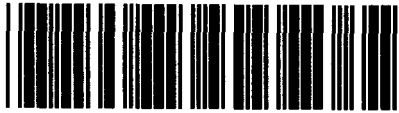




Control Number: 32182



Item Number: 13

Addendum StartPage: 0

PROJECT NO. 32182

PROCEEDING TO REVIEW                    § PUBLIC UTILITY COMMISSION  
INFRASTRUCTURE RELIABILITY,           §  
EMERGENCY MANAGEMENT AND           § OF TEXAS  
HOMELAND SECURITY MATTERS           §

**RESPONSES OF ENTERGY GULF STATES, INC. TO THE COMMISSION'S  
QUESTIONS CONCERNING INFRASTRUCTURE RELIABILITY, EMERGENCY  
MANAGEMENT, AND HOMELAND SECURITY MATTERS.**

Entergy Gulf States, Inc. ("EGSI") files the following responses to the questions by the Public Utility Commission of Texas ("Commission").

1. 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.
  - 286,000 customers affected
  - minimum duration less than 2 hours
  - maximum duration 21 days
  - average duration 4 days
2. Please provide information on additional non-company resources deployed in the area for the restoral effort.
  - 9,000 linemen, vegetation, & support
3. 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?
    - **Distribution** 20% - Primarily due to impact of Hurricane Katrina on draining existing inventory
    - **Transmission** 10% - Primarily due to impact of Hurricane Katrina draining existing inventory
  - b. What percent of those facilities had to be newly procured?

- **Distribution** 80% - Primarily due to impact of Hurricane Katrina on draining existing inventory.
  - **Transmission** 90% - Primarily due to impact of Hurricane Katrina draining existing inventory
- 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?**
- **Distribution** – Facilities were designed with NESC medium loading which is above recommended loading for coastal areas.
  - **Transmission** - Facilities replaced during the storm equaled or exceeded original installation standards. (Is this to NESC standards? It would be nice to be able to say it if possible.)
4. **What lessons were learned in the process that would improve restoral time or reduce cost of restoral in the future?**

The Company is continuing its lessons learned process and is evaluating where improvements can be made. In the course of this process, the following issues are being considered.

**Distribution had four areas that caused or hampered restoration:**

- a. Much of the logistic support, both local and company, were already strained by Hurricane Katrina restoration, Hurricane Katrina's evacuees, and by Houston's Hurricane Rita's evacuees; early on, logistic support was not able to keep up with resource deployment which slowed down restoration.
- b. Our facilities received heavy damage due to trees falling from outside our rights of ways.
- c. Subdivisions with overhead rear lot distribution without alley ways were totally inaccessible due to fallen trees, fences, and building damages.
- d. Inventory Levels were low, both company and suppliers, due to strain of Hurricane Katrina.

**Transmission:**

- a. Logistical support was a bottleneck. Hotels are simply not available after being saturated with evacuees. Entergy should catalog every high school with a gymnasium in the possible storm-affected zones. Here there will be large parking lots, toilets, showers, room for cots, and some cooking facilities which could be used during restoration efforts.
- b. Our facilities received heavy damage due to trees falling from off of our rights of way.

- c. Our contractor and vendor lists should be updated each spring with after-hour and weekend contact phone numbers.
  - d. Inventory Levels were low, both company and suppliers, due to strain of Hurricane Katrina.
5. **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?**

**Distribution:**

- a. Mitigating early logistics needs would require pre-staging logistic to match the pre staged resource deployment. Cost for major impact would be small but for a near miss the cost could be in the tens of millions.
- b. Mitigating tree damage would require an aggressive program in clearing vegetation to the sky and increase width of rights of ways. Annual Cost would be in the hundreds of millions and customer approval would be negative.
- c. Mitigating the inaccessibility of rear lot distribution would require rebuild of its entire infrastructure and cost would be in the tens of millions. Alternative is to use more equipment such as cranes to do restoration in these areas.
- d. Mitigating inventory levels would require increase levels to supply several major events. Cost would be in the tens of millions.

**Transmission:**

- a. Logistical costs can vary greatly. Mitigating early logistics needs would require pre-staging logistic to match the pre staged resource deployment.
- b. Cost for major impact would be small but for a near miss the cost could be in millions.
- c. Mitigating tree damage would require an aggressive program in clearing vegetation to the sky and increase width of rights of ways. Annual Cost would be in millions and customer approval would be negative.
- d. Mitigating inventory levels would require increase levels to supply several major events. Cost would be in millions.

6. **How might your company's physical infrastructure be modified or replaced to enhance its ability to withstand severe hurricanes?**

**Distribution:**

- a. See answer to #5.

**Transmission:**

- b. A complete response to this question deserves a thorough engineering and economic study, which has not yet been done while we still rebuild damaged facilities. Many miles of lines in the Entergy system are of different vintages and were built under different design standards. The

likelihood of storms of specific severity would need to be estimated, the performance in this storm of the existing facilities would need to be evaluated, and the cost of a full or partial upgrade would need to be compared to the likely repair or replacement costs.

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

**Distribution:**

- a. Significant more cost.

**Transmission:**

- b. This study has not been undertaken.

