



Control Number: 37448



Item Number: 707

Addendum StartPage: 0

**SOAH DOCKET NO. 473-10-1097
PUC DOCKET NO. 37448**

**APPLICATION OF LCRA TRANSMISSION SERVICES CORPORATION TO
AMEND ITS CERTIFICATE OF CONVENIENCE AND NECESSITY FOR THE
PROPOSED GILLESPIE TO NEWTON 345KV CREZ TRANSMISSION LINE IN
GILLESPIE, LLANO, SAN SABA, BURNET, AND LAMPASSAS COUNTIES,
TEXAS**

Before

STATE OFFICE OF ADMINISTRATIVE HEARINGS

**RESPONSE TO
OBJECTION OF LCRA TRANSMISSION SERVICES
CORPORATION AND MOTION TO STRIKE PREFILED
DIRECT TESTIMONY OF RYLANDER PRAIRIE
MOUNTAIN RANCH PARTNERSHIP LTD WITNESS
MARGARET AND GRADY RYLANDER**

Rylander Prairie Mountain Ranch Partnership Ltd hereby files this response to Objection of LCRA Transmission Services Corporation and Motion to Strike the testimony of witnesses Margaret and Grady Rylander. We will respectfully respond to each objection and provide an amended prefiled direct testimony.

I. Background: LCRA TSC incorrectly identifies the date of filing as January 7, 2010. The record shows that the Direct Testimony of Rylander Prairie Mountain Ranch Partnership Ltd was posted on December 23, 2009.

II. Motion to Strike:

A. General Objection-Witness Not Identified

The testifying witness is H. G. Rylander III with the concurrence of the second trustee of the partnership.

B. Unqualified Opinion Testimony

Dr. Rylander has attached his CV to show that he does have expertise in the analysis that he presents in this testimony. Dr. Rylander has testified as expert witness for LCRA TSC on several occasions regarding HVTL.

Page 2, 2d answer, 6 th line "Most" through 12 th line "Valley"

The paragraph has been amended to include only facts substantiated by TxP&W expert witness Karen Clary (filed December 23, 2009) or personal knowledge of the witness accrued from living in the area for 25 years.

Most of the terrain over the C7 segment is very rough and consists of granite hills and small creeks. A large portion of the C7 segment has no roads and is very isolated. The area is environmentally fragile and has habitat identified by TxP&W as suitable for the federal endangered species (black-capped vireo and golden-cheeked warbler). Segment C1+C2+C7 would be clearly visible from Enchanted Rock. The testimony filed by Dr. Karen Clary (TxP&W) on December 23, 2009 states: "TPWD does not recommend the selection of Routes GN1, GN2, GN3 or GN4 for the following reasons. Construction of these routes would have a permanent, adverse impact on Enchanted Rock State Natural Area. Link C7 of Routes GN1 and GN 2 would be located 2.8 miles west of the summit of Enchanted Rock. Link C8 of Routes GN3 and GN 4 would be located 2.1 miles east of the summit of Enchanted Rock. The granite batholith that makes up Enchanted Rock is a world-renown geologic feature which provides an unobstructed 360-degree view of the Texas Hill Country from its summit. Construction of either of these routes in such close proximity to the summit would permanently diminish the scenic beauty of the Enchanted Rock view shed and seriously threaten the viability of the park."

Page 3, 2d Answer, Entire 1 st line and 4 th line "between" through "and".

All references to Next Era Energy and the cost estimates based on the Next Era Energy cost of ROW have been deleted. The calculations are irrelevant to the arguments made in this testimony and only support the LCRA TSC estimates.

C. Hearsay

Page 2, last answer on page 1st line "We" through 2d line "mile"; 3d line "Next" through 4th line "and".

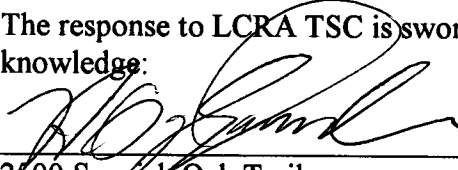
All references to Next Era Energy and the cost estimates based on the Next Era Energy cost of ROW have been deleted. The calculations are irrelevant to the arguments made in this testimony and only support the LCRA TSC estimates.

CONCLUSION

The LCRA TSC objections have all been addressed in the amended direct testimony. The testimony in question does not change the scope or results of the testimony. Our prayer is that the amended direct testimony be admissible in this case.

2

The response to LCRA TSC is sworn to be true and accurate to the best of my knowledge:


H.G. Rylander
2500 Spanish Oak Trail
Round Rock, Texas 78681
rylander@mail.utexas.edu

**SOAH DOCKET NO. 473-10-1097
PUC DOCKET NO. 37448**

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AMEND ITS CERTIFICATE OF CONVENIENCE AND NECESSITY FOR THE
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GILLESPIE, LLANO, SAN SABA, BURNET, AND LAMPASSAS COUNTIES,
TEXAS**

Before

STATE OFFICE OF ADMINISTRATIVE HEARINGS

**AMENDED
DIRECT TESTIMONY
RYLANDER PRAIRIE MOUNTAIN RANCH
PARTNERSHIP LTD**

Q. PLEASE STATE YOUR NAME AND ADDRESS

A. My name is H. Grady Rylander III, trustee for the Rylander Prairie Mountain Partnership Ltd. My mailing address is: 2500 Spanish Oak Trail, Round Rock, TX 78681.

Q. DO YOU HAVE PROPERTY THAT IS DIRECTLY CROSSED BY ONE OF THE 11 ALTERNATE ROUTES PROPOSED BY LCRA?

A. Yes, I have property that is directly crossed by the C7 segment of the alternate routes designated as GN1, GN2, and GN3 in the LCRA application.

Q. HAS LCRA CONTACTED YOU REGARDING THE EXACT PLACEMENT OF THE TRANSMISSION LINE RELATIVE TO YOUR PARCEL OF LAND?

A. No, LCRA has not done a ground study to know what archeological sites and environmentally sensitive habitat would be crossed by the transmission line.

Q. DOES THE PROPOSED C7 LINK FOLLOW YOUR PROPERTY LINES?

A. No, the proposed C7 link bisects the southeast part of the property and does not follow property lines.

Q. WHAT IS THE PURPOSE AND SCOPE OF YOUR TESTIMONY?

A. I respectfully submit that the preferred route, designated as GN11 in LCRA's application, is substantially better than any of the alternate routes in Northern Gillespie and Southern Llano Counties. The advantages accrue from use of 35 miles of existing ROW in this area. LCRA will decommission a 69KV transmission line and replace it with the proposed 345KV transmission line over Links C1+C3+C5+C9+C11. **This testimony will present a head-to-head comparison of the advantages of segment C1+C3+C5+C9+C11 over segment C1+C2+C7 which both start at the Gillespie substation and end at the same point south of the City of Llano at the intersection of C7 and C11 with C12.** Although this testimony does not directly address GN4 (Links C1, C3, C4, C8, C11), GN4 shares many of the characteristics of GN1, GN2, and GN3. This testimony does not offer fact or opinion regarding the northern segment of the proposed transmission line beyond the intersection of C7 and C11 with C12.

Q. WHAT ARE THE ENVIRONMENTAL COSTS OF USING LINKS C1+C2+C7?

A. C1+C2+ C7 segment of GN1, GN2, and GN3 alternate routes pass through northern Gillespie and southern Llano Counties through pristine Texas Hill Country, parallels only 1.7 miles of existing ROW near the Gillespie substation, will use no existing HV transmission ROW, and passes within 1.5 miles of the Enchanted Rock State Natural Area (Nature Conservancy of Texas). Most of the terrain over the C7 segment is very rough and consists of granite hills and small creeks. A large portion of the C7 segment has no roads and is very isolated. The area is environmentally fragile and has habitat identified by TxP&W as suitable for the federal endangered species (black-capped vireo and golden-cheeked warbler). Segment C1+C2+C7 would be clearly visible from Enchanted Rock. The testimony filed by Dr. Karen Clary (TxP&W) on December 23, 2009 states: "TPWD does not recommend the selection of Routes GN1, GN2, GN3 or GN4 for the following reasons: Construction of these routes would have a permanent, adverse impact on Enchanted Rock State Natural Area. Link C7 of Routes GN1 and GN 2 would be located 2.8 miles west of the summit of Enchanted Rock. Link C8 of Routes GN3 and GN 4 would be located 2.1 miles east of the summit of Enchanted Rock. The granite batholith that makes up Enchanted Rock is a world-renown geologic feature which provides an unobstructed 360-degree view of the Texas Hill Country from its summit. Construction of either of these routes in such close proximity to the summit would permanently diminish the scenic beauty of the Enchanted Rock view shed and seriously threaten the viability of the park."

