



ANSI updates Industry Safety Requirements – a sign of much to come.

On April 25, 2006 ANSI/PMMI approved changes to document # B155.I-2006 relating to Packaging Machinery and Packaging Related Converting Machinery.

Even if you are not in the packaging or converting industry, the changes that ANSI has approved are very important as a sign of things to come for all process and manufacturing industries.

So, who is ANSI and why should I care what they do? ANSI is an acronym standing for the American National Standards Institute. They are a diverse group of 85 employees and 125,000 industry experts and volunteers that meet and decide collectively the best way to do certain tasks related to the industry they are guiding.

The value of these groups is that through experience, they give guidance as to “minimums” and / or the best practices. They also give guidance to regulatory organizations such as OSHA (Occupations Safety and Health Act). OSHA sets minimum standards and enforces these standards for proper operating conditions and practices in our work environments. OSHA is a US Federal organization. However, many states have their own OSHA regulatory and guidance agencies that begin at the federal level and then add additional “more strict” minimum standards.

How do these modifications affect OSHA and impact producers of anything? Two ways: First, the modifications that occur in one industry historically have almost always spilled over into other industries. In time, these changes will show up and influence most industries guidelines. Second, OSHA is a unique organization in that they have “never had an original thought”. As an agency, OSHA goes outside itself to the industry experts and adopts their safety guidelines as MINIMAL STANDARDS. In various places through their documentation, they also make the statement that you need to comply to the “best known safety practice”. Meaning, if the industry updates their standards, then they become the new standard for you as you learn about them. So if you make the statement that “My business complies with OSHA guidelines” you may be significantly behind in what the industry is doing and potentially open to added liability.

What are the ANSI Modifications?

Section 5 Requirements – for design, construction, modification, and installation. Suppliers, Users, Integrators, Modifiers, and re-builders shall use a risk assessment and reduce the risk to an acceptable level.



[The key to this section is that it includes everyone in the life of the machine. No one is exempt from adhering.]

Section 6 Risk Assessment – Shall be hazard and task based and assess the severity of harm, achieve an acceptable risk, and be documented.

Severity levels in the example include:

- Catastrophic – death
- Critical – severe injury or illness with irreversible damage
- Marginal – injury that requires medical care
- Negligible – minor injury with no or minimal care

[There are two things to highlight in this section. First - this section begins to loosely quantify and name the severity of risk categories. In a few past OSHA / ANSI documents, it was stated that this needed to be done, but with limited to no guidance. Second, is the requirement to document the steps taken to address and minimize risk. This document then must begin with the machine builder and become a “living document”. Changes and updates will need to be made with installation, removal, and modification to the machine, as well as whenever industry updates of best practices occur.]

Section 7 Specific risk reduction and safeguarding methods.

Machines can be divided into zones. The safety related control system references ANSI document TR4 and ANSI B11.19.

7.2.9.2 “Stop Functions - When pneumatic/hydraulic valves are incorporated into a safety stopping function, they shall be redundant and monitored for both fault and diminished performance as determined by the risk assessment.”

LOTO- “lockout / tagout” shall be in accordance with ANSI Z244.

Packaging machinery shall minimize potential hazards from:

- Over Pressure
- Pressure Surges
- Pressure Loss
- Fluid Jet
- Stored Energy
- Sudden hazardous movement of a hose resulting from leakage or component failure

7.11.1 Safety Shut Off and Exhaust Valve – shall

- Be capable of being locked in the off position only
- Be easy to operate (e.g. simple pull/push action)
- Have an exhaust port equal to or greater than its supply line



- Have a pressure indicator that is visible to the operator to indicate that the line is relieved of pressure
- Mufflers shall not restrict the exhausting of the system

[This last section is a large section with a variety of specific and implied desired outcomes. Many converting machines and some packaging lines can be physically large. Locking out the entire machine is, unfortunately, often not done due to the time required to do the job properly. This section of the changes allows for the machines controls to be broken down into sections. The safety controls can also be broken down into sections or regions on the machines and an individual area can now be dealt with while other portions of the machine potentially continue to operate. Once again, the risk assessment will dictate how and when this is appropriate.

The need for the stopping functions to be redundant and monitored, with feedback of component failure and diminished performance, speaks directly to OSHA's recently adopted ANSI standard and the whole emerging safety focus. Specifically – the ensuring that control reliability is maintained through not only the electrical components, but also into the fluid power systems as well. If, the degree of risk is such that you need to protect workers and equipment with two hand controls, light curtains, or safety mats, then the risk is sufficient to incorporate safety rated, control reliable, pneumatic and hydraulic components as well. If you don't know and understand the meaning of these descriptors, then the possibility is great that you are not incorporating them in your plants systems. The changes in acceptable lockout devices and worker protection equipment are specifically designed to protect workers and increase the likelihood that proper LOTO practices are completed.

These changes will come at a cost. But the cost may be manageable if it is done not in a begrudging spirit of forced compliance, but rather as an exercise to improve. You will be able to lower fixed operating costs, increase up time and improve employee safety and morale. This can be proven through time studies of down time relating to complicated (often overlooked) lock out and start up procedures. Once again, this is driven by the results of the risk assessment. Operating costs can be lowered through less air consumption and through lower insurance premiums.

If you are a plant owner, manager, safety consultant, or concerned employee and you could go to your insurance underwriter and document that you reduced your risk to employees or equipment by a large percentage, what would that do to your insurance and workman's comp premiums?

These changes and the thought processes behind them are a strong sign of changes to come in all of North American process and manufacturing industries.