Control Number: 32182

Item Number: 37

Addendum StartPage: 0

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

AEP TEXAS CENTRAL COMPANY'S RESPONSE TO QUESTIONS POSED BY COMMISSION STAFF

FEBRUARY 24, 2006

TABLE OF CONTENTS

2006 FEB 24 PM 4:11

37

PUC 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	§ § § § § § §	**PUBLIC UTILITY COMMISSION OF TEXAS**

AEP TEXAS CENTRAL COMPANY'S RESPONSE TO QUESTIONS POSED BY COMMISSION STAFF

Table of Contents

PUC DOCKET 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	§ § § § § § §	**PUBLIC UTILITY COMMISSION OF TEXAS**

AEP TEXAS CENTRAL COMPANY'S RESPONSE TO QUESTIONS POSED BY COMMISSION STAFF

NOW COMES AEP Texas Central Company (TCC), and files the following response to questions posed by the Public Utility Commission of Texas Staff (Staff) regarding the Public Utility Commission of Texas (PUC or the Commission) investigation concerning the appropriate infrastructure for electric utilities and telecommunication providers to deploy in the hurricane prone areas of the state. On February 3, 2005 Staff filed a letter inviting certain utilities to respond to the following questions:

1. What are your company's proposals for hardening the network infrastructure, and modifying utility operations to minimize outages and speed up restoration for the next 1 to 5 year time frame? Please include the applicable financial data to show how the utility intends to fund these proposals.
2. What are your company's long-term plans to modify your network infrastructure to minimize outages and speed-up restoration in the areas prone to hurricane in Texas? Please provide detailed information outlining your plans for the next 5 to 10 years and 11 to 20 years and beyond. Please include financial data to show how the utility intends to fund these proposals.
3. Please explain what your expectations are as to the actions of this Commission, the state and local government, the affected community and any other entity to facilitate your proposals described under items 1 and 2 above.

I. Introduction

TCC appreciates the opportunity to respond to Staff's questions regarding the "hardening" of the electric system located along the gulf. Certainly the devastation that resulted from hurricane's Rita, Katrina, Wilma, and Dennis sparked a great deal of discussion to the best possible methods to design and construct buildings, bridges, and electric structures to withstand such storms. TCC understands the difficulty in striking a balance between the costs associated with hardening the electric system and the reduction in the number and duration of the outage. In responding to Staff's questions, TCC provides a brief history of the storms it has experienced, its current practices related to design and maintenance, as well as some suggestions related to hardening the infrastructure and their related costs. Further, TCC offers some thoughts related to how costs associated with hardening the TCC infrastructure might be recovered.

II. TCC Transmission System

Since its inception, the TCC has had the challenge of establishing and effectuating plans for the arrival of tropical systems, as well as planning restoration efforts in their aftermath. Significantly, the damage caused by hurricane Celia in 1970, created a shift in TCC's transmission design standards and as a result damage to TCC's transmission system from subsequent storms has declined.

Hurricane Celia, the third named storm of the 1970 hurricane season, made landfall along the Texas coast at Corpus Christi on August 3, 1970. Celia, a class 3 hurricane with sustained winds of 125 mph and wind gusts of up to 161 mph, was responsible for $2.3 billion dollars in property damages and 16 deaths in Cuba and Texas. The TCC transmission system suffered failures of 606 wood H-Frame, 273 wood B-Type and 1 steel tower at 69 kv, as well as 173 H Frame structures at 138 kv.

Although many of TCCs structures built prior to Celia have withstood a number of hurricanes with winds in excess of 120 mph, design criteria for these structures was not necessarily intended for wind loading at those speeds. As a result of Celia, TCC design criterion for structures within 75 miles of the Gulf Coast changed to include wind loading at 140 mph. Currently, with regard to wind loading, the National Electric Safety Code (NESC) establishes 6 different wind loading zones for the TCC geographic area ranging from 140 mph on the barrier islands to 90 mph approximately 135 miles inland. These wind loading zones are:

- 140 mph design loads from the barrier islands to approximately 20 miles inland.

