ISO 45001: WHAT IT MEANS FOR SAFETY AND RISK COMMUNICATION

By Erin Earley

In this column, we'll discuss the International Organization for Standardization's recently published ISO 45001 standard, its parallels with risk communication on products and its implications for workplace safety.

As an electrical engineer or professional, one of your primary goals is the safety of the products you have responsibility for. The groundbreaking workplace safety standard that was recently published, ISO 45001, has important safety implications – and more parallels to product safety than you may expect.

WHAT IS ISO 45001?

Many organizations are moving to a management systems approach to better handle workplace risks and improve corporate social responsibility to safety. After a five year standards-writing process and collaboration by more than 75 countries, this spring, the International Organization for Standardization (ISO) published ISO 45001, the first global standard for occupational health and safety management systems. It gives organizations in the U.S. and around the world a structure to plan, support, implement and evaluate their efforts to eliminate or reduce risks to workers.

Efforts were made to align ISO 45001 with a combination of other safety and health management systems – including ANSI/ASSE Z10, OHSAS 18001, ISO 14001 and ISO 9001 – to allow organizations to be able to efficiently integrate its requirements into their existing management systems. As an international consensus standard, ISO is designed to work for a variety of organizations, located in countries large and small, with both sophisticated and emerging economies. It doesn't lay out a prescriptive set of actions that must be taken to improve occupational health and safety. Instead, it gives organizations of all sizes a framework to plan and implement an ongoing process – a system – to successfully manage risk and improve safety.

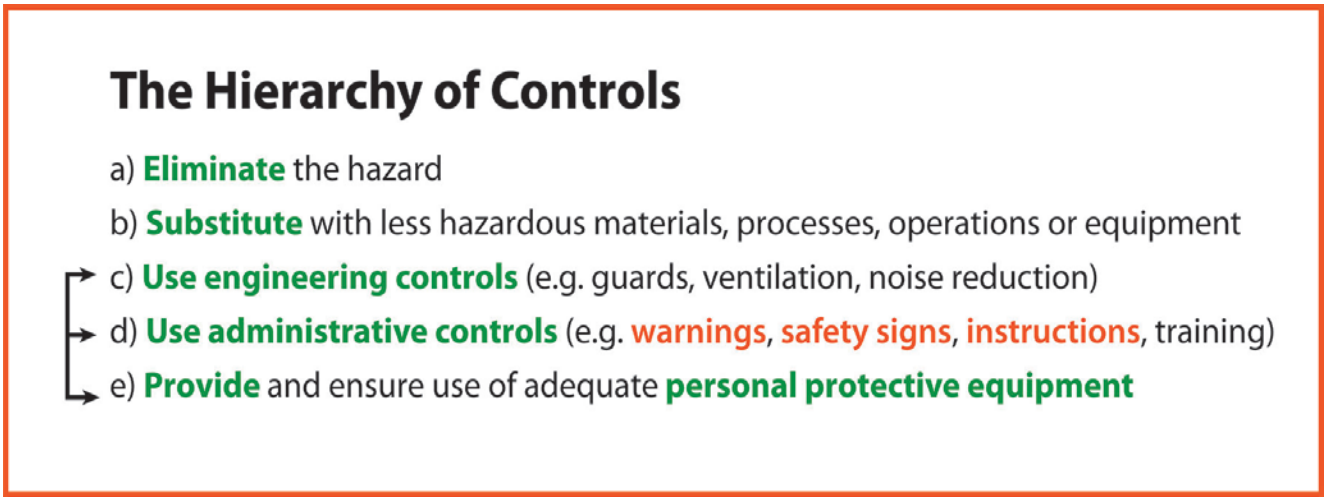

Figure 1: Risk reduction techniques and examples from the hierarchy of controls

PARALLELS TO PRODUCT SAFETY

One connection between this type of management systems approach to facility safety and product safety is a systems mentality to creating a safety program. It's important to look at the safety of your products holistically and on an ongoing basis – both across their lifecycle and in terms of all the products you manufacture. In the same vein, facility safety using an ISO 45001 methodology is an ongoing, continuous process to set benchmarks and make improvements.

