# Optimized Design Means a Safer Workplace

Workplace safety is a top priority throughout U.S. industry, but how can we ensure that work spaces are as safe as they possibly can be?

Optimized system design incorporates the most advanced processes and technology to ensure a safer, more productive workplace, regardless of the industry you're operating in.

## The Benefits of Safe Design

An optimized system design boosts safety by applying twenty-first century safety standards to the output and production processes of today's industry.

Optimized designs include the ability for a system to see inside itself. By constantly monitoring its own processes, the system knows before any human could if there's a problem—by reacting before the problem becomes serious, the system not only maintains a quality and output threshold, but also avoids exposing workers to potentially catastrophic accidents caused by plant or machinery failure.

Today's facilities and plants need up-to-date systems that create safer, cleaner working environments while ensuring businesses are better prepared to meet the increasingly strict government standards of workplace and environmental safety.

## Creating a Safer Working Environment

Optimized system design improves safety in two ways:

- By protecting the operator
- By protecting the process or product

Typically, good design improves safety through either hardware or software upgrades. In this process, upgrades utilize high-speed communications and a control-reliable method that combine to prevent operator harm or process issues.

In terms of boosting workplace safety, a key hardware upgrade would be one that gives you visibility into the current state of a machine as well as its status and ability to provide self-monitoring capabilities. Other examples of safe design include hard guarding the machine with a physical barrier, or using a light barrier such as a safety light curtain to make sure that the operator environment and the machine are safely delineated within the workspace.

Today's machinery can also utilize automatic shutdowns when they sense potentially hazardous internal issues. High-visibility warning systems using lights, beacons, or icons that draw a user's attention to an issue before it becomes serious are also excellent ways of maintaining a safer working environment.

Perhaps most usefully, optimized design incorporates intelligent processes—that is, machines monitor themselves or are monitored remotely. Operators and technicians have access to the machine at all times, giving them real-time insight into the machine's state. As this can be done remotely, it allows operators to monitor a system without having to be physically present at the location. Removing the need to travel or work in often hazardous or hard-to-reach environments is a significant factor in making today's work practices safer.

## Workplace Safety and Return on Investment

A safe workplace is a benefit in itself. Employees deserve to be able to perform their duties in the safest possible environment. A demonstrable commitment to safety helps with worker recruitment and retention, and can even boost a company's bottom line.

For example, safer machinery can protect product yields and avoid cost overruns by reducing or completely avoiding unplanned downtime. In many instances, if an operator improperly opens a machine's door or blocks the process, they can actually damage the machine components—necessitating costly repairs. Damaged components can also injure the operator or adversely affect the product, which leads to lower product yield, with an obvious impact on the total bottom line.

A well-designed and safe process can guard against these events, reducing accidents and loss of production, while also boosting profits through increased uptime and efficiency.

## Challenges of Designing Safer Systems

Companies often need support in designing safer systems due to a lack of understanding of the complexities of designing and implementing optimized systems. Additionally, keeping up with changes in local, state, and federal standards is very challenging.

Valin helps by creating safe system designs and by providing onsite consultation and risk assessment services. Working closely with Valin, companies can develop an understanding of the current risk factors for their machines or processes. From there, Valin can assist in solution design, including hardware and software upgrades, and be available to offer support and expertise through the implementation, training, and system validation stages.