IEEE HVCB Q&R WG

WG PC37.10

Draft "Guide for Investigation, Analysis and Reporting of Power Circuit Breaker Failures"

Tuesday, October 11, 2011
10:15 AM – 12:00 PM

Nashville, TN

Proposed Agenda

- Introductions
- Acceptance of Minutes of Orlando meeting
- IEEE Patent slides
- Results of Recirculation Ballot of PC37.10 D5.0
- Resolution of negative ballot and response to balloting comments
- New Business

Instructions for the WG Chair

The IEEE-SA strongly recommends that at each WG meeting the chair or a designee:

- **Show slides #1 through #4 of this presentation**
- **Advise the WG attendees that:**
  - The IEEE's patent policy is consistent with the ANSI patent policy and is described in Clause 6 of the *IEEE-SA Standards Board Bylaws*;
  - Early identification of patent claims which may be essential for the use of standards under development is strongly encouraged;
  - There may be Essential Patent Claims of which the IEEE is not aware. Additionally, neither the IEEE, the WG, nor the WG chair can ensure the accuracy or completeness of any assurance or whether any such assurance is, in fact, of a Patent Claim that is essential for the use of the standard under development.
- **Instruct the WG Secretary to record in the minutes of the relevant WG meeting:**
  - That the foregoing information was provided and that slides 1 through 4 (and this slide 0, if applicable) were shown;
  - That the chair or designee provided an opportunity for participants to identify patent claim(s)/patent application claim(s) and/or the holder of patent claim(s)/patent application claim(s) of which the participant is personally aware and that may be essential for the use of that standard
  - Any responses that were given, specifically the patent claim(s)/patent application claim(s) and/or the holder of the patent claim(s)/patent application claim(s) that were identified (if any) and by whom.
- The WG Chair shall ensure that a request is made to any identified holders of potential essential patent claim(s) to complete and submit a Letter of Assurance.
- It is recommended that the WG chair review the guidance in *IEEE-SA Standards Board Operations Manual* 6.3.5 and in FAQs 12 and 12a on inclusion of potential Essential Patent Claims by incorporation or by reference.

Note: **WG** includes Working Groups, Task Groups, and other standards-developing committees with a PAR approved by the IEEE-SA Standards Board.

(Optional to be shown)

Participants, Patents, and Duty to Inform

All participants in this meeting have certain obligations under the IEEE-SA Patent Policy.

- **Participants [Note: Quoted text excerpted from IEEE-SA Standards Board Bylaws subclause 6.2]:**
  - **"Shall inform the IEEE (or cause the IEEE to be informed)" of the identity of each "holder of any potential Essential Patent Claims of which they are personally aware" if the claims are owned or controlled by the participant or the entity the participant is from, employed by, or otherwise represents**
    - **"Personal awareness" means that the participant "is personally aware that the holder may have a potential Essential Patent Claim," even if the participant is not personally aware of the specific patents or patent claims**
  - **"Should inform the IEEE (or cause the IEEE to be informed)" of the identity of "any other holders of such potential Essential Patent Claims" (that is, third parties that are not affiliated with the participant, with the participant's employer, or with anyone else that the participant is from or otherwise represents)**
- **The above does not apply if the patent claim is already the subject of an Accepted Letter of Assurance that applies to the proposed standard(s) under consideration by this group**
- **Early identification of holders of potential Essential Patent Claims is strongly encouraged**
- **No duty to perform a patent search**

Slide #1

Patent Related Links

All participants should be familiar with their obligations under the IEEE-SA Policies & Procedures for standards development.

Patent Policy is stated in these sources:

IEEE-SA Standards Boards Bylaws

http://standards.ieee.org/develop/policies/bylaws/sect6-7.html#6

IEEE-SA Standards Board Operations Manual

http://standards.ieee.org/develop/policies/opman/sect6.html#6.3

Material about the patent policy is available at

http://standards.ieee.org/about/sasb/patcom/materials.html

If you have questions, contact the IEEE-SA Standards Board Patent Committee Administrator at patcom@ieee.org or visit http://standards.ieee.org/about/sasb/patcom/index.html

This slide set is available at https://development.standards.ieee.org/myproject/Public/mytools/mob/slideset.ppt

Slide #2

Call for Potentially Essential Patents

- If anyone in this meeting is personally aware of the holder of any patent claims that are potentially essential to implementation of the proposed standard(s) under consideration by this group and that are not already the subject of an Accepted Letter of Assurance:
  - Either speak up now or
  - Provide the chair of this group with the identity of the holder(s) of any and all such claims as soon as possible or
  - Cause an LOA to be submitted

Slide #3

Other Guidelines for IEEE WG Meetings

- **All IEEE-SA standards meetings shall be conducted in compliance with all applicable laws, including antitrust and competition laws.**
  - **Don't discuss the interpretation, validity, or essentiality of patents/patent claims.**
  - **Don't discuss specific license rates, terms, or conditions.**
    - Relative costs, including licensing costs of essential patent claims, of different technical approaches may be discussed in standards development meetings.
      - Technical considerations remain primary focus
  - **Don't discuss or engage in the fixing of product prices, allocation of customers, or division of sales markets.**
  - **Don't discuss the status or substance of ongoing or threatened litigation.**
  - **Don't be silent if inappropriate topics are discussed … do formally object.**

See *IEEE-SA Standards Board Operations Manual*, clause 5.3.10 and "Promoting Competition and Innovation: What You Need to Know about the IEEE Standards Association's Antitrust and Competition Policy" for more details.

