

Annex B - Dielectric Tests Subcommittee

October 17th, 2018
Jacksonville, Florida

Dielectric Tests Subcommittee		
Chair: Ajith M. Varghese	Vice-Chair: Thang Hochanh	Secretary: Poorvi Patel
Room: Grand Ballroom 5	Date: October 17 th , 2018	Time: 11:00 am to 12:15 pm
Members: 139	Present at time of checking: 96	Present per attendance roster & recorded to AM System: 96
Guests present: 114	Membership requested: X	Membership accepted: X

B.1 Chair’s Remarks

The Chair briefly highlighted the requirement that while introducing one need to state their employer/ company and sponsor if the difference from the company. The chair also reminded that IEEE and transformer committees are non-commercial organizations and standards shall focus only on developing performance and functional requirement and not design and construction details.

The Unapproved minutes from the Spring 2018 meeting and the agenda for Fall 2018 meeting was sent out to members and guests 14 days before the Fall meeting, and it’s also posted on the website.

An area that WG and TF have been late with and we need to improve is to send out the Agenda at least 14 days before the meeting. This also applies to on-line WG and TF meetings.

All TF and WG **MUST** record the attendance in the AM System- The WG/TF minutes do not need to include the list of attendees. The Roasters circulated in the meetings should not have the email addresses included to follow the data privacy policy. WG/TFs are urged to keep website information current. Any presentation presented during the meetings should be posted

The Chair clarified the Ballot resolution (BRG) group is now named as Comment Resolution Group (CRG) and CRG only need a simple majority to approve changes

All attendees should have updated information, such as email address in the AM system, as for all correspondence, this system is used.

The Chair reminded the WG and TF leaders to submit their minutes from the meetings within 30 days to the SC chair and secretary. The SC Secretary then has to submit the SC minutes within 45 days of the SC meeting. To minimize revision and errors in the sub-committee level and transformer committee level minutes, please send the final version of your minutes.

The Chair reminded WGs that call of the patent is required a during every WG meetings including on-line/Teleconference meeting. If there are any patent claim, it shall be noted but not discussed at the working group meetings. Calls for Patents is not required for TF.

Per new guidelines from IEEE, Audio/Video recording or photography is not allowed during SC, WG and TF meetings. The secretary could record the meeting for writing the minutes of meetings but this needs to be notified, and recording must be deleted after the use. Chair informed SC that the subcommittee Secretary would be recording the audio of the SC meeting for this reason today.

The Chair went through the new GDPR requirements. Please follow these requirements in your WG/TF meetings; *The GDPR applies to 'personal data' meaning any information relating to an identifiable person who can be directly or indirectly identified in particular by reference to an identifier. This definition provides for a wide range of personal identifiers to constitute personal data, including name, identification number, location data or online identifier, reflecting changes in technology and the way organizations collect information about people. Source: <https://www.eugdpr.org/gdpr-faqs.html>*

Some of WG/TG were late in sending the agenda for the Fall meeting. The invitation with agenda should be sent out 14 days before the meeting. Its required for the meeting conducted offsite or online/Teleconference aswell. Agenda shall include more details of topics that will be discussed so invitees can decide whether to participate on not.

The Chair shared details of upcoming PES sponsored meeting as well as details of next transformer committee. IEEE PES T&D Expo on April 16-19 of 2018 in Denver, CO, USA, and the next IEEE PES General meeting – Aug 5-9: Portland, Oregon, USA. The fall committee meeting 2018 will be held in Jacksonville, Florida 14th -18th of October 2018.

The Current Status of PARs was presented by The Chair.

