SMB/4375/R

STRATEGIC BUSINESS PLAN (SBP)

IEC/TC or SC	Secretariat	Date
95	France	2010-12

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Title of TC
MEASURING RELAYS AND PROTECTION EQUIPMENT

A Background

In October 1992, after the dissolution of TC 41, SC 41B was transformed into TC 95. A draft Strategy Policy Statement was circulated in June 1995 for comments. It was finalised at the meeting of TC 95 in Budapest (October 1995)

The scope of TC 95 reads as follows:
"Standardisation of measuring relays and protection equipment used in various fields of electrical engineering covered by IEC, taking into account combinations of devices to form schemes for power system protection including the control, monitoring and process interface equipment used with those systems"

Excluded are the following:
"All devices covered by standards prepared by other IEC Technical Committees, for example instrument transformers."

B Business Environment

B.1 General

Although IEC standards in the IEC 60255 series are widely used throughout the world, there is an increasing emphasis in harmonisation with CENELEC standards for particular applications in the European Community. Manufacturers and laboratories see positive benefits in having to comply with a single set of standards.

Due to the recent financial situation, it is becoming increasingly difficult to encourage companies to devote adequate resources to the preparation and maintenance of the relevant standards.

B.2 Market demand

Customers of standards produced by TC 95 include electricity supply utilities, manufacturers of power system protection and industrial users who are concerned with the distribution of electrical power within their own environments. Currently, there is a reasonable cross section of these customers represented within the technical committee and its working groups.

All TC 95 publications are widely used at the regional and national level and often used as the basis for contracts. As an example, some TC 95 publications are used to support European directives and as the regulation for product certification.

The maintenance of TC 95 standards, taking into account changes in technology, forms an increasing part of the work compared to the preparation of new standards for the time being, but TC 95 will develop more and more new functional standards to meet the needs of changes in technology and demands of market trends.

B.3 Trends in technology

With the development of information technology, communication technology, new type sensor technology, time synchronization technology, optical fiber Communication Technology etc., the impact on the work of TC 95 needs TC 95 to keep close watch on the development of future standards:

- Replacement of physical principles used in electromechanical or electronic relays by algorithms
- Needs of unification of formatting digital data for all aspects of digital automation of power systems
- Implementation of control, communication and protection functions in the same device (integrated systems)
- Management of configuration, settings, or parameters of complex multifunction protective relays and substation equipment that could impact protection performance (including Ethernet and other communications devices).
- Maintenance requirements and approaches for old and new generations of protection system designs.
- New function and performance requirements for protection relays due to the new sensor technology
- PMU and wide-area protection
- Self-Adaptive protection applied to Smart Grid
- Protection based on network within IEC 61850 digital substation
- Fault locator
- Fault recorders based on IEC 61850

B.4 Market trends

At present, more and more HVDC transmission projects have been put into operation in many countries around the world with the HVDC control and protection being the core parts.

The development of renewable energy should contribute to a new need of protections to address new concerns related to the loss of mains protection system.

Most of the countries overaround the world work on smart grid projects and as a result more and more protections will be implemented both at medium voltage and low voltage level.

TC 95 has to attach great importance to these new related industrial markets and strive for suitable standards to meet the market demands:

- Control and Protection function used in HVDC systems
- Loss of main protection for renewable energy power
- New functional protection including smart grid applications

B.5 Ecological environment

Possible ecological environmental issues relating to measuring relays and protection equipment include:

- The possible positive effects on electricity supplies to contribute in the future to smart grids applications where renewable energies are widely used.
- From a manufacturing viewpoint, volumes of equipment are low in relation to mass market products and hence the impact of the absence of recycling processes will be low. Nevertheless, the recycling process should be considered.

C System approach aspects

Component committees	IEC/TC14	Power transformers
	IEC/TC17	Switchgear and controlgear
	IEC/TC38	Instrument transformers
	IEC/TC65	Industrial-process measurement, control and automation
	IEC/TC115	High Voltage Direct Current (HVDC) transmission for DC voltages above 100kV
System committees	IEC/TC57	Power systems management and associated information exchange
	IEC/TC77	Electromagnetic compatibility
Others	CIGRE/SC C4	System technical performance
	CIGRE/SC B5	Protection and automation
	CIGRE/SC D2	Information systems and telecommunication
	IEEE/PSRC	Power system relaying committee

Joint ad-Hoc Group :
TC 38/JAHG 44 - Modernisation of Instrument Transformers Ratings

D Objectives and strategies (3 to 5 years)

In the short term, 2 or 3 years:
The maintenance team will produce a new standard covering all EMC aspects. This standard will cover both current IEC 60255-26 scope and IEC 60255-22 series of standards scope. Then, IEC 60255-22-x series of standards will be removed, and a revised IEC 60255-26 covering all EMC aspects will be produced

The maintenance team will make some work on the safety standard IEC 60255-27. One approach could be to maintain this standard and put it in line with the evolutions of basic safety standards. One other approach could be to use a well known safety standard and to complete it with specific requirements of protection relays.

