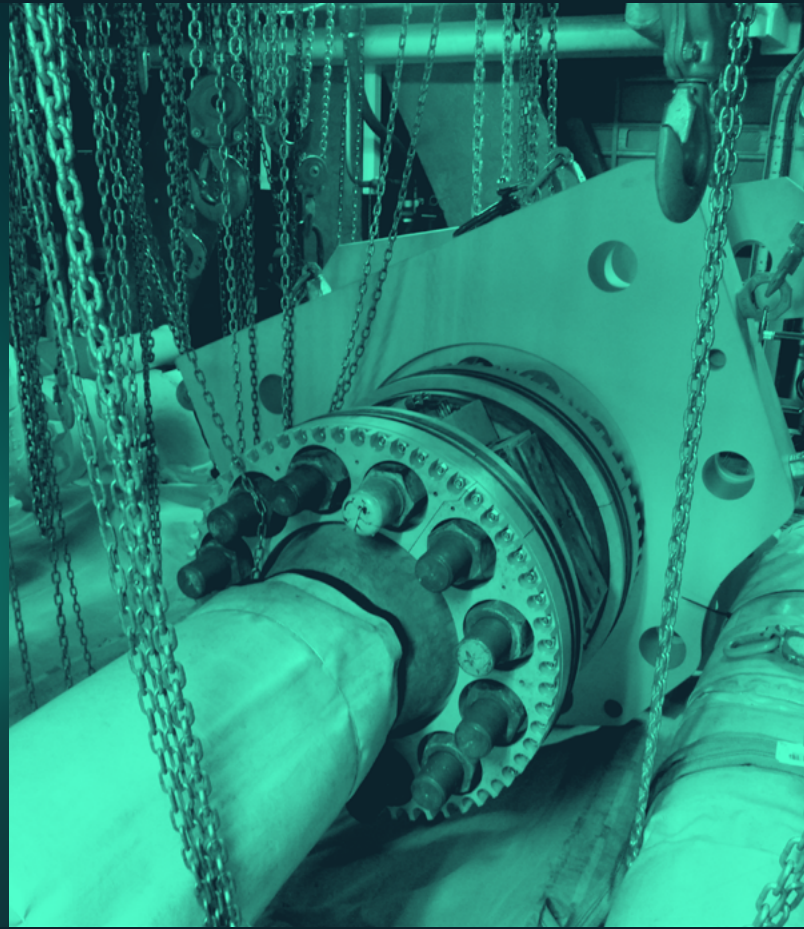


Production shutdown avoided in gas production facility during critical compressor maintenance



Northern Europe

12"

2500

Europe's largest offshore operator was facing a major maintenance challenge on an offshore production facility in the North Sea. Scheduled critical maintenance was due on one of the two main compressors, but a leaking valve meant that both compressors would need to be taken offline for several days to install a blind to complete the work. This would mean a gas export stop on a field that produces in the region of 8 billion standard cubic metres for export to Europe and the U.K.

CHALLENGES

- ⊗ Potential shutdown of large contributor of Gas Export to Europe
- ⊗ Safely Isolating one compressor whilst remaining compressor and systems remain online and fully operational
- ⊗ Limited accessibility in terms of working area
- ⊗ Rigorous system testing
- ⊗ Careful planning and execution required for flawless operation

OUTCOME

- ⊗ Positive Isolation of Gas export compressor for maintenance without production shutdown
- ⌚ Deployment & flawless installation within critical timeframe
- 🗨️ Follow-up maintenance on second compressor immediately planned and successfully executed
- 👍 No shutdown required
- 🔥 No hot-work required
- 🛡️ Zero LTI's or NPT

