

IEEE PCIC Standards Subcommittee Meeting
MINUTES
Tuesday, September 18, 2013 – Chicago, IL

1.0 Call to Order

The meeting was called to order at 12:45PM by the chair, Dennis Bogh, at the Downtown Marriott Chicago.

2.0 Circulation of Roster

The chair introduced the officers. There were 3 officers, 64 members, 4 guests and 3 IEEE staff representatives that attended the meeting. One member requested an excused absence. Copies of the roster were circulated for members and guests to indicate their attendance and update their information.

3.0 Approval of Agenda

The agenda was reviewed. Upon a duly made motion and second, the agenda was unanimously approved.

4.0 Approval of Minutes of Last Meeting

Rick Bried moved to accept the minutes of the September 25, 2012 meeting as written. Lorraine Padden seconded and motion was unanimously approved. The minutes are posted on the PCIC *mentor* site

5.0 Special Presentation to Will McBride

Dennis Bogh, Standards SC Chair, thanked the past Standards SC Chair, Will McBride, for his service leading the Standards Subcommittee.

6.0 Codes and Regulations Subcommittee Items of Interest

Rich Hulett gave a report on Codes and Regulations subcommittee item of interest. Presentation materials are attached to the minutes.

7.0 Summary of Standards Subcommittee Reports

Travis Griffith provided a summary of PCIC standards working group activities. Presentation materials are attached to these minutes.

8.0 Special Standards Reports

Reports were provided for the following standard activities:

| | |
|---------------------------|----------------|
| P844 and the dot series | Roy Barth |
| P1814 | Bruce McClung |
| IEC / IEEE 60079-30 (515) | Rich Hulett |
| P1458 | Gary Donner |
| P1683 | Marcelo Valdes |
| P1584 and the dot 1 | Bruce McClung |
| P1566 | Rick Paes |

Copies of the presentations are attached to these minutes.

9.0 Other Standards Reports

Other standard reports were provided as follows:

**PCIC Standards Subcommittee Meeting
Tuesday, September 24, 2013 – Chicago, IL**

API SC on Electrical Equipment
Category D Liaison Ex “n” TC31
Category D Liaison IEC TC 18

Jon Kitchel
Paul Hamer
Kevin Peterson

Copies of the presentations are attached to these minutes.

10.0 Old Business

Dennis Bogh, Standards SC Chair, recognized the following for publishing standards the past year:

- | | | |
|----------------|-------|--|
| Robert Durham | 1017 | RP for Field Testing Electric Submersible Pump Cable |
| | 1018 | RP for Specifying Electric Submersible Pump Cable - Ethylene Propylene Rubber Insulation |
| | 1019 | RP for Specifying Electric Submersible Pump Cable - Polypropylene Insulation |
| Wayne Williams | 515.1 | Std for the Testing, Design, Installation, & Maintenance of Electrical Resistance Heat Tracing for Commercial Applications |

11.0 New Business

Robert Durham indicated that a new PAR will be submitted for 1886 – Electrical Submersible Pump Motors.

12.0 Next Meeting

The next PCIC Standards Subcommittee meeting is scheduled to be held in conjunction with the 2014 PCIC meeting September 9, 2014 in San Francisco, CA.

13.0 Adjournment

There being no other business to conduct, a motion was made, seconded, and passed for adjournment. The meeting was adjourned at 1:59 PM by Chair Bogh.

Standards Subcommittee Report

Codes & Regulations

Richard Hulett

2013 Petroleum and Chemical Industry Committee Technical Conference
Chicago, IL - September 24, 2013



Codes and Regs Activity

- NFPA 70 E - P. Dobrowsky
 - New NFPA process
 - Change in terminology

- Canadian Electrical Code - T. Driscoll
 - Major revisions in this cycle
 - Deadline for changes is June 2014

- US Coast Guard - A. Hossian
 - USCG interested in IEEE 45 dot series

SCC 18 Report

- NEC 2014 available in Oct 2013
- NEC 2017 begins in 2014 (Nov)
- Update on current IEEE NFPA 70 CMP membership
 - 22 current CMP principle and alternate members
 - 16 vacancies
 - Four CMP vacancies of interest for PCIC