Another parallel is the foundational element of risk assessment to identify potential hazards and control actions related to them. There are a number of statements made throughout ISO 45001 about the need to inform, communicate, and increase awareness of hazards and risks; communicating about residual risk is a key part of an ISO 45001-based safety management system.

According to ISO 45001, the hierarchy of controls is to be used by organizations to eliminate or reduce risks to workers. While the hierarchy of controls is not a new concept for facility or product safety, looking at the hierarchy itself as a system and not a series of standalone controls is an emphasis we may begin to see in workplaces. Many product safety professionals recognize that following the hierarchy of controls does not necessarily equate to making choices in order to implement a single measure of control. A more effective way to reduce risks that can't be eliminated or substituted is often to layer multiple controls (see Figure 1) – and that's a mentality that may begin to be more widely embraced in workplaces enacting a systems approach to safety.

As an example, think about a machine that has moving parts, creating a crush hazard. The hazard can't be eliminated so the manufacturer installed a guard on the machine and placed a warning label on the guard that says, "Crush hazard. Do not operate with guard removed. Lockout/tagout before servicing." See the safety label example in Figure 2.

The equipment manufacturer has taken three actions related to the hierarchy of controls to mitigate this risk associated with their machine:

- Installed a guard
- Warned about the hazard
- Instructed how to avoid the hazard

Think about this same example from the perspective of the safety professional looking to mitigate the risk of a crush hazard from a machine in their workplace. They can do the following:

- Create a procedure to 1) inspect equipment on each shift to make sure the machine's guards are in place and 2) inspect the machine monthly to make sure its warning labels are intact and legible
- Implement safety training for all machine operators and maintenance personnel who may interact with the hazard, instructing them on how to safely service the equipment
- Install a facility safety sign that instructs people on how to safely lockout/tagout the equipment as a means to reinforce the safety training that has taken place. See the safety sign example in Figure 2. Additional

Figure 2: A product safety label placed on a guard on a piece of equipment (at left) and a safety sign warning of automatic startup on a machine in a facility (at right) (Label and sign designs ©Clarion Safety Systems).

signage could be installed to communicate about the need to wear proper personal protective equipment (PPE) when working with the machine.

In both of these examples, using the hierarchy of controls doesn't place limitations on implementing a single technique in the hierarchy. For the crush hazard at hand that couldn't be eliminated or substituted, the last three techniques in the hierarchy of controls – engineering controls, administrative controls and PPE – were used in combination to support one another. As a type of administrative control, product safety labels and facility safety signs reinforced the other risk reduction techniques in use in order to increase awareness of residual risks.

THE BIG PICTURE FOR SAFETY

There's another important intersection between ISO 45001 and product and workplace safety: consistency on warnings on products and in the workplace. Both the label and sign examples in Figure 2 use ANSI/ISO best practice design principles, which are considered the state-of-the-art for today's warnings. Currently, many of the signs in today's workplaces fall short of this; they use out-of-date styles, formats, and colors, as well as incomplete safety messages. ISO 45001 is expected to usher in a new era for the safety profession, with an opportunity to elevate occupational safety and health to a top priority in today's organizations. When it comes to bringing about awareness of residual hazards in the workplace, using the latest standards-based best practices in signage will be key to effective risk communication. The consistency that will come by using the best practice formats for safety labels on products and for safety signs on plant walls will help to drive better visual safety and risk communication. With better risk communication comes the possibility of significantly reducing injuries and deaths in the workplace. And that's our common, shared goal.

Erin Earley, head of communications at Clarion Safety Systems, shares her company's passion for safer products and workplaces. She's written extensively about best practices for product safety labels and facility safety signs. Clarion is a member of the ANSI Z535 Committee for Safety Signs and Colors, the U.S. TAG to ISO/TC 145, and the U.S. TAG to ISO 45001. Erin can be reached at eearley@clarionsafety.com.

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