



71st Annual Conference 2024 – Orlando, Florida, USA

Petroleum and Chemical Industry
Committee Technical Conference,
and Standards Committee Meetings
September 16 – 18, 2024

Conference Program

Industry Standards Working Group Meetings – September 12th to 15th

Petroleum and Chemical Industry Committee Conference – September 16th to 18th

PCIC Conference Tutorials – September 19th

Conference Website – <https://www.pcic2024.com/>



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THE IEEE IAS PETROLEUM AND CHEMICAL INDUSTRY COMMITTEE CONFERENCE, ORLANDO, FLORIDA

The Petroleum and Chemical Industry Committee (PCIC) of the Industry Applications Society of IEEE invites you to attend its 71st annual conference in Orlando, Florida. The 2024 conference technical presentations will be held Monday, September 16th, through Wednesday September 18th, and the conference tutorials will be held on Thursday, September 19th.

Under the sponsorship of the IEEE Industry Applications Society (IAS), the PCIC Conference has become the premier annual applications meeting for practicing electrical engineers. Following successful conferences in New Orleans and San Antonio, the Orlando Local Conference Committee is planning an outstanding event for 2024.

The PCIC conference is noted for the high quality and practical application of its technical papers. The technical program this year will feature 63 papers focusing on the technology and issues faced by electrical engineers in the petroleum, chemical, and mining industries.

In recent years, people have travelled from around the world to attend this informative and entertaining conference. PCIC sponsored “Pre-Conference” working groups and standards activities begin on Thursday, September 12th, 2024. During the last day of the 2024 conference, the PCIC hosts tutorials to provide for the transfer of knowledge from experienced industry leaders to enlightened individuals looking for continued education.

Welcome to Orlando
IEEE/IAS/PCIC 2024

The Orlando Local Conference Committee and I would like to extend a warm welcome and open invitation to attend the 71st annual PCIC technical conference, which, for the first time, is going to be held at the Hyatt Regency Orlando on International Drive. Located on what is commonly known as I-Drive an 11-mile thoroughfare which reaches from Universal in the north to Disney in the south, the Hyatt Regency Orlando is a centrally located conference hotel with fantastic views of the area's activities from tower 2, the second tallest building in Orlando.

'Why Orlando?' has been the question many have asked. Well, in the 71-year history of PCIC, the conference has never been held in the state of Florida. Florida boasts 6192 IEEE members and 222 IAS members and has been embraced by many other IEEE technical conferences. Art Maldonado, a long-time PCIC member, wanted to bring the conference to his state. He was the original conference chair and passed away suddenly in 2021. Orlando is one of the most visited places in the world, with over 60 million tourists each year.

PCIC is an annual event that provides learning opportunities spanning from technical paper presentations and tutorials related to practical applications in your business, providing tremendous value for attendees. In fact, the registration fee continues to be lower than many other professional conferences and choosing Orlando to host the conference was a decision made with that in mind. Networking opportunities abound at PCIC, allowing you to meet many leading engineers in the process industries, making PCIC the leading venue for such introductions. Additionally, if you want to contribute to the profession, there are opportunities to participate in technical papers, tutorials, codes, and standards, PCIC subcommittees, and various other avenues of engagement. PCIC continues to enhance sponsorship participation programs that are generously supported by manufacturers, representatives, distributors, and others in the form of hospitality suites, large conference events, and "in-kind" donations. We sincerely appreciate the support of our participating sponsors for helping to promote and advance the technical and professional aspects of PCIC.

In addition, the Hyatt Regency Orlando is centrally located on I-Drive with the I-ride Trolley which will take you to International Drive attractions, shopping, dining, and entertainment. For more information on enjoying Orlando, please visit the Visit Orlando website at PCIC 2024 (orlandomeeting.com).

Discover a world of knowledge, innovation, and connections at PCIC by joining the Orlando Local Conference Committee and myself this September 14-19, 2024, at the Hyatt Regency Orlando.

Donald G. Dunn, P.E., IEEE Fellow, ISA Fellow, CAP
 PCIC 2024 Local Conference Committee Chair
 Principal Consultant
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 Consulting Engineers
 1200 Saint Charles Avenue
 New Orleans, LA 70130



71st IEEE IAS Petroleum and Chemical Industry Committee Conference

Petroleum and Chemical Industry Committee Officers

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Vice Chair	Paul Sullivan	DuPont
Secretary	Robert Durham	THEWAY Labs

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Emeritus – Chair	Leo Berg	L Berg Technical Services
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Emerging Technologies Technical Subcommittee – Chair	Greg Clement	Chevron
International Technical Subcommittee – Chair	Allen Kachurowski	Shell Canada Ltd.
Marine Industry Technical Subcommittee – Chair	Ethan Dong	Chevron
Midstream Technical Subcommittee – Chair	Manish Verma	TMEIC
Mining Industry – Chair	Hélder de Paula	Federal University of Uberlândia (UFU)
Production Technical Subcommittee – Chair	Matthew Marchiano	Chevron
Refining Technical Subcommittee – Chair	Giovanni Parra	Fluor
Safety Technical Subcommittee – Chair	Tony Parsons	Eaton

Introducing your PCIC 2024 Orlando Local Committee



Orlando 2024 PCIC Local Conference Committee

Chair	Donald Dunn	Waldemar S. Nelson and Company
Vice-Chair	Murty Yalla	Hubbell-Beckwith
Secretary	Jack Neelis	Waldemar S. Nelson and Company
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Facilities Meeting Planner	Marie Madden	HPN Global
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Guest Hospitality Co-Chair	Heather Paes	Rick Paes
Guest Hospitality Co-Chair	Monica DeJohn	Wholesale Electric
Logistics Chair	Wil Gruber	ABB
Program Publication	Marty Cole	Hubbell Canada
Publications Chair	Mike Caruso	ABB Baldor
Registration Chair	Lana Deleon	TECO
Registration Vice-Chair	Dhruv Patel	Hubbell
Signs, Printing Chair	Cameron Nero	The Okonite Company
Signs, Printing Vice-Chair	Mark Fazio	The Okonite Company
Signs, Printing Vice-Chair	Johnny Wynn	Retired - The Okonite Company
Social Media, Marketing Chair	Dean Bickerton	The Reynolds Co.
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Sponsorship Secretary	Keith Lyles	Marathon
Sponsorship Vice-Chair	Lily Fontenot	Roxtec
Website Co-Chair	Javier Garza	Bartec
Website Co-Chair	Duane Brossart	nVent
Other Volunteers	Mike McIntyre	R.Stahl
Other Volunteers	Gail Vollrath	Hubbell



IEEE IAS Petroleum and Chemical Industry Committee Conference Mission

To provide an international forum for the exchange of electrical applications technology relating to the petroleum and chemical industry, to sponsor appropriate IEEE standards activity for that industry, and to provide opportunities for professional development.

PCIC Strategies

1. The IEEE IAS Petroleum and Chemical Industry Committee Conference Annual Technical Conference will be held in North American locations of petrochemical industry strength, and its location will be rotated annually in an effort to attract national and international participation.
2. The PCIC will proactively promote participation by a broad base of PCIC representatives, with an emphasizing on both early-career younger and retired engineers.
3. PCIC Conference attendees will be encouraged to participate in technical activities including authorship of papers and tutorials and participation in standards development.
4. The PCIC develops technical standards relevant to the petroleum and chemical industry that drive technology development and standardization and coordinates these activities with the IEEE Standards Association and other standards making bodies.
5. The PCIC will offer tutorials directed to enhancing the technical, communication, and interpersonal skills of petroleum and chemical industry engineers.
6. The quality of the PCIC paper offerings is essential for the PCIC mission to succeed and will be given highest priority. Preference in paper selection will be given to practical, application-oriented papers.
7. The PCIC will actively seek opportunities for rewarding participating members for contributions to the PCIC and the profession.
8. Technical Subcommittee areas of specialty will be continuously evaluated and updated to reflect the evolving needs of the industry.
9. User, manufacturer, consultant, and contractor participation will be encouraged in the activities of the PCIC to strengthen the conference technical base.
10. The PCIC will develop international collaborative partnerships as deemed appropriate to promote the PCIC Mission further.





Scope of the IEEE IAS Petroleum and Chemical Industry Committee Conference Technical Subcommittees

The IEEE IAS Petroleum and Chemical Industry Committee Conference technical subcommittees solicit technical papers to enable the exchange of electrical applications technology related to the petroleum and chemical industry.

Chemical Subcommittee

The Chemical Technical Subcommittee provides a forum for IEEE PCIC members to communicate technical papers related to the production of chemicals.

Emerging Technologies Subcommittee

To advance electrical engineering technology, applications, technical papers and industry standards for the emerging technologies within the petrochemical industry. This subcommittee provides an international forum to publish technical papers related to these topics at the annual PCIC conference.

International Subcommittee

The scope of the International Subcommittee is to provide technical sessions presented by non-North American authors that would be of interest to conference attendees with a purpose of bringing international participation to the North America PCIC Conference.

Marine Industry Subcommittee

The Marine Industry Subcommittee (MIS) provides an opportunity to expand the technical transfer of information and standards between the petroleum industry and the marine industry. The MIS facilitates the use and understanding of the currently issued standards such as IEEE-45 dot series, IEEE 1580 and IEC/IEEE 80005. MIS has been a leader in harmonizing standards with IEC. MIS also provides for the necessary working groups to keep the IEEE standards current and develop new standards as needed.

Midstream Subcommittee

The Midstream Subcommittee deals with electrical questions involved with transportation and storage of petroleum and chemical materials. This includes controls, measurement, data handling, power systems, motors and drives associated with pipelines, tankage, valves and conveyors.

Mining Industry Committee

The Mining Industry Committee is responsible for all matters within the scope of the IAS in which the emphasis or dominant factor specifically relates to all mining and related operations.

Production Subcommittee

The Production Technical Subcommittee provides a forum for PCIC members to communicate technical papers related to drilling, well head, and facilities operations of oil and gas wells.

Refining Subcommittee

The Refining Technical Subcommittee provides a forum for IEEE PCIC members to communicate technical papers related to the refining industry.

Safety Subcommittee

The Safety Subcommittee was chartered in 1991 and has served to accelerate the dispersion of information and knowledge impacting electrical safety in the petroleum and chemical industry.

General Information

Registration – Check-in

Registration will be at the Planning Office C-D located on the lower level of the convention center of the Hyatt Regency Orlando.

- Saturday, September 14..... 12:00 p.m. – 5:00 p.m.
- Sunday, September 15..... 10:00 a.m. – 5:00 p.m.
- Monday, September 16..... 6:30 a.m. – 4:00 p.m.
- Tuesday, September 17..... 7:00 a.m. – 12:00 p.m.
- Wednesday, September 18..... 7:00 a.m. – 12:00 p.m.
- Thursday, September 19 (for tutorial attendees not registered at conference)..... 7:00 a.m. – 8:00 a.m., 12:00 p.m. – 1:00 p.m.

Authors’ Breakfasts

Authors, registered for the conference, are required to attend at the Authors’ Breakfast on the day of their paper presentation (See page 9).

Attendee Breakfasts

Registered attendees are welcome to attend a complimentary breakfast each morning of the conference in the Regency Ballroom R-S on the lower level of the conference area of the Hyatt Regency Orlando from 7:00 am to 8:15 am. The PCIC appreciates the companies that support these breakfasts. (Guest are welcome to attend, see below).

Guest Breakfasts

Registered guests are welcome to attend the main conference breakfast in the Regency Ballroom R-S on the lower level of the conference area of the Hyatt Regency Orlando. Or if they would prefer, a light breakfast will be available for them in the Guest Hospitality Suite located in the Blue Spring room on the lower level of the convention center of the Hyatt Regency Orlando. (See page 12 for more information).

PCIC FTA/ED Orientation Breakfast (Note: Pre-registration is required)

First time attendees, young engineers, and others interested in learning more about the PCIC are encouraged to attend the “**PCIC Orientation Breakfast**” on Monday, September 16 from 7:00 a.m. to 8:00 a.m. in the Bayhill 21-22 on the lobby level of the convention center of the Hyatt Regency Orlando. A presentation and a discussion will take place on the history of PCIC, how it functions, on ways that you can become more involved, and many other suggestions on how to enhance your conference experience. You must check the “FTA/ED PCIC Orientation Breakfast” box during registration if you plan to attend. (See page 7 for more information).

Women Professionals Networking Breakfast

PCIC is hosting a networking breakfast for women professionals that promotes diversity in the industry and provides an opportunity for women to meet peers and potential mentors. Women professionals are invited to attend a complimentary breakfast on Tuesday morning in Manatee Spring I on the lobby level of the Convention Center of the Hyatt Regency Orlando from 7:00 am to 8:15 am. The PCIC appreciates the companies that supported and sponsored this breakfast.

Monday Awards Luncheon –The PCIC Awards Luncheon will be held on Monday in the Regency Ballroom R-S on the lower level of the conference area at the Hyatt Regency Orlando.

Emeritus Subcommittee Luncheon

The Emeritus Subcommittee luncheon will be held on Tuesday, September 17, 2024, in Manatee Spring I on the lobby level of the convention center of the Hyatt Regency Orlando. Attendance is limited to those who have been confirmed as Emeritus members by the PCIC Chair. The Emeritus Subcommittee is composed of PCIC members who have retired at least once from our industry. Members are required to consistently volunteer their services in support of various PCIC activities. If you are interested and feel you qualify, contact Leo Berg, Chair of the PCIC Emeritus Subcommittee at leoberg@ieee.org

First-Time IEEE IAS PCIC Conference Attendees

The PCIC leadership welcomes all those attending the annual conference for the first time. The conference provides an excellent opportunity to learn more about advancements in the petrochemical industry, to meet a wide range of other individuals involved, from newer folks to seasoned veterans, and to have a bit of fun while doing it. This year there are 63 papers being presented that focus on electrical engineering topics related to the petroleum, chemical, and mining industries, as well as six half-day tutorials on key topics.

The conference also provides an excellent opportunity to participate in IEEE Standards development and for you to network with a wide range of professionals involved in this industry. All paper presentations, IEEE Standards meetings, PCIC Subcommittee meetings are open to all attendees, and at the end of the conference day, you can relax and enjoy the social events and vendor hospitality suites.

Your badge will identify you as a “First Time Attendee” (FTA) and don’t be surprised if folks stop to chat with you, even if it’s just to welcome you to the conference. You also are welcome to participate in the Engineer Development Subcommittee orientation breakfast and luncheon, and to take advantage of the discount on tutorials. The PCIC conference is not just for engineers, it is for all those involved in this industry. We look forward to meeting you.

For more information for first-time attendee activities, read the information below. And if this is your quest’s first time attending PCIC, see page 12.

Engineer Development Subcommittee

The Engineer Development Subcommittee is an administrative subcommittee of the IEEE IAS Petroleum and Chemical Industry Committee. The subcommittee was formed (as Young Engineer Development Subcommittee: YEDS) in 1996 with the charter to “promote participation in PCIC technical conference and provide personal professional growth opportunities”.