P60079-30

IEEE IAS PCIC 2013

Preliminary Code Proposal

- Gary Savage presented a prelim proposal

Cables permitted for use in Class I Division 1 and zone 1 hazardous locations

- Discussion and input
- Decision on IEEE/PCIC support at 2014 C&R meeting

P60079-30

IEEE IAS PCIC 2013

End of C&R Report

P60079-30

IEEE IAS PCIC 2013

| PCIC Standards Working Groups | | 2-Jul-2013 | | |
|-------------------------------|---|-----------------|--|---|
| Title | Chair | Status | Action | |
| 303 | RP for Auxillary Devices for Rotating Electrical Machines in Class 1, Div 2 and Zone 2 Locations | Art Neubauer | Published 2004 Reaffirmed 2011 | New PAR is planned |
| 463 | Std for Electrical Safety Practices in Electrolytic Cell line Working Zones | Ken White | Published 2006 PAR 2011-2015 Submitted to Revcom 07/01/2013 | WG in Progress |
| 576 | RP for Installation, Termination, & Testing of Insulated Power Cable as Used in Industrial and Commercial Applications | Bill Taylor | Published 2000 2008-2012 Administrative withdrawal 2012 | PAR Plan to move information to 1242 |
| 841 | Std for Petroleum and Chemical Industry Severe Duty TEFC Squirrel Cage Induction Motors - Up to and Including 370 kW (500 HP) | Bill Veerkamp | Published 2001 Published 2009 | New PAR is planned |
| 1017 | RP for Field Testing Electric Submersible Pump Cable | Robert Durham | Published 2005 PAR 2010-2013 | Submitted to RevCom March 2013 Meeting |
| 1018 | RP for Specifying Electric Submersible Pump Cable - Ethylene Propylene Rubber Insulation | Robert Durham | Published 2005 PAR 2010-2013 | Submitted to RevCom March 2013 Meeting |
| 1019 | RP for Specifying Electric Submersible Pump Cable - Polypropylene Insulation | Robert Durham | Published 2005 PAR 2010-2013 | Submitted to RevCom March 2013 Meeting |
| 1068-2009/Cor 1 | IEEE Standard for the Repair and Rewinding of AC Electric Motors in the Petroleum, Chemical, and Process Industries - Corrigendum 1 | Chuck Yung | PAR 2011-2015 | PAR Approved Feb 2011 |
| 1242 | Guide for Specifying & Selecting Power, Control, and Special-Purpose Cable for Petrochemical Plants | Art Maldonado | Published 1999 Reaffirmed 2005 PAR 2010-2014 | PCIC/ICC Joint Standard |
| 1349 | Guide for Application of Electric Motors in Class I, Division 2 & Class I, Zone 2 Hazardous (Classified) Locations | Lorraine Padden | Published 2001 Published 2011 | Award PCIC 2012 |
| 1458 | RP for the Selection, Application, Field Testing, and Life Expectancy of Molded Case Circuit Breakers for Industrial Applications | Gary Donner | Published 2005 Reaffirmation 2010 | Par Approved until 12-31-2017 |
| 1566 | Standard for Performance of Adjustable Frequency Drives Rated at 375 kW & Larger | Rick Paes | Published 2006 PAR 2008-2012 PAR Extension 2012-2013 | PAR WG in Progress |
