

Task Force on Particle Counts in Transformer Insulating Fluids

Hilton Downtown Toronto Hotel
Toronto, Ontario CANADA
Room: Toronto II
Monday, October 25, 2010
1:45 PM – 3:00PM

IEEE/PES Transformers Committee / Insulating Fluid
Subcommittee – Fall 2010 Meeting – Toronto, Ontario
CANADA

These are not the original slides presented at the
meeting. The survey results have been removed.
T.V. Oommen presentation is embedded on Slide 15.

Agenda

1. Introductions & Roster
2. Patent Disclosure
3. Origins
4. Activities to Date
5. Member List / Quorum
6. Purpose / Scope
7. Mini-Tutorial
8. Survey / Survey Results
9. Back to Purpose / Scope
10. Next Steps / Discussion
11. Adjournment

Introductions & Roster

- **Chairperson**

Mark Scarborough
Electrical Engineering Consultant, EITG
DuPont Engineering
Wilmington, DE

- **Vice-chairperson**

T.V. Oommen
ABB (Semi-retired) / Consultant
Raleigh, NC

- **Secretary**

Paul Bowan
Hartford Steam Boiler
Auburn, KS

(Will establish if a Quorum is present in a few slides.)

Participants, Patents, and Duty to Inform

- 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.

Participants, Patents, and Duty to Inform

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

Participants:

- “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

Quoted text excerpted from IEEE-SA Standards Board Bylaws subclause 6.2

- Early identification of holders of potential Essential Patent Claims is strongly encouraged
- No duty to perform a patent search

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/guides/bylaws/sect6-7.html#6>

IEEE-SA Standards Board Operations Manual

<http://standards.ieee.org/guides/opman/sect6.html#6.3>

Material about the patent policy is available at

<http://standards.ieee.org/board/pat/pat-material.html>

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

This slide set is available at <http://standards.ieee.org/board/pat/pat-slideset.ppt>

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

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.

Origins

- The Insulating Fluid Subcommittee is the parent committee.
- TF was chartered after the Spring 2008 meeting in Porto, Portugal.
- TF was established to investigate the issue and determine if there is a need to develop a standard for particulate limits in new fluid, as received in new equipment, and continued use. (Currently, focus is on new fluid in new equipment.)

Activities to Date

- First face to face conference meeting was March 8, 2010. Prior to that we had five (5) teleconferences.
- Membership is 29 members based on March 8, 2010 meeting.
- We have had two (2) teleconference calls since March 8, 2010.
 - 9/16/2010 and 10/4/2010
 - 10-12 participants on teleconference calls. No quorum.
- Created and issued survey. Results of survey to date will be shared later.

Members List / Role Call

- Boettger, William
- Boman, Paul
- Castellanos, Juan
- Cherry, Donald
- Claiborne, C. Clair
- Crouse, John
- Darovny, William
- Garcia, Eduardo
- Ghosh, Saurabh
- Goldsmith, Anne
- Hanson, David
- Hayes, Roger
- Lundquist, Thomas
- McNelly, Susan
- McShane, Partick
- Mehrotra, Vinay
- Melle, Thomas
- Moleski, Hali
- Moore, Steven
- Oommen, T.V.
- Platts, Donald
- Prevost, Thomas
- Rasor, Robert
- Scarborough, Mark
- Sim, H. Jin
- Steinemen, Andrew
- Tenney, Jeff
- Varghese, Ajith
- Yang, Baitum
- Indicates in attendance.

Jeff Tenney is a SD Myers technical resource for Hali Moleski and Bob Rasor.

Anne Goldsmith is with Calumet and attends conference calls but not the Transformer Meeting regularly.

Approval of March 8, 2010 Meeting Minutes

- Do we have a quorum to approve the March 8, 2010 Meeting Minutes?
- Do we have a motion to approve the minutes?
- Second it?



S10 - TF Part Count
Notes of Meeting

Purpose / Scope

- During a September 16, 2010 teleconference call, a purpose / scope of the TF was discussed and published in notes of meeting.
- A quorum was not present during the meeting but meeting attendees agreed to it.
- See next slide.

Purpose / Scope (Not approved)

This Task Force (TF) has been established to investigate the issue / need of establishing particle count limits in new insulating fluids and as received in new equipment. The investigation will be limited to the following:

- New mineral oil only.
- Particle count limits as part of factory acceptance testing of a new transformer. (A gauge of transformer cleanliness at time of manufacturer.)
- Particle count limits as part of field acceptance testing of a new transformer.
- Determine voltage class / size of transformer in which particle count limits matter.

The following topics will NOT be explored at this time:

- Fluids other than mineral oil.
- Reprocessed / reclaimed mineral oil will not be addressed.
- Limits in new oil from refiner.
- Limits on in-service or service aged transformer.
- Limits on tap changers.
- HVDC applications.

These findings, results, and /or recommendations will be reported back to Insulating Fluid Subcommittee.

(Will come back to discussion on the Purpose / Scope after review of Survey Results.)

Mini-Tutorial

- During our September 16, 2010 teleconference T.V. Oommen offered to provide a mini-tutorial on the history of particle counts in transformer oil.
- T.V. Oommen (ABB, semi-retired) has been identified as a TF member that has worked with particles in oil since the early 1980's. He is providing guidance/support to the TF on particle counts.



Fall 2010 - TV
Presentation

Survey

- At the March 8, 2010 meeting, an announcement of a survey was made.
- Only five (5) people completed survey.
- The survey was revised and issued more formally October 18, 2010 to a distribution list of 475 individuals (~225 Committee Members, plus ~250 Active Participants).
- <http://www.surveymonkey.com/s/ieeexfmrtfpartcount>
- Forward the e-mail from 123Signup or forward the link above to anyone who has an interest in the topic.

Survey Results

- As of October 25, 2010 sixty three (63) people responded to the revised survey.
- We will leave the survey open until December 31, 2010.
- The TF has not had a chance to “normalize” and digest the responses.
- Some survey results were shared at the meeting but by discussion with IF Subcommittee Chairperson, we decided to remove those slides from this presentation until the TF has reviewed the comments.

Next Steps / Discussion

- Continue to collect responses to survey.
- “Normalize” results of survey.
- Summarize results of survey.
- Report back to Subcommittee results of survey.
- Look into accuracy of ASTM D 6786-08.
- Can any of the labs present share any test data for transformers where dielectric strength and particle counts were performed?
- Attempt a round robin of testing “new” transformers?
- T. V. wants to start working on a draft report document capturing the things that we have learned so far.

Adjournment - Thank you for attending.