Annex D Dry Type Transformers Subcommittee

October 17, 2018

Jacksonville, Florida USA

Chair: **Charles Johnson**

Vice-Chair: **Casey Ballard**

Secretary: **David Stankes**

D.1 Introductions and Approval of Agenda and Minutes

Casey Ballard, Vice-Chair, led the meeting as Chuck Johnson did not attend this meeting.

The Subcommittee met on October 17, 2018 at 1:30PM in the Grand Ballroom 1 room of the Hyatt Regency Jacksonville Riverfront Hotel.

The meeting was convened with 45 people in attendance. 18 of the 22 members of the Dry Type Subcommittee were present, so quorum was reached. Six guests requested membership. The attendance roster will be recorded in the AMS.

The Chairman reviewed the proposed Agenda. A motion to approve the agenda was made by Tim Felix-May and seconded by Klaus Pointner. The agenda was approved unanimously.

The chairman noted that the unapproved minutes from spring 2018 SC meeting had been posted on the SC Transformer Committee website. A motion to approve the minutes was made by Roger Wicks and seconded by Tim Felix-Mai. The minutes were approved unanimously.

D.2 Chairs Remarks

Casey reminded group that all TF/WG/SC meeting minutes must include the attendance (including affiliation) for all future meetings. The easiest way to comply with both is to enter attendance into AMS first, and then run a AMS attendance report that can be copy and pasted into the meeting minutes.

Casey noted that among the DTSC membership we have two new main committee members: Tim-Felix Mai and David Stankes.

D.3 Working Group/Task Force Reports

The next order of business was the presentation of the reports of the various working groups and task forces. See the following sections for the individual reports:

D.3.1 Revision of IEEE PC57.12.01 - Dry Type General Requirements Chair Casey Ballard

The working group met in the Grand Ballroom 7 of Hyatt Regency Jacksonville Riverfront Hotel.

The meeting was called to order at 1:45 PM by Chairman Casey Ballard.

Chairman made opening comments.

WG Roster has been distributed and signed. Participants introduced themselves.
The meeting was convened with 39 participants, 15 of them are members. Quorum was reached (24 current members). 2 guests requested membership. The attendance will be reported in the AMS.

The Agenda was amended by R. Marek to include information on the development of short circuit thermal calculation by IEC WG MT 60076-5. Agenda with amendments was approved unanimously being no negative votes.

The Minutes of Spring 2018 Pittsburgh meeting was approved unanimously (moved by T.-F. Mai and seconded by D. Walker).

The chair made a call for known patent disclosure. No patent related issues were claimed.

- Draft 5 of the revision has been circulated prior to the meeting.
- Chair informed on the revisions that were incorporated into Draft 5 as results of the decisions made in Spring 2018 meeting:

IEEE C57-12-01 Fall 18.pptx

- Minimum nominal system voltage of 1.2 kV – now is Table 4; 0.25 and 0.6 kV classes are removed.
- Designation of the cooling classes of transformers modified in Section 5.1:
  - included wording "dry air or nitrogen" in definition of "G" class
  - included definition of the "/" symbol in relation to cooling for more than one kVA rating transformers
  - included example for ANAF class (no slash in the designation).
- Audible sound levels – cooling class modification leads to changes in sound tables in 5.10.3.6.
- Partial discharge in 5.10.3.5 – removed the description of the testing process since it was moved to IEEE C57.91.
- Effect of temperature on transformer winding during short-circuit conditions in 7.8 - the emphasize to the importance of the insulation system integrity during these conditions has been included.
- Temperature limits of transformers for short-circuit conditions in 7.9
  - column 1 shows Insulation System Thermal Class, comment on the insulation system temperature has been added.
  - S. Levin asked what is the correct term for the temperature in the column 1 of Table 14: Temperature Class or Thermal Class (as in liquid-immersed transformers). The review of terminology used in this standard and other documents (C57.96, C12.60, C12.80) will be done to determine the proper term.
  - D. Walker noticed that it's better to use a singular form for a "Conductor" in the last column of Table 14.

