

## **Annex H Insulation Life Subcommittee**

**March 28, 2018**

**William Penn Omni Hotel, Pittsburgh, PA, USA**

**Chair: Sheldon Kennedy**

**Vice-Chair: Barry Beaster**

**Secretary: Sam Sharpless**

The Insulation Life Subcommittee was called to order by the Chair in Pittsburgh, PA on March 28, 2018 at 8:00 AM. Due to the size of the group, general introductions were not made. The Chair requested that each person state their name and affiliation when addressing the subcommittee.

### **H.1 Chair's Report/Remarks**

The chair provided the dates of upcoming Transformer Committee meetings as follows;

2018 Fall Meeting; October 14-18, 2018, Jacksonville, Florida, USA

2019 Spring Meeting; TBD

The Chair requested that any person with knowledge of a patent essential to meet the requirements of any subcommittee standard to bring the issue forward for discussion. No one responded to this request.

The Chair requested the following items be included in all activity group minutes;

- The name of the activity
- The date and time of the meeting
- The number of members and guests in attendance. Full attendance should be recorded in the AMS system
- The presence or absence of a quorum
- Any essential patent issues raised during the meeting.
- A summary of discussion. Intricate detail not required. Use a separate document to explain decisions that are made.
- A record of the decisions made in the meeting
- If there will be another meeting. If so, state the time and place.
- Submit minutes as soon as possible, but no more than 15 days after the meeting.

The Chair reminded everyone that working groups must achieve a two-thirds majority to submit a document for Sponsor Ballot. The subcommittee must achieve a simple majority to submit a document for Sponsor Ballot.

The Chair discussed the membership requirements and recognized the following new members; Jason Attard, Kevin Biggie, Roger Fenton, Gael Kennedy, Neil Kranich, Kumar Mani, Shankar Nambi, Anastasia O'Malley, and Peter Zhao.

The Chair discussed the requirements for continued membership and stated that the following members had been moved to guest status due to lack of attendance; Steve Brinkman, Eric Davis, Andre Shor, Hamid Sharifnia, Bill Chiu, Michael Barnes, Wayne Johnson, Mario Locarno, and Eduardo Robles.

The Chair noted that the following guest had been removed from subcommittee rolls by request; Keith Ellis.

### **H.2 Secretary's Report**

The Secretary reported that according to the electronic check-in system, 69 of 114 members were present at the start of the meeting and that a quorum had thus been achieved.

The Fall 2017 subcommittee meeting minutes had been provided to participants in advance of the meeting for review. Phil McClure made a motion to approve the minutes and the motion was seconded by Don Hoffman. Hearing no objections or abstentions, the motion carried by acclamation.

The Spring 2018 subcommittee meeting agenda was provided to participants in advance of the meeting for review and they were also presented on a screen at the meeting. Marcos Ferreira made a motion to approve the agenda and the motion was seconded by Arup Chakraborty. Hearing no objections or abstentions, the motion carried by acclamation.

Consolidation of the final electronic check-in records and written attendance rosters after the meeting indicated that 85 total members and 125 guests were present at the meeting.

Five guests requested membership via the membership roster and all met the membership criterion; Stuart Chambers, Everton De Oliveira, Pugazhenthil Selvaraj, Robert Stinson, and Janusz Szczechowski.

### **H.3 Project Status Reports. The Chair reported the status of each project as follows;**

#### **H.3.1.1 C57.91 IEEE Guide for Loading Mineral-Oil-Immersed Transformers**

C57.91 is valid until 2021. The Working Group Chair is David Wallach.

#### **H.3.1.2 C57.100 IEEE Standard Test Procedure for Thermal Evaluation of Liquid-Immersed Distribution Transformers**

C57.100 is valid until 2021. The Working Group Chair is Roger Wicks.

#### **H.3.1.3 C57.119 IEEE Recommended Practice for Performing Temperature Rise Tests on Oil-Immersed Power Transformers at Loads Beyond Nameplate Ratings**

C57.119 is valid until 2018. The revised document is on the April 26, 2018 RevCom agenda for consideration and approval. The Working Group Chair is Gael Kennedy.

#### **H.3.1.4 C57.154 Design, Testing and Application of Liquid-Immersed Transformers with High-Temperature Insulation**

C57.154 is valid until 2022. The Working Group Chair is Richard Marek.

