How to Execute and Sustain Successful Alarm Management with your Distributed Control System

In Distributed Control Systems of the 60’s and 70’s, alarms were hard wired into fixed annunciator panels mounted on the walls of a control room. The panels consisted of a discrete input and a red light on a window that was connected by a wire. Creating an alarm was a manual and permanent process because the installer had to drill a hole in the panel and run copper wire to activate the signaling device. This method required that significant thought be put into what events should be alarmed and why.

The modern HMI has changed traditional alarming methods. Alarms are now built into the distributed control system application software making it as simple as clicking a checkbox to enable them. This has led to a proliferation of alarms that may not be meaningful or relevant to the operator. Saturating the operator with nuisance alarms can cause them to ignore new alarms, while overloading them with too many alarms can cause them to miss critical alarms.

Because it is easy to add new alarms with the click of a button, it is important now more than ever to implement an effective alarm management program. While it can take 20 weeks to design and 20 months to implement a project, a distributed control system may be in operation for over 20 years. This means operators will live with the decisions others make during the design and implementation phases of the project for a long time!

Most additions, enhancements, and migrations of distributed control systems are treated and executed as a project. However, alarm management is an ongoing process that is never complete. Therefore; one of the keys to creating a successful alarm management program is to realize that it is NOT just a project, but an ongoing process. The ISA-18.2 standard suggests that alarm management is not just about hardware or software, but it is about the work process, or alarm management lifecycle.

The Benefits of an Effective Alarm Management Program

- Increase Uptime
- Improve Product Quality
- Improve Operator Effectiveness
- Reduce Process Safety Incidents
- Increase Throughput
Rockwell Automation® and exida, a recognized Encompass™ Partner, have condensed the alarm management lifecycle into seven major steps to consider for executing a successful alarm management project with the PlantPAx® DCS:

1) **Benchmark Alarm System Performance.** Quantify the average number of alarms / operators, identify nuisance alarms and “bad actors.”

2) **Develop an Alarm Philosophy.** What constitutes the need for an alarm? How are alarms prioritized?

3) **Perform Alarm Rationalization.** The goal is to create the optimum set of alarms that will maintain plant safety and keep the operation within normal operating limits. It is also important to document the rationale for why each alarm is needed.

4) **Advanced Alarm Design.** Add logic to suppress alarms when equipment is not in use or after plant trips to help prevent alarm floods.

5) **Implementation of Rationalization Results.** Load alarm configuration changes into the PlantPAx system and create Alarm Response Procedures for presentation to the operator in the HMI.

6) **Performance Monitoring and Assessment.** Regularly review alarm system performance reports to drive continuous improvement.

7) **Audit.** Compare the PlantPAx alarm settings versus those from rationalization and verify that processes and procedures are being followed.

Proper alarm management is an ongoing commitment. In a PlantPAx system, there is no reason to live with a poorly performing alarm system. Simple steps can be taken to execute and sustain successful alarm management with your distributed control system.

Learn more about exida and their tools for helping to optimize alarm management in a PlantPAx system.

Learn more about Process Solutions.
PlantPAx Success Story:

PlantPAx Boosts Productivity at Denver Wastewater Facility

For a greenfield wastewater treatment facility near Denver, the city’s Metro Wastewater Reclamation District desired an advanced process automation system that could optimize operations and improve maintenance procedures while simultaneously meeting compliance objectives. They asked engineering firm CH2M, which designed and implemented a virtualized PlantPAx® Distributed Control System, to accomplish these goals. The PlantPAx system not only streamlined engineering of the facility’s control and instrumentation systems, but also used mobile technology including ISA 18.2 standards for alarming and gray-scale graphics to give operators ready access to the information needed to efficiently operate and troubleshoot the new facility. The solution improves troubleshooting, predictive maintenance and operator effectiveness, while controlling the processing of nearly 30 million gallons per day (MGD) of wastewater with future expansion to 75 MGD. Read the entire article to learn more about this project, including how the design team was able to bring state-of-the-art mobile operator access and alarm management strategies to bear using PlantPAx tools.

Learn more about PlantPAx.

Educational Tools Now Available:

Like many industrial process plants, your manufacturing facility’s distributed control system (DCS) may have a poorly functioning alarm system. Among other things, limited funding and resources often present a barrier to adoption. Formal alarm management, which includes effective design, implementation, and maintenance, offers a solution. The following white papers help to resolve these industry challenges.

Economic and Effective Alarm Management
Performance Benchmarking and Alarm Philosophy Development
Alarm Rationalization and Implementation

Product and Service Highlights:

What’s New with I/O Modules?

Introducing the new Allen-Bradley® 1719 Ex I/O, a chassis-based intrinsically safe I/O solution for Zone 2 applications. These modules can be simply plugged into the backplane and communicate over EtherNet/IP. Add-On Profiles in Studio 5000® allow tight integration into PlantPAx systems. Modularity allows for easy configuration and the compact size of the chassis, including the power supply, makes 1719 Ex I/O an ideal solution for Zone 2 applications where space is limited.

Additionally, 1715-AENTR firmware version 3.0 includes several enhancement requested by customers. This firmware now enables the 1715 I/O modules to pass through device parameters that support the HART protocol. In addition, analog scaling has been added to the modules that will allow users to scale the inputs and set alarm levels. When firmware version 3.0 is installed, all 1715 I/O modules can now be firmware upgraded using Control Flash. 1715 modules can now be upgraded like any other Logix product.

Learn more about I/O modules.

