

**Meeting Minutes**  
**Working Group on PCS Revisions to C57.12.90**  
November 2, 2015, 11:15am-12:30pm  
Grand Ballroom C, The Peabody, Memphis, Tennessee  
Mark Perkins, Chairman; Craig Stiegemeier, Secretary

1. Introduction of members and guests
  - Mark Perkins presided over the meeting as Chair. Craig Stiegemeier was secretary. Attendance rosters were circulated for those in attendance to record their presence and confirm their membership or guest status.
  - Due to the highly anticipated “Duck Walk” and the delayed start time, the introduction of members and guests was suspended.
2. Attendance
  - A review of the adjusted membership was conducted and 38 of the 50 WG members were in attendance. This resulted in attendance of 76% of the membership, making this meeting “official” as a quorum was reached. In addition, 88 guests were present and 17 of those guests requested membership. Consult the AMS system for the full attendance roster.
3. Agenda approval
  - Dan Sauer made a motion to approve the agenda and Joe Melanson seconded the motion. All approved the agenda. Later in the meeting, a correction was made noting that the spring meeting was held in San Antonio.
4. Minutes of the Spring 2015 meeting
  - A review of the Spring 2015 San Antonio minutes was conducted by the chair. Dan Sauer made a motion, and it was seconded by David Murray to approve the spring minutes as written. Minutes were approved by the membership unanimously.
5. Old Business
  - A survey was conducted with the recommendation of changes to standard C57.12.90 section 9.3.1. The survey was sent to the all members and guests of the WG and Performance Characteristics Subcommittee on October 22. As of October 31, there were 75 returns, with 60 approvals, 8 approved with comments, and 7 disapproved. To aid in a time-effective review, the chair consolidated the returned disapprovals and approvals with comments into 7 grouped discussion points:
    1. A bushing CT may not meet the accuracy requirement. After considerable discussion regarding the accuracy of bushing CTs and need for calibration, it was agreed to remove the words “bushing CT” in both the text and the figure 18. Bertrand Poulin made motion, Joe Melanson seconded and the motion passed with no objections.
    2. Capacitor loss (0.2 W per KVAR) is not understood and should be measured in all cases. There was discussion regarding the correction of the measured losses for losses in the capacitor bank. Because the proposed wording allows using the measured loss or a conservative alternative that would guarantee that the reported losses are no higher than the actual losses, it was agreed to leave the wording as in the survey.
    3. This method is more complicated and will be less accurate than traditional method. The chair noted that this method was discussed in the working group, and that this

method is equally acceptable to meet the requirement of the standard. Everything must be appropriately calibrated. There was not disagreement with that statement.

4. We need to include Figure 19 for 3 phase case. The group concluded that there is sufficient explanation in the present section 9.3 for the three phase case and no additional figures are needed.
5. Setting Capacitors close to Transformer in Test Lab is bad Practice. This is a basic safety requirement. No one in the room believed that a change was required.
6. Modern Power Analyzers are most accurate at 90° Phase angle and the Error increases as the angle decreases. Bertrand noted that this is true for a bridge, but not a power analyzer. Dan Sauer noted that at 90 degree phase angle, the loss is zero.
7. This should be in C57.152 not in C57.12.90 if it is for field use. The chair suggested that this is used in some factories, and not only in the field.

After the completion of the discussion, Dan Sauer motioned and Joe Melanson seconded that that the chair would send a response to those who voted disapprove or approve with comments regarding the working group response and that changes to section 9.3.1 as surveyed and amended by removing references to bushing CTs be forwarded to the working group on C57.12.90 for inclusion into the next draft of the standard. The motion passed unanimously.

6. New Business – Load Tap Changer Performance Test Procedure for C57.12.90

Tauhid Ansari, chair of the working group on PCS revisions to C57.12.00 discussed the need for including a performance test on load tap changers as part of C57.12.90 and indicated that this had been surveyed in his working group. The chair reviewed the types of issues that would need to be considered, and Ramsis Girgis made a motion to include this as a new business item for the working group, Tauhid Ansari seconded the motion and it was unanimously voted for this motion. Mark noted that this would be covered in the Spring 2016 meeting.

7. Ramsis Girgis offered an informative comment that the new loss measurement would need to be performed as part of the loss measurement guide. Ed teNyenhuis requested this comment be included in the minutes.

8. Adjournment – Joe Melanson motioned and Dan Sauer seconded that we adjourn. The motion was accepted unanimously, and the meeting was adjourned at 12:15 pm.