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Confidence in the use of machines

The continuous and prolonged use of the machine by the operator, in the latter, leads to a certain confidence linked to the use of the machine with a consequent lowering of the level of attention and greater probability of incurring harmful consequences.

MTM Consulting s.r.l. is able to follow the employers in the drafting of the risk assessment document also with respect to the methods of interfacing the operators with the machines. The activity is also carried out towards the machine manufacturers in order to highlight the potential risks associated with incorrect, and therefore unforeseen, use of the machines themselves.

The prolonged use of a machine in time leads the operator to a high level of knowledge of the machine but leads to a reduction in the perception of the actual risks and dangerousness of the machine. In fact, the monotony, repetitiveness and also the experience negatively affect the perception of the risk that the operator has with consequent increase in harmful events. This lower risk perception, compared to the real one (mainly linked to the statistics of accidents on similar machines), and therefore the confidence in using the machine exposes the operator to higher risks compared to those to which an operator working for the first time on the same machines would be exposed.

In fact, over time, the operator tends to lose the necessary attention and to take the proper precautions related to the use of the equipment and exposes himself, unconsciously, to the dangers of the machine increasing the probability of a dangerous event. Ultimately, the operator tends to perform, unconsciously, an incorrect use of the machine as it differs from what was originally intended by the manufacturer.

Interventions by the employer

The monotony linked to the intervention that the operator must implement on the machine is the first aspect on which the employer must intervene. The monotony, in fact, gives rise to a sort of confidence between the operator and the machine used, the consequence of which is the underestimation of the dangers present on the machine with the consequence of being exposed more to harmful events.

The first solution that can be adopted by the employer is the rotation of the tasks: the periodic shift of the personnel between the different work stations of a production line or between the different machines of a department, is able to reduce the confidence effect with the different machines and/or workstations in line, determining a general improvement in the operator's level of attention during the planned activities.

Another aspect on which the employer must concentrate is the continuous training of the personnel. In replacement (or in addition) to the rotation of the tasks the employer have to guarantee, also thanks to his own prevention and protection service, a continuous training to his own operative personnel (according to article 73 of Legislative Decree 81/2008 and subsequent amendments). The continuous training must be aimed, among other things, also to keep high the level of attention of the personnel towards the risks present and related to the use of the machines, awakening those attentions in the operator that the monotony and repetitiveness have necessarily mitigated.

The same cited art. 73 expressly requires that personnel receive adequate training in relation to safety with regard to the conditions of use of the equipment and foreseeable abnormal situations. The training must therefore be aimed at highlighting the correct methods of use of the equipment and the abnormal conditions that could also derive from an unconsciously incorrect use of the machine to which the confidence in the use of the machine can potentially lead.

Compared to this mode of unconsciously incorrect use, even the machine manufacturer, already in the design phase, can adopt specific measures.

Solutions that the machine manufacturer can adopt

The manufacturer of a machine, before placing it on the market, is required to carry out a specific risk assessment aimed at demonstrating the compliance of the machine with the safety requirements of the Machinery Directive 2006/42 / EC. Specifically, the risk assessment must analyze the safety of the machine not only with respect to the intended use but also with respect to the reasonably foreseeable incorrect use, as defined: a "use of the machine in a manner different from that indicated in the instructions for use, but which may derive from easily predictable human behavior". As we indicated above, predictable human behavior is also an unconsciously misused use caused by historically predictable factors, such as monotony, repetitiveness, etc.

During the design of the machine, these factors must also be considered by the manufacturer of the machine itself, starting from the methods of use adopted in the past on similar machines, rather than statistics on accidents. The UNI EN ISO 12100: 2010 standard - "General principles of design - Risk assessment and risk reduction", provides some indications of the types of incorrect use or human behavior that can be easily foreseen to be taken into consideration during the evaluation and subsequent reduction of risks up to the machine design stage.

Ultimately, if during the risk assessment the machine manufacturer should detect situations of risk related to prolonged use of the machine and, therefore, to a lowering of the operator's attention level, already in the planning stage, specific measures necessary to reduce these risks must be adopted, highlighting, as always foreseen in the risk assessment process, the residual risk present in the instructions for use. Among other things, these aspects fall within the principles of ergonomics which must comply with the specific requirements of the essential requirement 1.1.6 of Annex I of the Machinery Directive 2006/42 / EC.



The next step it is up to the user who is required to adopt the procedures for use and interfacing with the machine defined by the manufacturer and included in the instructions for use and transmit them to the staff in charge of using the machine during the above mentioned mandatory training and training activities.