

Annex C Distribution Subcommittee – Chair: Ed Smith

**March 27, 2019
Anaheim, CA, USA**

**Chair: Ed Smith
Vice-Chair: Jerry Murphy
Secretary: Josh Verdell**

C.1 General Opening

Ed opened the meeting welcoming everyone to the meeting. Josh circulated the rosters. To establish a quorum, a list of members was displayed and a count of was made. We did have a quorum with 42 of the 70 members in attendance by count of those identified on a slide presented in the meeting. Recorded attendance gave 128 in attendance and 47 members.

The agenda was reviewed, a motion was made to approve by Dan Sauer, seconded by Gary Hoffman, and approved by unanimous acclamation of the members in attendance.

The Fall 2018 meeting minutes were reviewed, a motion was made to approve by Lee Mathews, seconded by Dan Sauer, and approved by unanimous acclamation of the members in attendance.

C.2 Working Group and Task Force Reports

██████ C57.12.20 – Overhead Distribution Transformers – Al Traut

Al presented the following minutes from the working group meeting on March 25, 2019 at 11:00 a.m. with 66 in attendance.

1. Call to order
The meeting was called to order by the Chair (Al Traut) at 11:00AM on Monday October 15th 2018. The roster was circulated followed by the introduction of attendees stating their name and company affiliation.
2. Confirmation of the essential patent statement and responses
There was a call for essential patent by the Chair. There were none brought forward. The Chair announced if there was on to let the Chair or Vice Chair know.
3. Quorum Verification
A members list was displayed and members were asked to raise their hands. 28 of 50 members were present. A Quorum was declared.
4. Approval of agenda for this meeting
The Chair sent out the Agenda prior to the meeting for review. He requested approval of the Spring 2019 Agenda. A motion was made by: Ed Smith and seconded by: Steve Shull for approval. Minutes for the Spring 2018 meeting in Anaheim was approved with no negative votes.
5. Approval of minutes of the previous meeting
The Chair sent out the minutes prior to the meeting for review. He requested approval of the Minutes for the Fall 2018 meeting in Jacksonville, FL. A motion was made by: Steve

Shull and seconded by Ed Smith for approval. The minutes for the Fall 2018 meeting in Jacksonville was approved with no negative votes

6. Chair Report

The Chair announced the PAR was approved. AI reviewed the Title, Scope and Purpose that was approved by NESCOM.

AI reviewed proposed changes the current draft (D2). Clause 7 have been re-organized. Also added reference to C57.12.30 and C57.12.39 under the reference section.

AI asked if internal tap changers should be left in the document in Section 7.2.1. Steve Shull makes a motion to removing internal tap changers from Section 7.2.1 and Second by Alan Wilks. There was no opposition MOTION PASSED.

Discussion to remove 7200 delta from Tables. This will be incorporated into the next draft.

A motion was made by Fred Friend to accept all changes as proposed in D2 and second by Steve Shull. There was no opposition MOTION PASSED.

7. Old Business

No old business brought forward

8. New Business

Josh Verdell should we to consider making BIL ratings match in Table 3? Decided to leave it as-is. No motion was put forward.

Igor Simonov should we add specifications on dielectric strength of the cover? (re. outages due to animal contact). Will table discussion for next meeting as we ran out of time.

9. Next meeting--date and location

The Next meeting will the **2019 Fall: October 27-31; Columbus, Ohio USA**
The meeting was adjourned at 12:15PM

Submitted by: Audrey Seibert-Timmer

██████████ C57.12.28, .29, .30, .31 & C57.12.32 – Enclosure Integrity – Dan Mulkey

Dan Mulkey presented the following minutes from the working group meeting on March 26, 2019 at 8:00 a.m. in with 71 in attendance.

1. Dan Mulkey called the meeting to order at 8:04 AM.
2. Introductions were performed.
3. Membership changes were noted:
 - a. Removed: None
 - b. Added: Martin Bachand, David Blew, Douglas Craig, William Elliot, Matthew Enders, Kenneth Hampton, Juan Ramirez, James Ratty, Pedro Salgado, Robert Tinsley

