NRC STANDARDS FORUM

IEEE NPEC
Standards Development

Greg Hostetter

Nuclear Power Engineering Committee

Standards Coordinator

Chairman Sub Committee 6

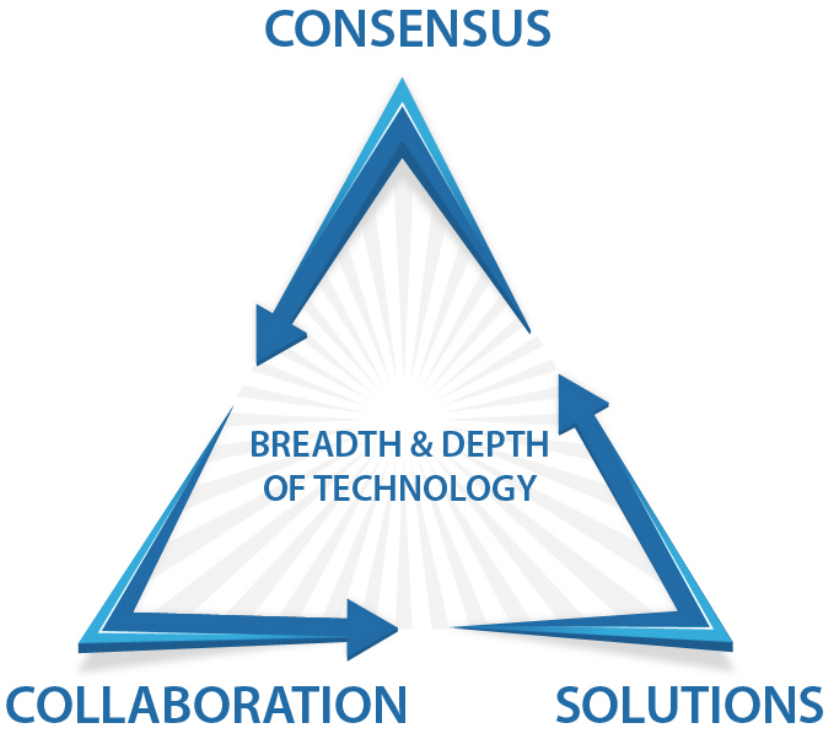
Agenda

- IEEE Standards Background
- IEEE Conformity Assessment Program (ICAP) - Certification
- International Collaboration

IEEE-SA Rigorous Standards Process

- Consensus
- Due Process
- Openness
- Right of Appeal
- Balance

The widely respected IEEE-SA standards-development process produces results that reflect the collective, consensus view of participants and enables industry to achieve specific objectives and solutions



The world's largest professional association

Global Reach

430,000+ Members

160+ Countries

1,300+ Annual Conferences

Technical Breadth

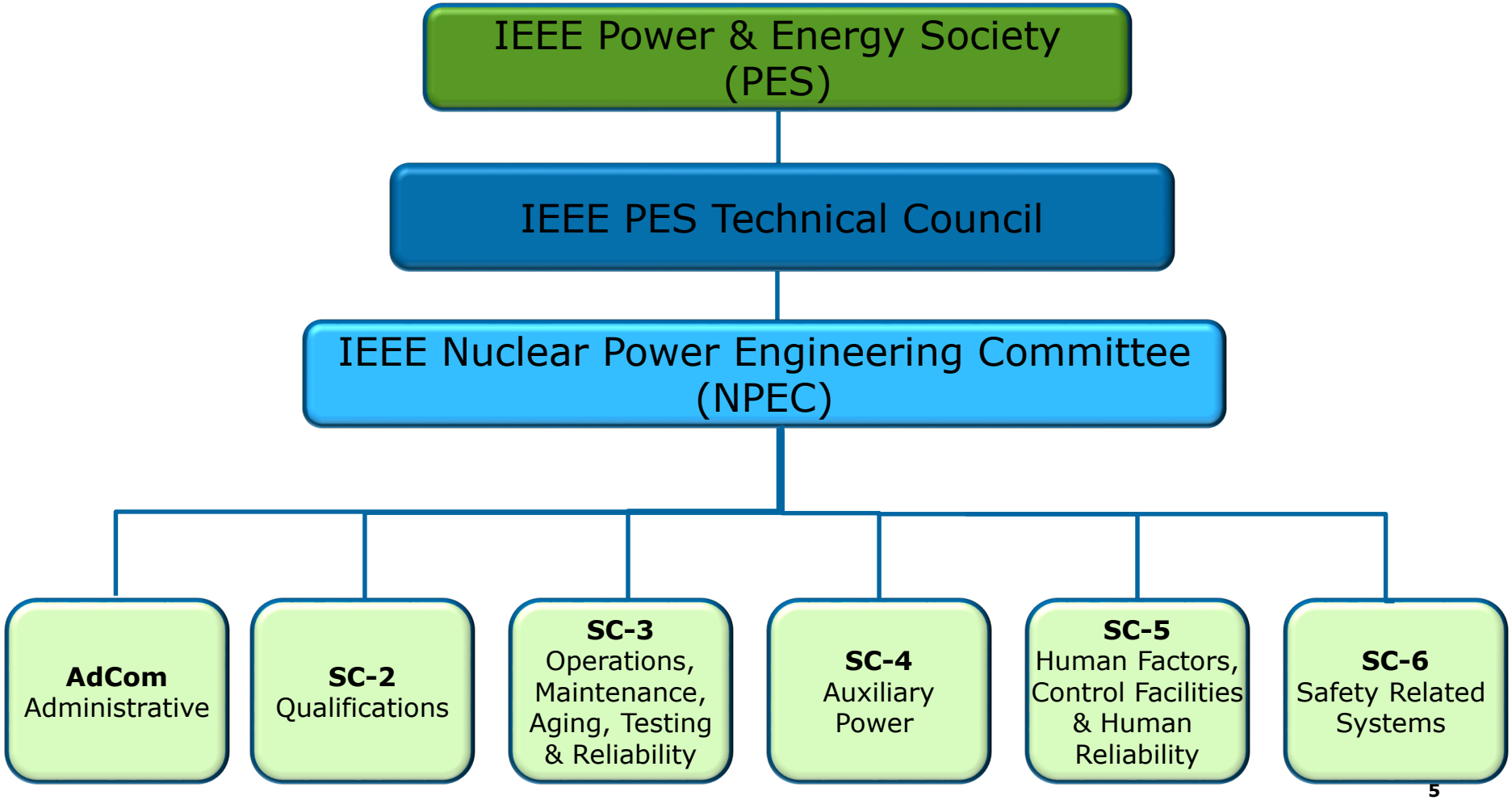
39 Technical Societies
6 Technical Councils

