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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 §

2006 JUL 10 PM 12:57
BEFORE THE

PUBLIC UTILITY COMMISSION

OF TEXAS

COMMENTS OF TXU ELECTRIC DELIVERY COMPANY

TO THE HONORABLE PUBLIC UTILITY COMMISSION OF TEXAS:

COMES NOW TXU Electric Delivery Company ("Electric Delivery" or "Company") and, in response to the request by the Staff of the Public Utility Commission of Texas' ("PUC" or "Commission"), files these its Comments to the recommendations included in the draft Final Report filed by the Staff on July 3, 2006, and would respectfully show as follows:

I. GENERAL COMMENTS

Electric Delivery appreciates the opportunity to provide comments on Staff's draft Final Report. As indicated in Electric Delivery's prior comments, the summer and fall of 2005 provided challenges for electric utilities to respond to the devastation brought about by two major hurricanes. Electric Delivery recognizes the importance of addressing this issue to the citizens of the State of Texas, and particularly to those along the coastal region.

The initial draft Executive Summary was made available by Staff on May 10, 2006, with a workshop to solicit oral comments being held on May 15, 2006. Various parties, including the Company, filed written comments regarding the draft Executive Summary by the May 30, 2006 deadline. Staff submitted a second draft Executive Summary on June 9, 2006, and held a workshop to solicit oral comments on June 15, 2006. Various parties, including the Company, filed written comments regarding the second draft Executive Summary by the June 23, 2006 deadline. At that time, the comprehensive report detailing Staff's findings had not been made available to parties and the draft Executive Summary did not provide the bases or justification for Staff's fifteen recommendations. Staff filed its draft Final Report containing twelve recommendations on July 3, 2006 and requested comments from the Industry by July 10, 2006.

TXU Electric Delivery applauds Staff for its consideration and subsequent removal of

certain recommendations contained in the second draft Executive Summary. Additionally, the Company appreciates Staff's tailoring of the implementation requirements of some of the recommendations with regard to their applicability to hurricane-prone areas.

II. COMMENTS ON SPECIFIC RECOMMENDATIONS

Summary of Staff Recommendations:

- 1. Require each electric and telecommunications utility without an on-going vegetation management program to develop and implement such a program addressing all overhead facilities/lines. Each utility should provide the Commission with the details of its existing, or newly developed, vegetation management program by April 1, 2007. Each vegetation management program should consider the growth rates of common vegetation in the service area and should incorporate defined vegetation management cycles/schedules appropriate for the vegetation.**

Each electric and telecommunications utility vegetation management program should incorporate, as part of any scheduled or cyclic vegetation management activity, the trimming, or removal, of all trees located within its right of way (ROW) that currently compromise the National Electrical Safety Code (NESC) clearance limits or that will compromise these clearance limits prior to the next scheduled or cyclic activity.

The development and implementation of an inspection program for vegetation management is currently a part of Electric Delivery's internal procedures. As such, the guidelines employed pursuant to this inspection can be made available to the Commission within the stated timeframe of the recommendation. TXU Electric Delivery trims or removes trees located in ROWs that compromise NESC standards as part of its normal vegetation management program.

- 2. Require each electric and telecommunications utility to develop and implement an on-going, cyclical, ground-based inspection program for its overhead facilities. Each utility program, whether existing or new, should**

include a condition-based assessment of wood poles indicating their suitability for continued service. Each utility should provide the Commission with the details of its facilities inspection program by April 1, 2007.

Electric Delivery inspects electrical overhead equipment on both a formal and informal basis as part of routine work on the system. Formal inspections are tracked. Informal inspections done as part of routine work are not tracked; however, a work order is created for any problems found from the informal inspection. The guidelines employed with respect to these inspections can be made available to the Commission within the stated timeframe of the recommendation.

- 3. Require telecommunications utilities to ensure that all central offices in hurricane prone areas are capable of full operation without interruption for at least 72 hours after loss of electric utility power.**

This recommendation is not applicable to Electric Delivery.

