single-pole
- Wood (other)
- Steel single-pole
- Steel lattice
- Steel (other)
- Concrete single-pole
- Concrete (other)

Total number of feet/miles of conductor and amount repaired and amount replaced by voltage class

RESPONSE:

**TXU Electric Delivery has a total of 672 transmission lines of which twelve sustained damage from Hurricane Rita.**

| Description | 345 kV Concrete & Steel | 138 kV Concrete & Steel | 138 kV Wood | 69 kV Steel & Wood | 69 kV Wood | Total |
|---|---|---|---|---|---|---|
| Number of Structures | **16,915** | **18,239** | **47,560** | **2,954** | **39,711** | **125,379** |
| Number of Structures Repaired/Replaced | **0** | **0** | **14** | **0** | **0** | **14** |

| Description | 345 kV | 138 kV | 69 kV | Total |
|---|---|---|---|---|
| Miles of Conductor | **4,511** | **6,786** | **2,894** | **14,191** |
| Miles Repaired/Replaced | **0** | **7.5** | **0** | **7.5** |

REQUEST:

Please provide the following information regarding distribution lines (feeders) damaged by Hurricane Rita.

Total number of lines in the system and the number of lines sustaining damage

Total number of structures in each type before the hurricane and the number of structures repaired or replaced by voltage class.

- Wood single-pole
- Wood (other)
- Steel single-pole
- Steel lattice
- Steel (other)
- Concrete single-pole
- Concrete (other)

Total number of feet/miles of conductor and amount repaired and amount replaced by voltage class

RESPONSE:

TXU Electric Delivery has a total of 2,943 distribution feeders of which 316 sustained damage from Hurricane Rita.

TXU Electric Delivery has an approximate total of 1,917,688 distribution wood poles of which 358 were replaced.
TXU Electric Delivery has approximately 590 distribution steel single poles of which zero were replaced.
TXU Electric Delivery has approximately 1,579 distribution concrete single poles of which zero were replaced.

TXU Electric Delivery has approximately 55,718 miles of distribution conductor of which approximately 79 miles were repaired or replaced.

REQUEST:

Please provide the following information regarding transmission only substations damaged by Hurricane Rita.

Number of substations sustaining damage and total number of substations in system

Number of substations sustaining control house damage due to:
- Flooring
- Wind
- Flying debris
- Other

Number of substations sustaining damage to other equipment (including underground wiring) due to:
- Flooring
- Wind
- Flying debris
- Other

RESPONSE:

TXU Electric Delivery has a total of 249 transmission-only substations (switching stations) of which none sustained damage from Hurricane Rita.

REQUEST:

Please provide the following information regarding distribution substations damaged by Hurricane Rita.

Number of substations sustaining damage and total number of substations in system

Number of substations sustaining control house damage due to:
- Flooring
- Wind
- Flying debris
- Other

Number of substations sustaining damage to other equipment (including underground wiring) due to:
- Flooring
- Wind
- Flying debris
- Other

RESPONSE:

TXU Electric Delivery has a total of 704 distribution substations of which none sustained damage from Hurricane Rita.

REQUEST:

Please provide the number of distribution substations that were:

Unable to serve load due to damage to the station from Hurricane Rita
Unable to serve load solely because of transmission line outage from Hurricane Rita

RESPONSE:

None of TXU Electric Delivery's substations were unable to serve load due to damage to the station from Hurricane Rita.

Five of TXU Electric Delivery's distribution substations were unable to serve load solely because of a transmission line outage cause by Hurricane Rita.

REQUEST:

Please describe the extent of any damage sustained by each utility power plant (if applicable).

RESPONSE:

TXU Electric Delivery does not have any utility power plants.

REQUEST:

Please describe any damage sustained by the transmission/distribution control center.

RESPONSE:

No damage was sustained by any of TXU Electric Delivery's transmission or distribution control centers.

REQUEST:

Please describe any damage sustained by the communication system (voice and data) that impacted the restoration after the storm.

RESPONSE:

No damage was sustained by TXU Electric Delivery's communication system that impacted the restoration efforts after the storm.

REQUEST:

If your company provided service in the areas affected by Hurricane Rita, please provide your company specific information on the number of customers affected, the minimum, maximum and average outage duration for the customers affected.

RESPONSE:

Approximately 238,280 TXU Electric Delivery customers were affected.
The minimum outage duration for a customer was momentary.
The maximum outage duration for a customer was 8,082 minutes.
The average outage duration for a customer was approximately 1,005 minutes.