- C57.127 Guide for the Detection of Acoustic Emissions from Partial Discharges in Oil-Immersed Power Transformers is expiring in 2018. Revcom is expected to review/approve the guide during an upcoming meeting in October. If approved, the guide will get published early 2019.
- C57.160 Guide for the Elec. Measurement of PD in HV Bushing and Instrument Transformers is in pre-ballot
- C57.113 Recommend Practice for Partial Discharge Measurement Power had their first meeting in March 2018 and Par expires 2021
- C57.98 Guide for Transformer Impulse Tests the PAR was approved at last meeting, and they had their 1st meeting here in Jacksonville. Par expires in 2022
- C57.138 Recommended Practice for Routine Impulse Tests for Distribution Transformers there is no activity on as the guide does not expire until 2026. If new WG needs to be formed earlier please advice to the chair
- C57.161 Guide for DFR Measurements is approved and published
- C57.168 Low-Frequency Test Guide is a new guide and had their first meeting here in Jacksonville; PAR expires 2022
- C57.200 Bushing Frequency Domain Spectroscopy Guide (ENTITY WG) is a new guide. PAR expires in 2022. The first meeting will be in the Spring 2019 meeting in Anaheim.

The Chair reminded the WG on attendance requirement for membership and the continuation and the requirement to have attendance updated in AM system, i.e., to attend two out of last three meetings or three out of five last meetings.

The secretary presented the new members and welcomed them to the subcommittee. 13 had requested membership in the last meeting in Pittsburgh, PA and 10 were accepted. Eight members were changed to guest status. The total membership of the Dielectric Subcommittee is today 139 members.

B.2 Quorum, Approval of Minutes and Agenda

The membership list was presented, and a quorum of members was established through the AM system. 96 out of 139 members were present. Thus 69% of members were present at the meeting, and a quorum was reached. For request of membership, please reach out to the chair or secretary.

Motion to approve the agenda was made by Dan Sauer and seconded by Bertrand Poulin. The chair presented the agenda, and it was unanimously approved.

The Motion to approve the Fall 2017 minutes was made by Dan Sauer and seconded by Bertrand Poulin. The minutes of the Spring 2018 meeting at Pittsburgh meeting was approved unanimously.

B.3 Taskforce and Working Group Reports

Working Group Low-Frequency Dielectric Testing for Distribution, Power and Regulating Transformers

Dan Sauer (Chair) at the meeting

Tuesday 16/10/2018, Jacksonville, FL.

The Chair called the meeting to order at 9:30 am.

The Chair showed the agenda below:

1. Chair's welcome
 - a. We are now a WG
 - b. Membership starts over with a WG – all who request membership today will become members
2. Introduction of Participants
3. Call for Patents
4. Approval of agenda
5. Discussion on approach
6. Request for Guide Material
7. New Business
8. Adjournment

The Chair asked participants to introduce themselves.

Since this was the first meeting for this WG, a quorum was achieved.

Total number of attendees: 66 (including Chair and secretary)

Participant requested and granted membership: 46

The Chair displayed the patent disclosure statement. There was no patent mentioned during the meeting.

Bertrand Poulin made first motion to approve the agenda, which was seconded by Wallace Binder. Agenda was approved anonymously.

The chair stated the scope and purpose of this guide as shown below.

“Scope: This guide provides additional information on low-frequency dielectric tests applicable to distribution, power and regulating transformers.”

“Purpose: The purpose of this guide is to provide background information on conducting and interpreting the results of low-frequency dielectric tests.”

Chair opened the floor for discussion on what the group vision is on this new guide.

Dan Blaydon stated that it might be a good idea to start with impulse guide to see how it is structured.

There was a discussion on the definition of low-frequency dielectrics tests. Some asked whether or not the power factor should be included in this guide.

Chair kindly asked for experts to lead each specific test such as induced test, applied voltage test to include background summary on each test.

Bertrand Poulin mentioned that he sent some information on how to perform applied voltage test on high voltage windings with delta.

Bertrand Poulin suggested that once this guide developed, any tutorial information in any of the standards should be removed from those standards and moved to the new guide.

Chair clarified that C57.12.00 includes requirements, C57.12.90 explains how to perform tests, and the new low-frequency test guide will have background information and ways around difficult situations in performing a specific test.

