

7.7 Underground Transformers and Network Protectors – Carl G. Niemann

Meeting Minutes – Memphis, Tennessee

7.7.1 Introduction/Attendance

The Underground Transformers and Network Protectors Subcommittee met on Wednesday, October 26, 2005, in the Grand Salon D room of the Peabody Hotel at 9:30 AM with 10 members and 7 guests present.

7.7.2 Approval of Minutes

The minutes of the March 16, 2005 meeting in Jackson, Mississippi were approved as submitted.

7.7.3 Membership

Membership stands at 16 members. Franklin Lu and Nelson Alfonso were accepted as members.

7.7.4 Chairman's Remarks

The following Administrative Subcommittee notes were reported to the subcommittee:

- The attendance statistics and future meeting locations
- Group membership type of "Corresponding Member" has been added to the AM system
- Anyone wishing to do a presentation should see Kent Haggerty

7.7.5 Working Group Reports

7.7.5.1 Underground Single Phase Transformers (C57.12.23) – A. Traut, Chairman

1. There were 13 members, 6 guests, and 1 guests requesting membership in attendance. With the addition of these new members the total membership of the WG now stands at 25.
2. The chair requested disclosure of any patents that might impact this standard. There were no patents disclosed at this meeting.
3. The minutes of the March 2005 meeting in Jackson were approved as submitted.
4. The WG agreed to make the following changes to Draft 3 of the document.
 - A. Add 85C reference temperature for load loss and impedance and 20C reference temperature for no-load loss.
 - B. Revise the paragraph regarding pressure relief provisions to include a plug to provide for manual pressure relief and provide for an optional automatic pressure relief valve. Alan Traut will propose this revision at the next meeting.
 - C. Revise the nameplate requirements to require a stainless steel nameplate and non-corrosive hardware.
 - D. Add the weight in pounds and the liquid volume in gallons to the nameplate requirements. These units were specifically chosen to address safety concerns.
5. The next meeting will be in Costa Mesa, CA in March 2005.

7.7.5.2 Three-Phase Underground-Type Transformers (C57.12.24) – Giuseppe Termini, Chairman

1. The meeting was called to order by the Chairman at 8:00AM on Monday, October 24, 2005 in the Forest Room of the Peabody Memphis Hotel in Memphis, Tennessee.
2. Introductions were made. The meeting was attended by 12 members and 11 guests. One guest requested membership.
3. The Chairman opened the meeting by asking if anyone in the Working Group knew or had knowledge of any existing or pending patents that may affect the work on this standard. All responses were negative.
4. The Meeting Minutes from the previous meeting in Jackson, MS were reviewed and approved.
5. The rest of the meeting consisted of a review of Sections 1 through 7.6 of the Draft Standard.
 - A. The Scope and Purpose of the standard were approved with a minor change to the Scope. The word “continuously” will be added to the last sentence of the Scope before the word “submerged”. A discussion about changing the Scope to increase the KVA transformer rating above 3750 took place. The Working Group agreed that 3750 will be the maximum KVA rating covered by this standard.
 - B. The references, if not cited in the body of the document, will be removed from Section 2 and placed in a Bibliography.
 - C. In Section 5.1 the cooling class was removed. This section will reference the appropriate IEEE Standard(s) for cooling requirements.
 - D. A suggestion to include a 600Y secondary voltage rating in Table 1 was made. The Working Group agreed that such a voltage is rarely used and will not be included in Table 1.
 - E. The Working Group agreed that the impedances as shown in Table 3 should be reviewed for the maximum fault current available on the secondary side of the transformer. A task force made up by Dan Mulkey, Giuseppe Termini and John Sullivan will review this table and make appropriate recommendations.
 - F. In Section 7.1 the references to other sections of the standard will be removed. A suggestion was made to include the dimensions for a 3000 KVA tank in the tables of Figure 1. Dinesh Sankarakurup and Brian Klaponski agreed to provide the tank dimensions so that the tables can be updated. Brian Klaponski suggested to include 316 stainless steel to the material option for the parking stands. He also suggested to add the letter “L” next to 304 and 316 to indicate low carbon content. This addition may eliminate the need to specify the 0.05% maximum carbon content, the Chairman agreed to follow up this item.
 - G. Figure 2 will be revised to change the description of the primary and secondary bushings to be consistent with the rest of the standard. The number subscript for the bushing markings in Note 1 of Figure 1 will be removed from the letter “B”.
 - H. The metric dimension for the hole size of the spade connectors shown in Figures 4 (a), (b), (c) and (d) will be added. The need to include a twelve (12) hole spade connector for the 3750 KVA transformer size in Figure 4 was brought up. The Chairman will work with Dinesh Sankarakurup and Brian Klaponski to make a recommendation.
 - I. The total weight in pounds (lbs) and kilograms (kg) and the volume in gallons (gal) will be added to the nameplate requirements for safety reasons.
6. The meeting was adjourned at 9:20 AM.