REQUEST:

Please provide information on additional non-company resources deployed in the area for the restoral effort.

RESPONSE:

A total of 2,602 personnel were deployed in the area of which 304 were classified as non-company resources.

REQUEST:

Please provide information on the types and physical quantity of facilities affected by the hurricane in your service area.

a) What percent of those facilities were replaced using existing inventory?
b) What percent of those facilities had to be newly procured?
c) Are the facilities replaced meet the existing standards or exceed the standards to ensure survivability in the event of another hurricane of category 4 or higher?

RESPONSE:

The type and quantity of facilities affected by the hurricane in TXU Electric Delivery's service area were:
358 wood poles,
505 crossarms,
3,321 spans of primary conductor,
807 services, and
333 transformers.

a) All facilities were replaced with existing inventory.

b) No facilities were newly procured.

c) All facilities replaced meet existing TXU Electric Delivery construction standards.

REQUEST:

What lessons were learned in the process that would improve restoral time or reduce cost of restoral in the future?

RESPONSE:

Lessons learned in the process that would improve restoration time or reduce cost of restoration in the future are:

1) ask restoration crews to bring their own bedrolls would eliminate the time to procure these bedrolls.
2) estimate appropriate fuel mix (diesel or unleaded) to be supplied for contractor vehicles;
3) expand Damage Evaluators' use of walkie talkies.
4) high speed printers need to be set up in an air-conditioned environment;
5) there is a need for a computer-based personnel check-in and check-out system to improve employee and resource tracking during storm restoration.
6) additional non-field personnel need to be trained and used to call back customers for more detailed information.

REQUEST:

What, if any, additional costs would be associated with improvements from lessons learned identified above? To what degree, if any, might they be offset by more timely restoral of services?

RESPONSE:

Costs would be minimal and would likely be offset by improved restoration time.

REQUEST:

How might your company's physical infrastructure by modified or replaced to enhance its ability to withstand severe hurricanes?

RESPONSE:

Physical infrastructure could be enhanced to better withstand severe hurricanes by increasing the class size of wood poles and cross arms normally installed or utilizing concrete distribution poles or installing the physical infrastructure underground.

While the installation of underground facilities decreases the exposure to wind and debris, underground facilities can be damaged during storms and are still susceptible to flood damage.

REQUEST:

How does the cost of the modifications and replacements identified above compare with that of replacing storm-damaged infrastructure in the past?

RESPONSE:

The cost to increase the Company's current installation standards to a heavier class of pole and crossarm would be approximately $2 million on an annual basis. Utilization of concrete or steel poles would increase the cost of labor and materials by approximately a factor of ten. Installing new underground construction is approximately ten times the cost of overhead construction.

REQUEST:

Has your company modified the planning, engineering and construction practices since Hurricane Rita for deploying facilities in the Texas Gulf coast region, if so how, please provide details.

RESPONSE:

TXU Electric Delivery Company does not have facilities in the Texas Gulf Coast region.

REQUEST:

How should the cost identified in the responses to the previous questions be recovered? Should the cost be recovered from general body of ratepayers, from the ratepayers in the affected areas, or from some other source?

RESPONSE:

> The costs related to specific incidents should be recovered from the ratepayers within the affected Transmission and Distribution Service Provider. The PUCT should also recognize that the method of storm loss recovery could be different among the various companies, and could be different for a single company at various points in time.

As an example, in order to deal with the frequency and severity of the damages experienced over the last few years, the PUCT should exercise its authority to establish a more appropriate Property Insurance Reserve level for each utility based on its recent catastrophic loss history. An appropriate Property Insurance Reserve level would reduce expense volatility for the ratepayer while providing the utility the funds necessary to respond in a timely and efficient manner.

REQUEST:

What changes in depreciation practices are appropriate?

RESPONSE:

At this point, TXU Electric Delivery does not advocate changes from current practice.

REQUEST:

Should utility standards of construction in the coastal area be upgraded? Has your company provided input or planning to participate in the activities of standard setting organizations? If so provide details.

RESPONSE:

TXU Electric Delivery does not have facilities in the coastal area and takes no position on the construction standards in this region.

TXU Electric Delivery participates in the following standards setting organizations: (1) American Society of Civic Engineers, (2) National Electric Safety Code and (3) North American Electric Reliability Council.