

Thermo-Wrap Inspectable Restores Offshore Platform to Safety

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UK

Pipe Details

711-mm (28-inch) pipe tee section on an offshore platform

Design Pressure 14 bar (203 psi)

Operating Pressure 6-10 bar (87-145 psi)

Design Temperature 80°C (176°F)

Summary

- 711-mm (28-inch) pipe tee section at height in a difficult-to-reach area on an offshore platform
- Proprietary composite injection system sealed the leaks
- Thermo-Wrap™ Inspectable covered the repaired areas of the leaking line.
- 2 technicians completed the repair in 4 days, including removing the failed repair, stopping leaks on a live line, and installing the composite system.
- No hot work was required
- No need to shut in production

When an operator discovered a leak on a 711-mm (28-inch) pipe tee section on a platform in the UK North Sea, immediate steps were taken to mitigate the damage. Unfortunately, the original solution provider was unable to successfully stop the leak and reinforce the line, which left the operator in a difficult situation.

Because the ineffective repair was now in place on the damaged line, the company that would take on the challenge of restoring the line to safety would have to come up with a way to address the leak while contending with the remnants of the faulty solution.

Having worked successfully with CSNRI in the past, the operator reached out for a composite repair solution that would arrest the leak and restore the integrity of the line.

This project posed several challenges in addition to dealing with the failed repair attempt. The leaking line was operating between 6-10 bar (87-145 psi), and the line had to remain in service while the repair was being carried out. The leak was at a height, and the area was surrounded by supports that limited access to the damaged area.



The repair executed by the original solution provider failed to arrest the leaks in the high-pressure line.

CSNRI engineers assessed the damage and designed a solution that used an injectable composite to seal the leak and a composite overwrap to reinforce the line. The custom engineered Thermo-Wrap™ Inspectable system uses a fiberglass, reinforced novolac epoxy that delivers high strength characteristics. It has been used successfully in a range of applications to repair corroded or damaged piping with harsh chemical service and elevated temperatures, so it was particularly well suited to address the leaks on the offshore platform.

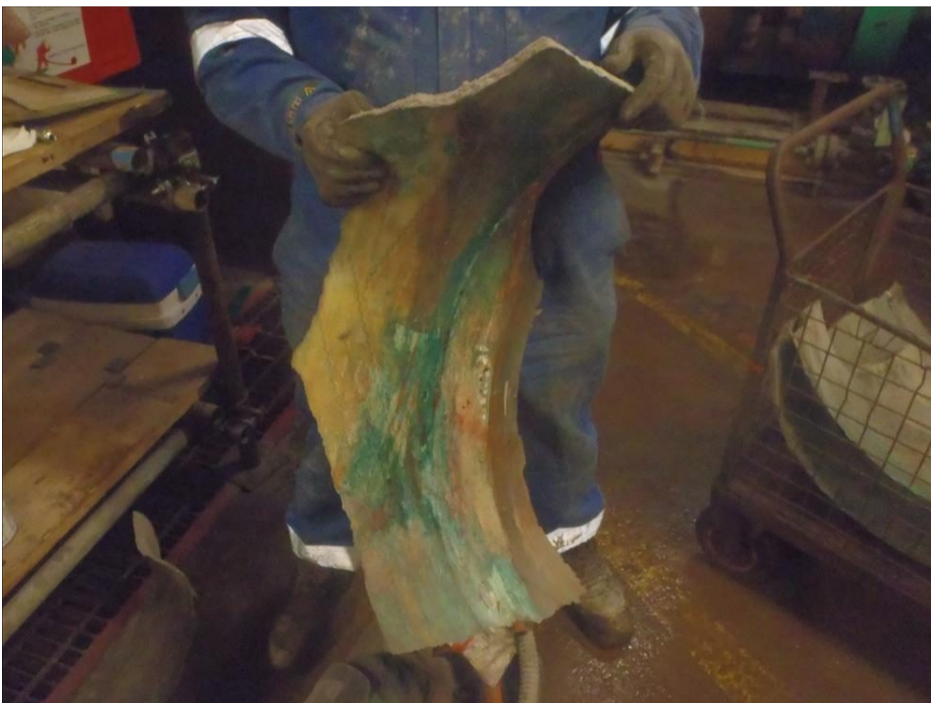


One of the difficulties for the engineers designing the composite system was making sure it would address the shortcomings of the existing failed repair. Technicians had to trim back the faulty repair before the CSNRI solution could be installed. When they did so, they discovered several leaks on the active line that had to be sealed live before the CSNRI repair could be carried out. By removing the original repair, the installation team was able to ensure all the leaks were arrested, and without the unwieldy repair in place, they were able to deliver a smaller repair that was faster to apply.

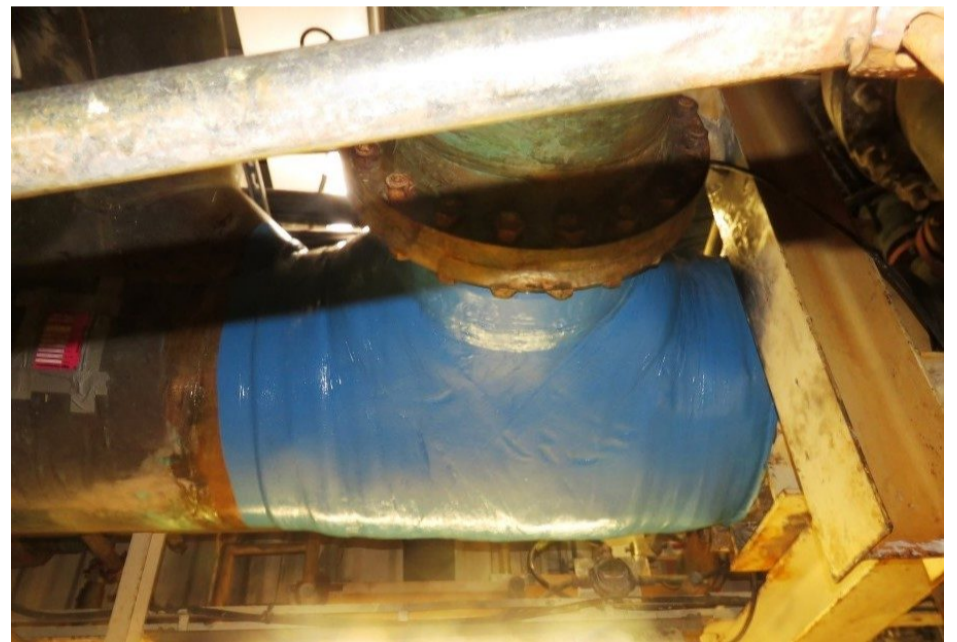
Leaks in the original repair had to be addressed before the CSNRI solution could be installed.

A team of 2 trained technicians carried out the installation over the course of 4 days, sealing multiple live leaks with the proprietary composite injection system in an area with tight access and overwrapping the repaired segments of the line with the Thermo-Wrap Inspectable composite repair.

This repair delivered reliable pipe sealing and overwrapping with the damaged line under pressure, which meant the owner could avoid shutting down the asset while the composite system was installed. The Thermo-Wrap Inspectable system enabled the owner to avoid the disruption and financial repercussions of interrupting production and delivered a reliable and long-lasting final repair that ensures the facility can continue operating safely.



Technicians trimmed back the faulty repair and addressed multiple live leaks before installing the Thermo-Wrap Inspectable composite system.



The Thermo-Wrap Inspectable repair, installed without taking the system offline, provided a reliable final repair that ensures the facility can continue operating safely.