A major North Sea oil & gas operator requested ABB to carry out a pilot study to confirm the actual status of redundant and partially redundant equipment on the client’s platform. It had been identified that the asset had a number of redundant equipment items that did not comply with the client’s decommissioning guidelines for offshore topsides.

The scope of the study also included closing out actions from previous internal audits, namely to:

- Identify all items of decommissioned plant on the installation
- Assess the risk posed by each item of plant
- Populate a sustainable decommissioning register - indicating HSE risk level and decommissioning status
- Fully define the future decommissioning strategy for each system where required
- Fully define scope of work required to implement decommissioning strategy
- Confirm safe state condition of equipment
- Track equipment status to improve knowledge of plant configuration
- Confirm isolation identification

ABB were asked to complete the work due to ABB’s previous performance and asset knowledge, developed during a series of asset life extension studies.

Solution
The pilot study was completed in three steps:

- The first step was to complete a decommissioning register of all redundant equipment. This included a gap analysis, between the actual condition of redundant items and the client’s decommissioning standard. This was done for 26 redundant systems.
- The next stage was to carry out a risk assessment of each item that was not correctly decommissioned to determine the level of health, safety or environmental risk created by the inadequate isolation.
- The final step was to prioritise the steps required to ensure correct standards of decommissioning, so that safe operations were not compromised, or likely to be compromised in the medium term (i.e. 6 to 24 months).

The final step included identifying safety critical drawings or documents (including P&ID’s etc.) that must be updated to reflect the current status of the equipment.
ABB provided a dedicated project engineer with access to a wide range of specialist consultants for further technical support. ABB fully integrated their project engineer into the client’s team. He was based in the clients office with access to all of the clients required personnel, documentation and systems.

The decommissioning register recorded the status of each isolation for process, electrical and instrumentation as well as listing the systems decontamination state.

Each isolations was assigned a status to indicate the stage of the isolation to identify where gaps existed.

A risk ranking methodology was designed and applied to the process isolations to determine their suitability for use for the specific process mediums and pressures / inventory. This together with the isolation state was used to prioritise the systems for field decommissioning.

The pilot project was evaluated at the end of the project by determining the maintenance work orders that will no longer need to be scheduled and carried out when adequate isolations are completed. The manhours required for the maintenance tasks and the associated cost savings were calculated. This demonstrated that the pilot project had a very attractive payback and that the pilot should be rolled out to more assets. A number of HSE benefits and improvements to TARs were also identified.

Benefits
- The process led to a significant reduction in planned maintenance activities, once appropriate isolations have been completed. The reduction in maintenance tasks equated to 4,900 man hours, or £300K of savings
- ABB identified considerable scope for reducing the TAR duration, (or for the re-allocation of labour during the TAR to more value added activities). The potential reduction in TAR duration was 1-2 days
- Confidence that redundant equipment was isolated correctly and that maintenance time and bedspace was not being wasted
- Lower HSE risks due to correct isolations

ABB Limited
Daresbury Park, Daresbury
Warrington, Cheshire
WA4 4BT United Kingdom
Phone: +44 (0)1925 741111
E-Mail: contact@gb.abb.com

abb.com/consulting