

IEEE PES  
Insulated Conductors Committee  
(ICC)

**SUBCOMMITTEE D**

*GENERATING STATION AND INDUSTRIAL  
CABLES (INCL. NUCLEAR)*

Art Maldonado – AM Technology, Chairman

Doug DePriest–TVA, Vice Chairman



## Subcommittees

The standards making process is the backbone of the ICC. There are over 40 working and discussion groups active in the ICC concerned with a wide range of topics including power cable standards, submarine cables, fiber optics, cleaning solvents for electric cables, ampacity tables, soil thermal stability, testing and diagnostics, magnetic fields and many more. The new realities in the electric industry have elevated standards to a position of great importance. It can be shown that standardization leads to cost reduction and higher quality products. In addition, today's standards are taking on a global importance by breaking down international barriers to trade. A good example is the recent North American Free Trade Agreement, NAFTA. Because of standards and the harmonization of standards cable now moves both ways across our borders.

### Active SCs

- A - [Cable Construction and Design](#):** Covers issues related to materials, construction, design and manufacturing of insulated cables.
- B - [Accessories](#):** Covers issues related to testing, construction and design of cable terminations and joints.
- C - [Cable Systems](#):** All issues related to installation, operation and testing of cable systems.
- D - [Generating Station and Industrial Cables](#):** Covers issues related to testing, assembly and operation and construction of cable systems not normally employed on transmission and distribution systems. This includes station cables, control cables, fiber optic cables, etc.
- E - [Administrative](#):** Covers all issues related to the effective, efficient operation of the ICC and for the development and presentation of special ICC related activities.
- F - [Field Testing and Diagnostics](#):** The subcommittee considers all issues related to testing and diagnostics of cables and cable systems.
- G - [Transnational](#):** The mission of the Transnational Subcommittee is to involve the international scientific community in the Insulated Conductors Committee of the IEEE Power Engineering Society and to enhance the exchange of technical information between countries.

## Subcommittee D - Generating Station and Industrial Cables

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- [A - Cable Construction and Design Subcommittee](#)
- [B - Accessories Subcommittee](#)
- [C - Cable Systems Subcommittee](#)
- [D - Generating Station and Industrial Cables Subcommittee](#)
- [E - Administrative Subcommittee](#)
- [F - Field Testing and Diagnostics](#)
- [G - Transnational](#)

### **Chairmen:**

**Chairman - Art Maldonado, A&M Technology Group, LLC, [art@amtechnologygroup.com](mailto:art@amtechnologygroup.com)**  
Vice Chairman - Doug DePriest, TVA, [dsdepriest@tva.gov](mailto:dsdepriest@tva.gov)

### **Scope:**

*Subcommittee D is tasked with cable systems for power, control, signal, data, communication, and fiber optic applications for use in generating stations, substations, industrial facilities, shipboards, military installations, submarines, mining, and transit/locomotive cars. These cables are direct buried, pulled in duct banks, conduits, ducts or wire ways, or installed in trays, air handling plenums, cabinets, enclosures and other non-T&D applications of insulated conductors. Testing and installation guidance for these applications is also within the scope of this group. The group develops standards and guidelines and provides opportunity for technical discussion. Specifically excluded are T&D cables for use on land applications.*

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# Sub D Scope

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- ▶ *Testing and installation guidance for these applications is also within the scope of this group. The group develops standards and guidelines and provides opportunity for technical discussion. Specifically excluded are T&D cables for use on land or underwater applications.*

# Sub D Mission

- ▶ **Mission Statement:** *Generating Station and Industrial Cables Subcommittee's mission is to continually advance the understanding and improve the application of insulated conductors and fiber optic cables.*

# Working/Discussion Group Status

Working Group	Standard Number	Description	Chair Vice Chair	Status
D01D	IEEE-45.8	Shipboard Cables	Savage Maldonado	Published. Next up IEEE 1580
D02D	NA	Industrial/Commercial Cables- Liaison with UL/CSA	NA	Inactive
D03W	IEEE-1242	Petrochemical Cables	Maldonado Bow	Published
D04D	NA	Compendium Smoke, Toxicity	Need Chair	Inactive
D05W	IEEE-1185	Installation Station Cables	Merando Bloethe	Developing PAR
D06D	IEEE-1428	Installation Fiber Optic Cables	Pirrong Vacant	Develop PAR
D07D	IEEE-1186	Evaluation Installed Cables in Power Generation Plants	Watson Mantey	Developing PAR

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# Working/Discussion Group Status