The Chair asked the attendees on how to organize the guide.

Don Platts suggested to organize the guide by each specific test and remove any tutorial material from other standards. The removed tutorial material would be added to the new guide after coordination with the standard leaders.

Bertrand Poulin recommended having a leader to collect information on each specific test from all contributors instead of assigning a leader for each specific test as one person may contribute to multiple tests.

Don Platts volunteered to work with the Chair on creating an outline. The following meeting attendees volunteered to help the Chair with the outline: Garcia Eduardo, Babanna Suresh, John Foschia, Brian Penny, Jhala Anirudhdhsinh, Thomas Melle, and Alex Winter.

Wallace Binder recommended that the guide starts with definitions such as a low-frequency dielectric test to help in determining whether or not a test belongs to this guide.

Ajit Varghese recommended development of test list that belongs to this guide.

Bertrand Poulin suggested to come up with a maximum frequency to include in the definition of low-frequency dielectric test such as any test with a frequency below 1kHz to verify the quality of insulation under AC supply.

John Foschia suggested adding examples of circuits representative of tests for new engineers. John Foschia agreed to supply examples to the Chair.

There was no new business.

The motion was made by Bertrand Poulin to adjourn the meeting and was seconded by Garcia Eduardo.

The meeting was adjourned at 10:40 am.

WG C57.113 - Recommended Practice for PD Testing, March 27th, 2018 – 3:15 pm

Ali Naderian – Chair, Janusz Szczechowski – Vice Chair

John Foschia – Secretary

Meeting Attendance

The working group met at 3:15 pm. There were 51 attendees, and 17 members out of 27 were present. The quorum requirement was met. Attendance and membership are completed in the AM system except one attendee who was not found in the system.

Discussions

The meeting began with introductions and a call for essential patent claims. None were brought to the working group's attention. The agenda of the meeting was unanimously approved (motion by A. Kraetge and seconded by D. Gross). The minutes of the Pittsburgh meeting were unanimously approved (motion by A. Kraetge and seconded by R. Fausch).

The chair provided a summary of the participants who have volunteered to improve the specific sections of the guide. Chapters 4 & 5, as well as annexes A, F, & G, have volunteers who will be providing improvements to these sections.

A significant portion of the meeting was composed of presentations made regarding the historical background of partial discharge measurement and the progression of technology related to the measurement of PD. Detlev Gross provided updates regarding IEC's latest amendments to IEC 60270. Mr. Gross advised the opportunity to synchronize the tutorial section of C57.113 with IEC 60270 and to include the background of the physics associated with partial discharge.

Mr. Kuppuswamy recommended including specifications of the measuring impedance in a revision of C57.113. It was advised by participants that this topic may be best left to the measurement equipment OEMs and that this proved to be too much information for the latest IEC revision of 60270.

The meeting was finalized with a presentation by the vice-chair illustrating various types of PD noise patterns and modern technology for measuring PD. The chair suggested that a survey should be sent out regarding the frequency ranges of measurement. This was supported by the working group; the chair will compose a survey for the working group.

Adjournment

The meeting was adjourned at 4:30 pm (motioned by A. Kraetge and seconded by D. Gross).

John Foschia

B 3.7 Working Group for PD in bushings, PTs and CTs – PC57.160
WG Secretary: Thomas Sizemore; WG Chair: Thang Hochanh
Meeting Minutes Jacksonville, FL

This working group did not meet in Jacksonville. The guide is currently in Ballot process.

Working Group for Impulse Guide – PC57.98

**WG Secretary: John Foschia; WG Chair: Thang Hochanh; WG Vice Chair: Reto Fausch
Meeting Minutes October 15, 2018, at 1:45 – Jacksonville, FL, Grand Ballroom 6**

Meeting Attendance

The working group met at 1:50 pm. Present at the meeting were 84 attendees, 30 of whom requested membership. Being the first meeting of this working group, attendees who requested membership will be granted membership. Attendee entries to the associated management system are incomplete at this time.