Q. WHAT ARE THE ENVIRONMENTAL COSTS OF USING LINKS C1+C3+C5+C9+C11?

A. Links C1+C3+C5+C9+C11 of the preferred route uses 34.3 miles of existing HVTL ROW through Gillespie and Llano Counties and would require acquisition of very little new ROW. Only 1.5 miles is not on existing ROW.

Q. WHAT ARE THE MONETARY COSTS OF ACQUIRING 32.8 MILES OF NEW ROW FOR LINKS C1+C2+C7?

A. The cost estimate is based on LCRA's ROW cost estimates at \$862K/mile. LCRA's cost estimate is \$28M.

Q. WHAT ARE THE MONETARY COSTS OF ACQUIRING 1.5 MILES OF NEW ROW FOR LINKS C1+C3+C5+C9+C11?

A. LCRA's cost estimate is \$1.3M.

Q. WHAT IS THE COST SAVINGS FOR USING SEGMENT C1+C3+C5+C9+C11 COMPARED WITH SEGMENT C1+C2+C7?

A. Using LCRA's cost estimates, the cost savings is $\$28M - \$1.3M = \$26.7M$. So the net savings of using segment C1+C3+C5+C9+C11 over segment C1+C2+C7 is approximately \$26.7M.

Q. SHOULD THE PUC CONSIDER COST IN SELECTING THE PREFERRED ROUTE?

A. Yes, the additional costs of condemning private property over using existing ROW will eventually be passed to Texas electric consumers who also have a stake in the selection of the preferred route over alternate routes. Cost is also listed in PUC 25.101 as a consideration for routing transmission lines.

Q. IS COST OF CONSTRUCTING THE PROPOSED HVTL RELATED TO USING EXISTING ROW?

A. Yes, Table1 (LCRA TSC) and Graph 1 show the use of existing ROW for the 11 alternate routes. GN1, GN2, GN3, and GN4 clearly have the least use of existing ROW. Table 2 (LCRA TSC) and Graph 2 shows the total cost estimate for construction of the 11 alternate routes. Cost estimates for GN1, GN2, and GN3 range between \$30M and \$45M in additional costs compared with the preferred route GN11.

Q. HAS THE PUBLIC SPOKEN ON THE USE OF EXISTING ROW IN MAKING ROUTING DECISIONS?

A. Of the twelve factors ranked in LCRA's questionnaires, respondents ranked "use of parallel or existing ROW" as the first preference and public opinion expressed in editorials, Commissioner's Courts, and other groups also urged use of existing ROW. "Use or parallel existing ROW" is also listed in PURA Sec. 37.056(c) as criteria for routing transmission lines.

Q. WHAT CONCLUSIONS HAVE YOU DRAWN FROM THE HEAD-TO-HEAD COMPARISON OF SEGMENT C1+C3+C5+C9+C11 WITH SEGMENT C1+C2+C7?

A. The preferred route segment C1-C3-C5-C9-C11 makes good sense from both the monetary cost and environmental impact standpoint.

Q. DO YOU HAVE ANY OTHER COMMENTS OR SUGGESTIONS?

A. Regardless of the route selected there needs to be a **Cost/Benefit Analysis** comparing lattice towers and monopole design throughout the project

AFFIDAVIT

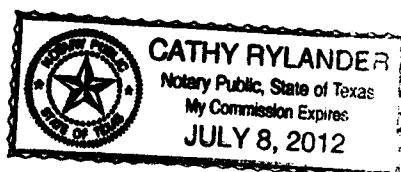
In the State of Texas,

Before me, the undersigned authority, on this day, H. Grady Rylander III did personally appear, and after having been placed under oath by me, did depose as follows: "My name is H. Grady Rylander III. I am of legal age and a resident of the State of Texas. The foregoing testimony offered by me is true and correct and the opinions stated therein are, to the best of my knowledge and belief, accurate, true, and correct."

H. Grady Rylander III H. Grady Rylander III

This instrument was SUBSCRIBED AND SWORN TO BEFORE ME on the 15 day of January, 2010 by H. Grady Rylander

