7.6 POWER TRANSFORMERS – TOM LUNDQUIST, CHAIRMAN

The Power Transformers Subcommittee met on Wednesday, April 22, 2009 at 1:30 p.m. with attendance of 157; comprised of 65 members and 92 guests.

The minutes from the Fall 2008 meeting in Porto, Portugal were approved with no changes.

The chairman asked if anyone was aware of any patent conflicts, none were voiced.

7.6.1 WORKING GROUP AND TASK FORCE REPORTS

7.6.1.1 TASK FORCE FOR REVISION OF C57.17, REQUIREMENTS FOR ARC FURNACE TRANSFORMERS – Dominico Corsi, Chairman

No meeting held. The document was sent to the editor for comments. Any needed changes will be made and then it will be sent out for ballot.

7.6.1.2 WORKING GROUP FOR DEVELOPMENT OF PC57.143, GUIDE FOR APPLICATION OF MONITORING TO LIQUID IMMERSED TRANSFORMERS AND COMPONENTS – Donald Chu and Andre Lux, Co-Chairmen

Meeting started shortly after 8 AM. There were a total of 98 attendees, 42 members and 56 guests.

Status update presented:

Ballot pool has been established.
Document is presently out for ballot with ballot closing May 14.

The document that was circulated for ballot was Draft 20 as it existed at our last working group meeting. Since that time, one section had been rewritten by a group of 4 members working collaboratively to resolve issues in the section. This revised section should have been inserted to replace the content in Draft 20 prior to balloting. Since it was not, the new section will be emailed to the working group this week and it will be merged into the document for the first re-balloting round.

Eight (8) volunteers signed up to assist by participating as part of the ballot resolution group. Their efforts will commence after the ballot closure of May 14.

Meeting adjourned at 8:40 AM.

7.6.1.3 WORKING GROUP FOR DEVELOPMENT OF PC57.148, STANDARD FOR CONTROL CABINETS FOR TRANSFORMERS – Joe Watson, Chairman

The working group met at 11:00 a.m. on Monday, April 20, 2009 with 31 in attendance. There were 18 members and 15 guests in attendance. Four of the guests requested membership.

Rosters were circulated, and copies of Draft 6d were handed out.

The current status of the document was discussed and it was noted that the PAR expires in December 2009.

Draft 6d was then reviewed.

Section 5, Cabinet Construction, was discussed. It was mentioned that it may be difficult to meet the 5 mils thickness with powder coating, and the group decided to check into what would be a reasonable minimum thickness. Also, it was pointed out that the Standard may need to indicate what type of stainless steel should be provided when the cabinet is stainless. Also, someone asked if a plastic box could be an option. Next, someone pointed out that the side of the cabinet could use other types of device mounting than a raised panel.

In Section 5.3, a question was raised concerning exposed terminals. The 120 volts was questioned, and several reference standards were brought up, including NFPA 70E and IEEE 1584. The voltage limit and whether the section should apply to the entire cabinet or just the swing panel will be examined further.

The word “sturdy” in Section 5.4 was discussed. In Section 5.6, the conduit plate was discussed, and the group felt that mild steel should be an option. In further discussion, the group agreed that the plate should be made of the same material as the control box.

Rain shedding was discussed in Section 5.7. Some members expressed concern about the requirement for options that may simply add cost, and not value.

Next, Section 5.11 on grounding was discussed. A member stated that there cannot be paint between the ground cable and the ground, and that this needs to be stated in the Standard. Also the size of the bus was discussed, as well as the use of braided cable over a solid conductor.

In Section 5.12, a concern was raised over making the light and GFI outlet standard due to cost. Also, the type of light should be optional.

Further discussion centered around the wiring in Section 5.13. It was agreed that the color of the control wire did not matter, as long as the grounding wire is green. SIS wire was discussed, as well as a few other wire types, as well as minimum wire sizes.

In Section 5.14, time delay relays were discussed, and it was agreed that the word “adjustable” would be stricken. Also, it was agreed that the time delay relay should

work even if it is de-energized. In Section 5.15, “molded case” was stricken in the description of the contactors.

In Section 6, it was agreed that a team should be assigned to the numbering and labeling schemes.

In Section 7, 125 Vac should be 120 Vac, and 120 Vdc should be 125 Vdc.

Before the meeting was adjourned, several teams were formed to work on specific items in the Standard:

Grounding: Gary Hoffman, David Wallach, and Jean-Philippe Gagnon
Wiring: Saurabh Ghosh, Catherine Hurley, and Phil Swan
Cabinet Construction: Donald Ayers, William Darovny, and James Fairris

The meeting was adjourned at 12:15 pm.