Discussions

The meeting began with a brief overview of the present guide. It was noted that the most recent revision of the guide is well written. The primary discussion focused on the future inclusion of ‘K-Factor’ related material as it is now required for evaluation impulse wave traces for compliance to IEEE standards. The consensus of the working group’s participants was that the purpose of the guide is to emphasize how to work with K-factor evaluation and not its benefits/shortcomings.

The chair requested that OEMs and test laboratories provide examples of highly oscillatory waveforms in .csv or T.D.G. (‘test data generator’) format. Multiple entities who provide waveform analysis software offered to evaluate these anonymous waveforms to understand variance in the resulting waveform parameters. Participants generally agreed that the guide should provide its audience with methods of handling discrepancies in the waveform analysis.

The chair also discussed some other minor changes to be made:

- Remove the reference to analogues recordings of the test waves
- Update the displayed waves with the more recent waves presentation

Further input will be sought for additional material or modifications to the guide at the next meeting in Anaheim, CA in March 2019.

Adjournment

The meeting was adjourned at 3:00 pm without formal motions to close.

WG - IEEE Guide for the Detection of and Location of Acoustic Emissions from Partial Discharges in Oil-Immersed Power Transformers and Reactors (C57.127)
Chair: Detlev Gross Chairs Vice Chair: Jack Harley Secretary: David Larochelle

WG on C57.127 did not meet at Jacksonville

WG Chair updated during DTSC that Balloting is complete and the document is under RevCom review.
WG chair clarified that there was one negative vote related to essential patent claim the which was resolved as per IEEE Standard policy guidelines
If Revcom approves, The document is expected to be published in early 2019

TF on External Dielectric Clearances,

Jacksonville, October 15th 9.30 am, Eric Davis, Chair; Troy Tanaka, Secretary

The Task Force on External Dielectric Clearances met on Monday, October 15, 2018, at 9:30 AM in the Hyatt Regency Jacksonville Riverfront, Grand Ballroom 7. There were 58 people in attendance; 8 of 13 members, and 50 guests. Several guests requested membership but will not be granted membership because the task force finished its work. The full attendance record is available in the AM System.

Several activities occurred between the Spring 2018 meeting and the Fall 2018 meeting. Those activities included 1) email approval of the Fall 2018 meeting minutes and changes discussed during the Spring 2018 meeting (11 approvals, 0 nays, 1 abstention) and 2) a survey of the Dielectric Test Subcommittee with the revised proposed text “C57.12.00 Section External Clearances Proposed 180326”.

A survey was sent to 138 members of the Dielectric Test Subcommittee on October 8, 2018, with the revised proposed text to C57.12.00 Section of External Clearances. The following responses were received.

- 22 Responses
- o 17 Approvals,
- o 5 Approvals with Comments
- 3 Abstentions

The meeting in Jacksonville was brought to order at 9:31 AM. A motion was made by Dan Sauer and seconded by David Wallace to approve meeting agenda. Agenda was approved.

A motion was made by Dan Sauer and seconded by Vinay Mehrotra to approve Spring 2018 Pittsburgh meeting minutes as drafted. Minutes were unanimously approved.

The Task Force discussed the results of the Survey of the Dielectric Test Subcommittee and made minor editorial changes. In general, the comments addressed:

- The wording of the sentence is addressing clearances required for factory testing.
- The wording of the footnotes c and d.
- Correcting the references to the notes and footnotes.
- The wording of Note 1.

The survey results are attached for reference.

A motion was made by Dan Sauer and Seconded by David Wallace to send the proposed text as revised during the meeting to the Dielectric Test Subcommittee for Sponsor ballot. The motion passed with a vote of seven yes votes, zero no votes, and with one member having left early.

