



IEC/TC OR SC: TC 99	SECRETARIAT: Australia	DATE: 2018-07-09
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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:

Standardisation 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.
- 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 has to be coordinated with existing TC99.

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

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 / Working Groups:

JMT 7 Maintenance Team for IEC 61936-2

JWG 22 Atmosphere and altitude correction (under responsibility of TC 42)

Ad hoc groups:

AHG 6 Ad Hoc Group for preparation of proposal for offshore installations

AHG 8 Roadmap of insulation coordination for HVDC systems (former TC 28 AHG 11)

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 this 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 standardisation 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. SYSTEM 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?

Liaison Committee	Role of the liaison committee	Title
TC 11	Customer	Overhead lines
TC 20	Customer	Cables
TC 115	Customer	High Voltage Direct Current (HVDC) transmission
TC 122	Customer	UHV AC transmission systems
SC 17C	Supplier	Assemblies
TC 22	Supplier	Power electronic systems and equipment
TC 32B	Supplier	Low voltage fuses
TC 64	Supplier	Electrical installations and protection against electric shock
TC 66	Supplier	Safety of measuring, control and laboratory
TC 78	Supplier	Live working
TC 89	Supplier	Fire hazard testing
TC 9	Other committees	Electrical equipment and systems for railways
TC 18	Other committees	Ships and offshore units
TC 88	Other committees	Wind energy generation systems
ACTAD	Other committees	Advisory Committee on Electricity Transmission and

- 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 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	Role of the liaison committee	Title
TC 8	Customer	System aspects for electrical energy supply
TC 17	Customer	High-voltage switchgear and control gear
TC 36	Customer	Insulators
TC 37	Customer	Surge arresters
TC 38	Customer	Instrument transformer
TC 42	Customer	High-voltage and high-current test techniques
TC 115	Customer	High Voltage Direct Current (HVDC) transmission for DC voltages above 100 kV
TC 122	Customer	UHV AC transmission systems
CIGRE SC A3	Supplier	High-voltage equipment
CIGRE SC C4	Supplier	Power system technical performance
CIGRE SC D1	Supplier	Materials and emerging test techniques
SC8B	Other	Decentralized Electrical Energy Systems

G. CONFORMITY ASSESSMENT

With reference to clause 6.7 of Part 2 of the ISO/IEC directives, are all your 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)
Bring up-to-date AC insulation co-ordination taking into account new techniques and test methods	First step: 4 Task Forces to prepare revision Revision of IEC 60071-2 Ed.4.0: Insulation Co-ordination - Part 2: Application guide	December 2018 October 2020 (CD)
Generate a set of standards for DC insulation co-ordination	Define a roadmap for insulation coordination for HVDC systems by Ad Hoc Group (Draft Road Map: January 2018)	First draft standard for DC systems: 2019
Update standard for the design and erection of high voltage AC installation.	Maintenance of the existing standard for AC high voltage installations (IEC 61936-1);	November 2018 (CD) June 2019 (CDV) November 2019 (FDIS)
Define standards for the design and erection of high voltage DC installation.	Review the technical specification on DC (IEC TS 61936-2) and convert to standard	October 2019 (CD)
Following the market trend	Preparation of proposal for offshore installations	August 2018
Note: The progress on the actions should be reported in the RSMB.		