



TRANSFORMERS COMMITTEE



February 3, 2007

Dear Committee Members and Guests:

You and your companion are cordially invited to attend the Spring 2007 Meeting of the IEEE/PES Transformers Committee to be held March 11-15, 2007 in Dallas, Texas. I am excited to represent TXU Electric Delivery as your host of this meeting.

Our meeting will take place at the Hilton Dallas Lincoln Centre, 5410 LBJ Freeway, located just minutes from hundreds of restaurants, entertainment and shopping destinations. The reduced group rate is US\$139 for single and double occupancy. Guest rooms are reserved under the group name "IEEE Transformers" and can be reserved at 1-800-HILTONS or 972-934-8400, or by fax at 972-701-5244 (include your email address in the fax). A link to the Hilton on-line reservation system is included in the Committee's website ("Next Meeting" page). The room-block cut-off date is February 14. After that date, remaining rooms will be released to the public. There are also a limited number of executive level rooms available at an additional cost.

You have two airports to choose from. Dallas Love Field (DAL) is 10 minutes away and a major hub for Southwest Airlines. A SuperShuttle ride will cost you \$21, or the taxi fare is ~\$23. DFW International Airport (DFW) is 20 minutes away and a SuperShuttle ride to/from there will cost you \$16, or the taxi fare is ~\$40. SuperShuttle tickets are available at the airport (advance reservation is not necessary).

For those who rent a car, the hotel offers self-parking in the adjacent garage at \$10/day, or \$18 for valet service. There are a few lakeside parking places available at no charge. The DFW area provides visitors a unique blend of Southwestern warmth, cosmopolitan flair, Old West charm, and modern sophistication. Visitors can experience the diverse cultures of both Dallas and nearby Fort Worth. You can visit the Dallas CVB website (www.dallascvb.com), or the Fort Worth website (www.fortworth.com). There is something available for everyone and I encourage you to take an extra day or two to see the many sites of the Dallas/Fort Worth area.

The weather in early March can get a little chilly in the morning and evening hours, so be sure to bring a light jacket. Temperatures range from an average high of 67°F (19°C), to an average low of 43°F (6°C). But like they say in Texas, if you don't like the weather just wait a little while and it will change! In addition to our meetings, we have also planned some great tours to make you and your companion's visit to Dallas/Fort Worth a memorable experience.

ON-LINE REGISTRATION

We again have a full agenda planned for this meeting. Use the on-line registration system to register for all tours and events. The on-line registration system can be accessed at www.transformerscommittee.org. Register by February 14 to receive the early-registration discount. The on-line registration system will be completely disabled on Wednesday, March 7 to print namebadges and finalize counts. Note that the cost to walk-up register for the meeting at the hotel is substantially higher than registering on-line in advance.

SPECIAL EVENTS

Sunday, March 11 -- For those if you who are history buffs, there will be a tour on Sunday morning of the historic sites surrounding John F. Kennedy's assassination. You will tour the **Sixth Floor Museum** (formerly the Texas School Book Depository), walk through **Dealey Plaza** and see the John F. Kennedy Memorial. Lunch will be in the historic West End at Sonny Bryans smokehouse.

The **Sunday Evening Reception** will be held in the Lincoln Ballroom of the Hilton. The reception will begin at 6:00 pm. Don't miss this event to mingle with some old friends and meet new ones. It is an excellent networking opportunity to brush shoulders with the "Who's Who" in the transformer world.

Tuesday, March 13 -- The speaker for the **Tuesday Luncheon** will be Michael Quinn P.E. from TXU Electric Delivery. Michael will talk about TXU's BPL Project (Broadband over Power Line). We will have some of the BPL equipment on display in the registration area on Tuesday morning for you to examine during breaks.

Wednesday, March 14 -- Our **Wednesday Evening Dinner Social** will give you and your spouse or companion the opportunity to spend an evening at the Dallas World Aquarium. You will be able to enjoy a dinner buffet while walking through the aquarium and the Orinoco Rainforest Exhibit and observe the marine life, beautiful scenery and exotic wildlife.

COMPANION TOURS

Monday, March 12 -- On Monday, your spouse/companion will get an opportunity to enjoy the local culture that Fort Worth has to offer. You will visit the **Texas Cowboy Hall of Fame**, and see a real herd of Texas Longhorns as you watch the **Fort Worth Herd** herded along Exchange Street. You will have an opportunity to browse the shops along Exchange Street, eat lunch at the Stockyards Hotel and end the day with shopping at **Sam Moon's**.

Tuesday, March 13 -- On Tuesday you will see some of the sites Dallas has to offer. You will start with a tour of the **Sixth Floor Museum** and **Dealey Plaza**, which provides a comprehensive exhibit on the life, death, and legacy of President John F. Kennedy. After lunch you will tour the **Dallas Museum of Art**. In addition to the permanent collection you will have a chance to see a special exhibit in town for a limited time called "**Matisse - Painter as Sculptor**".

TECHNICAL TOURS

At the time of this letter, there are no technical tours planned for this meeting.

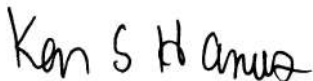
ADDITIONAL INFORMATION

The following additional information comprises the Meeting Invitation Package. This information can be found on the Committee's website (www.transformerscommittee.org).

1. Meeting Registration Form. You may mail or fax this form with payment or register on-line using a major credit card (must be received by February 14 to be eligible for the early registration discount). On-line registration is encouraged and is available starting sometime during the week of February 5.
2. Detailed Meeting Schedule. An updated schedule will be posted on the Committee's website approximately one week before the meeting.
3. Information Flyers:
 - Sunday Activity
 - Monday & Tuesday Companion Tours
 - Tuesday Speaker Luncheon
 - Wednesday Evening Dinner Social
 - Technical Presentations

I am pleased to host this event and hope your visit will be enjoyable and memorable. If you require further information or assistance, please phone me at 817-475-9283, or email me at ken.hanus@ieee.org.

I look forward to seeing you in Dallas!