| 1584 | Guide for Performing Arc Flash Hazard Calculations | Daleep Mohla | Published 2002 PAR 2003 - 2007 PAR Extension 2008-2011 PAR Extension 2011-2013 PAR Revision 3/2012 | WG in progress Pre-ballot, December 2012 |
| P1584.1 | Guide for the Specification of Scope and Deliverable Requirements for an Arc-flash Hazard Calculation Study in Accordance With IEEE 1584 | Daleep Mohla | PAR 2009 - 2013 | 2nd Ballot Recirculation Preparing to recirculate 07-01-2013 |
| P1673 | Standard for Requirements for Conduit & Cable Seals for Field Connected Wiring to Equipment in Petroleum and Chemical Industry Exposed to pressures Above Atmospheric (1.5 kilopascals, 0.22 psi) | Marty Cole | PAR 2005 - 2009 PAR Extension 2009-2013 | Ready for ballot to start July 15, 2013 Submitted again to NesCom 07-01-2013 |
| P1810 | Guide for the Selection and Installation of Fire-Rated, Circuit Integrity Cables for Safety, Critical, and Emergency Shutdown Systems in Petroleum and Chemical Industries | Gil Shoshani | PAR 2009 - 2013 | Extension requested, NesCom Meeting March 2013 |
| P1683 | Guide for Specifying Motor Control Centers Rated Up To 600 V AC or 1000 V DC With Features Intended to Reduce Electrical Hazards While Performing Defined Operations | Marcelo Valdes | PAR 2005 - 2009 PAR Modified 2009-2011 PAR Extension 2012-2014 | WG in progress Pre-ballot, October 2012 |
| P1714 | RP for Industrial Uninterruptible (UPS) Systems | Donald Dunn | PAR 2006 - 2010 PAR Extension 2012 Administrative withdrawal 2012 | |
| P1716 | RP for Managing Natural Disaster Impact on key electrical systems and installation in Petroleum and Chemical Facilities | Ed Thornton | PAR 2006 - 2010 PAR Extension 2012 PAR Extension 2012-2013 | Pre-ballot, December 2013 |
| P1814 | Recommended Practice for Electrical System Design Techniques to Improve Electrical Safety | Bruce McClung | PAR 2009 - 2013 | WG in Progress |
| 45 | Working Group for Electrical Installations on Shipboard (IAS/PCI/45_WG) | Moni Islam | PAR 2009 - 2013 | No Action |
| P45.1 | RP for Electrical Installations on Shipboard-Design .1 | Moni Islam | PAR 2008 - 2012 PAR Extension 2012-2015 | WG in Progress |
| 45.2 | RP for Electrical Installations on Shipboard-Controls and Automation .2 | David Cartes | Published 2011 | Award PCIC 2012 |
| P45.3 | RP for Electrical Installations on Shipboard-.3 Systems Engineering | Paul Bishop | PAR 2008 - 2012 PAR Extension 2012-2014 | WG in Progress |
| P45.4 | RP for Electrical Installations on Shipboard-Marine Sectors and Mission Systems .4 | Paul Bishop | PAR 2008 - 2012 PAR Extension 2012-2015 | WG in Progress |
| P45.5 | RP for Electrical Installations on Shipboard-Safety Considerations .5 | Dennis Neitzel | PAR 2008 - 2012 PAR Extension to 12/31/14 | Draft 3 Expect completion mid 2014 |