7.6.1.4 **WORKING GROUP FOR DEVELOPMENT OF PC57.131, STANDARD REQUIREMENTS FOR TAP CHANGERS - William Henning, Chairman**

The Working Group on Tap Changer Performance met on Monday, April 20, 2009 at 1:45 pm with 14 members and 27 guests present.

The working group chairman asked if anyone in the room had information on patents that may be essential for the implementation of C57.131, *Standard Requirements for Tap Changers.* It was noted that no one present at the meeting expressed knowledge of essential patents.

The working group chairman asked if there were any additions or corrections to the meeting minutes of October 6, 2008. There being no corrections, the minutes were approved.

The working group chairman gave a report on the status of PC57.131/D1.4. Draft 1.3 had been submitted for editorial review. The review indicated 23 changes required to the document to meet the style manual. Draft 1.4 incorporates those changes. An invitation to ballot was initiated, to close on May 16. The chairman will meet with Matt Ceglia regarding the next steps.

Under unfinished business, the working group debated a motion, made by Phil Hopkinson, to insert a clause in 7.2 of C57.131, which would require and define a functional life test for de-energized tap changers. The motion was seconded by Tom Lundquist. Five members, who could not attend the meeting, submitted written comments ahead of time. These were read by the chairman.

Out of the ensuing debate emerged a new proposal, summarized in three points:

1. The Task Force on Functional Life Test for De-energized Tap Changers will go back and prepare written text, specifying the requirements and test procedure in more detail, to be evaluated by the working group for inclusion in the next revision of C57.131.
2. The Working Group on Tap Changer Performance will proceed with its IEEE ballot, already in the pre-ballot stage, of Draft 1.4, which does not contain the Functional Life Test for De-energized Tap Changers.
3. Negative votes because the Functional Life Test is *not* included may arise. The attempt to resolve any negative votes on the account will be to offer that the proposal will be included in the next revision of C57.131.

The original motion was withdrawn, and a new motion, consisting of the above three points, was made and seconded. The results of a ballot among all present was:

INFORMAL BALLOT RESULTS

A. 13 for
B. 10 against
C. 7 abstain
D. 11 not voting

The motion was adopted by a margin of three votes. The Task Force on Functional Life Tests for De-energized Tap Changers and the Working Group on Tap Changer Performance, C57.131, will proceed as outlined above.

That concluded unfinished business. There being no new business, the meeting was adjourned at 3:02 pm.

7.6.1.5 WORKING GROUP FOR DEVELOPMENT OF PC57.150, GUIDE FOR THE TRANSPORTATION OF TRANSFORMERS AND REACTORS RATED 10,000 KVA OR LARGER –Greg Anderson, Chairman

Greg Anderson, Chair of the Working Group for Transportation Issues Guide, PC57.150, called the meeting to order at 3:17 pm. Also present was the Vice-Chair Ewald Schweiger, and Secretary Susan McNelly.

There were 17 of 25 members present with 52 guests and 10 guests requesting membership. Working group members will only be added to the Guide as "Participants" when they contribute to the document. The following requested membership and those marked with an asterisk will be elevated to member status.

Dick Amos *	Enrique Betancourt*
Dan Blaydon *	Jefferson Foley *
Alexander Kraetge *	Gary Martin
Lewis Powell *	Pat Pries *
Kirk Robbins *	Joe Watson *

Agenda:

1. Introductions/Roll Call
2. Patent Issues
3. Approval of Fall 2008 Minutes
4. Additional Content Still Needed
5. Review of Contributor List
6. Adjourn
7.

Member Roll Call and Introduction of Attendees was done. Seventeen of the present 25 members were present, therefore a quorum was achieved. The IEEE Patent disclosure requirements were discussed and a request was made for disclosure of any patents that may be related to the work of the WG. There were no responses to the request for disclosure. Approval of minutes from the Fall 2008 Meeting in Portugal was requested. A motion was made and seconded. The motion was approved.

Greg summarized the goal and purpose of the Guide.

The PAR for this WG will expired at the end of last year. A two-year extension was received, therefore the new PAR will expire the end of 2010.

