

Control Number: 32182



Item Number: 48

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#### PROJECT NO. 32182

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

#### PUBLIC UTILITY COMMISSION

OF TEXAS

#### INITIAL COMMENTS OF CENTERPOINT ENERGY HOUSTON ELECTRIC, LLC

Contact: DeAnn T. Walker CenterPoint Energy (512) 397-3032 (512) 397-3050 (Fax) deann.walker@CenterPointEnergy.com

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May 30, 2006

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

#### PUBLIC UTILITY COMMISSION OF TEXAS

#### COMMENTS OF CENTERPOINT ENERGY HOUSTON ELECTRIC, LLC TO STAFF REPORT FILED ON MAY 10, 2006

On May 10, 2006, the Staff of the Public Utility Commission of Texas (the Commission) filed an executive summary and recommendations in this proceeding. A workshop to discuss the document was held on May 15, 2006, (the Workshop) and written comments are due on May 30, 2006. The Staff has presented significant and costly recommendations for transmission and distribution utilities (TDUs) to undertake. CenterPoint Energy Houston Electric, LLC (CenterPoint Energy) does not believe that there has been adequate time to review and perform estimates on the proposals; however, the following comments are filed by CenterPoint Energy.

CenterPoint Energy requests that the Commission Staff provide clarification of several matters in the document that will be presented to the Commission. In addition, CenterPoint Energy requests that certain recommendations be eliminated from the recommendations. CenterPoint Energy's specific requests will be discussed below.

#### I. Comments on Executive Summary

The Executive Summary contains the following statement: "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." From clarifying questions at the Workshop, the Commission Staff stated that the recommendations of the Commission Staff only apply to transmission facilities as discussed in Recommendation 10. CenterPoint Energy requests that the Commission Staff clarify this sentence so as to limit its applicability to only transmission infrastructure.

#### II. Comments on Recommendations

#### **Recommendation 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.

CenterPoint Energy requests that the Commission Staff clarify the intent of the following: "level of inventory for transmission facilities" and "considering the requirements of staff recommendations". At the workshop, it was indicated that inventory was related to the stores material kept by the utility for storm restoration purposes. The Commission Staff also indicated that the intent of the recommendation was to determine the level of "stores materials" for transmission poles or towers that would have to be maintained to satisfy compliance with the recommendations. This recommendation needs further clarification due to the fact that replacement poles or towers are not necessarily indicative of restoration capability. For instance, CenterPoint Energy's practice is to use wood structures for temporary restoration of steel lattice structures to minimize the time necessary for complete restoration, such as foundation repairs and construction of steel facilities. Furthermore, it is unclear what the specific materials are that would need to be included in the inventory, such as wood poles, concrete poles, steel poles, conductor, and insulators, and whether transmission substation materials are to be included.

In addition, the level of inventory maintained by the utility for restoration is not indicative of the complete capabilities of the utility to procure replacement for the transmission facilities. It is common for utilities to have agreements with vendors of such facilities to stock or manufacture materials for transport within a short time frame. In addition, utilities are able to acquire facilities from other utilities during restoration efforts. These agreements greatly influence the level of inventory kept on hand by the utility.

# **Recommendation 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.

CenterPoint Energy requests that several points within this recommendation be amended or clarified.

1. The Recommendation should not require the removal of all trees in distribution rights-of-way (ROWs). Current practice is to trim living trees and, with landowner permission, remove dead trees, which is sufficient for protecting the integrity of the distribution system.

2. If the requirement is to remove such trees, the work cannot be accomplished within one year in the CenterPoint Energy service territory. Many portions of CenterPoint Energy's service territory are densely wooded and to change the current practice to incorporate the removal of all trees within the right-of-way would add significant work, which could not be accomplished within one year. This change in practice would also create significant customer relations issues resulting in negative publicity and protracted time schedules.

3. The Commission should define what constitutes "could potentially damage". This term is vague and could be construed in many different manners. The TDUs should be provided more specificity of the standards that will be imposed upon them. For instance, does this include trees that will fall on or into the facilities or does it also include trees with limbs that can come into contact with the facilities or trees that at maturity if left alone would grow into the facilities?