| PCIC Standards Working Groups | | 2-Jul-2013 | | | |
|-------------------------------|---|---------------------------|--|---|--------|
| 17-Sep-13 | | Title | Chair | Status | Action |
| P45.6 | RP for Electrical Installations on Shipboard-Electrical Testing .6 | Don Chambers | PAR 2008 - 2012 PAR Extension 2012-2017 | WG in Progress | |
| 45.7 | RP for Electrical Installations on Shipboard-Switchboards .7 | Steve Liggio | Published 2012 | Award PCIC 2012 | |
| P45.8 | RP for Electrical Installations on Shipboard-.8 Cable Systems | Gary Savage | PAR 2009 - 2013 | WG in Progress | |
| 515 | Std for the Testing, Design, Installation, & Maintenance of Electrical Resistance Heat Tracing for Industrial Applications | Rich Hulett | Published 1989 Published 1997 Published 2004 Published 2011 | Finished, Complete, No Action | |
| 515.1 | Std for the Testing, Design, Installation, & Maintenance of Electrical Resistance Heat Tracing for Commercial Applications | Wayne Williams | Published 1995 Published 2005 Published 2012 | Award PCIC 2013 Finished, Complete, No Action | |
| P60079-30-1/515 | Standard for Explosive Atmospheres - Part 30-1: Electrical resistance trace heating - General and testing requirements for Industrial Applications | Ben Johnson FOR IEC STUFF | PAR 2010 - 2014 | WG in Progress IEC/IEEE Joint Effort; TC-31 | |
| P60079-30-2/515 | Standard for Explosive atmospheres - Part 30-2: Electrical resistance trace heating - Application guide for design, installation and maintenance for Industrial Applications | Ben Johnson FOR IEC STUFF | PAR 2010 - 2014 | WG in Progress IEC/IEEE Joint Effort; TC-31 | |
| 844 | RP for Electrical Impedance, Induction, & Skin Effect Heating of Pipelines & Vessels | Roy Barth | Published 2000 Reaffirmed March 2006 | Moving/Updating information to: 844.1, 844.2, 844.3 | |
| P844.1 | Standard for the Construction, Testing, and Marking for Skin Effect Heating Systems for Pipelines and Vessels | Roy Barth | PAR 2011-2015 | WG in Progress | |
| P844.2 | Standard for the Construction, Testing, and Marking for Impedance, Induction, and Inductions Susceptor Heating Systems for Pipelines and Vessels | Roy Barth | PAR 2011-2015 | WG in Progress | |
| P844.3 | RP for Electrical Impedance, Induction & Skin Effect Heating Systems for Pipelines & Vessels | Roy Barth | PAR 2011-2015 | WG in Progress | |
| P844.4 | Standard for Impedance Heating of Pipelines, Vessels, Equipment, and Structures - Application Guide for Design, Installation, Testing, Commissioning and Maintenance | Roy Barth | | | |
| P844.5 | Recommended Practice for the Design, Installation, Testing, Commissioning and Maintenance of Induction Heating Systems for Pipelines, Vessels, Equipment, Structures and Induction Susceptor Heating Furnaces | Roy Barth | | | |
| 1580 | RP for Marine Cable for use on Shipboard and Fixed or Floating Platforms | Rudy Bright | Published 2001 Published 2010 | | |
| P1580.1 | RP for Insulated Bus Pipe for Use on Shipboard and Fixed or Floating Platforms | Deirdre Burley | PAR 2009 - 2013 | WG in progress | |
| 1662 | Guide for the design and application of Power Electronics in Electrical Power Systems on Ships | Yuri Khersonsky | Published 2008 | No WG activity | |
| P1709 | RP for 1 to 35 KV Medium Voltage DC Power Systems on Ships | Yuri Khersonsky | Published 2010 | No WG activity | |
| 1826 | Standard for Power Electronics Open System Interfaces in Zonal Electrical Distribution Systems Rated Above 100 kW | Yuri Khersonsky | Published 2012 | No WG activity | |
| 1886 | Subsea Electrical Working Group | Roy Jazowski | | P&P under review 01-2013 | 07- |
| 1886.1 | Subsea Electrical Applications - Power Connectors & Penetrators from 1.2kV through 36kV Um | Mike Alford | PAR 2013-2016 | WG in Progress | |
| 80005-1 | IEC/ISO/IEEE 80005-1:2012 Utility connections in port - Part 1: High Voltage Shore Connection (HVSC) Systems - General requirements | Kevin Peterson | Published 2012 | Award PCIC 2012 | |
| P80005-2 | Cold Ironing Part 2: High Voltage Shore Connection (HVSC) Systems - Communication Interface Description | Kevin Peterson | PAR 2011 - 2015 | WG in Progress Joint development with IEC/ISO | |