- 4. Require each electric utility to provide three annual reports to the Commission regarding any transmission lines built to pre-1977 NESC wind loading standards. For each identified line, the report should provide:**
 - a.) the length of the line;**
 - b.) a description of the types of structures used in the line; and**
 - c.) a reasonable estimate of the cost and time required to upgrade the line to current NESC standards.**

For each identified line located within 10 miles of the Texas coastline, the report should include a reasonable estimate of the cost and time required to upgrade the line to the NESC required standards for a wind velocity of 140 miles-per-hour.

The three annual reports should be required on the following timetable with the appropriate associated data:

- a.) The first report will be due on August 1, 2007, and must include the required data for all transmission lines, or portions thereof, located within 10-miles of the Texas coastline.**
- b.) The second report will be due August 1, 2008, and must include the required data for all transmission lines, or portions thereof, located within 10-100 miles of the Texas coastline.**
- c.) The third report will be due August 1, 2009, and must include the required data for all transmission lines, or portions thereof, located more than 100 miles from the Texas coastline.**

The premise that upgrading to current code would provide a significant improvement from damage sustained by hurricane events is questionable. It should be noted that in addition to the guidance provided by the NESC code, each utility implements its own additional design standards. All lines constructed prior to 1977 would have been built in accordance with the pre-1977 code. Given that there has not been a significant amount of new transmission construction, with the exception of activity over the last five years, one would expect the majority of the transmission grid to have been built in accordance with the pre-1977 code. This implies that all lines that are not new or have not been re-built with new conductor since 1977 would have to be evaluated and redesigned. This is a massive and burdensome undertaking to determine what would need to be done (if anything) to the existing lines, and would divert significant engineering resources from new-build projects.

TXU Electric Delivery recommends that the requirement to perform this study and submit a report be dropped. If the intent of Staff's recommendation is for all transmission lines to be able to withstand the impacts of a hurricane event, then design standards (not NESC code) will be required to be developed and used as appropriate. However, should this recommendation be adopted, the Company requests that Staff first resolve whether the 1977 NESC standards are the appropriate criteria upon which to base judgment regarding the potential upgrading of transmission infrastructure, as noted on page 29 of Staff's Final Report.

5. **Require all permanent new and replacement transmission structures installed after January 1, 2007, and within 50-miles of the Texas coastline, be pre-constructed of pre-stressed concrete, steel, or other engineered products that are more resistant to high wind and deterioration than wood.**

Require all designs for permanent new and replacement transmission structures after January 1, 2007, and within 10 miles of the Texas coastline, to withstand a maximum wind speed of 140 miles-per-hour.

TXU Electric Delivery does not have any transmission structures within 50 miles of the Texas coastline, concludes that this recommendation is not applicable to its facilities and therefore takes no position on this recommendation.

6. **Require electric utilities to design and construct all new substations after January 1, 2007, and located within a 100-year floodplain, so that the floor of the control house, and all water-sensitive components of the substation operating equipment, are above the elevation of the 100-year floodplain.**

The recommendation is consistent with TXU Electric Delivery's design criteria.

7. **If new underground distribution facilities are to be installed in the rear of residential lots, electric utilities are encouraged to work with developers and homeowners to establish buffer zones around the facilities in which no trees or structures will be placed. Such buffer zones will ensure suitable access to the facilities for any future repair work.**

The Company agrees that, for facilities (overhead / underground) that are installed in the rear of residential lots, the developer, homeowners, and cities should provide and require suitable access to our facilities for any future repair. A 10-foot ROW is desirable; however, some subdivisions with small lots may be significantly impacted by this requirement, in that it would reduce the number of lots that can be developed. Ultimately, most subdivision development requirements are set at the municipal level, and Electric Delivery believes that this type of

specific requirement would require a Commission rule to provide a basis for dealing with developer and customer complaints regarding this requirement, and extended outage complaints resulting from homeowner failure to abide by "buffer zone" requirements. Further, a rule is necessary to provide a basis to challenge any city ordinance that does not provide the required "buffer zone". Electric Delivery would note that, even with a rule, the outcome of any litigation between the requirements of such a rule and conflicting requirements in a municipal zoning/subdivision development ordinance is unknown.