Ken Hanus
Host, Spring 2007 Meeting
TXU Electric Delivery

Use this form only if you do not have access to the Internet, or need to pay by paper check or money order.
Pre-register on-line for the meeting and/or purchase meeting minutes (in paper format) using a credit card at:
www.transformerscommittee.org

IEEE/PES TRANSFORMERS COMMITTEE
SPRING 2007 MEETING -- MARCH 11-15, 2007
Dallas, Texas USA

Attendee's Name _____
Name to appear on your nametag (nickname, etc.) _____
Company / Institution _____
Street Address _____
City _____ State / Prov. _____ Postal Code _____ Country _____
Telephone _____ Fax _____ E-mail _____
PES Member? ☐ Yes ☐ No IEEE Standards Association Member? ☐ Yes ☐ No IEEE Membership #: _____
Will a companion accompany you? ☐ Yes ☐ No Full name of companion (for nametag) _____
Indicate if vegetarian meal(s) are required for: Attendee: ☐ Yes ☐ No Companion: ☐ Yes ☐ No
Other special requirements (special diets, wheelchair, etc.): _____

Attendee Registration Fee Includes: Meeting Attendance, Sunday Evening Reception, breaks, and 4 breakfasts (M, T, W, Th)

Companion Registration Fee Includes: Sunday Evening Reception and 4 breakfasts (M, T, W, Th)

-- Refund provided **ONLY** if request is received by March 7 (by snail-mail or fax, or confirmed email to the contact below) --

-- There is a US\$25.00 service charge on a full refund of the entire registration (US\$10 for a partial refund) --

NOTE: Complete meeting registration (with fees) is necessary to attend ANY event! (including companion tours)

Meeting Registration Fees (all fees in US\$ funds)	On or Before February 14	After February 14, on or before March 7	At the Meeting	Total
Attendee - IEEE Member (will be verified with IEEE)	\$175	\$225	\$325	_____
Attendee - non-member	\$200	\$250	\$350	_____
Attendee - IEEE Life or Committee Emeritus (will be verified)	\$50	\$100	\$200	_____
Spouse or Companion, including children age 10 and over	\$75	\$100	\$200	_____

*** Note: Companions and children must be registered for the meeting to attend any tour or social event. ***

Sunday Evening Reception (cost included in registration fee) Attendee: ☐ Yes ☐ No, Companion: ☐ Yes ☐ No **-0-**

Monday Luncheon: Stds Develop Process Review Mtg (all SC-WG-TF Chairs encouraged to attend) # ____ @ \$20 _____

Tuesday Luncheon: "Broadband over Powerline", by Michael Quinn # ____ @ \$30 _____

Indicate selection for Tuesday Luncheon: Beef ____, Chicken ____, Vegetarian ____

Wednesday Evening Event: Dinner Social at the Dallas World Aquarium # ____ @ \$60 _____

Spouse/Companion Tours: Monday - Fort Worth City Tour, includes lunch # ____ @ \$45 _____

Tuesday - Dallas City Tour, includes lunch # ____ @ \$45 _____

Other Tours: Sunday Morning Tour, JFK Historic Site, includes lunch # ____ @ \$45 _____

Spring 2007 Meeting Minutes, paper format** (purchased with or without meeting registration) # ____ @ \$20 _____

** The primary source for Meeting Minutes is the Committee's web-site. Printed minutes (in paper format) can be purchased and will be mailed to the above address at a later date.

TOTAL REMITTED -- US\$ _____
All funds in US dollars

METHODS OF PAYMENT: (1) Pre-register on-line (preferred). (2) Mail form with check or money order to:

IEEE/PES Transformers Committee, c/o Greg Anderson; 13110 Birch Drive, Suite 148; Omaha, Nebraska 68164 USA

(3) Fax or email completed form with credit card info to: 816/222-0828 (fax), or transformers@ieee.org

US Tax ID No. 13-1656633, Canadian Business No. 12563 4188, Euro Tax Registration No. EU826000081

Check or money order - Payable to: **"IEEE/PES Transformers Committee"**

- Checks not issued by a US Bank must add US\$25.00 for processing fee.

Mailed or faxed registrations without proper payment will not be accepted.

Credit Card: ☐ Visa ☐ MasterCard ☐ American Express ☐ Diners Club

Card Number _____ Expiration Date _____ Name as it appears on card _____ Signature (Important) _____

IEEE/PES TRANSFORMERS COMMITTEE

www.transformerscommittee.org

Spring 2007 Meeting; March 11-15

Hosted by Ken Hanus and TXU Electric Delivery
Hilton Dallas Lincoln Centre; Dallas, Texas USA

NOTES: See Page 5 for a key to the abbreviations. A vertical line in the left margin indicates a noteworthy revision since last issue.

<u>DATE/TIME</u>	<u>ACTIVITY</u>	<u>SUB-COM</u>	<u>ACTIVITY CHAIR</u>	<u>ROOM CAP/ARR/AV</u>	<u>MEETING ROOM</u>
Saturday, March 10					
	No Events or Meeting Registration.				
Sunday, March 11					
8:30 am - 1:30 pm	<u>Sunday Tour:</u> JFK Memorial. Everyone is invited, but advance registration is necessary. -- Buses depart from the Hilton at 8:30 am and return by 1:30 pm. Includes lunch. Eat breakfast beforehand. -- Contact Mr. Ken Hanus at TXU at 817-475-9283 or ken.hanus@ieee.org for more information.				
1:00 pm - <u>5:30 pm</u>	Meeting Registration (open only until 5:30 pm)			L-shaped table	Lincoln Foyer
2:00 pm - 5:30 pm	Administrative SC -- Closed meeting, by invitation only	Admin.	D. Fallon	25 US (w/snack buffet)	Adams AB (& Jackson A)
2:00 pm - 5:30 pm	NEMA Transformers -- Closed meeting, by invitation only	++	C. Drexler	15 US (w/beverages)	Washington
6:00 pm - 8:00 pm	Welcome Reception -- All Members, Guests & Companions are welcome!			325 Recept.	Lincoln Ballroom East/West
Monday, March 12 -- Monday Breaks Sponsored by <u>Omicron</u> ***					
7:00 am - 5:00 pm	Meeting Registration			L-shaped table	Lincoln Foyer
7:00 am - 6:00 pm	Internet Cafe'			12 SQ	Jefferson
<u>7:00 am</u> - 7:50 am	<u>Newcomers Orientation</u> Breakfast Mtg (arrive early!) -- Newcomers & Guests are encouraged to attend!		T. Prevost	50 CL	Atrium 1 (Lobby Level)
7:00 am - 7:45 am	Distribution SC Coordination Meeting (closed mtg)		K. Hanus	14 CONF	Crocketts Audubon (Lake Level)
7:00 am - 8:00 am	Breakfast - Attendees (no companions please)			200 RT (9/tbl)	Atrium 2
8:00 am - 9:00 pm	Breakfast - Companions (no attendees please)			40 RT (8/tbl)	Reflections (Lake Level)
9:15 am - 4:00 pm	<u>Companion Tour:</u> "Fort Worth City Tour". Includes lunch. -- Advance registration required. The bus departs the Hilton Hotel at 9:15 am and returns by 4:00 pm.				
8:00 am - 10:45 am	IEC TC-14 Technical Advisory Group (all interested individuals welcome)	++	P. Hopkinson	20 CL	Hamilton (Lobby Level)
8:00 am - 9:15 am	WG 3-ph UG Distr. Transf. C57.12.24	UTNP	G. Termini	16 CL / 12 TH	Washington
8:00 am - 9:15 am	TF Arc Furnace Transformers C57.17	Power	D. Corsi	18 CL / 10 TH	Lincoln 1
8:00 am - 9:15 am	TF Dry-Type Reactors	Dry	R. Dudley	32 CL / 20 TH	Adams AB (and Jackson A)
8:00 am - 9:15 am	WG Electronic Test Data Reporting PC57.12.37	Dist	T. Callsen/ R. Hollingsworth	75 CL	Lincoln 2,3
8:00 am - 9:15 am	TF Electrical Partial Discharge Measurements Guide C57.113	DiTests	E. Lemke	100 CL S3	Lincoln East
8:00 am - 9:15 am	WG Transformer Monitoring C57.143	Power	D. Chu/A. Lux	200 CL S3	Lincoln West (and 6,7,8)
9:15 am - 9:30 am	<i>Break (beverages only)</i>			Lincoln Ballroom Foyer	