Projects on SA site - myProject™ >> Manage Activity Profile; Join "Interest Area",
 Check Boxes, complete "affiliation"
 * WGs with IEEE bank account must submit Form L-50S to Standards Chair by February 1 for previous fiscal year

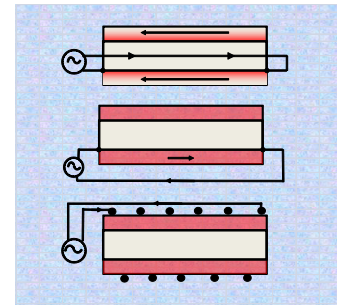
IEEE 844-Skin Effect, Impedance, and Induction Heating

Roy Barth – Chair
Franco Chakkalakal- Vice Chair
Derek Polk -Secretary



Heating Technology/Applications Covered

- Skin Effect Heating
- Impedance Heating
- Induction Heating



History of IEEE 844

- IEEE844 Was First Introduced as a Recommended Practice in 1991
- IEEE844 Went through a Significant Revision in 2000 in That Qualification Testing of the System Components Was Added Along With Other Improvements
- Reconfirmed in 2006
- Initial PARS to Update/Rewrite the Standard Approved in June of 2011
- Update of PARS to Accommodate Scope Changes and Joint Development Aspects with CSA in June of 2013

Primary Goals Today For the Rewrite

- Rebuild Into More Globally Adoptable Standards Where Possible (Joint Development with CSA)
- Separate Skin Effect, Impedance, and Induction Applications Using the “DOT SERIES” Arrangement
- Cover Hazardous Area (Potentially Explosive Atmospheres) Applications
- Expand Coverage to Address Other New Applications

New Structure of 844

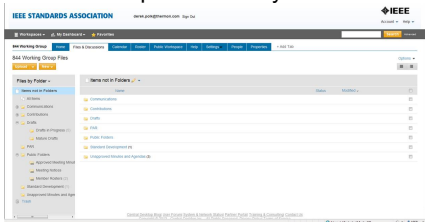
- 844.1 - IEEE Standard for the Skin Effect Trace Heating of Pipelines, Vessels, Equipment, and Structures – General, Testing, Marking, and Documentation Requirements
- 844.2 - IEEE Standard for the Skin Effect Trace Heating of Pipelines, Vessels, Equipment, and Structures – Application Guide for Design, Installation, Testing, Commissioning and Maintenance

New Structure of 844

- 844.3 - IEEE Standard for the Impedance Heating of Pipelines, Vessels, Equipment, and Structures – General, Testing, Marking, and Documentation Requirements
- 844.4 - IEEE Standard for the Impedance Heating of Pipelines, Vessels, Equipment, and Structures - Application Guide for Design, Installation, Testing, Commissioning and Maintenance
- 844.5 - IEEE Recommended Practice for the Design, Installation, Testing, Commissioning and Maintenance of Induction Heating Systems for Pipelines, Vessels, Equipment, Structures and Induction Susceptor Heating Furnaces

IEEE Central Desktop

- We Are One of the Groups Using the New Central Desktop Provided By IEEE



“DOT” Task Group Leadership

- STD 844.1- Roy Barth / Derek Polk
- STD 844.2- Franco Chakkalakal /Gustavo Saldarriaga
- STD 844.3/844.4- Neal Fenster
- RP 844.5- Bob Rafferty/Rob Turner

PAR Target

- Completion in 2015

Questions?

IEEE P1814 WG & TG's Annual Report to PCIC Standards Subcommittee

Presented Sept. 2012 – 2013 By
Bruce McClung – Chair P1814

"Recommended Practice for Electrical
System Design Techniques to Improve
Electrical Safety"

PAR Status

Submitted: October 15, 2009
Approved: December 9, 2009
Expires: December 31, 2013

Request for a PAR extension to:
December 31, 2015 submitted to NesCom
for consideration during its October 2013
meeting(s).

Officers

Chair: L. Bruce McClung
Vice Chair: Gary L. Donner
Secretary: Dennis J. Hill

No changes in officers in 2012-2013.

Liaison: Lisa Perry to IAS/PCIC

Roster

Voting Members: 44
Sponsor: Dennis Bogh

Meetings - Recent

Face-to-Face: PCIC Sept 2012; ESW Mar 2013
PCIC Sept 2013 (two days ago)

Current Activities

- Recommended Practice is in its 7th draft
- Stabilize remaining 25-30% of document
- Plant meetings: ESW and PCIC in 2014 & 2015
- Task Groups meet via email, teleconference at various times in the year
- PAR Extension would enable:
 - WG ballot = 3rd quarter 2014
 - Final RP = 2nd quarter 2015
(to RevCom)

Noteworthy Items

(1) PAR Extension Request (2-years) being reviewed by NesCom October 2013.

(2) RP has 6 subject matter areas.