Engineer Development Subcommittee focuses on all first-time PCIC attendees and engineers beginning their career in the petrochemical industry, regardless of age, and sponsors two major conference activities:

- **PCIC First Time Attendee/Engineer Development Orientation Breakfast** Monday, **September 16** – 7:00 a.m. to 8:00 a.m. EDS members, and new attendees interested in learning more about the PCIC are encouraged to attend the “*PCIC First Time Attendee/Engineer Orientation Breakfast*” in the Bayhill rooms 21-22 on the lobby level of the convention center of the Hyatt Regency Orlando. A presentation and discussion will take place on the history of PCIC, how it functions, ways to become more involved, and many other suggestions on how to enhance your conference experience. **Remember to check the “Attendee/Engineer PCIC Orientation Breakfast” box during registration if you plan to attend.**
- **PCIC First Time Attendee/Engineer Development Luncheon** – Tuesday, September 17 from 11:15 a.m. to 12:45 p.m. in Orlando Ballroom M on the main floor level of the Hyatt Regency Orlando just before you enter the main conference area. First time attendees are encouraged to attend this luncheon. It focuses on soliciting feedback from participants on how PCIC can better encourage first-time attendee participation; improve professional development through PCIC and discussing new ideas for future PCIC conferences. **Remember to check the “First Time Attendee/Engineer Development Tuesday PCIC Luncheon” box during registration if you plan to attend.**

Survival Guide – For those new to PCIC, the committee publishes a “survival guide”. The guide explains the goal of the conference, the structure, daily events and meetings, dress codes, and ways to plan your time to gain the most out of the conference. The PCIC Survival Guide can be downloaded at: <https://www.pcic2024.com/survival-guide.html>

Tutorials – PCIC is offering six half-day technical tutorials on Thursday, September 19, 2024. following the main conference. First time attendees registered for the full conference are eligible to attend one tutorial at a reduced rate. A second tutorial can be attended at the regular price. See page 31 for more information on the PCIC Tutorials and requirements to pre-register for tutorials.

NOTE: First-time PCIC attendees are welcome to participate in all Engineer Development Subcommittee and PCIC activities and we encourage you to post about your conference experience on LinkedIn, Facebook or Twitter. Welcome to Orlando!!

Wednesday Luncheon Speaker



Emily Esfahani Smith is a psychotherapist and writer in Washington DC. Her book, *The Power of Meaning: Crafting a Life that Matters*, is an international bestseller that has been translated into 16 different languages. From her popular TED talk viewed over 15 million times to her viral Atlantic article, "There's More to Life Than Being Happy," Smith helps us through these difficult times, not by ignoring our grief, but by putting us on a path to new meaning.

In a world of increased anxiety and uncertainty, the best thing we can do for our wellness and mental health is search for meaning, not happiness. That's the vital message at the core of Emily Esfahani Smith's book, *The Power of Meaning*, which outlines four pillars essential to living a life that matters: belonging, purpose, transcendence, and storytelling.

We're all striving for happiness—but our culture's obsession with instant gratification is only making us miserable. Drawing from over one hundred interviews, and years of research into positive psychology, neuroscience, and philosophy, Emily Esfahani Smith has discovered a more enriching way to live a good life: through the search for meaning. It's the subject of her compelling and acclaimed book *The Power of Meaning: Crafting a Life That Matters*: called "persuasive" and "elegant" by the Wall Street Journal, and "a life-transforming experience" by Susan Cain, it's now been published in over 15 languages. In keynotes, Smith offers methods for individuals to let go of unreasonable, unattainable standards of happiness, and pursue goals that reward over the long haul. And for organizations, it means embedding a sense of purpose into corporate culture—making beliefs and values align for

personal wellbeing as well as the bottom line.

With a TED main stage talk listed as one of the top ten most popular of 2017—and currently viewed over 10 million times—Smith is a keynote speaker who helps us think differently about the stories we tell ourselves and help us identify what makes life worth living.

The former managing editor of *The New Criterion*, Smith's articles and essays have appeared in *The New York Times*, *Wall Street Journal*, *The Atlantic*, and other publications. Her articles for *The Atlantic* "There's More to Life Than Being Happy" (about the Holocaust survivor Viktor Frankl) and "Masters of Love" (about romance and marriage) have reached over 30 million readers. In 2017, *The New York Times* published her article about rethinking success called "You'll Never Be Famous—And That's OK."

Smith is a reporter for the Aspen Institute's Weave project, an initiative founded by *The New York Times'* David Brooks to address the problems of isolation, alienation, and division. At Weave, Smith finds and tells the stories of people who are working to rebuild the social fabric. She served as an instructor in positive psychology at the University of Pennsylvania. Smith graduated from Dartmouth College and earned a masters of applied positive psychology from the University of Pennsylvania.

Information for Authors and Presenters

Registration

At least one contributing author must be registered for the conference and present on the day their paper is scheduled to be presented. Any additional persons involved in the presentation of their paper must be similarly registered for the conference.

Authors' Screening Room

Screening rooms with projection systems are provided for authors to confirm their equipment is compatible with audio visual systems used by the conference. Please note presenters are required to use their own presentation device that is compatible with projection technology used by PCIC (e.g., laptop, tablet, etc.). For information on A/V systems being used at the conference, contact Technical Program Chair Tim Driscoll tim.driscoll@ieee.org

The authors' screening rooms are in the Coral Spring room on the lobby level of the convention center of the Hyatt Regency Orlando.

Sunday: 12:00 p.m. – 9:00 p.m.
 Monday, Tuesday, and Wednesday: 7:00 a.m. – 9:00 p.m.
 Thursday: 7:00 a.m. – 2:00 p.m.

Authors' Breakfast

A complimentary breakfast will be served from 7:00 a.m. to 8:00 a.m. for the presenters of the papers and tutorials each day of the conference in the Barrel Spring I room on the lobby level of the convention center of the Hyatt Regency Orlando.

NOTE: All authors and presenters must attend this breakfast ***on the day their paper is being presented (only)*** to meet their session chair, review session logistics, check the audio video compatibility of their equipment, and to receive their PCIC certificate and authors' memento.

IEEE-IAS-PCIC On-Line Surveys

PCIC encourages feedback from the attendees to ensure that the Conference remains one of the premier conferences sponsored by IEEE and IAS. Following the conference, surveys will either be available on the PCIC web site (www.ieeepcic.com) or on the conference app (available at www.eventmobi.com/pcic2024) or you will be contacted with an alternate location. The following surveys are offered:

- ✓ General Survey
- ✓ Authors Survey
- ✓ Guest Survey
- ✓ First Time Attendees Survey



You only need to fill out one of the surveys, so please pick the one that is most appropriate.



About the IEEE IAS Petroleum and Chemical Industry Committee Conference

The annual PCIC conference is an exchange of technical ideas – not a trade show – that brings together professionals with a common focus on electrical installations and safety. The PCIC Executive and Local Conference Committees take great pride in providing a high-quality conference while keeping registration and participation costs reasonable. PCIC is the best educational value for anyone working in the petrochemical electrical field: Here's why:

- Conference papers and tutorials are authored by many of the most respected minds in the industry. Great care is taken to ensure that presentations are free of commercial content.
- Many PCIC members participate in writing industry standards. Working groups meet prior to the start of the conference to work on standards for the IEEE, API, and other organizations. These meetings are open to all conference registrants.
- Vendors are an integral part of PCIC. They support the technical and professional goals of the conference, author papers, sponsor conference functions, and host evening hospitality events. Vendor participation is encouraged and welcomed. All vendors must follow the PCIC etiquette rules.

Conference Activities Dress Code:

- For conference papers, tutorials, working groups, and standards meetings, ***business casual attire*** is acceptable and appropriate.
- Technical session leaders and paper presenters must wear ***professional business attire***. (For gentlemen, this means a suit or sports jacket with a tie; for ladies this means a dress, business suit, etc.)
- For the Monday Night Social, ***semi-formal attire is required***.
- For vendor sponsored hospitality events, ***casual attire*** is acceptable.

Conference Social Activities:

Conference attendees work hard during the day, but after the technical sessions conclude there's time to unwind, reconnect with friends, and network through some after-hours socializing. The events listed in the PCIC Hospitality and Social Calendar are open to all attendees that are registered for the full conference along with their guests at no additional charge. Major conference events include:

- **The Sunday Tailgate Party** is a long-running event where attendees and their guests can have some fun, enjoy some food and beverages, while socializing and watching Sunday football on the big screen. This year's **Tailgate Party** is hosted by **Toshiba** and will be held in **Regency Ballroom Q** on the lower level of the convention center from 12:00 p.m. to 5:00 p.m.
- **The Monday Night Social** is PCIC's premier social event. This year's event is sponsored by the Local Committee and features some of Orlando's local food and beverages. You won't want to miss this opportunity to meet friends and colleagues in an entertaining, elegant cocktail party setting. The Conference Social will be held in the **Regency Foyer T-V Rotunda & Regency U** (lower level of the convention center) from 6:00 p.m. to 7:30 p.m. Note: **The dress code for the Conference Social is semi-formal.**
- **Vendor Hosted Events and Hospitality Suites.** Many vendors host major hospitality events and hospitality suites in the evenings where a good time can be had by all. These events and suites are open in the evening after the conference sessions. Consult the Social Calendar or the PCIC App for the days, times, and locations.

Nametags and lanyards are provided to attendees and guests to identify you as a registered conference participant. Nametags must be worn when attending any PCIC technical subcommittee meetings, paper presentations, tutorials, breakfasts, luncheons, social functions, vendor-hosted events, and hospitality suites. Attendees and guests must be over the age of 21 to participate in social functions, vendor-hosted events, and hospitality suites where alcohol is being served.

Note: 1. The PCIC Conference Social for attendees and one guest is included with your **full conference registration** only.

2. Admittance to the Social is **not included** with any "**one-day only**" conference registrations.

"Monday and Tuesday only" registrants may pre-purchase Conference Social tickets during on-line registration or at the registration desk.

"Wednesday and Tutorials Only" registrants are not permitted to purchase Conference Social tickets.

Please remember: All conference attendees and registered guests must wear their conference nametag to be admitted to any PCIC activity.

Petroleum and Chemical Industry Committee Conference App

The IEEE IAS Petroleum and Chemical Industry Committee Conference 2024 App (PCIC2024) can also be accessed from any laptop, PC, tablet, or mobile device through any web browser at the website: www.eventmobi.com/pcic2024.

The app is your interactive guide to the PCIC Conference, including:

- Paper Presentations
- IEEE-IAS-PCIC & Standards Meetings
- Tutorials
- Hospitality Events
- Attendee and Guest Meals
- Registration, Help, and Safety Information
- Guest Tours and guest social events
- Interactive maps for navigating conference events
- A Directory of Attendees, Guests, Authors, and others
- Web links to hotels, conference center, airport, and other sites
- Links for downloading the entire Conference Record or individual presentations
- Alerts for last minute changes and updates



Each attendee **MUST** register for the conference with a unique email address. It is highly recommended any attendee guests are added to the registration using a unique email address, so they access the PCIC App and view the Guest Events and any alerts or notices.

When accessing the App for the first time you will be instructed to enter the email address that you used to register for the conference. You will also be instructed to create and enter your own one-time unique password. You may choose any password that you like. If you should later forget your password, there will be a link for you to update it.

Conference Record

The registration fee includes a one-time free download of the Conference Record during the conference. Papers can be downloaded directly using the PCIC App during the conference. Bound copies of the Conference Record are available for a fee of \$65.00.

Condensed Etiquette Rules for Vendor Entertainment

Vendor participation is welcomed at the PCIC conference. Etiquette rules are designed to prevent a conflict of vendor activities with the technical programs. Conduct at the conference must comply with the complete PCIC Rules of Etiquette which are available at www.ieeepcic.com. Following is a summary of those rules:

- All vendor personnel and their guests working in a hospitality suite must be registered for the conference.
- Hospitality rooms must be closed during all official conference functions (technical sessions, official luncheons, Conference Social, Subcommittee meetings, etc.)
- Commercial demonstrations and commercial literature distribution must be confined to the hospitality suite.
- Vendor activities outside the conference hotel must not host more than 25 conference delegates (exclusive of guests and host company personnel) from 7:00 a.m. Monday through 5:00 p.m. Wednesday.
- **Attendance of a vendor representative is mandatory at the "Vendor Pre-meeting"** held Sunday September 15, 2024, from 3:00 p.m. to 4:00 p.m. in the Rainbow Spring II room on the lower level of the convention center of the Hyatt Regency Orlando. Vendors will be contacted with additional details.

Guest Information

The local PCIC committee takes pride in how they accommodate the guests of the attendees by making their time at the conference as pleasant and entertaining as possible and offering a variety of off-site activities while attendees participate in the daily sessions.

Who can be the guest of an attendee? A guest is a spouse, significant other, child, or friend that is not involved in an electrical industry related occupation. Co-workers, associates that participate in any related industries, persons involved in any PCIC conference papers or tutorials (as an author or presenter), or anyone involved in similar activities cannot be registered as the guest of a conference attendee. Conference Attendees may include one guest in their registration.

Guests of conference attendees are not allowed to participate in, or attend, any PCIC standards meetings, paper presentations, technical subcommittee meetings, official PCIC meetings, or PCIC conference luncheons. However, tickets may be purchased in advance for guests of a conference attendee to attend the Monday Awards Luncheon and the Wednesday PCIC Luncheon for an additional fee.

Guests of conference attendees are welcome to attend the conference attendee breakfasts (or the light breakfast available in the Guest Hospitality suite), the PCIC Conference Social, and all vendor hospitality functions at no additional charge.

First Time Guests. The PCIC Committee recognizes the importance of the guests of attendees and commits a lot of time and resources to make their conference experience memorable. And we understand that attending a large conference for the first time can be somewhat intimidating for some. For many years, PCIC has recognized our "First Time Attendees" and has programs to help them become better acquainted with the conference. Dr. Obvious pointed out we should be doing something similar for first-time guests, because they too may find the conference just as intimidating. So, starting this year, PCIC will be recognizing our "**First Time Guests**" as well. Just like it works for attendees, the registration process has a check box where the guest's name is added, to identify you as a First-Time Guest. Your nametag, included in the registration package, will include a "First Time Guest" ribbon (if this was missed during registration, one can be obtained at the registration desk). Don't be surprised if folks stop to welcome you to the conference, share some helpful hints, let you know where the best suites and parties are, what tours you might want to go on, or other places of interest you might want to see. And you might just end up with new friends by the time you leave.

Complimentary Guest Breakfasts: Guests of conference attendees are welcome to attend the main conference breakfast in the Regency Ballroom R-S on the lower level of the conference area of the Hyatt Regency Orlando. Alternatively, a light breakfast will be served in the Guest Hospitality Suite at the times posted below.

The Guest Hospitality Suite: The Guest Hospitality Suite is in Blue Spring room on the lower level of the convention center of the Hyatt Regency Orlando and is open from 7:30 am until 4:00 pm. A light breakfast is available in the suite Monday, Tuesday and Wednesday mornings before the guest tours depart.

Guest Hospitality Suite hours and food services:

Sunday:.....8:00 a.m. to 4:00 p.m.This is great place to meet other guests – No Food Service
Monday:.....7:30 a.m. to 2:00 p.m.Light Breakfast served for Guests only from 7:30 a.m. to 9:00 a.m.
Tuesday:.....7:30 a.m. to 2:00 p.m.Light Breakfast served for Guests only from 7:30 a.m. to 9:00 a.m.
Wednesday:.....7:30 a.m. to 2:00 p.m.Light Breakfast served for Guests only from 7:30 a.m. to 9:00 a.m.

Guest Tours are offered by the Local Committee on Saturday, September 14, 2024, through Wednesday, September 18, 2024. The tours allow participants to meet other guests while experiencing some of the local areas of interest. (See page 38 for details and pricing.)

Note: *Tours are subject to cancellation if registrations do not meet minimum capacity levels (with a full refund).*

Myron Zucker Travel Grant

It is vital for the ongoing success of the IEEE-IAS Petroleum and Chemical Industry Committee to attract young, new electrical engineering talent who would greatly benefit from attending but are prevented from participating due to financial restrictions. Recognizing this, the PCIC has arranged with the IEEE Industrial Applications Society to sponsor a certain number of co-op/Intern students, or students in their last year of their university program, and those who graduated within the last two years of the conference to attend the conference through the Myron Zucker Travel Grant.

