TF for Instrument Transformers Accuracy

Meeting Minutes March 29th, 2022 Denver, CO

Attendees: The number of participants was 39. 19 members present and quorum was obtained. Paper rosters / sign-in sheets were circulated. 5 people requested membership. All fulfill the minimal requirements. 1 member asked to be removed from the member list.

Essential Patent Claims: Text was displayed, and the Chair inquired as to if anyone knew of essential patent claims. None were brought up.

Copyright: Text was displayed at the meeting

Minutes of pervious meeting: Unanimously approved with motion brought forward by Marek Kornowski and seconded by David Wallace.

Agenda: Unanimously approved with motion brought forward by Zoltan Roman and seconded by Lee BIgham.

Review of the action items for this task force:

Change of TF "status"

- It was brought forward by I. Ziger and T. Sizemore that the TF will report to the newly formed C57.13 revision working group instead of the Instrument Transformer Subcommittee directly.
- There was a short discussion initiated by Z. Roman on what the output of the TF was. It was conducted that Annex A, extended range and other spillovers from the main standard will be handled by the taskforce
  Further conversation will take place in the ITSC meeting.

2 Presentations of the results based on application of methodology from "Annex A" to different unit types

- The 1st was held by B. Sonnenberg

- The application of the method was showcased on units ranging 600 V– 69 kV
- A very good correlation of results was observed
- The approach was based on measurements made at 0 VA and maximum burden
- Z. Roman commented that other power factors should be considered. However, only standard burdens were able to be used in this case
- It was noted that used 0 VA values were actually very close to "true" 0 VA.

- The 2nd was held by H. Dinh

- The application of the method was showcased on two units (69 kV single ratio and 115 kV dual ratio) with different power factors
- Again, a good correlation was observed. It was pointed out that a better result certainty was achieved when Maximum and 0 burdens are used in the method.

- Z. Roman pointed out whether theoretical or actual burdens were used. A small discussion ensued on the topic, with T. Sizemore pointing out that it is critical to accurately assess the 0 burden as the failure to do so can lead to some errors
- J. Oliveira pointed out that the differences in presented results are negligible for practical applications

The results of the planned 3rd presentation by Z. Roman will be distributed to the WG after they are received.

I.Ziger asked for volunteers to work on the Annex A and implementing the changes in the main text of the standard. Several people volunteered directly (R. Trifunoski, M. Kornowski, H. Dinh, Z. Roman, D. Wallace). This group of people will be contacted after the meeting to perform the work on the annex and main text implementation.

Presentation of experiences on CTs with extended range – held by T. Sizemore

- A presentation was given with basic concerns on extended range, laboratory and field implications, as well as approaches to take when implementing it in the standard
- A very fruitful discussion ensued. The main points (and contributors) are listed below:
- It is important to give explanatory text which explains extended range and its implications (more expensive, different materials….) - M. Kornowski, T. Sizemore, R. Trifunoski
- It is necessary to put an additional clause for extended range – D. Wallace
- Extended range does not apply to Multi Ratio units – J. Oliveira
- Some customers cannot “afford” RF 4.0 due to meter limitations – L. Bigham
- Some meters see very low currents as noise. It is a question of what meters can actually sense – J. Kotula
- A question of test system calibration and traceability – B. Wimberly
- It will be important to clearly indicate the extended range on the nameplate – R. Hogg
- Two ideas were brought forward on how to do that. The first is to define extended range classes (Z. Roman). The other is to specify the range the accuracy is applicable to – either in percentage or amps of primary current (L. Bigham, I. Ziger, J. Kotula)
- We have to carefully specify expected accuracy. It is a question how to address the “double” accuracy limits for class 0.15. (I. Ziger). R. Trifunoski suggested that “double” accuracy limits should be removed from extended range applications
- Some other minor comments and observations were brought forward regarding field testing, available equipment and calibration

I.Ziger asked for volunteers to work on the wording for extended range. The first step is the explanatory text, and based on that the final approach will be determined . Several people volunteered directly (A. Rashid, R. Trifunoski, M. Kornowski, J. Oliveira, J. Chorzepa,T. Sizemore, H. Dinh, Z. Roman). This group of people will be contacted after the meeting to perform the work on the wording regarding extended range CTs.

Motion to adjourn: A motion was put forth by Deepak Kumaria and seconded by Thomas Sizmore

Next Meeting: This WG will meet to continue work at the Charlotte, NC, USA, Fall 2022 meeting.

Date: 2022-03-29
Chairman: Igor Ziger
Vice Chair: Thomas Sizemore stepping in for D. Kumaria