



TRANSFORMERS COMMITTEE



February 17, 2011

Dear Committee Members and Guests:

You and your companion are invited to "America's Finest City", San Diego, California to attend the Spring 2011 Meeting of the IEEE/PES Transformers Committee to be held **April 10-14** at the **Catamaran Resort Hotel and Spa**. San Diego Gas & Electric is the host of this meeting. We met at the Catamaran in 2004, and we're looking forward to another meeting there.

The Catamaran Resort Hotel and Spa (www.catamaranresort.com) is located on Mission Bay and is just 100 yards from the Pacific Ocean (3999 Mission Boulevard, San Diego, CA 92109). The Catamaran is now sold out. We are using the nearby Bahia Resort Hotel (998 West Mission Bay Drive) as our overflow hotel. Our block of reduced-rate guest rooms at the Bahia is now sold out. Call the Bahia directly at +858.488.0551 to reserve a room. Complimentary shuttle transportation will be provided between the two hotels throughout the day and before/after select events.

The Catamaran Hotel is located approximately 8 miles (13 km) from the San Diego International Hotel (airport code: SAN). For ground transportation, a taxi from the airport to the Catamaran is about US\$30. Super Shuttle has a group rate for US\$10 per person each way. Reserve a shuttle at www.supershuttle.com. Use Group\Discount Code "SEC58". Tip for driver not included in on-line rate. At the Catamaran, self-parking is US\$13 and valet parking is US\$17. Parking is no charge at the Bahia.

April is a nice time in San Diego, but can be cool at night and early in the morning. In mid-April, daytime highs average 69°F (21°C) and night time lows are 56°F (13°C). Mornings can be cloudy, but we should have sun after the morning clouds burn off. Bring your sunglasses!

ON-LINE REGISTRATION

Use the on-line registration system to register for tours and social events. The on-line registration system can be accessed at www.transformerscommittee.org. Register by March 18 to receive the US\$50 early registration discount. The on-line registration system will be disabled on April 6 to print name badges and to finalize counts. Note that the cost for walk-up registration for the meetings at the hotel is substantially higher than for registering on-line in advance.

SPECIAL EVENTS

Sunday morning we have a day-trip to the **San Diego Zoo**. Two departures are scheduled at 8:30 and 10 am. Buses return to hotels at 1:30 and 3:30 pm. See the flyer for information. Families welcome!

The **Sunday Evening Reception** will be held at the Catamaran Hotel. Weather permitting we will hold a "luau style" reception beach-side. Wear comfortable shoes and bring a sweater or light jacket.

Our speaker for the Tuesday Luncheon is **Dr. Richard Seymour**, head of the Ocean Engineering Research Group at Scripps Institution of Oceanography. He will give a presentation on "Ocean Renewable Energy".

On Wednesday, you and your family are invited aboard the **USS Midway** for touring and a sit-down buffet dinner. Dinner will be on the hanger deck with the flight deck open to inspect numerous aircraft and scenic views of the San Diego Skyline. Professional docents will be available to show you around.

SPOUSE/COMPANION TOURS

Monday, April 11: San Diego by Land and Sea. This informative journey through America's Finest City will introduce you to San Diego's past, present, and future. The tour will wander through the Gas Lamp Quarter; visit Balboa Park with its many museums and Spanish-Moorish architecture; embark on a cruise boat in San Diego Bay to see sites like Coronado, North Island Naval Air Station, and Cabrillo National Monument; and travel back in time to Old Town, the first European settlement in California. Lunch will be provided at Casa Guadalajara Restaurant.

Tuesday April 12: La Jolla Birch Aquarium and Shopping. The Birch Aquarium at Scripps hosts a variety of marine life from the cold waters of the Pacific Northwest to the tropical seas of Mexico and the South Pacific. Before lunch see La Jolla's coastline and the Pacific, as well as admission to the Birch Aquarium. Lunch will be at the Crabcatcher, a long time La Jolla favorite. After lunch, it's shopping along Prospect and Girard, San Diego's version of Rodeo Drive with boutiques, art galleries, and eclectic shops.

ADDITIONAL INFORMATION

Along with this invitation letter, additional meeting information can be downloaded from the Committee's website at www.transformerscommittee.org.

1. Meeting Registration Form. This document is primarily used for those who do not have access to the Internet or need to pay by paper check or money order. It also makes a good guide to review the fees before you begin the on-line registration process. On-line registration is strongly encouraged.
2. Detailed Meeting Schedule & General Session Agenda. An updated schedule will be posted on the Committee's web site approximately one week prior to the meeting.
3. Information Flyers:
 - Sunday Day-Trip to San Diego Zoo
 - Spouse/Companion Tours
 - Tuesday Speaker Luncheon
 - Wednesday Evening Dinner Social at the USS Midway
 - Presentation Flyers (flyer for Monday presentation only)

SDG&E is pleased to host this event in San Diego, "America's Finest City". We hope your visit will be enjoyable and memorable. If you require further information or assistance, please phone me at +858.518.5360, or email me at mayer@semprautilities.com. If I am not available, please contact my co-worker, Ms. Stephanie Bush at +858.654.1121 or at sbush@semprautilities.com.

We look forward to seeing you in San Diego!

Sincerely,

Rob Mayer

Spring 2011 Meeting Host
San Diego Gas & Electric (SDG&E)



Register on-line for the meeting using a credit card at: www.transformerscommittee.org (preferred method).
Use this form only if you do not have access to the Internet, or need to pay by check or money order.

IEEE/PES TRANSFORMERS COMMITTEE
Spring 2011 Meeting; April 10-14
San Diego, California USA

Name of Attendee _____
Company / Institution _____
Street Address _____
City _____ State / Prov. _____ Postal Code _____ Country _____
Telephone _____ Email _____
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: Entry into Meeting Area, Sunday Reception, coffee breaks, and 4 breakfasts (M, T, W, Th)

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

-- Refund provided **ONLY** if the request is received by April 6 (by confirmed email, see below) --

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

NOTE: Complete meeting registration (with fees) is necessary to attend ANY social event or tour

Meeting Registration Fees (all fees in US\$ funds)	On or Before March 18	After March 18, on or before April 6	On-site, at the Meeting	Total
Attendee - IEEE Member (will be verified with IEEE)	\$225	\$275	\$375	_____
Attendee - not IEEE member	\$250	\$300	\$400	_____
Attendee - IEEE Life or Committee Emeritus (will be verified)	\$50	\$100	\$200	_____
Spouse or Companion, and children age 12 and over	\$75	\$125	\$225	_____

Note: A Companion is a "significant other", boy/girl friend, attending for non-commercial reasons (not attending technical meetings, etc.).