Cathy Rylander Notary Public in and for the State of Texas

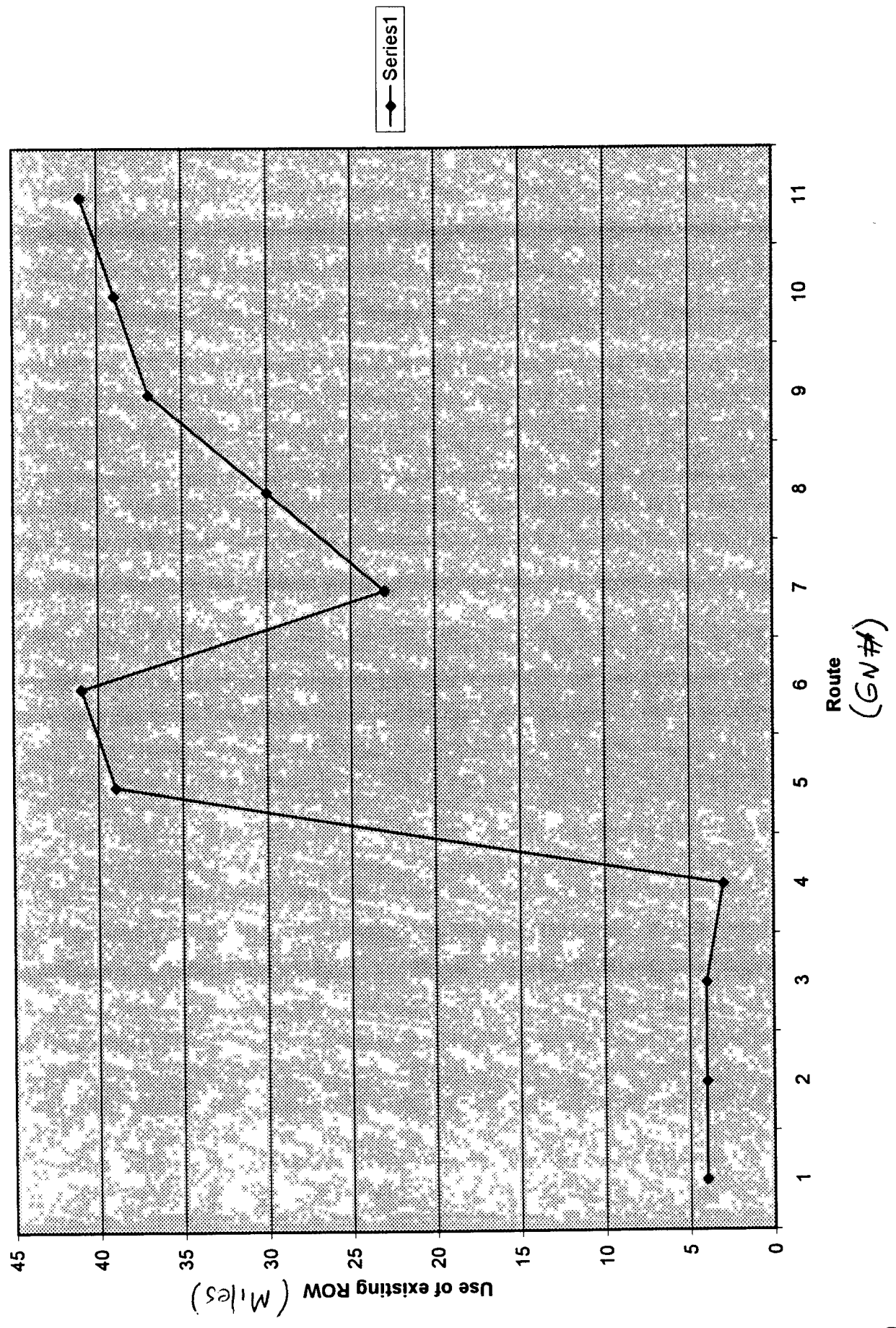


Route	Miles of Right-of-Way	Miles of Circuit	Percent of Right-of-Way Acquired
GN1	92.02	92.02	4
GN2	90.54	90.54	4
GN3	85.71	85.71	4
GN4	89.21	89.21	3
GN5	89.81	89.81	39
GN6	84.69	84.69	41
GN7	81.11	81.11	23
GN8	78.63	78.63	30
GN9	92.92	92.92	37
GN10	88.58	88.58	39
Preferred Route GN11	85.47	85.47	41

Table 1 : Ref (LCRATSC)

6

(9)

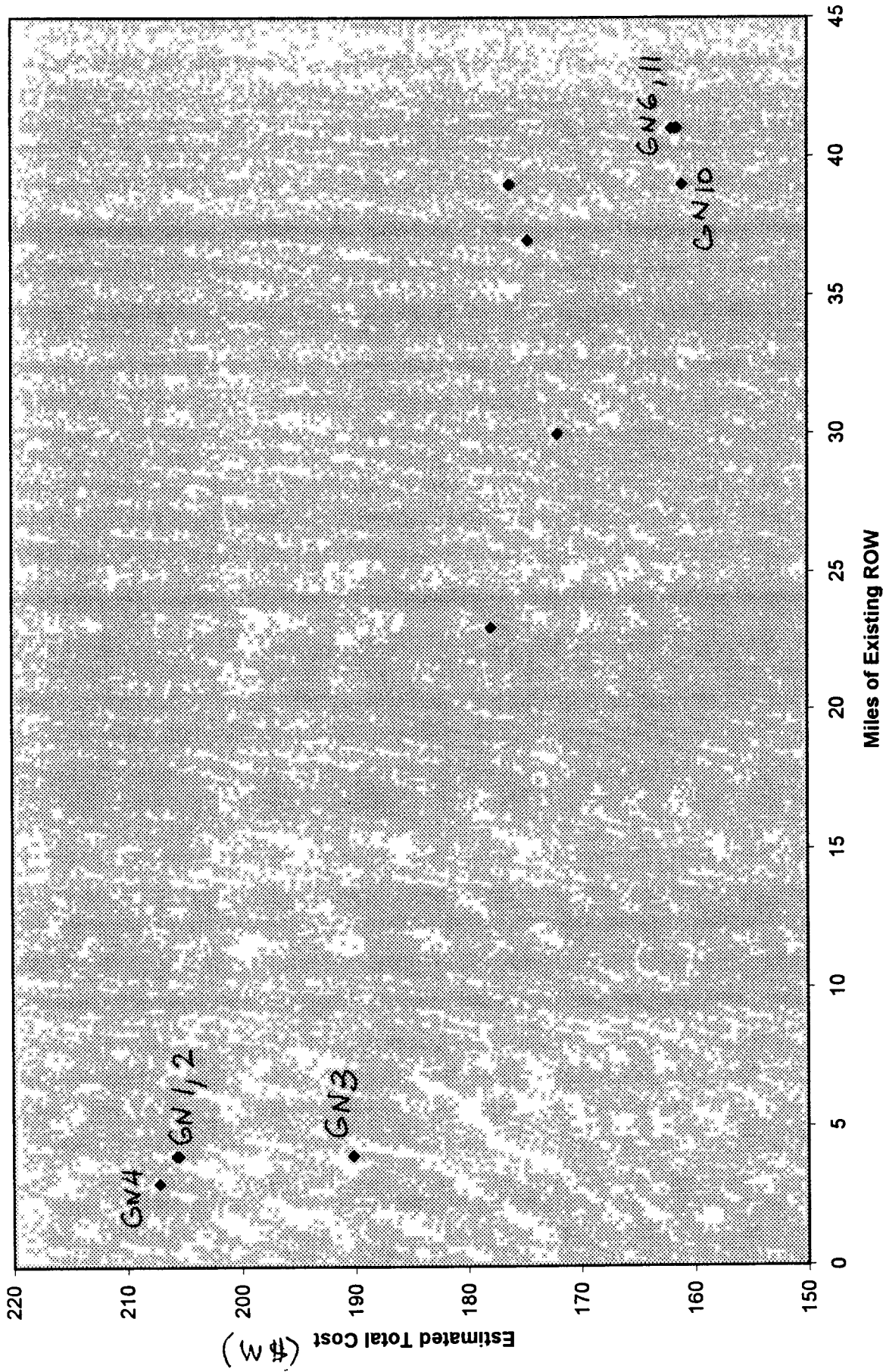


Attachment 3
Estimated Costs for the Gillespie to Newton 345-kV Transmission Line Project
(Preferred Route, Alternative Routes, and Substation Costs)
October 28, 2009

Total Costs (\$ x 1,000,000)

Total Costs (\$ x 1,000,000)										
			Procurement of Material and				Other (all costs not included in the above categories)			
Route	Approx. Miles	Right-of-way and Land Acquisition	Engineering and Design (Utility)	Engineering and Design (Contract)	Equipment (including stores)	Construction of Facilities (Utility)	Construction of Facilities (Contract)			Estimated Total Cost
GN1	92	\$81.9	\$7.6	\$2.3	\$27.1	\$0.0	\$62.5	\$24.3		\$205.7
GN2	91	\$80.8	\$7.5	\$2.3	\$27.0	\$0.0	\$60.6	\$27.3		\$205.5
GN3	86	\$70.9	\$7.4	\$2.3	\$26.3	\$0.0	\$58.3	\$25.0		\$190.2
GN4	89	\$75.2	\$7.5	\$2.3	\$27.2	\$0.0	\$61.8	\$33.2		\$207.2
GN5	90	\$52.2	\$7.5	\$2.3	\$27.1	\$0.0	\$62.9	\$24.2		\$176.2
GN6	85	\$39.3	\$7.3	\$2.3	\$27.1	\$0.0	\$62.5	\$23.0		\$161.5
GN7	81	\$52.0	\$11.9	\$2.2	\$23.3	\$0.0	\$53.8	\$34.7		\$177.9
GN8	79	\$49.5	\$11.4	\$2.2	\$21.7	\$0.0	\$50.3	\$36.9		\$172.0
GN9	93	\$54.1	\$7.6	\$2.4	\$27.6	\$0.0	\$62.7	\$20.2		\$174.6
GN10	89	\$45.0	\$7.4	\$2.3	\$26.6	\$0.0	\$60.8	\$18.9		\$161.0
GN11	85	\$43.1	\$7.3	\$2.3	\$26.4	\$0.0	\$60.0	\$22.8		\$161.9
Substation		\$0.0	\$0.2	\$0.0	\$0.8	\$0.4	\$0.0	\$0.0		\$1.4

Table 2 : Ref LCRA TSC



GRAPH 2

HENRY GRADY RYLANDER, III, M.D.

