



IEC/TC or SC 78	Secretariat CANADA	Date 2008-05-08
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Title of TC  
LIVE WORKING

**A. Background**

1 – TC 78 was established in 1975 with the scope "To prepare international standards on electrical and mechanical characteristics, as well as the reliability requirements of tools and equipment used in Live Working".

In response to market trends, the work of TC 78 was expanded in 1996 and the scope modified. In 2002, the scope was amended for editing purpose.

“To prepare International Standards for tools, equipment and devices for utilization in Live Working, including their performance requirements, care and maintenance.

Excluded: Work practices and methods for Live Working.

To prepare technical publications related to the utilization of tools, equipment and devices on, and in the vicinity of, live parts of electrical installations and systems.”

The Working groups are:

WG 1 : Terminology and Symbols

WG 11: Technical Support

WG 12: Tools and Equipment

WG 13: Protective Equipment

WG 14: Diagnostic Equipment

2 – The working procedures of TC 78 are those included in the ISO/IEC Directives Part 1 – Procedures for the technical work Edition 6.

In order to follow the trend of IEC, TC 78 introduced the concept of Project Leaders to proceed with the development of standards. In 1996, the structure of TC 78 was compressed from ten Working groups to only five and a Chairman’s Advisory Group was established. In 1999, Maintenance Teams were also structured identical to the existing WGs. Even with the reduction of active membership due to industry downsizing, TC 78 can now handle a larger amount of projects in an effective and timely manner.

3 – TC 78 has 33 publications, two new projects (IS) under development and is undergoing the maintenance of nine publications.

4 – National Committees involved in TC 78 are:

- 19 P members: BE, CA, CN, CH, CZ, DE, DK, ES, FI, FR, GB, IT, JP, NL, NO, RU, SE, US, ZA.

- 19 O members: AR, AU, AT, BG, CS, GR, HU, IN, IE, IL, KR, NZ, PL, PT, RO, SG, SI, SK, UA.

5 – Liaisons of TC 78 with other technical committees: TC 1, TC 11, TC 66, SC 86A, TC 99 and TC 106, ACOS of IEC, TC38, TC 94 and TC 214 of ISO.

Liaison category B: ILO (International Labour Organisation), ISSA (International Social Security Association).

## 6 – System Approach Relevance

	<b>Identification of the IEC/TC</b>
<b>TC78 as a customer</b>	TC10 - Fluids for electrotechnical applications SC17C - High-voltage switchgear and controlgear assemblies SC17D - Low-voltage switchgear and controlgear assemblies TC20 - Electric cables SC23F - Connecting devices TC28 - Insulation co-ordination TC29 - Electroacoustics TC40 - Capacitors and resistors for electronic equipment TC42 - High-voltage testing techniques SC46C - Wires and symmetric cables SC48B - Connectors SC59D - Home laundry appliances TC64 - Electrical installations and protection against electric shock SC65B - Devices and process analysis TC66 - Safety of measuring, control and laboratory equipment TC70 - Degrees of protection provided by enclosures TC85 - Measuring equipment for electrical and electromagnetic quantities TC104 - Environmental conditions, classification and methods of test TC109 - Insulation co-ordination for low-voltage equipment TC112 - Evaluation and qualification of electrical insulating materials and
<b>TC78 as a supplier</b>	TC11 - Overhead line SC17C - High-voltage switchgear and controlgear assemblies TC20 - Electric cables SC22G - Adjustable speed electric drive systems incorporating semiconductor TC44, - Safety of machinery - Electrotechnical aspects TC97 - Electrical installations for lighting and beaconing of aerodrome TC99 - System engineering and erection of electrical power installations in systems with nominal voltages above 1 kV a.c. and 1.5 kV d.c., particularly concerning safety aspect

### **B. Environment**

#### **B.1 Business environment**

The increasing use of electricity throughout the world coupled with the rapid growth of electricity power producers, transmitters and distributors (utilities) require power networks that operate at lower cost and are more reliable. The present economic and environmental pressures worldwide are making the planning and installation of new networks ever more difficult. Live working can assist in the avoidance of outages that are disruptive to electricity users, and which are costly to both the utilities and the users. In addition live working can reduce the adverse effects on network performance caused by outages.

Standardisation of live working tools, equipment and devices contributes to the increased safety of workers. This may facilitate the interchange of workers between utilities in cases of emergency electrical power restoration. Users of this technology can better realize cost savings and improve their quality of performance.

