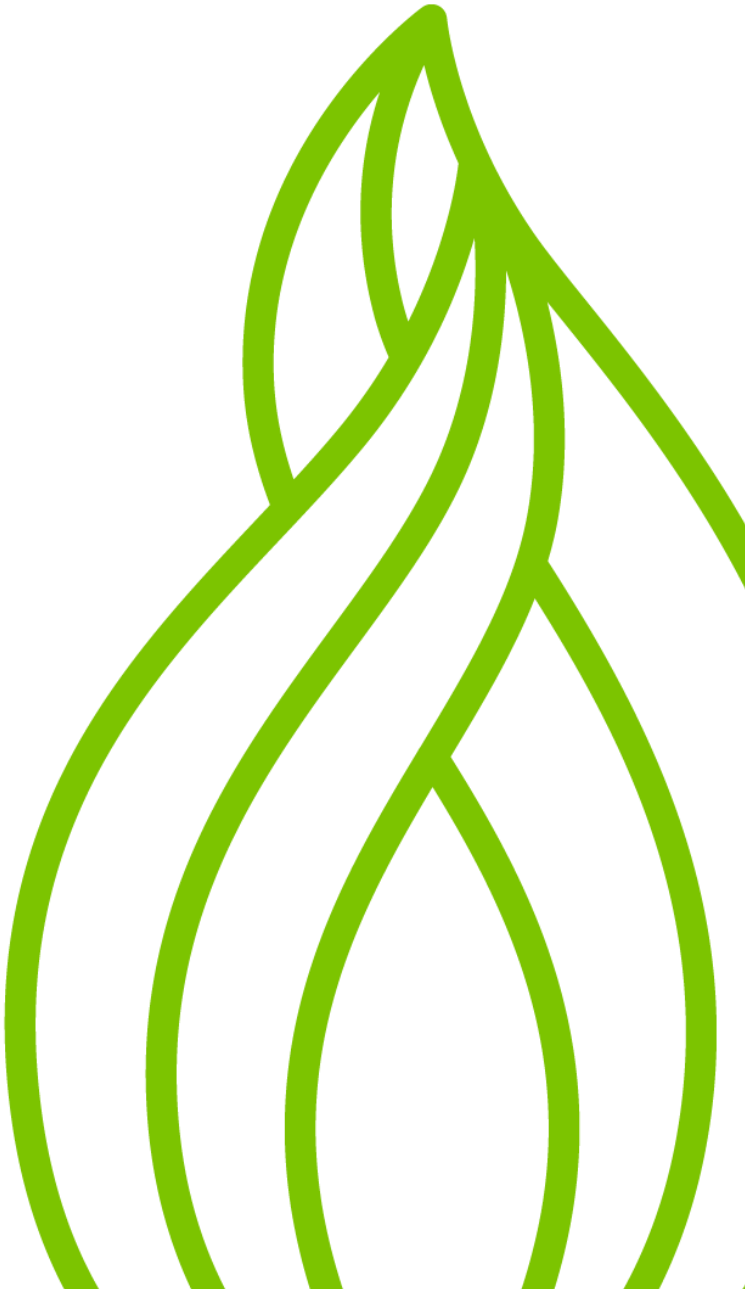
national gas transmission

Sarco Stopper

Value Tracking Case Study



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Background

St Fergus pipework, along with a lot of National Transmission System (NTS) pipework, was installed in the 1970's and over the years has been subject to the effects of external corrosion. There are a significant number of 2" steel risers and valve bridle lines (above ground) that are adjoined to (buried) main bore pipework. Due to external corrosion issues, especially around the flanges, these 2" stabbings require maintenance, and the majority will require replacement.

The required work to repair or replace the affected 2 inch stabbings will involve hot work. Under National Gas' management procedure T/PM/TR/17 (Isolation of Above 2 Bar Plant and Equipment), the isolations required to create a suitable double block and bleed system and carry out the work needed on the stabbings would require large sections of operational pipework to be isolated and purged to air. Due to the operational criticality of St Fergus terminal, this is not a viable solution.
The main bore pipework from which these stabbings stem from will already be de-pressurised, but there will still be some residual gas present. To carry out a repair or replacement using the traditional methodology, the main bore pipework would have to be purged to air. This is what the vapour barrier solution hopes to negate the requirement for.

St Fergus gas terminal has been chosen as the site for this project and all technical validation will be specific to St Fergus. However, with additional work and validation in a future scheme, there is no reason why this solution could not be deployed NTS wide.

What's new?

Following workshops between Operational Teams and the Supplier, designs were developed and challenged to complete the required operation. The solution developed during this project allowed for the independent inflation of two bags, joined by a short umbilical, with the control of the interspace annulus as a small volume of inert gas. This arrangement provided a reliable barrier from upstream hydrocarbon gas at near-atmospheric pressure from passing into the Hot
Work zone. The solution achieved its original objective, and the process have been proven at both bench and site trials utilising replica pipework and conditions.

Updated Policies/ Procedures:
T/PM/TR/17 Management Procedure for Isolation of Above 2 Bar Plant and Equipment

The benefits

- Effective solution to isolate sections of pipework that previously could not be completed.
- Cost and process efficient isolations
- Improved safety
- Due to site access limitations in light of the recent COVID situation, the device has not yet been trialled on an operational asset. Once this has been carried out the benefits can properly been measured.

Financial savings

Financial savings to follow full implementation onsite following test example usage.

Implementation

Full implementation to follow based on stakeholder support and benefits to be tracked.