4. Lastly, the Commission should clarify what is meant by ROW easement. Many of CenterPoint Energy's facilities are located within the street ROW. CenterPoint Energy does not have an easement to use the street ROWs, but the facilities are placed there pursuant to the franchise agreements with the various cities. From information received at the Workshop, the Commission Staff's intent is to address only easements that are within the control of the utility. Therefore, this recommendation should be clarified to state "within the utility's right of way (ROW) easement."

## **Recommendation 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.*

CenterPoint Energy requests that this recommendation be deleted. The underlying premise for performing the study is a concept that should not be adopted; therefore, the study is unnecessary. Significant distribution safety issues are related to this recommendation. Currently, when a distribution structure fails, the conductor does not come into contact with the ground and, if it does, the current does not continue to

flow through the conductor. Yet, if the facilities are constructed so that the conductor and its support fail first, then it is likely that live conductor will be on the ground.

In addition, this recommendation will extend the time of outages. Currently, if a pole is leaning, the workers will straighten and brace the pole, which is not very time consuming. If the conductor support structures are designed to fail, additional time and effort will be necessary to replace the support structures and the conductor.

Lastly, this recommendation will require the retrofitting of CenterPoint Energy'sentire overhead distribution system, which will be very difficult and expensive. For these reasons, CenterPoint Energy does not believe that there is a benefit to this proposal. In fact, due to the safety concerns for the public and utility restoration workers, CenterPoint Energy believes that there are significant detriments that should eliminate the recommendation from consideration.

**Recommendation 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 one year.

CenterPoint Energy requests that this recommendation be clarified. The second sentence requires that the TDU be responsible for correcting the problem. The obligation to correct the problem should be placed upon the entity that has created the problem. If the communication facilities need to be removed, the TDU should not be responsible for the cost of such removal. In the event that the pole needs to be replaced by one that is stronger, even though the TDU should be responsible for the actual work to replace the

pole, the TDU should not be responsible for the costs associated with the replacement. Instead, the entity placing facilities on the pole that cause the need for the replacement should be responsible for the costs.

In addition, the work cannot be accomplished within one year in the CenterPoint Energy service territory due to the number of poles located within the CenterPoint Energy distribution system. CenterPoint Energy recommends that a study be performed as a first step. The study would evaluate the magnitude of the task, estimate the costs, and determine time frame to complete the work. The project as proposed is large and will require significant time and expense; both for the inspection and analysis and for replacement of facilities.

#### **Recommendation 10** *Require annual upgrades to current National Electric Safety Code (NESC) wind loading standards of a 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 would 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.

CenterPoint Energy requests that this recommendation be revised to require that a study be performed in order to allow the Commission the opportunity to consider the cost magnitude, construction issues, and schedule as well as any potential benefits prior to requiring the replacement of the existing transmission infrastructure throughout Texas. To facilitate the one year study schedule, CenterPoint Energy recommends limiting the study to a small sample (e.g. 5% of circuits) of the utility's transmission infrastructure.

In addition, transmission facilities constructed since 1977 should be exempt from inclusion in the recommendation. In 1977, the National Electrical Safety Code (NESC) first introduced Rule 250C for Extreme Wind Loading. The rule is based on the fastest mile of wind and wind pressures. Major revisions have been made to NESC Rule 250C since 1977, most notably in 1987 (i.e. basic wind speeds) and in 2002 (i.e. 3-second gust wind speeds).

In the event that the Commission does not adopt the recommendation for utilitiesto first perform a study on this recommendation, the following issues should be considered:

1. The recommendation will create a significant increase in costs. First, CenterPoint Energy will be required to perform an analysis on all transmission structures to determine whether the structures meet the current NESC standards. CenterPoint Energy estimates that such a study for its entire transmission system may cost as much as \$1million to \$2 million. Once the analysis is complete, CenterPoint Energy will have to implement replacement of the designated structures. As proposed, CenterPoint Energy estimates that 15% to 60% of the transmission facilities could require replacement at an approximate cost of \$300 million to over \$1.3 billion. The cost would be significantly reduced if the scope of the recommendation was reduced to the most vulnerable wood structures, which are the most susceptible to strength degradation over time. Exempting facilities constructed in 1977 or after would also reduce the study and retrofit cost while providing a benchmark for facilities that meet an extreme wind design.