- 8. To the extent that it is not prohibited by city ordinances, electric utilities should encourage developers of new residential properties to utilize underground distribution facilities and should express a preference to locate these facilities in front of homes or in accessible alleyways.**

Electric Delivery does not agree that under-grounding necessarily provides greater service reliability in all circumstances. Underground facilities are subject to dig-ins, and repair of underground facilities can take longer than for equivalent overhead facilities. With respect to weather-related events, while underground facilities generally are not subject to outages due to high winds and falling vegetation, they can be more susceptible to outages due to flooding.

With regard to the installation of underground facilities, it is Electric Delivery's current practice to install such facilities in the front of homes or in accessible alleyways. This is most common in the DFW Metroplex or residential developments that have a large number of lots. However, this may not be practical in rural areas or where a development consists of large (very wide or large acreage) lots such that predicting the most opportune placement of underground facilities is extremely difficult. Once again, Electric Delivery will consult with cities as to municipal requirements. Additionally, a supplemental caveat should be amended to this requirement. In addition to where underground installation is not prohibited by ordinance, the requirement should read "and where tariff provisions for payment of difference in cost by requesting parties are in effect", to ensure that all customers do not bear the cost of underground facilities.

- 9. Staff recommends the initiation of rulemaking projects by the Commission, before January 1, 2007, to develop and adopt standards directing each**

electric and telecommunications utility to conduct inspections (during the utility's regular, ground-based inspection cycle) of its overhead facilities to determine whether the amount of equipment located on those facilities, but not owned by the utility, is causing an overload on those structures. These rulemakings should also determine reasonable timeframes for each utility to correct any identified overloading problems and institute practices to prevent future overloads on these facilities.

As outlined below, compliance with this requirement is very expensive and TXU Electric Delivery is not convinced that sufficient cost-benefit analysis has been performed to justify the cost. TXU Electric Delivery favors a further data gathering; perhaps, as a preliminary step, a request for utility data on the outages over the last five years that were attributed to overloaded poles, would be appropriate.

Using figures from Osmose (based on work they are doing in Florida), Electric Delivery has estimated costs on a per pole basis to do pole loading analysis for its system. Osmose has developed software called "Load Calc" that allows field personnel to do rough pole loading analysis in the field from their hand held units. The calculations use pole class, basic conductor configurations, assumed attachment points, and general weights, tensions, and attachment points for joint users to determine if a pole is within its acceptable loading guidelines. Any structure found to be close to or over its loading limits would have a more detailed pole loading analysis utilizing the "O Calc" software. This method also assumes guyed structures are not a problem.

Assuming 10% of the Company's distribution structures are guyed, Osmose believes 85% of the remaining poles can be successfully analyzed using their "Load Calc" software. The other 15% of the remaining poles would need a more detailed analysis with the "O Calc" software. The estimated cost for the inspection and running "Load Calc" is \$9 per pole. The cost for running "O Calc" on a structure is \$90/pole. Based upon these figures, the total cost to perform loading analysis on all 1.9 million poles in the Company's system exceeds \$36 million. This figure does not include remediation of any problems found.

Electric Delivery's analysis assumes that contractors would be available to do the work. If the utilities in Texas and Florida are all being required to do this simultaneously, qualified skilled labor may be in short supply. In addition, time spent on this type of pole-by-pole analysis

would reduce worker availability to perform other necessary field work.

To prevent loading problems going forward, the Company would need to require a detailed loading analysis on any pole a joint user requests to attach to. This is not currently being done and would need to be added to our joint use contracts and permitting process, and would increase the permitting cost to third party attachers.

TXU Electric Delivery submits that \$36 million is an unreasonably high expense to incur to prevent what, for our system, is believed to be a minor contributing factor to severe storm damage to facilities.