*** Contact Joe Watson (joe_watson@ieee.org) if you are interested in sponsoring coffee-breaks at a future meeting.

<u>DATE/TIME</u>	<u>ACTIVITY</u>	<u>SUB-COM</u>	<u>ACTIVITY CHAIR</u>	<u>ROOM CAP/ARR/AV</u>	<u>MEETING ROOM</u>
Monday, March 12 (continued)					
9:30 am - 10:45 am	WG Liquid-immersed Secondary Network Transformers C57.12.40	UTNP	B. Klaponski	16 CL / 12 TH	Washington
9:30 am - 10:45 am	(TBD)			18 CL / 10 TH	Lincoln 1
9:30 am - 10:45 am	WG Revision of C57.12.10	Power	J. Arteaga	32 CL / 20 TH	Adams
9:30 am - 10:45 am	WG Overhead Dist. Trans. C57.12.20	Dist	A. Wilks	75 CL	Lincoln 2,3
9:30 am - 10:45 am	WG PCS Rev. to Test Code C57.12.90	PCS	M. Perkins	100 CL S3	Lincoln East
9:30 am - 10:45 am	WG Acoustic PD Measurements	DiTests	J. Harley	200 CL S3	Lincoln West
10:45 am - 11:00 am	<i>Break (beverages only)</i>			Lincoln Ballroom Foyer	
11:00 am - 12:15 pm	WG Dry-Type Gen. Require. C57.12.01	Dry	J. Sullivan	16 CL / 12 TH	Washington
11:00 am - 12:15 pm	WG Thermal Evaluation of Power and Distribution Trans. C57.100	IL	R. Wicks	18 CL / 10 TH	Lincoln 1
11:00 am - 12:15 pm	WG Shunt Reactors C57.21	PCS	R. Dudley	32 CL / 20 TH	Adams
11:00 am - 12:15 pm	WG 1-ph Padmount Distribution Transformers C57.12.25	Dist	A. Ghafourian/ I. Ares	75 CL	Lincoln 2,3
11:00 am - 12:15 pm	WG Revision to Low Frequency Tests	DiTests	B. Poulin	100 CL S3	Lincoln East
11:00 am - 12:15 pm	WG Standard for Control Cabinets	Power	J. Watson	200 CL S3	Lincoln West
12:15 pm - 1:30 pm	<u>Lunch Meeting:</u> Stds Development Process Review -- All activity chairs are encouraged to attend. -- Advance reservation required (\$20 for box lunch). -- No paper tickets. Admission verified at the door.		B. Chiu (Stds SC)	80 RT (8/tbl)	"LBJ Room" (Lobby Level, past L'Express, down the hall)
1:45 pm - 3:00 pm	WG Thermal Evaluation C57.12.56 and C57.12.60	Dry	R. Provost/ R. Wicks	16 CL / 12 TH	Washington
1:45 pm - 3:00 pm	WG Frequency Response Analysis (FRA) Guide PC57.149	PCS	C. Sweetser	18 CL / 10 TH	Lincoln 1
1:45 pm - 3:00 pm	SC HVDC Converter Transformers and Smoothing Reactors	HVDC	R. Dudley	32 CL / 20 TH	Adams
1:45 pm - 3:00 pm	WG 3-ph Padmount Distribution Transformers C57.12.34	Dist	R. Stahara/ S. Shull	75 CL	Lincoln 2,3
1:45 pm - 3:00 pm	WG PCS Revisions to C57.12.00	PCS	S. Snyder	100 CL S3	Lincoln East
1:45 pm - 3:00 pm	WG Tap Changer Performance C57.131	Power	W. Henning	200 CL S3	Lincoln West
3:00 pm - 3:15 pm	<i>Break (beverages and treats)</i>			Lincoln Ballroom Foyer	
3:15 pm - 4:30 pm	Joint WG Optical ITs C57.13/PSIM P1601	IT/PSIM	Rahmatian/ Gilleland	16 CL / 12 TH	Washington
3:15 pm - 4:30 pm	WG 1-ph Submersible Distribution Transformers C57.12.23	UTNP	A. Traut/ B. Basu	18 CL / 10 TH	Lincoln 1
3:15 pm - 4:30 pm	TF IEEE-IEC Cross Reference	Stds	J. Sim	32 CL / 20 TH	Adams
3:15 pm - 4:30 pm	WG Dry-Type Test Code C57.12.91	Dry	D. Foster	75 CL	Lincoln 2,3
3:15 pm - 4:30 pm	WG Revision of Impulse Guides C57.98 and C57.138	DiTests	A. Molden	100 CL S3	Lincoln East
3:15 pm - 4:30 pm	TF Core Overexcitation Requirements	PCS	C. Stiegemeier	200 CL S3	Lincoln West
4:30 pm - 4:45 pm	<i>Break (beverages only)</i>			Lincoln Ballroom Foyer	
4:45 pm - 6:00 pm	<u>Presentation #1:</u> "Transformer Life Expectancy", by W. Bartley, Sponsored by SC Power Transformers. **			300 CL S3 (add 100 TH seats in rear)	Lincoln West
6:30 pm - 10:00 pm	Technical Tour #1: "Tour of High Voltage Supply Facility". Advance reservations required via TC website. Everyone is invited, but attendance is limited to one bus-load. Another similar tour on Tuesday evening. Bus will leave the Hilton at 6:30 pm, and return around 10:00 pm. Dinner will be served.				

** Contact N. Kent Haggerty (n.kent.haggerty@ieee.org) if you are interested in making a technical presentation at a future meeting.