Items that are still missing are identified below. Volunteers names are shown in parenthesis behind each item:

2.0 and 3.0 References and Definitions: **Pete Balma, Dick Amos**

4.0 & 5.0 Request for Quotation, Specification, Design: **Dave Wallach, Catherine Hurley**

6.0 & 7.0 Shipping Preparation (main tank and accessories), Impact Recorders. etc.: **Kipp Yule, Catherine Hurley, Ewald Schweiger**

8.3 Shipping by Barge and Ocean Vessel: **Joe Watson, Kipp Yule**

8.4 Shipping by Rail: **Catherine Hurley, Les Recksiedler, JoeWatson**

8.5 Shipping, Trucking, Rigging & Crane: **Dick Amos, James Gardner**

8.6 Shipping, Air Cargo: **Ewald Schweiger, James Gardner**

8.7 Shipping, Dielectric Fluid: **David Sundin (volunteered in abstentia), Kipp Yule**

9.0, 9.1-9.4 Planning, Heavy Haul Situations, Selection of Equipment: **Catherine Hurley, Dave Wallach, Mike Lau, Joe Watson**

9.0 & 9.5 Planning, Route Inspections and Verification: **Catherine Hurley, Dave Wallach, Mike Lau, Joe Watson**

9.6, 9.7, & 9.9 Safety & Environment Laws, Permits, Insurance: **Jane Verner**

9.8 Transformer Design (needs new name?): **Bill Darovny, Pat Pries, Enrique Betancourt**

10.0 – 10.6 Heavy Haul Transportation, Loading/Off-loading, Securing Load (should maybe be combined with 9.0 or streamlined to remove redundant material): **Catherine Hurley, Dave Wallach, Mike Lau, Joe Watson**

11.0- 11.6 Arrival Inspection, Check-lists (perhaps put checklist in Annex to be printed out as a separate document: **Dan Blaydon, Sue McNelly, Bill Darovny, Mike Lau**

11.7 Electrical Receipt Acceptance Tests, SFRA: **Alex Kraetge, Jeff Foley, Kirk Robbins**

Comments and corrections should be submitted to Sue McNelly by mid August.

Greg Anderson and Jerry D. Allen will look into getting information on the old Westinghouse book on transportation issues. Jane Verner indicated she would send Earl Luke's contact information

A comment was made that galvanizing and sea water do not mix well, this is more critical with new galvanized radiators being used.

There was a suggestion to add some acceptance criteria for impact recorders.

There were general discussions on recent experiences damages seen on ocean shipments and on the use of impact recorders.

Meeting was adjourned at 4:30 pm.

7.6.1.6 TASK FORCE FOR FUNCTIONAL LIFE TESTS OF DE-ENERGIZED TAP CHANGERS – Phil Hopkinson, Chairman

The Task Force on Life Tests, De-energized Tap Changers was called to order at 9:30 AM on April 21, 2009. There were 42 attendees, 16 members, and 28 guests with 8 requesting membership. Reviewed the Agenda for the meeting, and the Minutes from the October 7, 2008, meeting in Porto, Portugal, were approved.

1. Described conditions for alternative test for higher current and lower oil temperatures.

2. Challenged group to duplicate the model contained in spreadsheet titled "Kraemer Analysis"

3. Need to specify other parameters that give complete definition to the test.

4. The Task Force test was balloted at the C57.131 meeting on Monday and passed narrowly (13 for and 10 against) such that there is support to add the test to a future version of C57.131. A straw vote was held by the Task Force on the same issue and showed a much more favorable position with 19 in favor, 6 opposed.

5. Cooper Power Systems has conducted testing that supports the findings of stability/non-stability @ 130ºC.

6. New Business

There was no new business.

The meeting adjourned at 10:40 AM.

7.6.1.7 WORKING GROUP FOR REVISION OF C57.135, GUIDE FOR THE APPLICATION, SPECIFICATION AND TESTING OF PHASE-SHIFTING TRANSFORMERS – Jin Sim, Chairman

The WG for revision of the Phase Shifting Transformer Guide, C57.135, met Tuesday at 11:00 with 14 members and 7 guests. The IEEE Patent Policy was discussed with no conflicts noted. The minutes from the fall '08 meeting in Porto were approved with no changes.

The Chair opened the meeting with a discussion of the plans and schedule for this Guide. This meeting was the last regular meeting to introduce any new topics or materials. All changes up to and including the ones in this meeting will be incorporated into a Draft 4 which will be posted on the Transformers Committee website then submitted to the Standards Association for IEEE review and balloting.

