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ZVEI-position

Placing on the market and CE marking of switchgear cabinets for machines

The safety of modern machines is achieved to a considerable extent by electrical components that are often installed in a switchgear cabinet. Uncertainty often exists as to which of the parties involved in the supply chain bears responsibility for conformity and whether a switchgear cabinet is covered by the Low-voltage Directive 2014/35/EU or, as a safety component, by the Machinery Directive 2006/42/EC.

In a document published on its website, the German Federal institute for Occupational Safety and Health (BAuA) states that under certain conditions, switchgear cabinets constitute "safety components" in the sense of the Machinery Directive, and must then satisfy the requirements of said directive. In typical modern value chains and supplier processes, in some cases very diverse in their form and involving highly specialized parties, distinction between further cases is however necessary. This distinction gives rise to differences in classification of a product within the EU harmonization legislation governing placing on the market and the responsibilities of the parties involved.

The following cases are relevant and in the ZVEI's view give rise to the respective consequences stated:

Case 1: The machine manufacturer is the cabinet builder for his own machine.

Where a machine manufacturer builds his own switchgear cabinet in order to fit it to a machine also manufactured by him, the switchgear cabinet is not placed on the market separately. It is therefore covered neither by the Low-voltage Directive, nor as a safety component by the Machinery Directive, nor by any other CE directive. In order to satisfy the statutory safety requirements, the machine manufacturer conducts the conformity assessment procedure for the combination of machine and switchgear cabinet in accordance with the Machinery Directive, and bears overall responsibility for the complete machine's compliance with the EU legislation governing CE marking. The same applies by analogy to a machine operator manufacturing a machine machine for his own use[1].

Conclusion 1:

- ***The switchgear cabinet is not covered by any legislation governing CE marking.***
- ***No declaration of conformity, no CE marking.***

[1] Refer to the definition of "manufacturer" in the Machinery Directive 2006/42/EC, Article 2 (i).

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Case 2: The machine manufacturer tasks a supplier with building the switchgear cabinet

The switchgear cabinet is built by the supplier on behalf of the machine manufacturer and supplied to the latter, but is not marketed by the supplier in his own name. The supplier is not deemed to be the manufacturer of the switchgear cabinet and supply to the machine manufacturer ordering it is not deemed to constitute placing on the market. The principles set out in Case 1 apply by analogy.

The scale of the design and production work commissioned by the machine manufacturer is irrelevant in this context. Of decisive importance is that the machine manufacturer himself assumes responsibility for the switchgear cabinet's compliance with the relevant provisions of the EU legislation governing CE marking and in this respect "has it designed or manufactured" in the sense of the definition of "manufacturer".

As in Case 1, the supplied switchgear cabinet falls on its own account neither under the Low-voltage Directive, nor under the Machinery Directive, since it is not placed on the market in its own right. In order to satisfy the statutory safety requirements, the machine manufacturer conducts a conformity assessment procedure in accordance with the Machinery Directive for the entirety of the machine including the associated switchgear cabinet, and bears responsibility for the complete machine's compliance with the EU legislation governing CE marking.

Since misunderstandings and uncertainties regarding the responsibility and legal roles of the parties involved may easily arise in a supplier situation, a contractual agreement should preferably be drawn up stating explicitly that in the specific case concerned, the legal role of manufacturer and responsibility for conformity lie with the party ordering the switchgear cabinet, this party constituting the manufacturer in the legal sense.

Conclusion 2:

- ***The switchgear cabinet itself is not covered by any legislation governing CE marking.***
- ***No declaration of conformity, no CE marking.***

Case 3: The cabinet builder is the "manufacturer" of the switchgear cabinet.

Should the cabinet builder place the switchgear cabinet on the market in his own name, he is responsible for its compliance with the legislation governing CE marking. For this purpose, he must apply the EU harmonization legislation applicable to the switchgear cabinet. The legislation relevant in a given case depends upon the properties and intended purpose of the switchgear cabinet. As described below, a distinction must be drawn in practice according to whether or not the switchgear cabinet contains to whether or not the switchgear cabinet contains safety functions[2].

Case 3.1: The switchgear cabinet does not contain safety functions.