<u>DATE/TIME</u>	<u>ACTIVITY</u>	<u>SUB-COM</u>	<u>ACTIVITY CHAIR</u>	<u>ROOM CAP/ARR/AV</u>	<u>MEETING ROOM</u>
Tuesday, March 13 -- Tuesday Breaks Sponsored by <u>Serveron</u> ***					
7:00 am - <u>12:00 pm</u>	Meeting Registration (until noon only)			L-shaped table	Lincoln Foyer
7:00 am - 6:00 pm	Internet Cafe'			12 SQ	Jefferson
7:00 am - 8:00 am	NEMA ST-1/ST-20 Revision (breakfast meeting, get food in Atrium 2)			14 CONF	Hamilton
7:00 am - 8:00 am	Breakfast - Attendees (no companions please)			275 RT (9/tbl)	Atrium 1 & 2
8:00 am - 9:00 pm	Breakfast - Companions (no attendees please)			40 RT (8/tbl)	Reflections
9:15 am - 3:30 pm	<u>Companion Tour</u> : "Dallas Tour". Includes lunch. -- Advance registration required. The bus departs the Hilton Hotel at 9:15 am and returns by 3:30 pm.				
8:00 am - 9:15 am	WG Test Requirements for HV Instrument Transformers C57.13.5	IT	R. McTaggart/ P. Riffon	16 CL / 12 TH	Washington
8:00 am - 9:15 am	WG Temp. Rise Test Procedures in Section 11 of C57.12.90	IL	P. Powell	18 CL / 10 TH	Lincoln 1
8:00 am - 9:15 am	WG Rev. Field Test Guide IEEE 62	Stds	(TBD)	32 CL / 20 TH	Adams AB
8:00 am - 9:15 am	WG Enclosure Integrity C57.12.28, C57.12.29, C57.12.31, C57.12.32	Dist	R. Olen/ D. Mulkey	75 CL	Lincoln 2,3
8:00 am - 9:15 am	WG Natural Ester-based Fluids C57.147	IF	P. McShane	100 CL S3	Lincoln East
8:00 am - 9:15 am	WG Switching Transients Induced by Transformer/Breaker Interaction	PCS	R. Degeneff	200 CL S3	Lincoln West
9:15 am - 9:30 am	<i>Break (beverages only)</i>			Lincoln Ballroom Foyer	
	WG Oil Accept. & Maint. Guide C57.106	IF	Document is being edited for publication.		
9:30 am - 10:45 am	Joint TF Low PF Measure. (PCS/PSIM)		This activity will not meet in Dallas.		
9:30 am - 10:45 am	WG Terminal Markings C57.12.70 (NEW)	Stds	S. Shull	16 CL / 12 TH	Washington
9:30 am - 10:45 am	WG Neutral Ground. Devices PC57.32	PCS	S. Schappell	18 CL / 10 TH	Lincoln 1
9:30 am - 10:45 am	TF Functional Life Tests, De-energized Tap Changers (DETC)	Power	P. Hopkinson	32 CL / 20 TH	Adams
9:30 am - 10:45 am	WG Revision to Loading Guide C57.91	IL	T. Raymond	75 CL	Lincoln 2,3
9:30 am - 10:45 am	TF GSU Bushing Standardization (NEW)	Bush	L. Recksiedler	100 CL S3	Lincoln East
9:30 am - 10:45 am	TF Transformers for Wind Farms	Power	J. Watson	200 CL S3	Lincoln West
10:45 am - 11:00 am	<i>Break (beverages only)</i>			Lincoln Ballroom Foyer	
11:00 am - 12:15 pm	WG Loss Tolerance and Measurement	PCS	E. teNyenhuis	16 CL / 12 TH	Washington
11:00 am - 12:15 pm	WG Phase-shift Trans. Guide C57.135	Power	J. Sim	18 CL / 10 TH	Lincoln 1
11:00 am - 12:15 pm	TF Transf. Tank Rupture & Mitigation	Power	P. Zhao	32 CL / 20 TH	Adams
11:00 am - 12:15 pm	WG Dist. Substation Transf. C57.12.36	Dist	Aho/Rossetti	75 CL	Lincoln 2,3
11:00 am - 12:15 pm	WG Guide for DGA in LTCs C57.139	IF	F. Jakob	100 CL S3	Lincoln East
11:00 am - 12:15 pm	Short Circuit Tests Guide C57.133 and revision to C57.12.90, Section 12	PCS	M. Fortin	200 CL S3	Lincoln West
12:15 pm - 1:30 pm	<u>Speaker Luncheon</u> . "Broadband over Powerline", by Michael Quinn. Advance registration is necessary. -- Paper tickets will not be provided. Admission verified at the door.			170 RT (10) with elevated table for 6	"LBJ Room" (Lobby Level, past L'Express)
	WG Revision Installation Guide C57.93	Power	Document is being edited for publication		
1:45 pm - 3:00 pm	WG Rev. Transformers for Non-sinusoidal Loads C57.110	PCS	R. Marek	16 CL / 12 TH	Washington
1:45 pm - 3:00 pm	TF Revision to IEEE 638	Power	C. Swinderman	18 CL / 10 TH	Lincoln 1
1:45 pm - 3:00 pm	WG Dielectric Test Tables, Liquid-filled	DiTests	P. Hopkinson	32 CL / 20 TH	Adams
1:45 pm - 3:00 pm	WG Voltage Step Regulators C57.15	Dist	Colopy/Kennedy	75 CL	Lincoln 2,3
1:45 pm - 3:00 pm	WG Revision to Gas Guide C57.104	IF	R. Ladroga	100 CL S3	Lincoln East
1:45 pm - 3:00 pm	(TBD)			200 CL S3	Lincoln West
3:00 pm - 3:15 pm	<i>Break (beverages and treats)</i>			Lincoln Ballroom Foyer	