The Myron Zucker Travel Grant, which is administered by the First Time Attendees (FTA) / Engineers Development Subcommittee (EDS), provides the following benefits for the winning recipients:

- ✓ Up to \$600 for travel allowance
- ✓ Free Hotel Registration
- ✓ Free Conference Registration as a Student
- ✓ One Free Tutorial



In order to be considered for the program the applicants shall:

- ✓ Be an engineering co-op/Intern student or have graduated less than 2 years ago from a recognized university, college or technical school.
- ✓ Be 21 years of age or older.
- ✓ Complete the application form, which is available on-line at:
<http://ieeepcic.com/operating-subcommittees/young-engineers/#Myron-Zucker-Student>
- ✓ Submit, with the application form, a 200-word essay describing the importance of attending the PCIC technical conference.
- ✓ Be an Intern or be involved as a co-op worker for a company with one or more IEEE members who are full PCIC Conference registrants; one of whom will vouch for the applicant on the application form.
- ✓ Be a member, or a student member of IEEE.
- ✓ Become a member of the First Time Attendee (FTA) / Engineers Development Subcommittee (EDS) by attending the PCIC FTA/EDS Orientation Breakfast on the Monday of the conference and PCIC FTA/EDS Luncheon on Tuesday of the conference.
- ✓ Attend the Monday and Wednesday Conference Luncheons.
- ✓ Attend the general program meeting, technical paper presentations and at least one sub-committee meeting.

Applicants who are presenting papers at the conference or otherwise require full registration are not eligible for the Myron Zucker Travel Grant as the program will only pay for student registrations.

The recipient employers must be willing to pay the applicant their normal salary while they are at the conference.

The selection of the Myron Zucker Travel Grant Program recipients will be selected based on the quality of the submitted essays.

Applications including the mandatory essays are required no later than July 31, 2024. The applicants will be informed of the outcome of their applications by August 16, 2024.

Professional Development Hours (PDH) and Continuing Education Units (CEU)

PCIC offers PDH and CEU documentation, if required. Participation in the PCIC Conference standards or technical meetings, presenting or attending conference papers, and tutorials may be used as evidence of ongoing training and education for renewal of professional registration. It is the responsibility of everyone to check and confirm the requirements for continuing education of their respective organizations. The PDH and CEU certification processes are managed separately, completely independent of each other within PCIC. CEUs are normally converted into PDHs (1 CEU = 10 PDHs).

Note: IEEE-IAS-PCIC applies separate charges for PDH and CEU certificates which is in addition to the Conference Registration and Tutorial fees.

Professional Development Hours (PDH)

PCIC has a process for attendees to log and receive a PDH certificate for presenting or attending conference papers, participation in standards activities, and subcommittee meetings at the conference.

PCIC charges a \$45.00 fee for processing a PDH certificate. When an attendee registers for a PDH certificate, a form for logging your participation at events during the conference will be included with your registration packet. Instructions are provided on the form for submitting the completed worksheet.

IEEE Continuing Education Units (CEU)

IEEE Continuing Education Units (CEUs) are available for attending PCIC tutorials. Attendees earn 0.4 CEU's for each tutorial attended provided the completed forms are returned to the presenter at the end of class.

IEEE CEU certificates are provided directly by IEEE for tutorial participation only and PCIC charges a \$25.00 fee per tutorial for processing a CEU certificates. The IEEE rules for CEU Certificates do not allow these to be issued for any other PCIC participation (such as paper presentations and standards meetings). (See notes 3 and 4 below.)

IMPORTANT NOTES REGARDING PDHs AND CEUs

1. **Pre-registration is mandatory** to obtain these certificates. Please check the appropriate box on the registration form to receive the appropriate documentation with your registration package.
2. **All PDH documentation/forms must be completed and submitted on-line by the attendee prior to October 11th, 2024.** If this information is not received prior to that date, it will not be possible to issue a certificate. All PDH documentation and/or certificates will be emailed after the conference.
3. **To obtain CEU Credits, attendees** must be registered and attend the tutorial. A CEU evaluation form is provided to attendees at the start of each tutorial and **the completed form must be returned to the presenter at the end of the tutorial or a CEU cannot be issued. The IEEE CEU process only allows for submittal of CEU forms at the end of each tutorial, no late or other means is permitted.**
4. **PDH and CEU credits are optional**, and no action is required by an attendee if these credits are not required.



IEEE-IAS-PCIC Conference Schedule at a Glance

	Conference Breakfasts	Technical Sessions	Luncheons	Evening Events
Monday Sept. 16, 2024	7:00 a.m. – 8:00 a.m.	8:15 a.m. - 11:15 a.m.	11:45 a.m. - 1:30 p.m.	6:00 p.m. - 7:30 p.m.
	⑤ <i>Authors' Breakfast</i> <i>Barrel Spring I</i>	General Program Session I – Regency Ballroom O-Q	① <i>PCIC Awards Luncheon</i> – <i>Regency Ballroom R-S</i>	② <i>Conference Social</i> – <i>Regency Foyer T-V Rotunda &</i> <i>Regency U</i>
	④ <i>FTA/EDS PCIC Orientation</i> <i>Breakfast – Bayhill 21-22</i>	2:00 p.m. - 5:00 p.m. General Program Session II – Regency Ballroom Q		5:00 p.m. - 6:00 p.m. and 7:30 p.m. – Closing
	① <i>Attendees' Breakfast</i> – <i>Regency Ballroom R-S</i>	Chemical Session I – Regency Ballroom O		Visit Vendors Hospitality Suites
		International Session I – Regency Ballroom U		
		Midstream Session I – Regency Ballroom P		
	Refining Session I – Regency Ballroom T			
Tuesday Sept. 17, 2024	7:00 a.m. – 8:00 a.m.	8:15 a.m. - 11:15 a.m.	11:15 a.m. - 12:45 p.m.	5:15 p.m. – Closing
	⑤ <i>Authors' Breakfast</i> – <i>Barrel Spring I</i>	Emerging Technologies Session I – Regency Ballroom O	① <i>Attendees Lunch</i> – <i>Regency Ballroom R-S</i>	Visit Vendors Hospitality Suites
	① <i>Women Professionals</i> <i>Breakfast</i> – <i>Manatee Spring I</i>	Marine Industry Session I – Regency Ballroom Q	④ <i>Emeritus Lunch</i> – <i>Manatee Spring I</i>	
		Mining Industry Committee Session I – Regency Ballroom U		
	① <i>Attendees' Breakfast</i> – <i>Regency Ballroom R-S</i>	Production Session I – Regency Ballroom P	③ <i>Abstract Selection</i> – <i>Bayhill 23-24</i>	
		Safety Session I – Regency Ballroom T		
12:45 p.m. - 5:15 p.m. <u>IEEE-IAS-PCIC Subcommittee Meetings</u> See Meeting Schedule		④ <i>FTA/EDS Lunch</i> – <i>Orlando Ballroom M</i>		
Wednesday Sept. 18, 2024	7:00 a.m. – 8:00 a.m.	8:15 a.m. - 11:15 a.m.	11:45 a.m. - 1:30 p.m.	5:00 p.m. – Closing
	⑤ <i>Authors' Breakfast</i> – <i>Barrel Spring I</i>	Emerging Technologies Session II – Regency Ballroom O	① <i>PCIC Luncheon</i> – <i>Regency Ballroom R-S</i>	Visit Vendors Hospitality Suites
		Marine Industry Session II – Regency Ballroom Q		
		Mining Industry Committee Session II – Regency Ballroom U		
	① <i>Attendees' Breakfast</i> – <i>Regency Ballroom R-S</i>	Production Session II – Regency Ballroom P		
		Safety Session II – Regency Ballroom T		
		2:00 p.m. - 5:15 p.m.		
		Chemical Session II – Regency Ballroom O		
		International Session II – Regency Ballroom Q		
		Midstream Session II – Regency Ballroom T		
Mining Industry Committee Session III – Regency Ballroom U				
	Refining Session II – Regency Ballroom P			
Thursday Sept. 19, 2024	7:00 a.m. – 8:00 a.m.	8:00 a.m. - 5:00 p.m.	12:00 p.m. - 1:00 p.m.	Notes
	⑥ <i>Tutorial Presenters' Breakfast</i> – <i>Barrel Spring I</i>	③ <i>PCIC Annual Business Meeting</i> <i>Manatee Spring</i>	③ <i>PCIC Executive</i> <i>Committee Lunch</i> – <i>Manatee Spring</i>	① Only Registered Attendees and Guests are permitted to attend breakfasts. Luncheons are limited to registered attendees only. ② Single day registrations do not include entry to the Conference Social ③ Committee Members Only ④ Must be <u>pre-registered</u> to Attend this event ⑤ Open to Authors on the & Specific IEEE-IAS-PCIC Committee Members Only ⑥ Open to Tutorial Attendees only
	⑥ <i>Tutorial Attendees Breakfast</i> – <i>Regency Ballroom T</i>	8:00 a.m. – 11:45 a.m.		
		Tutorial T1 – Celebration 1-2	⑥ <i>Tutorial Luncheon</i> – <i>Regency Ballroom T</i>	
		Tutorial T2 – Celebration 3-4		
	Tutorial T3 – Celebration 5-6			
	③ <i>PCIC Executive Committee</i> <i>Breakfast</i> – <i>Barrel Spring II</i>	1:15 p.m. - 5:00 p.m.		
		Tutorial T4 – Celebration 5-6		
Tutorial T5 – Celebration 1-2				
Tutorial T6 – Celebration 3-4				

2024 PCIC Standards Working Groups and PCIC Technical Subcommittee Meeting Schedule

The PCIC Standards Subcommittee coordinates the activities of approximately 50 IEEE and other industry related standards. The individual Standard Committees establish a Working Group to meet, discuss and make the technical decisions necessary to develop and maintain their standard. Many of these Working Groups arrange their meeting schedule a few days before or after the PCIC annual conference.

The key to any standard is the quality and commitment of its members. Technical knowledge or expertise is just a part of what constitutes being a good member: Consistent participation, the ability to listen, to discuss, and to understand, along with a willingness to accept the ideas of others, is just as important.

The PCIC encourages all attendees, especially new attendees, to increase their value from the PCIC conference by actively participating in the various Standards Working Group meetings. You are welcome to attend as a guest, or better yet, join as a member to influence the outcome of the next edition, or to work on the development of a completely new standard. Active participation provides a greater insight and understanding of the industry issues that are addressed in the development and updating of these Standards.

The PCIC Technical Subcommittees solicit and review technical papers that support the exchange of electrical applications technology related to the petroleum and chemical industry. If you are not presently a member of one of these subcommittees, we also invite you to attend one of the Tuesday afternoon sessions that are of interest to you, and to join as a member.

The individual meeting schedule is listed below. PCIC registered attendees are invited to attend any of these meetings, except for those restricted to specific groups or subcommittee members, which are indicated by an **asterisk (*) and gray background**

Please note: Rooms are subject to change. Please check the final program or PCIC2024 APP to confirm.

Thursday September 12, 2024.		Room
8:00 a.m. – 5:00 p.m.	API RP 505 – Area Classification	Barrel Spring I
8:00 a.m. – 5:00 p.m.	API Standard 547 – General Purpose Form-wound Squirrel Cage Induction Motors – 185kW (250HP) through 2240kW (3000HP)	Barrel Spring II
Friday September 13, 2024.		
8:00 a.m. – 3:00 p.m.	API RP 505 – Area Classification	Barrel Spring I
8:00 a.m. – 3:00 p.m.	API Standard 547 – General Purpose Form-wound Squirrel Cage Induction Motors – 185kW (250HP) through 2240kW (3000HP)	Barrel Spring II
3:00 p.m. – 5:00 p.m.	API SOEE (Subcommittee on Electrical Equipment)	Barrel Spring II
Saturday September 14, 2024.		
9:00 a.m. – 11:00 a.m.	IEEE 1814 – RP for Electrical System Design Techniques to Improve Electrical Safety	Celebration 5-6
10:00 a.m. – 12:00 p.m.	IEEE/IEC P1886 International Standard for Subsea Electrical Equipment	Celebration 14-15
11:00 a.m. – 1:00 p.m.	IEEE 1683- Guide for Enhanced Safety MCCs	Celebration 5-6
1:00 p.m. – 2:00 p.m.	IEEE 1068 - Standard for Repair and Rewinding of AC Electric Motors	Celebration 14-15
1:00 p.m. – 3:00 p.m.	IEEE 1584.2 - Guide and Checklists for the Data Collection for Performing an Arc Flash Hazard Calculation Study	Celebration 5-6
1:00 p.m. – 5:00 p.m.	IEEE 2969 – Guide for Continuous Thermal Monitoring for SWGRs and MCCs up to 52kV	Celebration 12-13
2:00 p.m. – 3:00 p.m.	IEEE 841 & 841.1 - Standards for Severe-Duty, TEFC Squirrel Cage Induction Motors - up to 500HP	Celebration 14-15
3:00 p.m. – 4:00 p.m.	IEEE 1349 – Guide for Electric Machines in Hazardous (Classified) Locations	Celebration 14-15
3:00 p.m. – 5:00 p.m.	IEEE Trace Heating Standards Update	Celebration 5-6

Sunday September 15, 2024.		Room
8:00 a.m. – 9:00 a.m.	<i>IEEE-IAS-PCIC Standards Working Group Officers Breakfast*</i>	Bayhill 27
8:00 a.m. – 9:00 a.m.	<i>ExCom Awards Nominating Subcommittee*</i>	Bayhill 20
9:00 a.m. – 11:00 a.m.	<i>ExCom Facilities Planning and Finance Subcommittees joint meeting*</i>	Bayhill 17-18
9:30 a.m. – 12:00 p.m.	IEEE 1566 - Standard for Performance of Adjustable Speed AC Drives Rated 375 kW & Larger	Bayhill 23-24
11:00 a.m. – 12:00 p.m.	Joint IT / Marketing Subcommittees Meeting	Bayhill 17-18
11:00 a.m. – 12:00 p.m.	<i>Eugene Fagan Fund*</i>	Bayhill 20
1:00 p.m. – 4:00 p.m.	<i>Advisory & Awards Subcommittee Meeting*</i>	Bayhill 20
1:00 p.m. – 3:00 p.m.	Codes and Regulations Subcommittee Meeting	Bayhill 23-24
3:00 p.m. – 4:00 p.m.	Vendor Hospitality Pre-event Meeting	Rainbow Spring II
4:00 p.m. – 5:00 p.m.	IEEE Corporate Engagement Presentation	Rainbow Spring II
4:00 p.m. – 5:00 p.m.	Tutorials Subcommittee Meeting*	Bayhill 20
4:00 p.m. – 5:00 p.m.	<i>Dallas 2025 Local PCIC Committee Meeting*</i>	Bayhill 17-18
Monday September 16, 2024.		
7:00 a.m. – 8:00 a.m.	<i>Authors' Breakfast* (see page 9)</i>	Barrel Spring I
7:00 a.m. – 8:15 a.m.	Attendees' Breakfast	Regency Ballroom R-S
7:00 a.m. – 8:00 a.m.	<i>IEEE-IAS-PCIC Orientation Breakfast – FTA / YEDS (Must pre-register to attend, see page 7)</i>	Bayhill 21-22
8:15 a.m. – 11:15 a.m.	General Technical Session I	Regency Ballroom O-Q
11:45 a.m. – 1:30 p.m.	PCIC Awards Luncheon	Regency Ballroom R-S
2:00 p.m. – 5:00 p.m.	General Technical Session II	Regency Ballroom Q
2:00 p.m. – 5:00 p.m.	Chemical Technical Session I	Regency Ballroom O
2:00 p.m. – 5:00 p.m.	International Technical Session I	Regency Ballroom U
2:00 p.m. – 5:00 p.m.	Midstream Technical Session I	Regency Ballroom P
2:00 p.m. – 5:00 p.m.	Refining Technical Session I	Regency Ballroom T
6:00 p.m. – 7:30 p.m.	Conference Social	Regency Foyer T-V Rotunda & Regency U
Tuesday September 17, 2024.		
7:00 a.m. – 8:00 a.m.	<i>Authors' Breakfast* (see page 9)</i>	Barrel Spring I
7:00 a.m. – 8:15 a.m.	Women Professionals Breakfast	Manatee Spring I
7:00 a.m. – 8:15 a.m.	Attendees' Breakfast	Regency Ballroom R-S
8:15 a.m. – 11:15 a.m.	Emerging Technologies Technical Session I	Regency Ballroom O
8:15 a.m. – 11:15 a.m.	Marine Technical Session I	Regency Ballroom Q
8:15 a.m. – 11:15 a.m.	Mining Industry Committee Technical Session I	Regency Ballroom U
8:15 a.m. – 11:15 a.m.	Production Technical Session I	Regency Ballroom P
8:15 a.m. – 11:15 a.m.	Safety Technical Session I	Regency Ballroom T
11:15 a.m. – 12:45 p.m.	PCIC Attendees Lunch (<i>Grab & Go</i>)	Regency Ballroom R-S
11:15 a.m. – 12:45 p.m.	<i>Emeritus Luncheon* (Emeritus Subcommittee members only)</i>	Manatee Spring I
11:15 a.m. – 12:45 p.m.	<i>Abstract Selection Lunch*</i>	Bayhill 23-24
11:15 a.m. – 12:45 p.m.	<i>FTA / EDS Lunch* (Must pre-register to attend, see page 7)</i>	Orlando Ballroom M
12:45 p.m. – 2:15 p.m.	Standards Subcommittee Meeting	Bayhill 19-20

