

REDUCING NUISANCE CONTROL SYSTEM ALARMS BY ALARM RATIONALISATION

"Ignorance is the belief that the inevitable will not show up" - Craig D. Lounsbrough

Industry
Resources

Sector
Oil & Gas

Segment
Control Systems



Project

The client is an operator of a bulk gas pipeline. The client was seeing a disproportionate amount of **URGENT** alarms on their SCADA system which was resulting in a high number of callouts and risked important events potentially being missed.

They identified that upwards of 60% of the alarms were classified as **URGENT**, 35% classified as **HIGH** and 5% **LOW**. Based on ANSI/ISA 18.2, which is a standard developed to help the process industries design, implement, operate, and maintain effective alarm management systems, this is nearly the inverse of the recommended distribution.

The solution was therefore to perform Alarm Rationalisation on the system. Alarm Rationalisation is a systematic process to optimise a SCADA alarm database by evaluating all potential or existing alarms against principles established in an alarm philosophy document. The document qualifies which alarms are legitimate and specifies their design, captures causes, consequences and corrective actions, which can then be used to guide operator responses.

The client engaged Cromarty to develop a philosophy document, review the system alarms and rationalise them.

Solution

Cromarty followed the IAS 18.2, 10 step process to Alarm Management:

- **Philosophy** - define alarm management & system requirements
- **Identification** - determine potential alarms
- **Rationalization** - classify, prioritise & document
- **Detailed Design** - basic alarm, HMI & advanced alarming design
- **Implementation** - install alarms, test & training
- **Operation** - operator response after refresher training
- **Maintenance** - maintenance & periodic testing
- **Monitoring & Assessment** - monitor alarming & performance
- **Management of Change** - process to authorise modify alarms
- **Audit** - periodic audit of alarm management processes



The outcome of the alarm rationalisation process was extremely successful. The client realised a reduction in unplanned downtime, the operators had more confidence in the alarm system, and could develop well documented steps and procedures to follow in the event of an alarm or event and safety improved through appropriate, documented response procedures. There was a significant reduction in call outs with 80% of alarms now being classified as **LOW**, 15% as **HIGH** and only 5% as **URGENT**.