The client operates an installation in the North Sea. The overall platform classification had not been reviewed since the asset was built over 25 years ago. Modifications to equipment and modes of operation meant that it was out of date and needed to be updated in order to comply with regulation 9 (2)a of the offshore installations Prevention of Fire and Explosion and Emergency Response Regulations (PFEER) 1995.

They wished to assess the potential for the mechanical equipment installed in hazardous areas on their installation to produce an ignition source in order to demonstrate compliance with regulation 9 (2)d of PFEER.

**Solution**

ABB were asked to carry out a full hazard area classification review, update the associated drawings and carry out a mechanical equipment risk assessment.

**Area classification**

ABB reviewed the existing area classification for the platform and identified discrepancies due to changes to the platform and updates to the codes and industry guidance for hazardous area classification. The study identified zones that needed to be changed, either made larger or more onerous or removed. The de-graded areas will lead to cost savings for the client, as the equipment specification and inspection & maintenance regime will not be as onerous.

**Mechanical equipment risk assessment**

ABB undertook an ignition source risk assessment covering mechanical equipment installed in the hazardous areas on the installation. The types and populations of the equipment had been taken from information gathered during the recent asset life study as well as data collected through document reviews. The potentially flammable zone information was taken from the updated hazardous area classification study.

ABB provide compliance with legislation and money saving pragmatic judgements.
The study had three main elements:

- Information and data gathering - this exercise was undertaken using the records in the operators head office. A spreadsheet was populated detailing the equipment, its type, the zone where it is located, the duty (i.e. process fluid and operating conditions) and other pertinent parameters. During this exercise, equipment drawings, excerpts from manuals and other information required for the creation of the assessment were obtained.

- The creation of ignition source risk assessments for the mechanical equipment identified on the installation.

- A review of the assessments with the operator.

Throughout the project we utilised the ABB Hazmec® methodology to assess the mechanical equipment. The approach based on the guidance in the BS EN13463 ‘Non-electrical equipment for use in potentially explosive atmospheres’ suite of standards, and efficiently and effectively identifies potential ignition sources and recommends ignition source control measures.

The unique approach has been developed over many years’ experience, both onshore and offshore and has been shown to be effective and efficient in a wide range of projects and industries.

By using the information collected from the operator and ABB’s extensive knowledge of process plant equipment and failure modes, assessments for the equipment types installed within potentially flammable areas were created. These were then tabled for review with operating personnel. This resulted in a highly focussed and efficient review process which minimised the time demands upon highly utilised operations and maintenance personnel.

This review, with personnel who have experience in the operation and maintenance of the equipment installed on the asset, was an essential step within the overall process. It ensured that the assessments reflected the operational circumstances of the asset; giving a true picture and achievable benefits.

Benefits

- Compliance with PFEER legislation
- Accurate representation where flammable atmospheres may exist through updated drawings
- Reduced inspection and maintenance costs for unclassified areas

Above: ABB Hazmec® methodology