Should the switchgear cabinet not contain safety functions, it is not covered by the Machinery Directive. It constitutes neither a "machine" nor "partly completed machinery" in the sense of Article 2 (a) and (g) respectively of the Machinery Directive. Furthermore, as set out in Article 1 (2) (k), "Low-voltage switchgear and control gear" in the sense of the Low-voltage Directive 2014/35/EU is in any case excluded from the scope of the Machinery Directive.

[2] Note: The term "safety function" is used in the Machinery Directive with a meaning somewhat different to that in standards. Whereas for example in the sense of EN 61508, the term always refers to the entire cause and effect chain of all components involved, for example from the triggering sensor to the activated actuator, in the sense of the Machinery Directive it may also refer only to a sub-function of a component within the safety chain or to an "element safety function" in the sense of EN 61508-4. The term is used in this paper in the wider sense as used in the Machinery Directive.

A switchgear cabinet intended for operation at voltages between 50 and 1000 V AC or between 75 and 1500 V DC constitutes "electrical equipment" in the sense of the Low-voltage Directive, which is then to be applied. In certain cases, further legislation such as the EMC Directive 2014/30/EU or the RoHS Directive 2011/65/EU may also apply.

Conclusion 3.1:

- ***The switchgear cabinet does not constitute a safety component in accordance with the Machinery Directive.***
- ***The declaration of conformity and CE marking for the switchgear cabinet is to be performed by the cabinet builder in accordance with the Low-voltage Directive and possibly further directives as far as applicable.***

Case 3.2: The switchgear cabinet contains safety functions.

Where a switchgear cabinet also performs switching and control functions that in whole or part constitute safety functions, the definition of a safety component under Article 2 (c) must be taken into account. In practice, a distinction must be drawn here between the following two constellations.

Case 3.2a: The safety function is implemented by the cabinet builder.

Where the safety function defined by the manufacturer is implemented in the switchgear cabinet in whole or part by the use of components that are not themselves safety components (normal relays, logic units, etc.), the switchgear cabinet constitutes a "safety component" in the sense of Article 2 (c), and the same requirements apply as for a machine in the sense of the Machinery Directive.

Conclusion 3.2a:

- ***The switchgear cabinet constitutes a safety component in the sense of the Machinery Directive.***
- ***The declaration of conformity and CE marking in accordance with the Machinery Directive are performed by the cabinet builder.***

Case 3.2b: The safety function is implemented entirely by the use of safety components

Where a cabinet builder implements safety functions entirely by purchasing safety components placed as such on the market and installs and connects them in the cabinet entirely in accordance with the specifications of the safety component manufacturer and without adding safety functionality of his own, the switchgear cabinet as such does not become a safety component. Conformity assessment for the safety component in accordance with the Machinery Directive has already been conducted by the manufacturer of the safety component. In accordance with Section 2.1 of the *Blue Guide*, such a *"combination of products and parts, which each comply with applicable legislation, does not always constitute a finished product that has to comply itself as a whole with a given Union harmonisation legislation"*.[3]

The fitting of the safety component does not cause the Machinery Directive to extend to the entire switchgear cabinet. In this case, the switchgear cabinet is a sub-assembly containing a safety component. The cabinet builder forwards the safety component manufacturer's

3 "Blue Guide" on the implementation of EU products rules 2016. Commission notice in the Official Journal of the EU No C 272/1 dated 26 July 2016.

instructions on operation and declaration of conformity to the purchaser of the switchgear cabinet. The cabinet builder is responsible for proper installation of the safety component and assesses the conformity of the switchgear cabinet as in Case 3.1 in accordance with the directives applicable in the case concerned (such as the Low-voltage, EMC and RoHS Directives).

Conclusion 3.2b:

- ***The switchgear cabinet contains safety components in the sense of the Machinery Directive, but is not itself a safety component.***
- ***The declaration of conformity and CE marking for the switchgear cabinet may be performed by the cabinet builder in accordance with the Low-voltage Directive and possibly further directives. The declarations of conformity and instructions for use of the manufacturer of the safety components fitted are forwarded to the machine manufacturer.***

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