

LISTEN.
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People and Asset Safety

Service providers can help companies reduce safety risks, achieve compliance and boost production



Safety and Productivity: Partners in Success

An industrial safety program should strive to accomplish three primary goals:

- **Help protect people** from machine, process and electrical safety risks
- **Achieve regulatory compliance** while reducing the cost of that compliance
- **Improve productivity** wherever possible to support operational excellence

A significant obstacle to meeting these goals is the fact that workers in separate functions often have differing views on safety. Safety professionals, for example, are concerned with protecting workers and complying with safety standards, while operations professionals often worry about safety infringing on productivity.

However, studies have shown that safety and productivity can harmoniously coexist and – even thrive together. Best-in-class manufacturers, which are defined as the top 20 percent of aggregate performance scorers, have been found to outperform their industry-average counterparts with:²

5-7%

HIGHER
OEE

2-4%

LESS UNSCHEDULED
DOWNTIME

<50%

INJURY
RATE

These top performers share a common set of best practices that can be grouped into three core safety pillars:



CULTURE
(Behavioral)



COMPLIANCE
(Procedural)



CAPITAL
(Technical)

Reaching the level of a best-in-class manufacturer requires excelling in each of these three areas. Oftentimes, that can only be done by using the support and expertise of safety service providers.



Every **15 seconds**, **153 workers** have a work-related accident.¹

¹ Safety and Health at Work, International Labour Organization, 2017

² Integrated Safety Systems, Aberdeen Group, 2011

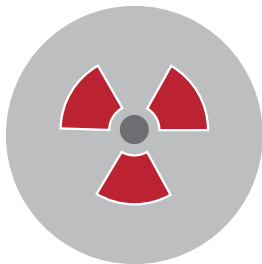
A Role for Safety Services

Few industrial companies have the full spectrum of safety expertise and capabilities in-house to meet their every need. Most use industrial-safety service providers for some level of support, such as to provide safety training to workers or to validate safety-system designs.

Many companies also turn to safety providers for help with unique safety-related challenges. This could include retaining key safety capabilities as they manage skills shortages or help with adopting key safety standards like ISO 13849 and IEC 62061 across global operations.

Beyond filling these organizational needs, safety services can also help companies realize best-in-class performance by improving their processes, competency and technology in the following:

Hazardous Energy Control



Electrical Safety



Machine Safety



18%

Increase in employee efficiency in lockout/tagout processes

15%

Reduction in cost of add-on machine safety solutions

13%

Use arc flash safety to improve asset optimization

up to 85%

Reduction of annual lockout/tagout audit times

¹ Supplier Provided Automation Services, ARC Advisory Group, 2015

Hazardous Energy Control

Lockout/tagout (LOTO) services can help companies create compliant, safe and productive LOTO processes.

LOTO graphical procedures show exactly where isolation points are and provide a more user-friendly format for LOTO methods and steps. They can be up to 40 percent faster to follow than text-based procedures and increase total employee utilization efficiency by up to 18 percent, while also potentially reducing errors during the LOTO process.

LOTO training can be provided to authorized and effected employees after a company changes its existing policy or introduces a new LOTO procedure format.

Policy services include reviewing or creating LOTO policies to make them clear and easy for employees to understand and implement.

Device-recommendation services help confirm LOTO devices are consistent with procedures. The recommendations consider factors, such as frequency of use, number of employees and existing device stock.

LOTO database software tracks LOTO procedures across sites. This can help companies identify trends to improve OEE and verify that employees are properly using LOTO. It can also reduce the time that is required for annual LOTO audits by up to 85 percent.



Company Standardizes LOTO Program and Boosts Productivity

A courier-services company that lacked a standardized LOTO program wanted to implement a standardized process and reporting structure across multiple facilities.

It enlisted a service provider, which implemented a LOTO-management software tool in each facility.

