

**IEEE Power Engineering Society
Switchgear Committee
Low Voltage Switchgear Devices Subcommittee**

**C37.13 and C37.27 Working Group Report
May 10, 2006 – Galveston Island, Texas**

PC37.13 and PC37.27 working groups (combined) met for Wednesday morning session (8 – 9:45 AM) May 10, 2006 with 4 members, 13 guests present, and no members excused.

The IEEE Patent Slides were not shown and reviewed but by further review, all participants had seen in other working group meetings.

C37.13 Low-Voltage AC Power Circuit Breakers Used in Enclosures

Distributed documents included:

Agenda for C37.13

C37.13/D16

Comments – C37.13/D15a & D16 creating D17.

Discussion Items

PC37.13/D15a ballot comments were discussed. These comments were organized by subject and discussed. There were 11 “priority” items identified but 10 of these were discussed and resolved (as follows below). The balance of the issues will be reviewed by follow-up telephone conference.

1. Section 4 – Service Condition min of -30C (68, 69a, 77, 109, 113)
 - Request to change from -30C to -5C.
 - Wording changed to match the wording in C37.20.1 – “The temperature for the air surrounding the enclosure of -30C” is used instead of the air directly at the device.

WG: Accepted proposed change from C37.20.1 reference.

2. Section 5 – 50 Hz, 60 Hz, and dual 50/60 Hz (79, 83, 85, 110, 111, 114)
 - Numerous requests to revert back to 60 Hz +/- 20%
 - Due to the number of comments, request WG consideration to the various operating frequencies requirements, e.g. tests at 50Hz, or 50/60Hz for dual rating, and 50 or 60 Hz depending on particular rating.

WG: Maintain the 50/60 Hz tests programs.

3. Section 5 – Frequency tolerances (53)
 - Request to add tolerance for the frequency.
 - This is not included since no other such tolerance for frequency is covered in similar standards.

WG: No details on tolerance to be added.

4. Rated Power Frequency Withstand Voltage (49, 50)
 - Rated power frequency withstand voltage as a rating is deleted.

WG: Deletion okay

5. Temperature testing of C-L fuses (58)
 - Request for temperature testing of C-L fuses
 - This change not made

WG: Testing of the CB covers temps on materials, etc. Fuses are pre-qualified at I continuous. Fuses are applied below I continuous.

6. Section 8 – Testing with MOC's and TOC's (108h)
 - Added requirement to test with maximums

WG: Done

7. Section 6.3 – Symbols (103-106)

- Request to allow symbols

WG: Added option for additional symbols with reference to IEC 417. Also, must add to references with footnote.

8. Section 8 – Retest (110)

- Grandfather clause added

WG: Comment accepted but review with IEEE if ok in body or note or intro.

9. Section 9.1.4.4 – 75% Field Test (89)

- Should there be a 75% level for field dielectric tests?

WG: Added words from C37.20.1. Revised two associated sections.

Not Discussed Items

10. Section 9.1.4.5.1 – Max Inst Trip - 12x or 13x (90)

- Request to change maximum setting from 13x back to 12x

11. Greater than 1.0 LT PU for E-M elements (117)

- Should >1.0 LT PU setting for OL conditions for E-M elements be reinstated?

12. Section 2 – References

- Date references deleted

13. Section 3 – Definitions

- circuit breaker, low-voltage non-integrally fused power circuit breaker - No Change
- circuit breaker, low-voltage fused power circuit breaker – No Change
- open-fuse trip device, modified to include reference to definite purpose switching devices

14. References to C37.50 – Various Sections

- C37.13 is to be revised
- C37.50 will subsequently be revised.

15. Cumulative Loading

- Deleted section

16. Section 9.7.1 – Annual Maintenance

- Request to change back to every six months
- Change not made per previous WG decision to move to annual basis.
- Request provided to C37.16 WG to change to annual basis.

17. Section 9.2.1 – Short-time current tests

- Request to delete 1 second test option
- Change made

18. Section 5.6 – Rated SC current and “one power frequency cycle”

- Request to define “one power frequency cycle”
- No change made. A definition for this is not considered necessary.

19. Section 5.6.2.1 – Operation of Fused CB's

- Reworded new section 5.6.2.1 (old 5.7.2.1) concerning operation of fuses.

20. Section 9.2.1 – Power Frequency

- Revised wording to include the “complete direct-acting trip system”.
- This clarifies that the power frequency tests is associated with the complete system and not just the direct-acting device.

21. Section 9.3.4.3 – CB and fuse coordination

- Deleted last sentence concerning operation less than 0.01 seconds.
22. Section 9.6.1 – Altitude Correction Factor
- Dropped note that this is under review by IEEE WG. C37.100.1 is not reviewing LV and 2000 meters is maintained.
23. Table 1 Notes and Added section 6.5 – Primary Disconnects
- Revised notes and added 6.5 to clarify requirements for primary disconnects and make these requirements normative.
24. Closed Door Racking
- Request to add requirement CB to be rackable with door closed.
 - No change made. This is considered requirement for C37.20.1.

**C37.27 Application Guide for Low-Voltage AC Nonintegrally Fused Power Circuit Breakers
(Using Separately Mounted Current-Limiting Fuses)**

Documents distributed

Agenda for C37.27

C37.27/D10

Comments – C37.13/D9 and D10 creating D11.

No discussion held on C37.27. A telephone conference will be held.

1. Section 2 – References
 - Date references deleted:
2. Section 3 – Definitions (32)
 - open-fuse trip device, modified to include reference to definite purpose switching devices
3. 5.1.1 – Fuses should operate within C-L region (12 & 42)
 - Text is modified to address.
4. 5.1.2 – Request for add note, “2.3 is 1.414 rms types standard dc offset of 1.6” (11b)
 - ??????????
5. 5.2.1 – “Minimum” changed to “Average” fuse melting (35 & 43)
 - Text revised
6. 5.2.4 – Minimum fuse size for Trip Device (12 & 36 & 44)
 - Sentence is added back that this may not apply for electronic trip devices.
7. Section 7 – Open-Fuse Trip Devices (38)
 - Revised Note to read, “Since some open-fuse trip devices may operate by sensing the voltage across the fuses, if they are reset with an open or missing fuse, they may not prevent closing of the circuit breaker, but in most cases will cause an immediate trip if such an operation is performed.”
8. Comment 41 – Request for maintenance of fuses (and CB) clause (41)
 - ??????????
9. 5.1.2 and 5.1.4 – Request words explaining the use of the 254 V rating (11c)
 - ???????
10. 5.1.3 – Request for clarification of Total Clearing Time (11d)
 - ?????????
11. Comments 50, 51, 52: Inclusion of requirements being applicable to integrally fused and non-integrally fused CB’s
 - ?????????

12. Comment 53: Does not like text of clause 10 versus previous clause 9.
 - No change made. ??????????????

Report submitted by: D. Edwards, PE
PC37.13 and PC37.27 WG Chair