4. Quorum was verified. The working group consisted of 59 members, requiring **30** for quorum. 36 members were confirmed at the time of counting. 39 members were confirmed afterwards through the roster.
5. Dan Mulkey pointed out an error in the previous meeting meetings regarding the added membership date. Circulated minutes stated Fall 2018 instead of Spring of 2019.
6. Said Hachichi made a motion, seconded by Steve Shull, for approval of the corrected minutes. No opposition was raised so the minutes were unanimously approved.
7. Dan Mulkey made a call for any essential patent statements and responses. None were raised.
8. Phil Hopkins requested to add a discussion on high voltage bushings to the agenda. Group discussed and concluded that bushings are covered under a different working group so it was not added.
9. Steve Shull made a motion, seconded by Paul Chisholm, for approval of the agenda. No opposition was raised so the agenda was unanimously approved.
10. Status of Standards:
 - a. C57.12.28 Standard for Pad-Mounted Equipment – Enclosure Integrity, Published July15, 2014, Revision Due: 12/31/2024
 - b. C57.12.29 Standard for Pad-Mounted Equipment – Enclosure Integrity for Coastal Environments, Published August 8, 2014, Revision Due date 12/31/2024
 - c. C57.12.30 Standard for Pole-Mounted Equipment – Enclosure Integrity for Coastal Environments, Published September 20, 2010, Revision Due: 6/17/2020
 - d. C57.12.31 Standard for Pole Mounted Equipment – Enclosure Integrity, Published September 20, 2010, Revision Due: 6/17/2020, Corrigenda approved May16, 2014
 - e. C57.12.32 Standard for Submersible Equipment – Enclosure Integrity, Reaffirmed 3/7/2008, Revision Due: 12/31/2018, PAR expiration: 12/31/2019
11. Old business:
 - a. The ballot comment review taskforce completed their review of the C57.12.32 draft standard comments. The draft standard is presently in its 2nd re-circulation.
 - b. PAR was approved for the following two standards.
 - i. C57.12.30 Standard for Pole Mounted Equipment – Enclosure Integrity for Coastal Environments Par Approval: 08-Feb-2019
 - ii. C57.12.31 Standard for Pole Mounted Equipment – Enclosure Integrity Par Approval: 08-Feb-2019
12. New business:
 - a. Jeremy Van Horn presented Draft 1 for C57.12.31 and C57.12.30. Key points discussed are summarized below.
 - i. Jeremy Van Horn requested to form a taskforce that will propose a new definition for enclosure for C57.12.31 and C57.12.30 standards. **Taskforce 1 was formed** included the following members: Jim Spaulding, Israel Barrientos, Al Trout, and Alex Macias.

- ii. Jeremy Van Horn requested input from the group on attachments listed under Section 4.4.1 in C57.12.31. Group added switches, PRV, lightning arrestor, brackets, grounding lug connection, gauges and animal guards.
 - iii. Tom Dauzat asked if we want to clarify 'retain their intended functionality" under Section 4.4.1 under C57.12.31. Jim Dorsten made a **motion** to accept the wording as-is. Motion was seconded by Brian Klaponski. **Motion was unanimously approved.**
 - iv. Dan Mulkey asked if listed attachments under Section 4.4.1 in C57.12.31 should be permanently attached to the transformer. For example, should lightning arrestors and animal guards be on this list? Group debated the meaning of attachments. Jerry Murphy reminded Dan Mulkey that guards may be permanently attached. Jim Dorsten mentioned that many utilities kit their transformers, meaning they capitalize the accessories that go with the transformer. Group decided to leave wording as suggested and will get further input when Draft 1 is circulated.
 - v. Al Traut proposed to add welded attachments to the definition of enclosure. **Taskforce 1 to include** welded attachments in enclosure definition.
 - vi. Jeremy Van Horn requested to form another taskforce to write a description of the test purpose for Section 5.4.2 Humidity test in C57.12.31. **Taskforce 2 was formed** and included the following members: Justin Minikel, Bob Tinsley and Martin Bachand.
 - vii. Jeremy Van Horn asked the group to confirm that the stated number of cycles of 10 is correct for the SCAB test under Section 5.4.6 in C57.12.31. Group confirmed number is correct but cannot recall specific testing to justify that number. Justin Minikel suggested that we explore this further. Due to the time limitations of standard life, this action cannot be completed for this revision. But work can be started for future revisions. **Taskforce 2 to review** SCAB methods and parameters and present alternative options.
- b. Jeremy Van Horn requested taskforce work to be completed **May 26, 2019** for both **Taskforce 1** and **Taskforce 2**. After the taskforce work is completed drafts for C57.12.30 and C57.12.31 will be circulated to the working group for review.
 - c. No new business was brought forward.

The meeting was adjourned at 9:00 am.

