

## **9.11 Distribution Transformers – Ed Smith**

Meeting Time: 3:00pm, Wednesday, October 17, 2001

Attendance: 50 Total

38 Members

12 Guests

4 Guest Requesting Membership

### **9.11.1 Chair's Remarks & Announcements:**

The chair's remarks and announcements are not produced in entirety here as some of the information is covered in other parts of these minutes.

New Standards Added to Distribution Transformer Subcommittee:

Due to the Joint Copyright issue and agreement between IEEE and NEMA the following Standards have been included under the Distribution Transformer Subcommittee umbrella.

ANSI C57.12.28 – Pad-Mounted Equipment Enclosure Integrity.

ANSI C57.12.29 – Pad-Mounted Equipment Enclosure Integrity for Coastal Environments.

ANSI C57.12.31 – Pole-Mounted Equipment Enclosure Integrity.

ANSI C57.12.32 – Submersible Equipment Enclosure Integrity

### **9.11.2 Working Group Reports**

#### **9.11.2.1 C57.12.20 Single Phase Pole Mounted Distribution Transformers**

(Copyright: IEEE/NEMA)

Alan Wilks & Glenn Andersen Co Chairs

([awilks@ermco-eci.com](mailto:awilks@ermco-eci.com) & [gwanders@duke-energy.com](mailto:gwanders@duke-energy.com))

Current Standard Date: 1996

Current Draft Being Worked On: #VI Dated September 2001

Meeting Times: 9:30am, Monday, October 16, 2001

Attendance: 40 Total

20 Members

20 Guests

#### *Issues, Remarks & Announcements:*

Glenn handed out Draft VI dated September, 2001, along with a 37 point list outlining the changes made in Nashville, Niagara Falls and changes made by himself while reviewing the document. The W.G. reviewed each of the 37 points and either agreed with them or made a few minor corrections. The location of TC's & DV's switches was discussed and changed to the current unwritten standard location.

Paragraph 6.1.3.3 was discussed in detail and it was decided to strike the last sentence stating "The HV & LV neutrals shall be connected internally by a link that is accessible and capable of being reconnected". This was a safety issue since the Ho & Xo bushings

are insulated and should not be connected together internally. All metrification issues were deferred until after Dudley Galloway's Tutorial. The next step will be to create a Draft VII using the IEEE template and the changes as discussed in this meeting. After a review period, Draft VII will be sent for a Transformer Committee Ballot.

A PAR for this document has been sent to IEEE for renewal. This will be reviewed at the Dec. 14 IEEE meeting.

#### **9.11.2.2 C57.12.23 Single Phase Submersible Distribution Transformers**

(Copyright: **IEEE**)

Al Traut & Roger Lee Co Chairs

([alant@keco.com](mailto:alant@keco.com) & [leerj@sce.com](mailto:leerj@sce.com))

Current Standard Date: 1992, Reaffirmed 1999

PAR Approved 3/18/1999 (For Standard Revision)

Current Draft Being Worked On: #4

Meeting Time: DID NOT MEET

#### *Issues, Remarks & Announcements:*

The WG did not meet this week. The last meeting was in Niagara Falls, October 2000. Since that time the chairs have been finalizing the draft for IEEE ballot. The draft, D4, has successfully passed the scrutiny of the IEEE editors and the PAR has been revised to reflect the changes in title and scope. IEEE is in the process of forming the balloting pool for an electronic ballot. The next meeting will be in Vancouver to review the results of this ballot.

#### **9.11.2.3 C57.12.25 Single Phase Padmounted Distribution Transformers**

(Copyright: **IEEE/NEMA**)

Ali Ghafourian & John Lazar Co Chairs

([ali.ghafourian@us.abb.com](mailto:ali.ghafourian@us.abb.com) & [john.p.lazar@nspco.com](mailto:john.p.lazar@nspco.com))

Current Standard Date: 1990

PAR Approved 12/08/1998 (For Standard Revision)

Current Draft Being Worked On: #VIII

Meeting Times: 1:45pm, Monday, October 15, 2001

Attendance: 33 Total

21 Members

12 Guests

#### *Issues, Remarks & Announcements:*

Draft VII of the standard have been balloted in 1999 with 7 negative votes. All negative votes have been resolved except for one. The negative vote is related on having a dual BIL on 19900 Voltage. The attempt was made to resolve the negative vote without success.

A copy of Draft VIII was distributed in the WG. All 7 negative votes were reviewed in the WG. The WG decided to go ahead for the publication of Draft VIII without resolving the one negative vote.

Under the new business, it was agreed to start working on combining .21 & .25 standards. The WG voted and agreed to expand the scope of the combined standard to include 250 KVA size and increased the L.V. to 600 volts and below.