Spouses/companions & children (age 12 and over) must be registered for the meeting - with above fees - to attend any tour or social event.

Sunday Evening Reception (event included in above fee) Attendee: ☐ Yes ☐ No; Companion: ☐ Yes ☐ No **-0-**

Monday Standards Luncheon: all SC, WG, TF leaders are encouraged to attend # ____ @ \$20 _____

Tuesday Luncheon: Speaker - Dr. Richard Seymour, Scripps Institute # ____ @ \$30 _____

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

Spouse/Companion Tours: Monday - San Diego by Land and Sea, includes lunch # ____ @ \$65 _____

Tuesday - La Jolla, Birch Aquarium and Shopping, includes lunch # ____ @ \$65 _____

Social Events: Sunday Day-Trip to San Diego Zoo (includes 1-day pass and round-trip transportation)

-- adult pass (age 12 and over) # ____ @ \$45 _____

-- child pass (ages 3-11) # ____ @ \$35 _____

Wednesday Evening Dinner Social and Tours at the USS Midway

-- adult pass (age 12 and over) # ____ @ \$85 _____

-- child pass (ages 3-11) # ____ @ \$65 _____

Note: Meeting Minutes in paper format is no longer available. The primary source for Meeting Minutes is downloads from the Committee's web-site.

TOTAL REMITTED -- US\$ _____
(all fees quoted in US funds)

METHODS OF PAYMENT: 1. Register on-line with a credit card (preferred). 2. Mail paper form with check or money order to:

IEEE Transformers Committee; 13110 Birch Drive, Suite 148, PMB 330; Omaha, Nebraska 68164 USA

email: transformers@ieee.org. Cancellation by email is not considered accepted unless confirmed by return email.

Check or money order - Make payable to: "IEEE Transformers Committee"

Funds not from a US Bank must add US\$25.00 for processing fee.

Mailed registrations without proper payment will not be accepted.

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

IEEE/PES TRANSFORMERS COMMITTEE
www.transformerscommittee.org
Spring 2011 Meeting; April 10-14
Hosted by Robert Mayer and San Diego Gas & Electric
Catamaran Resort Hotel; San Diego, California USA

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

<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, April 9					
No Meeting Registration, No Transformers Committee Meetings, No Social Events or Tours					
Sunday, April 10					
depart at: 8:30 or 10:00 am	<u>Special Day-Trip:</u> San Diego Zoo				
return at: 1:30 or 3:30 pm	-- Indicate your desire to attend while registering on-line for the Committee Meeting. -- Bus departs the Catamaran at 8:30 & 10:00 am (Bahia at 8:40 & 10:10); return to hotels at 1:30 & 3:30 pm. -- Eat breakfast before boarding bus. Lunch on your own, at the zoo.				
1:00 pm - <u>5:30 pm</u>	Meeting Registration				Kon Tiki Foyer
2:00 pm - 5:30 pm	Administrative SC -- Closed meeting, by invitation only	Admin.	E. Smith	26 US (w/snack buffet)	Toucan
2:00 pm - 5:30 pm	NEMA Transformers -- Closed meeting, by invitation only	++	C. Drexler	20 US (w/beverages)	Macaw
6:00 pm - 8:00 pm	Welcome Reception			450 Reception	Kon Tiki Ballroom (or beachside weather permitting)
Monday, April 11 -- Monday Breaks Sponsored by IFD Corporation ***					
7:00 am - <u>4:00 pm</u>	Meeting Registration				Kon Tiki Foyer
7:00 am - 6:00 pm	Internet Cafe'			6 SPECIAL	Rousseau Foyer
<u>7:00 am</u> - 7:50 am	<u>Newcomers Orientation Breakfast Mtg (arrive early!)</u> -- Newcomers & Guests are encouraged to attend! -- Breakfast will be served in the room		B. Chiu	60 CL (with buffet in foyer)	Rousseau Center
7:00 am - 7:45 am	Distribution SC Leaders Coordination -- Closed meeting, by invitation only		S. Shull	16 CONF (with buffet)	William D. Evans 1 (dockside)
7:00 am - 8:00 am	Breakfast - Attendees (no spouses/companions please)			250 RT (8/tbl)	Outdoor Pavilion
8:00 am - 9:00 am	Breakfast - Spouses/Companions (no Meeting Attendees please)			80 RT (8/tbl)	William D. Evans 2 (dockside)
9:15 am - 4:00 pm	<u>Spouses/Companions Tour:</u> "San Diego by Land and Sea". Includes lunch. -- Advance registration required. Bus departs the Catamaran ONLY at 9:15 am, and returns approx 4:00 pm.				
8:00 am - 9:15 am	WG Dry-Type Reactors C57.16	Dry	R. Dudley	50 MX	Rousseau E-W
8:00 am - 9:15 am	WG 3-ph Underground Distribution Transformers C57.12.24	UTNP	G. Termini	70 MX	Toucan
8:00 am - 9:15 am	WG Distr. Substation Transf. C57.12.36	Dist	J. Murphy	80 MX	Boardroom
<u>8:15 am</u> - 9:15 am	WG Natural Ester-Based Fluids C57.147	IF	P. McShane	90 MX (add 30 TH)	Rousseau Center
8:00 am - 9:15 am	TF Tertiary/Stabilization Windings	PCS	E. Betancourt	100 MX S3	Macaw/Cockatoo
8:00 am - 9:15 am	WG Failure Analysis & Reporting Guide C57.125	Power	W. Binder	180 MX S3	Kon Tiki
<u>8:30 am</u> - 10:45 am	IEC TC-14 Technical Advisory Group (all interested individuals welcome)	++	P. Hopkinson	250 RT (8/tbl)	Outdoor Pavilion
9:15 am - 9:30 am	Break (beverages only)				Kon Tiki & Rousseau Foyers