The new standard for Synchrophasor Measurement Unit will be taken into consideration."

In the long term:
Working objectives in the field of TC 95:
Even if the Maintenance Team 4 has already worked on protection function, most of the future work of TC 95 will be concerned with the preparation of new functional standards. Some functional standards will be renewed, taking into account changes in technology. Other functional standards are required to develop to meet the needs of market trends, particularly the needs of Smart Grid.

Collaboration with other TCs:
With the development of technology, TC 95 will take into consideration not only the functional protection standards but also more control, monitoring and digital process interface devices standards (the developed scope of TC 95).

Whereas technology within the power system protection field is moving more towards communication technologies and the responsibility for communications within substations is part of the scope of TC 57. TC 95 intends to increase the collaboration with TC 57.

Due to the appearance of EVT/ECT, TC 95 have to collaborate with TC 38 to renew and develop the relevant standards based on the evolution of digital technology.

Collaboration with other TCs should be considered into the future work of TC 95, where appropriate.

E Action plan

E 1 Current work

The most important work is to elaborate new protection function standards and to maintain existing ones. All these actions are listed in the following table.

Publication no.	Date of publication	Review date	Stability date	Responsibility (Maintenance Team)
60255-1 Ed.1	2009-08	2012	2014	MT3
60255-5 Ed.2	2000-12	2010	See Note 1	MT3
60255-8 Ed.2	1990-09	2010	See Note 3	MT4
60255-11 Ed.1	1979-01	2010	See Note 2	MT2
60255-12 Ed.1	1980-01	2010	See Note 3	MT4
60255-13 Ed.1	1980-01	2010	See Note 3	MT4
60255-16 Ed.1	1982-01	2010	See Note 3	MT4
60255-21-1 Ed. 1	1988-09	2010	2012	No revision
60255-21-2 Ed. 1	1988-10	2010	2012	No revision
60255-21-3 Ed. 1	1993-09	2010	2012	No revision
60255-22-1 Ed.3	2007-10	2010	See Note 2	MT2
60255-22-2 Ed.3	2008-04	2010	See Note 2	MT2
60255-22-3 Ed.3	2007-07	2010	See Note 2	MT2
60255-22-4 Ed.3	2008-04	2010	See Note 2	MT2
60255-22-5 Ed.1	2002-04	2010	See Note 2	MT2
60255-22-6 Ed.1	2001-04	2010	See Note 2	MT2
60255-22-7 Ed 1	2003-04	2010	See Note 2	MT2
60255-24 Ed.1	2001-05	2010	2012	MT4
60255-25 Ed.1	2000-03	2010	See Note 2	MT2
60255-26 Ed 2	2008-07	2010	2012	MT2
60255-27 Ed 1	2005-11	2010	2012	MT3
60255-127 Ed.1	2010-04	2012	2014	MT4
60255-151 Ed.1	2009-08	2012	2014	MT4

Note 1:
Document INF to be circulated informing NC IEC 60255-5 will be withdrawn and replaced with IEC 60255-27
Note 2:
All EMC standards will be replaced with one standard IEC 60255-26
Note 3:
IEC 60255-8 will be withdrawn and replaced with IEC 60255-149
IEC 60255-12 will be withdrawn and replaced with IEC 60255-132
IEC 60255-13 will be withdrawn and replaced with IEC 60255-187
IEC 60255-16 will be withdrawn and replaced with IEC 60255-121

E 2 Future work

New subjects need to be started in order to keep adequacy between market demand and market trends with requirements of TC 95 documents. As preliminary information the following may be considered as new concepts to be developed within TC 95:

- Loss of mains protection for renewable energy power
- New protection systems for smart grid applications
- Protection function for HVDC systems

F Useful links to IEC web site

IEC/TC 95 dashboard giving access to Membership, TC/SC Officers, Scope, Liaisons, WG/MT/PT structure, Publications issued along with their stability dates, Work Programme and similar information for SCs, if any.

Name or signature of the secretary

Serge VOLUT