



Control Number: 32182



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Public Utility Commission of Texas

Memorandum

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FOR THE PUBLIC UTILITY COMMISSION

DATE: May 10, 2006

TO: All interested parties

FROM: *for* David Featherston *TBA*
Director, Infrastructure Reliability Division

SUBJECT: Project 32182 – Investigation of Methods to Improve Electric and Telecom
Infrastructure that Will Minimize Long Term Outages and Restoration Costs.

This letter was sent to the attached party list by regular mail.

Paul Hudson
Chairman

Julie Caruthers Parsley
Commissioner

Barry T. Smitherman
Commissioner

W. Lane Lanford
Executive Director



Public Utility Commission of Texas

May 10, 2006

RE: Project No. 32182
Investigation of Methods to Improve Electric and Telecom Infrastructure that Will
Minimize Long Term Outages and Restoration Costs

Dear Sir/Madam:

Enclosed is a copy of the draft Executive Summary of the Commission staff report on the investigation of the methods to improve the electric and telecom infrastructure that will minimize long term outages and restoration costs. A discussion about the recommendations in the draft Executive Summary will take place at a workshop to be held on May 15, 2006 at 9:00 AM. The workshop will be held in the Commissioner's Hearing Room on the 7th floor of the Travis Building in Austin, Texas. Verbal comments concerning the need for these recommendations and the associated costs will be solicited at the workshop. Written comments should be filed by May 18, 2006 in Project No. 32182.

For any questions concerning this workshop or the draft, please contact Brian Almon at 512-936-7355 (brian.almon@puc.state.tx) or Nara Srinivasa at 512-936-7335 (nara.srinivasa@puc.state.tx.us).

Thank you for your participation.

Sincerely,

A handwritten signature in cursive script that reads "David E. Featherston".

David Featherston
Director, Infrastructure Reliability Division

PROJECT NO 32182

**PUC INVESTIGATION OF METHODS TO IMPROVE ELECTRIC
AND TELECOMMUNICATIONS INFRASTRUCTURE
TO MINIMIZE LONG TERM OUTAGES AND
RESTORATION COSTS ASSOCIATED
WITH GULF COAST HURRICANES**

STAFF REPORT

DRAFT

EXECUTIVE SUMMARY

(May 10, 2006)

June 8, 2006

I. EXECUTIVE SUMMARY AND RECOMMENDATIONS

The purpose of this Hurricane Infrastructure Investigation is to identify ways to improve electric and telecommunications infrastructure, and to minimize the utilities' downtime occurring as a result of Gulf Coast hurricanes. To accomplish this the Public Utility Commission (PUC) staff (Staff) conducted industry workshops at the Commission and town hall meetings in the Houston, Beaumont and Corpus Christi areas. In the course of these workshops and meetings, the Staff obtained input from telecommunications and electric utilities as well as interested parties. Staff focused on information related to the utilities' historical experiences with storm aftermaths and the utilities' resulting long-term and short-term plans for infrastructure improvements to address these situations. This report summarizes damages and operational issues sustained by electric and telecommunications utilities during and after the occurrence of Hurricane Rita and provides the utilities' recommendations, including suggested cost recovery mechanisms.

The electric and telecommunications utilities generally agreed that damage to above-ground distribution facilities from hurricanes, and high-wind events, resulted primarily from the impact of trees and flying debris. Damage to substation equipment, was primarily the result of flying debris (including limbs and portions of trees) and, occasionally the result of flooding.

Most electric and telecommunications utilities in Texas have some outside plant structure or facility that were designed and built according to now outdated wind loading standards. Staff recommends that all such facilities be required to meet current wind loading standards to improve the likelihood that infrastructure facilities will be able to withstand severe weather events. The following material provides Staff's detailed recommendations to minimize future outages and associated restoration costs.

Summary of Staff Recommendations:

Immediate (within six Months)

1. Require the development and implementation of an inspection cycle for vegetation management for all overhead electrical and telecommunication lines. This cycle should consider the growth rates of common vegetation in the service area. Utilities should provide the Commission with the details of its vegetation inspection program within six months.
2. Require the development and implementation of a regular, ground-based inspection cycle for all overhead electrical and telecommunication facilities, including a condition-based assessment of wood pole suitability for continued service. Utilities should provide the Commission with the details of this inspection program within six months.
3. Require utilities to establish processes, and incorporate these requirements into their existing contracts or tariffs, to ensure the structural integrity of poles and attachments in situations where utilities augment or add cable facilities to existing poles.

Short – Term (one year)

4. Require each utility to provide the Commission with a report within one year that evaluates the level of inventory for transmission facilities considering the requirements of staff's recommendations.
5. Require removal within one year of all trees that could potentially damage electrical or telecommunication structures or facilities and that are located within the right of way (ROW) easement.

6. Require each utility to perform a study within one year that evaluates the reasonableness and costs of retrofitting overhead distribution facilities so that, under conditions of high wind and/or ice loading, the conductors and/or support hardware will fail before the structures fail and provide the Commission with its evaluation and any recommendations.
7. Require utilities to perform a study within one year that evaluates the current practice of automatically sectionalizing a distribution line to improve reliability and examines a practice of increasing the number of automatic sectionalizers to gain additional enhancements to reliability. The utilities should provide the Commission with this study and any recommendations.
8. Require utilities to conduct inspections of all distribution circuits to determine whether the amount of non-electric equipment on structures is causing an overload on those structures. If overloads are identified utilities should be required to correct the problem. Furthermore, utilities should be required to institute practices that will prevent such overloads in the future. The results of this initial inspection should be reported to the Commission within a year.
9. Require telecommunications utilities to install onsite generators with a minimum of seventy-two hours of fuel in all central offices in hurricane prone areas. Utilities should also be required to have processes in place to ensure refueling of these generators for extended periods of time.

Long Term (more than one year, ongoing)

10. Require annual upgrades to current National Electric Safety Code (NESC) wind loading standards of at least 10% of the 230 kV or greater above-ground transmission infrastructure and 5% of the 138 kV or less starting with the highest voltage lines.

In addition, all transmission infrastructure upgrades within ten (10) miles of the Texas coastline should be required to meet current NESC standards assuming 140 mile-per-hour wind speed. Annual reports on the utilities' upgrading programs should be reported to the Commission.

11. Require all new and replacement transmission structures to be pre-stressed concrete or steel.
12. Require utilities, through negotiation with landowners, to remove all trees that have limbs extending into, or those that may potentially extend into, the transmission and distribution ROW easements under high wind conditions.
13. Require utilities to identify any damage of transmission and distribution facilities that occurs as the result of a weather event other than lightning, and provide an annual report to the Commission that includes; the cause of the damage, the type of facility involved and the voltage, and age of the structure or facility.
14. Require utilities to design and construct all substations so that no water enters the control house or damage any electrical equipment in the substation during a 500-year rain event rendering electrical equipment inoperable due to accumulated water.

15. Electric utilities have embarked on projects to modernize the electric grid by deploying intelligent devices on the network. These deployments will enable real time monitoring of outages, selective switching of electric supply routes, and preventative maintenance of protective devices to increase the reliability of the power grid. The Commission should establish incentives to encourage such deployments by electric utilities.
16. If new underground distribution facilities must be installed in the rear of residential lots, require developers and homeowners to provide at least a 10-foot ROW restriction upon the inclusion of trees or other structures so that suitable access is available for any future repair work.
17. Require burial of all new distribution lines serving new residential developments.
18. Encourage developers of new residential developments to locate underground facilities in front of homes or in accessible alleyways.

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