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SOAH DOCKET NO. 473-00-0945
PUC DOCKET NO. 38743

APPLICATION OF ELECTRIC TRANSMISSION TEXAS, LLC TO AMEND ITS CERTIFICATE OF CONVENIENCE AND NECESSITY FOR THE TESLA TO EDITH CLARKE TO CLEAR CROSSING TO WEST SHACKELFORD 345 KV CREZ TRANSMISSION LINE IN CHILDRESS, COTTLE, HARDEMAN, FOARD, KNOX, HASKELL, JONES, AND SHACKELFORD COUNTIES	§ § § § § § § § § § §	BEFORE THE STATE OFFICE OF ADMINISTRATIVE HEARINGS

INTERVENOR CROSS REBUTTAL TESTIMONY OF

HAROLD L. HUGHES JR., P. E.

ON BEHALF OF

DUFF/ALEXANDER GROUP

JANUARY 11, 2011

APPLICATION OF ELECTRIC TRANSMISSION TEXAS, LLC
TO AMEND ITS CERTIFICATE OF CONVENIENCE AND NECESSITY FOR
THE TESLA TO EDITH CLARKE TO CLEAR CROSSING TO WEST SHAKELFORD
345 KV CREZ TRANSMISSION LINE IN
CHILDRESS, COTTLE, HARDEMAN, SHACKELFORD COUNTIES

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INTERVENOR CROSS REBUTTAL TESTIMONY OF HAROLD L. HUGHES JR

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I. INTRODUCTION

Q. PLEASE STATE YOUR NAME, BUSINESS ADDRESS, CURRENT POSITION, AND CURRENT RESPONSIBILITIES.

A. My name is Harold L. Hughes Jr. I am employed by R. J. Covington Consulting, LLC as a consultant. My business address is 11044 Research Blvd., Suite D-230, Austin, Texas 78759.

Q. PLEASE BRIEFLY OUTLINE YOUR EDUCATIONAL AND PROFESSIONAL BACKGROUND.

A. I have a Bachelor of Science degree in Civil Engineering and a Master of Business Administration degree. My over 40 years of professional experience includes power plant construction, transmission line design and construction, fossil fuel procurement and 14 years of electric utility regulation experience with the Public Utility Commission of Texas. During my tenure at the Commission I initiated the formation of the Electro-Magnetic Field (EMF) Task Force, made up of a noted epidemiologist, doctors, engineers, and environmental professionals, to investigate and recommend to the Commission a policy for dealing with EMF associated with transmission lines. This Task Force's report led to the endorsement of the Commission's policy of "prudent avoidance". I also initiated changes to the Certificate of Convenience and Necessity (CCN) application form and Commission rules concerning transmission line CCNs that led to improved information being submitted to the Commission concerning CCN applications. As a consultant, I have advised and presented testimony on behalf of landowners

impacted by proposed transmission lines. Additional details regarding my experience and qualifications are shown on Appendix A.

Q. ARE YOU A REGISTERED PROFESSIONAL ENGINEER?

A. Yes, number 49159 in the State of Texas.

Q. HAVE YOU PREVIOUSLY BEEN QUALIFIED AS AN EXPERT IN PROCEEDINGS AT THE PUBLIC UTILITY COMMISSION OF TEXAS (COMMISSION)?

A. Yes. I have been qualified as an expert and offered testimony before the Commission numerous times. A list of the dockets for which I have filed CCN related testimony is provided in Appendix B.

II. SCOPE OF TESTIMONY

Q. ON WHOSE BEHALF ARE YOU TESTIFYING IN THIS CASE?

A. I am testifying on behalf of Duff/Alexander Group. The Duff/Alexander Group consists of landowners that are aligned for the purpose of this case and who own property in the southwest portion of the study area which would be affected by segments C2, C6b, C6c, C10, C11, C16, C16a, C16b, and C17.

Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY IN THIS PROCEEDING?

A. The purpose of my rebuttal testimony is to rebut certain aspects of the direct testimony of Mr. Scott Hibbs and Mr. Tommy O'Brien on behalf of the City of Abilene, and Mr. Tom Van Zandt on behalf of several ranchers in Shackelford

County. I will also respond generally to assertions made by several intervenors who support ETT's Preferred Route.

III. REBUTTAL TO THE DIRECT TESTIMONIES OF TOMMY O'BRIEN AND MR. SCOTT HIBBS

Q. WHAT ASPECT OF MR. OBRIEN'S AND MR. HIBBS' TESTIMONY DO YOU TAKE EXCEPTION WITH?

A. I take exception to Mr. Obrien's and Mr. Hibbs' recommendation and conclusion that alternate route CW8-CW15 should not be used because they use Links C8 or C9 which they believe would have adverse impacts on the proposed Cedar Ridge Reservoir. I also take exception to several of their specific conclusions that support this recommendation.

