Meeting hosted by:

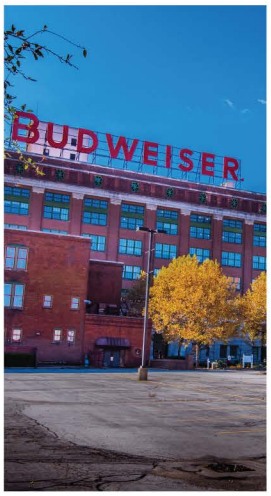
THE HJ FAMILY OF COMPANIES
SINCE 1969

IEEE Transformers Committee

Fall 2024 Meeting

St. Louis, Missouri USA







Dear Committee Members and Guests:
You and your spouse/companion are cordially invited to St. Louis, Missouri, **"The Gateway to the West,"** to attend the **FALL 2024 meeting of the IEEE PES Transformers Committee, October 27–31, 2024.**

The Transformers Committee will be headquartered at the **Hyatt Regency St. Louis at the Arch,** immediately adjacent to St. Louis' Gateway Arch. St. Louis features many exciting things to do, with many free to the public. *St. Louis is home to the St. Louis Cardinals baseball team, Blues hockey team, St. Louis City soccer team and Battle Hawks UFL team. Within walking distance of the hotel, you can visit the Gateway Arch, Busch Stadium, Ballpark Village, City Museum and Union Station. In addition, there are many "must visit" landmarks and eateries, including Anheuser-Busch Brewery, Pappy's BBQ, Crown Candy, Ted Drewes and many others.*

WELCOME TO ST LOUIS! We strongly encourage you to enjoy the restaurants, shops and entertainment at the Ballpark Village, a short walk from the Hyatt Regency.

Hotel Information:


Hyatt Regency

Our meeting will be held at the Hyatt Regency St. Louis at 315 Chestnut St., Saint Louis, MO 63102 · (314) 655-1234. Attendees will have access to many great restaurants and activities within walking distance of the hotel. Even though St. Louis is a major US city, it doesn't have a "big city" feel. There's a Ruth's Chris Steak House as well as a Starbucks in the lobby.

Group room rate starts at US$204/night, single or double. Also, please note the Hyatt Regency St. Louis at the Arch is a **cashless hotel.** Visit the Committee's website for a link to reserve a room, or, if you call the hotel, *mention "IEEE Transformers" to receive the respective group rate*. Cutoff date for the group rate is Monday, October 7, 2024. *NOTE: The hotel is likely to sell-out before this date!*

Getting There:

The Hyatt Regency St. Louis at the Arch is located in "downtown" St. Louis, approximately 14 miles northwest of the St. Louis Lambert International Airport (STL). Estimated taxi fare to/from hotel (one way): US$35–$50 from STL. Estimated lyft/uber fare (one way): US$35–$45 from STL.

Meeting Registration:

Register on-line for the meeting, Sunday night reception, Monday and Tuesday lunches, Wednesday lunch, spouse/companion tours, technical tours, and Wednesday night social event: A Magical Evening at the Gardens. The registration link can be found on the Committee website Next Meeting page. Register by October 4th to receive a US$50 early registration discount (depending on your registration type). The on-line registration system will change over to the on-site registration rate on October 23rd. *The cost to register on-site is substantially higher than the advance registration price, and some events may not be available for on-site registration.*

Weather:

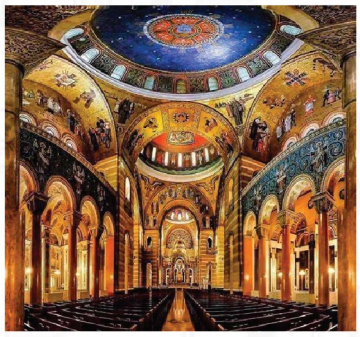
You will be in the midwestern part of the US, and St. Louis weather in late October is anybody's guess. Light to medium weight jacket is highly recommended, even if it's not needed. In late October, it's not uncommon for the weather outside to be cool and rainy; however, there are many very nice things to do within a short walking distance. As always, dress for the meeting is business casual.

Sunday Evening Welcome Reception:

Hyatt Regency

The reception will be held at the Hyatt Regency St. Louis at the Arch. Featuring live music by a local group, plenty of tasty food and cash bars. This is a great way to start your week off by catching up with old friends and meeting new ones. Please indicate whether you will attend this reception during the meeting registration process.

Spouse/Companion Tours:



Monday,
Oct. 28, 2024
City, Cathedral & Brewery
9:30am – 4:00pm

Begin your day with a driving tour of St. Louis. Learn the history of St. Louis and tour the historic neighborhoods of Soulard and Lafayette Square. Visit and tour the Cathedral Basilica, whose interior is adorned in 83,000 square feet of mosaic tiles, one of the largest such collections in the world.

Enjoy lunch at Favazza's Restaurant, located in the famed Italian neighborhood known to locals at "The Hill." For dessert, visit a St. Louis original, Ted Drewes Frozen Custard. This unique, one-of-a-kind custard stand has been in operation since 1929 and has never been franchised.

In the afternoon, visit Anheuser-Busch Brewery, where you will be guided through a blend of rich brewing heritage, state-of-the-art technology, and extraordinary architecture. Learn how the brewery product is made from beginning to end, stop in the aging cellars, see the world-renowned Clydesdale horses and end up in the hospitality room with free product samples and time to shop the amazing gift shop.

Tuesday,
Oct. 29, 2024
Forest Park & Kirkwood
9:30am – 4:00pm

Begin your day with a driving tour of Forest Park, home of the 1904 World's Fair. Visit the Missouri History Museum, where you will be entertained by a docent-led tour of the re-imagined 1904 World's Fair Exhibit.
Enjoy lunch at One 19 North Tapas Wine Bar, then browse the quaint neighborhood of Kirkwood, MO with its many shops, boutiques and Farmer's Market.

Technical Tours

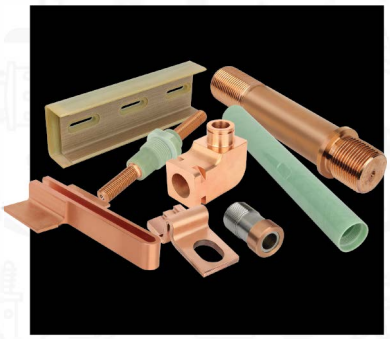
Monday,
Oct. 28, 2024
The H-J Family of Companies
6:30pm – 9:45pm

The H-J Family of Companies will be hosting a tour of its State Road PP facility, including high voltage test lab, featuring research and development capabilities including electrical, mechanical, environmental and chemical testing and analysis. In addition, you will get a tour of the complete facility that includes tooling, mold and foundry pattern design and manufacturing, EPOXY molding, conductor fabrication, plating and distribution center.

Register online for all tours. See flyers for details.

Tuesday,
Oct. 29, 2024
WEG
6:25pm – 9:45pm

WEG Transformers USA, a leading supplier of distribution and power transformers throughout North America, will host a technical tour at its distribution transformer factory in Washington, Missouri, which opened in November 2021. The tour will include an overview of all three WEG factories, a detailed tour of its distribution transformer facility followed by dinner at the plant.



Thursday,
Oct. 31, 2024
The Gund Company
12:20pm – 3:00pm

The Gund Company is an industry leader in the design and manufacture of electrical insulation applications for transformers, switchgear, power electronics and rotating equipment. This technical tour will emphasize the company's manufacturing processes and includes lunch at its facility.

Wednesday Dinner Social:

Wednesday,
Oct. 30, 2024
6:30pm – 10:00pm

To top off a great meeting week, join us for a **Magical Evening at the Gardens.** The magic starts with our venue for the evening, which will be the beautiful Missouri Botanical Gardens. Not only will you be able to roam and enjoy the beautiful Missouri Botanical Gardens, but you will also be entertained during the evening with a truly magical experience. During the cocktail hour, there will be roaming magicians doing magic, including sleight of hand, mind-reading, and illusion, with a little humor mixed in. Following dinner, there will be a formal Mind Kontrol Magic Show, featuring illusions, mind-reading and other special magic. See flyer for details.

Additional Meeting Information:

Along with this invitation letter, additional meeting information can be downloaded from the Committee's website:

- **Registration Fees Summary –** Guide to review all fees before logging into the registration system.
- **Meeting Schedule and General Sessions Agenda** – If any noteworthy changes are made, an updated schedule will be posted on the Committee's website a few days prior to the meeting.

We are certain you will enjoy your stay in St. Louis, and we look forward to seeing you at the FALL 2024 meeting!

Best regards,
Ed Smith and The H-J Family of Companies Team

FALL 2024 Meeting Hosts

IEEE PES TRANSFORMERS COMMITTEE
Fall 2024 Meeting
St. Louis, Missouri U.S.A.

~ Meeting Registration Fees Summary ~

– Register on-line with credit card or wire transfer (extra fee applies for wire transfer) at the registration link posted on this page: https://www.transformerscommittee.org/meetings/2024-fall-st-louis/.
– Each individual must register for the meeting and pay appropriate registration fee to attend any social event or tour.
– **Print a receipt at the end of the registration process**; paper receipts are NOT provided at the meeting.
– Refund provided only if request is received by Wednesday, October 23, 2024, and valid once confirmation email received; US$25 service charge for a refund of entire registration or US$10 for a partial refund.
– US Tax ID No. 13-1656633, Canadian Business No. 12563 4188, Euro Tax Registration No. EU826000081

REGISTRATION FEES AS SHOWN BELOW – **all fees shown in US dollars** – all fees stated are per person	**On or Before October 4**	**After Oct 4, on or before October 23**	**On-site (after Oct 23)**
MEETING REGISTRATION			
Attendee — IEEE member (will be verified when registering)	$495	$545	$645
Attendee — non-IEEE member	$595	$655	$775
Attendee — IEEE Life or Committee Emeritus (will be verified)	$220	$270	$370
Spouse/Companion or guest* and children aged 12 and over	$235	$285	$385
– Attendee registration fee includes Sunday night welcome reception, entry into meeting area, coffee breaks and four breakfasts (Mon, Tues, Wed, Thurs). – Spouse/Companion registration fee includes Sunday night welcome reception, four breakfasts (Mon, Tues, Wed, Thurs) and ability to register for tours (which are subsidized by the Committee).			
* This fee category is for anyone who is attending for non-commercial reasons, i.e., not attending the technical meetings, etc. Spouses/Companions/Guests, including children (aged 12 and over) must be registered for the meeting with above meeting registration fees to attend any tour, social event, and/or breakfasts.			
LUNCHES			
Monday Standards Development Lunch – Buffet (no meal selection required)	$35	$35	$35
Tuesday Awards Lunch – Meal selection required - indicate beef, chicken, or vegetarian	$45	$45	$45
Wednesday Women in Power Buffet Lunch (see description on reg site)	$25	$25	$25
SOCIAL EVENTS & TOURS (see flyers for details)			
Sunday Night Welcome Reception: 4th Floor Grand Ballroom – Hyatt Regency	included in registration fee; *please register in advance for headcount purposes*		
Wednesday Night Dinner Social: Magical Missouri Botanical Gardens* – Admire fall garden beauty from the venue's new event center – Enjoy hors d'oeuvres, buffet dinner, cash bars, award-winning roving magicians, internationally acclaimed "Mind Kontrol" magic show, and gift shop	$90	$90	$90
Monday Spouse/Companion Tour: City, Cathedral & Brewery Tour*	$105	$105	$105
Tuesday Spouse/Companion Tour: Forest Park & Kirkwood*	$105	$105	$105
TECHNICAL TOURS			
Monday Evening: H-J Family of Companies* *LIMITED TO 150 ATTENDEES – host reserves the right to approve guests.*	$30	$30	$30
Tuesday Evening: WEG Transformers USA* *LIMITED TO 50 ATTENDEES – host reserves the right to approve guests.*	$30	$30	$30
Thursday Afternoon: The Gund Company* *LIMITED TO 50 ATTENDEES – host reserves the right to approve guests.*	$30	$30	$30
* Attendance will be limited for Wednesday evening social event, spouse/companion tours and technical tours due to space constraints, so register early! *On-site registration for these events only available if space allows*.			