#### **9.11.2.4 C57.12.33 Guide For Distribution Transformer Loss Evaluation**

(Copyright: **IEEE**)

Don Duckett & Tom Pekarek Co Chairs

([don.duckett@fpc.com](mailto:don.duckett@fpc.com) & [tjekarek@firstenergycorp.com](mailto:tjekarek@firstenergycorp.com))

Current Standard Date: NEW Standard Under Development

PAR Approved 6/25/1998 (For Standard Development)

Current Draft Being Worked On: #8 Dated N/A

Meeting Time: 11:00am, Tuesday, October 16, 2001

Attendance: Total of 49 members and guests

#### *Issues, Remarks & Announcements:*

After introductions of attendees, draft 8 of the guide was distributed. This draft incorporates the changes discussed at the last working group meeting.

Draft 7 had been balloted by IEEE with 6 negative votes. Three were related to clause 6, which is an excerpt from NEMA TP 1 covering non-loss evaluation procedures.

The working group agreed to incorporate the revised tables into draft 9. The draft and copies of the negative ballots (with associated correspondence) will be sent to working group members. The same data will then be sent to IEEE for recirculation of the document for completion of the balloting process (there were sufficient ballots returned and sufficient affirmative ballots to publish the guide).

#### **9.11.2.5 C57.12.34 Three-Phase Padmounted Distribution Transformers**

(Copyright: **IEEE**)

Ron Stahara & Steve Shull Co Chairs

([rjstahara@msn.com](mailto:rjstahara@msn.com) & [sshull@empiredistrict.com](mailto:sshull@empiredistrict.com))

Current Standard Date: NEW Standard Under Development

This NEW Standard is a combination of the following two Standards  
57.12.22 1989 (Three-Phase Padmounted Distribution Transformers with H.V.  
Bushings) (Copyright ANSI) C57.12.26 1992 (Three-Phase Padmounted Distribution  
Transformers with Separable Connectors) (Copyright ANSI)  
PAR Approved 9/21/1995 (For Standard Development) The PAR extension expires  
2000

Current Draft Being Worked On: #8

Meeting Time: 3:15pm, Monday, October 15, 2001

Attendance: 33 Total

21 Members

12 Guests

*Issues, Remarks & Announcements:*

Ron Stahara asked Steve Shull, his co-chair, to review the status of this standard. Steve stated that this standard was the second standard that was processed as an electronic ballot. Because of this, there were a lot of challenges to overcome. IEEE reported the final balloting results to Steve. The balloting group was formed of 87 people. To have a successful ballot, there must be 75% of the total group returned. There were 29 ballots returned, 27 affirmative and 2 negative. This is 37 short of a successful ballot. A discussion ensued concerning the ballot returns. A number of the members were concerned that even though they had returned the ballot and IEEE confirmed it by Email reflection, their ballots had not been shown on the summary from IEEE.

**9.11.2.6 C57.12.35 Bar Coding For Distribution Transformers**

(Copyright: IEEE)

George Henry Chair

([gehenry@centrallmoloneyinc.com](mailto:gehenry@centrallmoloneyinc.com))

Current Standard Date: 1996

Current Draft Being Worked On: NONE

Meeting Time: ***DID NOT MEET THIS SESSION***

*Issues, Remarks & Announcements:*

This standard carries a 1999 date; AND will be sent out for reaffirmation.

**9.11.2.7 C57.12.36 Distribution Substation Transformers**

(Copyright: IEEE)

John Rossetti & Leon Plaster Co Chairs

([jrossetti@mlgw.org](mailto:jrossetti@mlgw.org) & [leon.plaster@us.abb.com](mailto:leon.plaster@us.abb.com))

Current Standard Date: NEW Standard Under Development

Current Draft Being Worked On: #1 Dated March 31, 2000

Meeting Time: 1:45pm, Tuesday, October 16, 2001

Attendance: 32 Total

12 Members

20 Guests

*Issues, Remarks & Announcements:*

The working group for Distribution Substation Transformers (C57.12.36) met on Tuesday, 10/16 at 1:45 P.M. In total there were 32 people in attendance, 12 members and 20 guests.

The PAR will be submitted by October 26<sup>th</sup>. This will also be in conjunction with the PAR for C57.12.10.

The prior PAR request was rejected with the reason being, that there wasn't a clear distinction between the scopes of C57.12.10 & C57.12.36. Both of the PAR requests have been revised to eliminate any product overlap and the titles will be as follows:

C57.12.10 – standard requirements for liquid immersed power transformers

C57.12.36 – standard requirements for liquid immersed distribution substation Transformers

One of the objectives of this standard is to create a section that addresses equipment coordination.

