

# CASE STUDY

## ALARM MANAGEMENT IMPROVEMENTS

ISA 18.2 / IEC 62682 is considered the Recognized and Generally Accepted Good Engineering Practice for Alarm Management in the Process Industries.

The standard provides for a comprehensive Alarm Management Life Cycle, which defines a framework for active, efficient alarm management.

### **Alarm system improvement starts with the following activities:**

- 1) Alarm Philosophy
- 2) Performance Benchmarking
- 3) Documentation
- 4) Rationalization
- 5) Alarm Auditing
- 6) Problem Alarm Identification
- 7) Alarm Remediation
- 8) Alarm Management
- 9) Maintenance Plan

In this case study, the standard was applied to a process area with over 300 alarms/day, many nuisance, stale, or invalid alarms. In one month's time, the alarm system was performing.

### *Project:*

### **Vaccines Plant, Ireland**

This project in Ireland was a brown-field project to produce bulk substance of 20 serotypes of pneumococcus vaccine. The project included installation, design and commissioning and qualification of the first DeltaV and OSI PI Historian system installation on the site. As an important part of the project, the client required implementation of an alarm management strategy which was based on global corporate standards and ISA 18.2. The project used the I/O list and Control Module Instance Design Specifications to generate a spreadsheet with the associated list of devices. The Automation team worked with this list and developed a 'best approach' for alarm definition based on process descriptions, existing control strategies, and functional and design specifications. These tasks included the larger team (i.e., process, tech transfer, quality, operations). The preparation of this list in the first stage of design was very important to guarantee a productive collaborative effort and to ensure that the concepts of the ISA 18.2 were followed, such as insuring that alarms require an action to be taken. Based on the recommendations of the process/operation/quality team, alarms were assigned to the appropriate levels and types, and, in most of the cases, as 'information only' alarms. Prior to alarm system development, the automation team completed training on the global standard and the principles of ISA 18.2.

### **Outcome**

The client was able to expedite configuration of alarms and the site started running batches without nuisance or invalid alarms. The client was also able to clearly identify alarms and to design batch report templates for future validation batches based on actual abnormal conditions.

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*Project:*

### **Biotech Project, Brazil**

A Biotech Project in Brazil was a green-field project built to produce bulk substance of three recombinant proteins for a meningitis vaccine product. This was the first biotech plant installed in the Northeast of the country. The project included installation, design and commissioning and qualification of a DeltaV and OSI PI Historian system. As part of the project, the client required implementation of an alarm management strategy which was based on company global standards and ISA 18.2. ISA 18.2 was new standard for the client at the time, and the Brazil project was one of the first to fully implement the standard while other sites would subsequently go through a process of rationalization.

### **Outcome**

ISA 18.2 implemented on all OEM equipment, DeltaV for Process and DeltaV for BMS. The Project was placed on hold due to a divestiture by the client and product sale to another company, but all control system specifications, code, testing, definitive cost estimate to completion, the project execution plan, and alarm document lifecycle plan was completed.

[info@horizon-controls.com](mailto:info@horizon-controls.com)

#### **USA:**

1777 Sentry Parkway West, Veva Bldg 11,  
Suite 200, Blue Bell, PA 19422

+1 484 344 5183

#### **Ireland:**

N.S.C. Campus, Suite 309 – Block 1,  
Loughmahon Technology Park  
Mahon, Cork, T12 H7AA

+353 21 2307090