13. Next meeting will be held on **October 27-31 in Columbus, Ohio.**

Copies of any handouts and/or subgroup reports will be made available as separate items but referenced by these minutes.

The following attendees requested membership and will be added to membership for the Fall 2019 meeting: Glen Andersen, Jason Attard, Tom Dauzat, Jim Dorsten, Jim Spaulding, Liz Sullivan

Submitted by: Audrey Siebert-Timmer

██████ C57.12.34 – Three Phase Pad-Mount Transformers – Ron Stahara

Ed Smith, for Stephen Shull, presented the following minutes from the working group meeting on March 25, 2019 at 3:15 p.m. with 78 in attendance.

Steve Shull called the meeting to order and introductions were made. The rosters were circulated. A “Get Well” card was circulated for Ron Stahara as he was absent due to illness. The names of those in attendance are recorded in the AM system. To establish a quorum, a members list was displayed on the screen and those who saw their names were asked to stand. From the people standing, it was determined a quorum was established. Essential Patent information was displayed and Steve Shull asked for any known essential patents to which no one responded.

The agenda was presented and a motion to accept it was made by Jerry Murphy and seconded by Ed Smith. The motion was approved unanimously. Steve Shull made comment that the Fall 2018 minutes were posted on the IEEE website. A motion was made to accept them by Jerry Murphy and seconded by Igor Simonov. Steve Shull asked the members for any opposition for approving Fall 2018 minutes, to which there was no opposition. The group approved the motion unanimously.

Steve started the review of the most current document at Annex A, Section A3.4. The changes shown were the consensus of the Working Group.

1. “A.3.4.1.1 Dry Well” – Gary King made a comment that he believes the loadbreak dry well canisters have been discontinued. Steve Shull modified wording in second sentence to “The canister can be provided as ~~either loadbreak or~~ non-loadbreak.” Steve Shull commented that he will have to look at the wording of this section and will modify accordingly and have ready for next meeting.
2. “A.3.4.1.2 Submersible” – Jerry Murphy asked the group if the submersible full range current limiting fuse is available as loadbreak. Gary King volunteered to verify Jerry’s question. Tom Callsen recommended that the last sentence to be changed to the following: “This is normally accomplished by using a ~~type of modified~~ Bayonet fuse assembly...”. Jim Dorsten agreed with this wording change. Rhett Chrysler made a comment that he thought the EL fuse holder had loadbreak capability. Steve commented that he believed that Rhett was correct but it could represent a safety issue unless the correct removal procedure is followed to the letter.
3. “A.3.5.1 Weak Link Fuse Assembly (Bayonet or Internal Cartridge)” – No comments on this section
4. “A.3.5.1 Mounting Options” – No comments on this section.
5. “A.3.5.2 Spill Prevention” – The last sentence states “ It should be used to make sure there is no positive pressure inside of tank...”. Gary King asked about all pressures, specifically negative pressures. Gary King commented that negative pressure could allow moisture to enter the system. Steve Shull reiterated to the group that this section specifically pertained to “Spill Prevention” only. The group was in agreement with the following change in wording “Each bayonet fuse assembly ~~shall~~should be equipped with a means...”.
6. “A.3.5.3 Fuse Link Options” – No comments on wording in this section. But a comment was made by Jeff Schneider that oil contamination will occur when many of these fuse option. Steve Shull stated that that was very good point and so he asked

Jeff to generate some wording pertaining to “Oil Contamination and Gassing” that can be used at the end of each specific fuse section(s) where this issue could present itself.