7.7.5.3 Liquid Filled Secondary Network Transformers (C57.12.40) – B. Klaponski, Chairman

1. The WG met on Monday, October 24, 2005 at 09:30am with 12 members and 12 guests.
2. The chairman reviewed the patent legal issue and asked whether there were any patents or patents pending that would affect the WG or standard. None were identified.
3. The minutes of the March 14, 2004 meeting in Jackson, MS were approved.
4. Chairman gave a brief summary of what has transpired regarding this document and the balloting process. He expressed frustration that the WG has been working 4 years on a task that should have taken 1 year.
 - A. WG was attempting to just fix errors on the document and republish. Encountered some stumbling blocks, including Metrification.
 - B. Most recent ballot closed on 1/27/05. Comments indicating many required changes received from Mr. Frysinger, Vice Chairman of SCC14.
 - C. WG reviewed ballot comments at the Jackson, MS meeting. WG made changes to standard with understanding that the Transformer Committee would resolve issues with Mr. Frysinger. The WG understanding was that the standard would then need to go thru a recirculation ballot.
 - D. WG Chairman replied to Mr. Frysinger after the Jackson meeting regarding his recommended changes, providing feedback that most changes were not needed as the existing document text was “industry standard transformer terminology”. In early October, WG Chairman received further comments from Mr. Frysinger, who apparently was unaware of agreement and resolution of issues with Mr. Barrow.
 - E. WG Chairman expressed concern that the author of this reply clearly did not understand the terminology and equipment which falls under the standard. He stated that the WG is responsible for updating technical industry standards, and is not responsible for educating those who do not understand our equipment.
 - F. WG Chairman has indicated to the Transformer Committee leadership, through the Rep. to Standards Coordinating, that the WG is prepared to reply to this individual but will do so in a rather terse tone as the WG believes this was totally inappropriate that they received this type of reply. We are trying to address technical issues and instead we have to put up with this type of bureaucratic red tape from an individual like this.
5. Discussion then followed on next steps we should take on this matter. WG understanding is that we have a responsibility to respond to Mr. Frysinger, but we are not required to address his issues. There was a suggestion to respond and cite relevant standards. Chairman responded that we should not have to give him a detailed response, basically educating someone on transformer issues.
6. S. Vogel, IEEE-SA, stated she sees two issues facing the WG. Firstly, having only one negative vote, we can go forward, and procedures require we address it and recirculate to group. Secondly, the SCC14 individual response issue is unfortunate, and we are not the only group experiencing this. The SCC14 response is not actually a vote, but rather a comment. It does not require rigorous rebuttal. The IEEE staff has received numerous complaints regarding this individual from groups like ours and is planning to address this with SCC14 leadership.

7. After further discussion by IEEE staff on this issue, it was felt that the best course of action would be to proceed with recirculation ballot.
8. Motion made by S. Schroeder, to disregard the comments made by Mr. Frysinger, as they are of no practical value given the common understanding of our industry.
Seconded by L. Dix. Approved unanimously.
9. Motion made by I. Hussain, to proceed with recirculation ballot. Seconded by S. Schroeder. Approved unanimously, subject to further discussion.
10. Chairman commented that WG should not take any further action regarding SCC14 response and recirculation ballot until guidance is received from the Transformer Committee leadership on this issue. Time frame for IEEE to take action and resolve this issue was discussed. S. Vogel will schedule a conference call within the next two weeks to review with IEEE Senior Management and resolve.
11. Motion made by C. Niemann to advise the Transformer Committee leadership that it be duly noted that our document contains technical errors and the IEEE may be exposed legally due to this fact. Further that that the Underground Transformers and Network Protectors Subcommittee Chairman appeal to and apply pressure to the Transformer Committee leadership to resolve this issue quickly because our standard is in full stop as to recirculation ballot. Further, that we will copy this motion directly the IEEE Standards Association, via S. Vogel due to the liability issue.
Seconded by L. Dix. Approved unanimously.
12. The meeting was adjourned at 10:40am with the next meeting in Costa Mesa, CA.

7.7.5.4 Secondary Network Protectors (C57.12.44) – D.H. Mulkey, Chairman

1. The WG met on Monday, March 14, 2005, with 7 members and 1 guest present.
2. Minutes of the spring meeting in Jackson, Mississippi were approved as submitted.
3. Disclosure of any relevant patents was requested; there were none disclosed
4. The chair informed the working group that the draft standard passed on the first recirculation and was submitted to Revcom. IEEE staff required the fuse manufacturers and numbers be removed from the annex. This was an editorial change. The corrections to the metric conversion rounding as required by SC14 were, however, deemed technical and required another recirculation. A poll of the working group was conducted between meetings and it was decided to have the chair make the changes and a 2nd recirculation was conducted
5. The second recirculation was successful and the document has been submitted to Revcom for approval at its December 6, 2005 meeting.
6. The working group was asked to think about what, if any, future revisions are needed
7. The meeting was adjourned at 2:15 PM.

7.7.5.5 Ventilated Dry-Type Network Transformers (C57.12.57) – A.L. Robinson, Chairman

1. The WG was not scheduled to meet.
2. The chair will submit the draft documents to either Carl Niemann or Dan Mulkey

7.7.6 Old Business

1. Dave Blew, Brian Klaponski, and Carl Niemann prepared a recommendation to be presented to the Transformers Committee regarding the problems with the comments from SC 14.

2. Brian Klaponski made the comment that the increased IEEE staff representation, the new Word template, the archiving of the current standards and their graphics in their original format, and the new My Ballot system were all positive steps and greatly appreciated. The committee agreed.

7.7.7 Future Meetings

The location and dates for future meetings are as follows:

- March 19-23, 2006 Hilton, Costa Mesa, California
- Oct 21-26, 2006 Delta Center-Ville, Montreal, Canada
- March 11-15, 2007 possibly in Phoenix
- Fall 2008 is being planned for Porto, Portugal

7.7.8 The Subcommittee adjourned at 10:30 AM.