Old business

- Impedance value ranges in 5.8 (Juan Medina) – no ranges, but to be defined by each manufacturer or, more importantly, by the customer itself.
  - Current text - Standard values of impedance are included in the product standards for particular types of transformers.

The only product standard that will still have impedance ranges after we complete the combination and revision of IEEE C57.12.50 and IEEE C57.12.51 will be IEEE C57.12.52 (Sealed Dry-Type).

- P. Hopkinson proposed to include a minimum impedance based on the coordination with breaker capabilities.
- Proposed text - The Impedance rating shall be specified to the manufacturer for each particular transformer. If there is no Impedance rating specified or available, the OEM's will follow their internal design and manufacturing standard processes to design and build a particular transformer. Due to the different design and building practices, the resulting IZ's when not specified, could vary from one OEM to the other.

Alternative text: the impedance rating shall be specified. If none is provided, then the OEM's standard rating may apply.

After a discussion, the motion to accept the Alternative text above was made by D. Walker and seconded by T.-F. Mai. The motion passed unanimously.

- After additional discussion, P. Hopkinson proposed to add the following additional requirements on impedance: "4% minimum impedance should apply to all transformers that step-down medium voltage to a low voltage". This motion was seconded by J. Antweiler. The motion was rejected by the vote (2 votes were for, 12 votes – against the proposal).

- Short Circuit Thermal Calculation – R. Marek informed that WG IEC MT 60076-5 has a proposal to modify thermal calculation for the short circuit conditions; this modification makes the equation valid in all cases (the previous one wasn't correct at current densities above 230 A/mm sq). As this modification hasn't yet been adopted by IEC, the WG assigned 2 action items:
R. Marek will contact the convener of IEC WG to clarify the status; D. Walker will evaluate the applicability of the proposed modified equation.

- **PAR expires 12/31/2020**

- Discussion completed to address topics that were defined for the revision of the document and opening of the PAR.
- No major issues left open.
- Draft 6 will be sent to the WG for the review and comments to be addressed in Anaheim in spring 2019 in order to finalize the revision.
- We plan to seek SC approval for SA ballot on or before Fall 2019 meeting.

Next Spring 2019 meeting: Anaheim, CA, March 24-28, 2019.

With no further business, the meeting was adjourned at 3 PM.
Chairman: Casey Ballard

Secretary: Sasha Levin

D.3.2 Revision of IEEE PC57.12.60 - Dry Type Thermal Aging Chair Roger Wicks

The WG met on October 16, 2018 at 1:45PM in the Grand Ballroom 7 room of the Hyatt Regency Jacksonville Riverfront Hotel. The meeting was called to order at 1:45 PM by Chairman Roger Wicks. Introductions were made and attendance sheet was circulated.

The meeting was convened with 42 people in attendance. 27 guests / 15 members present. Quorum was reached. 4 guests requested membership.

The Chairman reviewed the proposed Agenda. Motion to approve the agenda was made by Mike Shannon and seconded by Joe Tedesco. The agenda was approved unanimously.

Motion to approve the minutes from Pittsburg spring 2018 meeting was made by Tim-Felix Mai and seconded by Casey Ballard. The minutes from the spring 2018 WG meeting were approved unanimously. The attendance will be reported in the AMS.

The chairman presented slides pertaining to essential patent claims (no issues were noted) and meeting guidelines.

- IEC 61857-41 Review outcome of meeting in Vienna – September 18, 2018
    - Little progress was made related to the resolution of a wide range of comments provided during the circulation of a CD3.
    - In some cases, the comments did not provide enough proposal for revision, and in other cases the information was not complete.

