

OPTIMIZE INSPECTION STRATEGIES TO FOCUS ON HIGH-RISK ASSETS

Planning for a turnaround (TAR) is a major endeavor as all accessible vessels are typically candidates for an intrusive inspection. Implementing a risk-based inspection (RBI) plan will prioritize inspection activities to allow inspectors to focus their time and attention to the highest-risk assets during the TAR.

During an upcoming TAR, a USA-based refinery planned to inspect approximately 100 components in a catalytic reforming unit. Initially, the client wanted to inspect the equipment using the API 510 time-based interval and strip insulation from several assets to perform corrosion under insulation (CUI) inspections.

APPROACH: RBI ASSESSMENT

The CorrSolutions team worked with the client to review the numerous inspection activities planned and decided to conduct a rigorous API 581 assessment. As part of the assessment, the team analyzed many aspects of the equipment, including operation temperature and pressure, process fluid, construction material, thickness surveys, and damage mechanisms. The RBI assessment ranked each of the 100 components from highest risk to lowest risk to identify whether additional mitigation action was required beyond an inspection.

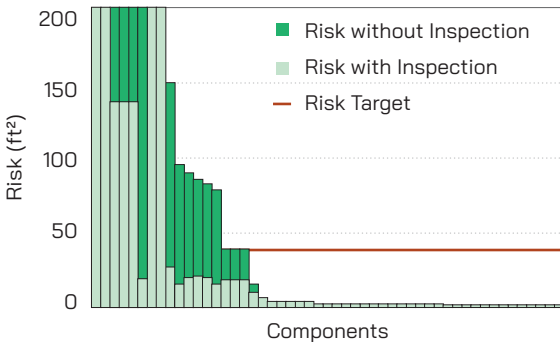


Figure 1 - Assessed components are arranged from highest risk (left) to lowest risk (right). Inspection is required when risk level exceeds the target (orange line)

Upon completion, the client was provided with findings and recommendations:

- 21 components exceeded the risk target during the plan period
- Seven components required other risk mitigation activities to manage the risk, in addition to an inspection
- Reduce the unmitigated risk to an acceptable level by removing insulation and increasing corrosion allowance or metallurgy in several assets

RESULT

The RBI assessment allowed the client to quantify risk and refocus their inspection efforts to the highest-risk items.

COST SAVINGS

As a result of conducting the RBI assessment, the facility was able to save significant costs on its planned TAR. The facility was able to restructure its inspection resources to focus on high-risk assets. Typically, inspection cost savings aren't the primary goal of an RBI assessment; however, in many cases it is a byproduct of optimizing the inspection activities.

CONTINUOUS IMPROVEMENT

By implementing an RBI program, the client was able to continuously improve their inspection cycle and systematically reduce the risk associated with pressure boundary failures.

FLEXIBILITY

It was determined that future inspections can be satisfied with either an intrusive or non-intrusive method, which allows more flexibility in scheduling future inspections and TARs. This flexibility alleviates the issue of having to complete all inspections during a TAR. Implementing an RBI assessment at least two years before a planned shutdown or TAR will help plan future inspection activities, maintain equipment reliability, and control costs.

GOAL

Optimize inspection strategy before turnaround

SERVICES

API 581 RBI assessment

BENEFITS

Cost savings



Continuous improvement



Flexibility

INDUSTRY

Refining

COUNTRY

USA

Contact us to learn how an RBI assessment can help prioritize a facility's inspection program.

TOTAL ASSET SUPPORT

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