*** Contact Joe Watson (joe_watson@ieee.org) if you are interested in sponsoring a coffee-break 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, April 11 (continued)					
9:30 am - 10:45 am	WG Sealed Dry-Type Power Transformers C57.12.52	Dry	S. Kennedy	50 MX	Rousseau E-W
9:30 am - 10:45 am	WG Liquid-immersed Secondary Network Transformers C57.12.40	UTNP	B. Klaponski	70 MX	Toucan
9:30 am - 10:45 am	WG Overhead Distr. Transf. C57.12.20	Dist	A. Traut	80 MX	Boardroom
9:30 am - 10:45 am	TF Furan Tests	IL	S. Xu	90 MX	Rousseau Center
9:30 am - 10:45 am	TF External Dielectric Clearances	DiTests	E. Davis	100 MX S3	Macaw/Cockatoo
9:30 am - 10:45 am	WG PCS Rev. to Test Code C57.12.90	PCS	M. Perkins	180 MX S3	Kon Tiki
10:45 am - 11:00 am	Break (beverages only)			Kon Tiki & Rousseau Foyers	
	TF IEEE IEC Cross Reference	Will give report during Wednesday Standards SC meeting.			
11:00 am - 12:15 pm	WG Dry-Type Gen. Require. C57.12.01	Dry	T. Holdway	50 MX	Rousseau E-W
11:00 am - 12:15 pm	WG Standard Requires for Secondary Network Protectors C57.12.44	UTNP	B. Wimmer	70 MX	Toucan
11:00 am - 12:15 pm	WG 1-ph Padmount Distribution Transformers C57.12.38 (12.21 & 12.25)	Dist	A. Ghafourian	80 MX	Boardroom
11:00 am - 12:15 pm	WG Thermal Evaluation C57.100	IL	R. Wicks	90 MX	Rousseau Center
11:00 am - 12:15 pm	TF Audible Sound & Vibration Revision to Test Code C57.12.90	PCS	R. Girgis	100 MX S3	Macaw/Cockatoo
11:00 am - 12:15 pm	WG Tank Rupture & Mitigation PC57.156	Power	P. Zhao	180 MX S3	Kon Tiki
12:15 pm - 1:30 pm	<u>Lunch Meeting:</u> Standards Development Review		B. Bartley	180 (8/tbl)	Outdoor Pavilion
	-- Presentation/Discussion: "IEEE Patent Disclosure Policy", by J. Kulick and D. Ringle				
	-- All SC/WG/TF leaders are encouraged to attend.				
	-- Advance reservation required (\$20 for box lunch). No paper tickets. Admission verified at the door.				
	WG FRA Guide PC57.149	Will not meet. Document in balloting process.			
1:45 pm - 3:00 pm	SC HVDC Converter Transformers and Smoothing Reactors	HVDC	R. Dudley	50 MX	Rousseau E-W
1:45 pm - 3:00 pm	WG Tap Changer Performance C57.131	Power	W. Henning	70 MX	Toucan
1:45 pm - 3:00 pm	WG 3-ph Padmount Distribution Transformers C57.12.34	Dist	R. Stahara	80 MX	Boardroom
1:45 pm - 3:00 pm	WG High Temp. Transformers PC57.154	IL	R. Marek	90 MX	Rousseau Center
1:45 pm - 3:00 pm	TF Particle Count Limits in Mineral Oil	IF	M. Scarborough	100 MX S3	Macaw/Cockatoo
1:45 pm - 3:00 pm	TF Dielect. Frequency Response (New!)	PCS	G. Frimpong	180 MX S3	Kon Tiki
3:00 pm - 3:15 pm	Break (beverages <u>and treats</u>)			Kon Tiki & Rousseau Foyers	
	WG Harmonizing IEEE & IEC Standards	Will not meet in San Diego.		Will meet in the fall.	
3:15 pm - 4:30 pm	WG Dry-Type Test Code C57.12.91	Dry	D. Foster	50 MX	Rousseau E-W
3:15 pm - 4:30 pm	TBD				Toucan
3:15 pm - 4:30 pm	TF Tank Pressure Coordination	Dist	C. Gaytan	80 MX	Boardroom
3:15 pm - 4:30 pm	TF PD in Bushings and PTs/CTs	DiTests	T. Hochanh	90 MX	Rousseau Center
3:15 pm - 4:30 pm	TF Moisture in Oil	IF	B. Rasor	100 MX S3	Macaw/Cockatoo
3:15 pm - 4:30 pm	WG PCS Revisions to C57.12.00	PCS	S. Snyder	180 MX S3	Kon Tiki
4:30 pm - 4:45 pm	Break (beverages only)			Kon Tiki & Rousseau Foyers	
4:45 pm - 6:00 pm	Presentation: "Transformers Used With Alternative Energy Sources - Wind & Solar", by D. Buckmaster, P. Hopkinson, and H. Shertukde. Sponsored by Power Transformers SC **			300 MX S3 (add 120 TH seats in back)	Kon Tiki
	No Technical Tours or Socials planned				