- The convener of the WG6 has requested the commenters to provide more detail so a working group can complete the resolution of the comments.
- C57.12.60 must move forward due to delays with 61857-41

- The chair reviewed the new draft revision of C57.12.60 and described the following changes made to the document. (The following information was included in slide presentation displayed during meeting.)
  - Inclusion of new aging table and thermal screening discussion from IEC
  - Inclusion of new dielectric screening discussion from IEC
    1. Initial Test Coil Usability Check – like IEEE C57.12.60, 4.3
    2. Pre-ageing design and construction evaluation
       - identification of the possible upper limit for thermal ageing
       - To evaluate the actual initial dielectric strength of the EIS on the test coil using operating voltage
  - Detailed discussion of dielectric testing for both models and small size coils
    1. Dielectric Testing has been further clarified in this revision, with a detailed description on how to run the test (consistent with IEEE C57.12.91).
    2. The following volunteers were identified at the meeting to improve the flow of the dielectric testing. Volunteers include Ken McKinney, Mark Raymond, Dhiru Patel and Casey Ballard
  - Discussion of PD as a trending test
    1. Chairman presented PD testing (optional) information that was submitted by Tim-Felix Mai.
    2. Chairman noted that this information will be found in the annex but may make it to the main body of the document once sufficient information has been collected.
    3. Joe Tedesco suggested that it may be a good idea to identify a threshold PD level. Casey Ballard noted that since this was a trending test, this was perhaps not needed.
  - Discussion on changes to approved systems (first draft)
    1. Chair reviewed list of materials typically referred to as Primary Insulation.
    2. Chair acknowledged that there may be strong opinions on what and how changes may be made described in the proposal, but something was needed in the document to address this subject. He expects lots of feedback.
    3. Chair described changes that may be approved using single point test including
       - Different winding constructions
       - Changes (reduction) in thickness. Mark Raymond noted that some systems may be overdesigned (too much insulation).
       - Change of build on magnet wire
       - If the original Arrhenius equation cannot be defined with the confidence interval of 0.95 or greater, then a full three-point thermal aging shall be required.
    4. Modifications to the primary insulation that involve replacement of one material vs. another material (different chemistry) will require a full three-point thermal aging.

5. Change of one supplier of a material to another supplier of enameled magnet wire is allowed if both materials meet the relevant ANSI/NEMA MW1000 magnet wire specifications.

    - Mike Shannon noted that the chemistry AND quality of the magnet wire should be validated, such as with UL approval.
    - Joe Tedesco pointed out that companies outside the US may want to use this standard, and may not have access to UL, etc. validation.
    - Mark Raymond suggested that both NEMA MW 1000 as well as IEC 60317 may be used to describe magnet wire.
    - Solomon Chiang suggested use of analytical test procedures to prove materials are chemically the same.

6. Question from Mike Iman regarding why (magnet wire) test approval on Copper will also cover Aluminum, but not vice versa. Mark Raymond explained that Al will create oxides during thermal aging, enabling the oxide coated material to attain a higher rating.
7. Mark Raymond described differences between Sealed Tube Test (CCT) and thermal aging test. He stated that UL 1562 transformer document references use of UL 1446 for changes in an EIS. Also said that CCT test has historically been used for Secondary insulations, but also is used for varnish changes. He also noted that UL 1446 allows use of either CCT OR single point test for material substitutions.
    - Chair suggested use CCT with higher temperature and extended times, possibly related to conditions used in the original system.
    - Casey Ballard. Mark Raymond and Joe Tedesco noted that data on original systems may not always be available, which would make it impossible to identify modified CCT test temperature.

- Addition of criteria on aging process minimum number of cycles and minimum time requirements for high and low temperature points.

- Path Forward
    - Chair noted that PAR expires end of next year
    - A new draft has been prepared with all the noted changes described during the meeting. He recommended moving forward with this draft, and entertained a proposal to do this.

      The following proposal was made by Casey Ballard:
        1. Draft document would be send out to the Members and Guests of the WG, requesting comments.
        2. Asked that comments be returned to the Chair by the end of November.
        3. The Chair would forward these comments to the volunteers (Casey Ballard, Tim-Felix Mai, Dhiru Patel, Roger Wicks, Dave Stankes). The volunteers would modify the draft, incorporating editorial changes received in the comments. They would not address technical comments.

