STRATEGIC BUSINESS PLAN (SBP)

IEC/TC OR SC:	SECRETARIAT:	DATE:
TC 99	**Australia**	**2019-10-18**

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

Are there any new or emerging trends in technology that will impact the scope and work activities of the TC? Please describe briefly.

Do you need to update your scope to reflect new and emerging technologies? If yes, will these changes impact another TC's scope or work activities?

If yes, describe how these will impact another TC(s) and list the TC(s) it would impact

Title of TC 99:

Insulation co-ordination and system engineering of high voltage electrical power installations above 1,0 kV AC and 1,5 kV DC

Scope of TC 99:

Standardization of -

a. insulation co-ordination for high voltage systems in specifying basic principles of insulation co-ordination, definitions and standard insulation levels for all type of electrical equipment considering field of applications, minimum air clearances, test requirements and test procedures; and
b. common rules and particular requirements for system engineering and erection of high voltage electrical power installations for power generation, transmission, distribution, and consumer premises, in both indoor and outdoor situations, with particular consideration of safety aspects.

Concerning insulation co-ordination a close cooperation with TC 115 is necessary to establish the field of standardization in respect of HVDC systems.

Concerning system engineering TC 99 recognizes that there might be some common interests between TC 18, TC 88, TC 115 and TC 99 in the development of standards in the area of off- shore HVDC and HVAC installations, to manage and optimize the performance of electrical transmission systems as well as renewable generation platforms (e.g. wind; PV) or multi-terminal junction platform as they evolve and expand off-shore. Furthermore the requirements out of TC 122 have to be coordinated with existing TC 99 publications.

B. MANAGEMENT STRUCTURE OF THE TC

Describe the management structure of the TC (use of an organizational chart is acceptable) (should be integrated by CO automatically) and, if relevant (for example an unusual structure is used), provide the rationale as to why this structure is used.

Note: Check if the information on the IEC website is complete.

When was the last time the TC reviewed its management structure? Describe any changes made. When does the TC intend to review its current management structure? In the future, will the TC change the current structure, for example due to new and emerging technologies, product withdrawal, change in regulations etc. Please describe.

Make sure the overview includes:

- any joint working groups with other committees,
- any special groups like advisory groups, editing groups, etc.

Chair: Mr Theodor Connor, Germany

Vice Chairs: Mr Mark Kuschel, Germany and Mr Jiansheng Wang, China

Secretary: Ms Erandi Chandrasekare, Australia

Assistant Secretary: Ms Rachel Frank, Australia

Maintenance Teams:
MT 4 Maintenance Team for IEC 61936-1
MT 9 Maintenance Team for IEC 60071-2
MT 10 Maintenance Team for IEC 60071-1

Joint Maintenance Teams:
JMT 7 Maintenance Team for IEC/TS 61936-2 (linked to TC 115, SC 22F)

Working Groups:
WG 12 Principles to be observed in preparation of safety publications-HV installations
WG 13 Insulation co-ordination for HVDC systems

Joint Working Groups:
JWG 22 Atmosphere and altitude correction (managed by TC 42)

Advisory Groups:
AG 11 Advisory Group on Strategy

C. BUSINESS ENVIRONMENT

Provide the rationale for the market relevance of the future standards being produced in the TC.

If readily available, provide an indication of global or regional sales of products or services related to the TC/SC work and state the source of the data.

Specify if standards will be significantly effective for assessing regulatory compliance.

a) The activities in insulation co-ordination are determined by the extension of system voltages into the UHV range. From the developing application of HVDC systems arises the necessity of standardization of procedures and rated values.

b) The safety of high voltage installations with a life time of more than 30 years is of prime importance. Therefore equipment must be designed, manufactured and installed to ensure
- protection against inadvertent contact with live parts; and

- the safe operation of the equipment and the installation.

The responsibility for the components of the power system remains with the relevant product committees.

D. MARKET DEMAND

Provide a list of likely customers of the standards (suppliers, specifiers, testing bodies, regulators, installers, other TC/SC's etc.). Do not specify company names, only categories of customers.

The standards on insulation co-ordination are a reference for the Product Committees, which have to elaborate Product Standards on the same common basis. In these standards the evolution of techniques has to be integrated, to provide advice for the limitation of overvoltages by using appropriate overvoltage limiting devices and test methods. However, concerning atmospheric air insulation guidelines are provided since no other standards are available.

The world market for high voltage installations can be considered an open market. In this field IEC standards are accepted world-wide. Many countries that do not have a national standard for high voltage installations will benefit by the work of TC 99.

There is a market need for the development of standards in the area of off-shore HVDC and HVAC installations, to manage and optimize the performance of electrical transmission systems as well as renewable generation platforms (e.g. wind; PV) or multi-terminal junction platform as they evolve and expand off-shore. Customers of the standards are utilities, manufacturers, Engineering Procurement Construction (EPC) and industry, certification bodies and insurances. TC 99 recognizes that there might be some common interests between TC18 and TC99 in developing the standards in this area.

E. TRENDS IN TECHNOLOGY AND IN THE MARKET

If any, indicate the current or expected trends in the technology or in the market covered by the products of your TC/SC.