Slide #4

IEEE PC37.10

- **Draft "Guide for Investigation, Analysis and Reporting of Power Circuit Breaker Failures"**
  - **Revision of Std C37.10, and**
  - **Incorporation of IEEE Std 1325**

Initial Ballot Summary PC37.10

Classification	Affirmative	Negative	Abstain	Un-returned	Total
Producer	19	5	0	5	29
User	32	2	2	6	42
Gov't/Milt	4	0	0	1	5
General Interest	24	2	1	3	30
Totals	79	9	3	15	106

Ballot Results PC37.10/D1.0

- Ballot Open Date:24-Mar-2010
- Ballot Close Date:23-Apr-2010

RESPONSE RATE

- This ballot has met the 75% returned ballot requirement.
- 106 eligible people in this ballot group
- 79 affirmative votes
- 9 negative votes with comments
- 0 negative votes without comments
- 3 abstention votes
- 91 votes received = 85% returned
- 3% abstention

APPROVAL RATE

- The 75% affirmation requirement is being met.
- 79 affirmative votes
- 9 negative votes with comments
- 88 votes = 89% affirmative

Recirculation Ballot #1 Results PC37.10/D2.0

- Ballot Open Date: 26-Aug-2010
- Ballot Close Date: 16-Sept-2010

RESPONSE RATE Recirculation Ballot #1

- This ballot has met the 75% returned ballot requirement.
- 106 eligible people in this ballot group
- 90 affirmative votes
- 1 negative votes with comments
- 0 negative votes without comments
- 2 abstention votes
- 93 votes received = 87% returned
- 2% abstention

Initial Ballot Summary PC37.10

Classification	Affirmative	Negative	Abstain	Un-returned	Total
Producer	19/**25**	5/**1**	0/**0**	5/**3**	29/**29**
User	32/**35**	2/**0**	2/**1**	6/**6**	42/**42**
Gov't/Milt	4/**4**	0/**0**	0/**0**	1/**1**	5/**5**
General Interest	24/**26**	2/**0**	1/**1**	3/**3**	30/**30**
Totals	79/**90**	9/**1**	3/**2**	15/**13**	106/**106**

APPROVAL RATE

- The 75% affirmation requirement is being met.
- 90 affirmative votes
- 1 negative votes with comments
- 91 votes = 98% affirmative

Basis of Negative Comment

- This term has negative legal connotations. Additionally, the term does not require a definition because it is only used in the document in Notes of other defined terms. See Page 4 on: Line 7 as Note to another definition - failure; Page 5, Lines 1 & 3 as Note to another definition - major failure (and this is actually used as a quoted IEC definition). Also see Annex B, Page 2, Line 1 where it is used as part of a referenced document's title. There is no need to define a term that is only used in Notes of other defined terms, and in a referenced document title, but never in the actual body of the standard.

IEEE Opinion

- The use and definition of the term “defect” in the Draft Guide is appropriate and no change is required. It is our understanding that the definition of “defect” was in the original standard from 1995 and in the reaffirmation of the standard in 2002, and that the term was used in the text of the 1995 standard. It is also our understanding that the term “defect” is used in many equipment reliability surveys around the world. Under those circumstances, there appears to be established a consistent practice and usage of the term in the context of the Draft Guide, and changing this to a different term may result in inconsistency and confusion.

IEEE Opinion (cont'd)

- The term "defect" does have a specific legal connotation in the United States, but is not dispositive of product liability issues. Given the nature of the subject matter of the Draft Guide, it is likely that any alternative term would have a similar legal connotation. Given the legal connotations associated with the term "defect," it is important to specify the meaning of the term as used in the Draft Guide. Therefore, we recommend that the definition of "defect" be retained in the Draft Guide.

Resolution

- The term "defect" is acceptable to IEEE
- The term "defect" is included in the definitions for consistency even though it is only used in notes. (intention is for report writers to use the definitions and terminology of IEEE C37.10

Recirculation Ballot #2 Results PC37.10/D3.0

- Ballot Open Date: 03-Dec-2010
- Ballot Close Date: 13-Dec-2010

RESPONSE RATE Recirculation Ballot #2

- This ballot has met the 75% returned ballot requirement.
- 106 eligible people in this ballot group
- 92 affirmative votes
- 1 negative votes with comments
- 0 negative votes without comments
- 2 abstention votes
- 95 votes received = 89% returned
- 2% abstention

APPROVAL RATE

- The 75% affirmation requirement is being met.
- 92 affirmative votes
- 1 negative votes with comments
- 93 votes = 98% affirmative

Basis of Negative Comment

- “the following is confusing "... the fault current now .....". In my opinion this should be replaced to insure clarity with "...the maximum expected fault current ,,,,,".
- Short circuit studies are usually conducted to include reasonable future fault levels for the expected llife of the equipment and to limit this to "now" which is one interpretation of this sentence would be misleading.

