

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”  
May 5, 2003

The task force met on May 5, 2003. Chairman M. Wactor called the meeting to order at 1:30PM. 11 task force members and 10 guests were present.

As a reminder, the discussion at the Spring, 2002, is summarized below:

The application guide will be restricted to consideration of application of equipment tested for arc resistance capability. The document will not address measures to deal with internal arcing that might be appropriate for use with existing installations of non-arc resistant equipment.

The document will be a supplement to C37.20.7, so that it can be balloted and adopted independently of the existing C37.20.7 document. Later, when C37.20.7 is revised, the supplement could be incorporated directly into the main document C37.20.7. The document will be designated as “C37.20.7a (supplement to C37.20.7)”.

C. Ball moved that effort continue towards completion of this guide. The motion passed, with no opposition.

Draft D1 (17-Sept-2002) had been distributed earlier to several members of the task force, along with input received from Mr. Smith. Mr. Wactor will redistribute the draft and additional input received to this point.

The assignments made at the previous meeting were reviewed, and some revision of responsibilities made. The following persons have volunteered to review and suggest revisions to clauses as follows:

Clause	Responsible	Subject
Intro	T. Olsen	Introduction
1.1	M. Wactor	Scope
1.2	M. Wactor	Purpose
1.3	J. Lord M. Wactor	Consequences of Internal Arc Faults
2.0	M. Wactor	References
3.0	M. Wactor	Definitions, Qualifying Terms, Common or related terms
4.0	M. Wactor	General conditions
5.1	J. Lord M. Wactor	Applications, general
5.2	J. Lord M. Wactor	Applications, strategy
5.3	C. Ball P. Barnhart T. McNamara	Applications, physical considerations

Clause	Responsible	Subject
5.4	T. Olsen D. Mazumdar J. Smith R. Puckett T. McNamara N. McQuin	Applications, electrical considerations

All those interested in offering commentary on these topics are requested to discuss their sections by E-Mail, with objective to have relatively firm text to the chair by 07-July-2003.

Discussion of 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.

A motion was made to pursue revision of C37.20.7 and to include the application guide as part of the document. The motion passed with no opposition.

Those present were requested to send descriptions of problems encountered with test implementation (without revealing any confidential or competitive information) to Mr. Wactor by 30-May-2003. Mr. Wactor will then consolidate the information for distribution to the group. This survey of problems with the existing document will serve as a guide for revisions needed.

A revision effort will also give us an opportunity to obtain further input from the Canadian experts, and to further harmonize the requirements of C37.20.7 with the evolving requirements of the IEC documents.

It was noted that revision effort on NFPA 70E, and that we should request that the NFPA 70E revisions make allowance for reduced exposure if the equipment has been qualified to C37.20.7 and is in the fully assembled condition.

Canadian replacement of EEMAC G14-1

Mr. Wactor and Mr. Smith are members of a CSA working group to revise Canadian requirements. An intent to harmonize with C37.20.7 has been expressed, which is encouraging. We all agree that we do not want multiple documents on arc resistant requirements. They will keep the group informed.

The meeting adjourned at 2:35PM.

Report submitted by: M. Wactor  
Task Force Chair