

## **8.10 Underground Transformers and Network Protectors – Carl G. Niemann**

### **Meeting Minutes – Jackson, Mississippi**

#### **8.10.1 Introduction/Attendance**

The Underground Transformers and Network Protectors Subcommittee met on Wednesday, March 16, 2005, in the Amphitheater 2 room of the Hilton Hotel at 9:30 AM with 11 members and 6 guests present.

#### **8.10.2 Approval of Minutes**

The minutes of the October 27, 2004 meeting in Las Vegas, Nevada were approved as submitted, except with a change of “2500” to “25000”.

#### **8.10.3 Membership**

Membership stands at 16 members. Isran Bamentos was accepted as a member.

#### **8.10.4 Chairman’s Remarks**

##### **Administrative Subcommittee Notes Reported to SC**

- Our first dual logo IEEE and IEC document, C57.135, is now approved
- Discussed SC14 comments that have been received on several ballots. They will be discussed at higher level.
- Name changes for the .23 & .24 standards may be accomplished by submitting them in the PAR.
- On new PARs for revisions, the committee wants to see the old scope and purpose as well as the original.

#### **8.10.5 Working Group Reports**

##### **8.10.5.1 Underground Single Phase Transformers (C57.12.23) – A. Traut, Chairman**

1. The WG met on Monday, March 14, 2005, with 13 members and 4 guests present, and 5 guests requesting membership. With the addition of these new members the total membership of the WG now stands at 24.
2. Minutes of the Fall meeting in Las Vegas were approved as submitted.
3. Disclosure of any relevant patents was requested; there were none disclosed.
4. The chair reported that a new PAR was completed and approved by NESCOM on 3/4/2005. The expiration date for this PAR is 12/31/2009.
5. There was a discussion of the use of the word enclosure in the document where the intent is to refer to the transformer tank. We agreed that the enclosure refers to the vault or containment means of the transformer and the tank refers to the transformer itself.
6. The WG agreed to make the following changes to Draft 2 of the document.
  - A. Change the title of Clause 7.5 from “Enclosure Integrity” to “Tank Integrity” in light of the discussion above. The chair will review other instances of the use of transformer enclosure to insure consistency with item 5 above.

- B. The second paragraph of Clause 2 will be changed so that future revisions of referenced Standards will not be automatically incorporated by reference. That paragraph is borrowed from C57.12.44 and will now read. "When a standard referred to in this document is superseded by a revision, the revision shall not apply. The referenced standard and the specific referenced edition shall be the applicable referenced standard until the new version of the referenced document is incorporated by formal action or appropriate revision of the citing standard."
  - C. Clause 4.2 will be changed to reflect that the terminations of the transformer must also be suitable for submerged operation.
  - D. Clause 7.3 will be changed from oil level sight gage to oil level indicator.
  - E. Table 1 will be changed to remove the 8.3/14.4 separable connectors as an option for 16340GY, 16340, and 17200. The transformer BIL will remain 95 or 125kV BIL as specified by the user.
7. The meeting was adjourned at 9:15 AM.

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

- 1. The WG met on Monday, March 14, 2005, with 11 members and 15 guests present. One guest requested membership
- 2. Minutes of the Fall meeting in Las Vegas were approved as submitted.
- 3. Disclosure of any relevant patents was requested; there were none disclosed
- 4. Old Business:
  - A. Discussed last meeting activities that included the initiation of the Project Authorization Request (PAR) and the proposed changes to the standard.
- 5. New Business:
  - A. Paul Orehek questioned deviation from original intent of standard. The Chairman stated that the proposed revision to the standard were to address engineering and design changes brought up by members and guests at previous meetings. The revision to the standard will also change the Title, Scope and Purpose as approved at the Las Vegas meeting.
  - B. The "Draft" PAR was reviewed. The PAR was not submitted pending review by Bill Chiu. According to Carl Niemann the original Title, Scope and Purpose must be included in the PAR before it is submitted.
  - C. Gerry Paiva of Southern California Edison suggested a survey among utilities be made as to the use of submersible versus occasional submersible. The Chairman stated that the WG has a good representation of utilities that use 3-phase submersible distribution transformers. The pool of utilities in the WG include: Exelon – PECO and ComEd, PSE&G, Georgia Power, Con Ed, PG&E, Delaware Electric, Duke Power and Seattle City Lights.
  - D. The "Draft" standard revision was reviewed. The word "Type" should be removed from the Title. The word "underground" should be changed to "submersible" in the Scope section.
  - E. Alan Traut suggested adding the definition of "submersible" into the standard.
  - F. Stan Kostyal agreed to work on the standard to address the electrical changes.