These 4 are stable:

- "Design for Operations & Maintenance"
- "Protection"
- "Equipment"
- "Signage/Labeling"

These need to be stabilized:

- "General System Design"
- "Grounding"

Noteworthy Items (cont)

(3) CHALLENGE: technical expertise needed across many different facets of the electrical engineering profession

- Safety
- Relaying and protection
- Equipment manufacturing
- System design
- High and low voltage
- Lighting
- Numerous others

The Working Group has obtained support in most areas and is shoring up others in order to complete the project.

END

Standards Subcommittee Report

IEEE P60079-30-1 & -2

Richard Hulett

2013 Petroleum and Chemical Industry Committee Technical Conference
Chicago, IL - September 24, 2013




What are these standards

- Heat tracing standards for hazardous area applications
- P60079-30-1: EXPLOSIVE ATMOSPHERES
Electrical resistance trace heating –
General and testing requirements
- P60079-30-2: EXPLOSIVE ATMOSPHERES
Electrical resistance trace heating –
Application guide for design, installation, and
maintenance

P60079-30 IEEE IAS PCIC 2013

Of Interest

Having one worldwide standard

How to develop standards with both North
American and International recognition

P60079-30-1 and P60079-30-2 are joint
development standards between IEEE and IEC

P60079-30 IEEE IAS PCIC 2013

Special Challenges with IEC/IEEE Joint Development

- Getting Working Group (Maintenance Team)
members together for meetings
- Dual system balloting
 - IEEE method
 - IEC method
- Maintaining consistent documentation

P60079-30 IEEE IAS PCIC 2013

Background

| | |
|--|---|
| <p>IEEE</p> <ul style="list-style-type: none"> • IEEE 515 - 1983 • IEEE 515 - 1989 • IEEE 515 - 1997 • IEEE 515 - 2004 • IEEE 515 - 2011 | <p>EN & IEC</p> <ul style="list-style-type: none"> • European Norm (EN 500xx) Series • IEC 62086 (2001) • IEC 60079-30 (2007) |
|--|---|

P60079-30 IEEE IAS PCIC 2013

Steps towards harmonization

- Members from the IEC 60079-30 MT were invited to join the IEEE 515 WG for the 2011 revision
- The result was that the new 515 2011 version and IEC 60079-30 were more closely aligned
- A joint development between IEEE and IEC was initiated in 2012 which would result in a dual logo standard
- IEEE 515 2011 was used as the starting draft

P60079-30 IEEE IAS PCIC 2013

Meetings of the 60079-30 MT

| | |
|---|---|
| <p>2010</p> <p>Oct Seattle WA</p> <p>2011</p> <p>Jan Orlando FL June Frankfurt GER Aug San Fran CA Nov Manchester UK</p> | <p>2012</p> <p>Mar Arnhem NL July Calgary CAN</p> <p>2013</p> <p>Mar London UK</p> |
|---|---|

P60079-30 IEEE IAS PCIC 2013

Current Status

- Final drafts of P60079-30-1 and P60079-30-2 have been produced by the Maintenance Team
- Two Committee Drafts (CDs) have been sent to the IEC National Committees for input
- First round of IEEE Sponsor balloting has been completed
- A Ballot Resolution Committee (BRC) has been formed

P60079-30 IEEE IAS PCIC 2013

What Next

- Complete the IEEE ballot resolution and respond to all comments
- Process a recirculation IEEE Sponsor Ballot with resolution changes
- Process a Committee Draft for Voting (CDV) in IEC
- Resolve any comments
- Process a Final Draft International Std (FDIS) and final IEEE recirculation Sponsor ballot

P60079-30

IEEE IAS PCIC 2013

Meeting the Challenges

- Getting Working Group (Maintenance Team) members together for meetings – *alternate meetings between North America and Europe*
- Dual system balloting – *follow the standard procedures and be patient*
- Maintaining consistent documentation – *sometimes a Modified PAR is needed to align draft text with PAR*

P60079-30

IEEE IAS PCIC 2013

The Finish Line

Two heat tracing standards for hazardous area applications that are recognized in North America and Internationally

IEC/IEEE 60079-30-1 & IEC/IEEE 60079-30-2

Projected completion - 2014

P60079-30

IEEE IAS PCIC 2013

Standards Subcommittee Report IEEE P1458

Gary Donner

2013 Petroleum and Chemical Industry Committee Technical Conference
Chicago, IL - September 24, 2013



IEEE 1683, Guide for Motor Control Centers Rated Up To and Including 600 Vac or 1000 Vdc with Requirements Intended to Reduce Electrical Hazards While Performing Defined Operations