Tuesday September 17, 2024. (continued)		Room
2:15 p.m. – 3:45 p.m.	Chemical Subcommittee Meeting	Bayhill 31-32
2:15 p.m. – 3:45 p.m.	Emerging Technologies Subcommittee Meeting	Bayhill 22
2:15 p.m. – 3:45 p.m.	International Subcommittee Meeting	Bayhill 17
2:15 p.m. – 3:45 p.m.	Marine Industry Subcommittee Meeting	Bayhill 27
2:15 p.m. – 3:45 p.m.	Midstream Subcommittee Meeting	Bayhill 29-30
2:15 p.m. – 3:45 p.m.	Mining Industry Committee Meeting	Bayhill 18
2:15 p.m. – 3:45 p.m.	Production Subcommittee Meeting	Bayhill 21
2:15 p.m. – 3:45 p.m.	Refining Subcommittee Meeting	Bayhill 25-26
3:45 p.m. – 5:15 p.m.	Safety Subcommittee Meeting	Bayhill 19-20
Wednesday September 18, 2024.		
7:00 a.m. – 8:00 a.m.	<i>Authors' Breakfast* (see page 9)</i>	Barrel Spring I
7:00 a.m. – 8:15 a.m.	Attendees' Breakfast	Regency Ballroom R-S
8:15 a.m. – 11:15 a.m.	Emerging Technologies Technical Session II	Regency Ballroom O
8:15 a.m. – 11:15 a.m.	Marine Industry Technical Session II	Regency Ballroom Q
8:15 a.m. – 11:15 a.m.	Mining Industry Committee Technical Session II	Regency Ballroom U
8:15 a.m. – 11:15 a.m.	Production Technical Session II	Regency Ballroom P
8:15 a.m. – 11:15 a.m.	Safety Technical Session II	Regency Ballroom T
11:45 a.m. – 1:30 p.m.	PCIC Luncheon	Regency Ballroom R-S
2:00 p.m. – 5:00 p.m.	Chemical Technical Session II	Regency Ballroom O
2:00 p.m. – 5:00 p.m.	International Technical Session II	Regency Ballroom Q
2:00 p.m. – 5:00 p.m.	Midstream Technical Session II	Regency Ballroom T
2:00 p.m. – 5:00 p.m.	Mining Industry Committee Technical Session III	Regency Ballroom U
2:00 p.m. – 5:00 p.m.	Refining Committee Technical Session II	Regency Ballroom P
5:15 p.m. – 7:15 p.m.	<i>IEEE-IAS-PCIC Executive Committee & Local Committee* Turnover Meeting</i>	Barrel Spring II
Thursday September 19, 2024.		
6:45 a.m. – 7:30 a.m.	<i>Tutorial Presenters' Breakfast (see page 9)</i>	Barrel Spring I
7:00 a.m. – 8:00 a.m.	<i>PCIC Executive Committee Breakfast*</i>	Barrel Spring II
7:00 a.m. – 8:00 a.m.	<i>Tutorial Attendees Breakfast* (Tutorial Attendees Only)</i>	Regency Ballroom T
8:00 a.m. – 9:00 a.m.	<i>IEEE-IAS-PCIC Annual Business Meeting*</i>	Manatee Spring
8:00 a.m. – 11:45 a.m.	Tutorial 2024-1 – Protection and Control in Distribution Switchgear using Current and Voltage Sensors	Celebration 1-2
8:00 a.m. – 11:45 a.m.	Tutorial 2024-2 – Electric Motors of Petroleum and Chemical Process Industry: What to look for to maintain the designed life of form wound insulation system.	Celebration 3-4
8:00 a.m. – 11:45 a.m.	Tutorial 2024-3 – Application of Medium Voltage Breakers.	Celebration 5-6
9:00 a.m. – 4:00 p.m.	<i>PCIC Executive Committee Meeting*</i>	Manatee Spring
12:00 p.m. – 1:00 p.m.	<i>PCIC Executive Committee Lunch*</i>	Barrel Spring II
12:00 p.m. – 1:00 p.m.	<i>Tutorial Luncheon* (Tutorial Attendees and Presenters Only)</i>	Regency Ballroom T

Thursday September 19, 2024. (continued)		Room
1:00 p.m.– 4:45 p.m.	Tutorial 2024-4 – Lessons learned in Circuit Breaker & Switchgear Retrofitting over the past 40 years.	Celebration 5-6
1:00 p.m.– 4:45 p.m.	Tutorial 2024-5 – Cybersecurity Protection for the Electrical Infrastructure.	Celebration 1-2
1:00 p.m.– 4:45 p.m.	Tutorial 2024-6 – State of the art technologies for liquid immersed Power Transformer Online Monitoring	Celebration 3-4



2024 IEEE-IAS-PCIC CONFERENCE TECHNICAL PROGRAM

The following is a list of technical papers that will be presented at the 2024 IEEE PCIC Conference in Orlando, Florida. Any last-minute changes to the final program can be found on the PCIC 2024 Orlando Conference App.

All paper presentations take place at the Hyatt Regency Orlando.

GENERAL TECHNICAL SESSION I

Monday, September 16, 2024 – 8:00 a.m. to 11:15 a.m.

Presiding: Kevin Peterson, PCIC Chair

PCIC-2024-01 IEEE 1017 Family of Standards – A Major Update

Robert Durham
Cameron Chung
Marcus O. Durham

THEWAY Labs
Alberta Electric System Operator
THEWAY Labs

PCIC-2024-02 Lithium-Ion Battery Systems: Risk Management, Operations and Maintenance Considerations.

Donald Dunn

Waldemar S. Nelson and Company

PCIC-2024-03 A Comparison of Protection Based Arc Flash Mitigation Techniques

Craig Wester
Donald Elliott
Wayne Hartmann
David Virost

GE Vernova
NorthStar Energy Services
GE Vernova
Colonial Pipeline

GENERAL TECHNICAL SESSION II

Monday, September 16, 2024 – 2:00 p.m. to 5:00 p.m.

Presiding: Paul Sullivan, PCIC Vice-Chair

PCIC-2024-04 Storage of Electricity in the Form of Electrical Energy Using Hydrogen

Rehanul Hasan
Merwyn D'Souza
David Hohenstein
Rick Mendler.

Pepperl+Fuchs, Inc.
Worley
Pepperl+Fuchs, Inc.
PIP Emeritus

PCIC-2024-05 The Path of Decarbonization through Electrification, A Refinery Case Study and Lessons Learned.

Giovanni Parra
Luis Espinoza
Sina Ghods
Alia Hardy

Fluor Enterprises, Inc.
Marathon Petroleum Corp.
Fluor Enterprises, Inc.
Marathon Petroleum Corp.

PCIC-2024-06 Electric Drivers in LNG Liquefaction Plants: Design Aspects and Challenges

Navid Binesh
Carlo Arrioja
Matt Taher

ABB
ABB
Bechtel Energy, Inc.

CHEMICAL TECHNICAL SESSION I

Monday, September 16, 2024 – 2:00 p.m. to 5:00 p.m.

Presiding: Jason Obermeyer, Chair

PCIC-2024-07 Petrochemical Plant Turnaround Case Study: Planning, Executing, Findings and Lessons Learned

Maria Clara Saraiva
Luiz Kehl

Braskem America Inc.
Braskem America Inc.

PCIC-2024-08	Analysis of Power Quality Monitoring Methods in Industrial Distribution Systems Farhana Choudhury Murty V.V.S. Yalla Gary Rinaldi	Electro Industries/Gauge Tech Electro Industries/Gauge Tech Electro Industries/Gauge Tech
PCIC-2024-09	The Drive to Electrify: Benefits of Electrification of Fossil Fuel-Fired Process Heating Equipment David TenEycke Ben Johnson	Thermon Thermon (Retired)

INTERNATIONAL TECHNICAL SESSION I	
Monday, September 16, 2024 – 2:00 p.m. to 5:00 p.m.	Presiding: Allen Kachurovski, Chair

PCIC-2024-10	The Impact of Changing Medium Voltage Switchgear Standards on the Application of Dedicated Motor Buses Rakan El-Mahayni Abdulwahab Al-Abdulwahab Cory Helfrich	Saudi Aramco Saudi Aramco Saudi Aramco
PCIC-2024-11	Overvoltages in Medium Voltage Industrial Systems Associated with Switching High Voltage Transformers Connected Through Insulated Cables Leonardo de Carvalho Rocha Thiago Trezza Borges Fabricio Las Casas	Petrobras Petrobras Petrobras
PCIC-2024-12	Electrical Obsolescence Management: Proactive & Data Driven Mitigation Strategies Ritchie Pragale Faisal Mansour Abdulaziz Mubayedh Amar Patel	Saudi Aramco Saudi Aramco Saudi Aramco Saudi Aramco

MIDSTREAM TECHNICAL SESSION I	
Monday, September 16, 2024 – 2:00 p.m. to 5:00 p.m.	Presiding: Manish Verma, Chair

PCIC-2024-13	Trans Alaska Pipeline System – Improved Safety and Reliability Via Main-Tie-Main, Arc-Flash, and Fast-Bus Protection Schemes Using IEC 61850 over a Software-Defined Network Tanushri Doshi Dwight Anderson Kevin Lythgoe Kenny Sheffler	Schweitzer Engineering Labs, Inc. Schweitzer Engineering Labs, Inc. Alyeska Pipeline Service Company Schweitzer Engineering Labs, Inc.
PCIC-2024-14	Design Considerations for Co-Locating PV farms Near Pipelines Alonzo Alvarez Meola Zach Mckinney Irfan Khan Giancarlo Leone Henry (Hank) Clark, Jr.	Chevron Pipeline & Power Chevron Technical Center TEXAS A&M SR3 Engineering Chevron Pipeline & Power
PCIC-2024-15	Use of Predictive Analytics on A Critical Heated Pipeline Akshat Singh Gustavo Saldarriaga	nVent Thermal Management nVent Thermal Management

REFINING TECHNICAL SESSION I	
Monday, September 16, 2024 – 2:00 p.m. to 5:00 p.m.	Presiding Patrick Loupe, Vice-Chair

PCIC-2024-16	Power Management System for a 4 GW Integrated Gasification Combined-Cycle Generation Facility Abdel Rahman Khatib	Schweitzer Engineering Laboratories, Inc.
PCIC-2024-17	Alarm Management Fundamentals – What is the Impact of Electrical Equipment Automation on Industrial Control Systems Donald Dunn Nicholas Sands	Waldemar S. Nelson and Company DuPont
PCIC-2024-18	Electrical Switchgear Protection and Control Scheme Design Techniques to Improve Security and Dependability Refining Pratik Patel Sundaravaradan Ananthan Rikesh Shah William Reed	Schweitzer Engineering Laboratories, Inc. Schweitzer Engineering Laboratories, Inc. Schweitzer Engineering Laboratories, Inc. Samsung Electronics

EMERGING TECHNOLOGIES SESSION I	
Tuesday, September 17, 2024 – 8:15 a.m. to 11:15 a.m.	Presiding: Greg Clement, Chair

PCIC-2024-19	Returns of Experience and Recommendations for Mechanical Integration of Large 2-pole Variable-Speed Electric Motors for High Availability of LNG Compression Trains Lionel Durantay Alain Gelin Wissam Moubarak Edouard Thibaut	GE Vernova PC TotalEnergies GE Vernova PC TotalEnergies
PCIC-2024-20	High Voltage Circuits in Large Industrial Facilities. Matthew Murray Matt Armand Dane Martindale	Bechtel Energy Inc. Bechtel Energy Inc. The Okonite Company
PCIC-2024-21	The Advancement of Safety Features for Industrial Power System Operations and Control Chetan Kansagara Paulo Franco Anil Pandya Bhairavi Pandya	Schweitzer Engineering Laboratories, Inc. Schweitzer Engineering Laboratories, Inc. Tengizchevroil Actalent Services

MARINE INDUSTRY TECHNICAL SESSION I	
Tuesday, September 17, 2024 – 8:15 a.m. to 11:15 a.m.	Presiding: Ethan Dong, Chair

PCIC-2024-22	Marine Radar Electromagnetic Environmental Effects [E3] on Shipboard and Land Based ASD Operation: Problems and Solutions Gary Skibinski Jim Valasek	Rockwell Automation Rockwell Automation
PCIC-2024-23	Lessons Learned from a 35KV Submarine Power Cable Replacement Miguel Sarris Jeff Whipple	Doris Group Doris Group

PCIC-2024-24	Replacing Electromechanical Relays with Microprocessor Relays to Provide Thermal Protection for Motors	
	Bishoy Azer	Schweitzer Engineering Laboratories, Inc.
	Krithika Bhuvaneshwaran	Schweitzer Engineering Laboratories, Inc.
	Derrick Haas	Schweitzer Engineering Laboratories, Inc.
	Jim Payne	Phillips 66
	Ganga Ramesh	Schweitzer Engineering Laboratories, Inc.

PRODUCTION TECHNICAL SESSION I	
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Tuesday, September 17, 2024 – 8:15 a.m. to 11:15 a.m.	
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Presiding: Matthew Marchiano, Chair

PCIC-2024-25	Oil Field Electrification – Evolving Distinct Metered Sites to a Utility Scale Grid	
	Jed Chute	ExxonMobil - XTO Energy
	Carson Bates	NEI Electric Power Engineering, Inc
	Ross Eldridge	NEI Electric Power Engineering, Inc.
	Joe Marquardt	ExxonMobil
PCIC-2024-26	Electrical Distribution System Optimization Using Reliability Analysis	
	Carlos Ramirez Franco	Occidental Petroleum (OXY)
	Alexander Novoa	Occidental Petroleum (OXY)
	Fares Romanos	Occidental Petroleum (OXY)
PCIC-2024-27	A Review of Metering Safety Concerns	
	John Nelson	Retired

SAFETY TECHNICAL SESSION I	
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Tuesday, September 17, 2024 – 8:15 a.m. to 11:15 a.m.	
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Presiding: Tony Parsons, Chair

PCIC-2024-28	Do Arc Mitigating Systems Really Work?	
	John Kay	Rockwell (Retired)
	Juha Arvola	Arcteq Relays Ltd.
	Mikko Manninen	Arcteq Relays Ltd.
PCIC-2024-29	Simplifying the Implementation of Machine LVMCC	
	Roberto Marques	Rockwell Automation
	Jonathan B Johnson	Rockwell Automation
	James Newbern	Rockwell Automation
	Gabriel Rivera	Corteva Agriscience
PCIC-2024-30	Load-Side Voltages on Open Low-Voltage Circuit Breakers Due to Parasitic Capacitive Coupling	
	William Brown	Schneider Electric
	Marc Foster	Schneider Electric

MINING TECHNICAL SESSION I	
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Tuesday, September 17, 2024 – 8:15 a.m. to 11:15 a.m.	
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Presiding: Hélder de Paula, Chair

PCIC-2024-31	Harmonic Suppression for Matrix Converter Based AC Drives	
	Galina Mirzaeva	The University of Newcastle, Australia
	Yuan Liu	The University of Newcastle, Australia

PCIC-2024-32 Tool for the Assessment of the Savings in the Cable Acquisition When Employing DC Transmission in Long Distance Drives

André Alzamora
 Marco T. A. Êvo
 Hélder de Paula
 Caio Eduardo Silva

Federal University of Uberlândia (UFU)
 Federal University of São João del-Rei (UFSJ)
 Federal University of Uberlândia (UFU)
 Federal University of São João del-Rei (UFSJ)

PCIC-2024-33 Reliability Analysis of IGBT Modules of Multilevel Inverters Operating in Hostile Environments

Caio Eduardo Silva
 André M. Alzamora
 Hélder de Paula
 Gabriela Lígia Reis

Federal University of São João del-Rei (UFSJ)
 Federal University of Uberlândia (UFU)
 Federal University of Uberlândia (UFU)
 Federal Institute of Southeast Minas Gerais

EMERGING TECHNOLOGIES SESSION II	
Wednesday, September 18, 2024 – 8:15 a.m. to 11:15 a.m.	Presiding: Richard Anderson, Vice-Chair

PCIC-2024-34 Performance and Drive Characteristics of Slotless Axial Flux Motors

Claudio Schmitz

WEG

PCIC-2024-35 Optimization Techniques of Substation Capability Applying Natural Ester Liquid-Filled Transformers

Ray Catlett
 Roberto Ignacio da Silva
 Kevin R. Wirtz

System Optimization Group
 Cargill
 Cargill

PCIC-2024-36 Enhancing Success in Carbon Capture Integration with Existing Industrial Facilities: Electrical Challenges and Strategies.

