

Alarm rationalisation and management in the North Sea



ABB Consulting helped client save over \$500,000 through alarm rationalisation and management.

The client recognised that they needed to review their alarm management strategy as they were aware that alarm flooding prevents operators from diagnosing process upsets quickly and stops them responding fast enough to upsets to avert dangerous situations and plant trips.

The client had carried out alarm rationalisation projects with other suppliers but these were far from successful. ABB Consulting were chosen to provide alarm management support for the following reasons:

- The client did not want another ‘system’ approach. They liked ABB Consulting’s operations-focused approach to alarm management. The approach would ensure that all aspects were assessed including the operational environment rather than just the technology.
- ABB’s operational expertise and background in control system solutions
- ABB’s proven track record from previous alarm management improvement projects
- ABB’s ability to manage all aspects of the improvement project

Benefits

The improvement project has yielded a number of significant benefits:

- A formal ongoing alarm management process that conforms to ‘best practise’ which has resulted in improved operational performance and improved maintenance performance. The operators have more confidence in the alarm system and are more effective in responding to alarms and events.
- Reduction in nuisance and standing alarms to a level that conforms to EEMUA 191
- The alarm system is now fully documented & validated, making it much easier to demonstrate good practice to the regulator



“A number of shutdowns have been avoided due to the low level of alarms the operators now have to deal with, which enables them to react to the alarms and events they do receive in a more timely and proactive manner. Several instances of saving in the region of \$250,000 - \$500,000 in lost production have been recorded.”

“This work has been completed safely and with no impact on production in only seven days due to the excellent pre-work, planning and professionalism of all involved.”

The solution

A joint team from ABB Consulting and ABB Service carried out a major update of part of the offshore control system on an oil production platform to re-prioritise all the alarms configured within the system. The work carried out involved reviewing the alarm priorities on almost 50,000 points and changing them on over 32,000 points.

Our client required an improvement project process that would deliver regulatory compliance with EEMUA 191 while improving operational performance through removing the high base load of alarms & alarm floods. Key to this was our ability to identify the operational, process and maintenance improvements offered by more efficient use of the alarm system and our ability to implement a project process that mitigated the major constraints of offshore working & limited client resource.

ABB provided alarm management process consultancy, project management skills and DCS engineering support through the existing Service support engineers, all as part of the client's own improvement project team.

The project was delivered in three phases:

Study phase - Audit of the existing alarm system and work carried out by previous alarm rationalisation projects against the requirements of EEMUA 191 using our deep alarm management expertise. This work was carried out to a level that would facilitate the production of a detailed plan and budgetary estimate for the investigation phase of the project.

Investigation phase - The activities identified in the study phase were evaluated to ensure they would deliver on the key requirements of the project. It was critical that the project could accurately predict what these future activities would deliver before they were included in the detailed project plans and budget estimates for the following implementation phase.

Implementation phase - All the work packages were implemented and where appropriate carried out using automated processes & techniques to minimise any potential risks & errors.

Ten days were allowed for the offshore work with a further three days allowed for operator training. The alarm system now complies with EEMUA guidelines covering steady state operations as well as process upsets and platform shutdowns.



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