Standards Increase Productivity as Well as Promote Safety

By Dan Henman
ROSS Controls® Troy, MI

Safety standards being written today not only provide guidance to help reduce the risk of injury or equipment damage, but also improve productivity in the workplace. The *ANSI/ASSE Z244.1-2003 (R2008)*[1] and *ANSI/PMMI B155.1-20062* standards are two examples of how standards promote safe work environments as well as making it possible for companies to increase productivity.

The *ANSI/ASSE Z244.1- 2003 (R2008) Control of Hazardous Energy Lockout/Tagout and Alternative Methods* standard addresses the need of manufacturers to reduce the time involved in performing safety procedures, while increasing the degree of safety provided. In the past, a routine task of clearing a simple jam could require a worker to spend considerable time commuting to different locations on a machine to perform lockout on multiple energy sources.

In the time-equals-money equation, this results in operators taking short cuts. These short cuts could include missing some lockout points and not locking out all the energy sources connected to the machine. Since lockout points are there to help prevent the equipment from being energized, neglecting one or more of the lockout tasks could very likely increase the risk of worker injury or equipment damage.

[1] ANSI is the American National Standards Institute; ASSE is the American Society of Safety Engineers.

[2] PMMI is the Packaging Machinery Manufacturers Institute.

The present *ANSI/ASSE Z244.1-2003 (R2008)* standard addresses this issue by allowing (in certain situations) for reducing the number of required lockout locations to one, which can be located near the operator. When properly implemented, such a single-point lockout can provide an excellent safety solution and while minimizing machine downtime occassioned by a lockout event. To accomplish these dual goals, the system must use a dedicated control system with a dual-channel, low-voltage lockable switch, dual control-reliable relays and control-reliable components such as a ROSS DM2® Series double valve, for example.

The term used for reducing the number of lockout locations to one is called Single-Point Lockout (SPLO). This alternative method may only be used for tasks that are part of the normal production and operation of the machine, and a risk assessment must be done for a given task to determine if the task qualifies for SPLO.

Why is SPLO so popular? It reduces the chance that an operator may miss or skip locking out an energy source when he/she is rushed to lockout the machine. Providing better assurance that lockouts will be properly used increases the safety for the operator and equipment. In addition, SPLO reduces the time required to put the machine into a safe mode.

Time=Money

One company using ROSS' DM[2]® Series valve was able to reduce lockout time by more than four minutes on a particular machine that averaged eight jams per shift! That is 32 minutes more of uptime per shift, or an hour and thirty-six minutes per day. Amazingly, this adds up to a full 8-hour shift of additional production time over a five-day period.

The *ANSI/PMMI B155.1-2006 Safety Requirements for Packaging Machinery and Packaging-Related Converting Machinery* standard addresses safety requirements for packaging machinery and packaging-related converting machinery. The standard now requires that safety shut-off and exhaust valves, which shut off and release pressure from the various systems during times of maintenance, need to be:

- Lockable only in the off position
- Easy to operate
- Equipped with an exhaust port having exhaust capacity equal to or greater than the capacity of the supply port, and
- Equipped with a visible pressure indicator

In some situations, there can be a false perception that the air has been quickly and totally dissipated when a shut-off and exhaust valve gets shut off, even when the valve only has a small bleed vent for an exhaust port as is the case with most ball valves used in most common packaging applications. The requirement of having a full exhaust port helps avoid this situation. For example, when exhausting one cubic foot of 100 psig compressed air, a fully ported one-inch valve will dump the air in 1.2 seconds as opposed to a one-inch ball valve with a vented exhaust, which will exhaust over a period of four minutes. An operator might not realize that it could take so long to exhaust the system and might begin the task at hand before the air is fully exhausted. Having a valve with a full-size exhaust port will help avoid this situation. In addition to the increased level of safety, the time-equals-money equation begs the question: What is the value to minimizing downtime for a particular task (by 99.5 percent in this example)? The ROSS L-O-X® valve complies with all the requirements of *ANSI/PMMI B155.1-2006* including the full-size exhaust port, while the majority of vented ball valves do not.

So remember, standards promote safety and uptime. Safety + Uptime in Production = Money is an equation that meets with *ANSI/ASSE Z244.1-2003 (R2008) and ANSI/PMMI B155.1-2006* standards.

Dan Henman is Director of Sales, North American Operations for ROSS Controls in Troy, MI.

Additional resources

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For over 60 years, ROSS has produced redundant, monitored valves for safety applications. The DM2® Series C and Series E are ROSS' latest control-reliable valve series that are third-party certified for Category-3 and -4 applications. ROSS SV Series is third-party certified for Category-2 and -3 applications. 2009 marks the 47th anniversary for ROSS' pneumatic energy isolation L-O-X® valve series. All of ROSS' safety products meet or exceed the global safety requirements for machine safeguarding and energy isolation. ROSS' global safety team can assist with system and product selection and provide solutions that help customers standardize globally.