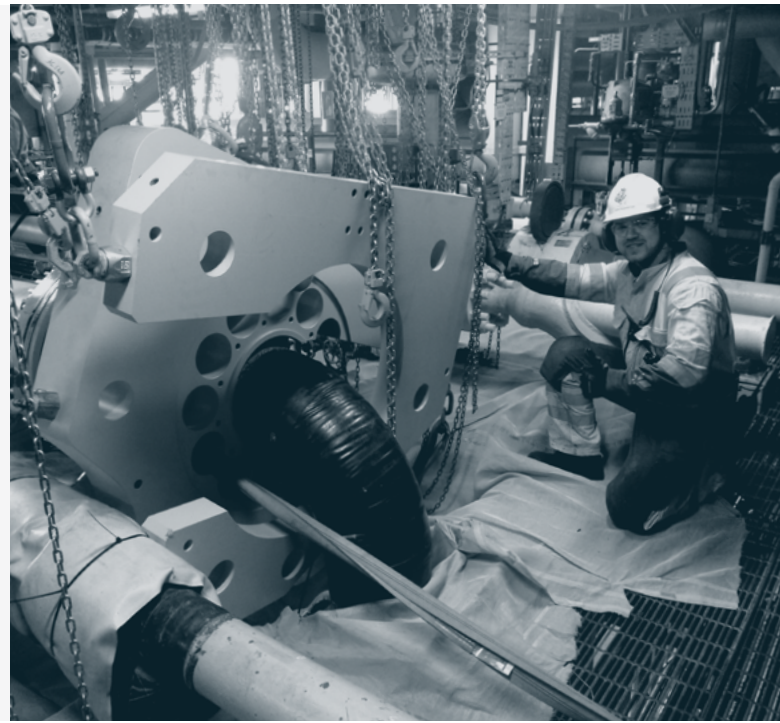
The AOGV is a mechanical isolation tool which can set and retract a blind spade, between a pair of flanges on a pressurised process system. The blind spade, a positive isolation, or a combination of several spades in different locations can facilitate the replacement of valves and pumps. The AOGV can also be used to take a vessel out of a closed loop temporarily for safe entry and bringing it back on-line whilst the main process is kept in operation continuously.

Because the operator had successfully used the Izomax patented AOGV technology on multiple projects during recent years, they knew it offered a solution to perform an isolation of the gas export compressor during a maintenance job. They therefore re-engaged the Izomax team to look for isolation solutions which could minimize or avoid a shutdown to their gas export whilst performing their critical maintenance work.

Challenges

Critical maintenance was due on one of the two main compressors on an offshore production facility. But a leaking valve meant that both compressors would need to be taken offline for several days to install a blind to complete the work. This would cause a gas export stop on a field that produces in the region of 8 billion standard cubic metres for export to Europe and the U.K, so the operator wanted to find a solution that avoided a production shutdown.

A second challenge was that the 12-inch piping leading to the compressors was in a limited accessibility area. This meant that tool geometries, weights and not least safe accessibility for workers all required careful planning.



Solutions

To determine if Izomax could offer a solution that could access the compressor and allow production to continue, they performed a site survey that included 3D scanning. This was performed by Izomax shortly after initial meetings. The site was digitally modelled and the AOGV was fitted to available space; qualified as part of the job execution plans.

During technical evaluations, it became apparent that the Izomax's AOGV isolating technology would allow one of the two export gas compressors to stay operational whilst maintenance was carried out on the other compressor.

This is because AOGV can be used to take a vessel out of a closed loop temporarily for safe entry and bringing it back on-line whilst the main process is kept in operation continuously.

A 17 Ton 12" Class 2500 AOGV mechanical isolation system was installed and operated by a team of four trained Izomax technical specialists. Once installation and AOGV leak testing was completed, the flanges were separated using the internal pressure of the line. This allowed for the removal of the existing gasket, and placement of a positive isolation spade.

Following the placement of the AOGV blind, the isolated compressor was available for full access and a substantial maintenance program which included calibration, flushing, cleaning and parts replacement. The compressor maintenance took several weeks, after which the AOGV blind was retracted, and new gaskets were installed. Once the flanges were compressed on the new flange gasket and the joint was verified leak tight, the flange couple was fitted with new bolts and torqued to the client specifications.

Outcome

The entire AOGV operation was completed without any HSE incidents or operational interruptions, and to the client's full satisfaction. The Izomax AOGV team executed work on critical systems without interfering with the other activities on the installation.

The team that performed system checks and prepared the equipment in the workshop prior to shipping, also performed the operation on-site. This approach helped ensure continuity from the planning stage through to the final job execution.

As with all Izomax AOGV mechanical isolation work, no hot work was required. This saved the operator considerable time and costs related to planning and executing hot work, while critically mitigating complex HSSE risk. System integrity was maintained throughout the operation, with the plant returned to its original status and condition.

The compressor maintenance took several weeks, after which the AOGV blind was retracted, and new gaskets were installed. Following the successful AOGV operation, the customer immediately planned to re-use the AOGV for proactive maintenance of the second compressor at the same location. The work on Compressor B has now been performed safely and efficiently, with the customer already planning future annual compressor maintenance with Izomax.



RESULTS

- 👍 The project was deemed a major success by the Operator and was delivered on time as planned
- 🔧 The Gas compressor was isolated, allowing full access and maintenance whilst production export continued with the second compressor online and fully operational
- ✅ Maximizing efficiency - the success demonstrated the value of planning future proactive maintenance without production export shutdowns.
- 🕒 Zero non-productive time or lost time injuries
- 🔥 No hot-work required