2. There needs to be clarification as to what is meant by "current" code wind loading standards. Does this require replacement at the loading standards that are current

at the time of replacement, or does it require that each time the NESC wind loading requirements change, the transmission facilities must also be changed? CenterPoint Energy recommends that "current NESC wind loading standards" be replaced with "the requirements of the 1977 or later edition of the NESC Extreme Wind Loading standards". This would remove the implication that changes to the NESC would require continued reevaluation and retrofitting of the transmission system. It also acknowledges that constructing to an extreme wind loading standard is required.

3. The requirement that all transmission infrastructure upgrades within ten miles of the Texas coastline would be required to meet current NESC standards assuming 140 mile-per-hour wind speed may affect 5% to 10% of CenterPoint Energy's structures. The replacement cost for these facilities could be between \$100 million to \$200 million depending upon the results of a detailed engineering study.

It should be noted that the 140 mile-per-hour wind speed corresponds to the nominal design 3-second gust wind speed referenced in the 2002 edition of the NESC. If future editions of the NESC remove the methodology of the 3-second gust wind speeds, the 140 mph wind speed reference may no longer be reasonable. To avoid the additional complexity of this recommendation and its need for continued modification with changes to the NESC, CenterPoint Energy recommends that the 10 mile coastal requirement be absorbed into the general requirements to build to and/or retrofit to the extreme wind loading in accordance with the 1977 or later edition of the NESC.

### **Recommendation 11** Require all new and replacement transmission structures to be pre-stressed concrete or steel.

CenterPoint Energy requests that this recommendation be amended to allow for the use of "other engineered products". The electric industry is developing innovative materials to use for transmission construction, such as structures made from composite materials like fiberglass. The Commission should not limit TDUs from using advanced technology that does not include concrete or steel.

CenterPoint Energy estimates that this recommendation will affect approximately 15% to 20% of its existing structures. The cost implication is dependent upon the cost of the materials that are susceptible to market demand and raw material pricing. Smaller class wood poles (e.g. Class 1) are generally less expensive than steel or concrete. Larger class wood poles (e.g. H5) are generally more expensive than steel or concrete and more difficult to find on the market. Currently, CenterPoint Energy considers all material types when replacing structures to meet design criteria and schedules, control costs, and mitigate construction difficulties. CenterPoint Energy recognizes that designing to an extreme wind condition may eliminate the use of wood structures in many cases, especially along the coast; however, banning the use of wood in all cases may not prove to be so necessary, especially for small capacity lines when coupled with good maintenance practices.

#### **Recommendation 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.

1. As discussed at the public meetings, it is highly unlikely that landowners will find this recommendation favorable. If such rights are obtained, it will likely be at

significant costs and possibly through numerous condemnation proceedings. CenterPoint Energy experiences much resistance to removal of trees within Company ROW easements already. In addition to landowner resistance, utilities often receive similar resistance from cities to removal of street trees due to their aesthetic and sometimes historical benefits.

2. From the Workshop, it was clear that removal of trees beyond the limits of the ROW was the intent of the recommendation. Clarification is needed as to whether removal of trees within falling distance or simply grow-in distance at maturity is the basis for removing a tree. CenterPoint Energy believes that trimming within the limits of the distribution ROW is just as effective as tree removal. Removal of trees from within transmission ROW, however, is CenterPoint Energy's current practice along with removal of dead or dying trees outside of the transmission ROW. The Recommendation should not require the removal of all trees. If the tree can be trimmed in order to protect the facilities, then trimming should be sufficient.

3. The Commission should clarify what is meant by ROW easement. As previously discussed, many of CenterPoint Energy's facilities are located within the street ROW. CenterPoint Energy does not have an easement to use the street ROWs, but the facilities are placed there pursuant to the franchise agreements with the various cities.

4. Lastly, the Commission should clarify what is meant by "high wind conditions". Is this term limited to winds associated with hurricanes or does it include winds related to severe thunderstorms? From the discussion at the Workshop, it seems that the Commission Staff's intent is to limit the wind speeds to 60 miles per hour or greater.

#### **Recommendation 13**

Require utilities to identify any damage of transmission and distribution facilities that occurs as a 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.