*** Contact Joe Watson (joe_watson@ieee.org) if you are interested in sponsoring coffee-breaks at a future meeting.

<u>DATE/TIME</u>	<u>ACTIVITY</u>	<u>SUB-COM</u>	<u>ACTIVITY CHAIR</u>	<u>ROOM CAP/ARR/AV</u>	<u>MEETING ROOM</u>
Tuesday, March 13 (continued)					
3:15 pm - 4:30 pm	WG Sound Level Measurement Guide	ASV	J. Puri	16 CL / 12 TH	Washington
3:15 pm - 4:30 pm	WG Semiconductor Rectifier Transformers C57.18.10	PCS	S. Kennedy	18 CL / 10 TH	Lincoln 1
3:15 pm - 4:30 pm	WG Bushing Applicat. Guide C57.19.100	Bush	T. Spitzer	32 CL / 20 TH	Adams
3:15 pm - 4:30 pm	WG for Bar Coding Distribution Transformers C57.12.35	Dist	L. Matthews/ G. Termini	75 CL	Lincoln 2,3
3:15 pm - 4:30 pm	WG Revision to Impulse Tests	DiTests	P. Riffon/ P. Heinzig	100 CL S3	Lincoln East
3:15 pm - 4:30 pm	WG Transportation Issues Guide	Power	G. Anderson	200 CL S3	Lincoln West
4:30 pm - 4:45 pm	Break (beverages only)			Lincoln Ballroom Foyer	
4:45 pm - 6:00 pm	Presentation #2: "Transformer Life Extension for Better Asset Management", by Bartley, Stiegemeier and Woodcock. Sponsored by SC Power Transformers. **			300 CL S3 (add 100 TH seats in rear)	Lincoln West
6:30 pm - 10:00 pm	Technical Tour #2: "Tour of High Voltage Supply Facility". Advance reservations required via TC website. Everyone is invited, but attendance is limited to one bus-load. Another similar tour on Monday evening. Bus will leave the Hilton at 6:30 pm, and return around 10:00 pm. Dinner will be served.				
Wednesday, March 14 -- Wednesday Breaks Sponsored by JSHP Transformer Co. Ltd ***					
No Meeting Registration, No Companion Tours					
7:00 am - 6:00 pm	Internet Cafe'			12 SQ	Jefferson
7:00 am - 8:00 am	Breakfast - Attendees (no companions please)			250 RT (9/tbl)	Atrium 2
8:00 am - 9:30 am	Breakfast - Companions (no attendees please)			40 RT (8/tbl)	Reflections
7:00 am - 7:45 am	SC Meetings Planning Get breakfast in Atrium 2 and take to Hamilton (Lobby Level). Arrive early!	Mtgs	G. Anderson	25 CL	Hamilton (Lobby Level)
8:00 am - 9:15 am	EL&P Delegation (Users only meeting)	++	K. Hanus	32 CL / 20 TH	Adams AB (and Jackson A)
8:00 am - 9:15 am	SC Instrument Transformer	IT	J. Smith	75 CL	Lincoln 2,3
8:00 am - 9:15 am	SC Audible Sound & Vibration	ASV	J. Puri	100 CL S3	Lincoln East
8:00 am - 9:15 am	SC Insulation Life	IL	D. Platts	200 CL S3	Lincoln West (and 6,7,8)
9:15 am - 9:30 am	Break (beverages only)			Lincoln Ballroom Foyer	
9:30 am - 10:45 am	TBD			75 CL	Lincoln 2,3
9:30 am - 10:45 am	SC UG Transf. & Network Protectors	UTNP	C. Niemann	100 CL S3	Lincoln East
9:30 am - 10:45 am	SC Dielectric Tests	DiTests	L. Wagenaar	200 CL S3	Lincoln West
10:45 am - 11:00 am	Break (beverages only)			Lincoln Ballroom Foyer	
11:00 am - 12:15 pm	TBD			75 CL	Lincoln 2,3
11:00 am - 12:15 pm	SC Insulating Fluids	IF	R. Ladroga	100 CL S3	Lincoln East
11:00 am - 12:15 pm	SC Performance Characteristics	PCS	R. Girgis	200 CL S3	Lincoln West
12:15 pm - 1:30 pm	Lunch (on your own)				
1:30 pm - 2:45 pm	TBD			75 CL	Lincoln 2,3
1:30 pm - 2:45 pm	SC Dry Type	Dry	C. Johnson	100 CL S3	Lincoln East
1:30 pm - 2:45 pm	SC Power Transformers	Power	T. Lundquist	200 CL S3	Lincoln West
2:45 pm - 3:00 pm	Break (beverages only)			Lincoln Ballroom Foyer	

** Contact N. Kent Haggerty (n.kent.haggerty@ieee.org) if you are interested in making a technical presentation at a future meeting.

*** Contact Joe Watson (joe_watson@ieee.org) if you are interested in sponsoring coffee-breaks at a future meeting.

KEY

Note: A PC projector will be furnished in each meeting room. Arrive early to ensure that equipment operates/syncs correctly. Overhead projectors are available in the meeting registration area.

> -- activity continued into another session / from another session
 ++ -- not a Transformers Committee activity TBD = "To Be Determined"
 FC = flip chart; S1 = sound (see note)
 S2 = stand mic in front only; S3 = one stand mic in front & stand mic(s) at mid-room

CL -- classroom seating (w/head table for 2-3)
 TH -- theater seating (with head table for 2-3)
 RT -- multiple roundtables (8-9/table)
 US -- U-shape table

<u>DATE/TIME</u>	<u>ACTIVITY</u>	<u>SUB-COM</u>	<u>ACTIVITY CHAIR</u>	<u>ROOM CAP/ARR/AV</u>	<u>MEETING ROOM</u>
Wednesday, March 14 (continued)					
3:00 pm - 4:15 pm	TBD			75 CL	Lincoln 2,3
3:00 pm - 4:15 pm	SC Distribution Transformers	Dist	K. Hanus	100 CL S3	Lincoln East
3:00 pm - 4:15 pm	SC Bushings	Bush	F. Elliott	200 CL S3	Lincoln West
4:15 pm - 4:30 pm	<i>Break (beverages only)</i>			Lincoln Ballroom Foyer	
4:30 pm - 5:30 pm	SC Transformer Standards	Stds	B. Chiu	100 CL S3	Lincoln East
6:00 pm - 10:30 pm	Dinner Social: Dinner at Dallas World Aquarium. Advance registration is necessary. -- Buses begin boarding at 5:45 pm. The last bus leaves at 6:00 pm. All buses return before 10:30 pm. -- Paper tickets will not be provided. Admission will be verified with a registration list as you board the bus.				

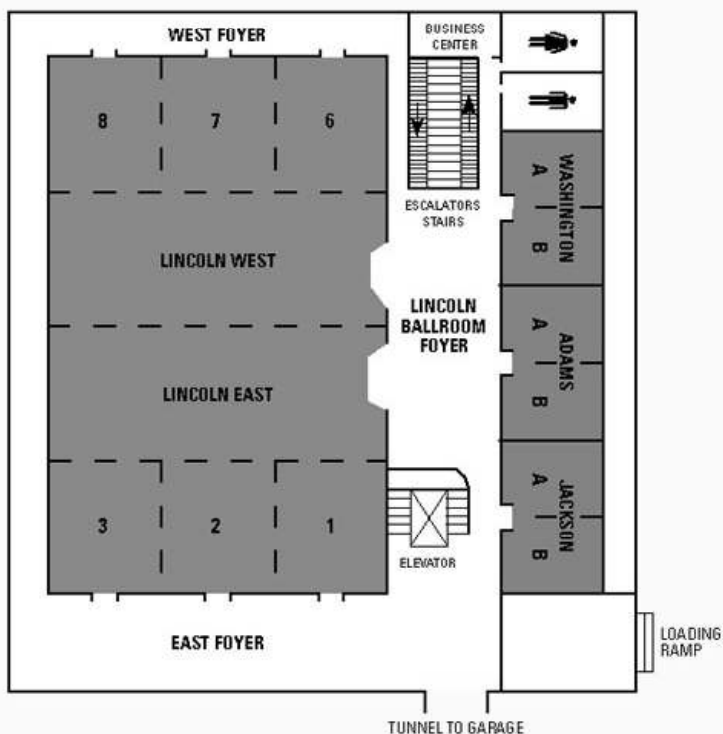
Thursday, March 15

No Meeting Registration, No Technical Tours, No Companion Tours, No Internet Cafe'					
7:00 am - 8:00 am	Breakfast - Attendees (no companions please)			225 RT	Atrium 2
8:00 am - <u>9:30 am</u>	Breakfast - Companions (no attendees please)			35 RT	Reflections
8:00 am - 9:45 am >	General Session, Transformers Committee -- All attendees are encouraged to attend. -- See separate document for meeting agenda.		D. Fallon	250 CL S1 2 per 6' and <u>elevat.</u> table for 4	Lincoln East/West (and 6,7,8)
9:45 am - 10:00 am	<i>Break (beverages only)</i>			Lincoln Ballroom Foyer	
> 10:00 am - 11:30 am	General Session, Transformers Committee		D. Fallon	250 CL S1	Lincoln East/West (and 6,7,8)
1:00 pm - 5:00 pm >	EPRI Power Transformer Project Review -- Closed meeting, EPRI members only -- Continued into Friday morning	++	L. van der Zel	30 CL	Jefferson (Lobby Level)