Resolution

- Text modified to clarify that the intent is to determine the fault current at the time of circuit breaker failure. The study is not for the application of a circuit breaker for future duties. (What fault current was interrupted or available at the circuit breaker when the failure occurred?)

Additional Comment

- In 4.3 b), there seems to be an incorrect use of the term "insure".

Resolution

- Change to "ensure" instead.
- …but IEEE object to the use of the word “ensure”, even though it is used twice in their own “standard text”.
- Changed instances of “ensure” to
  - “verify”
  - “preserve”

Recirculation Ballot #3 Results PC37.10/D4.1

- Ballot Open Date:23-Mar-2011
- Ballot Close Date:10-Apr-2011
- Note: This recirculation ballot was originally initiated as PC37.10/D4.0. The ballot was re-initiated due to a MS Word to Acrobat PDF converson.

RESPONSE RATE
Recirculation Ballot #3

- This ballot has met the 75% returned ballot requirement.
- 106 eligible people in this ballot group
- 96 affirmative votes
- 1 negative votes with comments
- 0 negative votes without comments
- 2 abstention votes
- 99 votes received = 93% returned
- 2% abstention

APPROVAL RATE

- The 75% affirmation requirement is being met.
- 96 affirmative votes
- 1 negative votes with comments
- 97 votes = 98% affirmative

Basis of Negative Comment

- Recommend recording the arc flash hazard level (incident energy released at a distance)
- Add reference to NFPA 70E and IEEE 1584
- Determine if failure was related to working on energized equipment.
- Determine if Arc Flash Hazard level was as predicted by IEEE 1584.

Additional Related Comment

- “The does not provide enough detail regarding the hazards and risks. I would suggest the following wording be included which provides more explanation.
- Alternatively the Important Notice stays but it refers to a more detailed section, perhaps in 4.x”

Resolution

- The comments raise safety related issues which should be addressed.
- Draft proposed Subclause 4.1
- Recirculation Ballot PC37.10D5.0 specifically allowing voting on Subclause 4.1 ONLY

RESPONSE RATE
Recirculation Ballot #4

- This ballot has met the 75% returned ballot requirement.
- 106 eligible people in this ballot group
- 99 affirmative votes
- 0 negative votes with comments
- 0 negative votes without comments
- 2 abstention votes
- 101 votes received = 95% returned
- 1% abstention

APPROVAL RATE

- The 75% affirmation requirement is being met.
- 99 affirmative votes
- 0 negative votes with comments
- 99 votes = 100% affirmative

Recirculation #4 Comment

- The Bibliography contains reference to three different vintages of the same C2 standard. They appear on line 1, line 7, and line 29.
- There is something wrong with our system when we must refer to three different versions of the same standard C2-2002, c2-2007, and C2-2010.
- While I will not cast a negative vote, I believe we should not require the user to own and refer to 3 sets of the same document.

Resolution - Recirculation #4

- The bibliography contains references to each edition of each circuit breaker standard. This unusual listing of Standards, Guides and Codes is to allow the user of this guide to select the Standards, Guides and Codes that are appropriate for the vintage of circuit breaker being investigated. These requirements changed over the eras of circuit breaker manufacture, so the circuit breaker may also have changed.
- Refer to Clause 2, Note 1 of Clause 2, and the Introduction. The circuit breaker investigator needs to use the appropriate standards, guides and codes for the vintage of circuit breaker being investigated.

Submission to IEEE SA

- The balloted document was submitted to RevCom
- If approved by RevCom at October 18, 2011 meeting, an editorial review will take place where the scribes will check our grammar, spelling, and composition. “Hopefully”, we will maintain the document as is.
- Publication date ???

Additional Business - 1325

- Withdraw IEEE Std. 1325 when PC37.10 is approved

New Business - Publicity

- Paper for PES
  - IEEE Transactions on Power Delivery
  - “Power and Energy” Magazine
  - "IEEE Power Engineering Letter“
- Paper for IAS
  - IEEE Industry Applications
  - IEEE Transactions on Industry Applications

New Business – C37.10.1

- Reaffirm or revise IEEE C37.10.1 "**IEEE Guide for the Selection of Monitoring for Circuit Breakers**"
  - Was reaffirmed in 2006

Information

- CIGRE WG A3.06 substation equipment reliability survey will be published later this year.

* substation equipment
  - Circuit breakers
  - Instrument transformers
  - Disconnect switches
  - GIS

CIGRE WG A3.06 Substation Equipment Reliability Tutorial

- October 13, 2011
- 10:30 to 14:00 (2:00 pm)
- Similar to tutorial presented in Vienna at CIGRE colloquium in September

New Business

- What is your biggest problem with quality or reliability of HV circuit breakers?
- It is time for a new WG chair
- New topics ???

Adjournment

- Thank you for your participation
- Enjoy your meetings
- Safe travels
- Have a G’day