Professor
Department of Biomedical Engineering
The University of Texas at Austin
(512) 471-1995
rylander@mail.utexas.edu

EDUCATION:

The University of Texas at Austin, BSEE, 1970
The University of Texas at Austin, MSEE, 1974
The University of Texas Health Science Center at San Antonio, MD, 1974
Post Graduate Training:
Bexar County Teaching Hospital, San Antonio, Texas
Straight Medicine Internship, 1974-1975
Audie Murphy V.A.H., San Antonio, Texas
Ophthalmology Residency, 1975-1978
Board Certified Ophthalmology, October 1980

PROFESSIONAL REGISTRATION:

Texas State Board of Medical Examiners #E2833
Texas State Board of Registration for Professional Engineers, #40999
D.E.A. #AR6 177251
D.P.S. #80026162

CURRENT AND PREVIOUS ACADEMIC POSITIONS:

The University of Texas at Austin: ECE/BME
William J. Murray and Harry H. Power Professor, 2002-present
Professor, 1989-present
Associate Professor, 1985-1989
Adjunct Associate Professor, 1982-1985
Adjunct Assistant Professor, 1978-1982

OTHER PROFESSIONAL EXPERIENCE:

Private practice:
The Eye Institute of Austin
3300 West Anderson Lane #308
Austin, Texas 78757
Hospital Affiliations (staff member):
Seton Medical Center
St. David's Community Hospital
Brackenridge Hospital
Round Rock Community Hospital
Llano County Hospital

Clinical Instructor in the Brackenridge Neurology/Neurosurgery Residency Program

CONSULTING:

Lower Colorado River Authority:
 Biological Impact of High Voltage Transmission Lines
San Antonio City Public Service:
 Biological Impact of High Voltage Transmission Lines
Miscellaneous ophthalmological litigation
State Commission for the Blind
Mystic Pharmaceuticals

HONORS AND AWARDS:

Outstanding Electrical Engineering Advisor, 1980
Tau Beta Pi Teaching Award, 1987
Elected Fellow AIMBE 2003

MEMBERSHIPS IN PROFESSIONAL AND HONORARY SOCIETIES:

AOA. Medical
Tau Beta Pi
Eta Kappa Nu
Phi Kappa Phi
IEEE
AMA
TMA
TOA
Travis County Medical Society
Fellow of American Academy of Ophthalmology
Fellow AIMBE

UNIVERSITY COMMITTEE ASSIGNMENTS:

The Biomedical Engineering Graduate Studies Committee
The Electrical and Computer Engineering Graduate Studies Committee
BME GSC Executive Committee
UG Curriculum Committee
Adviser for Pre-Med Electrical Engineering Undergraduate Students
COE Math/ Science Committee
BME Awards Committee
FRA Committee C
Engineering Honors Committee
College Promotions Committee
UTMB MD/PhD Committee
Search Committee, Dean of Medical College at Austin

PROFESSIONAL SOCIETY AND MAJOR GOVERNMENTAL COMMITTEES:

Secretary Austin Ophthalmological Society, 1982
President Austin Ophthalmological Society, 1983
NEI Glaucoma Review Panel, 2002-2004

Reviewer for: *Optics Letters, JOSA A, Lasers in Surg. Med., Biomed. Optics*

COMMUNITY ACTIVITIES:

Outpatient Affairs Committee, Seton Hospital, 1984
Board of Directors, Recording for the Blind, 1985
Provide indigent eyecare at no cost, Eyecare America Project

PUBLICATIONS:

A. Refereed Archival Journal Publications:

MOSFET, Texas Engineering and Science Magazine, IV (1), 22-56, October 1967.

Integrated Electrocardiograph Sensors, Texas Engineering and Science Magazine, VII (1), 14-15, November 1970.

Biomedical Engineering: What's Going on in Central Texas, Texas Professional Engineering, XXXXIV (12), 6-7.

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(with MS Markow, AJ Welch). Real-Time Algorithm for Retinal Tracking, IEEE Transactions on Biomedical Engineering, 40:12, pp. 1269-1282, 1994.

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(with SF Barrett, MR Jerath, AJ Welch). Digital Tracking and Control of Retinal Images, Optical Engineering, 33:1, pp. 150-159, 1994.

(with C Smithpeter, E Chan, S Thomsen, AJ Welch). Corneal photocoagulation with continuous wave and pulsed holmium: YAG radiation, J Cataract Refract Surgery, 21 pp. 258-267, 1995.

(with SF Barrett, MR Jerath, AJ Welch). Automated lesion placement in the rabbit eye, Lasers in Surgery and Medicine, 17:172-177, 1995.

(with SF Barrett, CHG Wright, MR Jerath, R Lewis II, BC Dillerd, AJ Welch). Computer-aided retinal photocoagulation system, Journal of Biomedical Optics, 1(1):83-91, 1996.

(with RD Ferguson, CHG Wight, AJ Welch, SF Barrett). Hybrid tracking and control system for computer-aided retinal surgery, SPIE (2673-09), 1996.

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Vargas G, EK Chan, JK Barton, HG Rylander III, and AJ Welch. Use of hyperosmotic agents to reduce scattering in skin, *Lasers in Surgery and Medicine*, 24:133-141, 1999.

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Chen B, J Oliver, SL Thomsen, HG Rylander III, and AJ Welch. Cornea Minimal Visible Lesion Thresholds for 2.0m Laser Irradiation, *JOSA A*, 24(10):3080-3088, 2007.

Jesung Park, Nate J. Kemp, H. Grady Rylander III, and Thomas Milner, Complex polarization ratio to determine polarization properties of anisotropic tissue using polarization-sensitive optical coherence tomography, *OPTICS EXPRESS*, Vol. 17, No. 16, 3 Aug 2009, 13402-13417.

Ginger M. Pocock, Roberto G. Aranibar, Nate J. Kemp, Charles Specht, Mia Markey, H. G. Rylander, The Relationship between Retinal Ganglion Cell Axon Constituents and Retinal

Nerve Fiber Layer Birefringence in the Primate, Investigative Ophthalmology and Visual Science, Vol. 50, No. 11, Nov., 2009, 5238-5246.

B. Refereed Conference Proceedings:

(with HL Taylor, JP Wissinger, JL Story). Measurement of Epidural Pressure and the Correlation Between Epidural Pressure and Intraventricular Fluid Pressure, Proc. of the Amer. Assoc. of Neurological Surgeons, 60, April 1975.

(with JL Story, HL Taylor). Design Considerations for an Epidural Pressure Transducer, Proc. AAMI 12th Annual Meeting, March 1977.

Biological Effects of 765 KV Transmission Lines, Proc. Region V Interaction of Engineering and Society, 1980.

(with DA Erwin, AJ Welch). A Video Sinusoidal Grating Generator, IEEE Trans. on Biomedical Engineering, ACEMB, September 1982.

(with GM Alexander, JP Douglas, AJ Welch). Laser Welded Quartz Transducer for CSF Pressure Measurement, Proc. of 35th ACEMB, September 1982.

Partial Treatment in Argon Laser Trabeculoplasty, Proc. 36th Annual Conf. on Engineering in Medicine and Biology, 3.1, Columbus, Ohio, September 12-14, 1983.

(with SK Dutta, BF Womack). Instrumentation of MC6809E Microprocessor Based VEP, Proc. 36th Annual Conf. on Engineering in Medicine and Biology, 11.1, Columbus, Ohio, September 12-14, 1983.

(with L Margulies, AJ Welch). A Method of Automatic Analysis of Lesion Formation During Photocoagulation, Proc. Amer. Society for Lasers in Surgery and Medicine, May 1985.

The Waterlogged Eye Syndrome, Proceedings of TMA, May 1986.

(with CE Davila, AJ Welch). Adaptive Estimation of Single Evoked Potentials, Proceedings of the Eighth Annual Conference of the IEEE/Engineering in Medicine and Biology Society, 1, 406-409, 1986.

(with CE Davila, AJ Welch). A Kalman Filter Algorithm for Estimating Sinusoids in Colored Noise, Proceedings of the International Conference on Acoustics, Speech, and Signal Processing, 3, 1316-1319, 1987.

(with CE Davila, AJ Welch). Eigenvector Decomposition of Single-Trial Evoked Potentials, Proceedings of the Ninth Annual Conference of the IEEE Engineering in Medicine and Biology Society, Boston, Massachusetts, November 1987, volume 2, 602-603.