**H.3.1.5 C57.162 Guide for the Interpretation of Moisture Related Parameters in Dry, Gas Insulated and Liquid Immersed Transformers and Reactors**

C57.162 is a new document. The PAR for creating this document expires December 31, 2020. The working group chair is Thomas Prevost.

**H.3.1.6 C57.165 IEEE Guide for Temperature Measurements for Liquid Immersed Transformers and Reactors**

C57.165 is a new standard and the PAR expires December 31, 2021. The working group Chair is Phil McClure.

**H.3.1.7 1276 Guide for the Application of High Temperature Insulation Materials in Liquid-Immersed Power Transformers**

1276 expires Dec 31, 2018. The PAR for revision of this document also expires December 31, 2016. The working group chair for this document is Roger C. Wicks.

**H.3.1.8 1538 IEEE Guide for Determination of Maximum Winding Temperature Rise in Liquid-Filled Transformer**

1538 guide is valid until 2021. An amendment was approved in September 2015. A task force met at this conference to formulate a PAR for document revision. The working group chair is Donald Platts.

**H.3.2 Working Group and Task Force Reports**

**H.3.2.1 Working Group on C57.162 Guide for the Interpretation of Moisture Related Parameters in Dry, Gas Insulated and Liquid Immersed Transformers and Reactors – Tom Prevost**

Due to the absence of the Chair, the Vice-Chair chaired the WG meeting and reported to the Subcommittee.

The meeting was called to order on Monday 26 March 2018, at 11 am.

Attendance:

Members: 48 out of 90 (quorum).

Guests: 44.

Guests Requesting Membership: 15 (to be verified).

The Vice-Chairman introduced the officers of the working group. The meeting agenda was approved. The Unapproved Minutes of the Fall 2017 meeting in Louisville were approved.

The meeting attendees were informed that a PAR extension request has been granted. The new PAR deadline is December 2020.

The status of the WG document was discussed. There are 10 Task Forces in the WG.

The following five TFs have submitted the first draft of their section to the WG Chair prior to the meeting: TF1 (Terminology and Definitions), TF4 (Moisture in Solids), TF5 (Dielectric Response Methods), TF6 (Inferring of Moisture), and TF8 (Factory Application).

A fruitful discussion on the Scope of TF2 (Moisture in Gases) has been held at the meeting. A confusion of what is included in the scope and what is not has been resolved.

TF3 (Moisture in Liquids) has a new Chair, who was appointed following the last meeting. A separate meeting of TF3 members has been held later on the day.

The position of Chair of TF7 (Evaluation of Ageing) became vacant just a few days before the WG Meeting. However, immediately after the meeting, a volunteer has expressed an interest in becoming a new Chair of this TF.

The Chair of TF9 “Field Application of Knowledge of Moisture” presented a brief report on the draft document of his section to the meeting.

The Chair of TF10 (Moisture Migration and Equilibrium) was absent.

The meeting was adjourned at 11:54 am.

### **H.3.2.2 Working Group for Application of High-Temperature Materials IEEE P-1276 – Roger Wicks**

The meeting opened at 3:18 PM after quorum established with 23 members in attendance. By the end of the meeting, the total attendance was 24 members and 40 guests. 7 of the guests requested membership. The chair will review these requests prior to conducting working group ballot.

Introductions were made. The meeting agenda was reviewed. There was a motion to approve by Sam Sharpless w/ 2<sup>nd</sup> by Mike Shannon. It was approved by the membership with no opposition.

There was a motion to approve the minutes from Louisville meeting by Bruce Forsyth w/ 2<sup>nd</sup> by Tom Golner. There was no opposition to the minutes and they were approved as presented.

The Essential Patents Disclosure slide was presented. No issues were brought up relating to patents.

A Review of the Draft 2.0 document was begun to highlight the changes since the Louisville meeting where the membership approved removal of overlaps with C57.154. It was noted that the document needs to be submitted to REVCON by October 15<sup>th</sup> so balloting process needs to begin.

Sections 4, 5, 6, 7, 8, 9 as well as the additions of Annex A, B and C were reviewed.

Annex A – references to C57.100 for conducting aging

Annex B – extracted from C57.154 to address aging in natural esters as well as aging information from the original IEEE 1276 guide

Annex C – from 1276 but adding dissolved gas analysis for high temperature liquids with references as well to natural esters and silicones

Bibliography – includes references to natural esters. Work needed to add other references from the document prior to working group ballot.

Alan Sbravati questioned removal of Annex D with loading guide information. The Chair said that he did not think it was not appropriate for this group but that there would be additional discussion during that part of the meeting.