Q. MR. OBRIEN STATES ON PAGES EIGHT AND NINE OF HIS TESTIMONY THAT ROUTES USING LINKS C8 OR C9 SHOULD NOT BE USED BECAUSE THEY WOULD REQUIRE STRUCTURES WITHIN A FUTURE FLOODPLAIN. DO YOU AGREE?

A. First, I would point out that the Cedar Ridge Reservoir is still in the early planning stage. As discussed on pages six and seven of Mr. Hibbs' testimony, the potential dam site for the Cedar Ridge Reservoir project has already moved 19 river miles upstream of the original site identified in 2008. Additionally, as detailed in Abilene's response to ETT's first set of requests for admission and requests for information, it has not acquired the necessary land rights for the

proposed site of the project[1] and has not even applied yet for a water rights permit from the Texas Commission on Environmental Quality or any other state agency for the construction of the project at the proposed site.[2] Assuming Abilene applies and gets its permits within its anticipated schedule; completion of construction of this project is not anticipated until approximately the 2029 to 2033 timeframe.[3] By the time the project is completed, the proposed transmission line will be approximately twenty years old.

Second, to my knowledge there is no restriction to building within a floodplain, much less a future floodplain, and transmission lines are often built in these areas. As noted on section 4.2.2 of the Environmental Analysis:

> Proposed construction would likely result in locating some transmission structures within possible floodplains, particularly in the vicinity of stream and rivers. These structures would be designed and constructed so as not to impede the flow of any waterway or create any hazard during flooding.

Third, given the relatively short distances of potential floodplain that might be crossed, many of these areas could probably be spanned by careful placement of the transmission structures or using different types of structures. For example, ETT is not restricted to using only monopoles and can use lattice steel structures with only a nominal difference in cost.[4] By using these types of structures, much greater span lengths can be used.

Q. MR. OBRIEN STATES ON PAGE ELEVEN OF HIS TESTIMONY THAT ROUTES USING LINKS C8 OR C9 SHOULD NOT BE USED BECAUSE

[1] Abilene's Response to ETT's First set of Requests for Admission, RFA 1-5.
[2] Abilene's Response to ETT's First set of Requests for Admission, RFA 1-6.
[3] Abilene's Response to ETT's First set of Requests for Information RFI 1-7.

OF THE UNACCEPTABLE HAZARDS TO CONSTRUCTION AND OPERATION OF THE LINE AS A RESULT OF THE POSSIBILITY OF TOWERS BEING LOCATED WITHIN AREAS THAT WOULD BE FLOODED DURING STORM EVENTS. DO YOU AGREE?

A. No. Although there are disadvantages to constructing in an *existing* floodplain, these disadvantages do not apply to a *future* floodplain. For example:

- Foundations for the transmission structures may need to be larger because of the soils typically found within existing floodplains.
- Construction may be more difficult because of access on wet soils and the high water tables that may cause flooding in any excavations.
- Potential for contamination of water by construction equipment is higher in existing floodplains.
- Existing floodplains are often associated with areas with prime farmland and construction can cause agricultural impacts.

It appear that none of these conditions apply to Links C8 or C9.

Q. MR. OBRIEN STATES ON PAGE TWELVE OF HIS TESTIMONY THAT THE CEDAR RIDGE RESERVOIR SHOULD BE CONSIDERED WHEN AESTHETIC VALUES ARE EVALUATED. DO YOU AGREE?

A. No. The statute and commission rules address actual aesthetic values, not potential or possible values. Addressing potential, future, speculative aesthetic impacts would place an impossible burden on any entity seeking a CCN.

Q. MR. OBRIEN STATES ON PAGE THIRTEEN OF HIS TESTIMONY THAT A LINE THROUGH THE SITE OF THE CEDAR RIDGE RESERVOIR WILL VIOLATE THE POLICY OF PRUDENT AVOIDANCE. DO YOU AGREE?

[4] CCN Application, page 7.

A. Definitely not. Avoiding places where people might gather in the future again places an impossible burden on any entity seeking a CCN since anyone could make that assertion about any area. In my opinion, the utility's design of routes utilizing Links C8 or C9 as viable routes and should be considered by the Commission.