The software implementation helped create a standardized LOTO program across all facilities and led to a 13 percent improvement in productivity. Safety and operations leaders also can now use the software to monitor the LOTO program's status across all locations and to view LOTO-associated downtime.

Electrical Safety

Industrial-safety service providers can provide valuable arc flash safety support.

Arc flash studies, for example, can deliver two key benefits. First, they can provide visibility into hazard exposures to support informed decisions for protecting employees. Second, they can provide equipment-setting recommendations and mitigation solutions to help keep equipment performing as intended.

These studies can be conducted on existing, new or modified systems. Typical deliverables in this comprehensive service include the following:

- Arc flash analysis
- Arc flash/incident energy labels
- Protective-device coordination study
- Power-system analysis
- Short circuit current study
- One-line diagrams
- Risk-reduction recommendations

Annual maintenance agreements can also be combined with a new or existing arc flash study. This can help a company monitor and maintain any system changes that impact the study.

“ Each year, 2,000 workers are admitted to burn centers for extended injury treatment that is caused by arc flash.”

- Arc Flash Prospectus, IEEE



Manufacturer Achieves Multisite Arc Flash Compliance

A consumer-goods manufacturer had compliance issues in an arc flash program that spanned dozens of sites. Challenges included non-compliant programs, inconsistent and incomplete labeling, and the lack of a framework to maintain programs.

The manufacturer turned to a safety-services vendor to deliver an arc flash solution with consistent implementation across all sites. Activities included collecting and modeling data, delivering and applying labels, and developing reports and source files. The vendor also trained plant personnel and created a strategy for continuous updates.

The project resulted in arc flash-compliant sites and the on-boarding of new sites into a consistent program format. An annual-update strategy was also put in place.

Machine Safety

Machine safety services are available that support – and ease – all five stages of the functional safety lifecycle, which is defined in IEC 61508 and 62061.

1 Risk Identification and Evaluation

A service provider can conduct risk assessments and compliance-conformity audits to help companies understand the machine safety risks that exist in their operations. The full spectrum of services includes the following:

1. Conformity audits
2. Guarding evaluations
3. Basic safety assessments
4. Team-based risk assessments
5. Corporate safety-program development

2 Identifying Steps to Mitigate Risk

After audits or assessments are completed, a service provider can use the findings to define the requirements specification for mitigating identified risks. This process considers not only all modes of operation but also all machine interactions.

And defining the requirements specification, a safety service provider can also provide guidance to help companies with mitigation planning.



Ease Progression Through the Safety Lifecycle

Software tools can prove valuable in helping companies simplify their progression through the safety lifecycle.

The Safety Automation Builder with Risk Assessment Software (RASWin) is one example. It can help companies manage everything from assessments and functional requirements to a safety system's design, verification and validation.

The tool organizes information from each step of the process and machinery validation, and links each step of the lifecycle to avoid systematic failures. It also assists with product selection to achieve the required safety performance level according to ISO 13849-1 and can help create SISTEMA projects for analysis of all safety functions.

Machine Safety continued

3 Design and Verification

A service provider can review a safety system's design to help make sure it meets software and programming requirements, and to confirm that it uses the appropriate components. The provider can also conduct a circuit analysis and do a SISTEMA verification to confirm that the design meets its requirements.

4 Installation and Validation

Finally, a service provider can support validation planning and execution to help confirm that a machine is operating within its defined requirements and in compliance with standards. These services could include sending specialists on-site to help perform validation testing and document the entire process.

5 Maintain and Improve

After a machine or line is operational, a service provider can help its customer maintain a safety system across its lifecycle. Long-term support services can include ongoing competency training for employees, periodic machine safety validation services and annual or ongoing health checks and compliance audits.



Safety Vendor Helps Standardize Machine Safety Across Plants

An industrial company had accumulated several aging machines with no safety systems across multiple locations.

The company turned to a vendor to help improve the machines' safety performance and to train plant staff on the new safety systems and methodologies.