IEEE PES TRANSFORMERS COMMITTEE

Fall 2024 Meeting: St. Louis, MO, USA

Agenda - General Sessions

Chair: David Wallach **Vice Chair:** Bill Griesacker **Secretary:** Scott Reed
Treasurer: Troy Tanaka **Awards Chair/Past Chair:** Ed teNyenhuis **Standards Coordinator:** Steve Shull

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Opening Session

Monday, October 28, 2024: 8:00 am - 9:15 am CST (UTC-13:00)

(Attendance recorded by roster – attendance required to maintain Member status)

1. Welcome and Announcements ..... David Wallach
2. Meeting Minute ..... Tammy Behrens
3. Approval of Agenda ..... David Wallach
4. Approval of Minutes from Spring 2024 Meeting ..... David Wallach
5. Chair's Report & Administrative Subcommittee Report ..... David Wallach
6. Vice Chair's Report ..... Bill Griesacker
7. Secretary's Report ..... Scott Reed
8. Treasurer's Report ..... Troy Tanaka
9. Standards Report ..... Steve Shull
10. Liaison Representative Reports
    - 10.1. CIGRE ..... Craig Swinderman
    - 10.2. IEC TC Report(s) ..... Christoph Ploetner et al
    - 10.3. Standards Coordinating Committee, SCC4 (Electrical Insulation) ..... Evanne Wang
    - 10.4. ASTM ..... Ed Casserly
    - 10.5. Transactions on Power and Delivery (TPWRD) Editor Liaison ..... Xose Lopez-Fernandez
11. Hot Topics for the Upcoming Week ..... Subcommittee Chairs
12. New Business & Wrap-up ..... David Wallach
    - 12.1 Standards Committee P&P Revision..... David Wallach

Closing Session

Thursday, October 31, 2024: 11:00 am - 12:00 pm CST (UTC-17:00)

1. Chair's Remarks and Announcements ..... David Wallach
2. Meetings Planning Subcommittee ..... Tammy Behrens
3. Reports from Technical Subcommittees (decisions made during the week)
    - 3.1. Bushings ..... Eric Weatherbee
    - 3.2. Dielectric Tests ..... Poorvi Patel
    - 3.3. Distribution Transformers ..... Jerry Murphy
    - 3.4. Dry Type Transformers ..... Casey Ballard
    - 3.5. Transformers and Reactors for HVDC Applications ..... Ulf Radbrandt
    - 3.6. Instrument Transformers ..... Thomas Sizemore
    - 3.7. Insulating Fluids ..... Stephanie Mabrey
    - 3.8. Insulation Life ..... Sam Sharpless
    - 3.9. Performance Characteristics ..... Rogerio Verdolin
    - 3.10. Power Transformers ..... Ryan Musgrove
    - 3.11. Standards ..... Dan Sauer
    - 3.12. Subsurface Transformers & Network Protectors ..... George Payerle
4. Additional Report from Standards Coordinator (issues from the week) ..... Steve Shull
5. New Business (continued from Monday) and Wrap-up ..... David Wallach

IEEE PES TRANSFORMERS COMMITTEE

FALL 2024 MEETING: OCTOBER 27 TO OCTOBER 31

Hyatt Regency St. Louis at The Arch; St. Louis, Missouri, USA

KEY

Note: A PC projector will be furnished in each meeting room. Arrive early to ensure equipment operates/syncs correctly.

> = activity continued into another session / from another session

++ = not a Transformers Committee activity

TBD = To Be Determined

TRACK LEGEND

Admin	Administrative SC	Ins Life	Insulation Life SC
Bush	Bushings SC	Instr TR	Instrument Transformers SC
DiTests	Dielectric Tests SC	Mtgs	Meetings Planning SC
Distr	Distribution Transformers SC	PCS	Performance Characteristics SC
Dry Type	Dry Type Transformers SC	Power	Power Transformers SC
HVDC	HVDC Converter Transfs. and Smoothing Reactors SC	STNP	Submersible Transf. & Network Protectors SC
IF	Insulating Fluids SC	Stds	Standards SC

STATUS LEGEND

N	New
I	In-Progress
NC	Near Completion
B	Ballot Stage
C	Complete
E	Entity

SATURDAY, OCTOBER 26

No Registration and no Meetings, Technical Tours, or Spouse/Companion Tours Planned

SUNDAY, OCTOBER 27

TIME	ACTIVITY	TRACK	MTG CHAIR	STATUS	ROOM (FLOOR)
1:00 PM – 5:30 PM	Meeting Registration				Grand Foyer (4)
2:00 PM – 5:00 PM	Administrative Subcommittee - Closed meeting, by invitation only	Admin	D. Wallach	–	Park View (4)
2:00 PM – 5:00 PM	NEMA Transformers - Closed meeting, by invitation only	++	P. Orr	–	Gateway East (18)
6:00 PM – 8:00 PM	Welcome Reception				Grand Ballroom (4)

Renew old friendships and form new ones! This reception will be held inside the Grand Ballroom at the Hyatt, so weather will not be an issue. Bars*, plenty of fabulous food and live music will be provided. Please indicate whether you will attend this reception during the meeting registration process. All registered attendees and spouses/companions are welcome to attend. *Hotel is cashless (except gratuities); credit cards, debit cards and room charges only.

IEEE PES TRANSFORMERS COMMITTEE

FALL 2024 MEETING: OCTOBER 27 TO OCTOBER 31

Hyatt Regency St. Louis at The Arch; St. Louis, Missouri, USA

MONDAY, OCTOBER 28 Breaks Sponsored by Hitachi Energy*

TIME	ACTIVITY	TRACK	MTG CHAIR	STATUS	ROOM (FLOOR)
7:00 AM – 5:00 PM	Meeting Registration				Grand Foyer (4)
7:00 AM – 7:50 AM	Newcomers Orientation - Arrive early, grab breakfast **from Regency BC** and get a good seat - Newcomers and guests are encouraged to attend		B. Griesacker	–	Regency A (2)
7:00 AM – 8:00 AM	Breakfast - Attendees (no spouses/companions please)				Regency BC (2)
8:00 AM – 9:30 AM	Breakfast - Spouses/Companions (no meeting attendees please)				Gateway East (18)
8:00 AM – 9:15 AM	Opening Session - All registered meeting participants are encouraged to attend - See separate document on website for meeting agenda - *Attendance required to maintain Committee Member status*		D. Wallach	–	Regency DEF (2)
9:30 AM – 4:00 PM	Spouses/Companions Tour: Sites of St. Louis - Start the day with a bus tour of St. Louis (complete with professional guide) - Visit the Cathedral Basilica in the morning and Anheuser-Busch Brewery in the afternoon - Enjoy a traditional Italian meal at Favazza's Restaurant on "The Hill" and Ted Drewes frozen custard for dessert - See website/flyer for details	Tour			
9:15 AM – 9:30 AM	*Break (beverages only): Hitachi Energy*				*Grand Foyer (4)*
9:30 AM – 10:45 AM	TF IEEE-IEC Cross Reference	Stds	A. Washburn	I	Grand Ballroom C (4)
9:30 AM – 10:45 AM	TF PAR Study Group Temp Rise Test beyond NP C57.119	Ins Life	E. Schweiger	I	Grand Ballroom AB (4)
9:30 AM – 10:45 AM	WG Guide for Tank Rupture Mitigation C57.156	Power	P. Zhao	I	Grand Ballroom GH (4)
9:30 AM – 10:45 AM	TF Transf Efficiency & Loss Evaluation (DOE Activity)	Distr	P. Hopkinson	I	Grand Ballroom D (4)
9:30 AM – 10:45 AM	TF PD Testing of DTR, Wind & Solar Transf	DiTests	A. Larison	I	Grand Ballroom E (4)
9:30 AM – 10:45 AM	WG Guide DGA in Ester-Immersed Transformers PC57.155	IF	A. Sbravati	I	Grand Ballroom F (4)
10:45 AM – 11:00 AM	*Break (beverages only): Hitachi Energy*				*Grand Foyer (4)*
11:00 AM – 12:15 PM	WG Eval Guide Environ Impact of Trans & Reactors PC57.151	PCS	J. Kazmierczak	N	Grand Ballroom AB (4)
11:00 AM – 12:15 PM	WG Guide for DGA in Silicone PC57.146	IF	P. Boman	I	Grand Ballroom C (4)
11:00 AM – 12:15 PM	WG Class 1E Transf.for Nuclear Power Gen Std. 638	Power	C. Swinderman	I	Grand Ballroom F (4)
11:00 AM – 12:15 PM	WG App of High-Temp Insulation Matrs IEEE 1276 Annex B	Ins Life	K. Biggie	I	Grand Ballroom D (4)
11:00 AM – 12:15 PM	TF PAR Study Group Guide for TVA Dry-Type Coil C57.12.58	Dry Type	K. Klein	I	Grand Ballroom E (4)
11:00 AM – 12:15 PM	WG 1ph Submersible Transformers PC57.12.23	STNP	A. Traut	I	Grand Ballroom GH (4)
12:15 PM – 1:30 PM	Standards Development Review Luncheon Everyone is welcome to attend. All SC/WG/TF leaders are highly encouraged to attend. Doors open ~12:00 pm. Come early, get a good seat and start eating. Advance on-line registration required. To listen to the presentation without eating lunch, arrive by 12:30 pm.				Regency BC (2)
1:45 PM – 3:00 PM	TF - Test Degredation of Cellulose in Liquid Type Transfs	Ins Life	L. Lewand	I	Grand Ballroom C (4)
1:45 PM – 3:00 PM	WG Dry Type Gen. Requirements C57.12.01	Dry Type	C. Ballard	I	Grand Ballroom AB (4)
1:45 PM – 3:00 PM	WG Guide for Phase Shifting Transf C57.135	Power	E. Schweiger	I	Grand Ballroom GH (4)
1:45 PM – 3:00 PM	TF Audible Sound Revision to Test Code	PCS	R. Girgis	I	Grand Ballroom D (4)
1:45 PM – 3:00 PM	TF DFR Test Guide C57.161	DiTests	E. Ermakov	I	Grand Ballroom F (4)
1:45 PM – 3:00 PM	TF Transformer Data Required for System Studies	PCS	J.Watson	N	Grand Ballroom E (4)
3:00 PM – 3:15 PM	*Break (beverages and treats): Hitachi Energy*				*Grand Foyer (4)*
3:15 PM – 4:30 PM	WG Test for Eval of Insulation for Dry-Type Transfs P259	Dry Type	D. Stankes	I	Grand Ballroom C (4)
3:15 PM – 4:30 PM	WG Std Reqs for Liquid-imersed Power Trans C57.12.10	Power	S. Digby	N	Grand Ballroom D (4)
3:15 PM – 4:30 PM	TF PCS Cont. Revisions to C57.12.00	PCS	T. Ansari	I	Grand Ballroom AB (4)
3:15 PM – 4:30 PM	WG Bushing Application Guide C57.19.100	Bush	T. Spitzer	I	Grand Ballroom F (4)
3:15 PM – 4:30 PM	WG 3-ph Padmount Dist Transf. C57.12.34	Distr	S. Shull	I	Grand Ballroom GH (4)
3:15 PM – 4:30 PM	TF Guide Eval & Recon of Liquid Immerse Transf C57.140	Power	S. Som	I	Grand Ballroom E (4)
4:30 PM – 4:45 PM	*Break (beverages only): Hitachi Energy*				*Grand Foyer (4)*
4:45 PM – 6:00 PM	TF Core Ground & Winding Insul. Resistance - Perf & Int.	DiTests	D. Robalino	I	Grand Ballroom AB (4)
4:45 PM – 6:00 PM	TF PAR Study Group Unit Substation Transf C57.12.55	Dry Type	S. Nunn	I	Grand Ballroom C (4)
4:45 PM – 6:00 PM	WG Failure Investigation & Reporting PC57.125	Power	H. Sahin	I	Grand Ballroom GH (4)
4:45 PM – 6:00 PM	WG Std Distributed Photo-Voltaic Transf (DPVTs) C57.159	PCS	H. Shertukde	I	Grand Ballroom D (4)
4:45 PM – 6:00 PM	SC HVDC Converter Transfs & Smoothing Reactors	HVDC	U. Radbrandt	-	Grand Ballroom F (4)
4:45 PM – 6:00 PM	WG PC57.15 Std Req Terms & Test Code for V Step Regs	Distr	D. Sauer	I	Grand Ballroom E (4)
6:30 PM – 9:45 PM	Technical Tour: H-J Family of Companies Advance registration required—space is limited! Admission confirmed with badge at bus. Start loading bus at 6:15PM for a 6:30PM departure time. Arrive at H-J at 7:00PM with social time prior to the guided tours followed by a catered dinner. Bus departure at 9:15PM for a 9:45PM arrival at hotel. See website/flyer for more information.	Tech Tour			