- ➢ 130 mph design loads in an area approximately 20 miles inland to approximately 30 miles inland.
- ➢ 120 mph design loads in an area approximately 30 miles inland to approximately 40 miles inland.
- ➢ 110 mph design loads in an area approximately 40 miles inland to approximately 75 miles inland
- ➢ 100 mph design loads in an area approximately 75 miles inland to approximately 135 miles inland.
- ➢ 90 mph design wind loading for facilities more than 135 miles inland.

TCC designs more conservatively in the coastal areas by combining these zones in to the following TCC wind loading zones.

- ➢ 140 mph design loads from the barrier islands to approximately 75 miles inland.
- ➢ 100 mph design loads from approximately 75 miles inland to approximately 135 miles inland.
- ➢ 90 mph design loads for facilities more than 135 miles inland.

Further, TCC engineering designs its transmission system according to the NESC's Medium ice loading district criteria despite the fact that counties along the Texas coast fall into the NESC Light loading district. This, in effect, increases the vertical loading capability of transmission line structures and does provide for some "hardening" against debris hitting structures and/or the associated conductors, especially in angle and dead-end structures.

Along with design changes, TCC now constructs 99% of all new transmission lines (69kV and up) using tubular steel pole, steel lattice or spun concrete structures. While the use of these types of materials does not generally "harden" the transmission grid, since wood structures can be designed to withstand the same loads and winds, they do provide some advantages in improved maintenance and construction costs.

These design and construction changes have made an impact on the TCC transmission system as demonstrated by the following:

Allen: Hurricane Allen was one of the strongest hurricanes in recorded history and one of the few to reach Category 5 status on three separate occasions. Allen made landfall north of Brownsville on August 9, 1980, as a Category 3 storm with sustained winds of 115 mph and peak wind gusts in excess of 129 mph. Two deaths in Texas were directly attributable to Allen. The storm spawned several tornadoes, throughout South Texas including Austin. Damage estimates from Allen stand at around $2.5 billion. TCC suffered the loss of 14, 138kv and 119, 69kv structures, with most of those facilities (108 structures) located in the Alice and Kingsville areas.

Gilbert: Hurricane Gilbert made land fall at the Yucatan peninsula of Mexico on September 14th 1988. Gilbert was classified as a Category 5 hurricane with sustained winds up to 185 mph. Gilbert was responsible for the deaths of 318 people, 3 of these deaths were in the United States. The damage estimates for Gilbert stand at approximately $5 billion. Gilbert did not actually make landfall along the Texas coast but did skirt the Texas border along a path through northern Mexico. In the TCC area, Gilbert was responsible for 29 recorded tornados in the south Texas area. TCC suffered no significant damage to any transmission facilities due to hurricane Gilbert or the tornados that it spawned.

Bret: Hurricane Bret made landfall along the Texas coast between Corpus Christi and Brownsville on August 22, 1999. Bret was a Category 3 hurricane at landfall with sustained winds of 115 mph and was responsible for $60 million in damages and no direct deaths. There was substantial rain fall associated with Bret throughout south Texas and northern Mexico and 4 traffic deaths were attributed to the rainy conditions. TCC suffered the loss of 3, 138kv wood H-Frame structures as a result of this hurricane.

Claudette: Hurricane Claudette struck the Texas coast at Port O'Connor on July 15th 2003. The storm was officially a strong category 1 hurricane with sustained winds of 90 mph at land fall. Claudette was responsible for $180 million in damages statewide and three deaths, 1 direct and 2 indirectly. Damage to the TCC transmission system due to Claudette consisted of 11 damaged structures, including 9 wood H-Frame 69kv and 2 wood H-Frame 138kv structures.

Although design criteria for new construction changed in 1970, there remain in service a significant number of transmission lines that were not constructed utilizing the 140 mph design criteria. Utilizing a 50 mile strip along the Texas coast, TCC has approximately 2,600 miles of transmission lines comprised of 345, 138, and 69kv built with wood, steel and concrete. Of these lines, TCC estimates that approximately 1600 miles are constructed to withstand winds up to 140 miles per hour, leaving 1000 miles built to pre-1970 design criteria.