**Fossil:**

- c. Fortunately Sabine Plant did not sustain the level of flooding that might have occurred as a result of a more westerly track of Hurricane Rita. To protect against storm surge, the major design change that would be required would be the design and construction of an extensive levee system.

- 8. 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.**

**Distribution:**

- a. No, not at this time.

**Transmission:**

- b. No, not at this time.

- 9. How should the cost identified in the response 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?**

This public policy and regulatory issue is difficult to answer in the abstract since so much is dependent on the type and magnitude of the expenditures, the timing in which they would be spent and how the benefits are determined. Utilities have a responsibility to serve their customers reliably and safely while investment in the necessary infrastructure and the expense incurred to maintain it are included in customer rates, with a regulated rate of return, in a timely manner. Entergy has met this obligation, investing in the necessary electrical infrastructure that serves its customers reliably and safely under industry standards. The need to timely recover incremental expenditures, should they be deemed necessary, is critical, particularly when large investments have already been made to restore the system after the current event. Recovery of those investments should be dealt with first.

**10. What changes in depreciation practices are appropriate?**

None have been identified.

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

EGSI uses the standards of the National Electrical Safety Code ("NESC") when it constructs its electrical infrastructure by meeting or exceeding such standards. The NESC is published and maintained by the Institute of Electrical and Electronics Engineers, Inc. ("IEEE") which is a non-profit technical professional association which Entergy Corporation belongs. Entergy's participates in the standards review of this organization which is dynamic and ongoing. Entergy believes that this forum should be used in the review and possible upgrade of the electrical infrastructure.

Please respond to the following questions if your company sustained more than minimal damage from Hurricane Rita.

**1. Please provide the following information regarding transmission lines damage by Hurricane Rita.**

- Total number of lines in the system and the number of lines sustaining damage
  - 232 lines total
  - 136 lines sustained minimum to extensive damage

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

a. Total number of structures in each type:

Wood single-pole	6,400
Wood (other)	16,000
Steel and Concrete	1,600
Steel lattice	940

634 structures replaced:

- 286 - single wood
- 321 - multi pole wood
- 26 - steel lattice towers
- 1 concrete pole

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

- Total circuit miles of conductor - 2630
- Approximate circuit miles of conductor replaced - 50+

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

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

- 345 distribution feeders

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

- Wood single-pole
  - Extensive prior to the storm
    - 8,970 distribution poles repaired or replaced
- Wood (other)
- Steel single-pole
- Steel lattice
- Steel (other)

- Concrete single-pole
- Concrete (other)

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

- 14,781 spans of wire was repaired or replaced (700 miles)

**3. Please provide the following information regarding transmission only substations in system**

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

- 32 transmission substations sustained damage \ 128 total transmission substations

b. Number of substations sustaining control house damage due to:

Flooding	0
Wind	3
Flying debris	3
Other	0

c. Number of substations sustaining damage to other equipment (including underground wiring) due to:

Flooding	0
Wind	10
Flying debris	6
Other	14

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

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

- 55 distribution substations sustained damage \ 193 total distribution substations

b. Number of substations sustaining control house damage due to:

Flooding	0
Wind	0
Flying debris	0
Other	0

c. Number of substations sustaining damage to other equipment (including underground wiring) due to:

Flooding	1
Wind	15



Flying debris	22
Other	18

**6. Please provide the number of distribution substations that were:**

- a. Unable to serve load due to damage to the station from Hurricane Rita
  - 26 distribution substations unable to serve load due to damage
- b. Unable to serve load solely because of transmission line outage from Hurricane Rita
  - 125 distribution substations unable to serve load due to loss of transmission line

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

Sabine power plant storm related damage was insulation damage that resulted in asbestos abatement/repairs. Also, cooling tower 5B was damaged and the repairs included the clean-up, logistical recovery efforts, weatherization repairs and numerous miscellaneous repairs.

The repairs for Nelson include the cooling tower, roof, insulation, transformer and convey. There was asbestos/insulation replacement, roof replacements and cooling tower component replacements work done.

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

Still collecting information.

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

Entergy experienced several problems with communications for several days after Hurricane Rita came ashore late in the day on Sept 23. The most notable problems are listed below:

- Generator problems at the Beaumont radio site disrupted all Beaumont area field radio service until early on September 24.
- Fiber optic cable in the Beaumont downtown area was damaged. This isolated radio towers and prevented wide area communications. Once the generator problem above was resolved, field radios in the Beaumont area could communicate locally but could not communicate with other areas of Texas and vice versa. This cable damage also caused loss of data and telephone communications at the main Distribution and Transmission

Service Centers in Beaumont. This fiber optic cable was repaired on September 27.

- A second fiber cable was damaged that resulted in the loss of communications to the Sabine generating plant. Temporary equipment was installed and communications were rerouted to the plant on September 26.
- Entergy also had numerous microwave dishes that were pushed out of alignment due to the high winds. This interrupted or degraded telephone and SCADA communications for short periods of time. Total loss of service due to microwave antenna problems was minimal.
- Entergy also encountered numerous failures on circuits leased from local phone companies that impacted SCADA communications and caused intermittent loss of external phone service to the Beaumont Transmission Service Center.