Heat run information was moved to C57.154 because it is a requirement and the gasket information is in Clause 6.

There was a discussion of the continuing need for 55 degree temperature rise.

Alan Sbravati had a concern the information being displaced from other standards could cause confusion. The Chair requested that he include those concerns in the ballot comments so that it can be resolved.

Sasha Levin desired more information about distribution transformers. The Chair stated that any suggestions for new information could be provided during balloting.

The Chair stated that section 7.1 is a slight modification from original 1276. The original only addressed power transformers (no distribution) and only mineral oil. The new section was updated to include more current lifetime test requirements

The Chair noted that the loading guide information in section 9 was updated to include more current information based on C57.100.

The Chair stated that there has been a proposal from the natural esters group for a proposed loading guide. This was not included in the current revision, but rather a generic discussion was provided. The chair believes that the expertise to provide more detail best resides in the working group for the revision of IEEE C57.91.

The Chair stated that the last paragraph of P1276 was changed based on comments from the last meeting where a concern was expressed about developing a loading guide based on a formula was too simplistic.

The Chair stated that current PAR was extended to the end of the year to coincide with the expiration of the current document.

The Chair reviewed Annex B. It gives examples of aging testing. He noted that they don't follow the most current C57.100 standard, but they are still good examples.

Joe Foldi and Roger wicks discussed what would be needed to update the data in the guide using the current C57.100.

Alan Sbravati noted that Annex A looks like C57.100. The chair stated that this data was moved from C57.100 because it was more tutorial in nature.

In order to stay on schedule, the Chair proposed a working group ballot with a 15 day response window. He noted that a Ballot Resolution Committee is already established and that they would try to resolve issues by end of April.

Patrick McShane expressed concern that many unilateral changes were made in the current revision. The Chair stated that he had not received much input from the membership, but encouraged members to make comments during ballot resolution as needed. Bruce Forsyth agreed that many changes were unilateral, but felt that the recirculating the ballot for comment and approval would resolve the issue.

Alan Sbravati stated that he would like to see coordination with the other 3 standards. The Chair requested that he comment during ballot so that it can be resolved through BRC.

The Chair summarized the discussion and noted that there were a number of comments as described in the notes of the document review. He stated that these comments should be reaffirmed as issues with proposed solutions during the working group ballot phase.

The chair proposed a ballot consistent with the agreement from the fall 2017 meeting, noting this could happen soon with a 15 day window for voting.

There was a motion to adjourn by Sam Sharpless, 2<sup>nd</sup> by Dave Stankes. The motion passed and the meeting adjourned at 4:34 PM.

In discussions after the meeting it was agreed to wait a week or two to start the ballot so that members and guests can have the time to read the document and the Chair can finalize the draft (finish bibliography, perhaps reformat some of the tables, etc.). A likely start date for the ballot will be the first or second week of April with an end of April completion.

### **H.3.2.3 C57.119 IEEE Recommended Practice for Performing Temperature Rise Tests on Oil-Immersed Power Transformers at Loads Beyond Nameplate Ratings – Gael Kennedy**

The document has been submitted to RevCom. Nothing further to report.

### **H.3.2.4 C57.91 IEEE Guide for Loading Mineral-Oil-Immersed Transformers – David Wallach**

The working group met at 4:45 PM on March 27, 2018. 24 of 52 members were present at the beginning of the meeting with a total attendance of 67.

The minutes of the previous meeting were presented. Bob Tompson made a motion for approval, it was seconded by Terry Martin. There were no objections, but the motion could not be officially approved due to lack of a quorum.

The meeting agenda was presented and reviewed. There were no objections, but the agenda could not be officially approved due to lack of a quorum.

The patent slides were displayed and no patent issues were identified.

The chair noted that the PAR will expire in December of 2021.

There was great deal of discussion and it was agreed to form sub-groups for revising the guide. The proposed subgroups are:

1. Distribution transformer loading. There was suggestion to request data from Phil Hopkinson's group.
2. Synchronization of guidance with C57.12.00 and other guide temperature limits. Don Platts will take the lead. The chair agreed to request an official copy of the IEC 60076-7 overloading guide through the IEEE Standards Office to compare the temperature limits with this guide.
3. C57.91 temperature "in-contact" and "not-in-contact" limits for tables 8 and 9. David Wallach will lead this group with help from Juan Castellano and Michael Saad. Don Platts commented that top oil temperature is defined in C57.12.80. Juan Castellano felt that we have equations in the guide for calculating winding hot spot but none for other metallic parts heating.
4. Condition based risks. Juan Castellano suggested we coordinate with the bushing overload working group.
5. Ancillary Component loading. More guidance is needed to work on enhancements to Clause 9.2.2
6. Fiber Optics to enhance overloading. Peter H, Walia, Gills M and Emilio Morales offered to help

The meeting was adjourned.