Atul Arunkumar Shenoy
 Carles Miller
 David Brunnert
 Manish Verma

Burns & McDonnell
 Burns & McDonnell
 Energy Transfer
 TMEIC

MARINE INDUSTRY TECHNICAL SESSION II	
Wednesday, September 18, 2024 – 8:15 a.m. to 11:15 a.m.	Presiding: Karen Johnson, Vice-Chair

PCIC-2024-37 Four Quadrant Medium Voltage Drives

Mukul Rastogi
 Liviu Mihalache

Innomotics LLC
 Innomotics LLC

PCIC-2024-38 Modernization of the Existing Low and Medium Voltage Switchgear and MCCs

Seth Kravetz
 Ken Agent
 Albert Livshitz

Qualas Services
 East Kentucky Power
 Qualas Services

PCIC-2024-39 Why are Class I/Division 1 and Zone 1 Induction Machines Employed Less and Less in Industries Today?

Raj Mistry
 William Lawrence
 Bharat Mistry

Siemens - retired
 FM Approvals
 GE - retired

PRODUCTION TECHNICAL SESSION II	
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Wednesday, September 18, 2024 – 8:15 a.m. to 11:15 a.m.	Presiding: Brandon Cassimere, Vice-Chair
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PCIC-2024-40 Relay-Based Electrical Signature Analysis for Incipient Motor Failure Detection – Field Successes

Christine Crites	GE Grid Solutions
Balakrishna Pamulaparthi	GE Grid Solutions
Ravindranauth (Mike) Ramlachan	GE Grid Solutions
Kola Y V Bharav Reddy	Indian Oil Corporation, Ltd.

PCIC-2024-41 Connectors, Connectors, Connectors – Aren't They all the Same?

Lee Herron	BURNDY LLC, A Hubbell Company
Mark R. Hilbert	MR Hilbert, LLC
Daleep Mohla	DCM Electrical Consulting
Greg Stienman	ABB Installation Products

PCIC-2024-42 Settings Management with IED – Integrated Reporting Leads to Enhanced System Benefits

Kamran Heshami	Schweitzer Engineering Laboratories, Inc.
Michael T. Mendiola	Chevron
Nilushan K. Mudugamuwa	Tengizchevroil
Matthew Watkins	Schweitzer Engineering Laboratories, Inc.

SAFETY TECHNICAL SESSION II	
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Wednesday, September 18, 2024 – 8:15 a.m. to 11:15 a.m.	Presiding: Jim Phillips, Vice Chair
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PCIC-2024-43 Changes in IEEE C37.20.7 that Impact Internal Arc Testing and Medium Voltage MCCs

Stan Simms	Eaton
Richard Bhalla	Eaton
Thomas A. Farr	Eaton
Kyle Harrison	Eaton

PCIC-2024-44 The Art and Science of Switching Orders

Brian Cassidy	Chevron
Zach McKinney	Chevron

PCIC-2024-45 Intelligent Lighting Control for Harsh and Hazardous Areas

Adam Nugent	Eaton
M. Lee Perry Jr.	BASF
Tony Trim	Eaton
Shoumi Sen	Eaton

MINING TECHNICAL SESSION II	
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Wednesday, September 18, 2024 – 8:15 a.m. to 11:15 a.m.	Presiding: Nicole Neuman, Vice-Chair
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PCIC-2024-46 Complying with NFPA 70B and Minimizing the Total Cost of Ownership of Distribution Switchgear using Condition Monitoring Technologies and Data Analytics

Harshavardhan Karandikar	ABB Inc.
Danny Kliebert	The Dow Chemical Company
Marcelo Valdes	ABB Inc.

PCIC-2024-47 Lessons Learned Commissioning a Relay-Based Synchronous Motor Excitation Control System

Christine Crites	GE Grid Solutions
Kenneth W. Apfelbeck	Apfelbeck Electronics
Robert Muziol	GE Grid Solutions

PCIC-2024-48 On-Load Tap Changer (OLTC) Selection and Optimization in Large Power Transformers

Shankar Nambi	Bechtel Energy, Inc.
John K John	Virginia Transformer Corp
Mohit Kumar	Bechtel Energy, Inc.
Kannan Veeran	Virginia Transformer Corp

CHEMICAL TECHNICAL SESSION II**Wednesday, September 18, 2024 – 2:00 p.m. to 5:00 p.m.****Presiding: Robbie McElveen Vice-Chair****PCIC-2024-49 Lifetime Analysis of Copper and Aluminum Squirrel Cage Rotor of Asynchronous Machines**

Fredemar Rünco	WEG
Fernando Teles Farias Neto	WEG
Fernando Roberto Spézia	WEG
Alexandre Wentz	WEG

PCIC-2024-50 Turbine Replacement with Electrical Drivers – Evaluating Options

Hartmut Walter	Innomotics
Mark Chatburn	Burns & McDonnell
Bart Sauer	Innomotics
Gijs van Maanen	Innomotics

PCIC-2024-51 Coupled Electromechanical Analysis for Torsional Design of Electric Powertrains

Timo Holopainen	ABB Oy
Jukka Järvinen	ABB Inc.
Tommi Ryyppö	ABB Oy

INTERNATIONAL TECHNICAL SESSION II**Wednesday, September 18, 2024 – 2:00 p.m. to 5:00 p.m.****Presiding: Rakan El-Mahayni, Vice-Chair****PCIC-2024-52 Advantages of Paralleling Transformers at Industrial Sites with a Communication-Based Paralleling Method**

Tomas Branch	Hubbell - Beckwith Electric
Ravi Manda	Hubbell - Beckwith Electric
Murty V.V.S. Yalla	Hubbell - Beckwith Electric

PCIC-2024-53 Application of IEEE 1584 to IEC Equipment

Cory Helfrich	Saudi Aramco
Ahmed S Alabidi	Saudi Aramco
Ahmad A Al-Shibli	Saudi Aramco

PCIC-2024-54 Partial Discharge Investigation in Electric Machines Exposed to Ambient Stresses During Industrial Operations

Waqar Hassan	Universiti Tenaga Nasional
Azrul Mohd Ariffin	Universiti Tenaga Nasional
Keyvan Firuzi	Middle East Technical University
Ghulam Amjad Hussain	University of Dubai
John A. Kay	Independent Consultant

MIDSTREAM TECHNICAL SESSION II	
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Wednesday, September 18, 2024 – 2:00 p.m. to 5:00 p.m.	Presiding: Jeff Gaspar, Vice-Chair
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| PCIC-2024-55 | Power System Design Considerations for an Island Combined Cycle Power Plant for an Electrical LNG Facility
Gautami Bhatt
Sangyoun Kim
Azam Kurji | Bechtel Energy
Bechtel Manufacturing & Technology
ExxonMobil Global Projects |
| PCIC-2024-56 | Sync or Async – How to Start a Synchronous Motor Driving Reciprocating Compressor.
Mark Chisholm
Mark Kaupa
Jacques Leger
Luiz Cláudio Santos | WEG Electric Corp
Linde Engineering Americas
Electric Machinery Co. LLC
WEG Automation |
| PCIC-2024-57 | Can High Efficiency LV Motors be Rewound While Maintaining the Original Premium Efficiency Levels?
Henk DeSwardt | Timken |

REFINING TECHNICAL SESSION II	
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Wednesday, September 18, 2024 – 2:00 p.m. to 5:00 p.m.	Presiding: Giovanni Parra, Chair
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| PCIC-2024-58 | Understanding the Relationship Between Total Harmonic Distortion and Total Demand Distortion in IEEE Std 519-2022: A Practical Discussion for Compliance Evaluations
Michael McGraw
Alexander Hoevenaars
John Greenwald
Joseph Kotria | Mirus International
Mirus International
SM Energy Inc.
McCreary & Associates, Inc. |
| PCIC-2024-59 | Replacing Lead Acid and Nickel Cadmium Stationary Batteries with Lithium Ion – It's Not a Simple Swap
Michael O'Brien
Miles Borchardt
Shannon Harris
Hila Shadravan | Exponential Power
Exponential Power
Exponential Power
Exponential Power |
| PCIC-2024-60 | State of the Art Technologies for Liquid Immersed Power Transformer Online Monitoring
Hakim Dulak
Gary Hoffman
Trent Williams | Advanced Power Technologies
Advanced Power Technologies
Advanced Power Technologies |

MINING TECHNICAL SESSION III	
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Wednesday, September 18, 2024 – 2:00 p.m. to 5:00 p.m.	Presiding: Galina Mirzaeva, Immediate Past Chair
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| PCIC-2024-61 | Implementing Cybersecurity for Industrial-Connected Products
Wesley Van Hill
Nathan Laan
Rahul Gupta
Alexander Koehler | nVent Thermal LLC
nVent Thermal LLC
UL Solutions
UL Solutions |
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PCIC-2024-62 Reliable and Efficient High Power DC Distribution for Hydrogen Electrolysis

Mohit Kumar
Kevin Pretorius
Terry Tadlock
Nandhakumar Vijayakumar

Bechtel Energy, Inc.
ABB Switzerland Ltd.
Bechtel Energy, Inc.
ABB Switzerland Ltd.

PCIC-2021-63 Motor Service Life vs. Design Life

Mark Hodowanec
Ian Bahnsen
Nicholas Lang
Anthony Soellner

Innomotics LLC
Innomotics LLC
Innomotics LLC
Innomotics LLC



Welcome to PCIC Orlando



The premier international forum for the exchange of electrical technology applications for the petroleum and chemical related industries

72nd Annual PCIC Technical Conference
Dallas, Texas USA
September 22 – 25, 2025

2025 PCIC Conference – Call for Papers

The PCIC is the premier conference for practicing electrical engineers and other professionals that deals with electrical installations in the oil and gas industry. It is highly regarded for providing top-quality papers on various relevant subjects aimed at the all-important electrical industry.

Abstracts are being requested on topics related to the practical application of new electrical technology, standards, equipment, and systems of interest in the petroleum and chemical industries within the scope of the PCIC Technical Subcommittees. All papers must be “PCIC Presentation First” as original works that have not been previously presented. Papers will be subject to thorough technical and peer reviews. Papers accepted will be published in the conference record. Papers deemed appropriate may be directed to the IEEE Transactions on Industry Applications or the IEEE Industry Applications Magazine for additional publication.

The following information must be included with all paper proposals:

1. Complete all pertinent information on the abstract collection webpage.
2. A maximum of five (5) authors per paper with four (4) or less authors preferred.
3. Post your abstract using unformatted text. Copying and pasting bullets or other special formatting may result in a less than ideal presentation.
4. **Important Notice:** An acknowledgement will be sent to confirm receipt of all proposals from this system. If you do not receive this communication, contact Paul Sullivan, PCIC Vice-Chair, Paul.B.Sullivan@ieee.org.

Submission Deadlines:

- Authors submit abstracts to Technical Program Chair via the PCIC website..... August 30, 2024
- PCIC notifies authors of acceptance status..... October 11, 2024
- Authors submit finished paper for peer review..... February 2, 2025
- Authors submit final manuscripts for final check..... April 4, 2025

For additional key dates for authors, see the Authors Resources page on the PCIC website.

Abstract interest polling by registered conference attendees this year will be performed prior to the Orlando Conference via an online platform. After the interest levels are compiled, the General Subcommittee will select seven papers for the General program. The remaining abstracts will then be sent to the individual technical subcommittees based on the authors request for committee and topic prior to 2:00 p.m. on **Tuesday, September 17, 2024**. Prospective authors are invited to speak to their abstract at their assigned Technical Subcommittee’s meeting on Tuesday afternoon.

If the paper is accepted, at least one author must register and attend the conference in 2025 to present the paper. Other co-authors attending the paper presentation must also register for the conference (at a minimum: for the day of their presentation).

To Submit a paper abstract, go to: <https://ieeepcic.com/conference/abstract-submission-form/>.

For more information, visit the IEEE/IAS-PCIC website at <https://ieeepcic.com/>

2025 PCIC Conference Call for Papers (Continued)

Below are the topics of specific interest of the different PCIC subcommittees and the Mining Industry Committee.

Chemical Subcommittee

Scope: Technical papers related to the application, installation and/or operational experiences as they relate to electrical technology for the general chemical industry.

Emerging Technologies Subcommittee

Scope: Technical papers that grow and preserve the knowledge base used in the electrolytic production of metals and chemicals and papers that introduce or further explore emerging technologies including LNG, renewable energy technologies, oil sands & shale; methanol, ethanol, & hydrogen, and subsea technologies.

General Program Subcommittee

Scope: Technical papers of broad interest to the petroleum and chemical industry.

International Subcommittee

Scope: Technical papers related to petroleum and chemical industry applications outside of North America.

Marine Industry Subcommittee

Scope: Technical papers related to ships, barges, and other floating structures used in the petrochemical industry.

Midstream Subcommittee

Scope: Technical papers related to pipelines, pumping stations, and terminals as well as other means of transporting oil and gas.

Mining Industry Committee

Scope: Technical papers related to electrical applications and operations in mines.

Production Subcommittee

Scope: Technical papers related to onshore and offshore, fixed and floating drilling, well head, and production facilities.

Refining Subcommittee

Scope: Technical papers related to petroleum refineries and petrochemical facilities.

Safety Subcommittee

Scope: Technical papers related to all aspects of electrical safety affecting the petrochemical industry.

For Additional Information see Author Resources

<https://ieeepcic.com/conference/author-resources/>



2024 IEEE-IAS-PCIC Conference Tutorials

The PCIC 2024 Tutorial Subcommittee is sponsoring six half-day tutorials on Thursday, September 19, 2024. For those who apply for a Continuing Education Certificate (CEU) evaluation, forms will be distributed prior to the start of each tutorial. The completed evaluation forms must be returned to the presenter at the end of each the session (see page 14 for more details). Included in your tutorial registration fee are breakfast from 7:00 a.m. to 8:00 a.m., lunch from 12:00 p.m. to 1:00 p.m. and light refreshments during breaks, these are an excellent networking opportunity to meet the other tutorial attendees.

First time attendees registered for the entire conference are eligible to attend one tutorial for the reduced rate of \$50.00. A second tutorial can be attended by paying full registration cost. This must be indicated on the registration form and completed prior to September 1, 2024, or the full tutorial fee will apply.