Working Group	Standard Number	Description	Chair Vice Chair	Status
D08D	IEEE-634	Cable-Penetration Fire Stop Qualification Test	Taylor Stansberry	Started up 2016-Spring
D09D	NA	Ampacity Derating of Installed Cables	Need Chair	Inactive
D10D	IEEE-383	Qualifying Electric Cables/Splices for Nuclear Facilities	Konnik Gwal	Published
D11W	IEEE-1143	Shielding Practice for Low Voltage Cables	Bow Bayer	Published
D12D	NA	Plant Life Extension	DePriest Rasmussen	Developing PAR
D13W	IEEE-848	Ampacity Derating Factor For Fire-Protected Cable	Gwal Spears	Published
D14W	IEEE-422	Design of Cable Raceway Systems for Electric Generating Facilities	Merando Bloethe	Published
D15W	IEEE-1202	Test Flame Propagation Wire and Cable	Stansberry Hills	Developing New Standard

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# Working/Discussion Group Status

Working Group	Standard Number	Description	Chair Vice Chair	Status
D16W	IEEE-1682	Qualifying Fiber Optic, Connections, and Splices for Use in Safety Systems of Nuclear Power Plants	Pirrong	Published
D17W	IEEE-1717	Hydrocarbon Pool Fire Test Protocol - Fire Resistive Cables	Maldonado Smith	Published
D18W	IEEE-1810	Installation Fire Resistive Cables Petroleum Plants	Shoshani Bayer	Balloted. Comment Resolution
D19W	IEEE-1844	Circuit Integrity Performance of Fire Resistive Cables in Nuclear Facilities	Taylor Rasmussen	Published
D20W	IEEE-	Guide for Cables in Nuclear Power Plants	DePriest Fleming	PAR submitted to NESCOM

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# Working/Discussion Group Status

Working Group	Standard Number	Description	Chair Vice Chair	Status
D21W	IEEE-2412	Test Circuit Integrity of Fire Resistive Cables in Tunnels and Transit Applications	Conrad Stansberry	Developing Standard
D22D	IEEE-2740	Installation Cables Class I, Division 1 and Zone 1 Hazardous Locations - Oil/Gas Land Drilling Rigs	Laudicina Bayer	Developing Standard Joint w/PCIC

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# Sub D Standards Published

- ▶ IEEE 422 – Cable Raceway Systems Power Plants
- ▶ IEEE 1143 – Shielding Low Voltage Cables
- ▶ IEEE 848 – Ampacity Derating Fire Protected Cables
- ▶ IEEE 383 – Qualifying Cables/Splices Nuclear Plants
- ▶ IEEE 1844 – Fire Resistive Cables – Nuclear Plants
- ▶ IEEE 1242 – Cables for Petrochemical Plants

# Standards Balloted

- ▶ IEEE 1810 – Installation Fire Resistive Cables in Petroleum Processing Plants

# Collaboration With CSA to Develop joint IEEE/CSA Standards

- ▶ **More like NPEC/IEC joint development**
- ▶ **Currently jointly developing IEEE 844 – Skin Effect Heat Tracing Cables**
- ▶ **Have CSA/ICC Liaison – Evangeline Cometa, CSA Technical Advisor – Wire and Cable**

# Collaboration With IEC to Develop joint IEEE/IEC Standards

- ▶ Interest in Harmonizing IEEE-1717 with IEC
- ▶ IEC developing Fire Resistive Test Protocol for High Voltage Cables (30 kV)

# Presentations

- ▶ 9:15 – 9:30AM – Sub D Business Update
- ▶ 9:30 – 10:30 AM – “PD Testing of Nuclear Power Plant Cables – Technical Considerations”, Sarajit Banerjee & Boguslaw Bochenski, Kinectrics, Inc.
- ▶ 10:30 – 10:45 AM – Break
- ▶ 10:45 – 11:15 AM “Medium Voltage Nuclear Cable Qualification to IEEE 383–2003”, Eric Rasmussen – RSCC Wire and Cable
- ▶ 11:15 – 12:30 AM "Frequency Domain Reflectometry NDE for Aging Cables in Nuclear Power Plants “, Leo Fifield & Bill Glass, DOE Pacific Northwest National Laboratory (PNNL)

# Future ICC Meetings

- ▶ **2017 –Spring – San Diego, CA – May 7 – 10 (Hyatt Mission Bay)**
- ▶ **2017 –Fall – Hollywood (Ft. Lauderdale) – Oct 29 – Nov 1 (Margaritaville Hotel)**
- ▶ **2018 – Spring – Tucson, AZ – (Marriott Starr Pass)**
- ▶ **2018 – Fall – Orlando, FL – (Disney’s Swan & Dolphin–Starwood/Marriott properties)**