IEEE PES TRANSFORMERS COMMITTEE

FALL 2024 MEETING: OCTOBER 27 TO OCTOBER 31

Hyatt Regency St. Louis at The Arch; St. Louis, Missouri, USA

TUESDAY, OCTOBER 29 Breaks Sponsored by Intellirent*

TIME	ACTIVITY	TRACK	MTG CHAIR	STATUS	ROOM (FLOOR)
7:00 AM – 11:30 AM	Meeting Registration				Grand Foyer (4)
7:00 AM – 7:50 AM	EL&P Delegation (End-users only please) - Arrive early and grab breakfast from Regency BC (2)		J. Murphy	–	Sterling Studio 6 (2)
7:00 AM – 8:00 AM	Breakfast - Attendees (no spouses/companions please)				Regency BC (2)
8:00 AM – 9:30 AM	Breakfast - Spouses/Companions (no meeting attendees please)				Gateway East (18)
9:30 AM – 4:00 PM	Spouses/Companions: Forest Park & Kirkwood - Day begins in Forest Park with a docent-led tour of the Missouri History Museum and its reimagined 1904 World's Fair Exhibit - Enjoy lunch at One 19 North Tapas Wine Bar - Browse shops, boutiques and a Farmer's Market in Kirkwood, MO in the afternoon - See website/flyer for details	Tour			
8:00 AM – 9:15 AM	WG Guide for Life Tests of Switch Contacts C57.157	Power	A. Sewell	I	Grand Ballroom C (4)
8:00 AM – 9:15 AM	WG Practice for Install & Operation of Dry Type PC57.94	Dry Type	K. Klein	I	Grand Ballroom F (4)
8:00 AM – 9:15 AM	WG Power-Line Carrier Coupling Cap & Volt Transf C57.13.9	Instr TR	Z. Roman	I	Grand Ballroom AB (4)
8:00 AM – 9:15 AM	WG Guide DGA Applied to Factory Temp Rise Test C57.130	IF	B. Forsyth	I	Grand Ballroom D (4)
8:00 AM – 9:15 AM	TF on Revision of Impulse Tests C57.12.00 & C57.12.90	DiTests	S. Plante	I	Grand Ballroom E (4)
8:00 AM – 9:15 AM	WG Encl Int C57.12.28, C57.12.29, C57.12.31, C57.12.32	Distr	D. Mulkey	I	Grand Ballroom GH (4)
9:15 AM – 9:30 AM	*Break (beverages only): Intellirent*				*Grand Foyer (4)*
9:30 AM – 10:45 AM	WG Detection of Acoustic Emissions from PD C57.127	DiTests	D. Gross	I	Grand Ballroom AB (4)
9:30 AM – 10:45 AM	TF Std Require for Bushings C57.19.01	Bush	S. Zhang	I	Grand Ballroom GH (4)
9:30 AM – 10:45 AM	TF Instrument Transf. Accuracy	Instr TR	I. Ziger	I	Grand Ballroom C (4)
9:30 AM – 10:45 AM	WG Condition Assessment Guide PC57.170	Power	K. Mani	I	Grand Ballroom D (4)
9:30 AM – 10:45 AM	TF PCS Cont. Rev. to Test Code C57.12.90	PCS	H. Sahin	I	Grand Ballroom E (4)
9:30 AM – 10:45 AM	WG Distr Substation Transf PC57.12.36	Distr	J. Murphy	I	Grand Ballroom F (4)
10:45 AM – 11:00 AM	*Break (beverages only): Intellirent*				*Grand Foyer (4)*
11:00 AM – 12:15 PM	WG Sw Transients Ind by TR/Bkr Interaction PC57.142	PCS	J. McBride	I	Grand Ballroom D (4)
11:00 AM – 12:15 PM	WG Liquid-immersed Sec. Network TRs C57.12.40	STNP	J. Vartanian	I	Grand Ballroom AB (4)
11:00 AM – 12:15 PM	WG Standard Requirements for Arc Furnace Transf. C57.17	Power	D. Corsi	I	Grand Ballroom C (4)
11:00 AM – 12:15 PM	WG Requirements for Instrument Transformers PC57.13	Instr TR	D. Wallace	I	Grand Ballroom E (4)
11:00 AM – 12:15 PM	TF Guide for Corrosive Sulfur In Oil- Immersed Trfs & Reactors	IF	L. Lewand	I	Grand Ballroom F (4)
11:00 AM – 12:15 PM	WG PC57.12.59	Dry Type	P. Weyandt	I	Grand Ballroom GH (4)
12:15 PM – 1:30 PM	Awards Luncheon All meeting attendees are encouraged to attend to show appreciation and recognize accomplishments. Doors open ~12:00 pm. Come early, get a good seat and start eating. Advance on-line registration is required.				Regency BC (2)
1:45 PM – 3:00 PM	TF Std Require Bushings above 5kA in Bus Encl. C57.19.04	Bush	S. Digby	I	Grand Ballroom D (4)
1:45 PM – 3:00 PM	TF Cont. Revision to Low Frequency Tests C57.12.90	DiTests	A. Varghese	I	Grand Ballroom E (4)
1:45 PM – 3:00 PM	WG Liquid Immersed Phase- Shifting Transf 60076-57-1202	Power	E. Schweiger	N	Grand Ballroom C (4)
1:45 PM – 3:00 PM	WG DGA in Mineral Oil Transf C57.104	IF	E. teNyenhuis	I	Grand Ballroom AB (4)
1:45 PM – 3:00 PM	TF to Merge C57.13.5 into C57.13	Instr TR	T. Sizemore	I	Grand Ballroom GH (4)
1:45 PM – 3:00 PM	WG Electronic Test Data PC57.12.37	Distr	A. Traut	I	Grand Ballroom F (4)
3:00 PM – 3:15 PM	*Break (beverages and pretzels): Intellirent*				*Grand Foyer (4)*
3:15 PM – 4:30 PM	WG Recommend Practice Routine Impulse Tests C57.138	DiTests	H. Sahin	I	Grand Ballroom C (4)
3:15 PM – 4:30 PM	WG Guide for DGA in LTCs C57.139	IF	R. Frotscher	I	Grand Ballroom F (4)
3:15 PM – 4:30 PM	WG Guide for Install & Maintenance of Power Trf C57.93	Power	S. Reed	N	Grand Ballroom D (4)
3:15 PM – 4:30 PM	TF Continuous Rev Clause 11 Temp Rise Tests C57.12.90	Ins Life	D. Sankarakurup	I	Grand Ballroom E (4)
3:15 PM – 4:30 PM	WG Reverse Power Flow Effects on Trans PC57.133	Stds	R. Hogg	N	Grand Ballroom AB (4)
3:15 PM – 4:30 PM	WG Req for Dist Trf Tank Pressure Coordination C57.12.39	Distr	C. Gayton	I	Grand Ballroom GH (4)
4:30 PM – 4:45 PM	*Break (beverages only): Intellirent*				*Grand Foyer (4)*
4:45 PM – 6:00 PM	WG Guide for App of Tert & Stabilizing Windings C57.158	PCS	E. Betancourt	I	Grand Ballroom D (4)
4:45 PM – 6:00 PM	WG Guide for Mitigating Corrosion on Sub Trfs C57.12.53	STNP	W. Elliott	I	Grand Ballroom AB (4)
4:45 PM – 6:00 PM	WG Guide for Field Testing PC57.152	Stds	M. Ferreira	I	Grand Ballroom E (4)
4:45 PM – 6:00 PM	WG Guide for Paralleling Transformers C57.153	Power	M. Tostrud	I	Grand Ballroom C (4)
4:45 PM – 6:00 PM	WG Dry Type Test Code C57.12.91	Dry Type	D. Walker	I	Grand Ballroom GH (4)
4:45 PM – 6:00 PM	WG Neutral Grounding Devices C57.32	PCS	S. Kennedy	I	Grand Ballroom F (4)
6:25 PM – 9:45 PM	Technical Tour: WEG Transformers USA Advance registration required—space is limited! Admission confirmed with badge at bus. Start loading bus at 6:15PM for a 6:25PM departure time. Arrive at WEG's distribution transformer factory at 7:15PM for a brief presentation and guided tour followed by a catered dinner. Bus departure at 9:00PM for a 9:45PM arrival at hotel. See website/flyer for more information.	Tech Tour			