Along with the 1970 change in design criteria, TCC has in place inspection and maintenance programs which minimize the impact of a hurricane. These programs are summarized below.

a. <u>Right of Way Issues and Danger Trees Outside of ROW</u>

It has been TCC's experience that hurricane damage to both its transmission and distribution facilities is a result of both the direct and the consequent effects of these storms – including but not limited to fallen trees and flying debris from damaged buildings, business signs and, other non secured items. Although TCC takes steps to maintain and clear its right-of-ways (ROW), attempting to address potential hazards outside of a ROW can at times, be problematic.

Within its ROWs, TCC conducts a vegetation management program, which is an integrated program utilizing a variety of management techniques. Maintenance does not occur on a rigid "cycle" basis (in which circuits are scheduled based on the time duration since last trimming); rather, it occurs on an ongoing basis depending upon the condition of the vegetation and the management tool to be applied.

All vegetation deemed capable of encroaching around the conductor where a fault would be expected to occur during normal operating conditions is managed. TCC adheres to the NESC electrical standards to avoid conflicts between vegetation and conductors. TCC also attempts to trim according to tree species and growth rates, however; obtaining this minimum clearance is often difficult due to customer concerns.

In areas outside of its ROW, TCC uses its best efforts to identify "danger trees" (unhealthy trees outside of TCC's ROW that have the potential of falling into the electric system) and endeavors to remove these hazards dependant on easement and landowner constraints. As a result of these efforts, TCC estimates that the danger trees outside of the right of way are cleared at 100% on the 345kv transmission line system, 60% on the 138kv transmission system, and an undetermined amount on the 69kv transmission system.

b. <u>TCC Transmission Line Inspection Program for the Coastal Area of Texas.</u>

TCC conducts a line inspection program for transmission facilities located within the coastal region utilizing the following guidelines:

- A routine aerial inspection performed on all facilities within the coastal area annually.

Utilizing a staggered inspection schedule:

- A comprehensive climbing inspection performed on wood poles and structures every 8 years and on non-wood poles and structures every 10 years.
- A walking inspection performed on wood poles and structures every 8 years and on non-wood poles and structures every 10 years.
- A ground line inspection with treatment for deterioration (if necessary) performed every 10 years.

c. Maintenance Guidelines for the TCC Transmission System in the Coastal Areas

Inspection and maintenance of TCC's transmission system seeks to assure that the lines perform their function safely and provide optimum service and reliability to our customers. TCC utilizes periodic line inspections to observe and report the present physical condition of the transmission line and right-of-way. The evaluation of the condition of any of its components, which may be near the end of useful life, may present potential danger to the public, company personnel/equipment or may pose an immediate threat of circuit interruption. Inspections of all types provide information concerning the general condition of the transmission system, in addition to indicating areas requiring immediate corrective action. Items found during routine inspection that appear to require urgent attention are scheduled as soon as possible for repair. Inspections can also reveal certain trends, such as increasing structure or hardware deterioration that allows for future planning, budgeting and scheduling of resources. Inspections, combined with follow up corrective maintenance, provide a safe environment for the public and company personnel, and continue system reliability.

d. Capital and O&M Impact of Hardening the TCC Transmission System

As previously discussed, the design criteria utilized by TCC prior to 1970 was not necessarily intended for heavy wind loading. Post 1970 designs, however, do include design criteria enabling transmission structures to withstand 140 mph winds. TCC estimates that it has approximately 1,000 miles of transmission facilities built to pre 1970 standards. Preliminary estimates indicate that TCC would need to fund approximately $966 million dollars to rebuild or upgrade the 138kv and the 69kv lines within the coastal region that are pre 1970 construction. Importantly, all of TCC's 345kv transmission lines are designed to withstand 140 mph winds.