4. The Chair would send out the resulting document (estimated mid December) to the WG for a Yes/No vote, requesting approval to send to SA. (Vote requires a super majority)
5. Casey will then send to subcommittee for simple majority vote.

This proposal was seconded by Tim-Felix Mai.

Some discussion regarding timing of when the various steps would take place.

Motion was unanimously approved.

As there was no more time left, the Chair thanked the WG and meeting was adjourned. Meeting was concluded at 3:03PM.

It was confirmed that the WG would meet again at the spring 2019 Transformer Committee Meeting.

Notes prepared by Dave Stankes.

Chair: Roger Wicks
Co-Chair: Dave Stankes

D.3.3 Revision of C57.12.51 – Ventilated Dry-Type Power Transformers – Casey Ballard

The working group met in the Hyatt Regency Jacksonville Riverfront Hotel, Jacksonville, FL, USA
The meeting was called to order at 11:02 AM by Chairman Sanjib Som.

Chairman made opening comments including that he had a new Vice-Chair in Casey Ballard

WG Roster was distributed for attendees to sign-in.
The meeting was convened with 15 participants, 5 of them are members. Since there are 11 members, quorum was not reached and official business was not possible to be performed. The attendance will be recorded in the AMS.

The Agenda was presented, but could not be approved due to lack of a quorum.

The Minutes of spring 2018 Pittsburgh meeting were presented, but could not be approved due to lack of a quorum.

The chair made a call for known patent issues. No patent related issues were claimed.

Old business

- No old business

New Business

There has been a PAR extension submitted by the chair

Draft 2.0 updates:

The vice chair then presented the outcome of the MEC review.

- Updated Scope to match PAR

- Updated language to match the style of a Guide instead of a Standard
    - Changing *Shall* to *May* or using *reference* instead of *requirement*
- Updated units to be metric (imperial) to match style manual
- Used new drawings that aren't so 'fuzzy'
- Updated Legal 'absolute verbiage'
    - *Prevent* to *help prevent*

It was noted that the Ballot Pool formation had ended and that the document ballot phase had begun and would continue until 11/10/2018.

Melia Zaman then assisted the vice chair in describing the process the document would follow until it is published. Since the SASB expiration date is 12/31/18, this document will become 'inactive'. It will still be available on the IEEE website until it is published. Then it will become 'active' again.

This WG does not plan to meet again under the existing PAR.

With no further business, the meeting was adjourned at 11:42 AM.

Respectfully submitted,

Chairman: Sanjib Som
Vice Chairman: Casey Ballard

D.3.4 Revision of IEEE PC57.12.91 - Standard Test Code — Chair David Walker

The Working Group met in Grand Ballroom 2 & 3. The meeting was called to order at 4:45 PM by Chairman David Walker.

Chairman made opening comments.

Introductions were made by all participants. WG Roster has been distributed and signed.

There were 28 people present. 10 out of 17 members and 18 guests were present. A quorum was present. The attendance was reported in the AMS.

The agenda was approved unanimously. Motion: Casey Ballard, Second: Jim Antweiler

The minutes of the March 2018 meeting in Pittsburgh were approved unanimously. Motion: Joe Tedesco, Second: Jim Antweiler

The patent call was given. No one replied with any patent issues.