We're Honored

Keeping your organization up to speed with rapid changes in information and communications technologies is key to our vision of The Connected Enterprise. We are honored that our PlantPAx DCS, a critical component of this vision, was one of seven Rockwell Automation products that won in the Control Engineering 2017 Engineers’ Choice Awards. Read more about Engineers’ Choice Award winners.
PartnerNetwork Highlights:
Endress+Hauser Installs High Pressure Test Rig

Endress+Hauser invested nearly $1 million in a state of the art pressure test rig at its U.S. headquarters in Greenwood, Indiana. The rig allows it to test complete instrument assemblies to customer specifications, and provides a 100% test indicating a specific instrument can withstand the design process pressure, up to 15,000 psi.

Previously, Endress+Hauser—like most other U.S.-based instrument manufacturers—did not have local high pressure testing capability. For example, Endress+Hauser performed such tests at its production plant in Maulburg, Germany. With the new high pressure test rig located in the Greenwood, IN, production center, instruments can be tested and certified quickly, for faster delivery to PlantPAx® system customers in the U.S. and the Americas. And because the test facility is in the U.S., it makes it easier for customers to schedule and witness the test.

Welcome to the Rockwell Automation PartnerNetwork Program

We are pleased to announce that the following organizations have successfully completed all of the program requirements and are now identified as a Rockwell Automation Process System Integrator and/or Solution Partner. These companies have exhibited strong process experience and reputation of delivering successful automation projects in the process industry.

- Advanced Electrical Technologies Inc.
- Advanced Telemetry Systems International
- Avid Solutions
- Aztec Technologies
- INTECH Process Automation
- Kice Industries Inc.
- McRae Integration
- NorthWind Technical Services

Two existing Encompass™ Partners have expanded to the Asia Pacific region:

- Cape Software Inc.
- MYNAH Technologies

View a complete list of our PartnerNetwork™ providers.

Read complete article and learn more about E+H high pressure offerings.
## Global Events 2017

### Canadian International Mining (CIM) Convention
- **Date**: 4/30/2017
- **Duration**: 4 days
- **Event**: Canadian International Mining (CIM)
- **City**: Montreal
- **Province**: Quebec
- **Country**: Canada
- **Website**: [Learn more](#)

### Offshore Technology Conference
- **Date**: 5/1/2017
- **Duration**: 4 days
- **Event**: Offshore Technology Conference
- **City**: Houston
- **State**: TX
- **Country**: USA
- **Website**: [Learn more](#)

### Rockwell Automation on the Move
- **Date**: 5/3/2017
- **Duration**: 2 days
- **Event**: Rockwell Automation on the Move
- **City**: Denver
- **State**: CO
- **Country**: USA
- **Website**: [Learn more](#)

### Industry Week Manufacturing & Technology Conference and Expo
- **Date**: 5/8/2017
- **Duration**: 3 days
- **Event**: Industry Week Manufacturing & Technology Conference and Expo
- **City**: Cleveland
- **State**: OH
- **Country**: USA
- **Website**: [Learn more](#)

### ISA Food and Pharmaceuticals Industries Division (FPID) Symposium
- **Date**: 5/16/2017
- **Duration**: 2 days
- **Event**: ISA Food and Pharmaceuticals Industries Division (FPID) Symposium
- **City**: Boston
- **State/Province**: Massachusetts
- **Country**: USA
- **Website**: [Learn more](#)

### Rockwell Automation on the Move
- **Date**: 5/10/2017
- **Duration**: 2 days
- **Event**: Rockwell Automation on the Move
- **City**: Green Bay
- **State**: WI
- **Country**: USA
- **Website**: [Learn more](#)

### Rockwell Automation on the Move
- **Date**: 5/17/2017
- **Duration**: 2 days
- **Event**: Rockwell Automation on the Move
- **City**: Meadowlands
- **State**: NJ
- **Country**: USA
- **Website**: [Learn more](#)

### Rockwell Automation TechED
- **Date**: 6/11/2017
- **Duration**: 5 days
- **Event**: Rockwell Automation TechED
- **City**: Orlando
- **State**: FL
- **Country**: USA
- **Website**: [Learn more](#)
## Global Events 2017

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<th>Date</th>
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Have you achieved process excellence? Have advancements you’ve helped deliver in your process plant impacted productivity, improved time to market or enhanced ROI? Here is your opportunity to show off your technical savvy and operational success!

As a valued customer and industry leader, we are pleased to extend an invitation to submit an application to present at the Process Solutions User Group (PSUG) November 13 and 14, 2017, in Houston, Texas, which typically attracts more than 800 of your peers from the process industries and across the globe.

You will have the opportunity to showcase your success and expertise through the following three opportunities. Please note: Rockwell Automation offers two new opportunities for 2017!

1. Deliver a project case study focused on the design and implementation of your process system

2. **NEW:** Deliver a best practice case study focused on the operation or maintenance of your system throughout its lifecycle

3. **NEW:** Show your expertise by appearing on the panel of an “Ask the Experts” session

Plus you’ll enjoy networking with industry leaders, your peers, and other process industries professionals. You will have a unique opportunity to gain coverage from industry leading publications and analysts! PSUG takes place the two days prior to the Automation Fair®Event. Plan to stay for an entire week of Process.

**Submissions are due no later than Friday, May 19, 2017**

Submit now

[https://www.surveymonkey.com/r/rockwellautomation-psug](https://www.surveymonkey.com/r/rockwellautomation-psug)