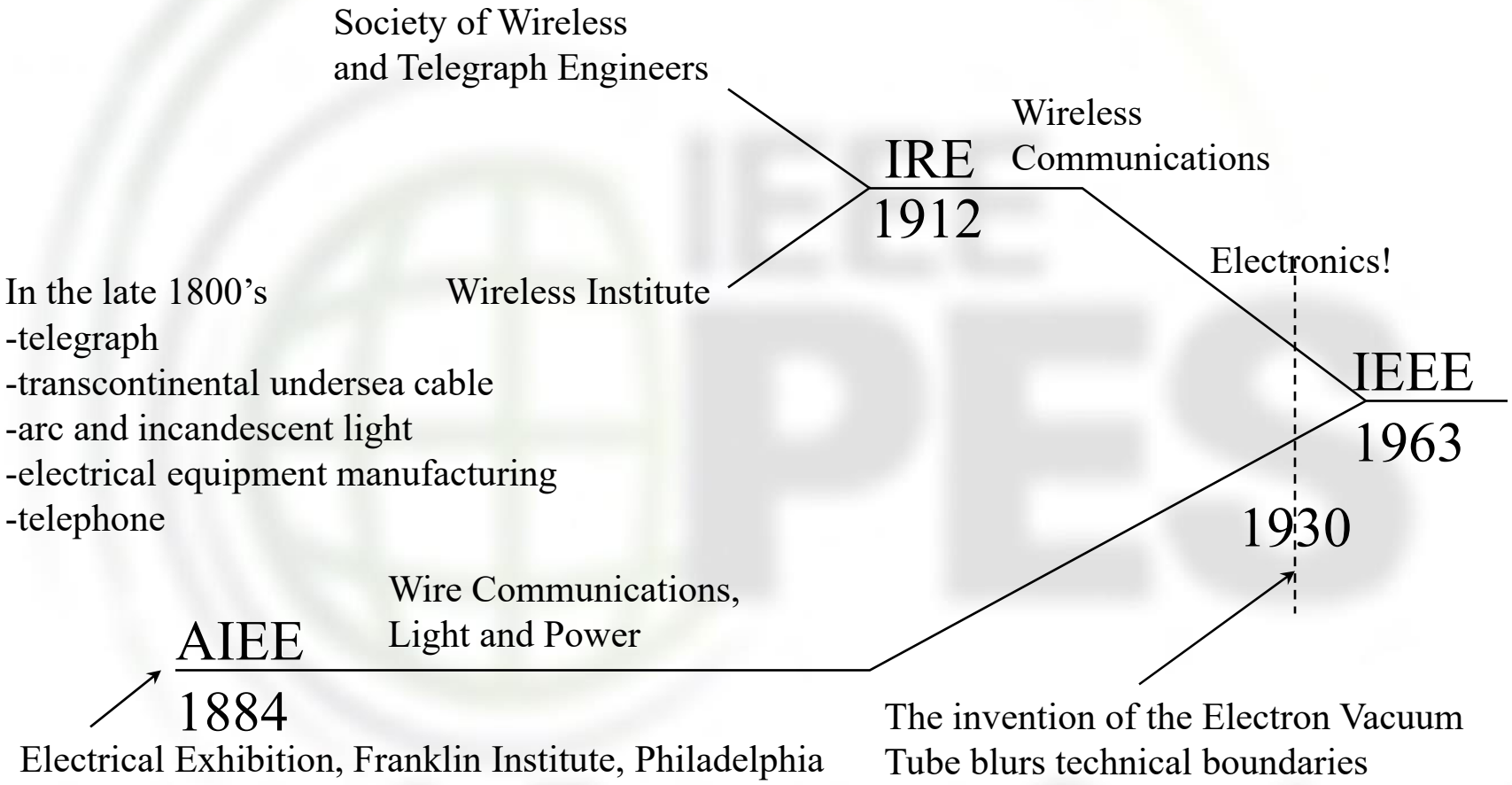
Power Systems Relaying & Control Committee

Michael Thompson- PSRC Committee Vice Chair

Mal Swanson/Cathy Dalton

PSRC Publicity/Membership

The IEEE Yesterday



Detailed history can be found at the following link:

https://www.ieee-pes.org/images/files/pdf/PES-History-Presentation-RAD.pdf

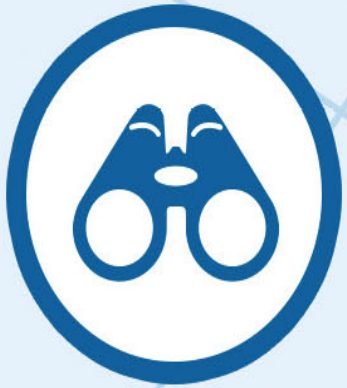
The IEEE Today

- > 430,000 members in 160 countries.
- The world's largest technical & professional society.
- 1,400,000 subscribers to all IEEE publications.
- 400,000 attendees at conferences annually.
- 40,000+ participants in Standards.

