

Optimising Topsides Integrity Management

CASE STUDY

PROJECT OVERVIEW

In 2021, Imrandd was awarded a multi-year contract by an international operator to provide topsides integrity data analytics and onshore inspection support across seven assets in the UKCS.

In the first year, the scope of work covered:

- ▶ Data analytics of historical inspection data
- ▶ Work pack creation
- ▶ Integrity reviews
- ▶ Inspection selection
- ▶ Improved planning
- ▶ Corrosion management

By implementing a methodical approach, grounded in the data that had been gathered over 30 years of inspections, Imrandd focused on reduction of unnecessary inspection activities, saving thousands of hours on the existing plan. The team produced a new inspection schedule up to COP in 2030 that will bring efficiency in the frequency and volume of inspections. Imrandd's recommendations have brought about a significant reduction in spend and ensured the continuing safety and stability of the asset. The work has had a positive impact on ESG targets around carbon footprint, helicopter flights, and logistics.

THE CHALLENGES

- ▶ An independent approach – Imrandd identified a lack of independence between inspection planning and enactment

- ▶ Frequency and volume of inspection – excessive for the current condition of the assets
- ▶ Volume of data versus internal resource – to deliver the analysis and technical justification to achieve their goals

THE SOLUTION – DIGITISE, ANALYSE, OPTIMISE

Imrandd employed numerous tactics from our Digitise, Analyse, Optimise toolbox, often in parallel, to deliver the efficiencies sought by the client.

Taking inspection data that is already collected and stored by the Operator, Imrandd deployed its expert team and tech-enabled solutions to first digitise, then cleanse and rationalise the datasets, conducting a thorough gap analysis to identify and isolate blind spots or missing data.

LATE LIFE REVIEW – EXACT POWERED BY AIDA

Working through the Operator's legacy asset and inspection data to deliver a late-life review, Imrandd consultants digitised the records using EXTRACT, then deployed EXACT to deliver a cleansed, rationalised dataset.

700k+ test points were analysed and trended, highlighting:

- ▶ Un-inspected circuits and lines
- ▶ Total inspection coverage per line / under-inspected areas
- ▶ Lines which had a significant corrosion rate and needed targeted inspection to determine condition
- ▶ Lines with a low / stable corrosion rate, which could benefit from longer inspection intervals

OPTIMISING THE SCHEDULE – NII ASSESSMENT & REFLEX

Work pack scheduling was performed using Imrandd's flexible, dynamic planning and optimisation tool, REFLEX. The team conducted a review of all current inspection work plans, optimising the enactment plan. On completion, over 17k hours were removed from the inspection plan. The team also conducted a thorough NII assessment of more than 40 vessels, gauging requirement for internal inspection. As a result, several vessels were removed from the shutdown plan, saving time, costs and addressing HSE concerns around vessel entry.

BENEFITS

- ▶ £1m+ saved in the inspection plan for year one
- ▶ Inspection plan based on analysed, demonstrable insights
- ▶ Further £40k saved in direct costs alone using EXACT and REFLEX for late life review (over remaining asset life)
- ▶ As recommendations from the EXACT analysis are implemented, further reductions of 20-30% in overall inspection time and costs are anticipated

CONCLUSION

As a result of the robust engineering analysis and advanced data analytics performed by Imrandd, the Operator has built a comprehensive, formatted, sorted record of their legacy data. With the support of the Imrandd team, they have optimised their future planning and enactment all the way to COP in 2030. The operator has gained the confidence that they were looking for in their inspection planning, basing their business decisions on a solid, reliable foundation of data.