Technology

Digitizing Lockout/Tagout: Obstacles and Opportunities

James Langford | Sep 15, 2022

Some of today's biggest obstacles to digitizing lockout/tagout procedures in machine shops are the same ones you contend with using your smartphone in everyday life.

Wander too far from your network router at home, and your wireless connection is likely to fade or be lost altogether, along with that TikTok video you were checking out.

And there's no chance of sharing your latest photos or home movies with friends and relatives reluctant to give up their flip phones from the early 2000s or perhaps still relying entirely on landlines.

Similarly, in factories and machine shops, it's easy for wireless signals to get lost in sometimes cavernous workspaces, be dampened by thick masonry walls or disrupted by interference from high-powered CNC cutting tools and other equipment.

At present, that's seldom more than an inconvenience. If a digital lock on a piece of high-energy equipment were rendered inaccessible by a signal interruption, however, the situation could easily become costly, dangerous or both.

And that doesn't take into consideration workers who don't own smartphones or tablets and would be unable to download apps that interact with digital locks unless their employer provided the devices.

In essence, the technology to digitize ***lockout/tagout systems*** exists but it hasn't yet evolved to the point that it's easily accessible to all the factory and machine shop workers who might need it—or even available without interruption throughout their workplaces. Because digital LOTO systems may not be a good fit for every manufacturing location, Master Lock offers other safety products and services to help associates stay safe, like Bluetooth-enabled locks and eLOTO software.

What Does Digital Lockout Mean Today?

So far, those obstacles have limited the digitization of physical lockout/tagout routines required for ***high-energy equipment*** by the federal Occupational Safety and Health Administration, but not the recordkeeping and other paperwork that goes along with them.

Many companies have begun developing and storing lockout/tagout policies digitally, enabling workers to access them while working directly with equipment on the factory floor rather than walking to an

office to search through desks and file cabinets for printed manuals.

Master Lock's subscription-based ***eLOTO software***, which includes an online database of lockout/tagout procedures as well as two mobile apps—one for policy writers and one for inspectors—helps customers run safety audits and keep logs of physical lockouts.

Designers solved the problem of internet connectivity gaps by building the apps to work offline if necessary, so that collected data including photos may be uploaded later.

Read more: *Lockout Safety Procedures: 5 Elements Critical To Success*

Regulators are beginning to leverage technology, too. The Texas Division of Workers' Compensation, for instance, utilizes a digital Energy Control Procedure Form for high-energy equipment that safety officers can either print or store electronically.

Another innovation that's gaining traction is the use of RFID (radio frequency identification) tags that function somewhat like QR codes but rely on radio waves rather than images.

Amping Up Digital Lockout Capabilities

The catch is that those systems require a smart device such as a phone or tablet for on-the-spot access, so a physical copy of the LOTO procedure should still be made available at the machine. Companies, for the most part, are disinclined to pick up the tab for providing smart devices to every employee.

Read more: *Lockout/Tagout Procedure Tips: Authorized vs. Affected Employees*

While the cost of the devices themselves is a pivotal consideration, others include the risk of increasing worker distraction by encouraging device use or, in higher-risk environments such as oil refineries or chemical plants, the possibility of an accidental energy release from a non-intrinsically safe device.

Bluetooth Locks

As a result, machine shops, factories and other businesses required to use lockout/tagout procedures are exercising caution about introducing digital equipment into areas where personal safety is on the line, though some padlocks and machine guards are making their way onto the market.

Master Lock's Bluetooth padlocks, which include devices such as the 4401LHEC, can be used to control access to worksites or specific points inside them.

The advantage of Bluetooth technology is that it relies on proximity for signal transmission, so when the user is close enough to the lock, it can be accessed regardless of wireless internet connectivity.

What makes such padlocks attractive isn't just the simplicity of being able to unlock them with a phone and not having to carry keys around. When they're used correctly, the customer has a record of who opened a particular lock, what time they opened it, what time they closed it and where.

Chemical companies, for instance, could track who opened a storage tank and when, while other companies such as machine shops could give an HVAC technician limited access for after-hours repairs.

The device's added value, in short, is access management.

What steps have you taken to digitize lockout/tagout procedures? Tell us in the comments below.