IV. REBUTTAL TO THE DIRECT TESTIMONY OF MR. TOM VAN ZANDT

Q. WHAT ASPECT OF MR. VAN ZANDT'S TESTIMONY DO YOU TAKE EXCEPTION WITH?

A. I take exception to Mr. Van Zandt's conclusion, stated on page 28 of his testimony that because of the relative fragility of eastern Shakelford County, Route CW5 should be selected.

Q. WHY DO YOU TAKE EXCEPTION TO HIS CONCLUSION?

A. Mr. Van Zandt discusses in his testimony the relatively pristine area area along the eastern route CW11 and then discusses the impacts of the proposed Cedar Ridge Reservoir. It seems inconsistent to argue that CW11 should be avoided because the area is pristine and at the same time argue that CW11 should be avoided because a dam is proposed to built in the area and 6,635 acres would be inundated by water all of which is overlooked by scores of wind generators located a few miles to the east of the proposed reservoir. The area may indeed be environmentally fragile, but the incremental impact of a transmission line compared to the impact of a reservoir and multiple wind farms is minimal.

Q. ARE THERE OTHER ISSUES IN MR. VAN ZANDT'S TESTIMONY YOU DO NOT AGREE WITH?

A. Yes. Although I agree with his conclusion that the Clear Fork Crossing at Link C16 is a problem, I disagree with his solution (realignment of C16 to mitigate impacts). I believe the best mitigation measure is simple avoidance.

As Mr. Van Zandt pointed out on page 14 of his testimony, as between route CW5 and CW11, CW11 is the "winner" in most of the environmental and land use categories presented in Table 7-1c. In addition, there are also other routes to the east that are just as viable that are not discussed in Mr. Van Zandt's testimony.

Q. WHAT IS YOUR OPINION REGARDING MR. VAN ZANDT'S STATEMENT THAT QUALITATIVE INFORMATION THAT IS NOT ON TABLE 7-1 SHOULD BE CONSIDERED?

A. I agree with Mr. Van Zandt that the differences in the quantitative data presented in the 39 factors in Table 7-1c of the EA are often marginally different and do not lead one to a ready conclusion about which route to pick. Therefore, I believe the commission should look more closely at qualitative differences. In this particular case, I believe the most important qualitative difference between the eastern and western routes is that the eastern part of Shackelford County consists of larger tracts of land and is at a generally higher elevation. Because of these factors, the landowners in the eastern part of the county have enjoyed the economic benefit of having wind generators lease their property. Since these eastern landowners are enjoying the economic benefit of having the wind generators, it seems only fair

that they should also bear the burden of a transmission line being specifically built to export wind power from the area. In addition, the incremental community value, aesthetic, and environmental impacts of the eastern routes in relatively close proximity to existing wind development would be significantly lower than on the western portion of the study area.

Q. MR. VAN ZANDT CITES THE DIFFERENCE IN AVERAGE PROPERTY SIZE IN HIS TESTIMONY AT PAGE THIRTEEN, DO YOU AGREE WITH HIS CONCLUSIONS?

A. Averages can be misleading. As can be seen by looking at the property ownership maps provided by ETT, the tracts on the east side of Shakelford County tend to be larger than the tracts on the west side of the county. Paralleling property lines is easier to do on the larger tracts in the eastern portion of the study area and the amount of fragmentation associated with the proposed line is reduced. The Commission has recognized that the impact of a transmission line on a large property is substantially less that the impact on a small property because of the proportionately smaller footprint the line makes on the property.

V. GENERAL REBUTTAL TO INTERVENORS SUPPORTING THE PREFERRED ROUTE

Q. DO YOU HAVE ANY GENERAL COMMENTS CONCERNING THE DIRECT TESTIMONIES FILED BY LANDOWNERS IN THIS DOCKET WHO SUPPORT ETT'S PREFERRED ROUTE?

A. Yes. I understand that these intervenors do not want a new transmission line on or near their property and support any route that does not cross their property

because of concerns about how the project could potentially affect, among other things:

- Hunting
- Archaeological and historical resources
- EMF
- Aesthetics
- Future development of property

However, the Duff/Alexander intervenors share these same concerns. The individual landowner intervenors who presented testimony in this case have not presented any evidence that distinguishes their concerns from those of the Duff/Alexander intervenors or why their concerns should be given greater weight than any other parties' similar concerns.

VI. CONCLUSIONS AND RECOMMENDATIONS

Q. WHAT ARE YOUR CONCLUSIONS REGARDING THIS APPLICATION.

A. I conclude after reviewing the pertinent documents filed to date in this docket that if the proposed transmission line utilizes Links C8 or C9 it does not pose an adverse impact on the proposed Cedar Ridge Reservoir and does not "significantly prevent" the construction of the reservoir. I further conclude that CW10 is a better route than ETT's preferred route CW5 based on the environmental and qualitative issues I discussed previously.