IEEE Mission & Vision

Our Mission

We foster technological innovation and excellence for the benefit of humanity.

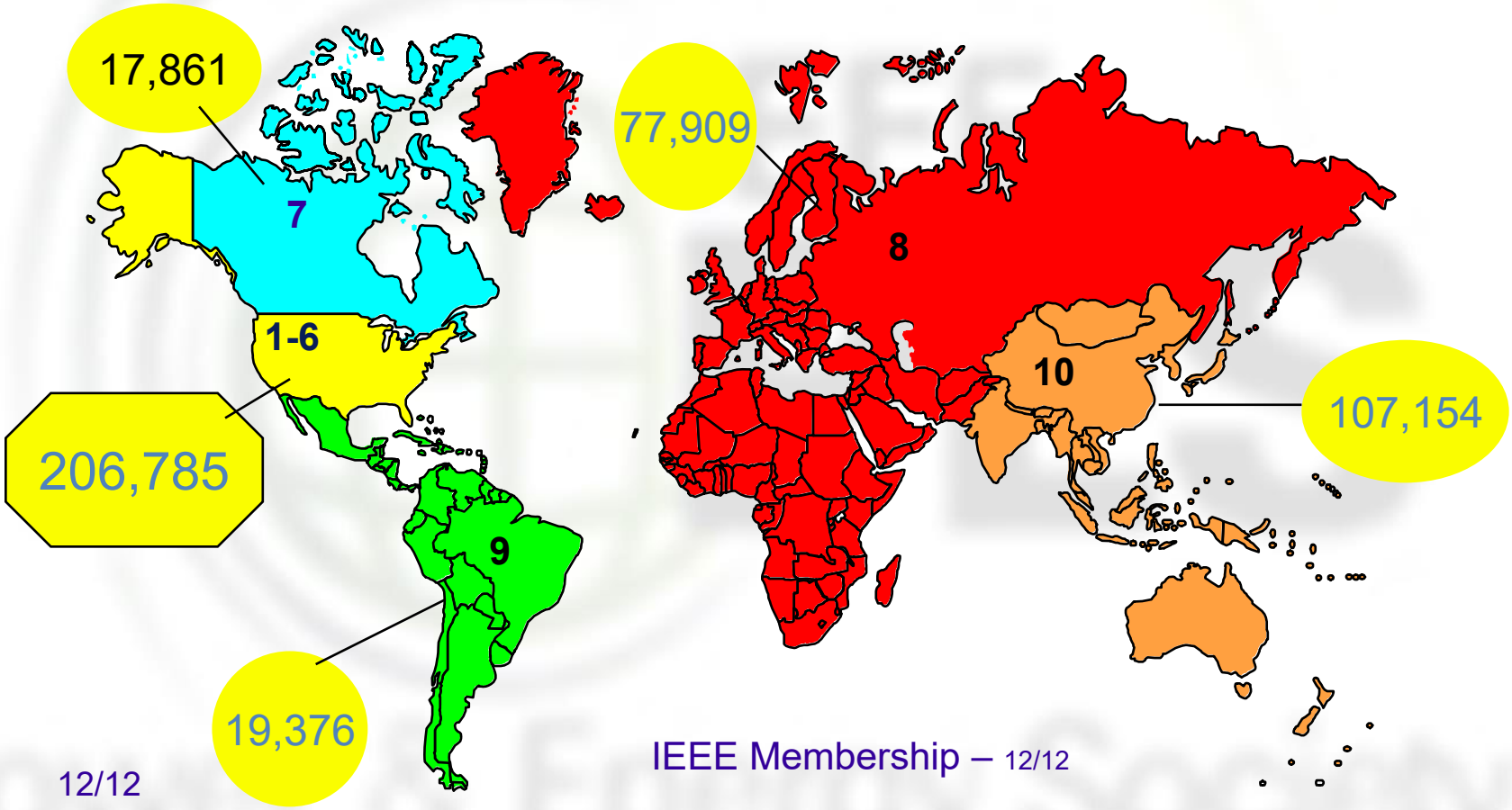


Our Vision

We will be essential to the global technical community and to technical professionals everywhere, and be universally recognized for the contributions of technology and of technical professionals in improving global conditions.