- 10. Staff recommends that, in the above mentioned rulemaking projects, each electric and telecommunications utility develop requirements, to be incorporated into existing “pole attachment” contracts and tariffs, that ensure the structural integrity of the utility’s overhead facilities in where other parties attach cables or other facilities.**

Electric Delivery has an attachment agreement with all parties attaching to a Company pole. The Agreement commits both parties to permitting, attachment count and maintenance of facilities. The agreement specifically identifies penalties for unauthorized (not permitted) attachments. Many of those making attachments to Company poles are governed by the Federal Communications Commission (FCC) and the appropriate policies and procedures are in place to follow those requirements

- ▶ Attachment Standards - All attachers are required to follow NESC or Electric Delivery Standards, whichever is more stringent. Electric Delivery has a section in the overhead standards manual specifically for joint use requirements and all attachers have access to this information via a web site or by requesting the information directly.
- ▶ Permit Application - All attachers are required to provide a permit application before making attachment to a pole. Electric Delivery follows a process which assures that the new attachment is made to NESC and/or Electric Delivery Standards.
- ▶ Safety Compliance Audit – Electric Delivery currently audits individual attachers for their compliance to NESC and/or Electric Delivery Standards.
- ▶ Attachment Count – Counting of 3rd party attachments takes place every 5 years per the

attachment agreement. Attachments found that were not permitted are considered unauthorized. By contract, Electric Delivery is allowed to charge back rent up to 5 years as well as a specific amount for each unauthorized attachment.

- Pole Loading – As a general matter, when a request is made by a third party to attach facilities to a pole, Electric Delivery does not require or complete pole loading calculations, as general loading information, based upon engineering studies, is known at the time the pole was first installed. The Company could implement a new pole loading analysis requirement as part of the permit application process, although that would increase costs and the time it takes to approve the application and Electric Delivery does not support implementation of such a broad requirement, as it is not clear that such analysis will significantly contribute to improved reliability under either normal or severe storm conditions.

11. **Staff recommends that the Commission include in the Electric and Telecommunications *Scope of Competition Reports* a suggestion that the State Legislature explore expanding the authority of electric and telecommunications utilities to trim or remove trees that threaten utility transmission or distribution facilities but that are not located within the utilities' ROW.**

Electric Delivery has no comment with regard to this recommendation.

12. **Staff recommends that the Commission consider the establishment of incentives, possibly in the above rulemaking projects, that encourage electric utilities to modernize their electric grids through the deployment of intelligent devices on the network. Several electric utilities have already embarked upon such modernization projects. These deployments enhance 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.**

Electric Delivery is taking the lead in modernizing the electric grid. Incentives to

encourage the use of such devices may be beneficial to complement the penalties inherent in the Commission's current reliability rule. Electric Delivery would note that the technology in this area is emerging and, thus, any incentive program must be fluid enough to keep pace with new and better equipment, availability, and/or cost.

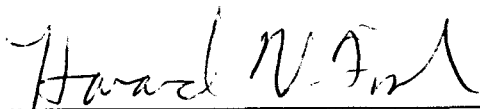
One such technology is Broadband Over Powerline ("BPL"), which will be installed to read AMIS meters for approximately 2 million customers in the Electric Delivery service area over the next four years. This opens the opportunity to collect voltage and transformer load data to monitor the system. Some equipment operational data can also be gathered and communicated on the BPL fiber network for an additional communication cost. There is statutory language already in place associated with AMR and BPL, but no legislation or Commission rules to encourage the separate development of the Smart Grid.

In addition to BPL, there are various other technologies and devices being developed to support a Smart Grid. Some examples include fault indicators with communications back to the operating center, and R&D projects such as a fault anticipator.

Electric Delivery applauds Staff for its forward-thinking and embracement of new technologies, including but not limited to BPL, and would support the proposed recommendation.

Respectfully submitted,

TXU Electric Delivery Company

A handwritten signature in dark ink, appearing to read "Howard V. Fisher", written over a horizontal line.

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CERTIFICATE OF SERVICE

It is hereby certified that a copy of the foregoing has been hand delivered to the Staff of the Public Utility Commission on this the 10th day of July, 2006.

Howard N. Fish