

IEEE PES Switchgear Committee, HVCB Q&R Meeting in Las Vegas, NV

- C37.10 WG
 - HVCB Quality & Reliability WG
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A combined meeting of HVCB Quality & Reliability (Q&R) WG and C37.10 WG was held on September 28, 2010 in Las Vegas, NV.

1. Welcome and introductions of all participants. The WG meeting was attended by 47 participants; 38 members and 8 guests. Out of those 28 are members of the C37.10 WG.
2. Six (6) new members were added to the Q&R WG and two (2) to the C37.10 WG
3. The WG Chair reviewed IEEE Policy on Patents and Guidelines for IEEE WG Meetings
4. Motion by Anne Bosma, seconded by Jeff Nelson to approve the minutes of Myrtle Beach, SC meeting. The vote for approval of the minutes was unanimous.

PC37.10 WG

5. Results of the initial ballot and the first recirculation ballot of PC37.10 were presented to the WG (and are included in the agenda slides of this meeting).
6. A single negative comment, related to item 3.5, definition of “defect”, was presented to the WG along with the analysis and research on the word “defect”. The word “defect” is used in other IEEE PES Standards (ex C57.125 “IEEE Guide for Failure Investigation, Documentation, and Analysis for Power Transformer and Shunt Reactors”) in other technical society (ex. CIGRE survey of equipment reliability) and other IEEE Standards
7. The WG asked IEEE to obtain a legal opinion on use of the word “defect”. That opinion is that

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.

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.¹

¹ Excerpt from September 24, 2010 email from Don Messina (IEEE) to W. J. (Bill) Bergman “Re: Legal Opinion Request on PC37.10D2.0 definition of defect”

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8. A unanimous vote was taken within the committee agreeing to retain the definition of “defect” on the document. The above notation in these minutes is to preserve the rationale supporting and explaining the decision.
9. A new PC37.10Draft 3.0 will be produced with editorial changes based on comments received from the first recirculation ballot and then issued for a second recirculation ballot.
10. Once PC37.10 is complete IEEE Std. 1325 will be superceded and a notation added to the archived standard referring readers to the new IEEE C37.10. Pete Dwyer is to be thanked for his long term historical support and promotion of the 1325 recommended practice.

HVCB “Q & R”

HVCB Q&R is responsible for the following IEEE Standards:

- IEEE Std. C37.10 “Guide for Investigation, Analysis and Reporting of Power Circuit Breaker Failures”
 - IEEE Std. C37.10.1 “IEEE Guide for the Selection of Monitoring for Circuit Breakers”
 - IEEE Std. C37.12.1 “IEEE Guide for High-Voltage (>1000 V) Circuit Breaker Instruction Manual Content”
 - IEEE Std. 1325 “IEEE Recommended Practice for Reporting Field Failure Data for Power Circuit Breakers”
11. In 2011, IEEE C37.10.1 will need to be reaffirmed or revised. Some changes made to PC37.10 may be appropriately changed in C37.10.1. A group has volunteered to determine if C37.10.1 should be reaffirmed or revised. Volunteers include Anne Bosma, Jeff nelson, Alan Storms, Rick Gavazza, Bill long, Doug Giraud, Devki Sharma, John Toney, Tony Ricciuti, Tom Pellerito, Steven Chen, Steven Brown and John Webb. The WG will review the draft 3.0 prior to issue for the second recirculation ballot.
 12. New business:

Members discussed new topics for development related to HV circuit breaker “quality and reliability” issues.

 - a) Several guests expressed concern over the adequacy of instruction manuals. Inadequate information and organization in instruction books were identified. C37.12.1 was developed to address the instruction manual issues. Members are encouraged to use this guide and determine if its use resolves the issues identified or if a revision is required.
 - b) SF6 leaks and design methods to reduce leaks.
 - c) A method of determining circuit breaker “end-of-life”.

John Brunke, Pat Di Lillo, Cory Johnson, Joanne Hu, Hua Liu and Rick Gavazza volunteered to review what could be done.

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Pat Di Lillo (Con-Ed) informed us, they use a specific EPRI² software tool “High Voltage Circuit Breaker Maintenance Ranking” to determine end-of-life and maintenance priorities for circuit breakers

- d) Users are interested in how to evaluate new circuit breaker designs. Some form of guide to reviewing circuit breaker designs would be useful.

A similar design guide for transformers is CIGRE 204 “Guidelines for Conducting Design Reviews for Transformers 100 MVA and 123 kV and Above”

The guide might also include some design review criteria to educate users on some possible future problems they might encounter with CB’s.

- e) Determining circuit breaker end-of-life is useful to many in the WG. A small group of interested persons will consider a new document that would provide information on circuit breaker end-of-life issues.

The following proprietary reports are available on this subject.

Pat Di Lillo from Con-Ed advised they use a specific EPRI software tool to determine end-of-life and maintenance priorities for circuit breakers (“High Voltage Circuit Breaker Maintenance Ranking”).

Other projects have been completed that provide guidance on ranking circuit breaker proximity to end of life. CEATI³ LCMSEA Project 3016 “End of Life Decision on Circuit Breakers”

A similar project was completed on transformer load tapchangers CEATI Report No. T063700-3042 “End of Life Decision Support Model for Transformer Load Tapchangers”.

- f) Guide to understanding circuit breaker Type Tests.

Development of such a guide is recognized as a huge task and a topic that is covered to varying extent is several other guides and documents related to testing of circuit breakers.

- g) An email will be sent to the members to confirm their desire to participate or contribute to any of these new areas of interest.

13. Meeting was adjourned by unanimous vote.

Chair: W.J. (Bill) Bergman bergman@ieee.org

Vice-chair: Mauricio Aristizabal m.aristizabal@ieee.org

² www.epri.com

³ www.ceatech.ca