IEEE PES TRANSFORMERS COMMITTEE

FALL 2024 MEETING: OCTOBER 27 TO OCTOBER 31

Hyatt Regency St. Louis at The Arch; St. Louis, Missouri, USA

WEDNESDAY, OCTOBER 30 Breaks Sponsored by Brockhaus Measurements*

No Registration and no Technical Tours or Spouse/Companion Events Planned

TIME	ACTIVITY	TRACK	MTG CHAIR	STATUS	ROOM (FLOOR)
7:00 AM – 8:00 AM	Breakfast - Attendees (no spouses/companions please)				Regency BC (2)
7:00 AM – 8:00 AM	SC Meetings Planning - Arrive early and grab breakfast from Regency BC (2) - All interested individuals welcome	Mtgs	T. Behrens	–	Sterling Studio 6 (2)
7:00 AM – 8:00 AM	IEC TC-14 Technical Advisory Group - Breakfast Meeting - arrive early and grab breakfast from Regency BC (2) - All interested individuals welcome		T. Prevost	–	Regency A (2)
8:00 AM – 9:30 AM	Breakfast - Spouses/Companions (no meeting attendees please)				Gateway East (18)
8:00 AM – 9:15 AM	SC Instrument Transformers	Instr TR	T. Sizemore	–	Grand Ballroom AB (4)
8:00 AM – 9:15 AM	SC Insulation Life	Ins Life	S. Sharpless	–	Grand Ballroom E (4)
9:15 AM – 9:30 AM	*Break (beverages only): Brockhaus Measurements*				*Grand Foyer (4)*
9:30 AM – 10:45 AM	SC Distribution Transformers	Distr	J. Murphy	–	Grand Ballroom E (4)
9:30 AM – 10:45 AM	SC Bushings	Bush	E. Weatherbee	–	Grand Ballroom AB (4)
10:45 AM – 11:00 AM	*Break (beverages only): Brockhaus Measurements*				*Grand Foyer (4)*
11:00 AM – 12:15 PM	SC Submersible Transf. & Network Protectors	STNP	G. Payerle	–	Grand Ballroom AB (4)
11:00 AM – 12:15 PM	SC Dielectric Test	DiTests	P. Patel	–	Grand Ballroom E (4)
12:15 PM – 1:30 PM	*Lunch Break*				
12:15 PM – 1:30 PM	Women in Power Luncheon				Park View (4)
1:30 PM – 2:45 PM	SC Dry Type Transformers	Dry Type	C. Ballard	–	Grand Ballroom AB (4)
1:30 PM – 2:45 PM	SC Power Transformers	Power	R. Musgrove	–	Grand Ballroom E (4)
2:45 PM – 3:00 PM	*Break (beverages and treats): Brockhaus Measurements*				*Grand Foyer (4)*
3:00 PM – 4:15 PM	SC Insulating Fluids	IF	S. Mabrey	–	Grand Ballroom AB (4)
3:00 PM – 4:15 PM	SC Performance Characteristics	PCS	R. Verdolin	–	Grand Ballroom E (4)
4:15 PM – 4:30 PM	*Break (beverages only): Brockhaus Measurements*				*Grand Foyer (4)*
4:30 PM – 5:45 PM	SC Standards	Stds	D. Sauer	–	Grand Ballroom E (4)
6:00 PM – 10:00 PM	Dinner Social: A Magical Evening at the Gardens - Advance on-line registration required; admission confirmed with name badge at bus loading - Take a short bus ride to the Missouri Botanical Gardens; buses will run between the event and hotel throughout the evening - Join your H-J hosts for hors d'oeuvres, buffet dinner, cash bars, roaming magicians and award-winning Mind Kontrol Magic Show - Gardens gift shop will be open for unique gift purchases - See flyer for details	Social			

THURSDAY, OCTOBER 31

No Meeting Registration, Spouse/Companion Tours, or Social Events Planned

TIME	ACTIVITY	TRACK	MTG CHAIR	STATUS	ROOM (FLOOR)
7:00 AM – 8:00 AM	Breakfast - Attendees (no spouses/companions please)				Regency BC (2)
8:00 AM – 9:30 AM	Breakfast - Spouses/Companions (no meeting attendees please)				Gateway East (18)
8:00 AM – 9:15 AM	Technical Presentation 1 Tutorial on Condition Assessment - Parts 1 & 2 - Introduction to PC57.170 Condition Assessment Guide – Brian Sparling & James Cross - Using Bayesian Networks for Condition Assessment (Published Cigre Paper) – Luiz Cheim, Alan Sbravati & Kumar Mani - See flyer on website for details **	Tutorial			Regency DEF (2)
9:15 AM – 9:30 AM	*Break (beverages only)*				Regency Foyer (2)
9:30 AM – 10:45 AM	Technical Presentation 2 Tutorial on Pragmatic Approach to Seismic Protection of High Voltage Transformer Bushings - Jon Bender and Bjorn Vaagensmith - See flyer on website for details **	Tutorial			Regency DEF (2)
10:45 AM – 11:00 AM	*Break (beverages only)*				Regency Foyer (2)
11:00 AM – 12:00 PM	Closing Session - All attendees are encouraged to attend - See separate document on website for meeting agenda		D. Wallach		Regency DEF (2)
12:00 PM	*Lunch (on your own)*				
12:15 PM – 3:00 PM	Technical Tour: The Gund Company (by invitation only) Advance registration required—space is limited! Admission confirmed with badge at bus. Board bus at 12:15PM for a 12:20PM departure. Arrive at The Gund Company at 1:00PM and enjoy lunch followed by a guided tour of the company's electrical insulation manufacturing facility. See website/flyer for more information.	Tech Tour			
1:00 PM – 5:00 PM	WG PC57.15 Std Req Terms & Test Code for V Step Regs	Distr	D. Sauer	I	Regency A (2)
1:00 PM – 5:00 PM	PAR Study IEC_IEEE 60076-57-129 HVDC Converter Trfs	HVDC	W. Ziomek	N	Mills 6 (4)

*** Contact Ed Smith (edsmith@ieee.org) if you are interested in sponsoring a day of coffee breaks at a future meeting.**

**** Contact Tom Prevost (tprevost@ieee.org) if you are interested in making a technical presentation at a future meeting.**

IEEE PES TRANSFORMERS COMMITTEE

FALL 2024 MEETING: OCTOBER 27 TO OCTOBER 31

Hyatt Regency St. Louis at The Arch; St. Louis, Missouri, USA

FRIDAY, NOVEMBER 1

No Meeting Registration, Technical Tours, Spouse/Companion Tours, or Social Events Planned

TIME	ACTIVITY	TRACK	MTG CHAIR	STATUS	ROOM (FLOOR)
8:00 AM – 12:00 PM	PAR Study IEC_IEEE 60076-57-129 HVDC Converter Trfs	HVDC	W. Ziomek	N	Mills 6 (4)