The chair thanked the task force for their work throughout the process and stated that the text and table would be sent on for inclusion in the next revision of C57.12.00. As a result, the task force will not have any further meetings until comments are received from the Sponsor ballot.

A motion was made by Dan Sauer and seconded by Vinay Mehrotra to adjourn the meeting at 10:33 AM.

During DTSC, Eric Davis (TF Chair) motioned for Dielectric Test Subcommittee's Approval to send the proposed text related to External Clearance to Standards Subcommittee to include in next revision of C57.12.00, as when it will be sponsor balloted

The proposed text was surveyed within Dielectric Test Subcommittee before the F18 meeting with response 22 Responses - 17 Approvals, 5 Approvals with Comments, 3 Abstentions. Comments were reviewed during the F18 Taskforce meeting, and the text was approved with minor editorial changes.

The motion was seconded by Dan Sauer and was unanimously approved.

B.3.4 TF on Revision of Impulse Tests
Pierre Riffon, Chair; Daniel Sauer, Vice-Chair

The TF met on October 16, 2018, from 4:45 pm to 6:00 pm. Twenty-five (24) members and forty-three (32) guests attended the meeting. Four (4) guests requested membership. The meeting was chaired by Pierre Riffon, Chair of the TF. Mr. Daniel Sauer was the vice-chair.

Meeting has been called to order by the Chair at 4:45 pm.
Attendance has been recorded in the AM system.

Required quorum was met, presence of at least 22 members was required. The TF membership roster has been reviewed after the Pittsburgh meeting and members who did not attend the last three meetings have been moved as guests.

The agenda has been approved unanimously. The motion was made by Mr. D. Wallace and was seconded by Mr. J. John

The Pittsburgh meeting minutes were approved as written by all members present. The motion was made by Mr. A. Varghese and was seconded by Mr. S. Antosz.

The first item of business was related to a revised proposal of modifications to clause 10.3.2.1 of C57.12.90 concerning the condition of tertiary and stabilizing windings during lightning impulse tests. This proposal was sent within the TF membership and guests. The proposal gets a 100% approval rate. Several editorial comments were received and were taken into account. The use of the term "open terminals" vs "floating terminals" was discussed and the WG supported the use of "open terminals" as stated in the Chair's proposal. A motion to survey this revised proposal to the Dielectric SC level has been made by B. Poulin and seconded by J. McBride. This motion was approved unanimously. The revised proposal will be surveyed to the Dielectric SC before the Anaheim meeting.

The second item of business was related to a revised proposal of modifications to clause 10.2.4 of C57.12.90 concerning the tap changer position during switching impulse tests. This proposal was sent within the TF membership and guests. The proposal gets a 92.9% approval rate with 3 negatives. Comments received have been discussed and the Chair presented a revised proposal which is mainly editorial in nature. A motion to survey this revised proposal to the Dielectric SC level has been made by B. Poulin and seconded by S. Brzoznowski. This motion was approved unanimously. The revised proposal will be surveyed to the Dielectric SC before the Anaheim meeting. Under New Business, Sanjib Som asked at the Pittsburgh meeting to add voltage transfer measurement during lightning impulse tests. Mr. Som did not send any material and this subject was not discussed. This item of business will be kept on the agenda for the Anaheim meeting.

The meeting adjourned at 5:35 pm on October 16, 2018. The adjournment motion was made by Mr. F. Leal and was seconded by Mr. J. McBride.
The next meeting is planned to be held in Anaheim, California on March 26, 2019.

