Asset life planning for a storage area

ABB help client plan for the future.

The client owns and operates a large storage and distribution area, handling a range of chemical products, with import and export to/from ships as well as tankers and pipelines.

The assets were built over a long period of time and have a variety of original design standards as well as varied levels of deterioration.

The nature of the business means that internal inspection of tanks is a significant proportion of the maintenance spend, and a coherent approach was needed to ensure that money is well spent both now and in the future.

ABB were asked to carry out a comprehensive study of the storage tanks and civil assets on the chemicals distribution and storage area to identify areas for improvement and develop a 12 year plan.

Benefits
- Savings in inspection costs by utilising non-invasive inspections where appropriate
- Improved integrity assurance by focussed inspection effort
- A prioritised plan for future work, based on the consequences of failure
- Improved budgeting information for the business, by developing a 12 year look ahead

“Overall a very useful cost effective exercise combining RBI and asset life plan development”.

Solution
The study combined risk based inspection techniques with specialised functional design assessments to generate an asset life plan for the area, looking ahead for 12 years. The whole approach was to work as a team with plant personnel, to make sure as much valuable operating data as possible was collected and used effectively.

The main elements of the work were:
- Risk based inspection reviews of a selection of the tanks and vessels were carried out to identify what mechanisms of deterioration were active or possible
- Developing new Schemes of Examination, utilising external only techniques where appropriate were developed
- Assessing the equipment highlighted in the reviews as needing repairs or replacements to determine the extent of the repair work needed.
- Looking at future plans and likely shutdown windows for repair work, to decide upon the timing of the work
- Developing an anticipated expenditure requirement for each year

By working with the client personnel, we were able to determine the full extent of preparation work required for repairs, painting etc, hence developed estimated costs including scaffolding and clean out to ensure the plan could be used as a basis for the business budgeting process.
The whole process ensured that the full benefits from the risk based inspection were gained. This was achieved by adding pragmatic actions into the planned maintenance schedule, so that they can be implemented. This overcomes the potential shortcomings of very quantitative assessment that can just generate 'scores' and no actions.

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