e. **Planning Criteria Changes**

Another means to mitigate the impact of hurricane damage is to make additions to the transmission grid that will provide hurricane immune transmission paths. Much of the bulk transmission system serving the Gulf Coast follows the coastline. The load centers on the coast that depend on these transmission paths may be better served with system upgrades remote to the coastline, as a preferable alternative to the strengthening of the existing exposed transmission path. Specifically, the lower Rio Grande Valley is almost entirely dependent on a pair of 345kv lines that are within 60 miles of the Gulf Coast. By adding a third 345kv line to the Valley that is remote to the coast, the loss of load due to the outage of either, or both of the existing 345 kV lines would be mitigated. The 345 kV transmission path from San Antonio to Laredo already endorsed by the ERCOT Board, could be extended from Laredo to the Valley. As such it would provide the third transmission path to the Valley, which is sufficiently removed from the coast that it is immune to hurricane damage. An Achilles' heel of the transmission system is certain coastal transmission substations that function as focal points for multiple 345 kV lines that serve south Texas. The Laredo 345 kV transmission path would provide an independent source of power to south Texas, should substations experience catastrophic damage from a hurricane.

In general, it may be possible to strategically upgrade substation and lines in order to withstand multiple outages that would be caused by a hurricane. Typically, the transmission grid is designed to survive the loss of any one individual element of the system. Depending on the magnitude of the loss of load, Transmission Providers may consider reinforcements of existing lines and substations that would otherwise not meet Transmission Planning Criteria thresholds without special consideration of hurricane damages. Encouraging Transmission Providers to achieve NERC Criteria C&D compliance with minimally load shed in hurricane prone areas would resulting in improved resilience to hurricane damage.

III. TCC Distribution

TCC does not have a detailed strategy for hardening the electrical distribution system against hurricanes, but continuously endeavors to improve its distribution system for the purpose of providing a safe and reliable delivery of electricity and would note that TCC currently spends 8-10 million dollars annually in infrastructure improvements throughout its distribution service area. It is difficult to establish an infrastructure hardening plan without a complete and thorough understanding by all concerned (regulators, legislators, and market participants) regarding the standards to be adopted, the costs associated with such efforts, as well as how the increased cost of the hardened infrastructure would be funded and subsequently recovered.

To respond to Staff's questions, TCC offers this discussion of the current distribution design standards and maintenance programs at TCC, as well as a discussion related to potential "infrastructure hardening" efforts.

a. Current Design Standards for Distribution Structures

Presently, all of TCC's Distribution Standards are based upon meeting the current requirements of the NESC. In applying these standards to TCC's service area, the NESC requires the Extreme Wind Loading Case (150 mph wind) to be evaluated on all structures over 60 feet above ground or water level, or on structures having supported facilities over 60 feet above ground or water level. While most distribution facilities fall below the 60 ft. criteria and therefore do not meet the Extreme Wind loading case, facilities located within 5 miles of the Gulf Coast are considered to be within a "corrosive zone." Together, the application of the corrosive zone requirements and the application of a design tool called LD Pro aid in assuring that all current and future distribution designs meet or exceed the requirements of the NESC.

When the distribution system designer uses the LD Pro Light loading corrosive templates for the corrosive zone, LD Pro automatically checks the Extreme Wind loading case with 150 mph wind and the equivalent 57.6 Pounds per sq.ft. wind loading on all structures in the design case, regardless of structure height or the height of facilities attached to a structure. In the vast majority of cases in the corrosive zone, the 150 mph wind loading will be the controlling factor in determining the design of the new line and thereby apply the NESC Extreme Wind loading case to structures of less than 60 ft in height. (The map on page 168 of the 2002 NESC depicts the 3 second gust wind speeds for the Western Gulf of Mexico Coastline).

For areas beyond 5 miles of the coast (outside the corrosive zone), and when a TCC designer uses other LD Pro templates, LD Pro automatically considers an Extreme Wind loading case with 25.6 Pounds per Square Foot (100 mph) wind loading on all structures in the design case, regardless of structure height or the height of facilities attached to a structure. This 100 mph wind loading used to evaluate all structures exceeds the current NESC requirements.