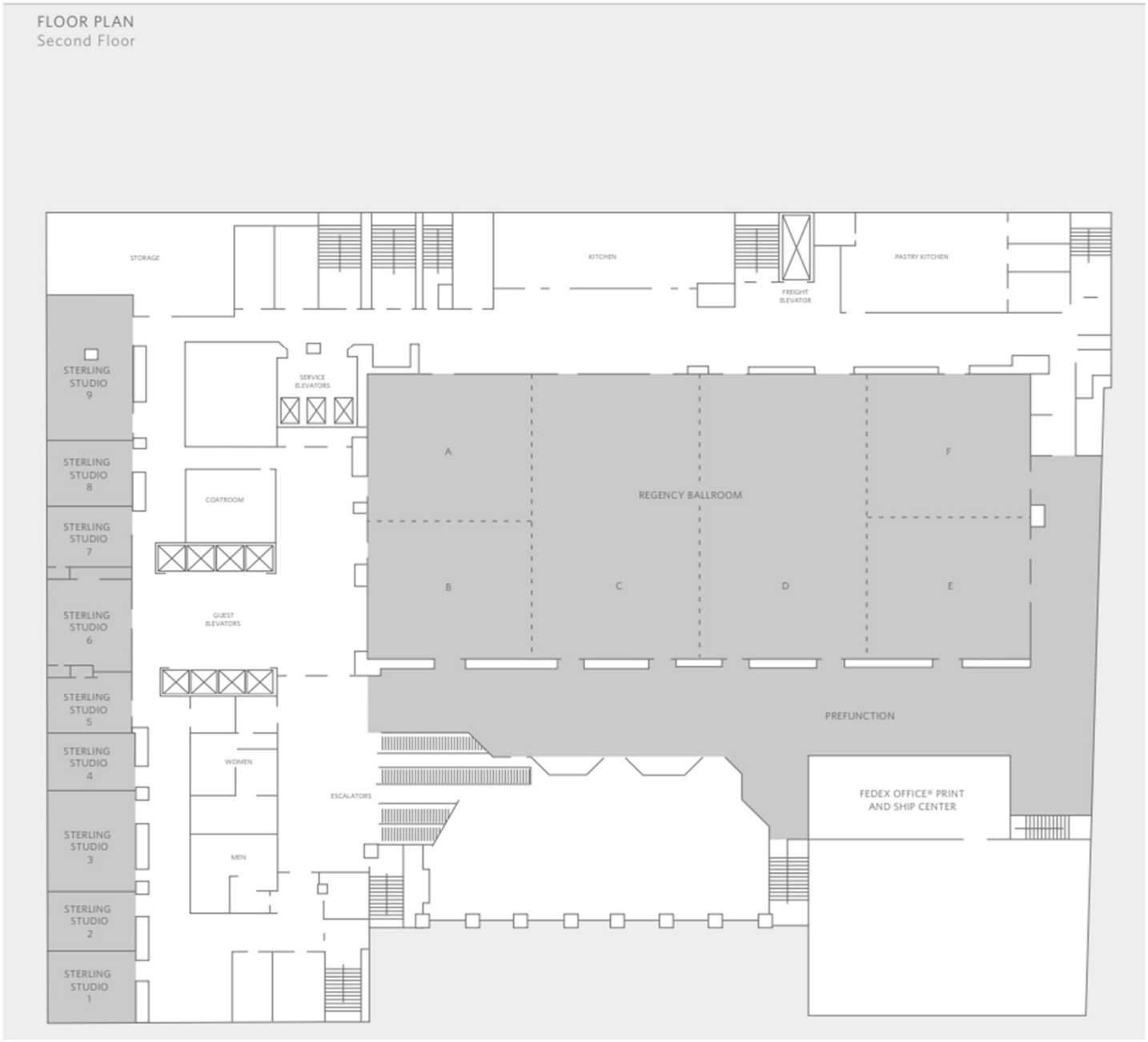
FUTURE COMMITTEE MEETINGS

Spring 2025: Denver, Colorado USA, March 23 – 27, 2025

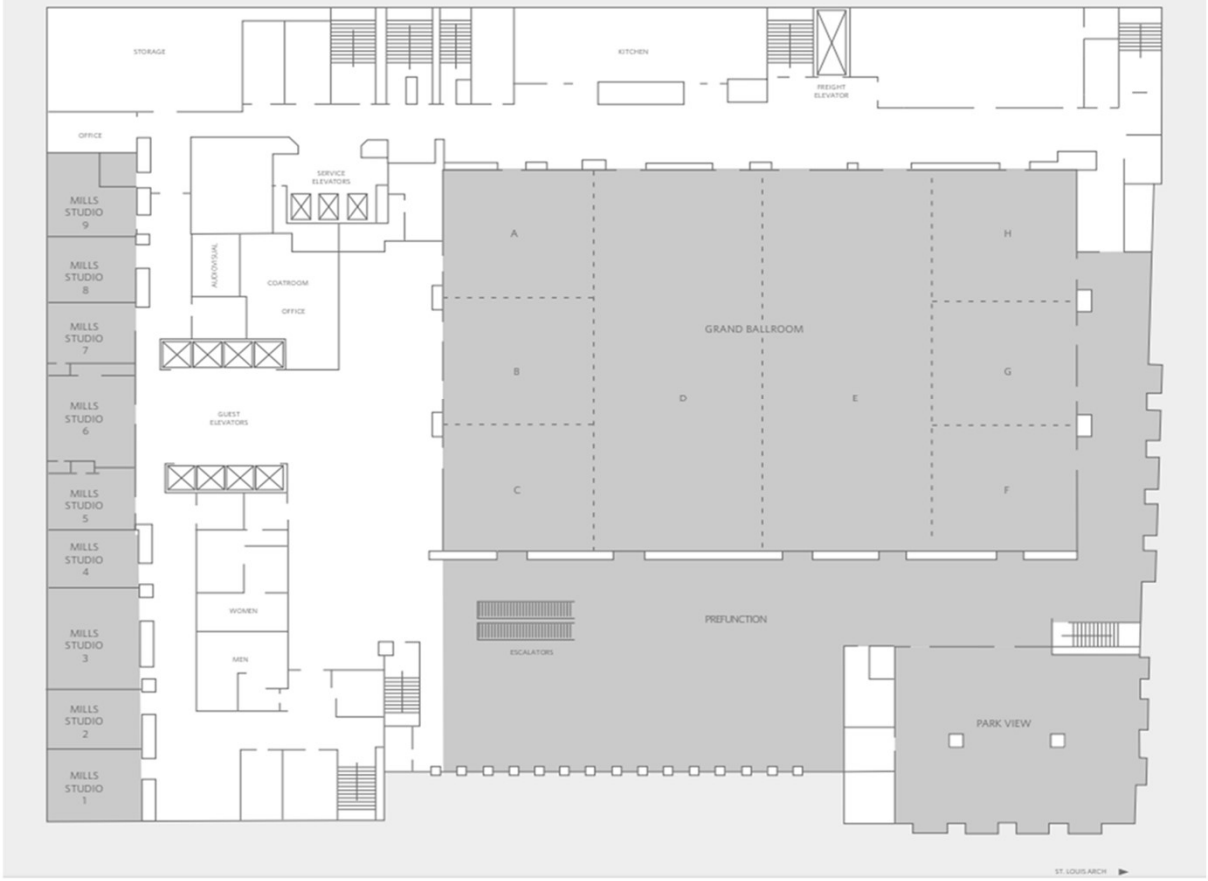
Fall 2025: Bonita Springs, FL USA, October 19 – 23, 2025

Spring 2026: TBD USA, March , 2026

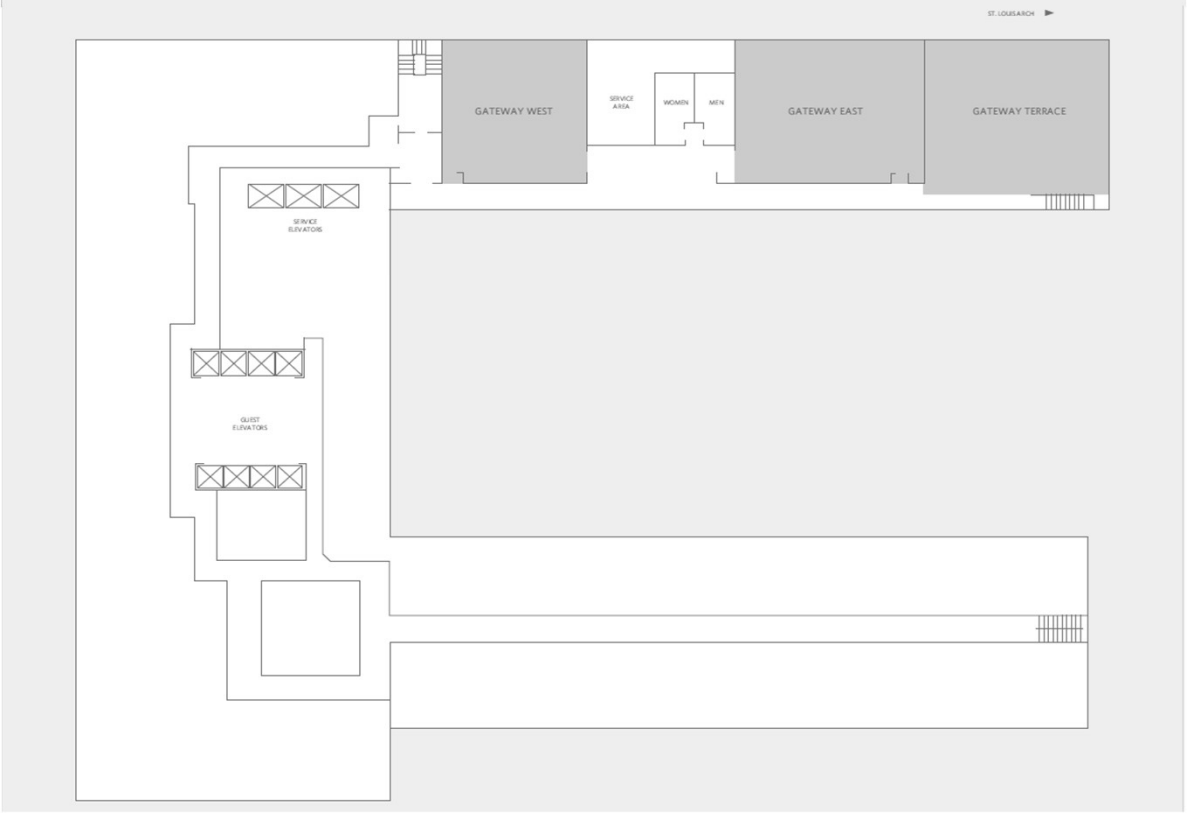
Fall 2026: TBD USA, October , 2025



FLOOR PLAN
Fourth Floor



FLOOR PLAN
Eighteenth Floor



IEEE PES TRANSFORMERS COMMITTEE

SUBCOMMITTEE MEETING LIST

FALL 2024 MEETING: OCTOBER 27 TO OCTOBER 31
Hyatt Regency St. Louis at The Arch; St. Louis, Missouri, USA

Date	Time Start	Time End	Session Title	Track	Chair	Room/Location
10/27/2024	2:00 PM	5:00 PM	Administrative Subcommittee - Closed meeting, by invitation only	Admin	D. Wallach	Park View (4)
10/28/2024	3:15 PM	4:30 PM	WG Bushing Application Guide C57.19.100	Bush	T. Spitzer	Grand Ballroom F (4)
10/29/2024	9:30 AM	10:45 AM	TF Std Require for Bushings C57.19.01	Bush	S. Zhang	Grand Ballroom GH (4)
10/29/2024	1:45 PM	3:00 PM	TF Std Require Bushings above 5kA in Bus Encl. C57.19.04	Bush	S. Digby	Grand Ballroom D (4)
10/30/2024	9:30 AM	10:45 AM	SC Bushings	Bush	E. Weatherbee	Grand Ballroom AB (4)
10/28/2024	9:30 AM	10:45 AM	TF Transf Efficiency & Loss Evaluation (DOE Activity)	Distr	P. Hopkinson	Grand Ballroom D (4)
10/28/2024	3:15 PM	4:30 PM	WG 3-ph Padmount Dist Transf. C57.12.34	Distr	S. Shull	Grand Ballroom GH (4)
10/28/2024	4:45 PM	6:00 PM	WG PC57.15 Std Req Terms & Test Code for V Step Regs	Distr	D. Sauer	Grand Ballroom E (4)
10/29/2024	8:00 AM	9:15 AM	WG Encl Int C57.12.28, C57.12.29, C57.12.31, C57.12.32	Distr	D. Mulkey	Grand Ballroom GH (4)
10/29/2024	9:30 AM	10:45 AM	WG Distr Substation Transf PC57.12.36	Distr	J. Murphy	Grand Ballroom F (4)
10/29/2024	1:45 PM	3:00 PM	WG Electronic Test Data PC57.12.37	Distr	A. Traut	Grand Ballroom F (4)
10/29/2024	3:15 PM	4:30 PM	WG Req for Dist Trf Tank Pressure Coordination C57.12.39	Distr	C. Gayton	Grand Ballroom GH (4)
10/30/2024	9:30 AM	10:45 AM	SC Distribution Transformers	Distr	J. Murphy	Grand Ballroom E (4)
10/31/2024	1:00 PM	5:00 PM	WG PC57.15 Std Req Terms & Test Code for V Step Regs	Distr	D. Sauer	Regency A (2)
10/28/2024	9:30 AM	10:45 AM	TF PD Testing of DTR, Wind & Solar Transf	DiTests	A. Larison	Grand Ballroom E (4)
10/28/2024	1:45 PM	3:00 PM	TF DFR Test Guide C57.161	DiTests	E. Ermakov	Grand Ballroom F (4)
10/28/2024	4:45 PM	6:00 PM	TF Core Ground & Winding Insul. Resistance - Perf & Int.	DiTests	D. Robalino	Grand Ballroom AB (4)
10/29/2024	8:00 AM	9:15 AM	TF on Revision of Impulse Tests C57.12.00 & C57.12.90	DiTests	S. Plante	Grand Ballroom E (4)
10/29/2024	9:30 AM	10:45 AM	WG Detection of Acoustic Emissions from PD C57.127	DiTests	D. Gross	Grand Ballroom AB (4)
10/29/2024	1:45 PM	3:00 PM	TF Cont. Revision to Low Frequency Tests C57.12.90	DiTests	A. Varghese	Grand Ballroom E (4)
10/29/2024	3:15 PM	4:30 PM	WG Recommend Practice Routine Impulse Tests C57.138	DiTests	H. Sahin	Grand Ballroom C (4)
10/30/2024	11:00 AM	12:15 PM	SC Dielectric Test	DiTests	P. Patel	Grand Ballroom E (4)
10/28/2024	11:00 AM	12:15 PM	TF PAR Study Group Guide for TVA Dry-Type Coil C57.12.58	Dry Type	K. Klein	Grand Ballroom E (4)
10/28/2024	1:45 PM	3:00 PM	WG Dry Type Gen. Requirements C57.12.01	Dry Type	C. Ballard	Grand Ballroom AB (4)
10/28/2024	3:15 PM	4:30 PM	WG Test for Eval of Insulation for Dry-Type Transfs P259	Dry Type	D. Stankes	Grand Ballroom C (4)
10/28/2024	4:45 PM	6:00 PM	TF PAR Study Group Unit Substation Transf C57.12.55	Dry Type	S. Nunn	Grand Ballroom C (4)
10/29/2024	8:00 AM	9:15 AM	WG Practice for Install & Operation of Dry Type PC57.94	Dry Type	K. Klein	Grand Ballroom F (4)
10/29/2024	11:00 AM	12:15 PM	WG PC57.12.59	Dry Type	P. Weyandt	Grand Ballroom GH (4)
10/29/2024	4:45 PM	6:00 PM	WG Dry Type Test Code C57.12.91	Dry Type	D. Walker	Grand Ballroom GH (4)
10/30/2024	1:30 PM	2:45 PM	SC Dry Type Transformers	Dry Type	C. Ballard	Grand Ballroom AB (4)
10/28/2024	4:45 PM	6:00 PM	SC HVDC Converter Transfs & Smoothing Reactors	HVDC	U. Radbrandt	Grand Ballroom F (4)
10/31/2024	1:00 PM	5:00 PM	PAR Study IEC_IEEE 60076-57-129 HVDC Converter Trfs	HVDC	W. Ziomek	Mills 6 (4)
11/1/2024	8:00 AM	12:00 PM	PAR Study IEC_IEEE 60076-57-129 HVDC Converter Trfs	HVDC	W. Ziomek	Mills 6 (4)
10/28/2024	9:30 AM	10:45 AM	WG Guide DGA in Ester-Immersed Transformers PC57.155	IF	A. Sbravati	Grand Ballroom F (4)
10/28/2024	11:00 AM	12:15 PM	WG Guide for DGA in Silicone PC57.146	IF	P. Boman	Grand Ballroom C (4)
10/29/2024	8:00 AM	9:15 AM	WG Guide DGA Applied to Factory Temp Rise Test C57.130	IF	B. Forsyth	Grand Ballroom D (4)
10/29/2024	11:00 AM	12:15 PM	TF Guide for Corrosive Sulfur In Oil- Immersed Trfs & Reactors	IF	L. Lewand	Grand Ballroom F (4)
10/29/2024	1:45 PM	3:00 PM	WG DGA in Mineral Oil Transf C57.104	IF	E. teNyenhuis	Grand Ballroom AB (4)
10/29/2024	3:15 PM	4:30 PM	WG Guide for DGA in LTCs C57.139	IF	R. Frotscher	Grand Ballroom F (4)
10/30/2024	3:00 PM	4:15 PM	SC Insulating Fluids	IF	S. Mabrey	Grand Ballroom AB (4)
10/28/2024	9:30 AM	10:45 AM	TF PAR Study Group Temp Rise Test beyond NP C57.119	Ins Life	E. Schweiger	Grand Ballroom AB (4)
10/28/2024	11:00 AM	12:15 PM	WG App of High-Temp Insulation Matrs IEEE 1276 Annex B	Ins Life	K. Biggie	Grand Ballroom D (4)
10/28/2024	1:45 PM	3:00 PM	TF - Test Degredation of Cellulose in Liquid Type Transfs	Ins Life	L. Lewand	Grand Ballroom C (4)
10/29/2024	3:15 PM	4:30 PM	TF Continuous Rev Clause 11 Temp Rise Tests C57.12.90	Ins Life	D. Sankarakurup	Grand Ballroom E (4)
10/30/2024	8:00 AM	9:15 AM	SC Insulation Life	Ins Life	S. Sharpless	Grand Ballroom E (4)
10/29/2024	8:00 AM	9:15 AM	WG Power-Line Carrier Coupling Cap & Volt Transf C57.13.9	Instr TR	Z. Roman	Grand Ballroom AB (4)
10/29/2024	9:30 AM	10:45 AM	TF Instrument Transf. Accuracy	Instr TR	I. Ziger	Grand Ballroom C (4)
10/29/2024	11:00 AM	12:15 PM	WG Requirements for Instrument Transformers PC57.13	Instr TR	D. Wallace	Grand Ballroom E (4)
10/29/2024	1:45 PM	3:00 PM	TF to Merge C57.13.5 into C57.13	Instr TR	T. Sizemore	Grand Ballroom GH (4)
10/30/2024	8:00 AM	9:15 AM	SC Instrument Transformers	Instr TR	T. Sizemore	Grand Ballroom AB (4)
10/30/2024	7:00 AM	8:00 AM	SC Meetings Planning - Arrive early and grab breakfast from Regency BC (2) - All interested individuals welcome	Mtgs	T. Behrens	Sterling Studio 6 (2)