### **H.3.2.5 C57.165 IEEE Guide for Temperature Measurements for Liquid Immersed Transformers and Reactors – Phil McClure**

The Chair called the meeting to order at 9:30 am and welcomed the attendees. The Chair also welcomed our newly appointed Vice Chair Robert Thompson and Secretary Mark Tostrud.

The patent slides were displayed and the attendees were asked if any of them were aware of any patents that may be essential to any aspect of the work we will be doing and if so, that they must inform at least one of the officers in order that IEEE may be notified. There were no responses to the inquiry.

The attendees introduced themselves and the attendance rosters were circulated. There were 21 members, no previous guests and 29 new guests attending. Two guests requested membership.

21 of 39 members were present and a quorum was thus achieved

The minutes from the fall 2017 meeting were circulated among the members prior to the meeting and the Chair asked for a motion to approve them. Babanna Suresh made the motion and Gilles Bargone seconded the motion. With no abstentions or objections the minutes were approved unanimously.

There was no old business

New business:

- Reviewed the draft of the guide

- Reviewed and discussed the scope of the document. There were no objections to the scope it was written.
- The Chair disclosed that a purpose statement was written into this first draft, even though the PAR stated that there would not be one. It was stated that the PAR would need to be revised to add the purpose statement and was concluded that the purpose statement was not so important that it merited revising the PAR. The purpose statement will be removed in the next draft.
- It was asked if the definitions section that is included in the draft is needed and the group agreed that it is.
- A recommendation was made to add a definition of indirect measurements to the draft. That will be done, since much of the guide will discuss indirect measurements.
- A member asked if the guide covers temperature measurements in both distribution and power transformers and the Chair answered yes.
- The group discussed hot spots that are not part of the winding. Lead hot spots were of concern and the following comments were made:
  - Leads can be one of the limiting factors
  - Failures have occurred due to lead defects
  - Language should be added to indicate to state that leads and bushings should be rated above the expected current load (overrated). The response from several members and the Chair was that the guide should not specify design factors. There could be language that describes temperature measurement methods that detect temperatures that exceed specifications of the insulation.
  - Other temperature measurements that should be considered and the group made the following suggestions:
    - Tie plate temperature measurements
    - Lead measurements
    - CT temp measurements
    - Tap changer leads
    - Temps due to leakage flux
    - Tap and tie connections
    - Bolted connections
  - Knowledge of all temperatures and hot spots is required for proper DGA interpretation.
  - The types of connections depend on the type of transformer, manufacturer, materials, etc. While the connection type will influence the temperature, this is out of scope for this guide.
  - The guide needs to focus on how to measure temperature and not design aspects.
  - The guide should not specify what type of connection to use, or which type of connection is best for an application, but should provide recommendations for how to measure these types of connections if they exist.
  - Manufacturer representatives present were asked if they typically measure temperatures of leads during test?
    - SW Electric; no
    - GE Prolec (Juan Castellanos); they are measured during a design check
    - Howard Industries (Zan Kiparizoski); Lead temperatures and connections are calculated and measured during the design process
  - As a result, it was concluded that the guide should cover measurements that are made in design and test phases, as well as in operational phases. The guide should not specify that certain measurements should be made, but if they are made it should recommend method(s) of taking measurements.



- Optical sensors were mentioned by Gilles Bargone and he stated that there is a section on optical sensors in Annex A.
- The Chair called for volunteers to author and/or edit temperature measurement sections. The names of the volunteers for various subjects were listed in the minutes of the Working Group.

With no more business and time running out, the Chair asked for a motion to adjourn.

- Gilles Bargone motioned for adjournment
- Juan Castellanos seconded the motion
- There were no objections and the meeting was adjourned.

### **H.3.2.6 Task Force to develop PAR for IEEE 1538 Maximum Winding Temperature Rise in Liquid-Filled Transformers – Don Platts**

An informational meeting held March 27, 2018 in Pittsburgh, PA. Nine members of the Insulation life subcommittee met to discuss the existing document as published in 2000, and the amendment that was approved and published in 2015. Since we need to incorporate the material found in the amendment, we will need to undertake a full revision of the document.