** Contact Tom Prevost (gwanderson@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, April 12 -- Tuesday Breaks Sponsored by Prolec-GE ***					
7:00 am - 12:00 pm	Meeting Registration				Kon Tiki Foyer
7:00 am - 6:00 pm	Internet Cafe'			6 SPECIAL	Rousseau Foyer
7:00 am - 8:00 am	Breakfast - Attendees (no spouses/companions please)			250 RT (8/tbl)	Outdoor Pavilion
8:00 am - 9:00 am	Breakfast - Spouses/Companions (no meeting attendees please)			80 RT (8/tbl)	William D. Evans 2
9:15 am - 4:00 pm	<u>Spouses/Companions Tour: "La Jolla, Birch Aquarium and Shopping". Lunch included.</u> -- Advance registration required. Bus departs the Catamaran ONLY at 9:15 am, and returns approx 4:00 pm.				
	TF Temp Limits for Metallic Surfaces	The TF has completed its work			
8:00 am - 9:15 am	WG Req. for Instrument Transf. C57.13	IT	R. McTaggart	50 MX	Rousseau E-W
8:00 am - 9:15 am	WG Enclosure Integrity C57.12.28, C57.12.29, C57.12.31, C57.12.32	Dist	R. Olen	70 MX	Toucan
8:00 am - 9:15 am	WG Oil Reclamation Guide PC57.637	IF	J. Thompson	80 MX	Boardroom
8:00 am - 9:15 am	WG Neutral Grounding Devices PC57.32	PCS	S. Schappell	90 MX	Rousseau Center
8:00 am - 9:15 am	WG PC57.152 Field Test Guide	Stds	J. Verner	100 MX S3	Macaw/Cockatoo
8:00 am - 9:15 am	TF Functional Life Tests, De-energized Tap Changers (DETC)	Power	P. Hopkinson	180 MX S3	Kon Tiki
9:15 am - 9:30 am	<i>Break (beverages only)</i>				Kon Tiki & Rousseau Foyers
	WG Step Voltage Regulators C57.15	Work is complete. Will not meet in San Diego.			
9:30 am - 10:45 am	WG Std Require. for Bushings C57.19.01	Bush	A. Del Rio	50 MX	Rousseau E-W
9:30 am - 10:45 am	WG Bar Coding for Distribution Transformers C57.12.35	Dist	L. Matthews	70 MX	Toucan
9:30 am - 10:45 am	WG Impulse Test Guide C57.98 (Power Transformers)	DiTests	A. Molden	80 MX	Boardroom
9:30 am - 10:45 am	WG DGA Natural Ester Fluids PC57.155	IF	P. Boman	90 MX	Rousseau Center
9:30 am - 10:45 am	WG Revision to Loading Guide C57.91	IL	D. Duckett	100 MX S3	Macaw/Cockatoo
9:30 am - 10:45 am	TF Wind Power Transformers	Power	D. Buckmaster	180 MX S3	Kon Tiki
10:45 am - 11:00 am	<i>Break (beverages only)</i>				Kon Tiki & Rousseau Foyers
	WG Revision to IEEE 638	Will not meet in San Diego.			
11:00 am - 12:15 pm	WG Milli-amp Current Transf. C57.13.7	IT	Alton/Rashid	50 MX	Rousseau E-W
11:00 am - 12:15 pm	WG Bushing Applicat. Guide C57.19.100	Bush	T. Spitzer	70 MX	Toucan
11:00 am - 12:15 pm	TF DPV Grid Transformers	Power	H. Shertukde	80 MX	Boardroom
11:00 am - 12:15 pm	WG Guide for DGA in LTCs C57.139	IF	F. Jakob	90 MX	Rousseau Center
11:00 am - 12:15 pm	WG Loss Evaluation Guide C57.120	PCS	A. Traut	100 MX S3	Macaw/Cockatoo
11:00 am - 12:15 pm	WG Temperature Rise Test Procedures in Section 11 of C57.12.90	IL	P. Powell	180 MX S3	Kon Tiki
12:15 pm - 1:30 pm	<u>Speaker Luncheon: Dr. Richard Seymour, Scripps Institute</u> -- Topic: "Ocean Renewable Energy" -- Advance registration is necessary. -- Paper tickets are not provided. Admission verified at the door.			250 (8/tbl) with elevated table for 5	Outdoor Pavilion
	WG Phase Shift Transf. Guide C57.135	Reviewing ballot results. Will not meet in San Diego.			
1:45 pm - 3:00 pm	WG Dry-Type Loading Guide PC57.96	Dry	R. Marek	50 MX	Rousseau E-W
1:45 pm - 3:00 pm	TF GSU Bushing Standardization	Bush	C. Hurley	70 MX	Toucan
1:45 pm - 3:00 pm	WG Test Data Reporting C57.12.37	Dist	J. Crotty	80 MX	Boardroom
1:45 pm - 3:00 pm	WG DGA Factory Temperature Rise Tests PC57.130	IF	J. Thompson	90 MX	Rousseau Center
1:45 pm - 3:00 pm	WG Life Extension C57.140	Power	R. James	100 MX S3	Macaw/Cockatoo
1:45 pm - 3:00 pm	WG Revision to Low Frequency Tests	DiTests	B. Poulin	180 MX S3	Kon Tiki
3:00 pm - 3:15 pm	<i>Break (beverages and treats)</i>				Kon Tiki & Rousseau Foyers

*** Contact Joe Watson (joe_watson@ieee.org) if you are interested in sponsoring a coffee-break 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, April 12 (continued)					
	WG Transportation Issues Guide		Document in review/balloting.		
3:15 pm - 4:30 pm	TF Semiconductor Rectifier Transformers C57.18.10	PCS	S. Kennedy	50 MX	Rousseau E-W
3:15 pm - 4:30 pm	WG Terminal Markings C57.12.70	Stds	S. Shull	70 MX	Toucan
3:15 pm - 4:30 pm	TF Transformer Efficiency and Loss Evaluation (DOE Activity)	Dist	P. Hopkinson	80 MX	Boardroom
3:15 pm - 4:30 pm >	WG Transformer Paralleling Guide	Power	T. Jauch	90 MX	Rousseau Center
3:15 pm - 4:30 pm	WG Revision to Gas Guide C57.104	IF	R. Ladroga	100 MX S3	Macaw/Cockatoo
3:15 pm - 4:30 pm	WG Revisions to Impulse Test Sections of C57.12.00 and C57.12.90	DiTests	P. Riffon	180 MX S3	Kon Tiki
4:30 pm - 4:45 pm	<i>Break (beverages only)</i>				Kon Tiki & Rousseau Foyers
4:45 pm - 6:00 pm	Presentation & Town Hall Meeting: "IEEE Power & Energy Society", by Mr. Alan Rotz, IEEE-PES President. -- Sponsored by Administrative SC **			300 MX S3 (add 120 TH seats in back)	Kon Tiki
No Technical Tours or Socials planned					