(with CE Davila, AJ Welch). Efficient Conjugate Directions Method for Adaptive Eigen-Spectrum Estimation, Proceedings of the 1988 IEEE International Conference on Acoustics, Speech and Signal Processing, New York City, April 11-14, 1988.

(with CE Davila, AJ Welch). Improved Signal Subspace Method for EP Estimation, IEEE EMBS 10th Annual International Conference, New Orleans, Nov. 4-7, 1988.

(with AM Alvarez, KR Diller, S Ghaffari, RP Farrar). Automated Analysis of Corneal Endothelial Cell Morphology, Proceedings of SPIE/SPSE Symposium on Electronic Imaging Science and Technology, Santa Clara, California, February 11-16, 1990.

Automated Endothelial Cell Counts, Proceedings TMA Annual Session, May, 1990, p. 75.

(with MR Jerath, D Kaisig, AJ Welch). Real-Time Control of Lesion Size Based on Reflectance Images, SPIE vol. 1644, Ophthalmic Technology II, pp. 206-216, 1992.

(with SF Barrett, MR Jerath, AJ Welch). Instrumentation for Feedback Controlled Retinal Photocoagulation, SPIE Proc. 1892-11, 1993.

(with SF Barrett, MR Jerath, AJ Welch). Digital Tracking and Control of Retinal Images for Feedback Controlled Retinal Photocoagulation, SPIE Proc., 1877:45, 1993.

(with MR Jerath, R Chundru, SF Barrett, AJ Welch). Reflectance Based Feedback Controlled Retinal Photocoagulation, SPIE Proc. 1877:42, 1993.

(with B Nemati, AJ Welch). Transscleral cyclophotocoagulation: An *in vivo* examination of Lesion Formation, SPIE Proc., 1877:36, 1993.

(with CL Smithpeter, AJ Welch). Evaluation of a Unique CW Holmium Laser in Radial Thermokertoplasty, SPIE Proc., 1988:14, 1993.

(with IM Stübig, PA Reder, GW Facer, AJ Welch). Holmium:YAG Laser Stapedotomy: Preliminary Evaluations, SPIE Proc., 1976:02, 1993.

(with B Nemati, AJ Welch). An Optical Model for the Development of Lesions During Transscleral Cyclophotocoagulation, SPIE, January 1994.

(with SF Barrett, CHG Wright, ED Oberg, BA Rockwell, CP Cain, MR Jerath, AJ Welch). Integrated computer-aided retinal photocoagulation system, Proceedings of the 1996 SPIE International Symposium on Biomedical Optics, SPIE 2673-32, San Jose, 1996.

(with CHG Wright, FD Ferguson, SF Barrett, AJ Welch, ED Oberg). Hybrid Retinal Photocoagulation System Using Analog Tracking, Proceedings of the 34th Annual Rocky Mountain Bioengineering Symposium, p. 366-371, 1997.

(with SF Barrett, CHG Wright, ED Oberg, BA Rockwell, CP Cain, AJ Welch). Digital Imaging-Based Retinal Photocoagulation System, Proceedings of Ophthalmic Technologies VII, SPIE BIOS 97, 2971-18, pp. 118-128, 1997.

(with TE Milner). Polarization Sensitive OCT of the Primate and Rabbit Eye, Proceedings IEEE/LEOS 2000, Rio Grande, Puerto Rico, Nov. 2000.

(with J Marsack, M Ducros, S Parekh, S Thomsen, TE Milner). Imaging the Primate Retina Using Polarization Sensitive Optical Coherence Tomography, Proceedings SPIE BIOS 2001, San Jose, Cal., Jan 2001.

Rylander HG III and TE Milner. Polarization Sensitive OCT of the Primate and Rabbit Eye, Paper TuQ1, IEEE LEOS, Vol. 1, 266-267 (2000).

Marsack J, M Ducros, S Parekh, S Thomsen, HG Rylander III, and TE Milner. Imaging the primate retina using polarization sensitive optical coherence tomography, Ophthalmic Technologies XI, Proceedings SPIE, Vol. 4245, 158-163 (2001).

Akkin T, DP Davé, TE Milner, and HG Rylander III. Interferometric Fiber Based Optical Biosensor to Measure Ultra-Small Changes in Refractive Index, Proceedings SPIE International Symposium on Biomedical Optics, BIOS 2002, Optic Fibers and Sensors for Medical Applications II, 4616:9-13, Jan. 2002.

Kemp NJ, J Park, JD Marsack, DP Davé, S Parekh, TE Milner, and HG Rylander III. "Depth-Resolved Birefringence Imaging of the Primate Retinal Nerve Fiber Layer Using Polarization-Sensitive OCT, Proceedings SPIE International Symposium on Biomedical Optics, BIOS 2002, Ophthalmic Technology 12:30-36, Jan. 2002.

Rylander HG. Polarization-Sensitive OCT for Glaucoma Diagnosis, Proceedings BRP-BEACON 3rd Annual Meeting June 24-25, p.132-133.

Kemp NJ, J Park, JD Marsack, DP Davé, SH Parekh, TE Milner, and HG Rylander III. Polarization Sensitive OCT Imaging of the Primate Retinal Nerve Fiber Layer, Proceedings of the Joint Conference of the BMES-EMBS, Houston, TX, Oct. 2002.

Park JS, NJ Kemp, TE Milner, and HG Rylander III. Analysis of the Phase Retardation in the Retinal Nerve Fiber Layer of Cynomologous Monkeys by Polarization Sensitive Optical Coherence Tomography, Proceedings ASLMS 23 rd Annual Meeting, Apr 2003, p55.

Akkin T, DP Davé, CG Rylander, HG Rylander III, and TE Milner. Biomedical Applications of a Fiber-based Polarization and Phase Sensitive Interferometer, Gordon Research Conference: Lasers in Medicine and Biology, 2002.

Akkin T, HG Rylander III, DP Davé, and TE Milner. Fiber-Based Phase-Sensitive Optical Low Coherence Reflectometer for Birefringence Imaging of Nerves, Proceedings of the Second Joint EMBS/BMES Conference, p.2301-02, 2002.

Akkin T, DP Davé, HG Rylander III, and TE Milner. Applications of Fiber-Based Polarization and Phase Sensitive Optical Low Coherence Reflectometer, SPIE's International Symposium on Biomedical Optics, BIOS 2003, San Jose, California, USA, January 2003.

Akkin T, DP Davé, HG Rylander III, and TE Milner. Surface Analysis Using Phase Sensitive Optical Low Coherence Reflectometry, American Society for Laser Medicine and Surgery, Anaheim, California, April 2003.

SPIE 2004 (Presentation and Proceedings)

Park J, NJ Kemp, HN Zaatari, TE Milner, HG Rylander III. Analysis of birefringent image in the retinal nerve fiber layer by polarization-sensitive optical coherence tomography, J Proc. SPIE Vol. 5314, p. 188-194, Ophthalmic Technologies XIV; Fabrice Manns, Per G. Soerberg, Arthur Ho; Eds.

SPIE 2004 (Presentation and Proceedings)

Zaatari HN, NJ Kemp, T Akkin, HG Rylander III, and TE Milner. Polarization-sensitive optical coherence tomography with de-correlated channels.

Zaatari HN, NJ Kemp, J Park, HG Rylander III, TE Milner. Retardation measurement with capillary blood flow using enhanced polarization-sensitivity optical coherence tomography (EPS-OCT), SPIE Proc.,(5690)Feb. 2005.

Kemp NJ, HN Zaatari, J Park, HG Rylander III, TE Milner. Characterizing cartilage ultrastructure using nondestructive depth-resolved polarimetric imaging, OSA Frontiers in Optics / Laser Science, Tucson, AZ (Oct, 2005)

SPIE 2007 (Presentation and Proceedings)

Paranjape AS, K Castleman, TE Milner, HG Rylander III. Advanced Imaging Technique for Automated Classification of Casts and Crystals in Urine, SPIE 2007, January, 2007.

