

T&D Europe WG4

POSITION PAPER ON EU DIRECTIVES

Revision July 2010

COMPLIANCE WITH EU DIRECTIVES RELEVANT TO POWER TRANSFORMERS ACCORDING TO EN 60076 , and HIGH-VOLTAGE SWITCHGEAR AND CONTROLGEAR (see Annex)

Comments:

Listed below are Directives of the European Union which, it is believed, might be applicable to **High-Voltage Electrical Equipment**:

- The Machinery Directive (MD)
- The EMC Directive (EMCD)
- The Low Voltage Directive (LVD)
- The Construction Products Directive (CPD)
- The Pressure Equipment Directive (PED)
- The Energy-using Products Directive (EuPD)
- The Directive on Waste Electrical and Electronic Equipment (WEEE) and the Directive on the Restriction of the use of certain Hazardous Substances in electrical and electronic equipment (RoHS)

The Machinery Directive (MD) 2006/42/EC applies to most types of machinery apart from certain special types which are specifically excluded.

The current version (superseding the previous version 98/37/EC) states clearly that HV switchgear and transformers are exempt from the MD. Article 1.2 is relevant: i.e. *“The following are excluded from the scope of this Directive”*, which states in subsection I: **“the following types of high-voltage electrical equipment: - switchgear and controlgear - transformers.”**

The EMC Directive (EMCD) 2004/108/EC is intended to apply to nearly all electrical equipment. Specifically, high-voltage electrical installations are fixed installations. Therefore, whilst high-voltage installations are subject to the essential requirements of the Directive, there is no need for CE-marking, or an EC declaration of conformity, or to involve a notified body.

As for the constituent parts of high-voltage electrical installations, such as high-voltage switchgear and controlgear or transformers, these can be apparatus intended for incorporation into a given fixed installation. **There is, therefore, no need for CE-marking, neither an EC declaration of conformity, nor to involve a notified body.**

The Low Voltage Directive (LVD) 2006/95/EC –

The current version of the Low Voltage Directive 2006/95/EC was published on 27 December 2006 and repealed the earlier version 73/23/EEC, but the content remains the same. Therefore there will be no new national law based on this revision.

The LVD applies to low voltage equipment (subject to the voltage limits), also used within high-voltage switchgear and controlgear e.g. control circuits, relays of protection, measuring and metering devices, terminal blocks etc. This equipment, when procured from the market place, has to comply with the LVD and to carry the CE Marking.

However H.V. switchgear and controlgear will not carry the CE Marking in relation to the LVD because that would be illegal due to high-voltage products falling outside its scope.

Currently the LVD is under revision to align with requirements of the New Legislative Framework for the marketing of products (Proposal to align ten product harmonisation directives to Decision 768/2008), but by its nature of the applicable voltage range (< 1000 V AC and < 1500 V DC), this Directive remains not applicable to HV Switchgear and Controlgear.

Construction Products Directive (CPD) 89/106/EEC

Switchgear and Controlgear are not within the scope of the CPD.

The directive clarifies the scope as follows:

“Article 1

*For the purposes of this Directive, 'construction product' means any product which is produced for incorporation in a **permanent manner** in construction works, including both buildings and civil engineering works.*

...”

The official European commission CPD webpage¹ also defines that

“Incorporation of a product in a permanent manner in the works means:
· *that its removal reduces the performance capabilities of the works; and*
· *that the dismantling or the replacement of the product are operations which involve construction activities.”*

This is definitely not the case for switchgear, controlgear and transformers and hence they are outside of the scope.

The Pressure Equipment Directive (PED) 97/23/EC applies to all equipment with an internal pressure higher than 0,5 bar.

The *“Enclosures”* used for the HV Switchgear are explicitly excluded in the Pressure Equipment Directive.

Reference is made to Art. 1,3. *“The following are excluded from the scope of this Directive “and then under 3.12: “enclosures for high-voltage electrical equipment such as switchgear, controlgear, transformers, and rotating machines“*

Since its implementation, the PED is unchanged.

The Energy-using Products Directive (EuPD) 2005/32/EC

[It should be noted that on 21 October 2009, the recast of the EuP Directive 2005/32/EC was adopted (extension to energy related products) as the **Energy Related Products Directive (ERPD) 2009/125/EC** and will come into force on 20th November 2010]

Manufacturers are in favour of reducing the level of transformer losses by a structured approach (standardisation).

¹

http://ec.europa.eu/enterprise/sectors/construction/documents/legislation/interpretative-documents/doc1_en.htm

The level of reduction should be in line with Kyoto protocol for greenhouse gas implications.

The reduction of the losses has to be coherent with the ways in which the countries produce the energy and the actual loss levels in these countries. Some countries have already reduced the level of transformer losses and therefore their efforts have to be minimized.

The reduction of losses for dry type transformers and immersed transformers should be studied by the relevant technical committees.

Directive on Waste Electrical and Electronic Equipment (WEEE) 2002/96/EC, and Directive on the Restriction of the use of certain Hazardous Substances in electrical and electronic equipment (RoHS) 2002/95/EC

HV equipment is outside of the WEEE and RoHS directive (Article 3 WEEE).

Other Directives

Presently HV Switchgear and Controlgear and Power transformers are not falling under any other Directive requiring an EC Declaration of Conformity and subsequently CE Marking.

New developments are followed carefully, and initiatives will be developed when appropriate.

Annex

T&D EUROPE is the European Association of the Electricity Transmission & Distribution Equipment and Services Industry whose Members are the European national associations representing the interests of the electricity transmission and distribution manufacturing and product derived solutions. T&D EUROPE results from the merger on the 6th of March 2008 of two former European sector committees, CAPIEL HV and COTREL. It represents the following countries: Austria, Belgium, France, Germany, Italy, Portugal, Spain, Netherlands and UK.

The companies represented by T&D Europe account for a production worth over € 25 billion, and employ over 200,000 people in Europe. Thereof T&D Europe covers 80 % of European Union transformer manufacturing capacity.

T&D Europe cooperates with ORGALIME - the Liaison Group of European Mechanical, Electrical, Electronic and Metalworking Industries. ORGALIME speaks for 33 trade federations representing some 130,000 companies in the mechanical, electrical and metalworking industries of 23 European countries. These industries employ some 7 million people and account for 1175 Billion Euro of annual output, which is a quarter of the EU's output of manufactured products and a third of the manufactured exports of the EU.

Switchgear and Control gear according to EN 62271- Series

Switchgear

A general term covering switching devices and their combination with associated control, measuring, protective and regulating equipment, also assemblies of such devices and equipment with associated interconnections, accessories, enclosures and supporting structures, intended in principle for use in connection with generation, transmission, distribution and conversion of electric energy.

Control gear

A general term covering switching devices and their combination with associated control, measuring, protective and regulating equipment, also assemblies of such devices and equipment with associated interconnections, accessories, enclosures and supporting structures, intended in principle for the control of electric energy consuming equipment.

Transformers according to EN 60076 – Series

T&D EUROPE defines transformers as those having a voltage greater than 1000 Volts. These transformers are described in EN 60076-1.

They are typically sold to operators of networks concerned with the transmission and distribution of electricity and also to industrial companies using large quantities of electricity.