Friday, March 16

No Transformer Committee Meetings, No Internet Cafe'					
7:30 am - 8:00 am	Breakfast - EPRI members only			30 CL	Jefferson
> 8:00 am - 12:00 pm	EPRI Power Transformer Project Review -- Closed meeting, EPRI members only -- Continued from Thursday afternoon	++	L. van der Zel	30 CL	Jefferson

BALLROOM LEVEL



Located on our Lobby Level

IEEE/PES TRANSFORMERS COMMITTEE

General Session - Spring 2007 Meeting Thursday, 15 March 2007

Chair: Donald J. Fallon

Vice Chair: Thomas A. Prevost

Secretary: J. Edward Smith

- | | | |
|-------|---|----------------------------|
| 1. | Chair's Remarks and Announcements | Donald J. Fallon |
| 2. | Approval of Minutes from Fall 2006 Meeting | Donald J. Fallon |
| 3. | Administrative Subcommittee | Donald J. Fallon |
| 4. | Vice Chair's Report | Thomas A. Prevost |
| 5. | Transformer Standards | Bill Chiu |
| 6. | Recognition and Awards | Kenneth S. Hanus |
| 7. | New Business | Donald J. Fallon |
| 8. | Report of Technical Subcommittees | |
| 8.1. | Dry Type Transformers | Charles (Chuck) W. Johnson |
| 8.2. | Distribution Transformers | Kenneth S. Hanus |
| 8.3. | Dielectric Tests | Loren B. Wagenaar |
| 8.4. | HVDC Converter Transformers & Reactors | Richard F. Dudley |
| 8.5. | Instrument Transformers | James E. (Jim) Smith |
| 8.6. | Insulating Fluids | Richard K. Ladroga |
| 8.7. | Insulation Life | Donald W. Platts |
| 8.8. | Performance Characteristics | Ramsis S. Girgis |
| 8.9. | Power Transformers | Thomas G. Lundquist |
| 8.10. | Underground Transformers & Network Protectors | Carl G. Niemann |
| 8.11. | Audible Sound and Vibration | Jeewan L. Puri |
| 8.12. | Bushings | Fred E. Elliott |
| 9. | Editor's Report | John C. Crouse |
| 10. | Meetings Planning Subcommittee | Gregory W. Anderson |
| 11. | Reports of Liaison Representatives | |
| 11.1. | Standard Coordinating Committee No. 4 | Paulette Payne Powell |
| 11.2. | IEC TC-14 Technical Advisor to USNC | Philip J. Hopkinson |
| 11.3. | CIGRE | Jean-Christophe Riboud |
| 12. | Old Business | Donald J. Fallon |
| 13. | New Business (further discussion as needed) | Donald J. Fallon |



IEEE/PES Transformers Committee
Spring 2007 Meeting
Dallas, Texas



“Transformer Life Expectancy”

– Technical Presentation –

(Part 1 of 2)

Monday, 12 March, 4:45 p.m.

By William Bartley, P.E.

1. Abstract

This presentation is the first part of a two-part presentation on Transformer Life. In this first session, we will discuss transformer mortality models. On Tuesday afternoon, we will then discuss transformer condition assessment, and life cycle management.

The world went through massive industrial growth in the post World War II era, causing a large growth in base infrastructure industries. World energy consumption grew from 1 trillion to 11 trillion kwhr in the decades following the war. Most of this equipment is now in the aging part of its life cycle. According to U.S. Commerce Department data, the U.S. electric utility industry reached a peak in new transformer installations around 1973-74. In those two years, the US added about 185 GVA of power transformers.

Natural aging of the transformer insulation system reduces both the mechanical and dielectric withstand strength of a transformer. As the transformer operates, it is subjected to faults that result in high radial and compressive forces. As the load increases, with system growth, the operating stresses increase. In an aging transformer failure, typically the conductor insulation is weakened to the point where it can no longer sustain mechanical stresses of a fault. Turn-to-turn insulation then causes a dielectric failure, or a fault causes a loosening of winding clamping pressure, which reduces the transformer's ability to withstand future short circuit forces.

Although we have not yet seen an alarming increase in end of life failures, such a rise must be expected eventually. A risk model of future failures based on past installations and expected life cycle can be developed. One such risk model was published at a conference in 2000 and since then, has been revised a number of times. A newly revised risk model (2007 revision) will be presented at this session.

2. Learning Objectives

The tutorial will provide:

- Discussion on methods available today to estimate risk.
- Introduction of the transformer mortality risk forecasting
- A review of previous forecasts
- A practical approach for transformer owners to forecast their own future failures, based on age.

3. Learning Outcomes

As a result of attending of this tutorial session members will gain:

- An understanding of “risk” (a concept of frequency and severity) and how it relates to a fleet of aging transformers.
- An understanding of mortality models and failure forecasts, based on aging.
- An appreciation of the parameters that affect the operating risk of a fleet of transformers (age is not the only factor).
- A better understanding of the life cycle management choices that are available.

4. Presenter’s Biographies

William H. Bartley P.E.: Mr. Bartley is an Assistant Vice President and the Principal Electrical Engineer in the Engineering Department of The Hartford Steam Boiler Inspection and Insurance Company. Mr. Bartley earned a B.S. degree in Electrical Engineering from University of Missouri at Rolla, and has been employed by Hartford Steam Boiler since 1971. He is responsible for developing standards, OEM relations, fleet problems, repair procedure development, and new testing technologies. He is a Senior Member of IEEE and serves on both the Transformers Committee and Electric Machinery Committee. He is currently Vice Chair of the Generator Subcommittee /EMC, and holds leadership positions in several generator and transformer Working Groups. He lives in Newington, Connecticut.



IEEE/PES Transformers Committee
Spring 2007 Meeting
Dallas, Texas



“Transformer Life Extension for Better Asset Management”

– Technical Presentation –

(Part 2 of 2)

Tuesday, 13 March, 4:45 p.m.

