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Ordinance provides clarification

Modification and modernisation of machines according to the new German ordinance on industrial health and safety (BetrSichV)

The new version of the German ordinance on industrial health and safety (Betriebssicherheitsverordnung - BetrSichV) has been in force since the middle of the year. It contains some changes that are of relevance to all organisations that operate machines and systems. And, finally, it clarifies – together with interpretation paper from the German Federal Ministry of Labour and Social Affairs (BMAS) – the question as to which safety requirements must be taken into account on the modernisation and modification of machines.

The current version of the BetrSichV contains a definition of a “significant change”. This term in itself is not new. It is well-known to all site managers who task others or undertake themselves the modification and modernisation of machines.

A matter of definitions: what is a “significant change”?

This issue was often the subject of discussions and uncertainties in the past. Although it was defined that machine safety must always be re-assessed if the modernisation or modification represents a significant change. And there were also cases that occurred frequently in practice and where such a change was indisputable – for example if the organisation operating the machine integrated several partly completed machines into an overall machine or linked them to form a system. In this case the organisation operating the machine becomes the manufacturer and must therefore take into account all directives and any standards relating to machine safety that apply to a machine manufacturer.

Helpful: interpretation paper from the BMAS

However, on the modification of existing machines there was always room for interpretation as to whether the change was significant or not. From the point of view of the standardisation bodies, the supervisory authorities, and also some site managers and organisations operating machines, this was an unsatisfactory situation that has now

come to an end. The BetrSichV and an interpretation paper from the German Federal Ministry of Labour and Social Affairs (BMAS) dated 9 April 2015 now provide clarification. According to the definition in the BetrSichV there may be a significant change if there is a change of function (intended use), an increase in performance, or a change in the safety system – whereby a safety-related improvement is expressly not evaluated as a significant change.

Key question: is there a new hazard?

An interpretation paper from the German Federal Ministry for Labour and Social Affairs (BMAS), which was prepared with the involvement of the BAuA (German Federal Institute for Occupational Safety and Health) and published on 09 April 2015 in the joint ministerial gazette (Gemeinsamen Ministerialblatt - GMBI 2015, p 183), is even clearer. According to this interpretation paper, a significant change occurs if there is a new hazard. If this hazard results in a new or increased risk and the existing safety measures are inadequate, and it is not possible to establish a safe state using simple protective devices, then by definition the change is significant. As a consequence, a risk assessment as per the standards must be undertaken for the related changes and a conformity assessment procedure must be followed that results in the renewed CE marking of the machine. Among other aspects, it may then be necessary to fit additional protective devices to the machine.



01 Caution, risk: after modifications to machines the operating organisation must check whether there are new risks or existing risks have been increased

Flowchart eases assessment

This process is shown very clearly in a flow chart in the interpretation paper. If the operating organisation has made a change to a machine, the following initial questions arise in relation to safety aspects: “Is there a new hazard?” and “Is there an increase in the existing risk?” If it is possible to answer both questions with no, the change is not significant. However, if one of the two questions is answered with yes, the operating organisation must check whether the existing safety measures are adequate. If this is not the case, it must be checked whether the (new or increased) risk can be eliminated or adequately minimised using simple protective devices. If this is possible, the operating organisation must take this measure and install additional protective devices. However, if the operating organisation answers this question with no, the change is significant and a new declaration of conformity must be prepared for the machine or for the system – including all the preceding steps such as a complete risk assessment.



02 The safety sensor RSS 16 is very suitable for safety-related retrofitting to existing machines

What is a “simple protective device”?

It may be due to the complexity of the subject, but it is almost ironic. Due the explanation provided by the interpretation paper there is a new definition-related question: what exactly does the term “simple protective devices” mean? Luckily, the experts are agreed that the most commonly used protective device, the guard fence, can be termed a simple protective device. The current interpretation paper also no longer uses the term “simple guards”, but “simple protective devices” instead. This means: movable guards (that is a guard fence with guard door) and protective (e.g. optoelectronic) devices can also be considered “simple protective devices”, provided they do not interact significantly with the existing safety-related control of the machine. In many cases the organisation operating the

machine will come, however, to the conclusion that the modification, the (extensive) repair or the retrofit is not a significant change and it is therefore not necessary to undertake the complete conformity assessment process again.

Additional responsibility for the operating organisation

The new BetrSichV brings additional new obligations for the organisation operating the machine; these obligations have already been addressed in detail in issue 7-8/15 of this magazine. For example, on procuring new machines the operating organisation must undertake a hazard assessment to identify (residual) hazards in the specific situation in which the machine will be used. The hazard assessment must also be checked regularly and updated, if necessary, and that over the entire service life of the machine. In practice this aspect could result in the necessity for a safety-related upgrade – a new task for site managers, maintenance engineers and/or safety engineers.



03 Optoelectronic protective devices are also often used if the risk at hazardous points on existing machines is to be removed or minimised

In the event of uncertainty: seeking advice helps

There is no doubt that the new BetrSichV, in combination with the interpretation paper from the BMAS, provides clarification of the much-discussed question of how a „significant change“ is to be defined. However, it also brings new tasks for the site manager and the manager’s staff. The Schmersal Group has added events to the comprehensive seminar program run by the tec.nicum academy that are explicitly aimed at organisations operating machines, and safety engineers in the organisations, to answer their questions related to functional safety as well as the BetrSichV. The complete seminar program is available at www.tecnicum.schmersal.com. As part of its „safety services“, Schmersal also undertakes the safety-related analysis of existing sites and machinery – a service that is intensively utilised worldwide, particularly by multinationals and particularly safety-conscious manufacturing companies.

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