Old Business

- The chair presented the changes from Last Meeting.
    - PD test were moved word by word from C57.12.01 to C57.12.91 (new diagram for the voltage without copyright protection from IEC)
    - Restatement of Section 11.8.3 was shown
- A proposal for Sound Level Test Revision was presented by chairman. It will be copied from C57.12.90, except the load sound level and near field correction. Motion Mike Iman, second: Dhiru Patel, approved unanimously
- An informative annex proposal for 50-60Hz Conversion was presented by chairman. The proposal is to copy the annex from C57.12.90 and adjust the wording to dry type transformer, where necessary. Motion:

Casey Ballard, second: Jim Antweiler-> after the discussion if the factors for noload correction are the same for dry and oil transformer the motion was tabled, motion: Casey Ballard, second: Jim Antweiler

- The decision was that manufacturers should send their noload correction data to Casey Ballard, he will collect the data to see if they will match the proposed annex. The 50-60Hz conversion with the correct factors will be discussed in the next meeting

- A proposal for Thermal Test Resistance Measurement Location (prepared by Jim Antweiler and Rhea Montpool) was presented by the chairman
  - The proposal was that the temperature rise should be measured at the leads not at the terminals
  - Discussion if this should be hard (shall) or soft (feasible) requirement. Consensus to be hard requirement but it should be possible to do it at the terminals if there's an agreement with the customer.
  - Decision that hot and cold resistance should be measured at the same place
  - A note should be added at the end of section 5.2.1 that the cold resistance might be different from the coil's resistance for the losses
  - Section 5.2.1 Resistance, 11.4 Resistance measurements and 11.5 Hot-resistance measurement must be updated
  - Motion: Jim Antweiler Second: Casey Ballard, approved unanimously
- Discussion about the right usage of the word secondary and low voltage winding Motion to table the discussion: Motion and second by Joe Tedesco / Jim Antweiler. Passed unanimously.
  - The chair will check for consistent wording in the section

New Business:

- C57.12.90 is looking at short circuit testing. This WG will monitor the results of the C57.12.90 TF. As C57.12.91 wants to stay synchronized with C57.12.01. It was decided to leave short circuit test as it is in this revision. Motion and second by Casey Ballard / Jim Antweiler. Passed unanimously.
  - The short circuit test will be reviewed in the next revision and aligned with changes in C57.12.90
- Final remarks from the chairman:
  - Goal- stay synchronized with C57.12.01 revision cycle.
  - Freeze changes after issues discussed in Fall 2018 meeting.
  - WG vote on draft in Spring 2019 meeting
  - Create Comment Resolution Group in Spring 2019.
  - Submit draft to MEC to start ballot process.

With no further business, the meeting was adjourned, without objection, at 6:00 PM.

The Working Group will meet again at the spring 2019 meeting in Anaheim, CA, March 24-28.

Chairman: David Walker

Vice Chairman: Tim-Felix Mai (acting as Secretary)

D.3.5 IEEE PC57.16 – Dry Type Reactors Chair Art Del Rio

The working group for the revision of C57.16 met in the Grand Ballroom 6 of the Hyatt Regency Jacksonville Riverfront Hotel on Monday October 15, 2018, at 9:30 AM.

1. Introductions and Call for Patents

- The meeting was called to order at 9:30 AM by the WG Chair Art Del Rio.
- The meeting was opened with the introduction of participants.
- The WG Chair Art Del Rio did a call for potentially essential patents. None was reported.

2. Circulation of Rosters

- The attendance rosters were circulated.

3. Verification of Quorum

- There were a total of 20 participants: 7 Members and 13 Guests out of which 3 guests requested membership; 2 were granted based on attendance.
- 7 of the current 13 WG Members were present and quorum to carry out business was met.
- The meeting agenda, which was circulated by email among members and guests on September 28, 2018, was presented to the participants.
- There were no objections or comments and the agenda was approved unanimously.

4. Approval of the minutes of the March 26, 2018, meeting in Pittsburgh, Pennsylvania.

- The minutes from the S18 meeting in Pittsburgh, which were circulated on September 28, 2018 by email, were presented to the participants.
- There were no objections or comments and the minutes were approved unanimously.

5. Continue to discuss and review of the scope, purpose and rest of the draft.

- The work has been focused on the contents of Normative Annexes.
- The WG members are requested review and suggest changes to the main clauses 3 to 12.
- Dave Caverly have found some minor adjustments. He will do a more thorough review to the next meeting.

