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„Safety Services“ at work Safety-relevant evaluation of existing machinery

Machine owners must ensure the safety of the plant and machinery used by their employees. A “siting” in the sense of a uniform safety-relevant evaluation with the aim of identifying weak points can be useful here. This gives owners the peace of mind of knowing their machines comply with current standards and regulations and that their employees can work safely with them.

A manufacturing company's machine pool is normally a heterogeneous collection of machinery. It contains old and new machines which have been partially rebuilt, extended, modernised or interlinked either by the owner or another company.

Are the machines safe?

It's a fair question to ask whether all this machinery is safe. Do they comply with the current machine safety standards specified by the Machinery Directive and its derived standards? Has the user perhaps created his own set of requirements or specified standards against which the machines must be evaluated? These questions arise whenever safety shortcomings are discovered or when machinery or complete production lines are relocated to another site. If one company takes over the production facilities of another company, the buyer may

query whether the facilities comply with his own safety standards. For these reasons, a safety-relevant analysis of the machine pool is always good idea in these situations.

Evaluation of more than 2,000 machines at fourteen sites

Schmersal's „Safety Services“ business division knows how to find the answers to these questions and systematically work through the associated tasks. Staff recently completed a project which was extraordinary on account of its sheer size.

After a global medical technology company merged with another one in the same sector, the company was faced with the challenge of evaluating the newly acquired production sites and processes, and standardising everything as much as possible. Machine safety also needed to be checked and brought up to the same standard at all sites. In Germany, Austria and Switzerland alone this meant evaluating more than 2,000 machines at 14 sites. Schmersal's „Safety Services“ business division was tasked with the job.

Developing common standards

The first step undertaken by the customer and the Schmersal project team was to develop a matrix which would form the basis of the evaluation of each piece of machinery. Here they were able to take advantage of a piece of software already used in the company. This step culminated in a list of 90 properties to be evaluated and verified for each machine. Alongside the relevant standards and regulati-

ons, tamper resistance and ergonomics were also taken into consideration despite the great heterogeneity of the machine pool which was due to each site manufacturing its own products. The results of the machine evaluations were entered directly into the software on-site which did away with the need to record them separately.

Uniform procedure at all production sites

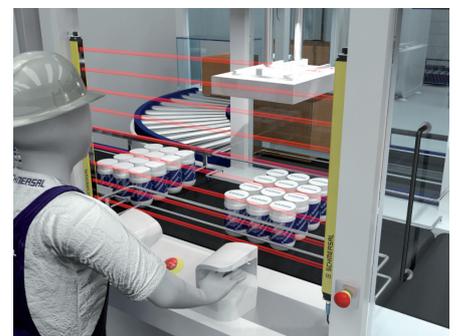
The safety experts followed the same defined procedure at all sites. Schmersal staff began by explaining the tasks to the supervisors at each site. This was followed by a joint inspection and the standardised evaluation of all machines. At the end the results and the acquired knowledge were presented to the company.

Core task completed in three months

The Schmersal Group was able to call upon the services of functional safety engineers in subsidiaries in each of the three countries. The resources of the CE network were also used. This network set up by Schmersal comprises of twelve independent engineering companies, each specialising in an area specific to machine safety.



In practice a manufacturing company's machine pool is rarely as homogeneous as the one shown in this photo of an ideal facility



Specialist „Safety Services“ for optoelectronic protective equipment

With the help of this qualified manpower, it was possible to evaluate in excess of 2,000 machines at all 14 sites within three months and accordingly document the results. The project was thus concluded. There are follow-on evaluation projects lined up though, for example at sites on other continents. The Schmersal Group is well prepared for such tasks. For example colleagues at its U.S subsidiary have a wide range of experience with such machine evaluations.

Relocating a production line

In another project, an international car manufacturer wanted to shift two gearbox production lines to a new site i.e. one from a European manufacturing site and one from a corporate brand. The question which presented itself here was whether the safety requirements set out in the relevant company standards were fulfilled. Schmersal's functional safety engineers tested every station in the linked production line for compliance with both EN standards and company standards.

Overtravel measurements at approximately 450 hazard areas

The „Safety Services“ offered by Schmersal are not always so extensive as the ones described above. Often it's „just“ a question of evaluating the safety aspects of a single machine or the machine's functions. Sometimes though, rather than working on a one-off project, the team provides ongoing services. For example Schmersal engineers are responsible for regularly testing 450 safety light curtains and grids at the works of a renowned European car industry supplier. In accordance with the Ordinance on Industrial Safety and Health (BetrSichV), (TRBS [Technical Rules for Operational Safety] 1203), this optoelectronic protective equipment must be regularly tested to check it promptly halts hazardous movements when the stop function is triggered. In practice it's quite likely the protective equipment's overtravel time will be greater when, for example, heavier tools are used or as a result of wear and tear of the moving mechanical components. Carrying out overtravel measurements provides proof that the machine user and owner are literally on the safe side.

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