7. “A.3.5.3.1 Current Sensing Fuse” – No comments on this section.
8. “A.3.5.3.2 Dual Sensing Fuse” Thomas Callsen asked the question on what temperature that the dual sensing link would melt at. Steve Shull answered Thomas Callsen that it depends on the fuse manufacturer.
9. “A.3.6 Isolation Link” - No comments on this section.
10. “A.3.7 Weak Link Fuse in Series with Partial Range Under Insulating Fluid Current Limiting Fuse” - No comments on this section.
11. “A.4 Under Insulating Fluid Loadbreak Switches” – The group agreed with the following wording change in the last sentence of the last paragraph “To that extent, a means ~~shall~~should be provided of verifying these are sufficiently immersed.”. Dan Mulkey made a comment that the oil level must be verified before operating switches.
12. “A.4.1 Labeling” – Jerry Murphy asked the question about where to apply the ground to which he answered as the obvious answer would be on secondary side. Dan Mulkey made comment to change wording in the note from “transformer” to “device”. There was much discussion pertaining the labeling of “OPEN/CLOSED” versus “ON/OFF”. Dan Mulkey uses both “OPEN/CLOSED” and “ON/OFF” on devices utilizing switches. Steve Shull commented that the wording “ON/OFF” implies transformer operation. Weijun Li made a recommendation to delete the entire note. Gary King asked the group if there was NOT a reason keep the note in this section. There were no objections from the group. Therefore, the note will remain in the section.
13. “A.4.2 Location” – Steve Shull made the comment that the “shall” in this section is important and should remain in this section. There was discussion pertaining of switch location. Rhett Chrysler made comment that from a manufacturer perspective it is easier to put a switch on the High Voltage side versus the Low Voltage side. However, it was pointed out that the section that refers to the auxiliary cabinet needs to reviewed carefully when we get to it as this section could be in conflict.
14. “A.4.3 Switch Rotation” – The group agreed on the following wording changes: “The two-position switch rotation ~~shall~~should be clockwise to close and counterclockwise to open. The four-position switch ~~will~~should be clockwise to initiate the first operation as indicated by the labeling on the switch.”.
15. “A.4.4 Current-carrying” – Dan Mulkey suggested that this section should be revised per the following: “The ~~minimum~~ continuous current rating capability ~~shall be either~~ is typically 200 A, 300 A, or 600 A.”
16. “A.4.5 Short-time Current Rating” - No comments on this section.
17. “A.4.6 Loadbreak Four Position Switch Types” – Tom Callsen made comment to break out the two-position switches from the four-position switches. Steve Shull made comment that this section is for four-position switches only. The first 2 switch references in the chart depict an “ON/OFF” configuration, but the switches were designed as a four-position switch. Jim Antweiler made comment that he has customers that utilize (2) two-position switches and/or (3) two-position switches. His

comment was that this combination of two-position switches can do the same as a V-blade and T-blade switch combined.

18. “A.4.7 De-energized under Insulating Fluid Tap Changer Switch” – Dan Mulkey explained to the group about HV voltage descriptions pertaining to transformers utilizing a Delta-Wye switch. Jim Antweiler asked the group about including all other types of switches. Jim Antweiler was asked to propose wording depicting the other types of switches.
19. Due to time restraints, “New Business” was not discussed.
20. Steve Shull adjourned the meeting at 4:30 P.M.

Gerald Paiva, a longtime member, made a comment that this Annex sounds like a guide. Steve remarked that since it was an informative annex, it was built in such a way to help the unsophisticated user understand the items that could be provided for a three-phase transformer.

Submitted by: Scott Dahlke

████████ C57.12.36 – Distribution Substation Transformers – Jerry Murphy

This working group did not meet.

████████ C57.12.38 – Single-Phase Pad-Mounted Transformers – Ali Ghafourian

This working group did not meet

████████ C57.12.39 – Tank Pressure Coordination – Carlos Gaytan

This working group did not meet

████████ Task Force on Transformer Efficiency and Loss Evaluation – Phil Hopkinson

Phil presented the following minutes from the task force meeting on March 25, 2019 at 9:30 a.m. with 109 in attendance.

1. Call to order and any Chair's remarks
9:37am meeting was called to order
2. Quorum Verification
Not a working group; Quorum is not necessary
3. Confirmation of the essential patent statement and responses
Not a working group, no patents were discussed.
4. Approval of minutes of the previous meeting
Minutes approved.
5. Approval of agenda for this meeting.
Agenda was posted and followed for this meeting.

6. Technical topics

Dan Mulkey presented data provided by Liz Sullivan of Dominion Energy. This is the largest and most details data received so far. The 2018 data is predominately from Virginia with some from North Carolina and DC.

The Transformer breakdown was:

| | |
|------------------------|--------------|
| Single-phase Overhead | 26176 |
| Single-phase Pad-mount | 25088 |
| Three-phase Overhead | 3090 |
| Three-phase Pad-mount | 6370 |
| Total | 60724 |

Dan Mulkey was able to analyze the data to provide breakdowns base on:

- Mixed use, residential only, commercial only
- Name plate kVA size
- Customers per transformer (average, maximum, mode)

The Annual load factor is:

Average Annual Load/Peak Annual Load

This was analyzed for the same parameters to provide the mode and range (at half the mode).