- G. Brian Klaponski agreed to work on the standard to address the mechanical changes.
  - H. Dan Mulkey suggested to post the “Draft” standard and Minutes on the IEEE Committee website. John Sullivan agreed to take care of the posting.
6. The meeting was adjourned at 9:13 AM.

#### **8.10.5.3 Liquid Filled Secondary Network Transformers (C57.12.40) – B. Klaponski, Chairman**

- 1. The WG met on Monday, March 14, 2005, with 14 members and 3 guests present.
- 2. Minutes of the Fall meeting in Las Vegas were approved as submitted.
- 3. Disclosure of any relevant patents was requested; there were non disclosed
- 4. The chairman noted that the standard had now been balloted. There was a negative ballot from one balloter and some concerns from the Vice Chair of SCC14.
- 5. Copies of the affirmative ballots with comments and the negative ballot and the concerns from the Vice Chair of SCC14 were passed out to all the attendees. The rest of the meeting focused on these issues:
  - A. Bal Gupta’s three comments were accepted as editorial clarifications
  - B. Ed Bertolini’s (Joe Cultrera’s) comments had been humbly withdrawn
  - C. Gary Engmann’s general comment was noted for the next revision
  - D. Saumen Kundu’s comment was noted for the next revision
  - E. Most of J W Wilson’s comments were noted and will be handled through the final editorial process. His comment about reference specification current dates was not correct and our intent is not to automatically accept the latest reference document.
  - F. The 4 comments associated with the negative ballot from N. McQuin were rejected by the WG. The Chairman will reply to the negative ballot.
  - G. The letter from the Vice Chair of SCC14 was reviewed. His first comment on spacing was noted and will be handled in final editing. His other comments were rejected. The WG Chair has replied once to the Vice Chair of SCC14 and will reply again following balloting protocol showing that his comments were given due consideration by the WG.
- 6. The WG Chair noted that he will concentrate on getting this standard through the balloting and approval process. He also noted that particularly with the lengthy metric issue with IEEE that this process had taken far too long and this standard is still in error from the NEMA/ANSI publication of 2000. The main issue causing further delay may be SCC14 without involvement of the executive of the Transformers Committee.
- 7. It is intended that the next meeting concentrate on the NEXT revision on issues like the coordination of the transformers to the protectors, switch test values, and issues raised by John Rossetti.
- 8. The meeting was adjourned at 10:30 AM.

#### **8.10.5.4 Secondary Network Protectors (C57.12.44) – D.H. Mulkey, Chairman**

- 1. The WG met on Monday, March 14, 2005, with 9 members and 3 guests present.
- 2. Minutes of the Fall meeting in Las Vegas were approved as submitted.
- 3. Disclosure of any relevant patents was requested; there were non disclosed
- 4. First Ballot closed successfully: 94% Return, 97% Affirmative, 1 Negative ballot

5. Recirculation Ballot closed successfully: 96% Return, 96% Affirmative, 2 Negative ballots
6. Negative Ballots:
  - A. Bertolini: restatement of original negative
  - B. Wilson: addressed new areas - principally references
7. Draft has been submitted for approval
8. Discussed the negative ballots; Wilson stated the following references should be in the reference section rather than in the annex; the committee determined as follows:  
 IEEE C57.91 – No, IEEE C57.12.00 – Yes, IEEE C37.09 – Yes, IEEE C37.09 – Yes, ANSI B1.1 – No, ASTM D2303 – Yes, UL 746A – Yes, ASTM D229 – Yes, UL 94 – Yes
9. Next Steps Once the draft is approved, the Chair will discuss with the assigned editor if moving these references is editorial.
10. The meeting was adjourned at 2:30 PM.

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

1. The WG was not scheduled to meet.
2. Will work on getting this into the xxx category
3. Chair is unlikely to return

#### **8.10.6 Old Business**

1. Name Change to “Submersible and Network Equipment” is proceeding

#### **8.10.7 New Business**

1. Brian Klaponski & Carl Nieman– will ask John Rosetti to tour Memphis underground system

#### **8.10.8 Future Meetings**

The location and dates for future meetings are as follows:

- Oct 23-27, 2005 Memphis, Tennessee
- March 19-23, 2006 tentatively Miami, Florida
- Oct 22-26, 2006 tentatively, Montreal, Canada
- March 11-15, 2007 no location yet

#### **8.10.9 The Subcommittee adjourned at 10:45 AM.**