Wednesday, April 13 -- Wednesday Breaks Sponsored by HICO America ***

No Meeting Registration, No Technical Tours, No Spouse/Companion Tour					
7:00 am - 6:00 pm	Internet Cafe'			6 SPECIAL	Rousseau Foyer
7:00 am - 8:00 am	Breakfast - Attendees (no spouses/companions please)			250 RT (8/tbl)	Outdoor Pavilion
8:00 am - 9:30 am	Breakfast - Spouses/Companions (no meeting attendees please)			72 RT (8/tbl)	William D. Evans 2
7:00 am - 7:45 am	SC Meetings Planning (arrive early, food buffet in room)	Meetings	G. Anderson	50 MX	Toucan
8:00 am - 9:15 am	EL&P Delegation (Users only meeting)	++	S. Shull	100 MX	Macaw/Cockatoo
8:00 am - 9:15 am	SC Instrument Transformers	IT	R. McTaggart	50 MX	Toucan
8:00 am - 9:15 am	SC Insulation Life	IL	B. Forsyth	250 MX S3 with elevated table for 2	Kon Tiki
9:15 am - 9:30 am	<i>Break (beverages only)</i>				Kon Tiki & Rousseau Foyers
9:30 am - 10:45 am	SC Bushings	Bush	P. Zhao	100 MX S3	Macaw/Cockatoo
9:30 am - 10:45 am	SC Distribution Transformers	Dist	S. Shull	250 MX S3	Kon Tiki
10:45 am - 11:00 am	<i>Break (beverages only)</i>				Kon Tiki & Rousseau Foyers
11:00 am - 12:15 pm	SC UG Transf. & Network Protectors	UTNP	C. Niemann	50 MX	Toucan
11:00 am - 12:15 pm	SC Dielectric Tests	DiTests	L. Wagenaar	250 MX S3	Kon Tiki
12:15 pm - 1:30 pm	Lunch (on your own)				

** Contact Greg Anderson (gwanderson@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 a coffee-break 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 (special set-up)

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)

TH -- theater seating (w/head table for 2)

RT -- multiple roundtables

US -- U-shape table

MX -- mix classroom & theater (w/head 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, April 13 (continued)					
1:30 pm - 2:45 pm	SC Dry Type	Dry	C. Johnson	100 MX S3	Macaw/Cockatoo
1:30 pm - 2:45 pm	SC Power Transformers	Power	T. Lundquist	250 MX S3	Kon Tiki
2:45 pm - 3:00 pm	<i>Break (beverages <u>and</u> treats)</i>			Kon Tiki & Rousseau Foyers	
3:00 pm - 4:15 pm	SC Insulating Fluids	IF	S. McNelly	100 MX S3	Macaw/Cockatoo
3:00 pm - 4:15 pm	SC Performance Characteristics	PCS	S. Antosz	250 MX S3	Kon Tiki
4:15 pm - 4:30 pm	<i>Break (beverages only)</i>			Kon Tiki & Rousseau Foyers	
4:30 pm - 5:30 pm	SC Transformer Standards	Stds	B. Bartley	250 MX S3	Kon Tiki
6:30 pm - 10:30 pm	<u>Dinner Social</u> : Dinner & Tours aboard the USS Midway. Advance registration is necessary. -- Buses begin boarding from Catamaran AND the Bahia at 5:30 pm. Final buses depart each hotel at 6:00 pm. All buses return to hotels before 11:00 pm. -- Paper tickets will not be provided. Admission will be verified with a registration list as you board the bus. -- Sit-down buffet dinner served at approx 7:30 pm, with touring before and after dinner. -- It could be cool in the evening, so dress appropriately!				

Thursday, April 14

No Meeting Registration, No Spouses/Companions Tours, No Internet Cafe'

7:00 am - 8:00 am	Breakfast - Attendees (no spouses/companions please)	200 RT (8/tbl)	Aviary Ballroom (indoors, 2nd floor)
8:00 am - <u>9:30 am</u>	Breakfast - Spouses/Companions (no meeting attendees please)	64 RT(8/tbl)	William D. Evans 2
8:00 am - 9:45 am >	General Session, Transformers Committee -- <u>All attendees</u> are encouraged to attend. -- See separate document for meeting agenda.	E. Smith 100 CL S1 150 TH elevat. table for 4	Kon Tiki
9:45 am - 10:00 am	<i>Break (beverages only)</i>	Kon Tiki Foyer	
> 10:00 am - 11:30 am	General Session, Transformers Committee	E. Smith 200 CL S1 100 TH	Kon Tiki
12:00 pm - 4:45 pm	No Technical Tours or Socials planned		

Friday, April 15

No Transformer Committee Meetings, No Internet Cafe', No Social Events or Tours.

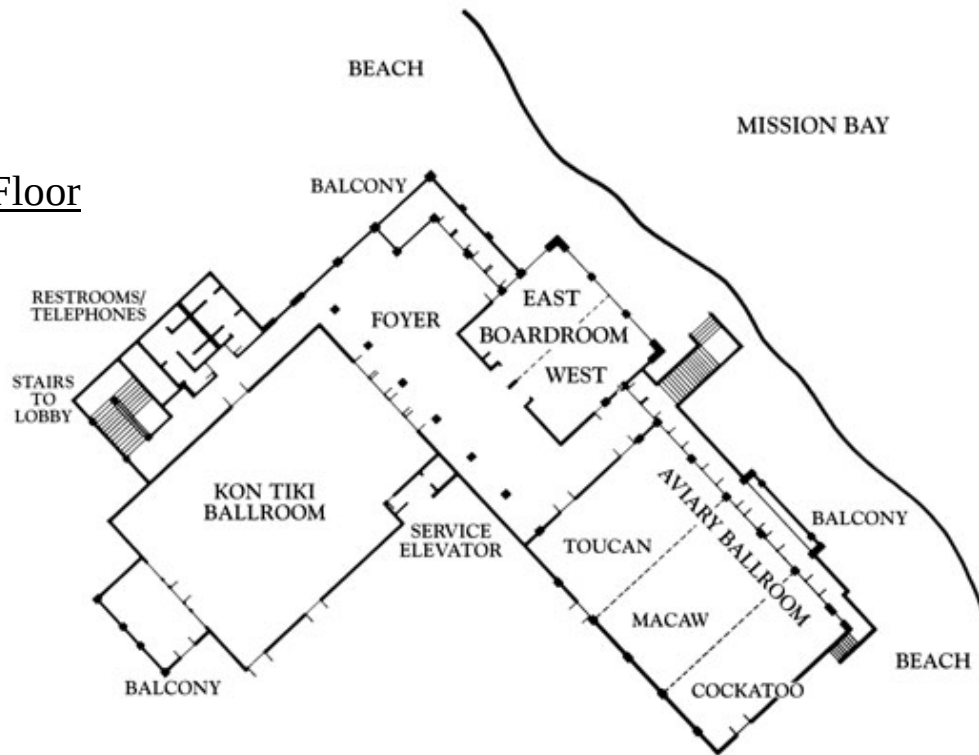
FUTURE COMMITTEE MEETINGS

Fall 2011 - Oct 30-Nov 3; Boston, Massachusetts. Hosted by Charles Sweetser and Omicron USA