IEEE PES TRANSFORMERS COMMITTEE

SUBCOMMITTEE MEETING LIST

FALL 2024 MEETING: OCTOBER 27 TO OCTOBER 31
Hyatt Regency St. Louis at The Arch; St. Louis, Missouri, USA

Date	Time Start	Time End	Session Title	Track	Chair	Room/Location
10/28/2024	11:00 AM	12:15 PM	WG Eval Guide Environ Impact of Trans & Reactors PC57.151	PCS	J. Kazmierczak	Grand Ballroom AB (4)
10/28/2024	1:45 PM	3:00 PM	TF Audible Sound Revision to Test Code	PCS	R. Girgis	Grand Ballroom D (4)
10/28/2024	1:45 PM	3:00 PM	TF Transformer Data Required for System Studies	PCS	J.Watson	Grand Ballroom E (4)
10/28/2024	3:15 PM	4:30 PM	TF PCS Cont. Revisions to C57.12.00	PCS	T. Ansari	Grand Ballroom AB (4)
10/28/2024	4:45 PM	6:00 PM	WG Std Distributed Photo-Voltaic Transf (DPVTs) C57.159	PCS	H. Shertukde	Grand Ballroom D (4)
10/29/2024	9:30 AM	10:45 AM	TF PCS Cont. Rev. to Test Code C57.12.90	PCS	H. Sahin	Grand Ballroom E (4)
10/29/2024	11:00 AM	12:15 PM	WG Sw Transients Ind by TR/Bkr Interaction PC57.142	PCS	J. McBride	Grand Ballroom D (4)
10/29/2024	4:45 PM	6:00 PM	WG Guide for App of Tert & Stabilizing Windings C57.158	PCS	E. Betancourt	Grand Ballroom D (4)
10/29/2024	4:45 PM	6:00 PM	WG Neutral Grounding Devices C57.32	PCS	S. Kennedy	Grand Ballroom F (4)
10/30/2024	3:00 PM	4:15 PM	SC Performance Characteristics	PCS	R. Verdolin	Grand Ballroom E (4)
10/28/2024	9:30 AM	10:45 AM	WG Guide for Tank Rupture Mitigation C57.156	Power	P. Zhao	Grand Ballroom GH (4)
10/28/2024	11:00 AM	12:15 PM	WG Class 1E Transf.for Nuclear Power Gen Std. 638	Power	C. Swinderman	Grand Ballroom F (4)
10/28/2024	1:45 PM	3:00 PM	WG Guide for Phase Shifting Transf C57.135	Power	E. Schweiger	Grand Ballroom GH (4)
10/28/2024	3:15 PM	4:30 PM	TF Guide Eval & Recon of Liquid Immerse Transf C57.140	Power	S. Som	Grand Ballroom E (4)
10/28/2024	3:15 PM	4:30 PM	WG Std Reqs for Liquid-imersed Power Trans C57.12.10	Power	S. Digby	Grand Ballroom D (4)
10/28/2024	4:45 PM	6:00 PM	WG Failure Investigation & Reporting PC57.125	Power	H. Sahin	Grand Ballroom GH (4)
10/29/2024	8:00 AM	9:15 AM	WG Guide for Life Tests of Switch Contacts C57.157	Power	A. Sewell	Grand Ballroom C (4)
10/29/2024	9:30 AM	10:45 AM	WG Condition Assessment Guide PC57.170	Power	K. Mani	Grand Ballroom D (4)
10/29/2024	11:00 AM	12:15 PM	WG Standard Requirements for Arc Furnace Transf. C57.17	Power	D. Corsi	Grand Ballroom C (4)
10/29/2024	1:45 PM	3:00 PM	WG Liquid Immersed Phase- Shifting Transf 60076-57-1202	Power	E. Schweiger	Grand Ballroom C (4)
10/29/2024	3:15 PM	4:30 PM	WG Guide for Install & Maintenance of Power Trf C57.93	Power	S. Reed	Grand Ballroom D (4)
10/29/2024	4:45 PM	6:00 PM	WG Guide for Paralleling Transformers C57.153	Power	M. Tostrud	Grand Ballroom C (4)
10/30/2024	1:30 PM	2:45 PM	SC Power Transformers	Power	R. Musgrove	Grand Ballroom E (4)
10/28/2024	9:30 AM	10:45 AM	TF IEEE-IEC Cross Reference	Stds	A. Washburn	Grand Ballroom C (4)
10/29/2024	3:15 PM	4:30 PM	WG Reverse Power Flow Effects on Trans PC57.133	Stds	R. Hogg	Grand Ballroom AB (4)
10/29/2024	4:45 PM	6:00 PM	WG Guide for Field Testing PC57.152	Stds	M. Ferreira	Grand Ballroom E (4)
10/30/2024	4:30 PM	5:45 PM	SC Standards	Stds	D. Sauer	Grand Ballroom E (4)
10/28/2024	11:00 AM	12:15 PM	WG 1ph Submersible Transformers PC57.12.23	STNP	A. Traut	Grand Ballroom GH (4)
10/29/2024	11:00 AM	12:15 PM	WG Liquid-immersed Sec. Network TRs C57.12.40	STNP	J. Vartanian	Grand Ballroom AB (4)
10/29/2024	4:45 PM	6:00 PM	WG Guide for Mitigating Corrosion on Sub Trfs C57.12.53	STNP	W. Elliott	Grand Ballroom AB (4)
10/30/2024	11:00 AM	12:15 PM	SC Submersible Transf. & Network Protectors	STNP	G. Payerle	Grand Ballroom AB (4)

IEEE PES Transformers Committee
Fall 2024 Meeting
St. Louis, Missouri

Part 1: Introduction to IEEE PC57.170 Guide for the Condition Assessment of Liquid Immersed Transformers, Reactors and Their Components

— Technical Presentation —
Thursday, October 31, 2024

By Brian Sparling and James Cross

1. Abstract

The objective of this guide is to adequately equip transformer users and asset managers with a process and tool to properly assess the technical condition of their in-service transformer fleet and their fleet of spare units, giving them a basis to identify units that may be suitable for major or minor repairs or for making critical decisions about operations, refurbishment, or replacement.

Many asset managers currently use a 'health index' for the purpose of identifying assets in need of attention. However, in many cases the index does not provide any indication of how quickly the worst transformers on the list need to be assessed, nor does it provide any indication of the type of action needed, i.e. replace, repair or refurbish. Many indices also fail to provide any indication of the confidence the asset manager should have in the index's assessments. Furthermore, many asset managers use their 'health index' to help determine which transformers in their fleet to replace. However, some "unhealthy" transformers can be (relatively) easily repaired and, therefore, do not need to be replaced. A 'health index' may, therefore, not be the ideal tool to determine transformer replacement.

Chapters 1 through 7 of the guide introduce a process that can be used to assess a transformer and develop transformer assessment indices to suit the needs of the user. These chapters also introduce the concept of a scoring matrix, which can be developed and used to ensure that consistent scores are allocated to each transformer failure mode or mechanism being assessed, thereby offering a time scale for action.

Chapters 8 through 12 and Annexes A and B deal with the subcomponents of a transformer and discuss failure modes and mechanisms as well as methods of diagnosing the failure modes and mechanisms for each subcomponent. These sections contain mostly existing knowledge.