By William Bartley, Craig Stiegemeier and David Woodcock

1. Abstract

This presentation is the second part of a two-part presentation on Transformer Life. In the first session, we will discuss transformer mortality models. In this session on Tuesday afternoon, we will discuss, transformer condition assessment, and life cycle management.

Transformer Risk/Life Assessment has received a lot of attention in the past few years due to the aging fleet of transformers in the industry and high profile system outages caused by transformer failures. Due to advanced aging of transformers throughout the electric power industry, many electric power companies are faced with the possibility of increased failure of these important assets in upcoming years. The purpose of a Condition and Risk Assessment is to provide the transformer owner with a unit-specific, rigorous and detailed assessment of selected units, aimed at assisting in day-to-day problem resolution or as part of effectively managing the overall transformer fleet.

A two-tiered approach has been found to be the most reliable and economical method for assessing selected units:

- A macro or high-level phase one assessment can systematically rank the condition, failure probability and associated financial risk for selected units as a group and to choose critical transformer candidates requiring further detailed examination.
- Individual or problem units can be analyzed in a more detailed engineering (micro) assessment, wherein more focused unit-specific maintenance and operational recommendations are developed and reported.

Risk Assessment Screening – The Macro Approach

Although difficult to precisely predict the likelihood of failure of any single transformer over time, methodology for ranking condition and failure probability for selected groups of units, utilizing such tools as risk models and Monte Carlo simulation, can be combined to provide an impartial and systematic evaluation toward this end. Results of the assessment can provide T&D managers with insight into vital technical and financial issues, including unit-specific failure probability and associated risk-cost, along with potentially 5, 10, or 15 year forecasts of the impact on future capital reinvestment for aging and problematic transformers in the fleet.

Analytical Assessment – The Micro Approach

The individual-based design evaluation and condition assessment process is a paramount step in the transformer life assessment and asset management approach. It requires rigorous, state-of-the-art analysis methods/rules, typical of the design, testing, and quality assurance tools presently used by designers in the manufacture of new power transformers. The assessment combines input from the design assessment, historical loading, operational history, and also routine and advanced diagnostic data.

Meeting the growing demand of the grid and at the same time maintaining system reliability may require significant changes in the way the utility operates and cares for its transformers. One conservative strategy suggests that the industry start a massive capital replacement program that duplicates the construction profile of the 60's and 70's. But this would cause many transformers to be replaced needlessly and cost the utility industry billions of US dollars.

Another strategy suggests that we leave all the transformers in service until they fail, and let the insurance pay for it. But most insurance programs have high deductibles, and probably don't cover all the costs. Additionally, the cost of an unexpected failure can be several times the cost of the original transformer installation, when you consider system outages, lost power sales, replacement power expense, and possible environmental clean up costs. The presenters believe that the presentations will help the audience to better understand the risk ranking and condition assessment process. This technical presentation aims to provide a definition, means of measurement, way of standardization, test procedure and applications of the new concept of risk assessment and life cycle management in transformers.

2. Learning Objectives

The presentation will provide:

- Discussion on methods available today to conduct a risk assessment screening of a fleet of transformers and a more rigorous condition assessment of specific individual units.
- Introduction of risk ranking concepts
- Discussion of design and operating parameters that affect the life cycle.
- Review of advance diagnostic tests to help assess current conditions.

3. Learning Outcomes

As a result of attending of this presentation session members will gain:

- An understanding of "risk ranking" (a concept of frequency and severity) for a fleet of aging transformers.
- An appreciation of the parameters that affect the operating risk of a fleet of transformers.
- A recognition of different design issues and operating history that contribute to the life assessment.
- A better understanding of means for solution of the life management problems related to the maintenance of transformers.

4. Presenter's Biographies

William H. Bartley P.E.: Mr. Bartley is an Assistant Vice President and the Principal Electrical Engineer in the Engineering Department of The Hartford Steam Boiler Inspection and Insurance Company. Mr. Bartley earned a B.S. degree in Electrical Engineering from University of Missouri at Rolla, and has been employed by Hartford Steam Boiler since 1971. He is responsible for developing standards, OEM relations, fleet problems, repair procedure development, and new testing technologies. He is a Senior Member of IEEE and serves on both the Transformers Committee and Electric Machinery Committee. He is currently Vice Chair of the Generator Subcommittee /EMC, and holds leadership positions in several generator and transformer Working Groups. He lives in Newington, Connecticut.

Craig L. Stiegemeier: Mr. Stiegemeier is the Engineering Solutions Manager for the Transformer Remanufacturing and Engineering Services Department of ABB Inc. in Saint Louis. His group is responsible for engineering solutions and studies that assist customers in reliably operating aging power transformers. He began his career with ABB (then Westinghouse) in 1979, as a shell form transformer development engineer, at the Muncie Indiana power transformer manufacturing facility. He has been a member of IEEE/PES since 1977, and is actively involved in the work of the Transformers Committee. He received BS and MS degrees in Electrical Engineering from the University of Illinois (Urbana/Champaign) in 1979 and 1981, and did graduate work in the MBA programs at Ball State University and the University of Pittsburgh. He lives in St. Charles, Missouri.

David J. Woodcock: Mr. Woodcock is Vice President of Business Development for Weidmann Systems International Inc. in St. Johnsbury, Vermont. He has over twenty-five years of experience in design, field service, power engineering and business development projects in the power equipment field. At both Weidmann and Dupont, he has been involved in the development of thermally enhanced insulation technology for high voltage transformers. Mr. Woodcock received the Diploma of Mechanical Engineering in England and attended the graduate program in Business Administration at the Wharton School of Business. He is a member of the ASME Power Engineering Society; a member of the IEEE/PES Transformers Committee; a member of CIGRE WG 12-20 Guide for Economic Management of Transformers and WG A2.27 Transformer Monitoring. He lives in Lyndonville, Vermont.

Sunday Activity
Sixth Floor Museum at Dealey Plaza
Sunday, March 11

From its location in the former Texas School Book Depository, the Sixth Floor Museum at Dealey Plaza provides a comprehensive exhibit on the life, death, and legacy of President John F. Kennedy.

The Museum's exhibition area uses historic films, photographs, artifacts, and interpretive displays to document the events of the assassination, the findings of the official investigations that followed and the historical legacy of that national tragedy.



You will take an audio tour of the permanent exhibit and also see two other additional special exhibits - *"Voices from History: Dallas Law Enforcement"* and *"Dealey Plaza: Front Door of Dallas"*.

You will also have an opportunity to visit the adjacent Dealey Plaza and the grassy knoll in Dealey Plaza, where JFK's motorcade was located when he was shot.



Lunch will be at Sonny Bryan's world famous barbeque smokehouse (Ken Hanus' favorite restaurant in Dallas) located in the historic West End of Dallas.

After lunch we will make a stop by the John F. Kennedy Memorial located three blocks from the Sixth Floor Museum.