4,000,000+ Technical Documents

180+ Top-cited Periodicals

- Aerospace and Electronic Systems
- Antennas and Propagation
- Biometrics Council
- Broadcast Technology
- Circuits and Systems
- Communications
- Components, Packaging, and Manufacturing Technology
- Computational Intelligence
- Computer
- Consumer Electronics
- Control Systems
- Council on Electronic Design Automation
- Council on Superconductivity
- Dielectrics and Electrical Insulation
- Education
- Electron Devices
- Electromagnetic Compatibility
- Engineering in Medicine and Biology
- Geoscience and Remote Sensing
- Industrial Electronics
- Industry Applications
- Information Theory
- Instrumentation and Measurement
- Intelligent Transportation Systems
- Magnetics
- Microwave Theory and Techniques
- Nanotechnology Council
- Nuclear and Plasma Sciences
- Oceanic Engineering
- Photonics
- Power Electronics
- **Power & Energy**
- Product Safety Engineering
- Professional Communications
- Reliability
- Robotics and Automation
- Sensors Council
- Signal Processing
- Social Implications of Technology
- Solid-State Circuits
- Systems, Man, and Cybernetics
- Systems Council
- Technology and Engineering Management
- Ultrasonics, Ferroelectrics, and Frequency Control
- Vehicular Technology

IEEE PES Nuclear Power Engineering Committee (NPEC) Structure



Benefits of IEEE Conformity Assessment Program (ICAP) -- Certification

- Mitigate the uncertainties 1E electrical equipment procurement.
- Cost savings on source verification and audits
- Limit fraudulent product issues
- Independent assessment on compliance to the standard and in turn to the regulatory requirements

ONE COMMON PLATFORM

REPRESENTATIVE "PROCESS SPECIFIC" ADAPTABILITY

DIGITAL REFERENCE + DATA ENTRY + EQUIPMENT DETAILS + TRENDING + SCHEDULING + INTEGRATION

IEEE ICAP CLEARINGHOUSE

Specific Attributes

- List of Accredited Labs
- Listing of Certified Products
- Equipment Types
- Product Verification
- Test Report Validation
- Accreditation Requests
- Grandfathering Requirements

IEEE ACCREDITED LABS

Specific Attributes

- Test Specification
- Test Plans
- Test Reports
- Specific References
- Specific Certified Products
- IEEE Standards Met
- Certification Level
- Authorized Personnel

IEEE CERTIFIED PRODUCTS

Specific Attributes

- Manufacturer Listings
- Certified Products Available
- Vendor Test Reports
- IEEE Standards Met
- Test Report Summary

IEEE CERTIFIED TEST REPORT

Specific Attributes

- Standardized Qualification Evaluation
- Status and Revision History
- Test & Calibration Details
- Qualified Life Calculator
- Activation Energy Calculation
- Maintenance Requirements
- Direct Package Update

EQ PACKAGE Plant Data

Specific Attributes

- Site Specific Data
- Integrated with ICAP Test Report
- EQ Maintenance Manual
- Qualified Life Extension
- Site Specific References

IEEE Certification Mark

- Suggested Certification Mark for Class 1E product certification

ICAP Program

- Continues to make progress
- Several labs going through final certificate in US and outside

International/ National Collaborations

- IEEE membership collaboration in NPEC with Japan, Germany, China, India, Sweden, etc.
- Joint Committee with ANS
- Nuclear Energy Institute Participation
- EPRI
- Nuclear Utility Group on Equipment Qualification

International Collaboration & Benefits

- IEEE continues to build collaboration with other standards development organizations
- Various cooperation agreements with IEC exist and a memorandum with IAEA was recently signed
- Such collaboration leads to new plant designs conforming to joint / shared standards that have US requirements embedded
- Joint standards help the designers to get regulatory acceptance in multiple countries without undue effort.

Contacts

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IEEE Conformity Assessment Program

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IEEE

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