

IEEE Power Engineering Society  
Switchgear Committee  
C37.20.7a Task Force Report  
“Guide for Application of Equipment Qualified as Medium-Voltage Metal-Enclosed Arc Resistant  
Switchgear”  
September 22, 2003

The task force met on September 22, 2003. Chairman M. Wactor called the meeting to order at 1:38PM. 9 task force members and 12 guests were present.

Draft 2 was previously distributed, and various input and comments (Messrs. Ball, Puckett, and Taylor) received were discussed. The list of comments dated 9-18-2003 was reviewed and dispositioned. In addition, Mr. Ball submitted revisions to clause 5.3 (designated as R6), and it was agreed that these revisions will be incorporated in Draft 3 of the document.

The original intent of this task force was (summarized from the Spring 2002 meeting minutes) to begin work to produce an application guide, restricted to consideration of application of equipment tested for arc resistance capability. The document was envisioned as a supplement to C37.20.7, so that it could be balloted and adopted independently of the existing C37.20.7 document. It was expected that the supplement could be incorporated directly into the main document C37.20.7 at a later revision.. The document will be designated as “C37.20.7a (supplement to C37.20.7).

Subsequently, the revision of IEC 62271-200 (old 60298) have reached the FDIS stage, with extensive changes to the IEC test regimen for internal arcing. Also, work has begun in Canada to revise EEMAC G14-1, as they do not wish to adopt either the IEC document or C37.20.7. In the interests of harmonization, we may wish to consider revision of the entire C37.20.7 document, and incorporation of an application guide as part of the document.

At the last meeting, a motion was approved unanimously to pursue revision of C37.20.7 and to include the application guide as part of the document. The task force reconfirmed this direction.

Revisions will reflect feedback from laboratories on use of the present test guide, harmonize with evolving experience in the IEC and Canada, and incorporate an application guide as part of the document.

#### Difficulties experienced with C37.20.7:

- 5.2.3.1 requires that the AC component not exceed 115% of the rated value. 5.2.3.2 requires that the prospective DC peak be at least 260% of the rated value. 5.2.3.2 also requires that the actual DC component during the test be no lower than 90% of the rated value. The power laboratories have reported that they cannot always satisfy all three requirements simultaneously.
- 6.1 criteria 2 is being interpreted by third-party organizations as allowing zero distortion of relay panels, which was never intended.
- North American power laboratories cannot perform full current tests at full voltage at the higher voltage ratings for equipment (e.g., 15kV, 27kV, 38kV).
- A number of power laboratories have been unable to meet the peak requirements for lower voltage ratings except by testing at a voltage well above the rated voltage. In addition, they have had to set the prospective DC component well above 260% of rating in order to meet the 90% requirement during the test.

Mr. Wactor volunteered to create a revised draft of the test guide (C37.20.7) to address known issues, including consideration of 17C-311-FDIS (62271-200) presently out for ballot.

A PAR for revision of IEEE C37.20.7 "Guide for Testing Medium-Voltage Metal-Enclosed Switchgear for Internal Arcing Faults", will be submitted. Mr. Wactor will be the working group chair.

At the Spring 2004 meeting, the new working group for this effort will meet.

The meeting adjourned at 4:49PM.

Report submitted by: M. Wactor  
Task Force Chair