SMB/6871/R

STRATEGIC BUSINESS PLAN (SBP)

IEC/TC OR SC:	SECRETARIAT:	DATE:
37	**US**	**2019-06-27**

Please ensure this form is annexed to the Report to the Standardization Management Board if it has been prepared during a meeting, or sent to the Central Office promptly after its contents have been agreed by the committee.

A. STATE TITLE AND SCOPE OF TC

TC 37: Surge Arresters

To prepare international standards regarding:

- Specifications for surge arresters and other surge protective devices (SPDs)
- The choice of arresters to provide adequate protection of the system with satisfactory reliability, and the definitions of conditions of use enabling this result to be obtained

SC 37A: Low-Voltage Surge Protective Devices

To prepare international standards for surge protective devices (SPDs) for protection against indirect and direct effects of lightning and/or against other transient overvoltages and for information on their selection and application. These devices are to be used in power, telecommunications and/or signalling networks with voltages up to 1 000 V a.c. or 1 500 V d.c. Requirements for selection and erection of SPDs in electrical installations of buildings as covered by TC64 are excluded.

SC 37B: Components for Low-Voltage Surge Protection

To prepare international standards for components for low-voltage surge protection. These SPCs (surge protection components) are used in power, telecommunication and/or signalling networks with voltages up to 1000 V a.c. and 1500 V d.c.

The Main Committee was established in July 1951
Subcommittee 37A was established in October 1988
Subcommittee 37B was established in November 1992

B. Management Structure of the TC

The general scope of IEC Technical Committee 37 is to prepare international standards regarding:
- Specifications for surge arresters and other surge protective devices (SPDs)
- The choice of arresters to provide adequate protection of the system with satisfactory reliability

The activities are subdivided into preparation of standards for **low voltage devices** (up to 1000 V a.c. and 1500 V d.c) and standards for **high voltage devices** (above 1000 V a.c. and 1500 V d.c.).

Standards for **low voltage devices** are handled by two subcommittees, namely:

SC 37A
Scope summary: to prepare international standards for **surge protective devices** (SPDs) for protection against indirect and direct effects of lightning and/or against other transient overvoltages and for information on their selection and application.

The Subcommittee is composed of three Working Groups and three Ad-Hoc Groups.

The officers of SC 37A are:
Chairman: Mr. Alain Rousseau (FR)
Secretary: Mr. Muhammad Ali (US)

SC 37B
Scope summary: To prepare international standards for **components** of low-voltage surge protective devices
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The Subcommittee is composed of three Working Groups and two Maintenance Teams.

The officers of SC 37B are:
Chairman: Mr. Vincent Crevenat (FR)
Secretary: Mr. Muhammad Ali (US)

Standards for **high voltage devices** are handled by the main Committee which, in addition to the Subcommittees, is composed of two Maintenance Teams and one Project Team.

The officers of the main committee TC 37 are:
Chairman: Mr. Volker Hinrichsen (DE)
Secretary: Mr. Michael Comber (US)

The committee structure was reviewed at the TC 37 plenary meeting in Frankfurt, Germany on 2019-09-27. The only change made to the previously published structure was the approved disbanding of WG 11 of the main committee.

C. Business Environment

Surge arresters are applied on medium voltage (MV), high voltage (HV) and ultra-high voltage (UHV) electric systems to ensure, as far as possible, the maintenance of an uninterrupted supply of electricity to users, in the presence of overvoltages such as lightning surges, switching surges and temporary overvoltages. SPDs are used in low voltage (LV) installations to protect equipment that is vulnerable to overvoltages. In all electrical environments, these products improve the reliability of equipment and services through overvoltage control.

The Technical Committee and its Subcommittees set technical requirements and testing methods to check the compliance to protective limits and to other performance aspects associated with the surge arrester or SPD.

Solid-state and discharge type SPDs are used in low voltage equipment which is vulnerable to overvoltages. Matters dealing with the use of SPDs to protect low voltage AC and DC electrical power and communication facilities and connected equipment against such overvoltages and transient events are addressed by SC37A. Requirements for the components used in SPDs are addressed by SC37B.

D. MARKET DEMAND

The market for surge arresters and SPDs is worldwide. The customers for the surge arrester and SPD products covered by the Technical Committee and its Subcommittees include electric utilities, industrial users and general consumers.

General consumers make primary use of the low voltage SPDs. Users of SPDs are typically different from users of high voltage surge arresters since the products have somewhat different applications and are not used under the same conditions. In the high voltage area up to UHV levels, the user, typically having technical knowledge, is more deeply involved in performance specifications and system designs. The general public (i.e., the usual user of the low voltage devices) is less technically sophisticated in this product area and relies heavily upon manufacturer technical capability. General consumers make primary use of portable low voltage SPDs. TC37 and its Subcommittee membership reflect those interests and alignments and are responsive to all requests for participation. The general public consumers sector input is received through comments from relevant IEC horizontal and product committees (TC109, TC64, TC81, and TC112) and test labs.

The market for low voltage SPDs is rapidly expanding, In contrast, the market for high voltage surge arresters is more stable and more mature. The pervasion of broadband communications has resulted in a demand for lower capacitance SPDs.

E. TRENDS IN TECHNOLOGY AND IN THE MARKET

TC 37:
Medium voltage and high voltage arresters have historically been used, and will continue to be used, to protect electrical equipment installed on MV distribution systems and in HV substations. With more and more focus being given to system reliability and continuance of service, there is increasing use of surge arresters on both MV and HV lines to prevent outages due to lightning-induced flashover. In certain parts of the world, where very long transmission lines are being operated at much higher voltages than previously used (UHV levels), there is an increasing market for surge arresters with lower per unit protection levels and much higher energy handling capabilities than have been generally available in the past. Expanded interest in high-voltage DC transmission, requiring HVDC converter stations, for delivering power over great distances will continue to expand the market for surge arresters to handle the unique requirements of such systems.