Pierre Riffon P. Eng.
TF Chair
October 16, 2018

- *During DTSC, Pierre Riffon motioned to re-survey,*
 - *Changes to Section 10.3.2.1 of C57.12.90 related to the condition of tertiary and stabilizing windings during the lightning impulse test*
 - *Prior Survey had 100% approval and proposed text address some of the comments.*
 - *Tap changer position during switching impulse tests*
 - *Prior Survey had 92.9% approval, and proposed text is intended to address the three negative votes*
- *Both the motions were seconded by Dan Sauer and were unanimously approved.*

B.3.5 TF on Revision of Low-Frequency Tests

Jacksonville, FL – October 16, 2018, 1:45 p.m., Chair: Bill Griesacker, Vice Chair: Daniel Blaydon, Secretary: Myron Bell

There were 98 attendees, 35 of 59 members and 63 guests were present at the meeting; 9 guests requested membership, 5 were granted, 7 members were moved to guest status, based on attendance. More than 50 % of the working group members were in attendance at the meeting. Therefore a quorum was present.

1. The meeting was called to order at 1:45 PM.
2. Attending members were counted, and a quorum was verified.
3. There were no objections to approval of the agenda.
4. There were no objections to approval of the meeting minutes from the 2018 Spring meeting in Pittsburgh.
5. Task Force Report
 - a. TF, Factory PD Limits – Vinay Mehrotra

The meeting was called to order at 3:15 PM. There were 112 participants, and 55 of 82 members were present during the current meeting. A quorum was achieved. The agenda and minutes of the Pittsburgh meeting were unanimously approved. Chairperson provided a background of the taskforce and read out the new scope of the TF as follows:

Review and modify

- a) Induced-voltage test for Class II power transformers clause 5.10.5.5 of IEEE Standard for General requirements C57.12.00
- b) Test procedure clause 10.8.2 and Failure detection clause 10.8.5 of IEEE Standard Test Code C57.12.90.

The motion was carried out for the newly revised scope. The first motion was approved by Vijayan, and it was second by Hakim. Total 39 members favored the newly revised scope of the TF during the vote.

Vinay motioned for the members of the TF for Continuous Revision to Low Frequency Tests approve the scope change as worded above. The motion was 2nd by Hugo Flores.

Steve Antosz commented that the TF for Factory PD Limits name should be changed for the next meeting, to clarify, based on the new scope.

28 approved
0 Disapproved
1 Abstention

6. Study Group
 - a. PD in bushings during factory transformer testing – Dave Geibel
- Proposed text to add to standard C57.12.90 Section 10.8.5:

“If the partial discharge is observed during the induced testing of the transformer and appears to be generated within an OIP bushing(s), it is permissible to “vent” the bushing(s) to the atmosphere using the bushing manufacturer’s instructions to allow for the dissipation of gas bubbles in the oil. Gas bubbles sometimes form following a temperature rise test during cool down or may be present for other reasons. Reestablishment of the bushing gas space blanket and resealing of the bushing must also be performed in accordance with the bushing manufacturer’s instructions following completion of the induced test.”

Dave Geibel motioned for the members of the TF to move this text to the Dielectric Test SC, for suggested addition to C57.12.90, section 10.8.5. The motion was 2nd by Hugo Flores.

30 approved
1 Disapproved
0 Abstention

7. Old business

- a. Tap changer position during induced test.

Bertrand Poulin reviewed the changes required to achieve 100% approval.

Bertrand motioned to pass his report to the Dielectric Test SC, for inclusion into C57.12.90
2nd from Dan Sauer

28 approve
0 disapprove
1 abstain

This text will eventually be moved to the Low-Frequency Test Guide, once complete.

- b. Applying pressure inside a transformer tank during induced test (survey results)

Steve Antosz presented text and results of the previous survey, reflecting 92% approval.

Steve motioned to move the text to the Dielectric Test SC, for inclusion into C57.12.90
2nd from Bertrand Poulin

29 approve
0 disapprove
3 abstain

- c. Clarification of measuring voltage during low-frequency dielectric tests

Bertrand has not yet drafted a new proposal. He indicated he may need to delegate this to someone else, or suggested we simply refer to the wording in IEEE Std 4.

- d. Class I transformer PD test – Don Ayers

Don Ayers was not present, so this topic was tabled until the next meeting.