Annex A provides tables of diagnostic information that are formatted to allow assessment using the methods described in the technical brochure. The information is from IEC and IEEE guides, CIGRE experts, and other industry experts. Users can use these values as a starting point when assessing a transformer but should evaluate if the values are suitable for their fleet of transformers, taking into consideration operating conditions, maintenance practices, and the time scales used in the scoring matrix mentioned above. Annex B provides several examples illustrating how to generate different types of transformer assessment indices and how to use the different scoring methods.

2. Learning Objectives

This technical presentation provides attendees with opportunities to learn about the following:

- Overview of transformer asset management and condition assessment requirements.
- Analysis of different types of indices, how they may be constructed, and their limitations.
- Guidance on dealing with missing or obsolete information, including actual examples.
- Detailed examples on developing diverse types of indices, including replacement, refurbishment and repair indices.
- Guidance on key transformer components that are considered necessary to build a transformer assessment index, along with suitable diagnostic techniques.

3. Learning Outcomes

By attending this technical presentation, attendees will gain an understanding of the five key steps to developing a transformer assessment index (TAI):

1) Determine the purpose of the transformer assessment score and index.
2) Identify the failure modes to be included in the TAI.
3) Determine how each failure mode will be assessed.
4) Design a calibrated system for categorizing failure modes (scoring matrix).
5) Calculate a TAI score for each transformer.

4. Presenters' Biographies

Brian Sparling is a Life Senior Member of IEEE and a senior transformer technical manager at Kinectrics with over 20 years of experience in the field of power and distribution transformers. For the last 31 years, he has been involved in all aspects of on-line monitoring, diagnostics and condition assessment of power transformers. Brian has authored and co-authored more than 34 technical papers on several topics dealing with the monitoring and diagnostics of transformers and has worked on many guides and standards with the Canadian Electricity Association, IEEE Transformers Committee and CIGRÉ A2 Transformer Committee.

James G. Cross is currently the director of transformer services at Kinectrics in Toronto, Canada, where he leads Kinectrics' testing and consulting efforts in the areas of power, distribution, and specialty transformers. As a subject matter expert in the field of transformer engineering, he lends his knowledge and expertise in transformer design and manufacturing to related project areas at Kinectrics, including asset management, transformer condition appraisals, design reviews, in-plant test witnessing, field testing, forensic and failure mode analyses, component and materials evaluation, and transformer diagnostics.

After graduating from the University of Manitoba with a Bachelor of Science Degree in Electrical Engineering, James has worked with different transformer OEMs in project design engineering for applications up to 500kV, 500 MVA class transformers while also serving as the technical liaison between the factories and customers around the world. His employment history also includes time with Weidmann as its manager of R&D/innovation for 18 years before joining Kinectrics.

James is a Life Senior Member of IEEE and a former Chairperson of the IEEE Winnipeg Section. He is currently active in the IEEE Standards Association on several working groups developing the C57 series of standards and guides. He is a registered Professional Engineer in the Province of Manitoba, co-authoring several papers related to electrical insulating materials, testing and transformer diagnostics. He has also presented on insulation design and transformer materials testing at several technical conferences.

IEEE PES Transformers Committee
Fall 2024 Meeting
St. Louis, Missouri

Part 2: Application of Probabilistic Bayesian Networks on Transformer Condition Assessment

— Technical Presentation —
Thursday, October 31, 2024

By Dr. Luiz Cheim, Alan Sbravati and Kumar Mani

1. Abstract

Traditional transformer assessment techniques are developed based on available data extracted from transformers. Aiming to estimate the risk of transformer failure, most conventional approaches were developed centered on combining results from online monitoring systems and offline test results, focusing more on ranking units based on the data. Common strategies include, among others: weighted averages, criticality indexes and traffic lights, focusing more on maintenance prioritization, interventions, and budget allocations. The method currently applied by the company represented by some of the authors already incorporates the probability of failure estimation, based on proprietary knowledge and experience. The current method expands the approach, allowing users' knowledge and experience, as well as user-specific statistics, to be incorporated in the analytical process, adding a probabilistic layer to the typical tree of failure modes. Rather than the test results themselves, the input data to the model is the "belief" that the data indicates the probability the component or system will fail or not. For instance, abnormal results in a DGA test may impact the risk of failure in different components of the event tree, which will further impact associated risks of the transformer failing. Based on the concept of conditional probabilities in Bayesian statistics, this method allows inferring the expected impact/criticality of each type of issue (evidence propagation) on the continuous operation of the transformer. The likelihood of each failure mode can be estimated either based on the statistics of international transformer reliability surveys or on the experience of each asset management group. The Bayesian network analysis allows the bi-directional assessment of the system, both for checking the impact of each root cause on transformer operation (inference) and to investigate the likelihood of a given cause, should a situation be identified (diagnostics).

2. Learning Objectives

This technical presentation provides attendees with opportunities to learn about the following:

- A probabilistic method to assess transformer condition
- Combination of probabilistic techniques and failure modes effects analysis (FMEA)
- Belief propagation networks

3. Learning Outcomes

By attending this technical presentation, attendees will gain an understanding of the following:

- A sound statistical technique to be used in support of transformer condition assessment
- Application examples of technique

4. Presenters' Biographies

Dr. Luiz Cheim has been with ABB/Hitachi Energy since 2009, working as a senior principal in the Global R&D organization, with an extensive list of publications and work carried out as a Senior Member of the IEEE Transformers Committee and a Distinguished Member of CIGRE since 2006. His major activities are on the development of power transformer condition assessment and performance models, with the application of sophisticated statistical tools, AI/machine learning algorithms, holding a PhD in Electrical Engineering and AI Certificate courses from MIT and Stanford University. Luiz already holds more than 20 granted patents with several new applications in progress.

Alan Sbravati has over 20 years of experience in the transformer industry, having spent most of this time in positions related to R&D on power transformers and insulation materials. Alan is currently the R&D principal engineer and innovations program manager for power transformers with Hitachi Energy. He is a member of the IEEE PES Transformers Committee, occupying positions of secretary of the Insulating Fluids Subcommittee (IFSC) and chair of working groups and task forces.

Kumar Mani is a Senior Member of IEEE. He has been working for the last 21 years with Duke Energy in various roles and is currently a transformer subject matter expert for Duke Energy's Renewable and Regulated Energy Generation Group. He is an active member of the IEEE PES Transformers Committee and is responsible for developing asset management strategies for the entire Duke Energy generation transformer fleet.

IEEE PES Transformers Committee
Fall 2024 Meeting
St. Louis, Missouri

Pragmatic Approach to Seismic Protection of High Voltage Transformer Bushings

— Technical Presentation —
Thursday, October 31, 2022

By Jon Bender and Bjorn Vaagensmith

1. Abstract

Power transformers are critical to any grid, and large (high voltage) power transformers are known to be susceptible to seismic failure. Historically, earthquakes have damaged large power transformers through internal electrical failures, bushing failures, anchorage failures (inadequate anchoring), oil conservator tank failures, and fires from oil leaks, all of which require replacing the transformer or major, time-consuming repairs. All these failure modes are generally a function of the system's structural dynamics. With a forthcoming amendment to IEEE 693 which requires consideration of these dynamics, understanding how to mitigate problematic power transformer dynamics is more critical than ever. This amendment pays particular attention to large (>138kV) bushings and surge arresters, as these components have been frequent failure points during recent earthquakes.

Come and learn about ways to identify and mitigate problematic transformer structural dynamics to improve seismic bushing performance.

2. Learning Objectives

This tutorial provides opportunities to learn about the following:

- Review the dynamic behavior of transformer bushing systems under seismic loads
- Understand critical load path elements, and how their stiffness can impact the seismic bushing stress
- Discuss various solutions to reduce seismic bushing demands/amplification

3. Learning Outcomes

By attending this tutorial, attendees will gain an understanding of the following:

- Basic understanding of designs that are at risk of seismic amplification
- State of the art methods for mitigating seismic amplification
    a. Structural design considerations
    b. Seismic isolation

4. Presenters' Biographies

Jon Bender (PES member) received his master's degree in civil/structural engineering from Boise State University. He is the principal research investigator at WEGAI Research, LLC, and serves on the IEEE 693 working group. Jon has extensive experience with seismic analysis and testing of substation equipment and has authored several peer-reviewed publications on transformer bushing seismic amplification.

Dr. Bjorn Vaagensmith (IEEE member) currently works as an electrical engineering researcher at Idaho National Laboratory, where he leads projects centered around power transformers, power systems data acquisition solutions, grid hardening and resilience, and large-scale power studies. He received his BS Degree in Engineering with an emphasis in Electrical Engineering from Dordt College, Iowa and his MS and PhD degrees in Electrical Engineering with an emphasis on Electronic Materials and Devices from South Dakota State University.

H-J Technical Tour

The H-J Family of Companies
Monday, October 28, 2024






The H-J Family of Companies, a leading supplier of transformer and switchgear components worldwide, is pleased to host a tour of one of its St. Louis facilities during the Fall 2024 IEEE Transformers Committee meeting. You will receive a complete tour of the facility, which includes tooling, mold and foundry pattern design and manufacturing, EPOXY molding, conductor fabrication, plating, and distribution center. Most importantly, you will also visit H-J's high voltage test laboratory, which will be the technical focus of the tour. The laboratory allows H-J to stay on the vanguard of its industry and further advance its product offerings through high quality research and development. Capabilities include electrical, mechanical, environmental and chemical testing and analysis. The H-J Family of Companies can now provide test services for its entire spectrum of customers, including utilities, OEMs, repair shops, universities and others. All testing is in accordance with applicable standards, including ANSI/IEEE, NEMA, CSA, IEC and even specific customer specifications.

The tour will be preceded by a social hour and followed by dinner catered by Annie Gunns, a premier restaurant in St. Louis.

Itinerary

(times are approximate)

6:15 pm	Board bus at HYATT REGENCY ST. LOUIS
6:30 pm	Bus departs HYATT REGENCY ST. LOUIS
7:00 pm	Arrival at The H-J Family of Companies
7:00 pm	Social time
7:30 pm	Tours of The H-J Family of Companies facility start
8:15 pm	Dinner catered by Annie Gunns*
9:15 pm	Board bus for return to the HYATT REGENCY ST. LOUIS
9:45 pm	Arrive back at the HYATT REGENCY ST. LOUIS

**Please specify dietary restrictions at registration.*

TOUR IS OPEN TO ALL**
Spouses/Companions are welcome.

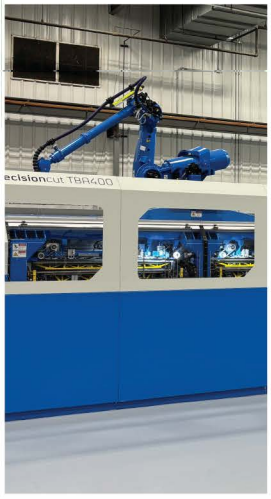
***The H--J Family of Companies reserves the right to approve guests prior to the event date, and any required adjustments will be communicated in advance of the visit.*

IEEE PES
Power & Energy Society®

IEEE PES Transformers Committee
Fall 2024 Meeting

Meeting hosted by: THE H/J FAMILY® OF COMPANIES ▪ SINCE 1969 ▪

Technical Tour
WEG Transformers USA
Tuesday, October 29, 2024






WEG Transformers USA is a leading supplier of distribution and power transformers throughout North America. We are pleased to host a tour at our distribution transformer factory, which opened in November 2021. **The event will include** an overview of all three **WEG factories,** along with a detailed tour of our distribution transformer factory.