Lessons Learned

M. Valdes Chair, Rachel Bulgaris Vice Chair, Craig Wellman Secretary



Do not let the perfect get in the way of the good enough

1683 started as a "standard" for manufacturers of MCCs

- Manufacturers were not ready
- Other "good" standards existed
- Too many commercial considerations
- Did not address the whole problem

Too much controversy, not enough progress



2
GE Title or job number
9/8/14

Guide for the user, installer, specifier...

- Less threatening to manufacturers
- More widely useful to various constituencies
- Less conflict with the existing standards from other organizations
- Easier to agree on
- Yes... may be less impactful in some ways, but its progress & if manufacturer's see it having an effect it will drive how they build product and what is available to the industry



3
GE Title or job number
9/8/14

Other lesson

Have a good secretary and a good technical editor

- Thank you to **Mr. Craig Wellman** for keeping this going and organized
- Thank you to **Miss Rachel Bulgaris** for keeping the editing organized, the document correct and doing all the hard detailed line by line work that needs to be done!



4
GE Title or job number
9/8/14

**IEEE P1584 and P1584.1 WG
Report to PCIC Standards SC**

Presented by
Bruce McClung
Vice Chair
September 24,2013

P1584WG presentation to PCIC Standards SC 2013

1

**P1584 WG
Responsible for**

- P1584
Guide for Performing Arc-Flash Hazard Calculations.
- P1584.1
Guide for the Specification of Scope and Deliverable Requirements for an Arc-flash Hazard Calculation Study in Accordance With IEEE 1584.

P1584WG presentation to PCIC Standards SC 2013

2

**P 1584
Guide for Performing Arc-Flash Hazard
Calculations**

Scope:
This guide provides models and an analytical process to enable calculation of the predicted incident thermal energy and the arc-flash boundary. The process covers the collection of field data, if necessary, consideration of power system operating scenarios, and calculation parameters.

Applications include electrical equipment and conductors for three-phase alternating current (ac) voltages from 208 V to 15 kV. Calculations for single-phase ac systems and direct current systems are not a part of this guide but some guidance and references are provided for those applications.

Recommendations for personal protective equipment to mitigate arc flash hazards are not included in this guide.

P1584WG presentation to PCIC Standards SC 2013

3

**P1584.1
Guide for the Specification of Scope and Deliverable
Requirements for an Arc-flash Hazard Calculation
Study in Accordance With IEEE 1584**

- **Scope:**
This document provides guidance for the specification and performance of an arc-flash hazard calculation study, in accordance with the process defined in IEEE 1584, Guide for Performing an Arc-Flash Calculations Study (Arc-Flash Study).
- It outlines the minimum recommended requirements to enable the owner or its representative to specify an Arc-Flash Study, including scope of work and associated deliverables.

P1584WG presentation to PCIC Standards SC 2013

4

P1584/P1584.1

Successes

- P1584 WG have very energized membership. At the last count we now have 80 members. Last meeting in Dallas was attended by 42 of 66 members at that time and 69 guests.
- P1584.1 is almost complete and ready for submission to RevCom.

P1584WG presentation to PCIC Standards SC 2013

5

P1584/P1584.1WG

- P 1584 Issues
Very heavily dependent on deliverables from IEEE/NFPA Collaborative Project performing the testing.
- The Collaboration is dependent on at least three High Power Test Laboratories, to fit testing in among the owner's need for the Test Lab time and thus difficult to predict completion of the testing.
- As a result of the delay of deliverables from the Collaboration , WG will submit another request for extension of PAR due to expire December 31, 2013.
- IEEE has filed an application for obtaining a patent on IEEE/NFPA project work causing some confusion and concern on possible implications. Dr. Konstantinos Karachalios, IEEE Standards Association Managing Director, addressed the P1584WG meeting on March 12,2013 by telephone providing reasons.
- A P1584WG Task Group was formed to document possible concerns from the members. Discussions with IEEE-SA Staff and the Collaboration are on going.