NOTE: *Pre-registration for tutorials is necessary as it allows the presenter to prepare sufficient handout materials. If space permits, conference attendees not pre-registered can attend tutorials by paying full price at the registration desk (printed handout material may be subject to availability).*

Tutorial PCIC 2024-1: Protection and Control in Distribution Switchgear using Current and Voltage Sensors.

Thursday, September 19, 2024.

8:00 a.m. – 11:45 a.m.

Abstract: In the past decade, there has been a noticeable growth in the use of low-power instrument transformers (LPITs aka Sensors) based on the Rogowski coil principle for current and resistive or capacitive voltage divider principles for voltage. These advanced technologies have been utilized in various applications from primary to secondary distribution in both outdoor and indoor applications. LPIT provides an advanced alternative to using conventional instrument transformers in electrical distribution solution systems for measurement, power quality, and protection applications. This tutorial will cover an evaluation of the performance of both design philosophies. It will deal with the standardization of the LPIT technology with a focus on the benefits connected with the latest standards from the IEC 61869 family. Finally, we will cover the integration of this technology into distribution switchgear and the significant resulting added value in terms of safety, sustainability, and performance.

Instructors:

Harsh Karandikar, Senior Member IEEE, Fellow ASME, has over 30 years of experience in research, engineering and product management of industrial products and services and with a focus in the last decade on technologies for medium voltage electrical power distribution. He currently is the Global Product Manager for Medium Voltage ANSI switchgear and for ANSI Digital Initiatives for ABB's Distribution Solution business. He has over 70 technical publications including at PCIC. He presented the tutorial "Introduction to Digital Switchgear" at PCIC 2022. Harsh holds a Ph.D. from the University of Houston.

Lukas Cesky, member IEEE, holds a doctor's degree in Power Engineering from the Slovak University of Technology. He works as the Global Product Manager responsible for MV Sensors and is located at ABB's factory in Brno, Czech Republic. Lukas is a member of the PES and a member of IEC and IEEE working groups that focus on MV instrument transformers and sensors. Lukas is the author of many articles connected with this topic. Lukas' power industry experience includes design engineering of LV grids, R&D project engineering of MV instrument transformers & sensors, and product management of instrument transformers and sensors. He frequently lectures within the industry including at universities and international conferences.

Tutorial PCIC 2024-2: Electric Motors of Petroleum and Chemical Process Industry: What to look for to maintain the designed life of form wound insulation system.

Thursday, September 19, 2024.

8:00 a.m. – 11:45 a.m.

Abstract: The form wound stator insulation system is the heart of electric motors used in the Petroleum and Chemical Process Industry. Many medium and high voltage motors in operation do not have replacements on hand in case of failure. Typically, replacement motors have long lead times, and so the cost of lost production significantly exceeds the cost of the replacement motor. A rewind option could be available as a most cost effective. However, it would be prudent to have an early intervention program that employs OEM recommended preventive

practices coupled with predictive analytics to prevent unplanned failures. These practices are critical to achieve the expected design life and protect operating return on the asset investment.

Instructors:

Bharat Mistry Graduated in Electrical Engineering in 1972 from India. Serving as the Professional Engineer in Ontario, Canada. Retired at General Electric in 2017. Previously worked for Franklin Electric, Reliance Electric. Served industries for more than 35 years in design and application of electric rotating machines. Involved in developing industry standards such as CSA, UL, IEC, NEMA, IEEE. Published many technical papers and tutorial in IEEE PCIC conferences in USA, Canada, Europe and Middle East. Presently chairing CSA C22.2 No. 100 standard of motors and generators, Canadian IEC/TC2 mirror committee.

Javier Portos graduated from U.A.N.L, Mexico with a BSME & EE degree in 1990. He has 30 years' experience on designing large electric induction and Synchronous machines. His areas of expertise include design, application engineering, manufacture, high voltage insulation systems, repair, test and field service for large rotating equipment. Involved in developing industry standards IEEE 112, 1349 & 1068 & API 541 & 546. Mr. Portos has published technical papers in IEEE/PCIC conferences. Mr. Portos joined IPS group in Oct 2012 as VP of Engineering for Southern Region responsible for repairs, reconditions and replacements of electric rotating machines.

Tom Reid received his B.Sc. degree in Electrical Engineering from Mississippi State University in 1985. During his career with Reliance Electric, he was responsible for the design, testing and development of next generation small and medium AC motors. He also completed significant work with insulation systems earning five patents and six meritorious disclosures. During his career with Integrated Power Services he has continued his research to develop insulation system technologies. He has extensive experience performing failure analysis for motors and generators. He has published numerous papers for the Electric Power Research Institute and Large Electric Motors Users Group. He has specific subject matter expertise with identification and mitigation strategies for partial discharge in high voltage motors and generators.

Greg Stone was a Dielectrics Engineer with Ontario Hydro, a large Canadian power generation company from 1975 to 1990. From 1990 to 2021 he was employed at Iris Power L.P., a motor and generator condition monitoring company he helped to form. He has published two books on motor and generator winding maintenance, a book on partial discharge testing and authored >200 papers concerned with rotating machine windings. Since 1980 he has also been active in creating and updating many IEEE and IEC standards. Greg Stone has a PhD in Electrical Engineering from the University of Waterloo, Canada, and is a Fellow of the IEEE.

Tutorial PCIC 2024-3: Application of Medium Voltage Breakers.

Thursday, September 19, 2024.

8:00 a.m. – 11:45 a.m.

Abstract: Provide a basic, but comprehensive overview of Medium Voltage circuit breaker general designs, ratings, design factors, and application in a number of typical systems.

Instructors:

Peter C. Pietramala has 35 years in the power systems industry in a variety of roles including heavy industrial and utility design and analysis. He currently specializes in dynamic simulation, short circuit, load flow, and transient switching analysis as well as protection application at both the distribution and transmission levels. He also has a key lead role in Eaton as a trainer of numerous engineering training courses such as overcurrent protection, overvoltage protection, power systems analysis, and CYME analysis software. The last several years he has taught engineering principles to hundreds of engineers throughout North America and has authored IEEE technical papers and lead IEEE tutorials in past conferences (PCIC and ESTMP).

Scott P Basinger has worked in the electrical industry for 26 years supporting industrial and commercial power systems. He currently works as a Senior Application Engineer with Eaton Corporation supporting consulting engineers and complex power system projects in Alberta, Canada. Scott is an active Senior Member of the IEEE as an author, panel discussion participant, reviewer, and tutorial instructor. He is currently serving as Vice Chair for the IEEE IAS ESTMP 2024 Conference.

Tutorial PCIC 2024-4: Lessons learned in Circuit Breaker & Switchgear Retrofitting over the past 40 years.**Thursday, September 19, 2024.****1:00 p.m. – 4:45 p.m.**

Abstract: Since the early 1980's retrofitting low voltage and medium voltage circuit breakers has been a popular and (mostly) successful method to extend the useful life of switchgear by upgrading critical components of, or entire withdrawable circuit breakers. Over this time period, there has been significant growth in the technology, methods, scope and the supporting standards to enhance the quality and reliability of circuit breaker and switchgear retrofitting".

This tutorial will address the following topics:

- 1) The common types of circuit breaker retrofitting projects over time
- 2) The economic justification for retrofitting vs. switchgear replacement
- 3) The early origins of retrofitting and the methods employed in the design and testing.
- 4) Some of the issues and failures of early retrofitting
- 5) The development of IEEE C37.59 to address these issues
- 6) Improvements in the MV retrofitting process including "Roll-in-Replacement" breakers
- 7) Low Voltage circuit breaker retrofitting
- 8) New(er) developments in switchgear life extension
- 9) What the future of retrofitting looks like
- 10) Common misconceptions surrounding retrofitting

Instructor:

John Webb received his Bachelor of Science in electrical engineering from the US Naval Academy in 1982. He qualified as a Nuclear Engineering Officer in Submarines aboard the USS Queenfish and served on the staffs of Commander, 3rd Fleet and Commander Pacific Fleet. Currently he is a Principal Engineer for ABB, with 33 years' experience in the electrical industry and is among the pioneers of medium voltage roll-in-replacement breakers. He was the Engineering Manager for the Westinghouse Electric "Center of Excellence" for Retrofit and Replacement Circuit Breakers and directly oversaw the design, testing and construction of more than 70 types and ratings of medium voltage vacuum retrofit and roll-in-replacement circuit breakers, including some for nuclear class 1E application. He worked as the Product Line manager for Aftermarket Products for Siemens, which included engineering oversight of its growing portfolio of vacuum replacement circuit breakers as well as several switchgear upgrade projects.

From 2000 through 2004 he was Vice-President of Atlantic Operations for Pacific Breaker Systems, which specialized in circuit breaker and switchgear retrofitting. His responsibilities included everything from design and testing of both vacuum and SF6 based replacement breakers to project management, installation and training of customers on multiple designs and projects. ABB purchased Pacific Breaker Systems in 2004 and John assumed the dual roles of Engineering Manager and R&D Manager for ABB Circuit Breaker Technology Solutions. In this role he oversaw both the traditional manufacturing processes of the factory as well as design of several dozen new medium voltage and low voltage retrofit designs. These included several types of nuclear safety related (class 1E) low voltage circuit breakers and six new designs of safety related medium voltage replacement breakers.

Tutorial PCIC 2024-5: Cybersecurity Protection for the Electrical Infrastructure.**Thursday, September 19, 2024.****1:00 p.m. – 4:45 p.m.**

Abstract: Cybersecurity is a major topic within the public, government regulatory agencies, as well as private industry. This tutorial will focus on the industry issues related to cybersecurity and protecting themselves from attacks on their operational technology (OT) systems. The participants will gain insight on where to go for information on cybersecurity threats and protections along with the examples of product evaluations and risk assessments. Industrial manufacturers are expanding their use of electrical infrastructure equipment connected to the internet as well as software controls. The types of equipment most seen in this growth area are circuit protection with external network communication, lighting control systems, building management systems, and automation/control systems used in various building systems

such as HVAC. A review of these various systems and the standards and methods used to protect them will focus on circuit protection and automation/control solutions. Understanding the impact on an industrial manufacturers' personal safety as well as the financial impacts caused by cyber-attacks is needed by those involved with the installation of network connected electrical infrastructure. Cybersecurity requirements in electrical infrastructure codes and standards along with how to meet them will be reviewed. Information will be provided on diverse types of industries that have been subject to cyber-attacks and how they have affected these end users including the cost impact both from lost production and loss of reputation. Multiple case studies on a new and existing industrial building will provide examples of how the previous information will be used and formatted for consulting engineers, industrial users, electrical contractors, and Authorities Having Jurisdiction (AHJ). When the tutorial is complete the participant will understand the cybersecurity standards utilized for product development as well as how cybersecurity risk assessments are conducted and reported.

Instructors:

Keith Waters is an Industry Standards Manager for Schneider Electric USA and is based in Lexington, Kentucky. He is responsible for overcurrent protective device and automation/control product standards, installation codes, enforcement, and holds BSEE degree from the University of Kentucky. Keith is engaged in applying codes and standards addressing cybersecurity, energy efficiency & sustainability. He also participates in the Power & Energy Institute of Kentucky's Industry Advisory Council. Keith is a licensed Professional Engineer and a Certified Energy Manager. Keith has been an employee of Schneider Electric for 37 years serving in multiple roles including engineering, Global Business Development and Strategic Sales Manager. Keith frequently speaks on various cybersecurity, energy efficiency, sustainability, product application, and code compliance topics. He is actively involved with the IEEE Standards Association's Standards Board (RevCom Chair), Industry Application Society's Executive Board and Industrial & Commercial Power Systems leadership. Keith maintains leadership positions within several industry standards technical committees. He is a representative to NEC Code Making Panels 3 and 11; and the NFPA 79 technical committee. Keith has published articles on circuit protection, energy management, electrical controls, and smart manufacturing.

Michael Pyle serves as Director of Product Cyber Security for the Energy Management Business Unit of Schneider Electric. He has more than 30 years of experience in industrial control and energy management solutions and has spent the last 12 years in the field of cyber security for products and solutions in Operational Technology (OT). He is a Certified Secure Software Lifecycle Professional and a Certified Ethical Hacker.

In this role Mike stood up the initial cyber security organization the business unit and has lead the vulnerability management team, developed cyber security solutions such device genuineness for products, coordinated with CISA/DHS on several topics, and lead collaboration and innovation programs on cyber security within the company and with partners. He has also written several blogs on cyber security that can be found here and has been a presenter and panel member on several cyber security conferences including PAC World, SAME, and Nullcon.

Tutorial PCIC 2024-6: State of the art technologies for liquid immersed Power Transformer Online Monitoring
Thursday, September 19, 2024. 1:00 p.m. – 4:45 p.m.

Abstract: Power transformers owner and users are moving from a time-based maintenance to a conditioned based maintenance. In order to proceed with this maintenance method change, online data is needed from the transformer parameters. This tutorial reviews the currently used technologies for power transformer online monitoring, as included in the latest IEEE and CIGRE guides and technical brochures. The tutorial will discuss the most used monitoring parameters for online transformer monitoring. This includes Oil temperature, Calculated winding temperature, Direct winding temperature (Fiber Optic Temperature Sensors), Transformer cooling control, Transformer cooling efficiency, Load tap changer (LTC), Level, static pressure, rapid pressure changes, Dissolved Gas Analysis (DGA), HV and LV bushings, Moisture in oil, Partial Discharge (PD) and Geomagnetic Induced Current (GIC).

Instructors:

Hakim Dulac is currently working for Advanced Power Technologies as Canadian General Manager based in Quebec City, Canada. Hakim has worked in past positions as Customer Solution Manager for Qualitrol, Technical Sales Engineer for FISO and Operations Manager and

Application Engineer for Nomos Systems. Hakim is involved in multiple IEEE Transformer Committee working groups. He is also the Canadian representative of the CIGRE A2.67 « Guideline for Online Dissolved Gas Analysis Monitoring» and Digitalisation of transformer asset management chapter task force leader on CIGRE A2.65 «Transformer Digital Twin». Hakim received his B.A.Sc. in Automation Engineering from ETS University in Montreal, Canada. He is a professional engineer in the province of Quebec.

Trent Williams is currently working for Advanced Power Technologies as the Eastern US Application Engineer based in Piketon, Ohio. Trent is involved in multiple IEEE PES Transformer Committee working groups and is a current member of Transformer Technologies' Technical Advisory Board. Trent received his BSEE in Electrical Engineering from Wright State University College of Engineering, Dayton, Ohio.

Bill Whitehead has over 30 years of major electrical equipment, software and monitoring solutions experience in both the Utility and Industrial markets. Bill holds a Bachelor of Science degree in Electrical Engineering from North Carolina State University. Since 2005, Bill has been an active member of the IEEE Transformer Committee and recently joined CIGRE A2, working to improve transformer standards and online transformer monitoring guides.

Bill started his career in electrical equipment manufacturing to field service to application engineering to managing application/engineering teams to Director of Engineering. He then moved into account management roles starting with Regional Accounts to Global Sales to International Accounts Director.



2025 IEEE-IAS-PCIC Conference – Call for Tutorial Proposals



**72nd Annual PCIC Technical Conference
Dallas, Texas USA
September 22 – 25, 2025**

The Tutorial Subcommittee strives to offer a tutorial slate that will appeal to a wide cross section of PCIC attendees depending upon their experience, discipline, and responsibilities. All tutorials are presented by experts and are intended to help experienced professionals update or refresh their knowledge base and to accelerate development of those new to the profession. The tutorial program is intended to provide all PCIC attendees with an opportunity to expand their PCIC experience, providing even more value from the conference because of their participation in the tutorials.

Any individual (s) interested in presenting a tutorial of topics relevant to PCIC attendees, is encouraged to fill out the form below. PCIC guidelines for non-commercialism available at the PCIC website are required to be followed for all presentations and handout materials. Due to limited time available for tutorials, each tutorial shall be of four hours duration.

