Liquid Terminal Employs Composite Repairs to Restore Jetty Lines to Safety

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UNITED KINGDOM

Pipe Details

- 152-mm (6-inch) Butane Jetty Line
- 200-mm (8-inch) Propane Jetty Line

Summary

- External corrosion on 152-mm (6-inch) and 200-mm (8-inch) import jetty lines
- Pit depths in the lines were up to 5.5 mm (0.22 inch) amounting to 70% wall loss
- Trained local contractors carried out repairs, installing Clock Spring Snap Wrap to restore straight line sections.
- Clock Spring Snap Wrap repairs were completed in only 30 minutes
- Pipes with complex geometries were treated with Clock Spring Contour

Jetty line safety inspections are routine, and assets regularly undergo evaluation to determine their integrity. During a routine inspection of the 152-mm (6-inch) butane and 200-mm (8-inch) propane lines servicing a jetty in the North Sea, the company discovered external corrosion. The pipelines, which are installed beneath the jetty roadway, had sustained damage from the continuous dripping of rainwater from the access roadway above. Pit depths on the lines measured as much as 5.5 mm (0.22 inch) in depth, equating to 70% wall loss in some sections of the pipe.

Repair location

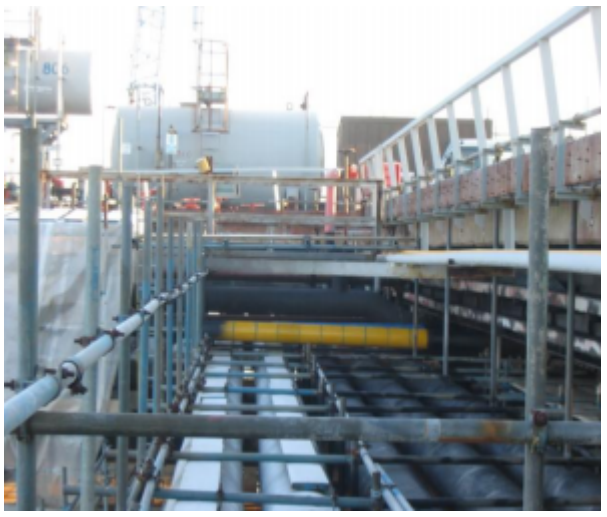
Recognizing the safety threat posed by this level of corrosion, the company immediately mobilized to repair and restore the lines, evaluating options and determining that Clock Spring composite repairs offered the best solution in terms of efficacy and efficiency.

A team of Clock Spring repair experts visited the site, assessed the corrosion damage, and recommended a program for repair. Based on damage to both straight pipe and pipes with tight radius bends, the team specified both the Clock Spring Snap Wrap and Contour repair systems.

The Clock Spring Contour repair restored the lines to full strength so safe operations could resume.

There are nearly 3,000 trained Clock Spring installers around the world who are qualified to provide repairs with Clock Spring products. Clock Spring regularly offers training classes for installers and can custom design training for individual company needs.

While the problem was complex, the solution was straightforward. A local contractor, already fully trained in Clock Spring application techniques, carried out the installations to restore the lines to working order.



The resulting Snap Wrap repairs restore the lines to full strength.

The first step was to grit-blast the defective areas, cleaning them to an SA 2.5 condition, which required metal blast cleaning to remove all rust, coating, and mill scale to produce a near-white surface prior to the application of the Clock Spring Snap Wrap. When the pipes were properly cleaned, the repair team applied Clock Spring Snap Wrap to the straight sections.

The 30-minute-long installation process effectively restored the lines to safe operating condition.

With the first repairs completed, the team turned its attention to the line sections with bends and unusual geometry. Most of the sections introduced some sort of installation variable, such as limited clearance, tight access for the installers, and complex geometries. These were repaired with the Clock Spring Contour repair system, using a ‘wet layup’ application and a ‘peel ply’ covering that protected the repair while it cured. Clock Spring Contour uses toughened epoxy resins and stitched fabric engineered and design to restore the structural integrity to its original condition. The number of layers or thickness is calculated based on design standards found in both ISO and ASME.

The resulting repair, once again, restores the line to full strength.

Sections of the lines with bends or unusual geometry are repaired using Clock Spring Contour repair system.