P1584WG presentation to PCIC Standards SC 2013

6

P1584.1

- Issues and lessons learned
- Submission to RevCom was disapproved by the IEEE- SA Standards Board (SASB) at its June meeting. The stated reason for disapproval was that the resolution of the comments received during the original ballot did not conform to IEEE-SA procedures.
- The document was recirculated for 30 day recirculation on August 28,2013. Comments are being addressed by the WG Ballot Resolution Group.
Lesson learned: Provide a defensible reason if a comment is not straight accept.

P1584WG presentation to PCIC Standards SC 2013

7

API Subcommittee on Electrical Equipment - Fall 2013

Status of the API Standards and Recommended Practices:

| | |
|---|--|
| <p>API RP 500 and API RP 505 - Mark Goodman (Area Classification)</p> | <p>RP 500 3rd Edition was published in December 2012. RP 505 is currently in revision (noted that RP 505 was recently reaffirmed for “administrative purposes”). Figures in the document are being redlined for submission to API editorial for redraft into correct format. Anticipate ballot release after the Spring 2014 meeting.</p> |
| <p>API Std 540 – Don Dunn (Electrical Installations in Petroleum Processing Plants)</p> | <p>Fourth Edition, 1999; Reaffirmed in 2013. Fifth Edition under revision. Planning to send edited version out to the committee for review and ballot later this year.</p> |
| <p>API Std 541 – Barry Wood (Induction motors 500 hp and larger)</p> | <p>Fifth edition. Currently working with API staff to publish. Hoping to publish by end of 2013.</p> |
| <p>API RP 545 – George Morovich (lightning protection of hydrocarbon storage tanks)</p> | <p>First Edition issued October 2009; TG will not meet until Spring 2014.</p> |
| <p>API Std 546 – Barry Wood (synchronous motors)</p> | <p>Third Edition was published in September 2008. TF started review cycle for next edition in Fall 2013.</p> |
| <p>API Std 547 – Barry Wood (general purpose, sleeve-bearing induction motors 250 hp and larger)</p> | <p>First Edition was published in 2005; Second edition successful ballot 2013. Worked minor changes and will submit to API staff for editing.</p> |
| <p>API RP14F* – Dave Burns (electrical systems, offshore – Divisions)</p> | <p>Fifth Edition was published July 2008; Revision cycle planned to begin Q1 2014. Expect a number of updates related to updates in USCG and BSEE requirements.</p> |
| <p>API RP 14FZ* – Dave Burns (electrical systems, offshore – Zones)</p> | <p>First Edition was published September 2001. Second Edition published in May 2013.</p> |

* Standards under the API Committee on Production



Category D Liaison Report – IEC TC18

September 24, 2013

Kevin Peterson
P2S Engineering, Inc.

Background

- ▶ Liaison was established in July 2008
- ▶ The liaison between IEEE ShorePwr - Electrical Shore-to-Ship Connections WG and IEC TC 18 is, at this time, primarily focused in IEEE P80005-1 and P80005-2 working groups

Meeting History

- ▶ IEEE participated in ten joint meetings with IEC since the liaison was established

June 2008 Loen, Norway
October 2008, Monfalcone, Italy
June 2009, Santa Clarita, CA USA
November 2009, Kobe, Japan

Meeting History

February 2010, Rome, Italy
June 2010, Seattle, WA, USA
November 2010, Hamburg, Germany
December 2010, Baltimore, MD, USA
October 2011, Oslo, Norway
April 2013, Long Beach, CA, USA
October 2013, Kristiansund, Norway
February 2014, France

Accomplishments

- ▶ IEC/ISO/IEEE 80005-1 was published in July 2012. We believe the collaboration process was successful and the international maritime industry has benefited.
- ▶ Working on IEC/IEEE 80005-2
- ▶ New work starting on 80005-3 "Utility Connections in Port Part 3: Low Voltage Shore Connection (LVSC) Systems - General requirements"

Special Challenges

- ▶ Much more meeting time in development process
- ▶ Keeping IEEE WG members participating for a longer development process
- ▶ Coordinating multiple balloting systems (IEC/ISO/IEEE)