

Motor operated valve change out

ASSET
LOCATION

Pipeline
UK

Immediate troubleshooting and repair support is essential when you have faulty equipment

BENEFITS

A bespoke design solution to meet exacting requirements

Safe solution complying with standards

Extensive engineering expertise to ensure quality

In-house inspection and testing of equipment to optimise efficiency



DELIVERY ASSURED

CHALLENGE

Our customer identified an issue with a pipeline valve that required immediate attention. They discovered an inadequate isolation of a 36-in inlet of a conduit gas isolation motor operated valve to a sealine pig receiver. A decision was made to overhaul the existing gate isolation valve in order to repair and prevent any future problems that may impact the operations of their pipeline and connected facility.

To enable this, our client asked us to assist them to carry out a site survey, provide a feasibility study and develop lift plans to allow the valve to be changed out.

SOLUTION

- With the valve being changed out located in close proximity to a live 36-in sealine pipe, the lift had to be planned and executed with great precision.
- We started with the production of a feasibility study that outlined options for a jacking and skidding or a lifting procedure. Both options required a certain amount of destruct of surrounding structures but the lifting option was chosen as the most suitable for the customer.
- An appropriate mobile crane was sourced and we produced calculations to determine the resulting ground bearing pressure under the outriggers. From this we set site boundary limits to ensure the outrigger supports were a safe distance from the live pipeline. Slewing limits were also set to prevent the crane lifting over the live sealine pipe.
- Lift plans were created to remove the walkways and receiver to free up room around the valve, while great care was taken to ensure the face of the flanges between the receiver and valve were not damaged.
- A top and tail procedure was required to lay the valve flat to enable it to be transported safely. The existing lifting padeyes attached to the valve were not designed for this type of lift. We designed, fabricated and tested a bespoke arrangement using Finite Element Analysis (FEA) to design a plate to interface with the valve and accommodate an off the shelf swivel hoist ring.
- During the process we were also able to identify limitations of existing lifting equipment which we replaced to allow the project to be delivered quickly and efficiently.

SUMMARY

- Project management
- Onsite survey
- Feasibility study
- Design calculation package
- Detailed fabrication drawings
- Material sourcing
- Fabrication
- Lifting point testing and certification
- Lift plan preparation
- Supply of rigging

1.



2.



3.



1.

Motor operated valve prior to removal

2.

Pig receiver mid lift

3.

Pig receiver prior to walkway destruct

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