

*PC57.19.00 - WG for the Revision of
IEEE Standard General Requirements and Test Procedure for
Power Apparatus Bushings*

11:00 AM to 12:15 PM, Monday March 26, 2018
Omni William Penn Hotel, Pittsburgh, Pennsylvania USA

Unapproved Meeting Minutes

WG Chair Peter Zhao presided over the meeting, with Scott Digby stepping in to facilitate presentation of discussion materials and to record the minutes due to the absence of WG Secretary, Eric Weatherbee, who unfortunately experienced airline related travel delays so was unable to arrive in time for the meeting. Introductions were made and a sign-up sheet was circulated to record the attendance due to formal rosters not be presently available.

Total Attendance	65
Members in Attendance	26 out of 57 members, no quorum
Guests in Attendance	39
Guests Requesting Membership	N/A (Due to formal rosters not available, membership requests were not indicated on sign-up sheet that was circulated to record attendance)

The WG Chair noted that comments had been received from the six (6) review groups that had been established at the previous meeting in Louisville back in the Fall. These comments had been compiled by the WG Secretary in spreadsheet format and posted on the organization website in pdf format prior to the meeting, with the WG membership being advised of this posting upon transmittal of the Agenda for this meeting (it had been noted by the WG Secretary that review comments had not been received regarding sections 3 or 6 prior to the meeting).

The meeting focused on review of the comments received from the review group with the attendees. The following is a summary of those discussions and resulting disposition or follow up action to be taken:

Review Section: 4. Service Conditions: Page 5, Subclause 4.1, Line 30 – Comment: add 105°C maxi temp limit. **Proposed Change:** Add: and does not exceed 105°C maximum.

Discussion, disposition, and/or follow up action:

- There was much discussion regarding how the ambient was defined and applied by this standard.
- It was noted that it is difficult to determine actual ambient service conditions.
- WG Chair will contact the Pwr XFRM SC for guidance and input towards harmonization of definition of the ambient as a service condition.

Review Section: 4. Service Conditions: Page 5, Subclause 4.1, Line 31 – Comment: add temperature limit for bottom terminal connection, say, 105°C maxi temp. **Proposed Change:** Add: - The bottom terminal and lead connections do not exceed a 105 °C.

Discussion, disposition, and/or follow up action:

- There was question regarding to whom does the lead from the winding to the bushing belong.
- Matt Weisensee noted that there is also no requirements concerning the temperature of the mounting flange. It was further noted that bushing flange temperature was not currently addressed in the thermal testing requirements.
- The WG was encouraged to do additional review of this topic in order to further continue this discussion.

Review Section: 4. Service Conditions: Page 6, Subclause 4.2.2, Line 14 – Comment: add seismic conditions. **Proposed Change:** Add: or seismic conditions.

Discussion, disposition, and/or follow up action:

- Accepted for addition by those in attendance.
- Add to the list of unusual service conditions to the end of the line currently associated with Abnormal vibrations..." such that it would now read "Abnormal vibration, shocks, or seismic conditions."

Review Section: 4. Service Conditions: Page 5, Subclause 4.1, Line 31 – Comment: This line has the temperature measurement in K, while all other references are in °C. **Proposed Change:** For consistency, change this temperature to 30°C.

Discussion, disposition, and/or follow up action:

- It was noted that this topic regarding whether K or °C should be used in such instances has been referred to IEEE for some guidance as a result of negative votes during the recent PC57.19.04 balloting process. So discussion on this topic is deferred to await such guidance.

Review Section: 4. Service Conditions: Page 5, Subclause 4.1, Line 32 – Comment: The dash on the dashed list appears to have been accidentally deleted. **Proposed Change:** [See comment].

Discussion, disposition, and/or follow up action:

- Editorial comment. To be corrected.

Review Section: 5. Rating: Page 8, Subclause 5.4.1 – Two similar comments received, each with slightly differing proposed changes

1st Comment: Thermal base rating to reflect C57.19.04 in last sentence. **Proposed Change:** To add "for the bushings used for enclosed bus duct or similar situation where the air temperature around the bushings exceeds the ambient temperature, reference to C57.19.04"

2nd Comment: Add reference to C57.19.04 in the last paragraph of this section. **Proposed Change:** Suggest adding the text "For bushings located within bus enclosures refer to C57.19.04 for requirements." at the end of the last paragraph of this section.

Discussion, disposition, and/or follow up action:

- Circulate document PC57.19.04(D7) to the WG in order to better review and discuss this section.

Review Section: 5. Rating: Page 8, Subclause 5.4.2 – Comment: To be clearer about "draw-lead conductor". **Proposed Change:** To change "draw-lead conductor" to "draw-lead conductor (rod or cable)".

Discussion, disposition, and/or follow up action:

- After some discussion, it was decided to proceed with the following text "draw-lead conductor (solid or cable)".

At this point time expired so comment discussions to continue at the next WG meeting in the fall during the IEEE Transformers Committee meetings in Jacksonville.

The comment spreadsheet will be updated based on the above and posted to the website.

Meeting was adjourned.

Respectfully Submitted,

Scott Digby (for WG Secretary Eric Weatherbee)