SPIE 2007 (Presentation and Proceedings)

Aranibar RG, TE Milner, HG Rylander III. Relationship between Birefringence and Neurotubule Density in the Primate Retinal Nerve Fiber Layer, SPIE 2007, January, 2007.

SPIE 2008 (Presentation and Proceedings)

Paranjape A, B Elmaanaoui, J Dwelle, HG Rylander III and TE Milner. Automated method for RNFL segmentation in spectral domain OCT, Proc. SPIE, Vol. 6848, 68480N (2008).

Shuang Liu, Amit S. Paranjape, Badr Elmaanaoui, Jordan Dewelle, H. Grady Rylander III, Mia K. Markey and Thomas E. Milner, Quality assessment for spectral domain optical coherence tomography (OCT) images, Proc. of SPIE, Vol. 7171 71710X-2, Jan, 2009.

C. Other Major Publications:

Capacitive Electrocardiogram Electrodes, The University of Texas at Austin, Master's Thesis, June 1974.

(with B Nemati and AJ Welch). Optical Properties of Conjunctive, Sclera, and Ciliary Body and their Consequences for Transscleral Cyclophotocoagulation, *Lasers in Surgery and Medicine*, Supp. 4, 1992.

(with S Ghaffari, AJ Welch). A New Mercury-Vapor-Laser System for Medical Applications, *Lasers in Surgery and Medicine*, supp. 5, p. 26, 1993.

Barrett SF, MR Jerath, HG Rylander III, AJ Welch. Automated lesion placement in the rabbit eye, *Lasers Surg Med*, 1993.

Smithpeter C, E Chan, S Thomsen, HG. Rylander III, AJ Welch. Corneal photo-coagulation with CW and pulsed Holmium:YAG radiation, *J. Cataract Refract. Surg.*, 21: 258-267, 1995.

Wright CHG, JK Barton, HG Rylander III, AJ Welch. Anomalous reflectance of retinal lesions, *IEEE J. Selected Topics in Quant. Elect.*, 2(4), 1035-1040, 1996.

Ferguson RD, CHG Wright, HG Rylander III, AJ Welch. Hybrid tracking and control system for computer aided retinal surgery, *Proc. SPIE*, 2673:31.32, 1996.

Barrett SF, CHG Wright, MR Jerath, RS Lewis II, BC Dillard, HG Rylander III, AJ Welch. Computer aided retinal photocoagulation system, *J. Biomedical Optics*, 1(1):83-91, 1996.

Nemati B, HG Rylander III, AJ Welch. Optical properties of conjunctiva, sclera, and ciliary body and their consequences for transscleral cyclophotocoagulation, *Applied Optics*, 35(19): 3321-3327, 1996.

Wright CHG, RD Ferguson, HG Rylander III, AJ Welch, SF Barrett. Hybrid approach to retinal tracking and laser aiming for photocoagulation, *Journal of Biomedical Optics*, 2(2), 195-203, 1997.

Wright CHG, RD Ferguson, SF Barrett, HG Rylander III, AJ Welch, Hybrid retinal photocoagulation system using analog tracking, *Proceedings of the 34th Annual Rocky Mountain Bioengineering Symposium*, 366-371, 1997.

Barrett SF, CHG Wright, ED Oberg, BA Rockwell, C Cain, HG Rylander III, AJ Welch. Digital imaging-based retinal photocoagulation system, *Proc. SPIE*, 1997.

Babak N, A Dunn, AJ Welch, HG Rylander III. Optical model for light distribution during transscleral cyclophotocoagulation, *Applied Optics*, 37(4), 764-771, 1998

Vargas G, EK Chan, HG Rylander, AJ Welch. Use of an agent to reduce scattering in skin, *Lasers in Surgery and Medicine*. 24:133-141, 1999.

Ducros, MG, JF deBoer, H Hunag, L Chao, Z Chen, JS Nelson, TE Milner. Polarization sensitive optical coherence tomography of the rabbit eye, *IEEE Journal of Selected Topics in Quantum Electronics*, Aug. 1999.

Park J, NJ Kemp, HN Zaatari, TE Milner, and HG Rylander III. Analysis of phase retardation in the primate retinal nerve fiber layer by polarization sensitive optical coherence tomography, EMBS 2003 (Short Paper), Biomedical Engineering Department, The University of Texas at Austin.

D. Books, Chapters of Books:

(with KR Diller). Measurement of Fluorescein Diffusion in the Retina, *Advances in Bioengineering*, V.C. Mow, ed., ASME, New York 1980.

(with AJ Welch, R Richards-Kortum, S Barrett , N Ramanujam , I Çilesiz , E Chan). Automation of diagnostic and therapeutic systems for medical applications of lasers, *Biomedical Optical Instrumentation and Laser-Assisted Biotechnology*, AM Verga Scheggi, S Martellucci, AN Chester, R Pratesi, eds., 1996.

ORAL PRESENTATIONS:

(with SF Barrett, AJ Welch, MR Jerath). Digital Tracking and Control of Retinal Images, Tenth Annual Conference on Biomedical Engineering Research, Houston, TX, March 19-20, 1992.

(with MR Jerath, D Kaisig, AJ Welch), Real-Time Control of Lesion size Based on Reflectance Images, SPIE, Los Angeles, CA, January 19-21, 1992.

(with B Nemati, AJ Welch), Optical Properties of Conjunctiva, Sclera, and Ciliary Body and Their Consequences for Transcleral Cyclophotocoagulation, American Society for Laser Medicine and Surgery Annual Meeting, Lake Buena Vista, FL, May, 1992.

(with JA Pearce, R Richards-Kortum, AJ Welch), General Overview of Medical Optics Program, site visit from Johnson and Johnson, May 5, 1992.

(with B Nemati, AJ Welch), Transscleral Cyclophotocoagulation: An *in vivo* Comparison of Coagulation Neurosis Due to Nd:YAG and Diode Laser Irradiation, Lasers in Medicine, Laser '92, Houston, Texas, December 1992.

(with SF Barrett, MR Jerath, AJ Welch), Digital Tracking and Control of Retinal Images for Feedback Controlled Retinal Photocoagulation, SPIE Biomedical Optics '93, Los Angeles, California, January 16-23, 1993.

(with SF Barrett, MR Jerath, AJ Welch), Instrumentation for Feedback Controlled Retinal Photocoagulation, SPIE Biomedical Optics '93, Los Angeles, California, January 16-23, 1993.

(with S Ghaffari, AJ Welch), A New Mercury-Vapor-Laser System for Medical Applications, Am. Soc. for Laser Med. and Surgery, 13th Ann. Mtg., New Orleans, Louisiana, April 18-20, 1993.

(with MR Jerath, R Chundru, SF Barrett, AJ Welch), Reflectance Based Feedback Controlled Retinal Photocoagulation, SPIE Biomedical Optics '93, Los Angeles, California, January 16-23, 1993.

(with B Nemati, AJ Welch), Transscleral Cyclophotocoagulation: An *in vivo* Examination of Lesion Formation, SPIE Biomedical Optics '93, Los Angeles, California, January 16-23, 1993.

(with CL Smithpeter, AJ Welch), Evaluation of a Unique CW Holmium Laser in Radial Thermokeratoplasty, SPIE Biomedical Optics '93, Los Angeles, California, January 16-23, 1993.

(with IM Stübiger, PA Reder, GW Facer, AJ Welch), Holmium:YAG Laser Stapedotomy: Preliminary Evaluation, SPIE Biomedical Optics '93, Los Angeles, California, January 16-23, 1993.

(with AJ Welch, SF Barrett, MR Jerath), Feedback Controlled Retinal Photocoagulation, 11th Annual Conference on Biomedical Engineering Research in Houston, February 11-12, 1993.

Cataracts, St. David's Hospital Adult Education Series, Austin, Texas, May 1994.

Argon Laser Transscleral Cyclophotocoagulation, 129th Annual Session Interlink for Patient Care, Texas Medical Association, San Antonio, 1996.

