

Clock Spring Repair Targets Weakness in Pipeline Bends

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United States

Pipe Details

- 6-inch (153-mm) ethylene line
- 40 bar (580 psi) operating pressure
- Ambient temperature

Summary

- Extensive external corrosion of up to 80% metal loss on 12-foot (3.7-m) bend radii on both sides of an ethylene pipeline at a canal crossing
- The line was under 580 psi (40 bar) pressure in an ambient operating environment
- 18 Clock Spring units were installed on the damaged bend sections with the line under pressure
- A single Clock Spring trained technician carried out the repair in less than 5 hours
- The repair restored the pipeline to safe service without interrupting operations

Pipelines that cross open areas are subjected to additional stresses and fatigue, particularly where the pipeline bends. Identifying wear on a 6-inch (153-mm) ethylene line operating under 580 psi (40 bar) pressure, the company contacted Clock Spring for a solution.

A Clock Spring trained technician evaluated the site and corroborated the need for repair, noting extensive external corrosion of up to 80% metal loss on the 12-foot (3.7-m) bend radius on both sides of a canal crossing. To repair the line, 36 Clock Spring units were cut to suit the bend radius on both damaged sections. Because of the need to contend with tight clearances, the technician used a hand spool technique to install the coils.



Clock Spring units being installed using the hand spool technique



Coils cut to width to suit the bend radius



One of the completed bend repairs on one side of the canal crossing

All 36 Clock Spring units were installed by trained and certified technicians in less than 5 hours with the pipeline in operation. The company was able to avert a potential environmental incident in short order, meeting the goal of redressing a safety issue without sacrificing productivity.

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.