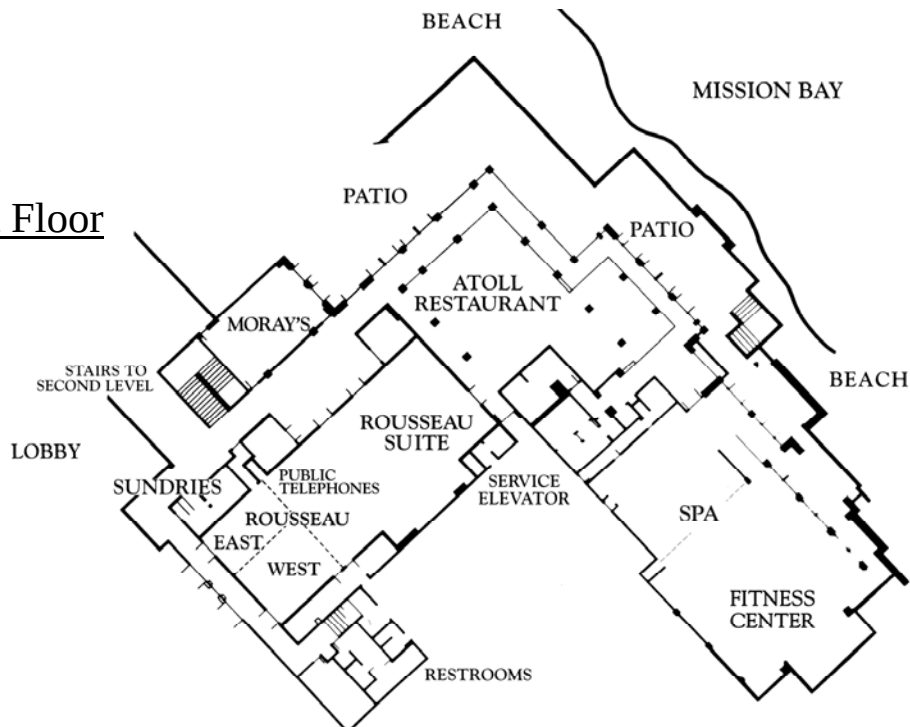
Spring 2012 - date and location to be determined

Catamaran Resort Hotel & Spa
3999 Mission Boulevard; San Diego, California 92109
+858.539.8700

Second Floor



First Floor



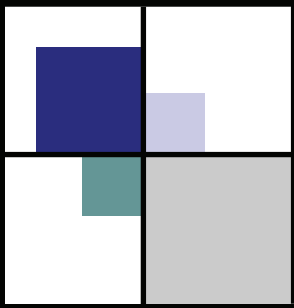
IEEE/PES TRANSFORMERS COMMITTEE

General Session - Spring 2011 Meeting

Thursday, April 14

Chair: Ed Smith Vice Chair: Bill Chiu Secretary: Don Platts Treasurer: Greg Anderson

- | | | |
|--------|---|------------------------|
| 1. | Chair's Remarks and Announcements | Ed Smith |
| 2. | Approval of Minutes from Fall 2010 Meeting | Ed Smith |
| 3. | Administrative Subcommittee | Ed Smith |
| 4. | Vice Chair's Report | Bill Chiu |
| 5. | Secretary's Report | Don Platts |
| 6. | Treasurer's Report | Greg Anderson |
| 7. | Transformer Standards | Bill Bartley |
| 8. | Recognition and Awards | Tom Prevost |
| 9. | New Business (continued below) | Ed Smith |
| 10. | Report of Technical Subcommittees | |
| 10.1. | Distribution Transformers | Steve Shull |
| 10.2. | Dielectric Tests | Loren Wagenaar |
| 10.3. | HVDC Converter Transformers & Reactors | Richard Dudley |
| 10.4. | Instrument Transformers | Ross McTaggart |
| 10.5. | Insulating Fluids | Susan McNelly |
| 10.6. | Insulation Life | Bruce Forsyth |
| 10.7. | Performance Characteristics | Steve Antosz |
| 10.8. | Power Transformers | Tom Lundquist |
| 10.9. | Underground Transformers & Network Protectors | Carl Niemann |
| 10.10. | Bushings | Peter Zhao |
| 10.11. | Dry Type Transformers | Chuck Johnson |
| 11. | Editor's Report | Ed teNyenhuis |
| 12. | Meetings Subcommittee | Greg Anderson |
| 13. | Reports of Liaison Representatives | |
| 13.1. | Standard Coordinating Committee No. 4 | Paulette Payne Powell |
| 13.2. | IEC TC-14 Technical Advisor to USNC | Phil Hopkinson |
| 13.3. | CIGRE | Jean-Christophe Riboud |
| 14. | Old Business | Ed Smith |
| 15. | New Business (further discussion as needed) | Ed Smith |



Sunday Day-Trip to the San Diego Zoo Sunday, April 10

Span the globe in one day, viewing rare and intriguing wildlife from nearly every region of the world, at the San Diego Zoo. The zoo is known for its large, naturalistic enclosures and bio-climatic zones such as Absolutely Apes, Tiger River, Gorilla Tropics, Polar Bear Plunge, and the Owens Rainforest Aviary.

The Monkey Trails and Forest Tales is the Zoo's largest and most elaborate animal habitat takes guests through Asian and African forests featuring monkeys and leopards.

The newest exhibit is the 7 acre Elephant Odyssey following the prehistoric path of elephants to its existence today.



Children are welcome, but advanced registration is required for all attendees. Contact the Committee at <transformers@ieee.org> to register children, less than 12 years old.