Akkin T, TE Milner, DP Davé, HG Rylander III. Phase-Sensitive Measurement of Birefringence Change as an Indicator of Neural Functionality and Disease, Proceedings ASLMS, April, 2002

Marsack J, TE Milner, HG Rylander. Applying Femtosecond Lasers and Wavefront Sensors to Keratoconus, RMBS, April, 2002.

OSA 2004 (Abstract and Poster)

Park J, NJ Kemp, HN Zaatari, HG Rylander III, and TE Milner. Three-dimensional nonlinear algorithm to determine depth-resolved phase retardation.

OSA 2004 (Abstract and Poster)

Zaatari HN, NJ Kemp, J Park, HG Rylander III, and TE Milner. Polarization Domain Quantification of Capillary Blood Flow with Polarization-Sensitive Optical Coherence Tomography.

OSA 2004 (Abstract and Poster)

Kemp NJ, J Park, HN Zaatari, HG Rylander III, and TE Milner. Quantitative birefringence imaging with polarization-sensitive OCT: An algorithm to determine phase retardation and diattenuation with high sensitivity.

SPIE 2004 (Presentation)

Kemp NJ, HN Zaatari, J Park, HG Rylander III, and TE Milner. Speckle noise reduction and quantitative birefringence imaging using Polarization Sensitive Optical Coherence Tomography (PSOCT).

UTHSCSA Biophotonics Workshop 2004 (Poster)

Milner TE, HG Rylander III, NJ Kemp, HN Zaatari, and J Park. Depth-resolved Quantification of Birefringent Tissue Properties using Polarization-Sensitive Optical Coherence Tomography.

Birefringence of the Primate Retinal Fiber Layer, BRP Grantee meeting, Bethesda, July 2004.

Neurotubule Loss in Glaucoma, TMA, May, 2004

GRANTS AND CONTRACTS:

Neurophysiology of Amblyopia and Intracranial Pressure Monitor, URI, \$4000, 1978-1979.

Capacitive ICP Transducer, Church Foundation, \$5000, 1980-1981.

(with AJ Welch), Visual Fatigue, IBM Corp., \$380,000, 1982-1985.

Laser Quartz Welding, Church Foundation, \$5000, 1984-1985.

Project Quest, IBM PC AT, 1985.

Project Quest, Macintosh, 1987.

(with KR Diller and R Farrar). Microwave Interaction with Corneal Endothelial Cells, \$300,000, USAF, 1988-89.

(with AJ Welch). An Automated Laser Delivery System, \$230,000, Advanced Technology Program Grant, 1988-89.

(with AJ Welch and JA Pearce). Laser Vessel Welding, \$250,000, Advanced Technology Program Grant, 1989-91.

(with KR Diller and R Farrar). Microwave Interaction with Corneal Endothelial Cells, \$145,000, USAF, 1990-91.

Laser Ablation of Human Crystalline Lens, Coopervision, \$10,000, 1989-90.

(with M Motamedi, S Jacques, JA Pearce, F Tittles, R Richards-Kortum, S Rastegar, L Esterwitz). Diagnostic and Therapeutic Applications of Diode Lasers and Solid State Lasers in Medicine, Department of Energy, \$207,591, 1991-94.

Argon Laser Cyclophotocoagulation, Coherent Medical, \$45,000, May 1993-May 1995

Continuation of the Response of Specialized Biology Tissue to Infrared Radiation, AFOSR, \$199,201, December 1, 1998 – November 30, 2000 (with A J Welch).

Biological Detection Systems for Electromagnetic Spectral Signatures, AFOSR, \$5,000,000, June 1998 - May 2003, (with AJ Welch, M Motamedi, M Grace, J McDevitt, V Tsukruk, J Pearce, D Neikirk, H Bayley).

Functional Neural Imaging, ATP#3658-0359, \$221,300, Jan 2000- Dec 2001.

Polarization Sensitive Retinal Tomography for Glaucoma, NIH#1R24EY12877-01

9/30/99-9/30/00 \$512,411

9/30/00-9/30/01 \$468,751

9/30/01-9/30/02 \$431,386

9/30/02-9/30/03 \$471,696

Seed Grant, Blood Warmer, 30419369XX, 2005, \$20,000.

Quantitative RNFL Assessment for Glaucoma Diagnosis, NIH#R01 EY016462-01A1 (5 year award with Tom Milner))

3/1/06 to 3/1/07 \$376,880

3/1/07 to 3/1/08 \$492,873

3/1/08 to 3/1/09 \$227,000

3/1/09 to 3/1/10 \$423,000

Comprehensive Training Program in Imaging Science and Informatics, NIH T32EB007507-01A2

8/1/09-7/31/2010 \$147,000. This is the first year of a 5 year award (2009-2014) with Mia Markey.

PROFESSIONAL DEVELOPMENT:

A. Teaching Effectiveness

1978-81, 1985, EE 338, Electronic Circuits

1979-present, BME 385J, Electrophysiology of the Nervous System

1986-present, BME 385J, Neuropathophysiology/Prostheses

1992-present, EE 374L, Bio-instrumentation Lab

F02-BME 303, Intro to Computing

F04-BME 180, Instrumentation

F06-BME 365R, Physiology

F07-present BME 365R Quantitative Physiology

B. Workshops

Application of Lasers in Ophthalmology, May 1994

Summit Excimer Laser Workshop, 1996

PH.D. SUPERVISIONS COMPLETED:

Guillermo Martin Alexander, "The Measurement of Intracranial Pressure Utilizing an Implantable Epidural Pressure Transducer"

PhD granted December 1982 through BME

Edward Joseph Engelken, "Influence of Visual and Auditory Stimuli on Saccadic Eye Movements"

PhD granted May 1987 through BME

Carlos Eduardo Davila, "Adaptive Signal Processing of Sensory Evoked Brain Potentials"

PhD granted August 1988 through ECE

Shahriar Ghaffari, "The Design of a Two-Dimensional Optical Image Correlator and its Application in Image Tracking"

PhD granted May 1990 through ECE

Babak Nemati, "Transscleral Argon Cyclophotocoagulation: A Preclinical Feasibility Study"

PhD granted May 1995 through ECE

Newton de Faria Jr., "A Non-Invasive Visual Evoked Cortical Potential Test for Detection of Early Glaucoma Damage"

PhD granted December 1998 through BME

Mathieu Ducros, "Polarization Sensitive Optical Coherence Tomography of the Eye"

PhD granted May, 2000 through BME

Taner Akkin, "Biomedical Applications of a Fiber-Based Low-Coherence Interferometer for Quantitative Differential Phase Measurements"
PhD granted through ECE in Dec 2003

Jeehyun Kim, "Biomedical Imaging Applications of Parallel Optical Coherence Tomography and Adaptive Optics"
PhD granted December, 2004

Nate Kemp, "Enhanced Polarization-Sensitive Optical Coherence Tomography for Characterization of Tissue Anisotropy"
PhD granted December, 2005 through BME

Jesung Park, "Polarimetric Analysis of Anisotropic Tissue using Polarization-Sensitive Optical Coherence Tomography (PS-OCT)"
PhD granted August, 2006 through BME

Kevin Terry, "Human Motor Unit Synchrony and its Relation to Force Steadiness,"
PhD granted August 2007 through BME (with Lisa Griffin) through BME

M.S. SUPERVISIONS COMPLETED:

William Leonard Robinson, "System Controller for the Electrophysiological Analysis of Amblyopia"
MSE granted May 1979 through ECE

Douglas Allen Erwin, "A Video Sinusoidal Grating Generator for Use in the Diagnosis of Visual Acuity Defects"
MSE granted December 1979 through ECE

Douglas James Matzke, "Home Computer Biofeedback for Consumer Relaxation Training"
MSE granted December 1980 through ECE

John Patrick Douglas, "A Quartz, Static Pressure Transducer for the Measurement of Intracranial Pressure"
MSE granted August 1981 through BME

