GENERAL FACTSHEET
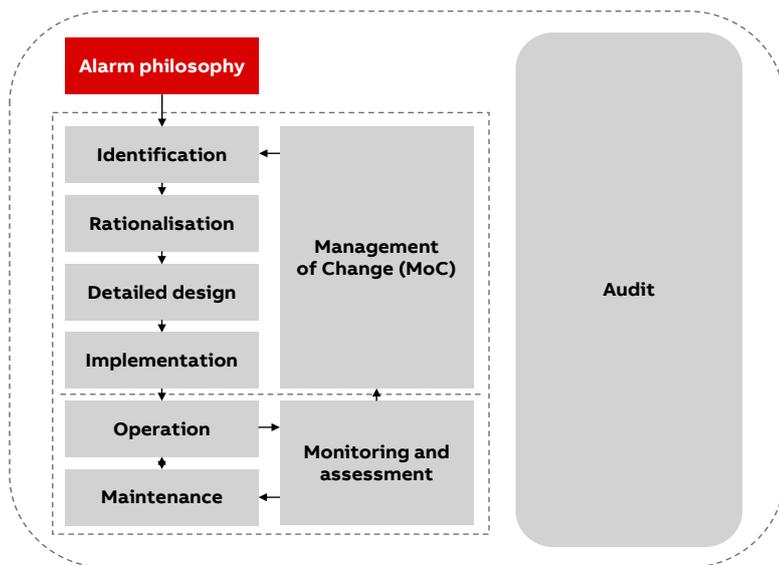
Alarm philosophy

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The alarm management lifecycle.

Are you being challenged as to how you are managing your alarms?

Do you have a plan for effective alarm management?

How 'useful' is your alarm philosophy document?

An appropriate alarm philosophy is the core of an effective alarm system and the starting point of any alarm management project. It defines the role of the alarm system in controlling safety and business risk and how the system will be designed, operated, managed and maintained throughout its lifecycle.

A 'useful' alarm philosophy document:

- Defines responsibilities for managing the alarm system
- Sets out review process for continuous improvement
- Ensures new projects do not add excessive numbers of alarms
- Highlights safety role of alarm system
- Facilitates system consistency
- Design standards
- Style of presentation and handling
- Alarm prioritisation
- Application of good practice templates and modules

Unfortunately, in ABB's experience a number of operators and project teams struggle either to create a comprehensive alarm philosophy document or, more frustratingly, to apply the principles and requirements documented within their day to day operations.

The costs of 'getting it wrong' are rarely calculated but include:

- Inconsistent system design
- Extended implementation and commissioning of alarm system changes
- Low operator confidence in alarm system
- Increased use of 'work-arounds' e.g. alarms ignored or disabled for extended periods
- Need for remedial work post-handover

In a worst case scenario, the costs of poor alarm design or alarm system performance are not just financial. One has only to recall newspaper headlines such as 'Board Alarms Failed' (Texas City 2005) to be reminded that unacceptable system performance may be assessed as a key contributor to a major safety or environmental incident.

With an extensive range of templates and tools available on the market, the challenge is not to produce a document which 'ticks the appropriate boxes' but to agree and capture a good practise, realistic and achievable plan as to how a particular asset or project is to deliver effective alarm management.

Alarm Philosophy contents	Required	Recommended
Purpose of alarm system	Y	
Definitions	Y	
References		Y
Roles and responsibilities for alarm management	Y	
Alarm design principles	Y	
Rationalisation	Y	
Alarm class definition	Y	
Highly managed alarms (or site equivalent)		Y
HMI design guidance	Y	
Alarm setpoint determination		Y
Prioritisation method	Y	
Alarm system performance monitoring	Y	
Alarm system maintenance	Y	
Testing of alarms	Y	
Approved advanced alarm management techniques		Y
Alarm documentation		Y
Implementation guidance	Y	
Management of change	Y	
Training	Y	
Alarm history preservation	Y	
Related site procedures		Y
Special alarm design considerations		Y

In so doing, the alarm philosophy needs to 'translate' alarm requirements and recognized good practice into specific work processes and responsibilities to achieve company objectives for Process Safety Management (PSM) in a cost effective and efficient manner. This integration of alarm management into the PSM framework ensures that alarms are accepted as a flexible tool to support and improve plant operations.

What we offer

While ABB's extensive library of document and good practice templates is the starting point, each alarm philosophy we create is a uniquely customized roadmap based on the application of our in depth knowledge of 'what good looks like' for each stage of the alarm management lifecycle.

Our service offer begins with an in-depth consultation to understand operational requirements, constraints and priorities. ABB have developed a number of questionnaires based on aspects of good human factors and alarm management practice and our extensive knowledge in this domain. These will be used to structure the conversation and ensure that all aspects of the lifecycle are addressed.

A key focus during this consultation is to understand operational priorities and constraints, and how these may impact the strategy for addressing any gaps in current performance.

Where appropriate the alarm philosophy will be structured so as to define not only current business targets for alarm system performance, but also long term targets and the required improvement plan to transition towards that end goal.

Once ABB have collated a draft document, a second client meeting is held to review and address any comments before final issue and communication of the agreed document.
The next step in the ABB process is the strategy for communication of the alarm philosophy. This is a key step as without timely, effective communication the opportunity to use the alarm philosophy as the catalyst for alarm improvements will be lost.

ABB have developed a number of modules / options for this communication, ranging from briefing sessions through to facilitated workshops. Where appropriate, these sessions may be extended into more formal coaching or training sessions devoted to improvement activities such as nuisance alarm remediation or bulk alarm rationalisation.

Benefits

ABB's alarm philosophy service delivers not just a 'fit for purpose' management document, available for corporate and regulatory inspection, but the start of the alarm management improvement journey. Our process is targeted at identifying, agreeing and documenting how alarm management can be achieved within existing organizational structures, work processes and procedures. This ensures that the documented framework is grounded in current business operations and therefore sustainable throughout the alarm system lifecycle.

Why ABB?

Within ABB, alarm management is an integral part of our Process Safety Management (PSM) risk assessment and risk management portfolio.
ABB's core principles of safe, effective and efficient operations have been embedded over many years of experience in delivering safer, more effective and more efficient operations through improved alarm management.

Having worked with a range of global operators to define and implement good practice we are uniquely placed to support other organizations seeking to define a 'fit for purpose' alarm philosophy and the supporting framework to deliver it.

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