In summary, TCC believes that its current line designs in the hurricane prone areas of TCC's distribution system exceed the current requirements of the NESC.

b. Pole Inspection and Maintenance

TCC's current pole inspection program has been in place since 2001. The program consists of:

- A detailed inspection of company owned wood poles once every 10 years for all poles that have been in service for 18 years or longer.
- For poles located in the coastal areas of Texas, a detailed inspection of company owned wood poles is performed once every 10 years for all poles that have been in service for 10 years or longer.

The primary objective of this program is to proactively maintain the mechanical integrity of TCC's wood pole infrastructure necessary for the safety of employees and the public under the conditions specified by the NESC and for system reliability. This objective is accomplished by identifying and mechanically reinforcing weak poles, as well as identifying and replacing poles that have reached the end of their service life.

c. System Hardening

As previously discussed, TCC already designs distribution facilities, located within 5 miles of the Gulf Coast, to exceed the NESC Extreme Wind velocity zone criteria. Potentially TCC could take the approach of extending these standards (from 5-miles) to its existing infrastructure located within 30 miles of the Gulf Coast. TCC estimates that approximately 175,000 poles (about 25% of all the poles at TCC) within 30 miles of the Coast. If the Extreme Wind velocity zone criteria were applied to this area, the result would be either replacing these poles with larger class poles or decreasing the spacing between poles at an estimated cost of $200 million. This estimate assumes that no other facilities (wire and transformers) would have to be replaced. Further, TCC estimates that it would require approximately 1.2 billion man-years of work to complete this task. Replacement of the entire overhead electrical distribution infrastructure, including transformers wire, etc., within this 30-mile zone would cost approximately $500 million.

It is important to note that if a decision is made to replace existing wood structures with steel structures, the cost is estimated at $300 million ($600 million including transformers, wire, etc.). Additionally, the use of steel poles would also require a fundamental change in the equipment TCC utilizes to build and maintain its distribution system at a cost of $2 million per year.

d. <u>Under-grounding</u>

Approximately 13% of TCC's current distribution system consists of underground (UG) facilities; however, most of the distribution construction taking place in new subdivisions is underground. Recently, most of the major cities in TCC's service territory have established ordinances encouraging the installation of UG electrical distribution in new subdivisions in accordance with TCC's standard line extension policy.

As part of TCC standard line extension policy, the developer of a residential subdivision receives certain allowances that are applied toward the installation of an UG distribution system. While TCC is supportive of installing UG facilities in new residential subdivisions, recent meetings with developers and Legislators to explain TCC line extension indicate that it is unlikely developers in the TCC territory would be accepting of rules or policy changes that would increase their costs.

TCC continues to work with developers that desire a total underground concept, but has found that most choose not to do so due to the cost, as well as the need to have a fully developed master plan for the area to be developed as underground electrical facilities once in place are not easily modified. If TCC is required to install UG facilities at all new subdivisions as a standard offering, TCC estimates the costs to be as high as $30 million annually.

In the past cities, communities and other entities have approached TCC concerning the conversion of existing overhead facilities to underground; however, few of those projects have gone forward as a result of the cost associated with installation, as well as the inability to secure the space for the pad-mounted equipment necessary for the conversion. For example, a three phase switch pole that is approximately 12 inches in diameter at the ground line must be replaced with a 6'X6'X4' pad-mounted switchgear and have ample room available around it to allow the doors to be opened as well as for the ability of our employees to safely accomplish their work. A pad-mounted transformer similar in size to the pad-mounted switchgear replaces a three-phase overhead transformer bank on a similar size pole. Most existing city rights-of-way are not large enough to accommodate these facilities and cities have been reluctant to approach landowners along the route in efforts to secure the necessary easements to accomplish the requested conversion. In some cases, TCC was unable to avoid estimating the cost of the requested conversion by simply having the city planner visit a TCC service center to see the equipment that would have to be placed in the right-of-way. While TCC has been willing to work with the cities to allow placement of underground facilities within the city rights-of-way it is not TCC's preference to do so. If at all possible, TCC would prefer easements adjacent to the rights-of-way or along the rear lot lines. In this manner, TCC is somewhat isolated from street widening, sidewalk, curb and gutter, storm sewer, water and other projects that may require relocation or shoring of our facilities.