The majority of the meeting involved review of the changes made in Draft 3 and suggested changes for the next revision received from Deitrich Bonmann and distributed to the WG a few weeks before the meeting. The final resolutions of those suggested changes are as follows:

- Section 4.5.1: The sentence on page 19 …"The user's electric power system requirements and the manufacturer's preference generally determine the design." Was changed to…" The user's electric power system requirements and the user's or manufacturer's preference generally determine the design."
- Section 4.5.1: The list of factors in determining the type of PST to use for an application was divided into two sections with four subsections and a new first section was added as follows:

  Technical restraints limiting the choice of PST solutions

  Performance factors
  1. The power rating and phase-shift angle requirements
  2. The voltage and voltage regulation
  3. The connected system's short-circuit capability

  Design factors

  1. Type of construction (core form or shell form)
  2. Layer or disc winding design
  3. Shipping limitations
  4. Load tap changer (LTC) performance specification

- Section 4.5.1: The existing list of factors in determining the type of PST to use, from Draft 3, was kept as the second section, with the following section header added:

  Items for the comparison of risks and total costs of different PST solutions

- Section 4.5.2: The following text had been deleted from Draft 3, but was re-installed in this section:

  Voltage per tap and current are determined by the phase angle requirement and rating of the PST and cannot be adjusted to obtain optimum switching conditions. If one of these parameters exceeds its limit, the solution would not be possible although the required switching capability may still be given.

- Section 4.5.2: The following text was added to the beginning of the second paragraph after discussions of possible alternate designs:

  For the configurations shown for single core designs in this guide,

- Section 4.7.2: The following was added to the end of this section:

  When a tap change is performed for two PSTs connected in parallel, they may operate on different taps for the short time until both tap changers have completed their motion. The voltage difference of one tap will drive a circulating current through the two PSTs, which is limited by the sum of the PSTs impedances only. The tap changers have to have sufficient margin for switching the load current superposed with the circulating current. Single core PSTs as described in 4.5.2 cannot be operated in parallel with other single core PSTs or some duel core PSTs, unless reactors are inserted to limit the circulating current. In general, paralleling PSTs without considerations at time of design could lead to significant circulating currents and limitation on the LTC operations.

- Section 5.4.1: A brief definition of “buried CT’s” was added as “all CT’s other than bushing CT’s” and the following sentence was added to this section:

  All buried CTs should be equipped with compensating windings in order to avoid false signals due to magnetic stray fields caused by the windings or internal connections during external faults or during inrush.

- Section 7.1: This section covers throat connections and the need for the throat to be designed to withstand vacuum processing. It was expanded with the following text added to the existing section to clarify the requirements:

  …such that oil filling of the tanks can be carried out independently (i.e. pulling full vacuum on one tank while the throat and other tank are filled with oil).

- A new Section 12.2.3 was inserted into Section 12, the Bid Document Check List as follows:

12.2.3 Parallel operation of two or more PST's

The buyer should state in the bid documents if they intend to operate the PST in series or in parallel with any existing or sister units.

The meeting adjourned at 12:15.

7.6.1.8 WORKING GROUP FOR REVISION OF C57.12.10, STANDARD REQUIREMENTS FOR LIQUID IMMERSED POWER TRANSFORMERS - Javier Arteaga, Chairman

1. Javier Arteaga opened the meeting announcing the PAR has been extended until December 31, 2009 and the ballot group has been formed. Javier then announced that he was resigning as Chairman of the Working Group.

2. Tom Lundquist solicited volunteers for Chairman and Gary Hoffman volunteered to be Chairman, Saurabh Ghosh volunteered to be Vice Chair and Jim Graham volunteered to be Secretary.

7.6.1.9 WORKING GROUP FOR THE REVISION OF IEEE STD 638-1992, IEEE STANDARD FOR QUALIFICATION OF CLASS 1E TRANSFORMERS FOR NUCLEAR POWER GENERATING STATIONS – Craig Swinderman, Chairman

Date: Tuesday, April 21, 2009 – 1:45 pm to 3:00 pm.

Attendees: 2 members + 6 guests, one guest requested membership.

The meeting began at 1:45 pm.

The meeting minutes from October 2008 meeting were approved.

The IEEE patent policy slides were shown. An opportunity was provided for the attendees to identify or disclose patents that may be essential for the use of the standard. No responses were given by the attendees of the meeting.

Topics discussed:
The latest version of the P638 document is now Draft #3. This latest draft was reviewed during the meeting. This draft #3 of the document will be posted to the transformers committee website shortly. The majority of the document is nearly complete, but a few remaining items need to be addressed.