Summary tables:

| Annual Load Factor | | | |
|--------------------------------|-------------|-------------------------------------|-------------|
| RMS Average/ Peak Load | Mode | Numerical Average/ Peak Load | Mode |
| Dominion 2018 All | 0.288 | Dominion 2018 All | 0.258 |
| Dominion 2018 Residential only | 0.28 | Dominion 2018 Residential only | 0.26 |
| Dominion 2018 Commercial only | 0.35 | Dominion 2018 Commercial only | 0.37 |
| Dominion 2018 Mixed use/comm | 0.31 | Dominion 2018 Mixed use/comm | 0.29 |
| Duke Energy LF | 0.3 | Duke Energy LF | 0.2 |
| | | Toronto Hydro 2013 Residential | 0.29 |
| | | PG&E 2006 Residential | 0.39 |

| Peak Load kW Load/Nameplate kVA | |
|--|------|
| | Mode |
| Toronto Hydro Residential only | 0.9 |
| Duke Energy | 0.7 |
| Dominion overall | 0.46 |
| Dominion Residential only | 0.46 |
| Dominion Commercial only | 0.00 |
| Dominion Mixed use | 0.53 |

Lessons learned:

1. Add details on transformers in the transformer bank – e.g. is the 45 kVA 3-phase bank a single transformer or three 15kVA single phase transformers?

2. Ensure that the average load calculations sums the absolute value of the load
3. Ensure that daylight savings time change does not result in an artificial report of zero load.

Phil Hopkinson thanked the utilities who have contributed data; in particular Liz Sullivan for data set from Dominion Energy. He encouraged more utilities to provide data so that a national picture of transformer loads, highlighting geographic and regional differences, can be developed. He received indications of potential contributions from Ft Collins, Knoxville and Southern Company.

7. Future Work

Phil Hopkinson noted the work being undertaken by other IEEE groups on insulating materials and permitted temperature rise for transformers. He is considering the possibility of dual plating for transformers for A) 65° raise and B) Thermal class. He will develop this proposal and report at the next meeting

8. Next meeting--date and location

No additional comments before adjournment. Next meeting is in Columbus, Ohio in Fall 2019.

Submitted by: Phil Hopkinson

██████████ PC57.167 – Guide for Monitoring Distribution Transformers – Gary Hoffman

Gary presented the following minutes from the working group meeting on March 26, 2019 at 4:45 p.m. with 57 in attendance.

1. Call to order and Chair's remarks – Called to Order at 4:45PM by Gary Hoffman
2. Quorum Verification – Took count with 34 members and had a Quorum. The Rosters was circulated.
3. Approval of agenda for this meeting. No Objections. Motion by Marcus Ferreira, and Second by Stephen Shull– Unanimously Approved
4. Approval of F18 PC57.167- Guide for Monitoring Distribution Transformer minutes Fall 2018. No Objections. Motion by Babanna Suresh, and Second by Marcus Ferreira – Unanimously Approved.
5. Call for Patents was disclosed.
6. Task Force Reports was presented as follows:
 - 6.1 Justification for Monitoring – Presented - Daniel Mulkey
Comments:
 - a) Look at Hazard levels more closely

- b) How does TIC A, TIC B apply better. Risk levels might need to be expanded better.
- c) Gary to send the IEEE template.
- d) Additional Risk Factors to consider Environmental Hazards like draught, fire, water shed, oil spills.

6.2 Key monitoring parameters and their tolerance- Jerry Murphy

Comments:

- a) Should Sudden Pressure, PF, Phase Angle, PD be included
- b) Why consider online monitoring? Why not off –line monitoring like DGA testing once a year with a portable DGA.
- c) Discuss the need to include Tolerances.

6.3 Methods of Alert – Gary Hoffman for Mike Thibault

Comments: No Major comments.

7. Recap on user and producer presentations- No comments.

8. New Business

8.1 F18 Table Clause TF

Comments:

- a) Gary Hoffman made a clarification on the minutes of the meeting. The section 8.1.1 Telemetry would not be part of the Table Clause TF. Gary Hoffman to revise the minutes of the meeting.
- b) Agreed to postpone the discussion of section 8.1.3 Installation for the Fall 2019 meeting.
- c) Discuss adding Voltage Regulators. Agreed to postpone this item for discussion in the Fall 2019 meeting.

8.2 Global outreach proposal was discussed by Gary Hoffman.

9. Next meeting is in Columbus Ohio

10. Adjournment

Submitted by: Gustavo Leal

██████████ C57.12.35 – Bar Coding for Transformers and Regulators– Rhett Chrysler

Rhett presented the following minutes from the task force meeting on March 26, 2019 at 1:45 p.m. with 35 in attendance.