#### **9.11.2.8 P1338 Electronic Reporting of Test Data**

(Copyright: **IEEE**)

Rich Hollingsworth & Jerry Smith Co Chairs

([rhollin@howard-ind.com](mailto:rhollin@howard-ind.com) & [jwsmith@southernco.com](mailto:jwsmith@southernco.com))

Current Standard Date: Published under IEEE Std. 1388-2000

Current Draft Being Worked On: N/A

Meeting Time: 11:00am, Wednesday, October 17, 2001

Attendance: 17 Total

6 Users

11 Manufacturers

#### *Issues, Remarks & Announcements:*

Status of Standard: It is published under IEEE Std. 1388-2000 PAR has been applied for and granted to move document to C57.12.37, along with modifying various data fields and possibly adding more defined fields.

#### Action Items:

- 1) Survey taken on the number of users taking advantage of the standard
- 2) Discussion of, and adjustment to field descriptions of both the “standard data set” and the “extended data set”.
- 3) Further definition of the information to be used in 2 data fields will be required

#### Open Action Item:

#### Paragraph 4.3.9 – Types of insulating fluids

We will investigate the general types of fluids (i.e. sc insulating fluids, NEC & Factory Mutual) and reference the proper terminology in the spec.

#### **9.11.2.9 C57.15 Step-Voltage Regulators**

(Copyright: **IEEE**)

Open & Craig Colopy Co Chairs

([Open](mailto:Open) & [ccolopy@cooperpower.com](mailto:ccolopy@cooperpower.com))

Current Standard Date: C57.15 – 1999 – Published April 2000

Current Draft Being Worked On: See Below

Meeting Time: : 3:15am, Tuesday, October 16, 2001

Attendance: 26 Total

9 Members

17 Guests  
8 Requested Membership

*Issues, Remarks & Announcements:*

Tom Diamantis is retiring and is relinquishing his co-chairman position. We will be pursuing a replacement from the user side

C57.15 – 1999 – Published April 2000

PAR was established July 2000, approved December 2000

PAR will be revised to change C57.15 representative due to Tom Diamantis retirement

Items to be investigated by C57.15 working group

Dimensions to be fully metric

Update to the latest references documents and standards including C57.12.00 and C57.12.90

Raise add-amp limit from 668 amps to 875 amps

Removal of references to 55 °C rating and establish 65°C windinG, rise as Standard

Add bushing terminal connector sizes per rated current of 669-1200 amps

Update of tables of preferred ratings

Clarification of Type A and Type B designs and their resulting voltage regulation

Address application of Type A and Type B regulators in an annex

Draft I will be issued to WG before next meeting

**9.11.2.10 C57.12.28, .29, .31 & .32 Standards are reviewed and revised NOW under the IEEE Transformer Committee umbrella)**

Bob Olen with Cooper Power Systems is the Chair for these four Working Groups. Bob Olen, Cooper Power Systems, P. O. Box 100, Franksville, WI, 53126, Tel: 262-835-3362, [rolen@cooperpower.com](mailto:rolen@cooperpower.com)

**9.11.2.10.1 C57.12.28 Pad-Mounted Equipment Enclosure Integrity**

(Copyright: IEEE/NEMA)

Bob Olen Chair

Current Standard Date: 1999

Discussed alternative corrosion tests

Issue related to PENTA Bolt Drawing

PAR to be submitted to convert to IEEE Std.

**9.11.2.10.2 C57.12.29 Pad-Mounted Equipment Enclosure Integrity For Coastal Applications**

(Copyright: NEMA)  
Bob Olen Chair  
Current Standard Date: 1999  
No discussion

PAR to be submitted to convert to IEEE Std.

**9.11.2.10.3 C57.12.31 Pole Mounted Equipment Enclosure Integrity For Coastal Applications**

(Copyright: NEMA)  
Bob Olen Chair  
Current Standard Date: 1996

Working Group voted to reaffirm Oct. 2000

NEMA Secretariat notified Nov. 2000

No action taken to reaffirm

PAR to be submitted to convert to IEEE Std.

**9.11.2.10.4 C57.12.32 Submersible Equipment Enclosure Integrity For Coastal Applications**

(Copyright: NEMA)  
Bob Olen Chair  
Current Standard Date: 1994

Revision balloted to WG & NEMA main committee

No action taken since Oct. 2000 due to NEMA C37 problem

PAR to be submitted to convert to IEEE Std.

**9.11.3 Subcommittee Old Business:**

*NONE*

**9.11.4 Subcommittee New Business:**

*NONE*