Conversion of the overhead electrical distribution facilities within 30 miles of the Texas coastline would be a costly as well as lengthy project. Estimated costs would be in the range of $4 billion and would require in excess of the estimated 24 billion man-years (utilizing the existing work force) to complete due to the anticipated difficulty in obtaining the necessary easements as well as coordination issues with customers in the areas being converted.

TCC believes that it is the intent of both the NESC and the PUC to address the issue of wind damage to facilities in a hurricane without regard for the damages caused by storm surge and the subsequent wave action. As a result of Hurricane Katrina, most of the damage south of I-10 in Mississippi was the result of storm surge and wave action. Those who visited this area after Hurricane Katrina remarked that it looked like the area had been bulldozed. Not only was the electric infrastructure gone but the homes and business it served were swept away as well. Low lying areas on the northeast side of the eye of Hurricanes Katrina and Rita at land fall like Cameron and Grand Isle, LA no longer exist and only time will tell it they are to be rebuilt or simply drift into obscurity like Indianola, TX. Today Entergy has over 100,000 locations that have not had service restored because there is no longer anything to serve or what is left is too severely damaged to receive service, CLECO has approximately 10,000 locations in the same situation. Additionally, CLECO is beginning to experience outages on some of the pad-mounted transformers that were submerged in 8 to 12 feet of salt water, the hurricane may have come and gone but its legacy will endure for years to come. Placement of "hardened" electric distribution facilities in the low lying areas along the Texas Gulf coast specifically the more costly underground facilities places a heavy financial burden on the utility to replace those facilities after they are swept away by the storm surge and increases rather than decreases recovery time.

e. Vegetation Management

Trimming on distribution circuits is performed according to ANSI A-300 and NESC standards. TCC promotes the idea of the right tree in the right location has received the Tree Line USA award for the past seven years.

Circuits to be trimmed within the TCC territory are chosen based on the tree related SAIFI and SAIDI in an effort to both address worst performing circuits as well as improved the overall system outage indices. To maintain a skilled tree trimming work force the work is prioritized and planned over a 12 month time period. While it might be possible to address the coastal areas of the service territory prior to hurricane season TCC would expect to pay a premium to do so.

In reviewing an infrastructure hardening plan submitted by Florida Power and Light (FPL) to the Florida Public Service Commission, FPL noted that 81% of the tree related outages caused by Hurricanes Katrina and Wilma were not preventable by FPL. In other words, no trimming standard or work performed by FPL would have prevented these outages from occurring. Further, in recent workshops held by the PUC, Entergy and TXU noted that much of the damage sustained by their system was a result of trees and other flying debris, located outside their right-of-way, falling into their lines. TCC like most other utilities is negatively impacted by trees outside the right-of-way, or easement, which place such trees outside the location of and not a part of TCC's trimming program. Tree trimming is a volatile issue. Even while trimming within its acquired rights-of-ways and easements TCC often faces considerable opposition from both citizens as well as city governments. Such opposition makes it extremely difficult to get the necessary clearance within the right of ways and easements and it is extremely unlikely that removal of trees or tree limbs from areas outside those areas would be tolerated.

