



Effective alarm management

Improving safety, production efficiency
and environmental performance

Effective alarm management

A part of ABB's Operational Human Factors Programme

Is your alarm management effective?

Familiar with international guidance and standards such as ISA 18.2, IEC 62682 and EEMUA 191?

Are you being challenged to improve your alarm systems performance?

Effective alarm management is a key element of ABB's portfolio of technical and consultancy services to improve performance in the areas of compliance, operations and engineering to a wide range of global customers.

In principle, modern alarm systems provide process operators with an essential decision support tool in managing plant operations. Alarms provide a unique layer of protection against scenarios impacting safety, the environment or financial loss. Alarms combine the flexibility and adaptability of the plant operator with the power of technology.

However, in practice, poor initial design and lack of effective alarm management often result in alarm systems which are not 'fit for purpose'.

Our capabilities

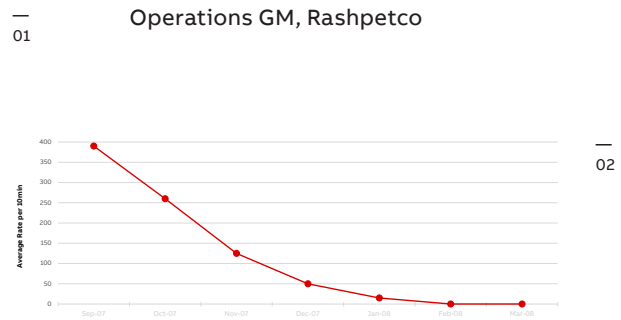
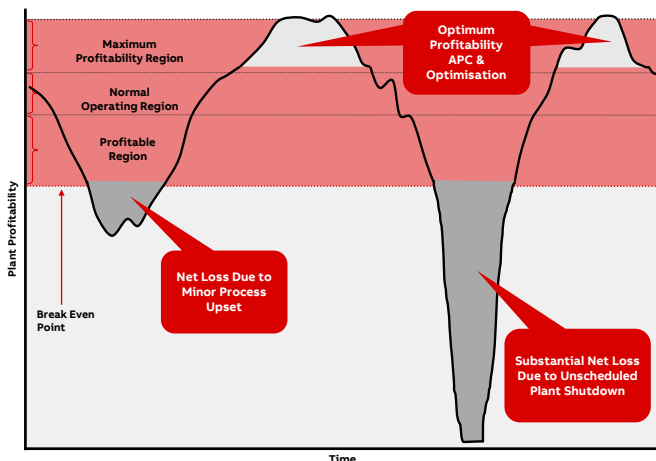
ABB can help with all aspects of the practical implementation of alarm improvement. We work with clients to transfer knowledge, to ensure that improvements are fully delivered and improved performance is maintained after the initial project is completed. Our alarm management programme uncovers the root cause(s) behind poor system performance and provides a route map for the improvement journey towards robust performance levels.

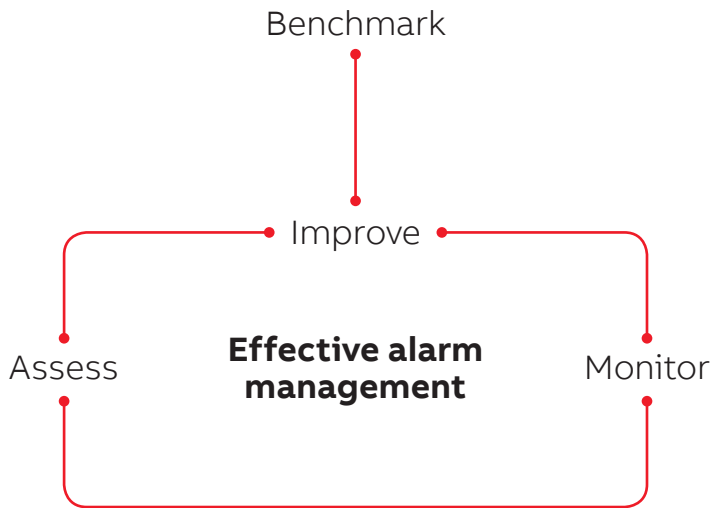
Our programme includes:

- A lifecycle approach to alarm design, implementation and on-going operation
- A focus on the usability of the alarm system and the needs of the operator
- Alarm rationalisation to fully specify alarm design requirements, in particular an appropriate and timely operator response
- Alarm system performance measurement and monitoring against agreed targets
- Processes for periodic review and delivery of actions to ensure continuous improvement

“This is what success looks like. Our facility alone had 6 trips in 2016 compared to 25 in 2015, and 17 in the first half of the previous year. This has a significant business value.”

01 Plant profitability over time graph.
02 Average alarm rates for an offshore gas processing plant.





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Above: The effective alarm management process.

Our experience

ABB has a proven track record of alarm management projects, many being for brownfield sites with a variety of legacy equipment. ABB's methodology involves the operations and maintenance teams in the process of alarm management under guidance from experienced consultant engineers and is particularly appropriate for customers who wish to demonstrate compliance with ISA 18.2, IEC 62682 and EEMUA 191.

Our expertise is backed by proven tools and techniques to assess alarms in the context of the process operational envelope.

Our tools provide an efficient and cost effective approach to alarm improvements, including implementation of DCS changes and operations training in the revised system configuration.

ABB consultants are actively involved in defining alarm management good practice and work closely with the UK's Health and Safety Executive (HSE) and the relevant committees for updates to EEMUA 191 and the development of the new IEC 62682 standard 'Management of Alarm Systems for the Process Industries'.

Our approach

Our programme is based on a lifecycle approach and a focus on the usability of the alarm system and the needs of the operator. Included are:

Finger print

- Operationally focused short benchmark assessment
- Identifies good practice and gaps versus industry guidance and requirements
- Provides route map for formulation of improvement plans
- Highlights benefits of improved alarm management

Improvement and rationalisation projects

- Performance monitoring and assessment
- Alarm system documentation & procedures
- Facilitation of alarm rationalisation reviews
- Download of revised configuration for implementation of system improvements
- To facilitate alarm rationalisation ABB have developed the ART to efficiently and effectively assist the client in delivering an alarm rationalisation project in line with the latest guidelines and international standards. The ART is part of the ABB AlarmInsight alarm lifecycle management product suite, and is built on more than 20 years of alarm consulting experience

Nuisance alarm analysis

- Full or part time service offering
- Establishment and facilitation of process for periodic review and remediation

Enhanced and advanced alarm techniques

- Analysis of alarm floods and system performance under upset conditions
- Identification of opportunities for logical processing of alarms

Specialist 'ad-hoc' consultancy

- Customised to client requirements

Training

- Awareness training
- Operations training
- Advanced tools and techniques for alarm management practitioners
- Client customised training services
- On-going assessment and certification of competence

Benefits

Our alarm improvement projects typically pay back within a matter of months and a number of our clients report savings in the range **\$250,000 - \$2,000,000** p.a. in lost production.

We can help you achieve:

- Compliance with industry standards and good practice
- Improved safety and environmental performance
- More flexible and efficient plant operation
- Improved product consistency / quality
- Increased production and equipment availability
- Smoother start-up and shutdown
- Operational human factors improvements / reduced operator stress



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