IEEE PES PSRC Power & Energy Society®

IEEE Regions & Membership



IEEE Membership – 12/12

IEEE Organization

The IEEE is made up of

- 38 Societies
- 10 Councils
- Approximately 2,195 individual and joint Society chapters and 333 Sections
- 2,354 Student Branches are located at colleges and universities worldwide.

Power & Energy Society (PES)

- The Power System Relaying & Control Committee is a Technical Committee in the PES
- PES is the third largest Society with > 38,000 members
  - Computer society 67k
  - Communications society 50k

IEEE (38 Societies)

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Power & Energy Society (PES)
(20 Committees)

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Power System Relaying and Control Committee

2021 PES Technical Council

COUNCIL OFFICERS

Vijay Vittal, *Chair*

Hong Chen, *Vice Chair*

Diane Watkins, *Secretary*

Farnoosh Rahmatian, *Past Chair*

https://www.ieee-pes.org/technical-activities/technical-council

2021 PES Technical Council

TECHNICAL COMMITTEES

Analytic Methods for Power Systems Committee – K. Cheung, *Chair*
Electric Machinery Committee - K. Chen, *Chair*
Energy Development and Power Generation Committee - John B. Yale, *Chair*
Energy Storage and Stationary Battery Committee - Curtis Ashton, *Chair*
Insulated Conductors Committee - Henk Geene, *Chair*
Nuclear Power Engineering Committee - John White, *Chair*
Power System Communications and Cybersecurity Committee – Craig Preuss, *Chair*
Power System Dynamic Performance Committee - Leonardo Lima, *Chair*
Power System Instrumentation and Measurements Committee - E. Hanique, *Chair*
Power System Operations, Planning and Economics Committee - Fran Li, *Chair*
Power System Relaying and Control Committee – Murty Yalla, *Chair*
Smart Buildings, Loads and Customer Systems - Ron Melton, *Chair*
Substations Committee - Patrick Fitzgerald, *Chair*
Surge Protective Devices Committee - Ronald Hotchkiss, *Chair*
Switchgear Committee - Keith Flowers, *Chair*
Transformers Committee - Bruce Forsyth, *Chair*
Transmission and Distribution Committee - Surya Santoso, *Chair*

http://www.ieee-pes.org/technical-activities/technical-council

Power System Relaying and Control Committee

- Meets 3 times a year (Jan., May & Sept.)
- Consists of 6 technical Subcommittees
- Typical attendance 220
  - Utilities
  - Manufacturers
  - Universities
  - Consulting

PSRC Scope

Treatment of all matters in which the dominant factors are the principles, application, design, construction, testing, and operation of power system protection and control. Protection and control systems include one or more of the following functions:

-- Sensing

-- data acquisition and processing

-- fault detection

-- manual or automatic control

-- and auxiliary operation

PSRC Scope (Part 2)

Included are:

- The devices providing these functions such as protective relaying, regulating, monitoring, synchronism-check, synchronizing, and reclosing relays; transducers; and Intelligent Electronic Devices (IEDs).
- The functions employed in the generation, transmission, distribution, and utilization of electrical energy, and their effects on system operation.
- The environmental phenomena that can adversely affect them.

PSRC Scope (Part 3)

- The communication, cybersecurity, time synchronization, and related requirements necessary to support protection and control systems, such as the identification and declaration of object modeling, message sizes, latencies, and jitter for satisfying technical and business requirements.

PSRC Scope (Part 4)

- The scope includes liaison and cooperation with other technical committees, societies, groups and associations concerned with various aspects of items herein.

