

Meeting Minutes

IEEE Switchgear Committee Meeting C37.81 and C37.82 Working Group

September 22, 2015

IEEE C37.81 Guide for Seismic Qualification of Class 1E Metal-Enclosed Power Switchgear Assemblies

IEEE C37.82 Standard for the Qualification of Switchgear Assemblies for Class 1E Applications in Nuclear Power Generating Stations

The meeting was opened by Dave Riffe with an introduction to the subject documents.

1. All members (4) and Guests (7) introduced themselves and affiliation. The chair and 3 of 4 working group members were present for a quorum.

Sever Bodea	Guest	ABB
Jon Cambell	Guest	Powell
Mather Claxton	Guest	Powell
Larry Connor	WG	Eaton
Michael Flack	WG	Southern Company
Frank Mayle	Guest	Technibus
Steve Powell	Guest	AZZ Bus Systems
Dave Riffe	Chair	Westinghouse
Mark Roberson	Guest	AZZ Bus Systems
Matt Williford	Guest	Schneider Electric
Terrance Woodyard	WG	Siemens

2. The meeting agenda was approved by consensus.
3. The Spring 2015 meeting minutes were approved by consensus.
4. Chairs Remarks

The status of both C37.81 and C37.82 were discussed. Draft 3 of both documents were issued in August. The comments received on both Draft 3 revisions, were primarily editorial in nature. One proposed technical changes included clarification of the mounting requirements during testing.

5. A redlined version of C37.81 was reviewed. The red line version included all comments to revision 3 of the draft. The changes, with the exception of minor editorial revisions are listed below. By consensus, the changes were accepted.
 - 5.1. The following sentence was removed from the introduction *The applicable changes in the 2013 revision to IEEE Std 344 are included in this revision to IEEE C37.81.*
 - 5.2. The titles of reference standards C37.20.1 and C37.20.3 were corrected in several sections.

- 5.3. The definitions of cutoff frequency, Seismic Category I and Seismic Category II were added to the definition section. The definitions are copied from IEEE 344.
- 5.4. The following footnote was added following the first note in the text. ¹ *Notes in text, tables, and figures of a standard are given for information only and do not contain requirements needed to implement this standard.*
- 5.5. The 2nd paragraph of section 7.2 was re-worded as follows. *The switchgear to be tested shall be attached to the test table in a manner that meets or exceeds the manufacturer specifications. Note that manufactures may have multiple approved methods of attachment; typically bolting or welding. Analysis may be used to qualify un-tested mounting configurations. Interface and boundary requirements, such as incoming buses, cables, or conduits, shall be considered. Equipment shall be connected in a manner that simulates its expected installation when in actual use unless an analysis can be performed and justified to show that the equipment's performance would not be altered by the expected means of connection.*
- 5.6. Seismic Category I was added as a title to section 7.7.2.1 and Seismic Category II was added as a title to section 7.7.2.2.
- 5.7. Annex A and Bibliography were removed since the document did not include any Bibliography entries.
- 5.8. Dates associated with referenced standard IEEE 344 will be removed from the text. The introduction will state that the guide is based on the requirements of standards at the time this document was issued.
6. A redlined version of C37.82 was reviewed. The red line version included all comments to revision 3 of the draft. The changes, with the exception of minor editorial revisions are listed below. By consensus, the changes were accepted.
 - 6.1. The titles of referenced standard C37.20.1 was corrected in several sections.
 - 6.2. The following footnote was added after the reference to C37.06: *C37.06 will be withdrawn, and ratings incorporated in the revision to C37.04. Therefore, when C37.06 is withdrawn, references to ratings in C37.06 shall be deemed to be references to C37.04.*
 - 6.3. The definitions of Seismic Category I and Seismic Category II were added to the definition section. The definitions are copied from IEEE 344.
 - 6.4. The following footnote was added following the first note in the text. ¹ *Notes in text, tables, and figures of a standard are given for information only and do not contain requirements needed to implement this standard.*
 - 6.5. Paragraph C of section 6.1 was changed to improve clarity as follows: *Short-circuit Current - Margins are demonstrated by momentary and short-time current tests of greater duration than normally experienced in service; for example, 2 s (120 cycles) duration of short-time current versus 5-10 cycles of actual short-circuit current in systems.*

6.6. The following titles were added to sections 7.2.1.1.1, 7.2.1.1.2 and .7.2.1.1.3 respectively: Circuit Breakers and Interrupter Switches, Auxiliary Components and Mechanical Interfaces

6.7. Annex A and Bibliography were removed since the document did not include any Bibliography entries.

7. New Topics

A request was made to increase the scope of C37.81 and C37.82 to include post Seismic Design Basis Event (DBE) qualification requirements for components that are either in the test position, disconnect position or storage. The current drafts of the standards address components in the test and disconnect position during a DBE. Storage is not addressed.

The reason for this request is to address the following scenario:

A facility experiences a seismic DBE. Post DBE actions require inserting a component (typically a circuit breaker) to energize a Class 1E load. Presently, there is no assurance that the component was not damaged during the original DBE and will be able to perform the required Seismic Category I functions.

By consensus it was agreed that C37.81 and C37.82 would not be revised to include this scope. This decision was based on the following:

- It is outside the scope of IEEE 344 and IEEE 323. C37.81 and C37.82 provide guidance on meeting the 344 and 323 requirements.
- Facilities have unique storage facilities and practices for spare equipment. Qualifying generic storage containers and requirements does not seem feasible.

8. Next Actions

By unanimous agreement of all present Working Group Members, it was agreed that, pending the changes described above, the documents were ready for balloting. Balloting is anticipated prior to the Spring 2016 meeting.

Submitted:

Dave Riffe PE

Westinghouse Electric Company

September 23, 2015