Carlos Eduardo Bouffier, "Predictability of Visual Outcome in Radial Keratotomy"
MSE granted December 1982 through BME

William Wynn McMullen, "An Electronic, Variable Depth Blade Positioner for use in Radial Keratotomy"
MSE granted December 1982 through BME

Bret Gordon Fremming, "A Study of the Effects of Radial Keratotomy on the Rupture Strength of the Eye"
MSE granted May 1983 through BME

Carlos Eduardo Davila, "ERP Correlates of Visual Fatigue"
MSE granted December 1983 through ECE

Martin Taormina, "An Objective Measurement of Dynamic Accommodation"
MSE granted December 1983 through BME

Neil Brooks Battiste, "A Device for the Measurement of Mechanical Strength of Ocular Tissue During Compression"
MSE granted December 1984 through BME

Anthony Mark Coutinho, "The Estimation of the Cup-Disc Ratio From Digitized Pictures of the Optic-Disc"
MSE granted December 1984 through BME

Lyle Aaron Margulies, "An Analysis of Retinal Lesion Formation During Photocoagulation with an Argon Laser"
MSE granted December 1985 through BME

Paul Aafedt Reder, "The Development of Piezorestive Epidural Intracranial Pressure Transducer"
MSE granted August 1985 through BME

Charles Kelly Shepherd, Jr., "Experimental CO₂ Laser Thermokeratoplasty"
MSE granted December 1986 through BME

Patrick Allan Lichter, "Real Time Eigen Vector Decomposition of Single-Trial Visually Evoked Potentials"
MSE granted May 1988 through BME

Darioush Samani, "An LED Array, Microcomputer-Controlled Visual Evoked Potential Stimulus Unit"
MSE granted August 1988 through ECE

John Shimmick, "Evaluation of the Intrinisc Photo-Excitability of Rabbit and Bull Frog Nerve Fibers by Laser Exposure"
MSE granted August 1989 through BME

Srinivasan Nagarajan, "Artificial Neural Networks in Closed Loop Control"
MSE granted December 1990 through BME

Ira Brenner, "A System Design Approach to a Developmental Platform for Computational and Molecular Biology"
MSE granted May 1991 through BME

Sridhar Narayan Porindla, "The Acoustic Effects of Q-Switched Nd:YAG on Chrystalline Lens"

MSE granted May 1991 through BME

Ana Luisa Monroy Calderon, "Automated Morphometric Analysis of Corneal Endothelial Cells"

MSE granted August 1991 through BME

Christopher S. Stanford, "Dorsiflexion of the Foot of an Incomplete Spinal Cord Injury Individual in Response to Vibratory Stimulus"

MSE granted December 1991 through BME

Dwight Ernest Waddell, "A Finite Difference Analysis of Radio Frequency Heating of the Eye in One Dimension"

MSE granted December 1991 through BME

Tarun Jain, "Infrared Reflectance Eyeblink Switch for the Severely Disabled"

MSE granted December 1992 through BME

Ingrid Stübiger, "Holmium:YAG Laser Stapedotomy"

MSE granted May 1993 through BME

Rebecca Schultz, "Characterization of the Fast-Phase Component of the Vestibulo-Ocular Response"

MSE granted May 1994 through BME

Sumeet Hingorani, "Estimation of Nerve Regeneration and Recovery Following Laser Welding of the Sciatic Nerve of Rat"

MSE granted August 1994 through BME

Agrahara Bharatkumar, "Application of Semiconductor Diode Lasers for Dye-Enhanced Hemostasis Using Gelatin Films"

MSE granted August 1994 through BME

Laure Fuentes, "Space Motion Sickness"

MSE granted Aug 1995 through BME

Mathieu Ducros, "Design and Construction of an Optical Microscope Prototype"

MSE granted May 1996 through BME

Tiffany Raynor, "Evaluation of Signal Response Characteristics of a Laplacian Electrode"

MSE granted Aug 1996 through ECE

Jason Marsack, "Polarization Sensitive Optical Coherence Tomography of the Eye," May 2001

Jennifer Marie Siegert, "Exploration into the Transduction Mechanism of the Infrared Sensitive Pit Organ of *Melanophila accuminata*: Optical Low Coherence Reflectometry (OLCR) Studies," Aug, 2001

JC Fox, " Polarization Effects of the Primate Cornea," Dec 2001.

Nate Kemp, "Phase Retardation and Fast Axis Orientation in Multiple –Layered Media with PS-OCT," Dec 2002.

JS Park, "Analysis of the Phase Retardation and Axis in the RNFL of Cynomolgous Monkeys from PS-OCT Data," May 2003

Yul Young Park, "The psychophysical and physiological assessment of cochlear-origin tinnitus," Aug 2004.

Haitham N. Zaatari, "Phase Retardation Measurement with Capillary Blood Flow using EPS-OCT," December 2004.

WeiShi Tsai, "Noise Analysis of a SD-PS-OCT System," August 2005.

Roberto G. Aranibar, "Relationship between Birefringence and Neurotubule Density in the Primate Retinal Nerve Fiber Layer," December, 2006.

Kevin Aroom, "The design, fabrication, and testing of a portable arteriovenous fluid warming system," May, 2007.

Anckit Wadhwa, "Motor unit coherence and synchrony across different force levels are not different in older adults as compared to younger adults" December, 2007 (with Lisa Griffin).

Ginger Pocock, "The relationship between retinal ganglion cell axon constituents and retinal nerve fiber layer birefringence in the primate" May, 2009

CV updated: August, 2009

DOCKET NO. 26381

**PETITION OF UTEX
COMMUNICATIONS CORPORATION
FOR ARBITRATION PURSUANT TO
SECTION 252(b) OF THE FEDERAL
TELECOMMUNICATIONS ACT AND
PURA FOR RATES, TERMS, AND
CONDITIONS OF
INTERCONNECTION AGREEMENT
WITH SOUTHWESTERN BELL
TELEPHONE COMPANY**

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**PUBLIC UTILITY COMMISSION
OF TEXAS**

10/23/20 AM 10:35
FILED
FILING CLERK

**ORDER NO. 25
CLARIFYING REQUIREMENTS FOR JOINT DPL**

In Order Nos. 23 and 24, the Panel required the parties to file two joint DPLs and a copy of the agreement being negotiated, including agreed and disputed language. On January 15, 2010, a prehearing conference was convened to discuss those filings, among other things. The undersigned arbitrators¹ now issue the following additional instructions regarding the joint DPLs:

- As required by Order No. 24, the baseline agreement for the joint DPL submissions shall be the Interconnection Agreement – Texas Between Southwestern Bell Telephone Company and UTEX Communications Corp. The parties are not bound, however, by the agreement language proposed in UTEX's Second Amended Petition and AT&T Texas's Response to Second Amended Petition. Instead, the parties shall update the joint DPL to reflect the current state of negotiations between the parties and any changes in law.
- Order No. 24 directed the parties to file two joint DPLs—one with the disputed contract language and one without the disputed contract language. Regarding the joint DPL with the disputed contract language, the parties may, rather than including a section of disputed contract language in the DPL itself, incorporate that section of the agreement by reference but only if populating the joint DPL

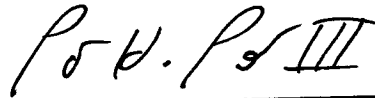
¹ On January 14, 2010, UTEX Communications Corp. filed a motion seeking the recusal of Arbitrator Meena Thomas. For this reason, Ms. Thomas did not participate in rendering the decisions contained in this Order.

format attached to Order No. 23 with that section's language would add more than 5 pages to the joint DPL.

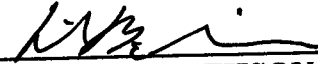
- The parties shall file the joint DPLs and contract language no later than **February 5, 2010**.

SIGNED AT AUSTIN, TEXAS on the 20th day of January, 2010.

FTA § 252 PANEL



PATRICK H. PETERS III
ARBITRATOR



DAVID B. SMITHSON
ARBITRATOR