The group discussed and confirmed the need for continuing this guide. It was noted that the portions that discuss the installation of fiberoptic probes do not include any warnings of the problems that can arise with the installation of probes, and the errors in temperature readings that can result. The group also noted that references and definitions in the guide are out of date. They agreed to request that the Insulation Life Subcommittee approve the request to obtain a PAR utilizing the same scope and purpose statements that appear in the present document.

If approved, a PAR request will be submitted and they will be prepared to start a WG at the next meeting in October.

### **H.3.2.7 Task force to develop PAR for revision of C57.100 IEEE Standard Test Procedure for Thermal Evaluation of Liquid-Immersed Distribution Transformers – Roger Wicks**

The Chair called the meeting to order at 9:15 AM and welcomed attendees to this first meeting of the task force. The Chair noted members of the previous Working Group on C57.100 have been added as guests on the rosters. Since this was the first meeting, there was no quorum call. However, the PAR and the document was discussed to gain consensus of the attendees at the meeting.

The Chair provided information related to the Patent disclosures.

The Chair reviewed the proposed meeting agenda, which was focused on developing a title, scope and purpose for the PAR to revise C57.100.

There were 69 total attendees at the meeting, of whom 17 requested membership, bringing the total number of members (once the working group is formed) to 18 (including the task force chair).

The current title was presented for review along with a version with a proposed minor modification to be: “IEEE Standard Test Procedure for the Thermal Evaluation of Insulation

Systems for Liquid-Immersed Distribution, Power and Regulating Transformers” and the Chair invited comments related to recommended changes. A question was raised regarding why the documents does not cover all liquid-immersed equipment. The Chair noted this would be a part of future discussion.

After some discussion, the Chair polled the group and the consensus was to use the modified title.

The Chair presented the current scope with updates to reflect the modified title.

The Chair briefly overviewed key sections of the current document specifically related to Power and Distribution transformers. Sasha Levin and Jin Sim provided input related to the similarity of insulation systems between regulating transformers and the power and distribution transformers. In specific, Sasha suggested we could survey producers of such equipment and verify if the ratio of materials were consistent with the other applications, and if so, that the tests could be used as written. Here is the revised scope based on the revised title:

“This standard applies to the insulation systems used in all liquid-immersed distribution, power and regulating transformers. This standard provides test procedures to evaluate the thermal aging characteristics of insulation systems used in liquid-immersed distribution, power or regulating transformers. The dielectric liquid is part of the insulation system.”

There was consensus that the scope as written was acceptable.

The Chair presented the current purpose and opened the floor to comments. A question was asked whether anyone uses the document for item a), which is to provide a basis for the selection of a limiting hottest-spot temperature for rating purposes.

There was a lengthy discussion regarding whether the purpose is to establish solid insulation or oil temperature limits. Certain challenges related to establishing oil temperature limits were identified and one member suggested oil temperature limits should be established by other groups. Various wording proposals were discussed.

After a lengthy discussion, the Chair polled the group for preferences of the various versions that had been discussed to replace the existing item a), as well as to modify item b) with the disclaimer that the life curves derived from the C57.100 test procedure are theoretical. The version with most support was as follows:

The objective of this test procedure is to establish uniform methods for investigating the effects of operating temperature on the life expectancy of liquid-immersed transformer insulation systems. The results of these test procedures are expected to;

- a) Provide the basis for the selection of material temperature limits for rating purposes
- b) Provide theoretical life curves that may serve as the basis for a guide for loading
- c) Permit the comparative evaluation of a proposed insulation system with reference to an industry proven system that has been shown to be acceptable in service

In the time remaining, the Chair presented several proposals for items that the future Working Group may want to consider for revision. Some of those items are as follows:

- Modify test methods to add regulating transformers if included in the scope of the revised document.
- Consider additional testing information regarding areas of omission from past document:
  - Enamel coated wire evaluation technique
  - Diamond dotted coated paper evaluation technique
  - Discussion on what testing would be required if have approval for one type of transformer (distribution or power) and need to qualify for other – full evaluation or some reduced testing requirement.
  - Better define the scope of minor changes requiring single point testing. Current document describes minor changes to industry proven system – also need method for minor changes to new systems.