#### **B.2 Market demand**

TC 78 has developed and is developing a range of standards to be used by manufacturers and the support industry to produce tools, equipment and devices that are safe. These standards are also used worldwide by electrical power utilities for the construction, maintenance and repair of their live networks in a safe manner. Manufacturers, utilities and other bodies have been actively involved in this work.

Standards developed by TC 78 are being more widely used as time goes by and this use is expected to increase throughout the world due to the ever increasing economic and environmental pressures on the utilities.

Existing standards developed by TC 78 will need to be maintained to take account of the implications of new technologies and the revisions found necessary from user experience. In addition new standards will need to be developed to incorporate the technology advances in this area of interest as they occur.

#### **B.3 Trends in technology and trade**

The increasing use of helicopters, robotics, changes in the electrical power markets and occupational health concerns will possibly require new standards for tools, equipment and devices as new materials are developed, new work methods become available and new issues arise.

#### **B.4 Ecological environment**

TC 78 is monitoring the use of chemicals and materials that are suitable and provide for safety, occupational health and environmental protection. This includes the disposal of tools, equipment and devices.

### **C. Work programme**

#### **C.1 Current work**

The Plenary Meeting of TC 78 was held in Oslo in Norway, 8 May 2008. The next meeting will be held Autumn 2009, at a place and date to be determined. WG meetings (and meetings of Project Teams under the responsibility of a WG) will be held as considered necessary by the relevant Convenors (or Project Leaders).

TC 78 is completing the development of the following new projects.

- IEC 62192 (Live working – Insulating ropes),
- IEC 61482-2 (Live working – Protective clothing against the thermal Hazards of an electric arc – Part 2: Requirements)

TC 78 is presently involved in the maintenance of a large number of its publications. Those already included in the programme of work, are the maintenance of 60855-1, IEC 61057, IEC 61111, IEC 61112, IEC 61230, IEC 61243-1, IEC 61243-3, IEC 61477 and IEC 61482-1 (to become IEC 61482-1-1). Those for which preliminary work has been initiated are IEC 60832, IEC 60903, IEC 60984 and IEC 61481.

Development of new and the revision of existing publications are performed at Project Leader level under the management of the appropriate WG. It is the practice in TC 78 to carry out as much work as possible using electronic information technology means.

#### **C.2 Resources/infrastructure needed**

TC 78 adheres to the practice of harmonizing definitions and editing project documents prior to circulation.

### **D. Future work**

Future work items listed without priority are:

- a.c. and d.c. testing criteria for tools, equipment and devices used in live working.
- inspection and diagnostic tools (non contact/proximity voltage detectors, live line rope tester, etc);
- factors influencing the evaluation of clearances required for safe live working (electrically floating objects, high humidity, defective polymer insulators, etc);
- robotics and manipulators;
- EMF concerns (power frequency and radio frequency) as they pertain to live working;
- future developments in protective clothing (conductive and insulating);
- future developments in personal protection against effects of electric arc, as they

- pertain to live working;
- insulating scaffold, ladders and booms.

<b>E. Maintenance cycle (publications not included in the programme of work)</b>				
<b>Publication no.</b>	<b>Date of publication</b>	<b>Review date</b>	<b>Maintenance result date</b>	<b>Responsibility (Maintenance Team)</b>
60050-651	1999	2008	2011	TC 1/TC 78 (WG 1)
60743	2001		2011	WG 1
60832	1988	2007	2008*	WG 12
60895	2002		2010	WG 13
60900	2004	2008	2008*	WG 12
60903	2002	2005	2008*	WG 13
60984	1990	2004	2008*	WG 13
61219	1993		2010	WG 13
61229	1993		2010	WG 13
61235	1993		2012	WG 12
61236	1993	2008	2011	WG 12
61243-2	1995	2008	2010	WG 14
61243-5	1997		2012	WG 14
61318	2007		2013	WG 11
61328	2003	2008	2010	WG 12
61472	2004		2010	WG 11
61478	2003	2008	2008*	WG 12
61479	2001		2010	WG 13
61481	2001		2010	WG 14
61813	2000		2009	WG 11
61911	2003	2008	2010	WG 12
62193	2003		2010	WG 12
62237	2003		2010	WG 12
62263	2005		2011	WG 12
61482-1-2	2007		2010	WG13

\* Maintenance to be started by the end of 2008.

Name or signature of the secretary

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