The vendor conducted standardized risk assessments, created consistent mitigation strategies, implemented new safety solutions and performed repeatable validations for the machines at all locations. Training was provided, and workers shadowed the vendor throughout the project.

At the project's completion, fully operational and high-performance safety systems were in place based on the risks identified during the assessment. The safety systems were consistent and standardized across all locations and employees were knowledgeable of the new systems.

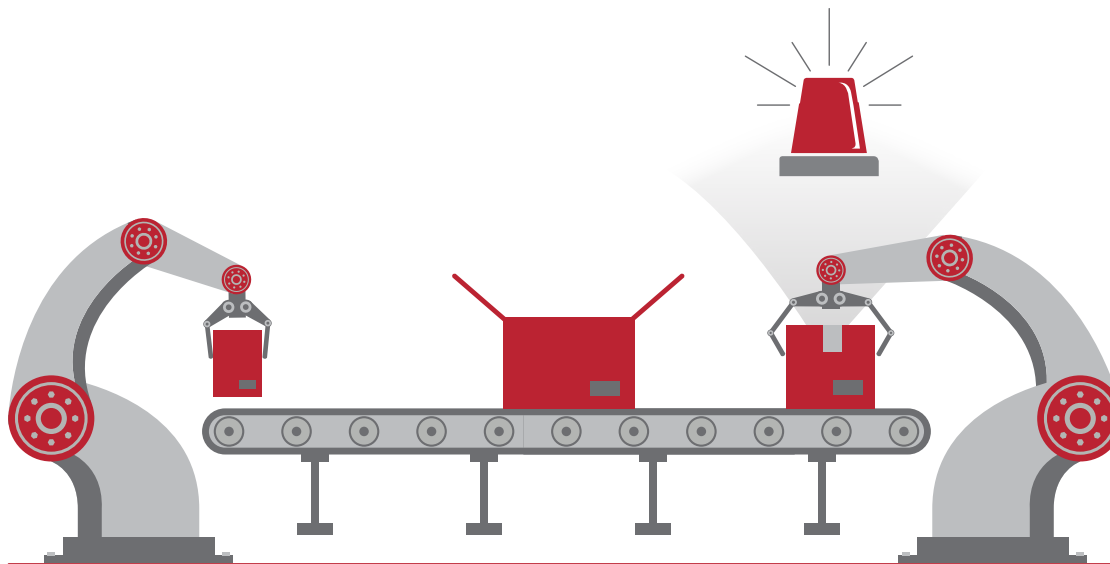
A New Approach to Safety

There is a growing awareness that safety can be more than just a cost of doing business. With a strong safety culture, compliant safety procedures and contemporary safety technologies, best-in-class manufacturers have shown that they can protect people and directly benefit the bottom line.

Rockwell Automation can help organizations work toward and realize this best-in-class Performance Level. Our industrial safety services are designed to help companies safeguard employees from harm and keep equipment compliant with the latest standards. We also proactively focus on ways to improve safety and reduce risk, while optimizing productivity.

“Rockwell Automation ... employs more TÜV Rheinland-certified professionals than any other company.”

- ARC Advisory Group: Machine Safeguarding Solutions
Global Market 2015-2020 Report



For more information about People and Asset Safety Services, call a Rockwell Automation Services representative or visit ***rok.auto/services***

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www.rockwellautomation.com

Power, Control and Information Solutions Headquarters

Americas: Rockwell Automation, 1201 South Second Street, Milwaukee, WI 53204-2496 USA, Tel: (1) 414.382.2000, Fax: (1) 414.382.4444

Europe/Middle East/Africa: Rockwell Automation NV, Pegasus Park, De Kleetlaan 12a, 1831 Diegem, Belgium, Tel: (32) 2 663 0600, Fax: (32) 2 663 0640

Asia Pacific: Rockwell Automation, Level 14, Core F, Cyberport 3, 100 Cyberport Road, Hong Kong, Tel: (852) 2887 4788, Fax: (852) 2508 1846