Day-trip includes round-trip transportation, and reduced-price admission to the zoo. Lunch is not included. Suggest eat breakfast before boarding bus.

Morning Departure: We will have two morning departures for the zoo trip. The first bus will leave the Catamaran at 8:30 am and the second bus at 10:00 am. Buses will stop for pick-up at the Bahia 10 minutes later, at 8:40 and 10:10 am.

Afternoon Return: Two return trips are scheduled to arrive at the Catamaran and Bahia at 1:30 and 3:30 pm.

Spouses/Companions Tour

Monday, April 11: San Diego by Land & Sea

See San Diego as this beautiful city should be seen, from the land and the sea. This informative journey through America's Finest City will introduce you to San Diego past, present and future. The tour will wander through the historic Gas Lamp Quarter originally developed in 1854. Balboa Park will be highlighted with its many museums and galleries housed in Spanish-Moorish architecture dating back to the 1914 Pan-American Exposition. To capture the true essence of this dynamic seaside city, you will embark on a large cruise boat for a fully narrated one hour tour of San Diego's Big Bay to see sites like Coronado, North Island Naval Air Station, and Cabrillo National Monument. Back on land, the journey will continue to picturesque "Old Town" the first European settlement on the west coast and birthplace of California. There you will enjoy Casa Guadalajara's delicious Mexican cuisine and have some free time to admire period architecture and Old Town's many unique shops.



Bus departs ONLY the Catamaran at 9:15 am and returns approx 4:00 pm.

The menu at Casa Guadalajara is:

- Chips & Salsa
- Welcome Margarita (alcoholic or non-alcoholic)
- Choice of One (make selection at restaurant):
 - * Grilled Chicken & Black Bean Tostada served on crispy tortilla, topped with avocado, shredded cabbage, and lime-cilantro vinaigrette.
 - * Burrito de Guadalajara filled with shredded beef & refried beans, topped with sour cream, and served with rice & beans.
 - * Enchilada Suizas prepared with seasoned chicken, green chilies, topped with salsa verde, cheese and sour cream, and served with rice & beans.
- Dessert Churros
- Coffee and Tea
- Alternate Menu Items Available, upon request (vegetarian, gluten-free, etc.)

Spouses/Companions Tour

Tuesday, April 12: La Jolla, Birch Aquarium and Shopping

Birch Aquarium at Scripps brings to life the exiting discoveries of world renowned Scripps Institution of Oceanography. Enter the world of sharks, seahorses, living coral reefs, and discover a stunning variety of Pacific marine life in more than 60 habitats. Visitors will experience a dazzling variety of marine life, from the cold waters of the Pacific Northwest to the tropical seas of Mexico and the South Pacific. One of the largest oceanographic museums in the country, there are numerous exhibits on water, air, land, life and the environment.



Before lunch see La Jolla's spectacular coastline and the blue Pacific. You'll enjoy some of the best ocean views in southern California.

Lunch is at The Crabcatcher, a longtime La Jolla favorite. The menu includes a choice of one (make selection at restaurant):

- Cobb Salad
- Fish and Chips
- Crab Cake Sandwich

Each comes with Vanilla Bean Gelato for dessert and choice of soda or iced tea.

Bus departs ONLY the Catamaran at 9:15 am and returns approx 4:00 pm. Admission to Birch Aquarium and lunch is included. Space is limited.

After lunch it's shopping along Prospect and Girard, San Diego's version of Rodeo Drive. There's an endless array of boutiques, art galleries, and shops featuring eclectic collectables from around the world.



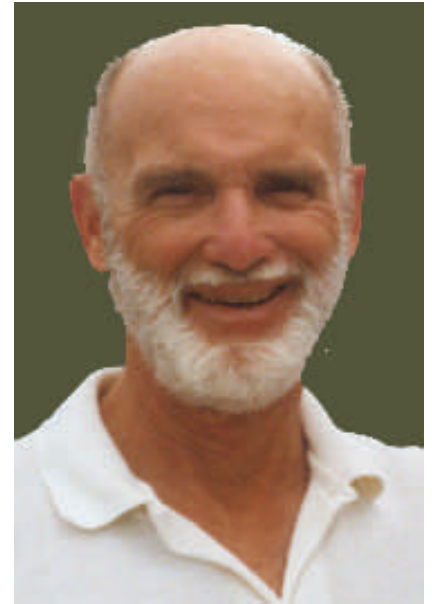
- Depart Catamaran at 9:15 am
- Arrive Birch Aquarium at 9:45 am
- Depart Birch Aquarium at approx 11:00 am, driving tour of La Jolla Coastline
- Arrive at Crabcatcher Restaurant for lunch at approx 11:30 am.
- Shopping along Prospect and Girard, approx 1:00 to 3:30 pm
- Return to Catamaran approx 4:00 pm

Speaker Luncheon
Tuesday, April 12
12:15 - 1:30 pm

Speaker: Dr. Richard Seymour
Research Engineer
Scripps Institution of Oceanography

Dr. Seymour is the head of the Ocean Engineering Research Group at Scripps Institution of Oceanography. He received his bachelors degree from the U.S. Naval Academy and his Ph D from the University of California, San Diego-Scripps Institution of Oceanography. His research includes ocean technology, wave mechanics, near shore processes and ocean based renewable energy technology.

Dr. Seymour's presentation will focus on ocean renewable energy technology. Energy technology from the ocean is based on ocean temperature gradients, wind driven currents, ocean winds, difference in salinity, and ocean waves. Dr. Seymour will speak on these energy technologies and their conceptual applications for generation and some actual test energy generation projects.



Lunch Registration

- Indicate your desire to attend the luncheon when you register on-line for the meeting.
- Indicate your meal selection (beef, chicken, or vegetarian).
- Paper tickets will not be provided. Admission to the event and meal selection verified with a registration list at the door. We will begin seating approx 12:05 pm.



Wednesday Evening Dinner Social USS Midway Wednesday, April 13

Welcome aboard the USS Midway for the Wednesday Evening Social. Join us for dinner and guided tours on a retired aircraft carrier that had a 47 year career with the US Navy starting at the end of WWII until the liberation of Kuwait in 1991. Dinner will be in the hangar deck with the flight deck available to inspect numerous aircraft and enjoy scenic views of the San Diego skyline and harbor. The USS Midway is now the most visited floating naval ship museum in the world.



