

# Control room operations improvements



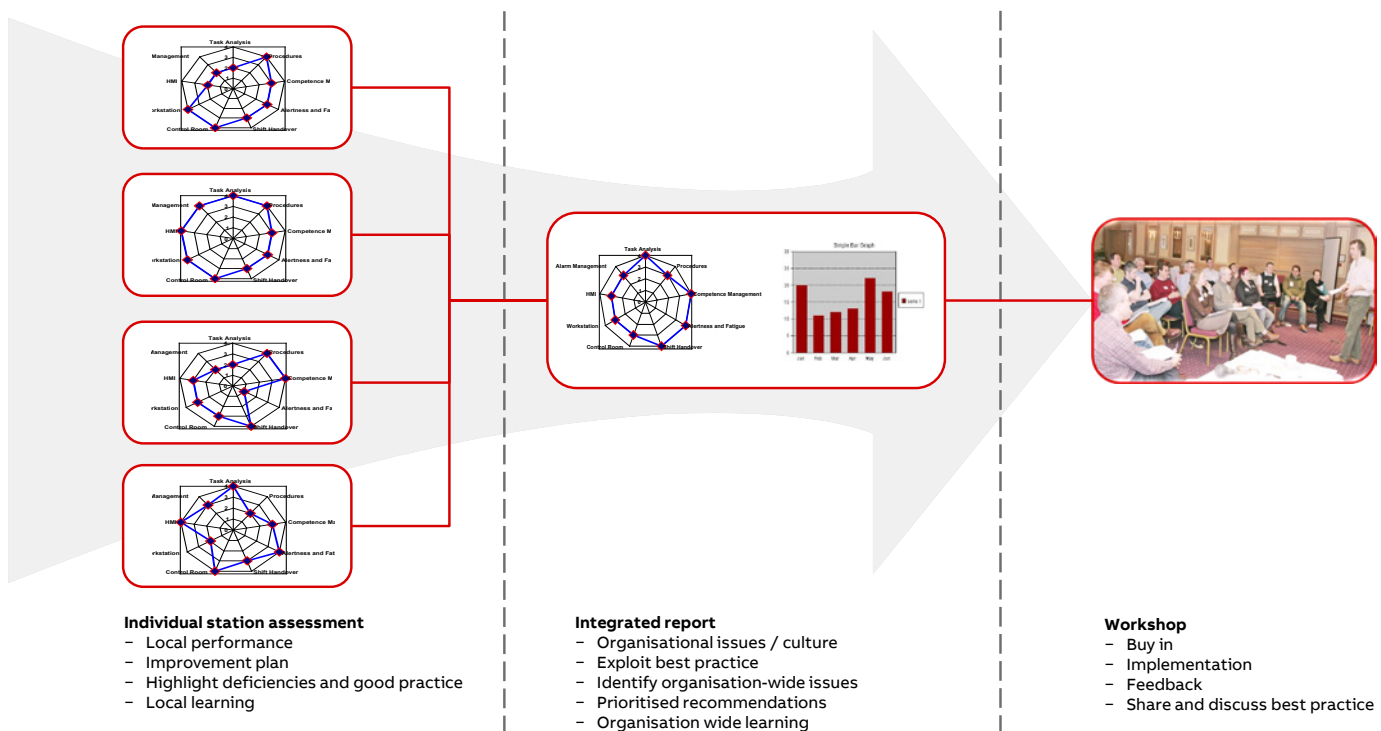
ABB deliver human factors benefits to SSE's control rooms.

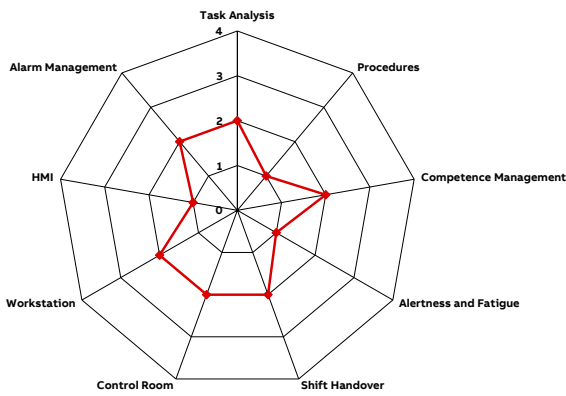
In light of recent major incidents across the process industries, SSE had identified a need, as part of its Process Safety Management (PSM) programme, to assess its current control room operations.

ABB were engaged to carry out a human factors assessment to evaluate the control room operations of SSE's 9 power stations. The stations ranged from small integrated co-generation operations, to large coal-fired stations.

“The feed back has been very positive and I thought its one of the most positive days we have had in my time with SSE.”

SSE Loss Prevention Engineer





— Above: Operational human factors - example 1.

### Solution

ABB's operational human factors and alarm management team utilised their expertise and the ABB human factors assessment methodology to assess SSE's power station control room operations.

ABB's operational human factors assessment methodology focuses on the control room as the nexus of all real time decisions taken on a station.

The structure of the assessment addresses the following nine critical topics:

- Task analysis
- Operational procedures
- Competence management and training
- Alertness and fatigue
- Shift handover
- Control room ergonomics
- Workstation environmental condition
- Human machine interface
- Management of alarms

These criteria have been selected from a list of 'Operationalised human factors' areas of concern published by the UK Health and Safety Executive (UK HSE) for high hazard sites. Using these parameters assists in benchmarking an organisation against current regulatory expectations and established best practice. It also helps to target recommendations to be more effective in improving occupational and process safety as well as operational efficiency.

As illustrated in the example below, each topic area, for each site was scored against the word model on a scale of 0 – 5 where 0 indicates no awareness / implementation of the topic, and 5 indicates best in class in all elements of the word model.

This resulted in a benchmark not only against established good practice but also provided an internal comparison against company standards and other stations within the fleet.

A number of examples of 'world class' performance were identified in the study, including; individual verbal handover protocols, the use of practical 'table-top' exercises and the roll-out of electronic procedures to hand-held devices. These, and other examples of best practice, are now being implemented across the fleet to transfer benefits across the whole of SSE's energy generation operations.

The assessment for each station was documented in a report, which highlighted current good practice and recommendations for improvement. The outcome of each assessment was presented to the local management team at the conclusion of each station visit.

For other fleet managers concerned with the implications of recommendations across the wider organisation, a one day workshop was hosted by a facilitator from ABB's operational improvement team at which an integrated report was presented.

The workshop helped ensure that the momentum generated by the individual control room assessments was maintained and was attended by a number of technical and managerial staff from across the SSE fleet management and corporate engineering teams. It helped SSEs operations management and technical support staff to identify and agree a set of practical, achievable recommendations to improve reliability, reduce operational costs and improve their control room operational environment.

The output of the workshop was an agreed 'shortlist' of corporate improvement initiatives including common areas for improvement, 'Islands of best practice' suitable for roll-out across the organisation and identified opportunities for cost effective 'company-wide' initiatives. These were targeted at areas where a common corporate philosophy can be agreed for example in establishing a common alarm management strategy. For each of the common initiatives, a shared action plan was drawn up which serves as a template for implementation of improvements on a station by station basis.

### Benefits

- Improved reliability
- Reduced operational costs
- Improved control room environment
- Sharing of best practice from industry and across sites
- Corporate philosophy implemented for key areas such as alarm management