IV. Regulatory and Governmental Action

Regarding the issue of how regulatory, local and state government, and communities may facilitate a hardening of the Texas Gulf Coast infrastructure, TCC suggests the following:

- Clearly define the areas along the Texas Coast where the infrastructure is expected to be hardened against hurricanes and the criteria by which the transmission and distribution utilities (TDUs) are expected to design their system.
- Provide the necessary funding recovery mechanism to allow the infrastructure to be hardened.
- Address vegetation management across the state to assist TDUs in their attempts to clear the right of ways and easements.
- Commission support of TDU's vegetation management programs.
- Adjust the reliability standards for each utility if additional under-ground facilities are required as a result of the hardening efforts. Studies have shown that outages to underground equipment take on average 55% longer to resolve.
- Revise Transmission Planning Criteria to provide consideration of redundant circuits that would mitigate hurricane related outages.
- Commission consideration of the appropriate inventory levels necessary to facilitate storm recovery efforts.

V. Cost Recovery

All of the TDUs in Texas currently design and build their transmission and distribution facilities to meet and/or exceed the current NESC standards established for their particular geographic area. These standards establish rules for the practical safeguarding of persons during the installation, operation, or maintenance of electric lines and associated equipment. The NESC contains the basic provisions that are considered necessary for the safety of employees and the public under the specified conditions and includes provisions for areas susceptible to hurricane-force winds. Should the PUC decide to establish alternative design parameters for the Texas Gulf Coast, TDUs will incur significant costs, as discussed above, that should be recoverable without the need for a full rate proceeding.

Currently, there are cost recovery mechanisms designed to recover incremental transmission investment. P.U.C. SUBST. R. 25.192(g) and 25.193 provide mechanisms for a TDU to revise its transmission rates to reflect changes in, among other things, its invested capital on an annual basis through the interim TCOS mechanism for transmission companies and the TCRF mechanism for distribution companies. TCC believes that increases in invested capital for the "hardening" of facilities qualify for treatment under the TCOS mechanism; however, a review of the rule may be appropriate to ensure recovery of these investments.

Distribution investments can now only be recovered through a general rate case proceeding, which can be costly and time consuming, and could result in delays in the recovery of the investment costs. Given the significant investments that could be required by a change in distribution design requirements, TCC supports the development of an alternative regulatory mechanism that would allow for more timely recovery of incremental distribution costs. There are several general types of cost recovery mechanisms that could be applied to distribution investments. Some examples include: (1) adapting the TCOS and/or TCRF mechanism to apply to distribution investments; (2) implementing a mechanism similar to the Gas Reliability Infrastructure Program which is a mechanism currently in use at the Railroad Commission of Texas for gas distribution utilities to seek recovery of incremental investment costs; (3) a bandwidth mechanism that would consist of periodic (most likely annual) filings with the PUC that allow rate adjustments if a distribution utility's return on equity is determined to be outside a preset bandwidth; or, (4) a separate rider to a distribution utility's tariffs to allow recovery of incremental investment costs that are designed to harden the infrastructure (an example of this last option is the Public Service Company of Oklahoma's "Reliability Rider," which allows recovery of incremental costs associated with tree trimming expenses and investments in underground facilities).

TCC believes that each of these types of recovery mechanisms have advantages and disadvantages associated with them and recognizes that these concepts need to be more fully developed and discussed with all interested parties through workshops and rulemakings to ensure that the mechanisms are well designed, streamline the regulatory process, ensure timely cost recovery and provide due process to all parties in the process. TCC has begun the process of further exploring the mechanisms described above and will endeavor to share information as it is more fully developed with interested parties in the near future.

VI. Conclusion

TCC appreciates the opportunity to submit this response and looks forward to meeting with Staff to discuss issues related to "hardening" TCC's electric system.

Dated: February 24, 2006

RESPECTFULLY SUBMITTED,

American Electric Power
400 West 15th Street, Suite 1520
Austin, Texas 78701
Jerry N. Huerta
State Bar No. 24004709
Telephone: (512) 481-3323
Telecopier: (512) 481-4591

By: ______________________
Jerry N. Huerta

ATTORNEY FOR AEP TEXAS CENTRAL COMPANY

CERTIFICATE OF SERVICE

I hereby certify that a true and correct copy of the foregoing document was served on all parties of record in this proceeding by hand-delivery, overnight delivery, facsimile transmission, or U.S. first-class mail on the 24th day of February 2006.

____
Jerry N. Huerta