Moored alongside Navy Pier on San Diego Bay in downtown San Diego, the USS Midway will continually expand as a dynamic, enriching experience. A visit to the Midway will instill a greater appreciation for naval aviation, service to country and sacrifice. Visitors marvel at a floating city at sea and share in the latest chapter of this fabled warship's storied history - beginning in 1945 when the Midway was commissioned as the largest ship in the world.

- Dress is casual. It could be cool and breezy, so dress appropriately.
- Buses begin boarding at the Catamaran Hotel and at the Bahia Hotel at 5:30 pm.
- Final buses depart each hotel at 6:00 pm.
- Sit-down buffet dinner begins at approx 7:30 pm.
- Buses begin departing the Midway at 9:30 pm
- All buses return to both hotels before 11:00 pm.

For those who wish to drive instead of ride the bus:

USS Midway Museum
910 N. Harbor Drive
San Diego, CA 92101

Children are welcome, but advanced registration is required for all attendees. Contact the Committee at <transformers@ieee.org> to register children, less than 12 years old.



“Transformers Used with Alternative Energy Sources - Wind & Solar”

**-- Technical Presentation --
Monday, April 11, 2011
4:45 - 6:00 pm**

By David Buckmaster, Phil Hopkinson, and Hemchandra Shertukde

1. Abstract

With the goals set forth in the "American Clean Energy and Security Act" (ACESA) the need for more production of energy from Wind and Photo-Voltaic energy sources is required in order to meet the mandate to have 20% of all energy produced by Wind, Solar (DPV) and Geothermal by the end of 2020. This will drive the need for collector system transformers to an ever higher demand and the transformers will need to change along with the technology. We will look at anomalies imposed directly on the transformer from these energy sources, the typical operating conditions observed and ideas to remediate constraints on safety for the end user by NFPA-70E.

2. Learning Objectives

This tutorial is planned to:

- Provide background information on the technologies being discussed, current levels of the existing energy market, and how the goals in the ACESA affect these technologies.
- Explain the impact on transformers due to harmonics, frequency variations, current and voltage spikes/dips due to wind gusts and Low Voltage Ride Through (LVRT) conditions.
- Explain the end user's current safety practices to comply with NFPA-70E and how the industry can assist in helping the end user minimize down-time and loss of operations during routine maintenance.
- Introduce the user and interested parties to the effects of primary and secondary valued variables that can affect the working of a transformer connected to a solar generator.
- Discuss the analytical aspects of systems with voltages as high as 38 kV and power ratings up to 10 MVA. shedding light on some finer nuances that affect operations of such systems. Explain the impact on transformers due to vacuum switching and probability of failure due to excessive operations.
- Give an overview of possible future directions of new designs for improved performance and safety for the end user.

3. Learning Outcomes

As a result of attending this tutorial session, members will gain an understanding of the following:

- What impacts the aggressive goals for clean energy place on the transformer industry.
- What impacts Wind and Solar (DPV) energy sources have on the performance of small power and distribution transformers.

- Relationship between performance parameters of a system where transformers are a major contributor on the Master Grid and to comply with requirements of NERC, FERC, local entities and the Large Generator Interconnect Agreements (LGIA)
- Members will learn to apply the concepts learned to solar systems of larger capacity. Demand for such systems is rapidly increasing and government oversight is stringent. Expansion of system capacities in conjunction with local electrical bodies is understood effectively by the user.
- Members will gain valuable information whether as a system designer or transformer manufacturer on mitigating damage to transformers and operational considerations.
- Possible future directions of new designs for improved performance and safety for the end user.

4. Presenters' Biographies

Dr. David Buckmaster: David is a self-employed consultant, specializing in transformers, stationary power systems, MV, HV and EHV design parameters. David has ventured into the wind energy field and has studied the impact on transformers from this technology and the hurdles to overcome associated with new requirements of NFPA-70E. David received his Honorary Ph.D. degree from Moscow State University in Moscow, Russia, in Electrical Power Engineering in 1998. He has over 36 years of combined experience (professional and pre-professional) in the area of power, distribution, transformers, and transmission grid designs. Dr. Buckmaster co-authored a new chapter in an electrical engineering handbook on transformer design with Dr. Shertukde and Mr. Jim Harlow. He is active in the IEEE Transformers Committee and several subcommittees including but not limited to the IEEE-USA Climate Change Technology Subcommittee.

Dr. Hemchandra Shertukde: Hemchandra is a Senior Member of IEEE, AIAA and SPIE since 1991. He received his MS and Ph.D. from the University of Connecticut, Storrs, CT in 1985 and 1989 respectively in Controls and Systems Engineering. He is a Professional Engineer in the State of Connecticut. He obtained his Bachelor of Technology degree - B.Tech (High Hons) from the Indian Institute of Technology, Kharagpur in 1975 with specialty in Controls and Power. He is on the faculty of the Electrical Engineering Department at the University of Hartford since 1988. Dr. Shertukde holds several patents for his inventions in the power and transformer field. Dr. Shertukde has published more than 75 journal and proceedings articles in controls, signal processing, power and multi-sensor, multi-target tracking. He recently authored the books "Transformers: Theory, Design and Practice with Practical Applications" and "Tracking of Crossing targets with Passive Sensors". Recently Dr. Shertukde co-authored a new chapter in an electrical engineering handbook on transformer design with Dr. Buckmaster and Mr. Jim Harlow.

Phil Hopkinson: Phil is an IEEE Life Fellow and long service Transformer Engineer. He received his BS in EE from Worcester Polytechnic Institute in 1966. He also graduated from GE's Advanced Engineering Course in 1970 and simultaneously received his MS in System Science (EE) from Brooklyn Polytechnic Institute. In 2001, Phil formed a power transformer consulting company, called HVOLT Inc. He currently holds 15 US patents, is a Registered Professional Engineer in North Carolina, and is Technical Advisor (TA) to the US National Committee for IEC TC14 for Power Transformers and past TA for IEC TC96. Phil's numerous contributions to IEEE, promoting the engineering field and the transformer industry are too numerous to enumerate in this document.