8:30 AM – Buses depart the hotel (eat breakfast beforehand)

9:00 AM – Tour Museum & Dealey Plaza

11:30 PM – Lunch Sonny Bryans

12:30 PM – Tour JFK Memorial and back to Hilton by 1:30 PM

Companions Tour

Fort Worth Stockyards, Texas Cowboy Hall of Fame & Sam Moon's

Monday, March 12

Even though Dallas & Fort Worth are only 35 miles apart, the two cities experience different cultures. The Monday tour will start with a Cowtown experience by visiting the Fort Worth Stockyards. You will start with a tour of the Texas Cowboy Hall of Fame, which pays tribute to 76 of the top cowboys and cowgirls who have excelled in the sports of rodeo and cutting. The largest exhibit in the museum is the Sterquell Wagon collection with over 60 horse drawn carriages. Afterwards you will stroll the streets of the Stockyards and visit the many shops.



You will also get a chance to experience an authentic cattle drive as cowboys and cowgirls in period clothing herd Texas Longhorn steers down the streets of historic Exchange Avenue.



Lunch will be at the Stockyards Hotel. After lunch you will make a stop at Sam Moon Trading Co, Sam Moon Luggage & Gifts or Sam Moon Home Décor Store for a chance to shop. You will enjoy browsing for unique luxury items, jewelry, handbags, home décor, gifts, watches, perfumes and much more.

- 9:15 AM – Bus departs the hotel
- 10:00 AM – Cowboy Hall of Fame & Stockyards Shops
- 11:30 AM – Watch the Fort Worth Herd
- 12:00 PM – Lunch at Stockyards Hotel
- 1:45 PM – Shopping at Sam Moons
- 3:30 PM – Depart for the hotel (back by 4:00 PM)



Companions Tour
Sixth Floor Museum at Dealey Plaza & Dallas Museum of Art
Tuesday, March 13



Tuesday you will experience a taste of Dallas. You will start with a tour of the Sixth Floor Museum at Dealey Plaza. It provides a comprehensive exhibit on the life, death, and legacy of President John F. Kennedy. The Museum's exhibition area uses historic films, photographs, artifacts, and interpretive displays to document the events of the assassination, the findings of the official investigations that followed, and the historical legacy of that national tragedy.

You will also visit Dealey Plaza and the grassy knoll in Dealey Plaza, where JFK's motorcade was located when he was shot.

Lunch will be in the Atrium Café at the Dallas Museum of Art.



Afterwards you will have a docent-led tour at the Dallas Museum of Art. The DMA features an outstanding collection of more than 23,000 works of art from around the world, from ancient to modern times. Now on display is a special exhibition "Matisse - Painter as Sculptor".

9:15 AM – Bus departs the hotel
9:30 AM – Sixth Floor Museum Tour
11:00 AM – Dealey Plaza
12:00 PM – Lunch at Atrium Café
1:00 PM – Tour the Dallas Museum of Art
3:00 PM – Depart for the hotel (back by 3:30 PM)



Tuesday Luncheon
TXU Electric Delivery - BPL Project Overview
Tuesday, March 13



BPL (Broadband over Power Line) technology uses existing electric wires to provide digital communication services at multi-megabit data rates to enable services such as high-speed Internet access, Voice over Internet Protocol (VoIP), video, and in-home networking. BPL enables PCs, telephones, and multimedia devices to exchange information between one another and the Internet and other networks by simply plugging into existing 120 VAC electrical outlets.

The presentation will discuss TXU's on-going BPL Project. The roles, responsibilities, progress and project deliverables will be discussed. A short overview of the technology will also be discussed in the presentation. This is the largest BPL deployment in the world to date.

Our speaker is Michael Quinn, P.E. Michael Quinn is Sr. Project Manager, Asset Management and Engineering, for TXU Electric Delivery. He is responsible for all facets of Broadband over Powerline (BPL) implementation for TXU Electric Delivery. He

joined Texas Utilities in 1988 and had assignments in Nuclear Generation, Fossil Generation, System Protection, and Transmission Operations. Over the last eight years, he held various management and project management positions within these organizations.

Michael is a 1988 graduate of Clemson University with a Bachelor of Science degree in Electrical Engineering and is a registered professional engineer in the state of Texas. He is past Chairman and Vice Chairman of the IEEE Power Engineering Society, Fort Worth Chapter.

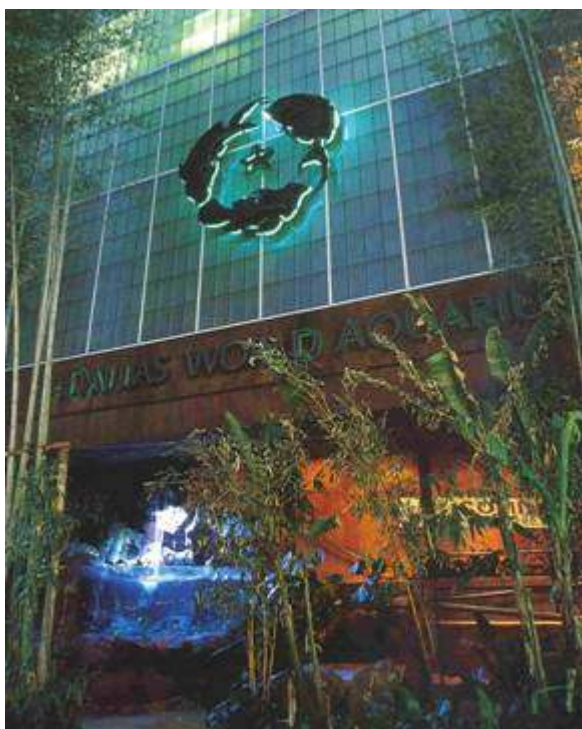
Michael and his wife Stephanie live in Flower Mound, Texas with their two children, Lexi and McKenna.

Wednesday Evening Social Event
Dallas World Aquarium
Wednesday, March 14



The Dallas World Aquarium is located in the historic Dallas West End. The structures making up the facility were once warehouses, many built in the 1920's. Once abandoned and dilapidated, they are now part of the revitalization of the west end of downtown Dallas.

The aquarium features more than 85,000 gallons (323,000 liters) of saltwater with marine life from around the world. Walk through the 22,000 gallon (83,600 liters) tunnel to experience a panoramic view of reef life. The aquarium represents marine life from around the world.



The Orinoco – Secrets of the River rainforest exhibit represents the relatively unknown South American Orinoco River basin. Located entirely in Venezuela, the Orinoco River begins along the Venezuela-Brazil border in the Parima Mountain range and continues for 1,600 miles until it empties in the Atlantic Ocean

You will be served a Texas Food Feast sit-down buffet . A cash bar will be available.

5:45 PM – First bus departs the hotel
6:00 PM – Last bus departs the hotel
6:30 - 9:30 PM – Dallas World Aquarium
10:00 PM – Return to the hotel