Composite Solution Seals Crack in Gas Transmission Line

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Czech Republic

Pipe Details

- 25-mm (0.98-inch) crack in a 900-mm (35.4-inch) diameter gas line
- 14.5 mm (0.57 inch) original wall thickness
- 64 bar (928.2 psi) Operating Pressure
- 6 °C (43°F) Operating Temperature
- 13.5°C (56°F) Ambient Temperature

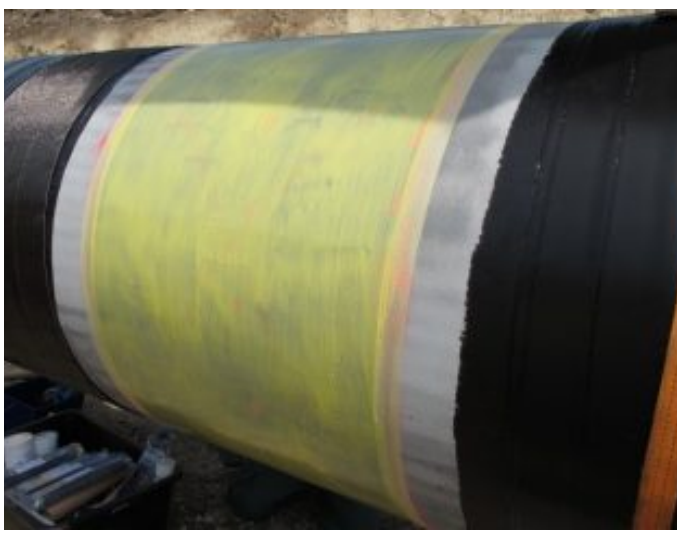
Summary

- 25-mm (0.98-inch) crack in a 900-mm (35.4-inch) diameter gas line
- A team of 4 local Clock Spring trained and certified technicians completed the repair in less than 4 hours
- No hot work was required
- The pipeline and surrounding lines and process equipment remained in service during the repair

A gas transmission line operator discovered a 25-mm (0.98-inch) longitudinal crack on a bend section of a 900-mm (35.4-inch) diameter carbon steel pipeline that was under considerable loading. The crack had penetrated 80% of the wall thickness and posed a significant safety threat.

Wanting to prevent the crack from becoming a through-wall defect, the operator began looking for a solution that could be executed that did not require hot work. The objective was to effect the repair safely without taking the line out of service, if possible, to avoid nonproductive time.

Having worked with Clock Spring Company, Inc. in the past, the operator made inquiries to determine if the crack was a candidate for a composite repair. The Clock Spring engineering team provided a repair plan and immediately prepared the DiamondWrap® HP™ Standard 9-Ply 30 linear cm (11.8 inch) Weld Special Build kit.



The prepared section of pipe is ready for the fiber wrap

The DiamondWrap® system includes a bidirectional weave of carbon fiber and a 100% solids epoxy that form a composite system that is stronger than steel. The structural system forms a pipe around a pipe, and each successive wrap increases the pressure rating. Its bidirectional weave allows for strength in both the hoop and axial directions and ensures that there is no reduction in strength over time.

Each successive layer of DiamondWrap® increases the pressure rating. The bidirectional weave allows for strength in both the hoop and axial directions and ensures that there is no reduction in strength over time.

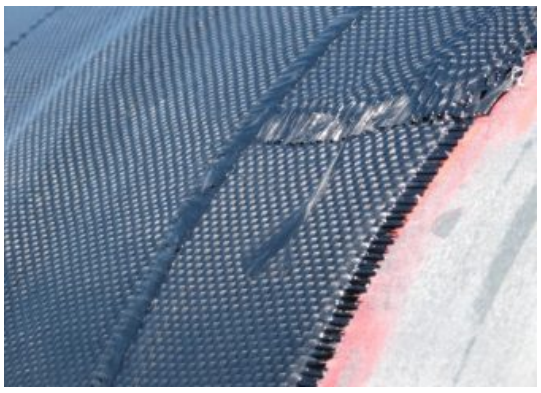
Clock Spring trained and certified repair technicians from SEPS, a local company that specializes in diagnosis, repair and maintenance of pipelines, executed the repair without disruption to operations.

A Clock Spring trained and certified repair technician from SEPS applies DiamondWrap® to the damaged pipe.

Following normal installation procedures, the team uncovered the pipe and sandblasted the surface to prepare it for the repair. After applying filler and primer, the technicians applied the carbon fiber material to the damaged line.

A team of 4 SEPS technicians completed the installation in less than 4 hours, restoring the line to safety within 6 days of the discovery of the anomaly and at one-tenth the cost of a traditional repair.

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.



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