The Lead Instructor is responsible for submitting the completed form electronically to the Tutorial Subcommittee Chair.
All tutorial instructors are required to register for the PCIC Conference (for the day they are presenting their tutorial at a minimum).

Schedule:

- Lead Instructors submit proposals to Tutorial SC Chair..... November 1, 2024
- Tutorial SC Chair notifies lead instructor of tutorial status..... January 31, 2025
- Lead Instructor submits CV of all Instructors..... March 1, 2025
- Lead Instructor submits finished tutorial for non-commercialism check..... August 15, 2025

Simple Steps to follow to submit a tutorial proposal:

- Complete the 2025 PCIC Tutorial Proposal form below, and email it to:
 - D Ray Crow – Chair, draycrow@aol.com
 - cc. Daleep Mohla Vice Chair, d.c.mohla@ieee.org, and Neeraj Bhatia- Secretary, nbhatia@bechtel.com
- Or go to <https://ieeepcic.com/conference/tutorial-proposal-form/> and complete the on-line form 2025 Tutorial Proposal



Tutorial Proposal Form – for PCIC 2025

Please see notes below before submitting - Submit Biography of each instructor with the proposal.

1.) Title of Tutorial: *(maximum of 100 characters including spaces)*

2.) Abstract *(maximum of 1000 characters including spaces)*

3.) Lead Instructor: *(see notes 3, 4 below)*

Name: _____ Title: _____

Company: _____ Telephone: _____

Address: _____

City/State/Zip: _____

Email: _____

4.) Other Instructor(s) Name & Company affiliation: *(see note 5 below)*

5.) Send To: Ray Crowe – Chair, PCIC Tutorial Subcommittee

DCM Electrical Consulting Services, Inc.

Email to: Draycrow@aol.com; nbhatia@bechtel.com cc: d.c.mohla@ieee.org

Notes:

- 1) The title should accurately reflect material to be addressed in the tutorial. It should be limited to a maximum of 100 Characters with spacing.
- 2) The abstract limited to 1000 characters with spaces should summarize material to be covered in the tutorial and should be in complete sentences (no bulleted list). Please note that tabs, fonts and bullets may be lost in formatting. Only the use of spaces and carriage returns will be retained.
- 3) **Lead Instructor is responsible for all submissions and serves as the main contact for all tutorial** related correspondence. The Lead Author shall ensure all presentation and handout material (printed or electronic) is free from any commercialism to comply with PCIC policies. This includes the removal of all commercial logos in the presentation slides and disabling any company screen savers.
- 4) The **Lead Instructor** shall submit Biographies of all the instructors. The biography of the instructors should be limited to one thousand characters with spaces. If there are more than two instructors, the total characters with spaces for all instructors should not exceed two thousand. Please note that tabs, fonts, and bullets may be lost in formatting. Only the use of spaces and carriage returns will be retained.
- 5) In addition to the paper copies, PowerPoint slides should be printed with a maximum of two slides per page for clarity.
- 6) The number of instructors for the tutorial should be a minimum of two and a maximum of four (including the lead instructor) with not more than two from any one company or organization.



Guest Tour Information

Orlando is a city with so many attractions available to enjoy. After a lot of hard work, your PCIC Local Guest Tours Committee has selected what they believe is an excellent selection of tours for you to select from. With so many options available, there will also be some additional tour information and special discounts for attractions such as Disney's Keys to the Kingdom Tour, Disney World – Epcot, Universal Orlando Resort - Island of adventure park - Volcano Bay, and SeaWorld. Information on these tours and discounted tickets will be available in the Guest hospitality suite and on the PCIC 2024 link (<https://www.orlandomeeting.com/delegate/pcic-2024/>).

The guest tours offered by the PCIC Local Committee are available for Saturday September 14, 2024, through Wednesday September 18, 2024, of the conference. These tours allow the guest to experience some of the great local areas of interest.

Important Notes about the PCIC Orlando Tours:

- Tours will operate rain or shine.
- Tour tickets are non-refundable but may be exchanged with, or sold to, other conference guests.
 - Exchange information will be available in the Guest Hospitality Suite.
- PCIC reserves the right to cancel tours if registrations are less than the minimum capacity levels required.
 - If a tour is cancelled a full refund will be issued.
- Some tours may require or suggest specific clothing, footwear, or safety equipment. See tour descriptions below for more information.
 - For all outdoor tours, sunscreen with a high SPF rating is highly recommended.

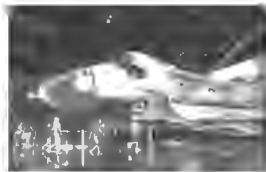
The check-in for all tours will be in the Guest Hospitality Suite in the Blue Spring room on the lower level of the convention area of the Hyatt Regency Orlando. The departure area for the tour buses is just up the escalator and a short walk (less than a minute). Please arrive at least 20 minutes before the scheduled departure time.

Saturday, September 14, 2024

Tour 1 – Kennedy Space Center Adventure

8:00 AM – 5:00 PM

\$174.00



Welcome to the home of One Small Step for Man. In simple terms, this is one of the most essential – and thrilling – attractions in Florida, and it is as real as it comes in terms of a dynamic, visceral place to visit. Not only does the Space Center offer the past, present and future of the space program, it puts visitors front and center in the whole experience like never before. Seeing is believing, and you will believe you have been transported to the cutting edge of space exploration through a series of hands-on exhibits, movies, and presentations, including a daily Astronaut Encounter with one of the modern heroes of NASA's operations.

It all starts with the signature Bus Tour that provides a complete overview of the full extent of the vast spread of operations, including the massive Vehicle Assembly Building, Launch Complex 39B, and the Apollo/Saturn V Center, with its recreated moon landing and awesome full-size Saturn V rocket. Back at the main Visitor Complex, you should definitely make a beeline for the hugely impressive Space Shuttle Atlantis exhibit, with its moving and emotional presentation of one of the four surviving orbiters, as well as take a ride on the riveting Shuttle Launch Experience, a clever simulator with the inside track on what it feels like to blast off from the Space Center.

You can also visit the Heroes & Legends center (including the U.S. Astronaut Hall of Fame), soak up the grandeur of the IMAX Theater with its eye-popping large-screen movies, and wander the Rocket Garden. There is **so much to see** here, you will definitely need all day to take it all in, and our Admission with Transportation is the perfect way to indulge your inner astronaut! The KSC is fully 60 miles from Orlando, so let us take the strain out of the journey and you can enjoy the experience to the max – the IMAX. Note: lunch is not included.

Tour 2 – Real Florida Manatee Adventure**8:00 AM – 5:00 PM****\$202.00**

You've come all the way to Florida, so it makes sense to actually see as much of it as possible, and no other tour provides such a wide-ranging, in-depth experience as our carefully crafted Real Florida Adventure. This action-packed day an overview of what's in store as we head out to the beautiful Crystal River area on the Gulf coast, 80 miles north-west of Orlando. This is the Manatee Capital of the World, and the only place in America where it is legal to swim with manatees. It is also home to stunning natural springs and lots of wildlife, and you'll get to meet an essential part of it as we gear up for the signature Manatee Snorkel under the supervision of a Coast Guard Certified Captain. You will learn all about the unique West Indian manatee – and then get to see some of them, up close and personal in the crystal-clear waters!

Then we head off to 210-acre Homosassa Springs State Park, a genuine hidden gem of Florida nature, where there is plentiful local wildlife to see and hear about, including the endangered Florida panther, black bears, red wolves, bobcats and alligators, as well as a profusion of birdlife, notably whooping cranes and flamingos. Also here is the unique sight of Nature's Fishbowl, an underwater observatory built over the mouth of the main spring where a huge number of fish hang out, while the Park has its own manatee rehabilitation program to provide another exciting glimpse of these rare sea mammals. Lunch is included here, too. Finally, the day will conclude with an exciting airboat ride on the Withlacoochee River, another natural haven where you can see more wildlife in its natural habitat and enjoy the thrill of skimming the water at up to 45mph in these exhilarating, flat-bottomed craft.

NB: any person wishing to do the manatee swim must rent a wetsuit prior to boat departure. Flotation devices and life vests are available for you if needed. To swim with the manatees, swim masks, snorkels and wetsuits are required and provided at no additional cost. This tour includes a Boat tour of Kings Bay and Crystal River, admission to Ellie Schiller Homosassa Springs Wildlife State Park, a wild airboat ride on the Withlacoochee River, and a packed lunch. Round trip transportation, professional certified and licensed tour guides, and applicable fees and gratuities are all included.

Monday, September 16, 2024**Tour 3 – Shingle Creek Guided Kayak Adventure****9:00 AM – 12:00 PM****\$150.00**

There is no better way to view Florida's natural beauty than taking a leisurely kayak tour through one of Central Florida's best kept secrets... Shingle Creek. We'll pick you up and transport you to this hidden gem located just outside the hustle and bustle of the tourist district. Steeped in rich history, certified guides will lead you down the river pointing out the abundance of wildlife as you glide through ancient cypress forests. This 2-hour out & back eco-tour is a great way to explore the peaceful side of the Sunshine State. Catch glimpses of turtles, birds of prey, wading birds, and maybe even an alligator or two. This tour includes single kayaks or tandem kayaks,

paddling instructions, and all paddling equipment.

After your tour enjoy a picnic lunch along the river before heading back to your pickup location. This is the perfect half day Florida experience for everyone of all ages to enjoy. All tours guides are Certified Kayak Instructors by the American Canoe Association (ACA) as well as First Aid and CPR trained and certified. The tour duration is approximately 5 hours door to door. Boxed lunch included.

Tour 4 – Gatorland Adventure **9:00 AM – 1:00 PM** **\$114.00**



Get ready for down-home family fun at “The Alligator Capital of the World®” – Gatorland! There isn’t a better place to see alligators and crocodiles of all sizes, from babies, also known as grunts, to the 14-foot monsters that call their Breeding Marsh home. They even have the largest collection of extremely rare white leucistic alligators. But Gatorland is more than just a gator park! The free-flight aviary, petting zoo, one-of-a-kind animal shows and new Stompin’ Gator Off-Road Adventure ensure your day will be chock-full of fun, smiles, and special memories!

Gatorland guests can now board one of three, 12-foot-high custom-made, off-road monster vehicles for a 15-minute rugged and hilarious adventure like no other theme park ride anywhere. This exciting ride is chock full of wacky new Gatorland characters, singing tour guides, swampy adventure, and, of course, lots of alligators. Each vehicle is specially branded and named after iconic real alligators and crocodiles at Gatorland, including Bonecrusher SM, Cannibal Jake, and Swamp Ghost SM.

Tour 5 – Titanic: The Artifact Exhibition **10:00am – 2:00pm** **\$39.00**



Titanic: The Artifact Exhibition Orlando! Experience the Ship of Dreams like never before. Titanic: The Artifact Exhibition takes guests on a journey back in time to April 1912. The Exhibition features more than 300 artifacts, costumed actors as well as full-scale room recreations. Are you interested in a guided tour of the Titanic: The Artifact Exhibition? Join us at select times throughout the week, for our thematic 2-hour guided tours. An artifact specialist will lead groups of 25 through the exhibition providing a personalized experience.

Tuesday, September 17, 2024

Tour 6 – Brews and Bites **11:00 AM – 3:00 PM** **\$150.00**



Embark on an exciting brewery tour in Orlando, Florida, and immerse yourself in the world of craft beer at three exceptional breweries: Rockpit Brewing, Persimmon Hollow, and Ivanhoe Park Brewery. This tour is designed to celebrate the art of brewing, with the focus firmly placed on the highlight of the experience – the beer. While exploring each brewery, you’ll have the opportunity to sample their finest brews, experiencing the diverse flavors and styles that make them unique. Along the way, enjoy samples of delicious bar food, which serve as a delightful bonus to enhance your overall enjoyment.

From Rockpit Brewing’s exceptional offerings to Persimmon Hollow’s innovative brews and Ivanhoe Park Brewery’s vibrant selection, this brewery tour promises an unforgettable journey through Orlando’s thriving craft beer scene. Raise a glass, savor the beer, and delight in the bonus of satisfying light bites as you explore the flavors of the city. Cheers to a beer-centric adventure! Includes 3 Orlando Breweries with 1 flight at each stop, food samplings at each stop, a brewery tour of one facility, 10% off merchandise, and roundtrip transportation.

Tuesday, September 17, 2024 (Continued)**Tour 7 – Wild Florida Adventure****8:00 AM – 2:30 PM****\$201.00**

Wild Florida is a wonderful airboat ride and nature attraction carefully woven into the pristine countryside deep in Osceola County. Based on 3,000-acre Cypress Lake, it is the only sign of development for miles around and therefore offers a true taste of the real Florida we love to show our visitors.

With almost 300 acres of its own, Wild Florida is the largest family-owned wildlife and adventure park in Central Florida, and its attractions include a raised boardwalk through a typical swamp, an extensive alligator park, exotic animal exhibits, and several shows.

Then there is the signature Drive-Thru Safari Park experience, a rare opportunity to get up close and personal with a variety of animals, both native and imported, including a chance to hand-feed the park's giraffes. The only thing you have to bring is your camera – and your sense of Florida adventure! This tour includes a 30-minute airboat tour, safari admission, gator park admission, BBQ basket lunch at the Chomp House, a digital photo of your group, a bag of gator and giraffe feed.

Tour 8 – Tour of Winter Park**Times (not set at the time)****\$114.00**

Small Town Charm, one hour boat tour: Located on Lake Osceola in the quiet suburb less than 10 minutes from downtown Orlando, the boat tour offers hour-long, guided cruises through three of the seven lakes and two, narrow manmade canals on the tranquil Winter Park chain. Hosted Seltzers, Beers & Wine Aboard. On any given tour, participants may observe large cranes swooping the waterside to snag a large fish or a lazy alligator languishing on a nearby bank.



Afterwards, you can enjoy a leisurely lunch at Ava MediterrAegean (not included) or stroll around town and shop (also not included 😊).

Tour 9 – The Spa at Hyatt Regency Orlando**9:00 AM – 4:00 PM****Cost Based on Selection**

Situated inside the Hyatt Regency Orlando, The Spa is the perfect place to unwind. Our 22,000 square-foot sanctuary features a relaxation room, steam room, indoor whirlpool and outdoor serenity pools as well as a fitness center and full-service hair salon. Treat yourself to a stress-melting massage, European facial or body wrap with products infused with natural ingredients. Take advantage of our complimentary 8,000 square-foot fitness center, offering a fully equipped weight room, cardio studio, core and stretching room, spinning studio and group exercise studio. Your journey to serenity awaits. We have arranged a limited number of appointments, at special pricing. Please chose from the 1-hour treatments listed below:

- Facials: 14 appointments. \$140/hr.
- Massage: 56 appointments. \$145/hr.
- Manicure or Pedicure: 28 appointments. \$65/hr.

NOTES:

- No refunds after booking, however you are free to resell your ticket.
- Gratuity NOT included and not required (but at guest's discretion).
- After you register, your contact information will be sent to the SPA who will contact you to arrange an appointment time.

Plan your visit to The Spa today

Wednesday, September 18, 2024

Tour 11 – Mia’s Italian Kitchen Interactive Class

11:00 AM – 1:45 PM

\$144.00



Pizza and Sangria Experience

Experience the artistry of pizza making in a lively and interactive class at Mia’s Italian Kitchen. Dive into the world of culinary creation as skilled chefs guide you through the process of crafting the perfect pizza, from kneading the dough to selecting fresh, flavorful toppings. As you unleash your inner pizza chef, savor the vibrant atmosphere where creativity and camaraderie flourish. To complement your culinary adventure, indulge in a delightful Sangria Tasting, where you can savor the rich flavors of this classic Spanish beverage and a plated lunch, in a relaxed and social setting.