- e. Gassing issue for certain types of transformers with wound cores: proposal for new design test

Phil Hopkinson was not present to present the results of the previous survey

Dan Sauer gave a history of the topic, and voiced opposition to the current wording. Dan would like this topic to exclude transformers rated at 500 kVA and below.

Bertrand Poulin proposed that the latest survey results should be shared with the group, from Phil Hopkinson, prior to changing any text. The Chairperson agreed.

The chairperson suggested having a liaison between the LFDT TF and the Distribution XFMR SC, to ensure proper representation of the group that will be primarily affected.

8. New business

There was no new business.

9. Adjournment

Adjournment was at 3:00 pm

- ***During DTSC, Bill Griesacker (TF chair) motioned***
 - ***To survey in the Dielectric Test Subcommittee, the proposed text related to PD and Venting of Bushings during Transformer Factory Acceptance testing***
 - ***Second Dan Sauer.***
 - ***During the discussion, Joe Foldi remarked that Bushing manufacturing recommended procedure shall be followed during venting of business,***
 - ***The motion was unanimously approved.***
 - ***For Dielectric Test Subcommittee's Approval to send the proposed text related to Tap changer position during Induce test to Standards Subcommittee to include in next revision of C57.12.00, as when it will be sponsor balloted.***
 - ***Dan Sauer Seconded the motion.***
 - ***The proposed changes were surveyed multiple times within TF and DTSC and had a high approval rate***
 - ***The motion was unanimously approved.***
 - ***To include text for Applying pressure inside a transformer tank during the induced test to C57.12.90.***
 - ***Second Rashed Minhaz.***
 - ***The proposed Text was surveyed within TF and DTSC multiple times and had high approval rate.***
 - ***The motion was unanimously approved.***

**B 3.8 Task Force Winding Insulation Power Factor & Winding Insulation Resistance Limits
Diego Robalino (Chair) and Greg Lobo (Secretary) at the meeting
Tuesday 16/10/2018, Grand Ballroom 2 & 3, Jacksonville, FL.**

Activity Name: TF Winding Insulation PF/Resistance Limits

Activity ID: 2186

Number of Members in Activity = 44

Number of Members Present = 27

Quorum Present = 61.4%

Number of attendees = 111

Meeting initiated at 08:00 AM at the Grand Ballroom 2 & 3

Hyatt Regency, Jacksonville FL USA

Diego Robalino (Chair) at the meeting

Meeting started with the introduction of attendees

Headcount 22 members, reached a quorum to approve agenda for meeting and minutes from F17 meeting.

- TF identified IEEE SA staff to arrange NDA and DB
- Description of NDA
- A brief description of the DB
 - The team assigned to test DB by mid-November
 - Review filters and input data
- Presented data for accuracy of instrumentation for PF testing as provided by manufacturers
 - Information to be circulated for comments
 - Suggested for the document:
 - Below 1% PF : $\pm 2\%$ of reading ± 0.05 absolute
 - Above 1% PF: $T \pm 2\%$ of reading ± 0.05 absolute
- Presented a chart showing all data received without the need of NDA
 - Data fluctuates from almost 0 to ~ 1% PF
- No new topic for discussion.
- Adjournment at 9:02 am

B.3.7

B.4 Liaison Reports

**IEEE High-Voltage Testing Techniques Subcommittee
Liaison Report to Dielectric Tests Subcommittee of IEEE Transformers Committee
Submitted by Jeff Britton (HVTT Subcommittee Chair)
October 17th, 2018
Jacksonville, FL**