- 1. Call to order and any Chair's remarks
Chair called the meeting to order at 1:45pm. Attendees introduced themselves.
Chair reported that the preset document expires in 2023. The purpose of this TF is to review the title and scope for submit with a PAR application.

2. Quorum Verification
This is a first Task Force meeting. Quorum not required. 16 of 35 guests present requested membership. Those requesting membership will be members at the next meeting.
3. Confirmation of the essential patent statement and responses
Chair called for identification of essential patents pertaining to the work of this TF. None brought forward to the TF.
4. Approval of minutes of the previous meeting
As this is the first meeting of this TF, there are no previous minutes to approve.
5. Approval of agenda for this meeting.
Motion by Alex Macias/Steve Shull to approve agenda as submitted. Passed unanimously.
6. Technical topics
Chair presented the Title, Scope and Purpose of the present document for review.

Title

IEEE Standard Bar Coding for Distribution Transformers and Step-Voltage Regulators

1.1 Scope

This standard sets forth bar-code label requirements for overhead, pad-mounted, and underground-type distribution transformers and step-voltage regulators. Included herein are requirements for data content, symbology, label layout, print quality, and label life expectancy. This standard assumes the existence of central transformer databases within utility companies so that bar-code labels need only carry basic transformer identification data.

1.2 Purpose

The purpose of this standard is to promote standardization and uniform use of bar-code labels on distribution transformers and step-voltage regulators when specified by the user. In the longer term, it is hoped that the bar codes provided as a result of this standard will serve as an integral part of electrical utility material and information management systems.

Motion by Dan Mulkey/Jerry Murphy to change ‘underground’ to ‘subsurface’.
Passed unanimously.

Motion by Ed Smith/Fred Friend to change ‘within utility companies’ to ‘by users’.
Passed unanimously.

Motion Dan Mulkey/Alan Wilks to change ‘Bar’ to ‘Information’ in Title and Scope.
Passed unanimously.

Motion by Lee Matthews/Jerry Murphy to remove ‘central’ and ‘transformer’ from last line of Scope. Passed unanimously.

Motion Steve Shull/Jerry Murphy to remove 'print quality'. Passed unanimously.

The final revised Title and Scope is as shown below. The Purpose is not part of the PAR application so it is not included below. Once PAR is approved, the WG will decide if the Purpose will be retained or modified in the revised document.

Title

IEEE Standard Information Coding for Distribution Transformers and Step-Voltage Regulators

Scope

This standard sets forth information code requirements for overhead, pad-mounted, and subsurface distribution transformers and step-voltage regulators. Included are requirements for data content, symbology, layout, and life expectancy. This standard assumes the existence of user databases so information codes need only carry basic identification data.

Motion by Steve Shull/Fred Friend to send modified Title and Scope to Distribution SC to recommend application for PAR. Passed unanimously.

Meeting adjourned at 2:34pm.

7. Next meeting--date and location
Next meeting Columbus, OH

Submitted by: Alan Traut

C.3 Old Business

- Phil Hopkinson brought up the outstanding core gassing issue and stated his intent to address comments related to core gassing.

C.4 New Business

- Gary Hoffman addressed the subcommittee about the need for members of the Distribution Transformer subcommittee to volunteer in the working group revising C57.169. The working group is working on clauses related to thermocouples and their placement.
- Jim Graham addressed the subcommittee about the need for members of the Distribution Transformer subcommittee to volunteer to review the terminology guide.
- Don Ayers notified the subcommittee that there is a new task force starting up regarding Partial Discharge (PD) Testing Class I power transformers. The first meeting will be in Columbus and anyone that is interested should contact Bill Griesacker or Don Ayers.

- Brian Klaponski requested that future meeting rooms all have double screens noting poor views during some of the meeting. Jerry noted that this was discussed during the planning meeting.
- Dan Sauer brought up the test procedures to identify core gassing could have larger implications. The test for core gassing is a Partial Discharge (PD) test. He noted that many components may not be free of PD and that this subcommittee needs to be aware of the addition of PD testing requirements. Phil reiterated that he was going to be address comments from the previous ballot.

C.5 Chairman’s Closing Remarks and Announcements

Ed had no closing comments to the SC except to note that the next meeting would be in Columbus, OH, in the Fall of 2019.

C.6 Adjournment

Ed adjourned the meeting as provided in the meeting agenda at 10:15am.