WEG Transformers USA is excited to welcome ***IEEE delegates to our*** distribution transformer facility to learn about our manufacturing processes.

Itinerary
(times are approximate)

6:15 pm	Board bus at Hyatt Regency STL
6:25 pm	Bus departs for WEG
7:15 pm	Overview of WEG Transformers USA business
7:40 pm	Distribution transformers factory tour
8:15 pm	Dinner at the WEG factory*
9:00 pm	Board bus for return to Hyatt Regency STL

**Please specify dietary restrictions at registration.*

TOUR IS OPEN TO ALL**
Spouses/Companions are welcome.

***WEG Transformers USA reserves the right to approve guests prior to the event date, and any required adjustments will be communicated in advance of the visit.*

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Fall 2024 Meeting

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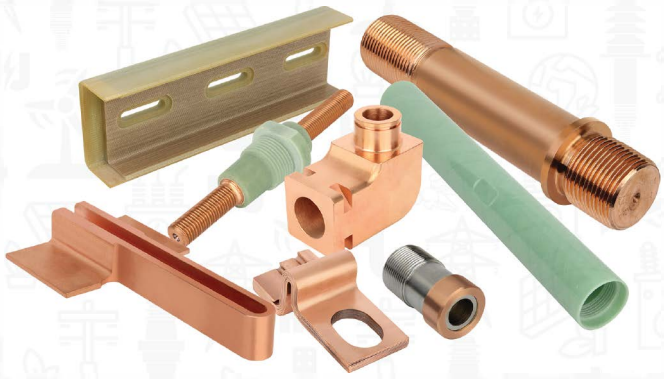
Technical Tour
The Gund Company

Thursday, October 31, 2024





The Gund Company is the industry leader in the design and manufacture of electrical insulation applications for transformers, switchgear, power electronics, and rotating equipment.
By partnering with trusted global material suppliers and through backwards integration, the Gund Company has become a top supplier of electrical insulation in North America.

The Gund Company is excited to welcome ***IEEE delegates to our St. Louis*** facility to learn about our manufacturing processes.

Itinerary

(times are approximate)

12:20 pm	Bus departs HYATT REGENCY ST. LOUIS
1:00 pm	Start of tour
	Lunch provided by the Gund Company*
3:00 pm	Return to Hyatt Regency

**Please specify dietary restrictions at registration.*

TOUR IS OPEN TO ALL**
Spouses/Companions are welcome.

***The Gund Company reserves the right to approve guests prior to the event date, and any required adjustments will be communicated in advance of the visit.*

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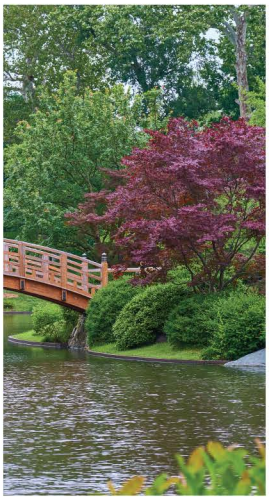
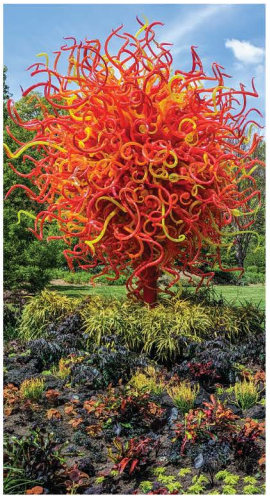
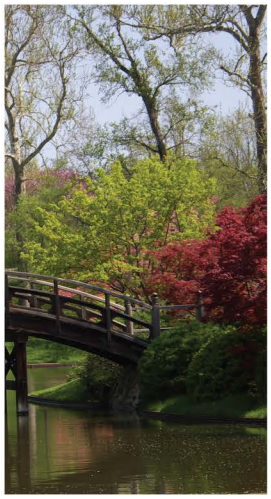
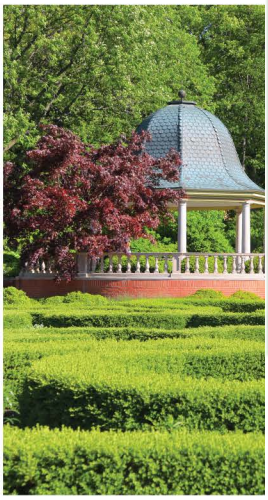
A Magical Evening at the Gardens

Dinner Social

Missouri Botanical Gardens
Wednesday, October 30, 2024

The H-J Family of Companies invites you to experience a **"Magical Evening at the Gardens."** The beautiful **Missouri Botanical Gardens** will be our venue for the evening. Not only will you be able to roam and enjoy the beautiful Missouri Botanical Gardens, but you will also be entertained during the evening with a truly magical experience. During the **cocktail and hors d'oeuvres** hour, there will be roaming **magicians doing magic**, including sleight of hand, mind reading, and illusion, with a little humor mixed in. Following dinner, there will be a **formal Mind Kontrol Magic Show** featuring illusions, mind reading and other special magic. Your magicians for the evening will be the internationally acclaimed, **award-winning illusionists, Michael D'Urzo and Robert Testa.**

Both have performed at major events and venues around the world. In addition, the Missouri Botanical Gardens gift shop will be open for anyone wishing to take home a souvenir.

Robert Testa (comedy magician)

Dinner Buffet Menu*:

Rustic rolls and whipped butter; baby kale and iceberg lettuce, ceasar dressing, asiago croutons; white wine-marinated chicken roasted with figs and olives; lasagna of grilled vegetables, ricotta and goat cheese; herb-stuffed beef tenderloin with Tuscan olive-raisin sauce; rosemary roasted baby potatoes; balsamic grilled vegetables; regular/decaf coffee and hot tea station; assorted mini desserts.

**Please specify dietary restrictions at registration.*

Itinerary

(times are approximate)

6:00 pm	First bus departs for the Botanical Gardens
6:30 pm	Cash bar & hors d'oeuvres; gift shop open
7:30 pm	Dinner
8:00 pm	Gift shop closes
8:30 pm	Mind Kontrol Magic Show
10:00 pm	Last bus returns to the Hyatt Regency

Shuttle buses will run between the hotel and Gardens starting at 6:00pm until 7:00pm and then back starting at 9:00pm.

IEEE PES Power & Energy Society®

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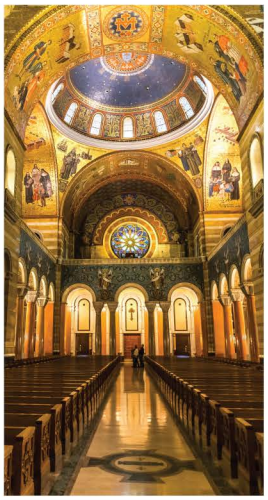
City & Brewery tour

Spouse/Companion Tour
Monday, October 28, 2024







Begin your day with a driving tour of St. Louis. Learn the history of St. Louis with a downtown driving tour and a tour of the **historic neighborhoods of Soulard and Lafayette Square.** Visit and tour the **Cathedral Basilica,** whose interior is adorned in 83,000 square feet of mosaic tiles, one of the largest such collections in the world.

Enjoy lunch at **Favazza's Restaurant,** located in the famed **Italian neighborhood known to locals at "The Hill."** Enjoy a traditional Italian meal, including an appetizer of toasted ravioli, Sicilian chicken, Italian salad, fresh Italian bread, a side of pasta and a non-alcoholic beverage (vegetarian and gluten-free options are available with advance notice). **For dessert,** we visit a St. Louis original, **Ted Drewes Frozen Custard.** This unique, one-of-a-kind custard stand has been in operation since 1929 and has never been franchised. You'll enjoy either a small hot fudge sundae or a mini chip concrete.

In the afternoon, **we visit Anheuser-Busch Brewery,** where you will be guided through a blend of rich brewing heritage, state-of-the-art technology, and extraordinary architecture. Learn how the brewery product is made from beginning to end, stop in the aging cellars, see the world-renowned Clydesdale horses and end in the hospitality room with free product samples and time to shop the amazing gift shop.

***Cost includes** luxury motorcoach, professional guide, tour of Cathedral Basilica, lunch at Favazza's, dessert at Ted Drewes, tour of Anheuser-Busch,* gratuities.

Itinerary

(times are approximate)

9:30 am	Board bus at HYATT REGENCY ST. LOUIS
9:30 am	Bus departs HYATT REGENCY ST. LOUIS
10:00 am	Tour the city of St. Louis and the Cathedral Basilica
12:00 pm	Lunch at Favazza's on The Hill*
02:00 pm	Tour Anheuser Busch
4:00 pm	Arrive back at the HYATT REGENCY ST. LOUIS

Please specify dietary restrictions at registration.

IEEE PES Power & Energy Society®

IEEE PES Transformers Committee
Fall 2024 Meeting

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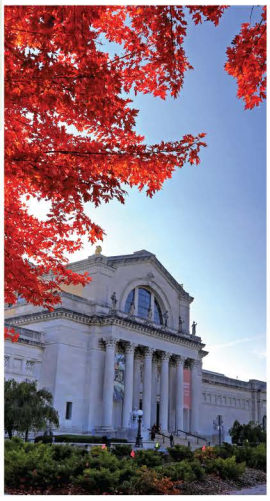
Forest Park & Kirkwood

Spouse/Companion Tour
Tuesday, October 29, 2024




Begin your day with a driving tour of Forest Park, home of the **1904 World's Fair.** Visit the **Missouri History Museum**, home to a variety of exhibits, programs, and events for visitors of all ages and interests. Today you will enjoy a docent-led tour of the re-imagined **1904 World's Fair Exhibit.**

Enjoy lunch at One 19 North Tapas Wine Bar. Specify meal selection in notes at time of registration:

- **Bistro Burger -** Charbroiled 8 oz Angus beef burger, topped with white cheddar cheese, sliced tomato, bacon, greens, bistro sauce, & an over-easy egg (can do without egg as well)
- **One 19 Chicken Salad -** Creamy chicken salad served on toasted cranberry bread
- **Tilapia Sandwich -** Sauteed bronzed tilapia filet topped with sauteed spinach, caramelized onions on a toasted French roll with a caper remoulade spread
- **Harvest Salad -** Mixed greens, tossed with a roasted fig vinaigrette, topped with bacon bits, shredded smoked gouda cheese, dried cranberries, apple slices and grilled chicken

In the afternoon, enjoy the quaint neighborhood of **Kirkwood, MO,** where you'll be able to browse the many shops, boutiques and Farmer's Market.

***Cost includes** luxury motorcoach, professional guide, visit to the Missouri History Museum, lunch at One 19 North Tapas & Wine Bar, gratuities.*

Itinerary

(times are approximate)

9:15 am	Board bus at HYATT REGENCY ST. LOUIS
9:30 am	Bus departs HYATT REGENCY ST. LOUIS
10:00 am	Tour to Forest Park
12:00 pm	Lunch at One 19 North Tapas Wine Bar*
2:00 pm	Tour to Kirkwood, MO
4:00 pm	Arrive back at the HYATT REGENCY ST. LOUIS

Please specify dietary restrictions at registration.

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