5.a Scope and purpose

- The scope has been updated with more information about which kind of converter reactors that are covered by this standard. The general rule is that AC side converter reactors without significant level of direct current will be covered by this standard and other converter reactors will be covered by IEEE 1277.
- References to the new Annex on converter reactor applications have been added.
- Comments were given that we should clarify that this standard covers converter standards both for HVDC and STATCOM.
- Pierre Riffon and Klaus Pointner will review and give proposals to changes.
- The scope should cover reactor in series with DC capacitor for STATCOM. The operating current is at rated current during operation and therefore the temperature limits should be lower than for other series reactors. We will refer to IEEE C57.21 (Shunt Reactors as for filter reactors in Annex A.

5.b Update on proposed on 2-level, 3-level, multi-level converter reactors. Ulf Radbrandt

- Ulf Radbrandt has transferred his proposal to explanation of the differences between 2-level, 3-level and multi-level converters to a new informative Annex in the draft of the standard.
- We should add information about STATCOM also.
- We should not copy this annex to IEEE 1277 because we don't want to have the same text in two standards. It is probably better that IEEE 1277 refer to this Annex.
- One question is if this Annex will be normative or informative. As written now, the Annex does only include information and no requirements therefore should it be informative.

- A proposal is to add possible test on stray capacitance. Since this is important for other type of reactors, e.g. PLC/RI filter reactors, this should be handled in the main part of the standard. The test of stray capacitance should be performed if specified by the purchaser.

5.c Annex B - Dry-type air-core shunt capacitor reactors. Update on Technical Report 16, short term ratings, Dave Caverly

- Short term ratings should be as clear as in IEC.
- We should make an informative Annex with explanation of different applications and some basic formulas.
- When the work with the standard is ready then we should make a tutorial on this topic.
- We should cooperate with the switchgear committee in order to avoid the trouble we had during the last revision of this document. Then we added a lot of information related to TRV issues on breakers when adding current limiting reactors and later we had to remove most of it after negative votes from switchgear committee members. Dave Caverly is also participating in the switchgear committee and will try to establish cooperation.

5.d Annex A - Filter reactors. Sound section update, Klaus Pointner

- Christoph Ploetner has given inputs to clause 11.8 Audible sound level test. This proposal is ready to be included into the draft of the standard.
- We cannot refer to IEEE C57.12.90 regarding sound measurement because that standard is not updated with the latest methods that we want to use for this standard. IEC 60076-10 will be referred to instead.
- The minimum clearance distance to the reactor should be clearly stated.
- We need to limit the number of measurements, e.g. by limiting the number of harmonics.
- Klaus will send the updated section to Art Del Rio.

5.f Annex F - System considerations, TRV update based on meeting minutes. SWG committee follow up. Monty Goulkhah

- Monty Goulkhah gave a presentation regarding TRV considerations for different applications.
- Monty Goulkhah has also done a draft Annex on TRV considerations.
- Pierre Riffon suggested that we should refer to the guide IEC 62271-306.
- We should avoid to include a lot of information regarding how to do system studies. That could lead to negative votes from the switchgear committee. We should consider if we can refer to other documents for more information, e.g. by switchgear committee.

6. New Business

- There were no new business. Next meeting will take place in Anaheim, California, March 24-28, 2019.

7. Adjournment

- The meeting was adjourned at 10:49 AM.

Respectfully submitted,
Chairman: Art Del Rio (a.delrio@ieee.org)

Secretary: Ulf Radbrandt (ulf.radbrandt@ieee.org)

D.3.6 IEEE PC57.124 – Dry Type Partial Discharge Guide Chair **Tom Prevost**

Unapproved Minutes of Meeting
WG C.57.124 Dry Type PD Detection
October 16, 2018
Grand Ballroom 1 (2)
Hyatt Regency Hotel
8:00 am - 9:15 am