During the review of the information contained in the updated Annex A of the draft document that describe the thermal aging procedures and calculations, it has been discovered that some of the figures and graphs included in the annex, which are

updated figures pulled from another referenced standard C57.96-1999, are actually incorrect. One figure is the curve on relative life expectancy as a function of hottest spot temperature, in which case the curves are plotted incorrectly. Additionally, during the meeting, one of the members pointed out that the equations shown on the additional figures containing the logarithmic graphs of "life expectancy curve – base 10", have incorrect coefficients in the formulas, as it appears that the decimal points might be in the wrong place. A working group member has volunteered to help correct these figures in our document. We will try and obtain the original formulas for the curves and have the curves re-plotted correctly. This work will be completed prior to this June.

During our last working group meeting in October 2008, a new section was added to the document to address concerns raised during the re-affirmation ballot regarding transformers subjected to non-sinusoidal loads, referencing C57.110. We again reviewed this new section during the working group meeting, and some members questioned whether this really applied to class 1E applications, as this standard applies to a very specific transformer application, and these applications may not necessarily be subject to non-sinusoidal loads in service. We are now preparing a survey to send to additional users for more information on the validity of the non-sinusoidal load concerns for this particular application. We hope to have the results of this survey back by this June.

On and editorial note, there are some standards in the normative reference list of the existing document that are not referenced in the body of the document. These references will be moved to the bibliography at the end of the document.

The current planned schedule for the working group is to have draft #4 of the document completed by this June 2009. We will then send the document out for a straw vote in early 2009, and then submit the document for the Mandatory Editorial Review and hope to start balloting around the time of our next meeting in October 2009.

The meeting adjourned at 3:00 pm.

7.6.1.10 WORKING GROUP FOR DEVELOPMENT OF PC57.153, GUIDE FOR PARALLELING TRANSFOREMRS – Tom Jauch, Chairman

Attendance included: 14 members, 31 guests with 5 requesting membership

- Minutes of the previous meeting were approved – no patent issues were found
- The need for better participation by working group members was discussed. To improve communication within the working group and to expedite the development of the guide, a commitment was made by the officers to circulate the guide every 4-6 weeks.
- The volunteers from previous meetings were presented to remind everyone of the commitments they made.
- Volunteer changes and additions received during the meeting:

    - Reasons for paralleling - Jennifer Yu – Pacific Gas & Electric -
    - Power Factor Method – Until the determination of a proposed new "combination" paralleling method by Dr. Karsten Viereck – Reinhausen, Jim Harlow – Harlow Engineering to postpone his work on the Power Factor Method.
    - Master Follower with odd/even cam switches – Daniel Blaydon – Baltimore Gas & Electric – will look through his company archives for Westinghouse and GE manuals that discuss this method.
- Proposal was made to add a "combination" paralleling method. The working group will discuss this proposal at the next meeting. Comments included a question for the necessity of the "new" method. It was suggested that it was a subset of the Power Factor Method and that creating a separate method for it was not required.
- Benefits and limitations of each method should be addressed when discussing the paralleling method.
- The guide should address the location of the LTC's.
- Sanjib Som – Virginia Transformer led the discussion on a list of questions and concerns that manufacturers have when transformers are being paralleled. There was debate on which of these items should be covered by the guide. Presently the PAR for the working group focuses on control methods for paralleling.
- An invitation was made for everyone to attend transformer paralleling tutorial on Tuesday.
- Meeting was adjourned at 4:30pm.

7.6.1.11 TASK FORCE FOR TRANSFORMER TANK RUPTURE AND MITIGATION – Peter Zhao, Chairman

Meeting of the Task Force for Tank Rupture & Mitigation convened Tuesday morning at 8:00am. Chairman Peter Zhao presided.

Knowledge of patent concerns was requested, with none cited.

Attendance was 44 (14 members, 30 guests).

The status of the White Paper that this task force has been working on was reported by Terry Lee. The White Paper, which was originally submitted for approval in early February, 2008, was well received by reviewers - but required various revisions before approval. Approval was received March 2009, with expectation of inclusion in next publication of IEEE Transactions – Power Delivery.

The chairman announced that the paper is to be presented at the July 26, 2009 IEEE PES general meeting in Calgary, and requested volunteers from among the writers to do the presentation. With no immediate response to the request, the chairman requested that any interested party contact him after the meeting.

The chairman confirmed that with the publication of the white paper, the work of the Task Force is essentially complete, and called for discussion of the question of whether a PAR should be issued for development of an Application Guide. As a result of the discussion, the question was tabled until the fall '09 meeting, to allow members to become familiar with the final version of the white paper – which will be issued to members only.