Additional suggestion presented by attendees included:

- Look at the definition of industry proven system (does it need to be 180,000 hours or not)?
- Do we need to incorporate discussion on the pressure within the materials test methods (such as do we specify using pressure relief valves at what pressure)?
- It was also noted that there is a CIGRE working group studying aspects of insulation that may provide useful information to the revision of this document.

The meeting adjourned at 10:45 AM

### **H.3.2.8 Task force to develop PAR for revision of C57.154 Design, Testing and Application of Liquid-Immersed Transformers with High-Temperature Insulation – Richard Marek**

The meeting was called to order at 4:45PM by Chair Richard Marek. Vice-Chair Anastasia O'Malley and Secretary Ewald Schweiger were also present. The Chair stated that since this is the first meeting of the TF, anyone requesting membership on the initial roster will be accepted as a WG Member. 42 of the total 90 attendees on the paper roster requested membership. 91 attendees signed in on the RFID attendance system.

Introductions of the Chair, Vice Chair, and Secretary were made. Attendees were asked to introduce themselves and indicate their affiliations when making comments or asking questions.

The Chair stated that the main purpose of the TF was to define the scope and purpose so that a PAR could be submitted. He gave a brief history of the standard, noting that there is a parallel IEC standard. The standard was published in 2012 and a revision is due by the end of 2022.

The chair presented a proposed document scope as follows; “This standard applies to all liquid-immersed distribution, power, and regulating transformers that are designed to operate at temperatures that exceed the normal thermal limits of IEEE Std C57.12.00 under continuous load, in the designed average ambient, and at rated conditions.” Initially a suggestion was made to add reactors to the scope, but it was decided that the document could be used for a reactor even if they were not specifically included in the scope. After some discussion, the following scope was agreed upon; “This standard applies to all liquid-immersed transformers that are designed to operate at a temperature rise that exceeds the limits of IEEE Standard C57.12.00 under continuous load, in the designed average ambient, and at rated conditions.”

The chair presented the proposed document purpose as follows; “This standard provides specific requirements and guidance in the design, testing, and application of the transformers covered within its scope. These transformers incorporate high-temperature insulation systems or systems that use a combination of high-temperature and conventional insulation.” After some discussion, the following purposed was agreed upon; “This standard provides specific requirements for transformers which incorporate high-temperature insulation systems or systems that use a combination of high-temperature and conventional insulation.”

The proposed title for the standard was as follows; “IEEE Standard for the Design, Testing, and Application of Liquid-Immersed Distribution, Power, and Regulating Transformers Using High-Temperature Insulation Systems and Operating at Elevated Temperatures.” The chair suggested that this title may be too long and the group agreed. The following new title was agreed upon: “IEEE Standard for Liquid-Immersed Transformers Designed to Operate at Temperatures Above Conventional Limits Using High-Temperature Insulation Systems”.

The chair briefly reviewed the current version. He noted that the original document was heavily criticized for having too much tutorial content and suggested that such material should be moved to the IEEE 1276 guide currently under revision. The chair stated that the document will be made available to the members and he requested comments and suggestions for revision before the next meeting.

The meeting was adjourned at 6:00PM

#### **H.4 Old Business**

There was no old business

#### **H.5 New Business**

Following Don Platts’ presentation regarding the IEEE 1538 Task Force, David Wallach made a motion that a PAR be submitted for this document as presented to the subcommittee. Claude Beauchemin seconded the motion and it passed by acclamation.

Following Roger Wicks’ presentation regarding the C57.100 Task Force, Sanjib Som made a motion that a PAR be submitted for this document as presented to the subcommittee. Robert Thompson seconded the motion. After an extended discussion, the motion carried by acclamation.

Following Richard Marek’s presentation regarding the C57.154 Task Force, there was a discussion about proceeding with a PAR. Alan Sbravati spoke against moving tutorial information out of the standard. Marek stated that these issues could be resolved during development of the standard. Don Platts made a motion that a PAR be submitted for revision of this document as presented to the subcommittee. Susan McNelly seconded the motion and it passed by acclamation.

It was announced that Sam Sharpless would be resigning as secretary of the subcommittee following the meeting. Jinesh Malde will take over as secretary at the next meeting.

**H.6 Adjournment**

With all business completed, the Chair called for a motion to adjourn. Rogerio Verdolin moved for adjournment and the motion was seconded by Marcos Ferreira. The meeting was adjourned at 8:53 AM.

Respectfully submitted,

Samuel L. Sharpless  
Secretary, Insulation Life Subcommittee