The insulation coordination level have extended to the field of voltage systems exceeding 800 kV AC and 600 kV DC which have to be covered by appropriate standards and guidelines. The increased application of HVDC systems leads to the demand of basic standardization of HVDC insulation co-ordination.

The ever increasing use of the latest technology leads to the use of new or modified electrical equipment (e.g. compact solution, storage, subsea installations).This drives the need to continual review of the high voltage installation requirements and to provide modifications or add new requirements.

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

Does your TC/SC have a need for a systems approach?

If so:

- Will the Systems work be in a single TC or in multiple TCs?
- Will a Systems Evaluation Group (SEG), Systems Committee (SyC), or Systems Resource Group be required?
- Is your TC/SC work of relevance to ISO?
- Is or are there fora or consortia working in parallel to IEC? Is there a chance to integrate this work in your TC/SC?

This should not only be restricted to the customer/supplier relationships with other TC/SCs indicating types of co-operation (e.g. liaisons, joint working groups) but be of a more generic nature.

If there is no need for a systems approach as outlined in AC/33/2013, is it intended a TC would not be requested to report on general systems approach considerations such as customer/supplier relationships, liaisons, joint WGs, etc. as referenced in the system approach matrix illustrated in slide 14 of the presentation attached to AC/37/2006?

Customer – Committees that use standards produced by TC 99
Supplier – Committees that produce standards used by TC 99
Other committees – Committees to be in liaison with TC 99 for technical consistency

Concerning insulation co-ordination, horizontal standards are provided in the field of transmission and distribution to be used in all high voltage product committees. Therefore, a wide system approach is given with other TCs and organizations as follows:

Liaison committee	**Title**	**Role of the liaison committee**
TC 8	System aspects of electrical energy supply	Customer
SC 8B	Decentralized Electrical Energy Systems	Other
TC 9	Electrical equipment and systems for railways	Other
TC 11	Overhead lines	Customer
TC 17	High-voltage switchgear and controlgear	Customer
TC 18	Electrical installations of ships and of mobile and fixed offshore units	Other
TC 20	Electric cables	Customer
TC 22	Power electronic systems and equipment	Supplier
TC 36	Insulators	Customer
TC 37	Surge arresters	Customer
TC 38	Instrument transformers	Customer
TC 42	High-voltage and high-current test techniques	Customer
TC 64	Electrical installations and protection against electric shock	Supplier
TC 66	Safety of measuring, control and laboratory	Supplier

	equipment	
TC 78	Live working	Supplier
TC 89	Fire hazard testing	Supplier
TC 109	Insulation co-ordination for low-voltage equipment	Other
TC 115	High Voltage Direct Current (HVDC) transmission for DC voltages above 100 kV	Customer
TC 122	UHV AC transmission systems	Customer
Liaison A:		
CIGRE	International Council on Large Electric Systems	Supplier
CIGRE/SC A3	High voltage equipment	Supplier
CIGRE/SC B3	Substations	Supplier
CIGRE/SC C4	Power system performances	Supplier
CIGRE/SC D1	Materials and emerging test techniques	Supplier

G. CONFORMITY ASSESSMENT

With reference to clause 33 of Part 2 of the ISO/IEC directives, are all you publications in line with the requirements related to conformity assessment aspects?

Will the TC/SC publications be used for IEC Conformity Assessment Systems (IECEE, IECEx, IECQ, IECRE)?

Will any of your standards include test specifications, reproducible test requirements, and test methods?

Are there likely to be special conformity assessment requirements generated by any standards projects? If yes, list which projects.

TC 99 publications will not be used for IEC Conformity Assessment Systems.

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
Update the AC insulation co-ordination	Revision of IEC 60071-1 Ed.8.0 Insulation Co-ordination – Part 1: Definitions, principles and rules	August 2018 (CDV) April 2019 (FDIS) *Published in August 2019
Bring up-to-date AC insulation co-ordination taking into account new techniques and test methods	Revision of IEC 60071-2 Ed.4.0 Insulation Co-ordination - Part 2: Application guidelines (Proposed horizontal	CD: 2020-11 CDV: 2021-11 FDIS: 2022-05 IS: 2022-11

	standard)	
Generate a set of standards for DC insulation co-ordination	Define a roadmap for insulation co-ordination for HVDC systems. *[completed]	NPs for Parts 1 and 2 of the series to be developed initially, in 2020. Part 1: Definitions, principles and rules Part 2: Application guidelines for line commutated converter (LCC) stations
Maintenance of the existing standard for design and erection of high voltage AC installation	Revision of IEC 61936-1: Power installations exceeding 1 kV AC and 1,5 kV DC - Part 1: AC	CDV: 2020-05 FDIS: 2021-01 IS: 2021-05
Define standards for the design and erection of high voltage DC installation	Review the technical specification on DC (IEC TS 61936-2 Power installations exceeding 1 kV a.c. and 1,5 kV d.c. - Part 2: d.c.), and convert to a standard	CD: 2020-06 CDV: 2021-04 FDIS: 2022-04 IS: 2022-08
Define principles to be observed in preparation of safety publications - High voltage installations	IEC TS 61936-0: Power installations exceeding 1 kV a.c. and 1,5 kV d.c – Part 0: Principles to be observed in preparation of safety publications - high voltage installations	CD: 2020-06 TS: 2022-06
Note: The progress on the actions should be reported in the RSMB.		