The meeting proceeded with discussion of scope of an Application Guide, so that work can proceed under the assumption that a PAR is to be presented. Areas of work for which volunteers are needed were discussed with following assignments confirmed:

1. General introduction: Terry Lee, Devki N Sharma, Patrick McShane, Harold Moore, and Peter Zhao
2. Transformer tank construction: Bill Darovny, Mike Lau, Dan Perco, Raj Ahuja.
3. Pressure Relief Device: Josh Hertz, Guillaume Perigaud.
4. User Specifications: Dennis Marlowe, Dan Perco, Jim Zhang, Bill Darovny, Patrick McShane, Harold Moore, and Peter Zhao
5. Acceptance Evaluation: Dan Perco, Arnold Carlos.

Underlined names are leaders of each team.

The chairman informed volunteers that work of each team is due to him by the end of the first week of September (2009), in order to allow review at the fall '09 meeting.

Craig Swinderman presented an informative summary of "Industry Standards and Recommendations on Transformer Tanks" including excerpts from IEC 60076-1 (tank testing) and CIGRE Brochure 156 (Guide for Specifications for Transformers).

The meeting was adjourned at 9:15am.

7.6.1.12 TASK FORCE FOR EVALUATING THE NEEDS OF TRANSFORMERS USED WITH SVC – Peter Zhao, Chairman

No meeting. An investigation report was completed and submitted last year. Based on the report, subsequent work is in process to produce and IEEE technical paper on the subject.

7.6.1.13 TASK FORCE FOR DVP-GRID TRANSFORMERS – Hemchandra Shertukde, Chairman

The first meeting of the task force was held in Concerto C/D on Monday April 20, 2009 at 8:00 am.

5 members and 18 guests attended the meeting for a total of 23.

Mr. C. J. Kalra served as the shoe-in secretary for this meeting. The meeting started with introduction of participants.

The IEEE Patent Disclosure issue was brought forth to the attention of all attendees.

In the absence of any the previously circulated Task Force Assignment was illustrated to the participants. Attention was drawn also to the IEEE Std 929-2000 shared by Amitav Mukerji of ABB, Cary, NC. At the suggestion of several participants including: Tom Lundquist, Bill Chu, Sanjib Som, Mathieu Sauzay, Donald Ayers, Charles Williams; issues regarding the direction in which the TF should proceed were discussed. After a lengthy discussion it was decided to start focusing on the real issues faced by DPV – Grid Transformers related to:

1) Islanding
2) Voltage Flicker
3) Voltage Operating range
4) Frequency variation
5) Waveform Distortion
6) Power factor variation
7) Safety and Protection functions

Related Standards besides the above like IEEE 519 and others were brought to the notice of the participants. It was decided to create a matrix which shows the information already available in existing IEEE standards that address the above (1) – (8) topics and assess the existing gap in this information and seek help from participants and interested experts to share the load in contributing to these tasks and important chores specifically: Bill Chu, Sanjib Som, Mathieu Sauzay, Donald Ayers, and Charles Williams. Several of the above mentioned participants have agreed to help out in addressing these issues and formulating the future direction the TF should take going forward in satisfying the charge placed in front of the TF by the SC – Power Transformers in Oporto, Portugal in October of 2008. The Chair will issue future notifications to these members/guests in preparation of the next meeting in Chicago.

There being no further business, the meeting was adjourned at 9:15 am.

7.6.2 OLD BUSINESS

No old business.

7.6.3 NEW BUSINESS

1. The following documents are up for balloting in the near future. The following members have volunteered to review the documents and determine if they need revisions or can be submitted on a re-approval ballot.

   C57.16 – Tim Raymond

   C57.125 – Wally Bender

   C57.117 – Wally Bender

   C57.140 – Joe Watson

2. A motion was made to form a task force to develop a standard or guide for GSU transformers for alternative applications, especially with smaller units.

3. A motion was made requesting that the TC start collecting generic data and begin building a database to log data on power transformer failures.

7.6.4 STATUS OF "INACTIVE" GROUPS

WORKING GROUP FOR THE REVISION OF C57.93, INSTALLATION OF LIQUID-FILLED TRANSFORMERS - Michael Lau, Chairman

This group is not meeting; major work on this document is complete; waiting for publishing.

TASK FORCE FOR WIND FARM TRANSFORMERS – Joe Watson, Chairman

Work of this group is complete; the task force is inactive.