This recommendation is of similar nature to information already available in other reports being produced for the Commission, specifically reports submitted pursuant to PUC Subst. R. 25.52(f)(1) for distribution and PUC Subst. R. 25.83(d) for transmission. These existing reports should be utilized for information on restoration events in lieu of this recommendation.

In the alternative, the reports should not be required for transmission facilities due to the fact that incidents of damage to transmission facilities are rare in comparison to distribution facilities. The Commission previously required the reporting of transmission outages, but abandoned the requirement due to lack of significant findings and the small numbers of outages reported by the utilities.

In the event that the recommendation is not deleted, the following clarifications should be made.

1. There should be clarification on the level of "damage" that must be reported. There is a significant range of damage that can occur to electric delivery facilities. Better definition of the expectations for reporting should be provided to the TDUs. CenterPoint Energy recommends that summary data for sustained line outages be reported in lieu of a detailed "pole by pole" account and that damage reports should be limited to events causing repairs greater than \$250,000.

2. The requirement to report the age of the structure should be deleted. Not all facilities are date stamped and significant research may be required to obtain the information on a component by component basis, if available. Furthermore, the age of the equipment does not necessarily attribute itself to the cause of the failure. New facilities can be damaged by large falling trees the same as older, well-maintained, facilities.

**Recommendation 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.

CenterPoint Energy requests that this recommendation be amended.

1. There should be clarification as to whether the recommendation applies to substations to be constructed in the future or to all future and existing substations. CenterPoint Energy urges the Commission to limit the requirement to future substations; otherwise, there will be significant costs to retrofit all substations. From the Workshop, if seems that the intent of the Commission Staff is for the recommendation to apply to only future installations.

2. Significant portions of CenterPoint Energy's service territory are located within flood prone areas. CenterPoint Energy estimates that an additional \$100,000 to over \$1 million may be required to raise a substation site to meet a 500-year rain event.

3. The definition of a 500-year rain event should be tied to a specific reference such as flood maps prepared by the Federal Emergency Management Agency (FEMA) or another specific method for determination. The Commission should also exclude water levels related to storm surge and downstream flooding.

4. The recommendation should be clarified to recognize the fact that flood plains change over time due to subsidence and economic development. The Commission should not require that substations be retrofitted to comply with then current standards.

**Recommendation 17** Require burial of all new distribution lines serving new residential developments.

CenterPoint Energy requests that this recommendation be clarified.

1. There should be clarification as to the definition of "new distribution lines". As currently drafted, it is unclear whether all distribution feeders exiting a substation would be included in this recommendation or whether the recommendation is limited to the facilities within the subdivision itself or also those around the subdivision.

2. There should be clarification as to the definition of "new residential development". As currently drafted, it is unclear if one or two homes would constitute a residential development or if the term is intended to apply to master planned communities of certain sizes.

3. The Commission should provide clarification on cost recovery. Currently, CenterPoint Energy's tariff requires landowners or developers, under certain conditions, to pay for costs to provide underground service, which is considered to be non-standard service. It is unclear whether it is the intent for this recommendation to alter the current requirements of the tariff. If so, each TDU's tariff would have to be amended through a separate proceeding to address this change.

#### **III.** Conclusion

The overall costs to implement the recommendations will be significant; therefore, CenterPoint Energy recommends that studies be performed prior to adopting

the recommendations for the Commission to consider the cost magnitude, construction issues, and schedule as well as any potential benefits before making a recommendation to replace existing infrastructure. CenterPoint Energy estimates that for its service territory alone the retrofit costs could be over \$1.3 billion. CenterPoint Energy questions the prudence of initiating such requirements on the TDUs and the ratepayers of Texas without significant evaluation of the impacts. The recommendations regarding removal of live trees will impact the current aesthetics of the communities and cities. Public resistance will be significant to such a requirement. CenterPoint Energy believes that the current practices for operating, maintaining, and constructing the transmission and distribution facilities in its service territory are adequate. At a minimum, many of the recommendations need clarification as to the intent, and better definitions of terms and expectations should be provided.

Respectfully submitted,

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SCOTT E. ROZZELL Executive Vice President and General Counsel State Bar No. 17359800 DEANN T. WALKER State Bar No. 20696840 1005 Congress, Suite 650 Austin, Texas 78701 (512) 397-3032 (512) 397-3050 (fax)

ATTORNEYS FOR CENTERPOINT ENERGY