While there may be small pockets of production of high voltage surge arresters using silicon-carbide non-linear resistors, the overwhelming majority of arresters being produced today are based on metal-oxide non-linear varistor technology. The use of polymer materials as an alternative to porcelain for the housings of arresters intended for outdoor is finding increasing acceptance by users. The need to transmit very large amounts of power over long distances is spurring more use of UHVAC and HVDC transmission systems, stimulating the need for surge arresters to protect equipment operating at very high AC and DC voltages. Such needs have been taken into consideration in recent work by TC 37.

Emerging technologies being considered for possible future activity are:

- varistors used in HVDC circuit breakers
- low-residual- voltage arresters for UHV systems
- line arresters for DC transmission and distribution lines.

SC 37A:
The proliferation of sensitive electronic equipment connected to low-voltage ac power distribution systems and dc power systems is increasing the need for the application of SPDs. Multi-port (multi service) SPDs are being deployed that provide surge protection for ac power, telephone, coaxial cable and communications circuits. Low-voltage SPDs are evolving into products that provide surge diversion, harmonic filtering and both overload and thermal protection. The widespread new uses of dc systems, such as in photovoltaic products, have placed an increased need to expand standardization efforts for SPDs used in this sector.

SC 37B:
New developments are taking place in surge protection components that are used in SPDs. Trends are in miniaturization, surface mount and increased component complexity. Isolation transformers being used to mitigate surges.

There is an emerging interest in LVDC applications. Other trends will increase demand for surge protection components:

- Increased interest in wind power and photovoltaics
- Increased use in power line communication
- Increase in smart grid technology

- Increased deployment of high speed data links
- Moving the central office closer to the end customer to be able to deliver broadband and high speed data.

F. SYSTEMS APPROACH ASPECTS (REFERENCE - AC/33/2013)

The surge protective products covered by TC37 and its Subcommittees are found throughout the electricity supply system, from generating station to consumer, thereby creating a connection with many other IEC Technical Committees. The system approach relevant to TC37 and its Subcommittees as follows:

System Committees (TC 37/SC 37A/SC 37B as supplier)	TC 14	Power transformers
	SC 17A	High voltage switchgear and controlgear
	TC 33	Power capacitors and their applications
	TC 81	Lightning protection
	TC 82	Solar voltaic energy systems
	TC 88	Wind turbines
	TC 99	System engineering and erection of electric power installations in systems with nominal voltage above 1 kV a.c. and 1.5 kV d.c., particularly concerning safety aspects
Other Committees	TC 9	Electrical equipment and systems for railways
	TC 33	Power capacitors and their applications
	TC 36	Insulators
	TC 42	High-voltage and high-current test techniques
	TC 64	Electrical installations and protection against electrical shock

G. CONFORMITY ASSESSMENT

Many of the publications of the TC and its SCs contain requirements for product performance. All are written in accordance with the conformity assessment aspects stated in Clause 33 of Part 2 of the ISO/IEC directives. These publications will typically be used by testing laboratories for product conformance assessment purposes.

H. 3-5 Year Projected Strategic Objectives, Actions, Target Dates

Strategic Objectives 3-5 years	Actions to support the strategic objectives	Target Date(s) to complete the actions
TC 37		
IEC 60099-4	Continue maintenance to reflect deficiencies recognized in current edition	FDIS by 2023-12
IEC 60099-5	Continue maintenance to provide improved guidance to users in selecting and applying arresters	FDIS by 2023-12
IEC 60099-6	Continue maintenance as needed to reflect changes in “mother” document IEC 60099-4	FDIS by 2023-12
IEC 60099-8	Withdraw document with publication of IEC/IEEE 60099-11	FDIS by 2023-12
IEC 60099-9	Continue maintenance as needed to reflect changes in “mother” document IEC 60099-4	FDIS by 2023-12
IEC/TR 60099-10	Continue activity, primarily with web-conference meetings, to finalize a Technical Report on test rationales	Publish by 2023-12
IEC/IEEE 60099-11	Continue activity with both face-to-face and web-conference meetings, in concert with IEEE, to produce a joint logo standard for testing of line surge arresters	FDIS by 2023-12
The overall objective is to regularly revise existing standards to reflect changing requirements and technology in design and application of high-voltage surge arresters, as well as developing new standards as necessary to cover emerging surge protection applications. It is the intent that there will be ongoing collaboration between MTs and PTs to ensure harmonization between all TC 37 standards so that new editions can be published simultaneously		
SC 37A		
IEC 61643-12	Revise reflect changes in Part 11, performance and test requirements for SPDs in AC systems	FDIS by 2019-01
IEC 61643-01	Consolidate common clauses relating to performance and test requirements for SPDs	FDIS by 2020-01
IEC 61643-41	Standard for performance and test requirements for SPDs in DC systems	FDIS by 2021-01
IEC 61643-11	Revise to reflect changes in technology affecting performance and test requirements for SPDs in AC systems	FDIS by 2020-01
SC 37B		
IEC 61643-311 (Test Standard)	Revise to align with recent technological changes and align with SC 37A relevant standards	FDIS by 2026
IEC 61643-312 (Test Standard)	Revise to align with recent technological changes and align with SC 37A relevant standards	FDIS by 2026

IEC 61643-331 4th Edition	Revise to align with recent technological changes and align with SC 37A relevant standards	FDIS by 2023