- ❖ HVTT Subcommittee hasn't met since 2018 PES Joint Technical Committee Meeting in January 2018
- ❖ Active Projects Include
 - ❖ IEEE P1122 – Impulse Digitizer Standard. In draft development, PAR expires end of 2019 – Chair: Jeff Britton, Phenix Technologies, Inc.
 - ❖ IEEE P510 – High Voltage Safety Guide. Met at PES General Meeting in August 2018 in Portland, OR. The Guide is presently in draft development, PAR expires end of 2020 – Chair: Jeff Hildreth, Bonneville Power Administration
 - ❖ IEEE P2426 – Field Measurement of Fast Front and Very Fast Front Overvoltages in Electric Power Systems (Entity PAR). In draft development, PAR expires end of 2021 – Chair: Shijin Xie, State Grid Corporation China
 - ❖ Task Force for Title, Scope and Purpose for General IEEE PD Measurement Guide – Chair: Nigel McQuin, McQuin Power Consulting. Future WG will be chaired by Detlev Gross, Power Diagnostix
 - ❖ New Task Force for Title, Scope and Purpose for IEEE Standard 4 Implementation Guide – Chair: Bill Larzelere, Evergreen High Voltage
- ❖ Next meetings: Scheduled during week of October 29th in Orlando Florida, following the IEEE Insulated Conductors Committee Meeting
- ❖ Electronic attendance is offered for most HVTT SC, WG and TF meetings via web meeting, so physical attendance is not required to participate and qualify for membership
- ❖ Contact Jeff Britton or Jim McBride to participate

B.5 Discussions

B.6 Old/ Unfinished Business

1. Core gassing and PD Testing on Wound Core Transformer

- This topic was discussed during Fall18 Low-frequency task force. See TF Minutes for details.
- No further action is planned by DTSC until Low-frequency Task Force recommends SC on next steps.

2. C57.13-2016: Sec 11.3.1.7 Impulse guide for Instrumental Transformers

- There is a conflict between C57.13-2016 and C57.12.00 and C57.12.00 for Impulse waveform superimposition is requested between first FW and Final FW. Instrument Transformer SC plan to correct it through corrigendum along with some other corrections that they had identified
- No further action is planned to be taken by DTSC on this issue

B.7 New Business

1. Entity PAR: DFR guide for Bushings C57.200

- IEEE SA received Entity PAR for a new standard on Bushing Frequency Domain Spectroscopy from China.
- A Presentation was made during S18 TC meeting, and Transformer Adcom reviewed and approved PAR after S18 meeting, with the caveat of establishing an oversight TF that will report to Dielectric Subcommittee as most work will be done in Asia.
- IEEE-SA approved PAR. New Guide will have number C57.200
- Most WG Meeting will be outside of United States but WG chair or representative plan to attend Spring 2019 meeting in Anaheim CA.
- A Motion to create a Liason Task Force to coordinate WG with DTSC was moved by Hemchandra Sherdukte and second David Wallace.

- During the discussion, many members reported concern on Entity WG process due to limited involvement of transformer Committee. Sue McNelly clarified that irrespective of transformer committee approval, IEEE rules allows EntityWG to move forward and its best interest of transformer committee to have work with Entity WG. By having the guide under C57., any future revision to guide will go through transformer committee like all other standard and transformer committee will have to say in approval before WG can go for sponsor ballot
- Motion carries according to the books. - Approve- 6 Oppose- 1 Abstain- 35 (majority)
- The scope for the TF as approved
 - ❖ *Liaison between Entity working group and Transformer Committee*
 - *Participate in WG meetings as Technical Experts/Observers subjected to IEEE Entity WG participation/Membership rules*
 - *Provide status update to DTSC and Adcom on the progress of Standard development*
 - *Strive to have at least one TF meeting a year during transformer committee*
 - *Report any concerns regarding deviation from Transformers Committee's Policies and Procedures for Standards Development (Transformers Committee P&P)*
 - ❖ *Provide recommendation to Transformer Adcom regarding Final Approval of before standard goes to the ballot.*

B.8 Adjournment

Meeting adjourned 12.20 PM. Motion to adjourn made by David Geibel and Dan Sauer

Minutes respectfully submitted by:

Poorvi Patel

Secretary DTSC.