7.2 C57.13 Instrument Transformers – R. McTaggart – Unapproved Minutes

Chair's Remarks & Announcements

- The Instrument Transformer Subcommittee met on Wed Oct 27 at 8:00 AM for a double session.
- 8 of the 12 members plus 19 guests attended.
- The previous meeting's minutes were approved as written and there were no Patent issues.
- The past Chair, Jim Smith, recently resigned as SC Chair after 17 years – appreciation and best wishes were expressed by all
- The next meeting is scheduled for Apr 10 – 14, 2011 in San Diego
- The structure and privileges for members of different organizations within IEEE were reviewed in response to some misunderstandings in the previous meeting
- The status of all C57.13 standards was reviewed

7.2.1 Working Group for Revision of IEEE C57.13 Instrument Transformers

This working group will meet officially for the first time in a separate time slot at the San Diego meeting. Many of the people who will be members were in attendance at the SC meeting and discussed the timeline and goals of the WG. It was agreed that significant work would need to be done between meetings to meet the deadline. It was pointed out, however, that we should not let the quality slip to meet the deadline and a PAR extension may be necessary.
The most important issue discussed was the dilemma of how to handle differences between C57.13 and C57.13.5. Some suggestions were:

1) Limit the scope of C57.13 to Instrument Transformers below 115 kV and use C57.13.5 for all Instrument Transformers 115 kV and above. This would mean revising both standards.
2) Make the C57.13.5 requirements mandatory for all Instrument Transformers 115 kV and above. This has the same effect as 1) but can be accomplished by only revising C57.13 and including reference to C57.13.5 for test requirements where applicable.
3) Define 2 classes of Instrument Transformers – one which meets C57.13.5 as well as C57.13 and one which only meets C57.13. This suggestion (similar to Breaker standard) resulted in the most discussion. If this option is chosen it can also be accomplished by only revising C57.13 and including reference to C57.13.5 for test requirements where applicable. It

would define 2 classes, say Class 1 & Class 2 with Class 2 having the optional test requirements as per C57.13.5. Class 1 would be the default to be assumed by the manufacturer if no Class is specified.

It was suggested that a survey on this subject should be done before the next meeting but to ensure that all WG members have the opportunity to vote this was deferred to the 1st WG meeting.

7.2.2 Review of Survey Responses

1) Bushing CT Proposal – 75% were in favor of including the appendix and 55% were in favor of it being normative
   R. Mullikin to provide new draft

2) CT Metering Accuracy Calculation Proposal – 55% were against having a separate clause and 89% were against replacing 8.1.7 to 8.1.10
   The comments indicated that the proposed clauses should be consolidated with the existing ones.
   V. Khalin to work on this

7.2.3 WG Report: **Current Transformers with mA range (PE/TR/PE/TR/Instrument-WG C57.13.7)** Henry Alton & Adnan Rashid

Thirteen people attended. Three new attendees committed to joining this working group on a "Standard for Current Transformers with 250mA range secondary current".

Following introductions, the agenda was presented and accepted. The agenda was as follows;

1. *Introduction*
2. *Acceptance of the Agenda*
3. *Project Approval (PAR)*. ***Henry Alton of Triacta Inc.***
   a. Status
   b. Updated scope details;
   c. Discussion;
4. *Presentations*.
   a. Report Presentation on 200A – 80mA CT testing – **Nick Powers, Vladimir Khalin, ABB Inc.**
   b. Presentation on Current Transformer accuracy measurement – **Dr. Eddy So, National Research Council of Canada (NRCC)**
   c. Any Patents that Impact the Working Group
   d. Discussion
5. *Next Steps*
   a. Discussion on Strategy for producing the Industry Standard
      i. Potential using structure example of C57.13.6
      ii. Volunteers to research, add and draft applicable subsections

b. Timelines for a draft availability

New Business

Henry Alton of *Triacta Power Technologies Inc.* provided a brief review of the final changes to the PAR required to reach approved status.

A verbal presentation of testing of the sample CTs provided by Triacta was given by Vladimir Khalin, ABB Inc. These CTs were tested down to 8mA secondary output. The transformers were found to be very accurate in the range tested. Vladimir stated a concern about the potential for error in the mA CT secondary circuit if the wiring is not twisted and shielded pair to protect against electric field influence. Further investigation will be conducted on this point.

A presentation was also given by Dr. Eddy So of the National Research Council of Canada outlining the methodology of determining the true accuracy of current transformers in 80mA and 100mA range. Details of how the test is set-up were given and included some of the theoretical points. Specific attention was drawn to the possibility that voltage influences may cause ratio errors. More testing would have to be done in this area to confirm whether this is the case.

PAR Comments and Changes

Review

The final approved PAR details were reviewed from a ".pdf" format provided from the "MYPROJECTS" account for this project. This was also distributed to all of the volunteers from the previous Houston TX meeting as a function of the Houston TX action register update.

Actions from this meeting

These are the actions from this meeting. The dates shown are targeted dates that the action item will be completed by.

- *Henry Alton* to get a copy of C57.13.6 to establish a base line for creating this new standard and produce a draft frame work of the new standard, including burden and other accuracy information as stated in the Measurement Canada specification.
    - Status/Date: November 1, 2010
- *Henry Alton* to distribute the latest version of the Measurement Canada specification as a function of this meeting minutes email distribution
    - Status/Date: November 1, 2010
- *Henry Alton* to schedule two meetings, one per month over the next two months to track progress on the new standard with all participants and tighten up the frequency after to twice per month.
    - Status/Date: November 1, 2010
- *Team* - A document writing strategy of breaking out into groups to research each subsection and add any new categories to be done as follow-up to this meeting.
    - Status/Date: November 10, 2010
- *Team* - The goal is to have a first draft target by Jan/March 2011 timeframe. The date will become more clear as work progresses.
    - Status/Date: Jan/March 2011

7.2.4 Presentation on Voltage Dependency of Ratio Errors in High Voltage CT's – by Dr Eddy So

7.2.5 Presentation on Diagnostic Methods for the Loss of Life of 69 kV Currrent Transformers - by Dr Satish M. Mahajan

7.2.6 Old Business

7.2.7.1 C57.13.2 & C57.13.6

These 2 standards are now reaffirmed

7.2.8 New Business

None

7.2.9 Adjournment