Q. WHAT ARE YOUR RECOMMENDATIONS TO THE COMMISSION?

A. The Commission should approve Route CW10 as the route for this proposed transmission line.

Appendix A

QUALIFICATIONS AND PROFESSIONAL EXPERIENCE
OF
HAROLD L. HUGHES JR.

Harold L. Hughes Jr. is a Professional Engineer with over 40 years of experience in the energy business. His broad background includes utility regulation and legislation, transmission line design and construction and Power plant construction and operations. While with the Public Utility Commission of Texas (PUC), Mr. Hughes served as Manager of the Fuels section, Manager of Engineering, and later as the Director of the Electric Utility Division with responsibility for overseeing all electric utility manners before the PUC. He has served as an expert witness on a broad range of technical topics including Certificate of Convenience and Necessity (CCN) applications, quality of service, fuel audits, depreciation, and system operations. Mr. Hughes has prepared and presented training on numerous utility related topics such as system operations, transmission line routing, and wheeling. As a consultant, he has been an active participant in the industry restructuring in Texas. He has prepared a general plant allocation study and filed testimonies on behalf of municipal clients regarding proposed increases to the Transmission Cost of Service and Price-to-Beat fuel cases. Mr. Hughes was also active in attending Electric Reliability Council of Texas (ERCOT) meetings and representing clients on the Protocols Revision Subcommittee which handles all requests for changes to the current ERCOT Protocols. Mr. Hughes has prepared expert testimony on behalf of landowners impacted by proposed transmission lines. He is also editor-in-chief of a weekly newsletter to clients which summarizes activities at ERCOT and at the PUC.

EDUCATION

MBA
Corpus Christi State University, Corpus Christi Texas

BS – Civil Engineering
University of Texas at El Paso, El Paso Texas

PROFESSIONAL HISTORY

R. J. Covington Consulting
Consultant

Public Utility Commission of Texas
Director of Electric Division

Saber Refining Company
Staff Engineer

Central Power and Light Company
Transmission Engineer

Brown and Root
Cost Engineer/Estimator

REPRESENTATIVE TRANSMISSION EXPERIENCE

As a Transmission Engineer, designed foundations for structures in problem soils for the Lon C. Hill – STP 345 kV line. Inspected all foundation installations and worked with the contractor to design special foundations and structures to overcome problems in the field, so that the project could stay on schedule.

As a Transmission Engineer, worked as an internal consultant to design foundations and structures for lines in problem areas, such as across Nueces Bay and adjacent to Padre Island.

Designed and conducted full scale tests for the first concrete transmission poles used by Central Power and Light. Developed special installation technique with contractor to install poles using air and water jets. Testing and installation techniques led to acceptance by the company for use in coastal areas and their use on Padre Island, Texas.

As a Transmission Engineer, designed numerous 69kV and 138kV lines in Texas. Duties included line design, routing, ordering material, preparing bid documents, and inspecting construction. Worked with contractors, sub-contractors, landmen and the affected public to ensure the projects stayed on budget and on schedule.

As an Engineer with the Texas Public Utility Commission, reviewed and recommended acceptance or denial of over 50 applications for Certificates of Convenience and

Necessity. Review included determining if the project was needed; reasonability of cost; and probable environment and community impact of the line routing.

As Engineering Manager with the PUC, supervised engineering staff in the review of all aspects of all transmission line Certificate of Convenience and Necessity applications made in Texas. Reviewed and approved all staff recommendation or testimony concerning transmission line CCNs. All recommendations were accepted and endorsed by the Commission.

As Engineering Manager, led the staff team to revise the Commission's rules pertaining to transmission lines. Led the effort to update and improve the application forms.

As Engineering Manager, wrote and developed booklet entitled "Transmission Line ROW" that was used to educate the Commissioners on why different ROW widths were used by the utilities and how these widths were determined.

As Engineering Manager, developed, wrote and presented numerous papers, seminars and presentations on transmission topics for presentation to Commission staff, Legislative staff and industry groups.

Served as an expert witness for the Texas Public Utility Commission (PUC) for contested transmission line applications. Testified on need, routing, environmental and community impacts, and costs. Commission accepted recommendations all his recommendations.

Served as project leader to develop the transmission line construction reporting rules and forms that are currently used by the Commission.

As a Consultant, prepared and defended expert testimony for municipal client regarding the projected cost of transmission projects to be included in rate base.

