Why Do Workplace Amputations and Similar Injuries Continue to Occur?

Insights
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Every week we see reports of amputations and deaths or OSHA Press Releases about big dollar penalties relating to guarding, lock-out and training.Should we conclude that many employers don't care or that employees themselves are usually at fault?Probably not.

Part of the problem is that familiarity can breed nonchalance.We become so accustomed to the work environment that we don't really consider what we're seeing around us.Management in particular must constantly remind themselves to look around and check to make sure that chains, belts, rotating shafts and pinch-points are guarded.

Another reason is that employers cannot rely on the equipment manufacturers to send fully guarded machines.Manufacturers are not required to meet OSHA standards and when you see a label reading "OSHA approved," remember that OSHA doesn't approve equipment and machines.A further problem is that the manufacturer may ship a properly guarded machine, but the employer's set-up may result in unguarded areas, disconnected interlocks or other problems.Moreover, quality used machinery is available in plastics, food production, beer brewing and a host of other industries.Installation at the new facility may not result in complete protection.All of these circumstances can contribute to leaving a hazard exposed. So a few points to remember:

- You, the employer are responsible to ensure proper guarding and cannot rely on original equipment manufacturers or anyone else.
- Never assume that guarding is fine – regularly check.
- Maintain a management of change mindset and when you add or alter machinery and lines, consider whether you have inadvertently created new hazards.
- Employee error may be a valid contributing factor, but don't stop there.

Rotating Shafts

One of the solid safety consultants with whom I work, SafEnvirons Inc.'s Jim Smith, recently talked about hazards associated with rotating shafts, and for good reason.

Any exposed rotating component on a machine presents a potential wrap-point on which clothing, hair or loose items can become entangled.Employees can be killed or maimed when pulled into operating equipment.Possibly the most horrific injuries occur when one's hair gets caught in a

machine. There have been at least two fatalities in the last few months involving shaft entanglements.

An OSHA January 9, 2006 Interpretation Letter emphasizes that "Section 1910.219 does not exempt round shafts from its guarding requirements.Also, OSHA's standard provides no exemption for shaft size or speed (rpm).

I've summarized and added to some of Jim's observations below.

Guards must be effective and should meet basic requirements:
Prevent exposure:The guard must effectively prevent hands, arms, any other part of a worker's body, and loose clothing and jewelry from making contact with moving parts.

Be durable:Guards should be secured, durable, and not be easily removable.Guards and safety devices should be made of durable materials that will withstand use and exposure in the facility environment.

Properly Designed:Any guard that hinders a worker from performing a job quickly and comfortably tends to be removed or circumvented in some manner.Design guards to allow servicing with a reasonable level of effort.Guards should also not create new hazards such as a shear point, a jagged edge or an unfinished surface.Regularly inspect guards.

Types of Guarding:
Fixed Guards.Fixed guards are permanent parts of a machine and are the most common guards because they're simple and permanent.Adjustable and self-adjusting guards are a means to guard a particular hazard while allowing the required work to be performed.

Guarding Devices:These are generally photoelectrical devices use light sources and controls that can interrupt the machine if the beam is broken.Other types include radiofrequency or capacitance devices use a radio beam that is part of the machine circuit.When the capacitance field is broken, the machine will stop.There are also various types of restraint devices for specific industrial uses.

Safety Controls:Safety trip controls, such as pressure-sensitive body bars, safety tripods and safety tripwire cables, can quickly deactivate a machine.

Location and Distance:Barriers to prevent access to the moving parts and restrictions on entry without lockout can provide a safe option to fixed guards in some cases, but training and rules alone are not sufficient.People can do unwise things.

Assistance:
OSHA Regulations and Safety Information is available at:www.osha.gov

OSHA's Machine Guarding page

OSHA's Machine Guarding E Tool

Assistance is available through the OSHA 21D Consultation Program through Georgia Tech and information is available at:www.oshainfo.gatech.edu/about.htm/

I also recommend a few articles from EHS Today:

Balancing the Pros and Cons of Machine Guarding Technologies

The down home American adage, "If it ain't broke, don't fix it," seems like it must date back to colonial times. In fact, the phrase was popularized in the 1970s, but its widespread use makes it seem older than it really is. In that sense, the phrase is a bit like safety mats...

Nov. 14, 2012 | http://ehstoday.com/safety/balancing-pros-and-cons-machine-guarding-technologies

Webinar

The Do's and Don'ts of Fixed and Moveable Machine Guards, Part...

Even though machine guarding challenges may be disparate, one common need emerges for all applications: Find the uncompromised method for protecting workers while simultaneously providing optimum productivity...

Nov. 30, 2011 | http://ehstoday.com/safety/management/dos-and-donts-moveable-machine-guards-1211

Article

The Do's and Don'ts of Fixed and Moveable Machine Guards Part 2

A well-conducted risk assessment will help you decide whether the selection of a moveable guard is the proper choice...

Jan. 5, 2012 | http://ehstoday.com/safety/dos-donts-fixed-moveable-machine-0112

Thanks to Jim and to EHS Today for this helpful information.

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