



Blog

3 key steps to minimize unplanned downtime of your industrial control system



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Do you know how much an hour of unplanned downtime costs your organization? While the cost of unplanned downtime varies greatly across industries and applications, its significance is universal. Downtime's biggest impact stems from lost production, however other sources include wasted labor costs, loss of clients, diminished reputation, and the opportunity cost of replacing equipment prematurely due to non-optimized maintenance.

Unplanned downtime can cost \$100,000's an hour

The specifics of your industry and operation can help you determine a more precise estimate of unplanned downtime costs—across all elements. Factors such as loss of clients and diminished reputation are more challenging to quantify and are often not easily reversed. Other factors, such as labor costs and opportunity costs are more readily quantifiable. A comprehensive cost estimate is a helpful guidepost in determining the most appropriate ways to proactively mitigate the risks. So, what can you do to minimize unplanned downtime?

Step 1: assess your control system health

To start, one simple yet highly effective first step is commissioning a Health Assessment, also known as a Preventative Maintenance Assessment, for your control system. The details can vary across vendors but at a high level, the purpose of these assessments is to provide an evaluation with specifics detailing the health of your control system.

An assessment of your control system health encompasses a review of your alarms, logs, equipment, and any concerns or challenges you have related to your system. The output of this assessment should identify common issues such as power supply failures and ground faults that, if unaddressed, can often lead to bigger problems later. A health assessment helps to create a prioritized list of recommended preventative maintenance actions so you know where to start and what's most important.

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Step 2: perform preventative maintenance

The goal of preventative maintenance is to proactively minimize or eliminate equipment failure before it occurs. Understanding the cost of unplanned downtime for your company helps to determine the right preventative maintenance strategy for your operation.

Across industries and organizations, a minimum requirement is a documented implementation plan for all safety or cybersecurity related patches and updates. The foundation of this plan is an understanding of your current versions of software, firmware, and hardware, and the recommended updates for each version. Regarding related patches, it is important to only use patches that have been validated to run in your control environment.

Additionally, faulty equipment should be repaired or replaced to prevent potential failures that lead to reduced operational efficiency or unplanned downtime. To bolster the prevention of equipment failure, it is helpful to craft a spares plan that combines onsite spares with vendor-managed spares to optimize your investment vs. risk ratio.

There are many other preventative maintenance tasks to consider performing. Your preventative maintenance strategy should be customized to your specific operational needs and risk tolerances. For companies with higher downtime costs and increased risks, both the benefits and investments in Preventative Maintenance are also greater.

Step 3: properly train your personnel

Equipment failures and lack of proper maintenance are not the only causes of lost productivity. The people in charge of operating and maintaining your control system play an essential role. And, in today's environment of consistently striving to do more with less, workforce reductions and turnover are putting even more pressure on remaining resources while creating knowledge and efficiency gaps that can lead to increases in human error.

If you truly want to get the most out of your equipment then you need to invest in properly training your site personnel. This should not be a one-time event but rather a dynamic approach to periodic training and refresher courses. A good training program has dual benefits. It can reduce costly human errors and also empower your team to improve the collective efficiency and productivity of your operation.



Your control system is key to getting the most out of ALL your investments

Today, across many industries and organizations, a proactive, preventative maintenance approach is taken on more expensive assets such as turbines and boilers. Health checks, preventative maintenance, and training are not as commonly performed on control systems. However, this strategy of focusing on assets provides only partial protection, creating blind spots and leaving vulnerabilities unchecked. While the initial investment for your control system is less than your turbine, your control system acts as the brains of your operation. Thus, smart manufacturers recognize that proper and proactive maintenance of their control system ensures their entire operation and business are protected to get the most out of ALL investments.

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