As a Consultant, prepared expert testimony on behalf of landowners impacted by proposed transmission lines.

Appendix B

LIST OF CCN DOCKETS CONTAINING TESTIMONY OF
Harold L. Hughes Jr.

BEFORE THE PUBLIC UTILITY COMMISSION OF TEXAS

Docket 7356	Texas Utilities Transmission CCN Scope of Testimony: CCN Evaluation August 1987
Docket 7437	Rio Grande Electric Cooperative Transmission CCN Scope of Testimony: CCN Evaluation November 1987
Docket 7726	Brazos Electric Power Cooperative CCN Scope of Testimony: CCN Analysis March 1988
Docket 9728	Texas New Mexico Power Company Transmission Line CCN Scope of Testimony: CCN Evaluation July 1991
Docket 29684	Application of LCRA Transmission Services Corporation to Amend its Certificate of Convenience and Necessity for a 138 kV Transmission Line in Kendall and Bexar Counties Scope of Testimony: Transmission line route May 2005
Docket 30168	Application of TXU Electric Delivery to Amend a Certificate of Convenience and Necessity for a Proposed Transmission Line in Jack, Wise and Denton Counties Scope of Testimony: Transmission line route March 2005
Docket 31011	Application of TXU Electric Delivery Company to Amend a Certificate of Convenience and Necessity for a Proposed Transmission Line within Dallas, Johnson, Tarrant, and Ellis Counties Scope of Testimony: Transmission line route January 2006

Docket 33800	Application of Brazos Electric Power Cooperative, Inc. for a Certificate of Convenience and Necessity for a Proposed Transmission Line in Johnson and Hood Counties, Texas Scope of Testimony: Transmission line route July 2007
Docket 33844	Application of LCRA Transmission Services Corporation to Amend its Certificate of Convenience and Necessity for a 138 kV Transmission Line in Kerr County Scope of Testimony: Transmission line route August 2007
Docket 33978	Application of LCRA Transmission Services Corporation to Amend its Certificate of Convenience and Necessity for a 345 kV Transmission Line in Caldwell, Guadalupe, Hays Travis and Williamson Counties Scope of Testimony: Transmission line route September 2007
Docket 36995	Application of Oncor Electric Delivery Company, LLC to Amend a Certificate of Convenience and Necessity for a Proposed Transmission Line Within Bell, Falls, Milam, and Robertson Counties Scope of Testimony: Transmission line route November 2009 – Direct testimony December 2009 – Intervenor cross testimony
Docket 37463	Application of Oncor Electric Delivery Company, LLC to Amend its Certificate of Convenience and Necessity for the Newton-Killeen 345 kV CREZ Transmission Line in Bell, Burnet and Lampasas Counties, Texas Scope of Testimony: Transmission line route December 2009 – Direct testimony January 2010 – Cross rebuttal testimony
Docket 36978	Application of Electric Transmission Texas, LLC to Amend a Certificate of Convenience and Necessity to Construct a Proposed Uvalde to Castroville 138 kV Transmission Line in Uvalde and Medina Counties, Texas Scope of Testimony: Transmission line route February 2010

Docket 38230	Application of Lone Star Transmission, LLC for a Certificate of Convenience and Necessity for the Central A to Central C to Sam Switch/Navarro Proposed CREZ Transmission Line Scope of Testimony: Transmission line route August 2010-Direct Testimony and Cross Rebuttal
Docket 38290	Application of Sharyland Utilities, L.P. to Amend its Certificate of Convenience and Necessity for the Proposed Hereford to White Deer 345 kV CREZ Transmission Line in Armstrong, Carson, Deaf Smith, Oldham, Potter, and Randall Counties Texas Scope of Testimony: Transmission line route August 2010 – Direct Testimony September 2010 – Cross Rebuttal
Docket 38324	Application of Oncor Electric Delivery Company, LLC to Amend a Certificate of Convenience and Necessity for the Willow Creek-Hicks 345 kV CREZ Transmission Line in Denton, Parker, Tarrant and Wise Counties, Texas Scope of Testimony: Transmission line route September 2010 – Direct Testimony and Cross Rebuttal
Docket 38354	Application of LCRA Transmission Services Corporation to Amend its Certificate of Convenience and Necessity for the Proposed McCamey D to Kendall to Gillespie 345 kV CREZ Transmission Line in Schleicher, Sutton, Menard, Kimbel, Mason, Gillespie, Kerr, and Kendall Counties Scope of Testimony: Transmission line route September 2010 – Direct Testimony October 2010 – Cross Rebuttal