Meeting was called to order by Chair Tom Prevost at 8:0 am. Introduction of members took place. Quorum was recorded at 61% @ 8:10 am with total 47 attendees; 17 members and 30 guests. Three guests requested membership to the WG.
Agenda of this meeting was approved unanimously. Moved by D. Gross and seconded by Tim Felix Mai.
Meeting Minutes of Spring Meeting in Pittsburgh were approved unanimously. Moved by Casey Ballard and seconded by D. Gross.
Essential Patent claims were mentioned by the Chair none were recorded that affected work of this WG.
It was emphasized that the work of this WG would be focused on the Factory aspects of PD detection in Dry Type Transformers. Much discussion was aimed at wide band and narrow band aspects by R Kuppuswamy and D. Gross. Scope of the WG was already approved and would be kept in mind in all further discussions.

Progress on the write-up of revisions were further discussed by:

1) Normative and References, Definitions etc Casey Ballard; which covered Introduction, References and Definitions. All of which would be expanded on completion of the document.
2) PD detection Systems and Test Procedure D. Gross; which covered close working with IEC 60270 and WG C. 57.113. IEC 60270 is being revised, as is C57.113. Chair introduced concept of a task force with members of C57.113 revision to assure that we stay in synch with each other as well as IEC 60270

Other aspects will be discussed in the near future with an eye on the hard date of completion by or before 2021.
Meeting was adjourned at 9:15 am

Respectfully Submitted
Hemchandra Shertukde
Secretary WG C.57.124

D.4 Old Business

D.4.1 IEEE 259 Administrative Withdrawal

- The Vice Chair noted that the motion to (administratively) withdraw IEEE 259 had previously passed with 16 votes affirmative (unanimous). The 'administratively" was added based on a conversation with Jim Graham and Malia Zaman in which they said we

do want to let it "expire" instead of withdraw. The withdrawal process is only used if the document is not technically correct and requires PAR and ballot pool in SA. The document also wouldn't be available for purchase if withdrawn. The administrative withdrawal (expiration) is a gentler resolution as the standard is still available for purchase and could be brought back to life if we chose to in the future with a PAR.

- With that last thought in mind… Casey Ballard commented that he had studied the IEEE 259 standard and found that it contained very useful information, and asked that we reconsider the administrative withdrawal of this document. Roger Wicks noted that there were some differences between the IEEE 259 and other systems related documents (such as 40,000 vs, 20,000 reference hours). Discussion regarding merits of reversing the administrative withdrawal ensued. Joe Tedesco proposed a motion to "reverse the decision to let IEEE 259 be "administratively Withdrawn". As the PAR had expired on this document, Joe Tedesco then offered a "friendly amendment" to his motion, requesting that the PAR for IEEE 259 be opened. Jerry Murphy then offered an additional "friendly amendment" requesting that a Task Force also be formed. Resulting proposal by Joe Tedesco was to "reverse the decision to let IEEE 259 be "administratively Withdrawn", open a PAR to revise this document, and form a TF to begin work on this project." The motion passed with 11 for, 1 against and 2 abstentions. Dave Stankes volunteered as Chair and Joe Tedesco as Vice Chair.

D.4.2 **Status of Standards**

- The Vice Chair noted that the list of active standards along with noted board submission deadlines was available online for review.
- Vice Chair noted the need to begin work on C57.12.52 (Sealed Type Transformer) as this document has a 2022 expiration date. Joe Tedesco volunteered as Chair and David Walker as Secretary for this document revision. Vice Chair asked that a formal request for a meeting time slot be submitted to Jerry Murphy.

D.5 New Business

- Tim-Felix Mai made proposal that SC address transformers that have coils and core exposed to the elements (no enclosure). The group discussed whether this be addressed in a new document or annex to a current document such as C57.12.01. Casey Ballard requested that Tim send a formal proposal and that Casey would then bring this to the main committee to determine where this work should fall.

D.6 Adjournment

With no further business, the meeting was adjourned at 2:42 PM.

Chairman: Charles Johnson

Vice Chairman: Casey Ballard

Secretary: David Stankes

(Notes prepared by Dave Stankes)