Attractions near the Hyatt Regency Orlando and Hilton Orlando



Pointe Orlando – Food, Fun, and Shopping

(5-minute walk from the Hyatt Regency Orlando)

WonderWorks gaming/ laser tag and Orlando and iFly Indoor Skydiving are a short walk (10-15 minutes) from the hotels (just past Point Orlando). A ride up International Drive on public transit (and a short walk) will take you to places like Orlando Slingshot, Sea Life Aquarium, Madame Tussauds Orlando, Museums of Illusions, Icon Park, Lockbusters Escape Rooms, Ripley’s Believe It or Not! Museum, and many more attractions (these are about a 30 minute walk from the Hyatt, public transit is available). There’s plenty to do in Orlando.

(This was originally Tour 10 – Andretti Indoor Karting & Games)



Andretti Indoor Karting & Games in Orlando is a premier entertainment/event destination featuring high-speed electric Superkarts on a road course style track, State of the Art Arcade, Ropes Course with curved rail zipline, Two-Level Laser Tag, Racing Simulators, Boutique Bowling, XD Dark Ride Motion Theater and immersive multiplayer Virtual Reality experiences. Fuel up in the Andretti Grill delivering scratch American favorites or in the SkyBar with craft beer, cocktails, and selections from the Andretti Winery. Are you looking to wow your guests with an unforgettable event? We have over 10,000 sqft of event space with In-House Catering, Free WiFi, and A/V. Take your entertainment to the next level today with Andretti Indoor Karting & Games!

PLEASE NOTE: This event is to be entirely organized by the guests (you could plan the outing in the guest hospitality suite). Please refer to (<https://andrettikarting.com/orlando>) for booking info. Also, Online Waiver must be filled out: (<https://andrettiorlando.centeredgeonline.com/waivers>). It is about a 15 minute walk from the Hyatt along Convention Way and a 25 minute walk from the Hilton (but the shuttle can bring you to/from the Hyatt for a shorter walk)

PCIC 2024 Conference Hotels Contact Information

It is approximately a 15-minute walk from the Hyatt to the Hilton.

The PCIC Local Committee is providing a shuttle between the Hyatt, Hilton and Pointe Orlando. The shuttle will run every 15-20 minutes at peak times (Monday – Wednesday, 6:30 a.m. – 8:30 a.m., and 4:00 p.m. – 11:30 p.m.). It will run every 30 minutes at off peak times (Monday – Wednesday, 8:30 a.m. – 4:00 p.m.). Limited shuttle service is also available on Saturday and Sunday.

Hyatt Regency Orlando

9801 International Drive,
Orlando, FL 32819, USA.
Telephone: +1 407 284 1234
Info & requests: orlando.regency@hyatt.com

Located minutes from major theme parks like Universal Orlando®, Walt Disney World® and SeaWorld Orlando®, the family-friendly Orlando resort has it all. Reserve a private cabana and relax poolside where you can enjoy a swimming grotto with waterfalls, zero-entry pool, and a waterslide. Grab a bite at one of five on-site restaurants or the 24-hour grab-and-go market, work out in a state-of-the-art fitness center, or pamper yourself at the full-service hotel spa. Located on International Drive makes it easy to enjoy shopping, dining, and more than 100 entertainment options, within a two-mile radius of the hotel.

Work out exactly as you would back home. The technology-enabled gym offers three distinct studio spaces for strength, cardio, and core conditioning. There are additional studios for exercise and indoor cycling, plus tennis courts—all are included in the resort fee. There are also many walking and running routes surrounding the hotel which are open 24/7.

The Hyatt Regency Orlando offers **Concierge Services** to assist PCIC attendees with travel and entertainment arrangements while at the hotel.

Parking Information: The hotel on-site has Valet Parking at \$50 per day and Self-Parking for \$35 per day with in-out privileges. An offsite parking lot is approximately a 6-minute walk away at Pointe Orlando for \$20.00 with no in-out privileges.

Hilton Orlando

6001 Destination Parkway,
Orlando FL, 32819
Telephone: +1-407-313-4300

Tucked away in the heart of Orlando is where you will discover the Hilton Orlando, a vibrant, contemporary resort with an exciting personality to complement an exceptional location. Centrally located to all major theme-parks and attractions and just minutes from the eclectic dining scene and entertainment of International Drive, this resort sits on over 26 acres of lush landscaping and tropical inspirations making it a true destination in of its own. Guests are immediately welcomed with an upscale feel enhanced with resort-style accommodations and amenities.

To enhance the Orlando dining scene, Hilton Orlando offers several distinct dining options from our new sports bar, FastBreak, to the more leisure Tropics Pool Bar & Grill. From a little R&R to making a big splash, the heart of the resort is the expansive recreation area featuring a tropical oasis with sweeping waterfalls overflowing into two pools and a lazy river lined with luxurious cabanas. For more activity, take a plunge down the winding waterslide, or enjoy an afternoon on one of the sports courts. Inside, take the time to enjoy the Eforea spa, the 15-000 sq. ft. onsite spa and fitness center.

Hilton Orlando seamlessly blends extensive leisure offerings with world class business amenities, and there is a discreet separation between meeting facilities and recreational amenities allowing each type of guest to experience the stay that meets their unique expectations. The resort welcomes each guest with personalized service with the goal of creating unforgettable memories. Hilton Orlando is truly a destination with a unique experience of its own. The Hilton Orlando offers **Concierge Services** to assist PCIC attendees with travel and entertainment arrangements while at the hotel.

Parking Information: The hotel offers valet parking, at \$45 per night plus tax. and self-parking at \$35 per night plus tax. There are charging stations available for electric cars (for a fee).



Orlando International Airport (MCO):

The Orlando International Airport (MCO) is the main airport serving the area and the Hyatt Regency Orlando.

Ground transportation from Orlando International Airport to the Hyatt Regency Orlando

The Hyatt Regency Orlando hotel is about 15 miles from the airport and does not provide shuttle services to the airport. Other travel options include:

Taxis, Limos and Rental Cars

Taxis and limousine services are available outside the main terminals. Taxis from the airport cost approximately \$45.00 and Limousines cost approximately \$70.00. The travel time for either option takes approximately 20 minutes to reach the Hyatt Regency Orlando or the Hilton Orlando.

Ride Share Services

All Ride Share companies (such as Uber, Lyft and Wingz) pick-up passengers outside the arrivals level at Terminal A (Level 2) and Level 3 between 9:00pm and 2:00am. The average price shown on-line is approximately \$34.00: It is best to contact these services directly for more information.

Public Transportation

The Orlando LYNX public transit system is located at Terminal A on Level 1 (Ground Transportation) in spaces A38-A41. Bus route 42 departs every 20-30 minutes during the day and has a stop opposite the Hyatt Regency Orlando and at the near the Hilton Orlando. The trip takes approximately 1 hour and 15 minutes and costs \$2.00.

For more information on the Orlando LYNX system go to <https://www.golynx.com/maps-schedules/routes-schedules.shtml>

Orlando Sanford International Airport (SFB)

Orlando Sanford International Airport is served by a few airlines with multiple routes for the US, Canada, Mexico and the Caribbean <https://flsfb.com/>.

Public Transportation

Public Transportation is available at Orlando Sanford International Airport, but it takes approximately 3 hours to reach the Hyatt Regency Orlando or the Hilton Orlando.

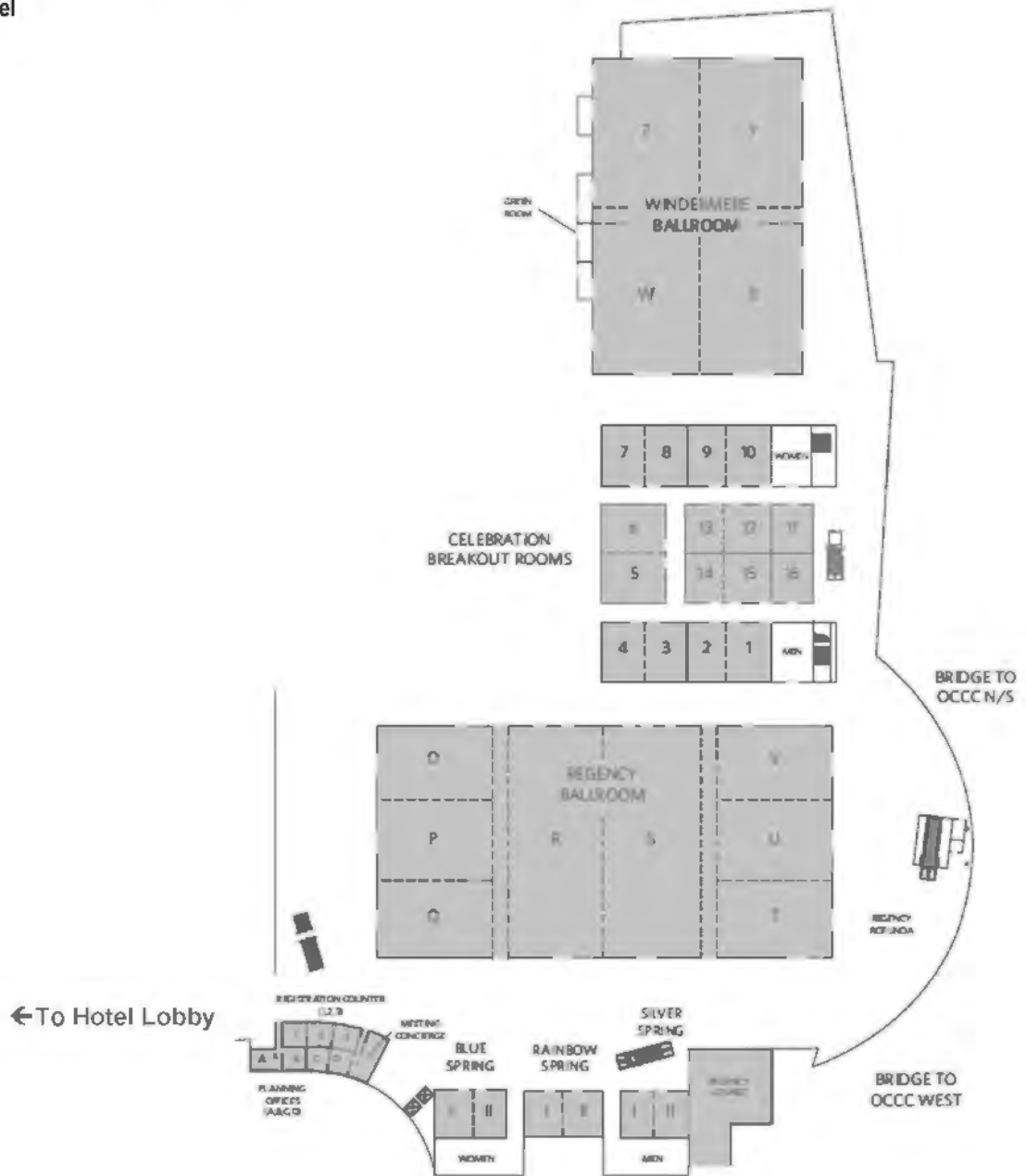
Taxis, Limos and Rental Cars

Taxis, Limousines and Shuttles are available and takes approximately 1 hour to reach the Hyatt Regency Orlando or the Hilton Orlando. Taxi fares are approximately \$130.00, Limousines fares are approximately \$160.00.



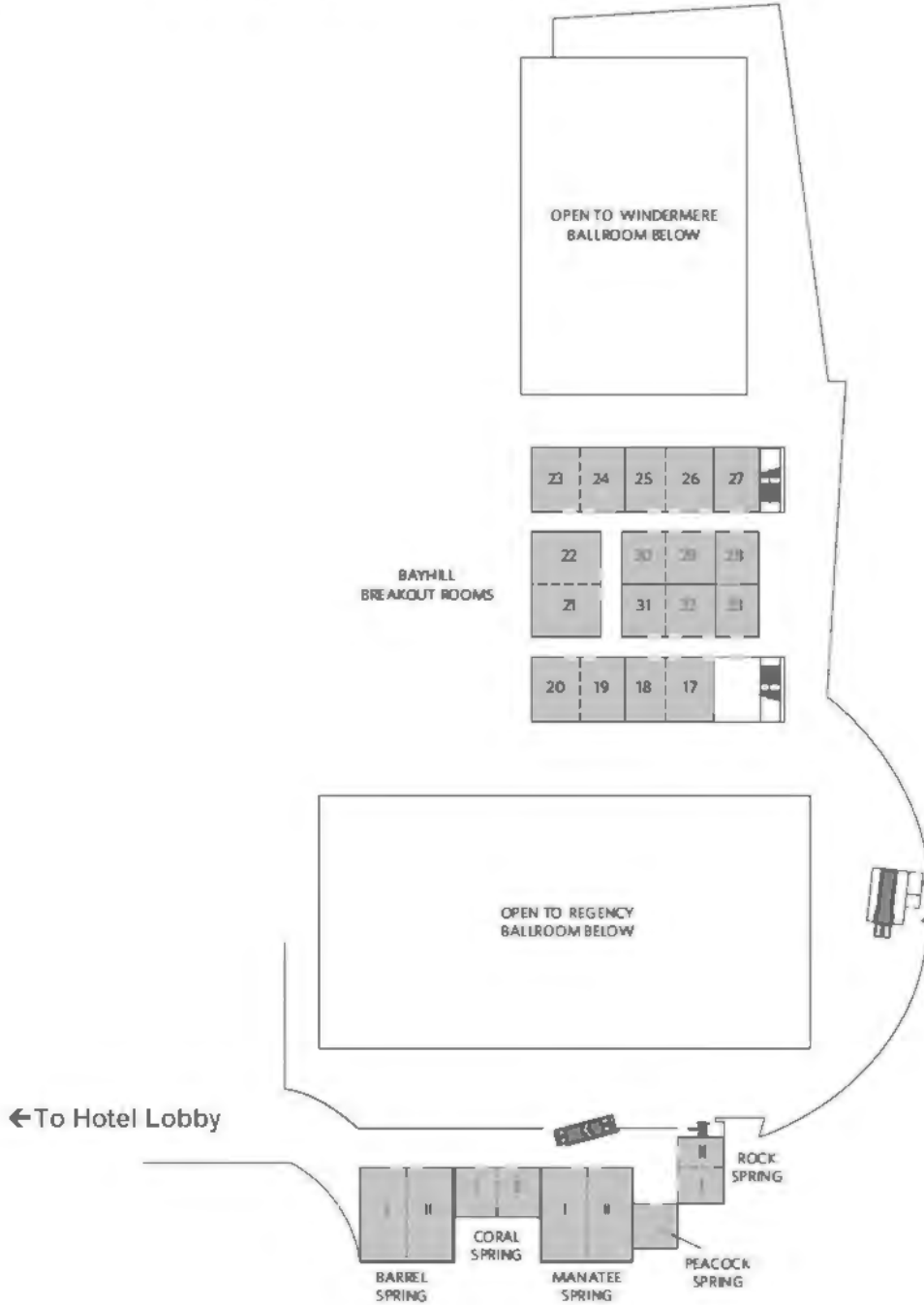
Hyatt Regency Orlando Layout and Room Locations

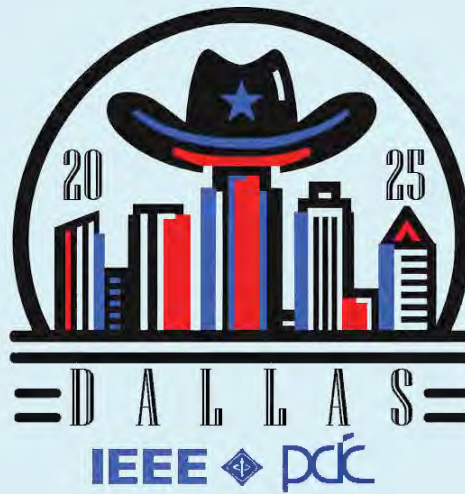
Convention Level



Hyatt Regency Orlando Layout and Room Locations

Lobby Level





It's time to start planning to attend the
**72nd IEEE IAS Petroleum and
Chemical Industry Committee
Conference**

**IEEE PCIC 2025
Dallas, Texas USA
September 22 – 25, 2025**