

CUSTOMER CASE STUDY

Rise to the occasion: InVista® Subsea inspection supports life extension

A low-risk, high-resolution ultrasonic in-line inspection was performed on two 8-inch diameter rigid risers providing regulatory compliant inspection data to support remaining life assessment and life-cycle extension.

Challenge

A major operator in the Gulf of Mexico needed to inspect two 8-inch diameter risers on one of its platforms as part of the company's life extension process. At first, the company was hesitant to use an in-line inspection (ILI) solution to inspect the risers due to historical issues experienced with conventional ILI technologies in similar assets. Additionally, guided wave ultrasonic inspection and other external inspection methods were not a viable option because it would only inspect a fraction of the pipe and deliver qualitative results. The operator actively searched for a commercially available solution that could inspect the risers and accurately detect damage while avoiding the operational difficulties that arose with prior inspection providers. Quest Integrity, was contacted and had a proven inspection technology ready to deploy.

The inspections were required to detect and quantify remaining wall thickness, internal and external metal loss, and deformations to support remaining life calculations of both 8-inch risers. Initially, the operator was concerned with the navigation and coverage of an ILI pigging solution and recommended the inspection tool be tethered to ensure only the risers were inspected and the tool could be retrieved in the event of navigational challenges. Quest Integrity experts showcased the InVista Subsea inspection tool to the operator, demonstrating its ease of use and low risk as an untethered solution. A performance qualification test was successfully completed at Quest Integrity's purpose-built test loop to ensure valid data acquisition and minimize project risk offshore.

Solution

A two-man team mobilized offshore hand carrying the lightweight and compact inspection tools to the platform. The InVista Subsea inspection tool was configured for a bi-directional run, being launched topside from a standard short barrel launcher. The tool was propelled in diesel at 74°F (23°C) at a rate of 203 gpm (46 m³/hr) to achieve an approximate scan rate of 0.85 ft/s (0.26 m/s). The tool navigated each riser a total of three (3) times, acquiring valid data for a total of 763 ft. (233 m) in each direction before being received back at the temporary launcher/receiver.

Upon retrieval of the InVista Subsea tool, the UT data was downloaded on the platform and initial field analysis was performed. The InVista Subsea inspection tool provided 100% circumferential and axial inspection coverage of each riser. Inspection of both risers was completed in 24 hours.

Following field inspection data verification, Quest Integrity personnel returned to the office to analyze and assess the fitness-for-service of the risers based on the inspection data obtained. Repeat inspections to monitor corrosion growth rates were recommended as part of a comprehensive integrity management program. Advanced engineering assessments to exactly quantify the stresses in the areas of corrosion and consideration of additional damage mechanisms, such as fatigue and fracture, that could pose a threat to riser integrity provided greater confidence for the continued safe operation of the pipeline.

Outcome

Quest Integrity's InVista Subsea technology is bi-directional, untethered, compact and lightweight, which can free flow through reduced radius bends. The extreme versatility of the tool and bi-directionality provided the client with the confidence needed to leverage this advanced ILI solution. The direct comprehensive UT measurements acquired quantitative data to support the riser's integrity and reliability assessments while eliminating vessel time and subsea modifications. The regulatory control subsequently approved both risers' life extension and their continued safe operation in the Gulf of Mexico.

Quest Integrity is a premier energy technology company, developing asset integrity and reliability management services to help companies optimize performance, mitigate risk, and improve operational planning. Our integrated services consist of advanced inspection and engineering assessment solutions to help our partners in the global energy industry.

Quest Integrity's unmatched engineering experience and expertise coupled with our profound understanding of customers' needs, enables us to provide tailor-fit and comprehensive integrity solutions to help our clients improve their asset performance and create sustainable value.

Our innovative approach allows us to utilize groundbreaking technology and develop in-house solutions for difficult to inspect assets.

We challenge convention.