PSRC Officers - Main Committee

- Chairman – Murty Yalla– Beckwith Electric Represents PSRC on the Technical Council
  - Sponsor of Standards
- Vice Chairman – Michael Thompson—SEL Engineering Services
  - Technical Committee Paper Coordinator (GM & T&D Expo)
  - Chooses new meeting venues
- Secretary – Gene Henneberg—NV Energy
  - Set meeting agenda
  - Records minutes
  - Runs physical meeting
- Standards Coordinator - Don Lukach– Ameren

PSRC Subcommittees

- Advisory (ADCOM) – Murty Yalla
- Systems Protection – Fred Friend
- Line Protection – Bruce Mackie
- Relay Communications – Aaron Martin
- Relay Practices and Consumer Interface – Jim Niemera
- Rotating Machinery Protection – Gary Kobet
- Substation Protection – Adi Mulawarman

C: System Protection Subcommittee

Fred Friend

Scope: Evaluate protection system responses to abnormal power system states. Evaluate and report on special protection schemes, remedial actions schemes, monitoring and control systems and their performance during abnormal power system conditions. Recommend corrective strategies and develop appropriate standards, guides, or special publications. Evaluate and report on new technologies which may have a bearing on protection system performance during abnormal power system conditions.

D: Line Protection Subcommittee

Bruce Mackie

Scope: Investigate and report on the relaying techniques and systems used for T&D line protection. Develop statistics and recommend protection practices for improving line relaying performance. Develop and maintain standards for line protection.

H: Relay Communications and Control Subcommittee

Aaron Martin

Scope: Evaluate and report on the characteristics and performance of protective relaying communications and control systems. Recommend communication requirements, operating and test procedures which assure reliable performance of the overall protection and control system. Report on new relaying equipment designs tailored to specific communication requirements.

H: Relay Communications and Control SC (Page 2)

Included are matters necessary to the function of:

- such systems employed in the generation, transmission, distribution, and utilization of electrical energy, and their effects on system operation. Control systems include data acquisition and processing from devices such as transducers, Intelligent Electronic Devices (IEDs), and Human Machine Interfaces (HMIs) including the low-level interfaces to these systems.
- Power System control issues associated with Power System Dynamics are excluded from this scope.

I: Relaying Practices Subcommittee

Jim Niemera

Scope: Develop, recommend and establish standards on protective relaying practices which are compatible with the electrical environment, including, but not limited to, relay withstand capabilities to electromagnetic interference, characteristics and performance of instrument transformers, testing procedures, applications, performance criteria, and definitions of relays and relay systems.

J: Rotating Machinery Subcommittee

Gary Kobet

Scope: Evaluate and report on protective relaying concepts and practices applicable to generators, motors, synchronous condensers, associated auxiliary systems, and performance of plant protective systems. Develop and maintain related relaying standards.

K: Substation Protection Subcommittee

Adi Mulawarman

Scope: Evaluate and report on methods used in protective relaying of substations and the consumer or independent power producer, associated equipment and performance of these protective systems. Develop and maintain relaying standards which relate to this equipment and the utility-consumer interface.

What does the PSRC Committee Do ?

- Responsible for 55+ IEEE Standards and Guides
  - Standards have 10 year life
  - Before the 10 years expires the standard must be updated and balloted
- Technical paper review
- Write reports / papers

Working Group Process

- Education
  - Speakers present topics pertinent to the standard
  - Working group member learn about topic
  - One reason to join working group
- Writing or rewriting
  - Members write various portions of the standard
  - Writing assignments are reviewed and revised
- Balloting
  - Ballot and resolve comments
  - 75% approval needed
  - Anyone can join balloting body
  - Must be an IEEE SA member to ballot

Working Group Process

- Forward to IEEE SA for final approval and publishing
- After Ballot is finished working group assignment is complete
- Working group may publish
  - Transaction paper
  - Conference paper
  - Tutorial

Types and Roles

- PSRC Committee Membership Type
  - Interested Individual
  - Active Participant
  - Main Committee Member
  - Honorary Committee Member
- Working Group and Subcommittee Roles
  - Guest
  - Non-Voting Member
  - Voting Member
  - Chair/Vice Chair/Secretary

BENEFITS OF PSRC ATTENDANCE

IMPROVE PRACTICES:

- Learn about and influence standards that directly effect your designs.
- Gain advance knowledge on future guides and standards.
- Best practice sharing with other utilities, consultants and suppliers.
- Highlight your Company's expertise and best practices.

Benefits of PSRC Attendance

Networking:

- With suppliers
- With consultants
- With other utilities

Meeting Organization

- Monday evening reception
- Tuesday – all day working group meetings
- Wednesday morning – working group meetings
- Wednesday afternoon – Subcommittee Mtgs
- Thursday - Main Committee Meeting
- WG meetings intersperse with Power System Communications and Cybersecurity groups

QUESTIONS ?

http://pes-psrc.org/