Breathing new life into a 30-year-old compressor

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A major LNG/LPG storage operator in India faced the critical challenge of procuring a new onshore vapor recovery compressor within a tight timeline and limited budget. With a new machine beyond the capital expenditure budget, they approached Burckhardt Compression India to find an alternative that could meet the operational, financial and sustainability objectives.

Ironically, the solution for achieving future production targets came from the past. Rather than supplying new equipment, Burckhardt Compression proposed revamping and restoring a 30-year-old, out-of-service Laby® compressor that was originally designed for offshore duty. The proposal offered a cost-effective path to new capability while extending the life of an existing asset and supporting the principles of a circular economy.

Revalidating process requirements

The project began with comprehensive engineering and process revalidation to ensure the compressor could meet the requirements of continuous onshore vapor recovery. Compressor sizing was reviewed against varying gas compositions and load conditions, while critical components, including valves, flywheel and unloaders, were redesigned for the new operating parameters.

The drive system was converted from direct-coupled to belt-driven, while the unloader system was changed from hydraulic to pneumatic. These modifications enabled integration with the customer's existing infrastructure while supporting reliable operation under the new duty.

Restoring a three-decade-old machine presented several challenges. Seized and aged components were carefully dismantled using chemical, mechanical and

precision machining techniques, allowing reusable parts to be preserved wherever possible. Site-specific engineering, including the development of piping and instrumentation diagrams as well as utility mapping enabled smooth integration into the existing plant documentation and compliance with local regulations.

Complete package

Following reassembly, the compressor was comprehensively tested and validated before being returned to site. Detailed documentation and customer support ensured the refurbished machine was ready for safe and reliable operation.

The results demonstrated the value of engineering-led asset reuse. The complete revamp was delivered within eight months, significantly reducing the lead time compared with procuring new equipment. The compressor was customized for onshore LPG vapor recovery, providing reliable performance across varying loads and gas conditions while integrating seamlessly with the existing plant.

Beyond the operational benefits, the project delivered a measurable sustainability advantage. By restoring an existing compressor rather than manufacturing and procuring a new machine, the solution avoided approximately 20 tons of CO_2 emissions, supporting the customer's ESG objectives.

Tailored solution

A representative of the gas storage operator commented: "It was a pleasure to see how the team from Burckhardt Compression India carefully listened to our requirements, fully understood our expectations, and developed an excellent solution. It supports all our business objectives as well as our sustainability goals. From a technical perspective, we were impressed by how effectively the team adapted the compressor to our specific needs. Thank you for taking on our challenge and delivering such a strong result."

The project demonstrates that with the right engineering expertise, an aging compressor can gain a whole new lease of life, delivering a reliable, sustainable and economically attractive asset for a new generation of operations.

Image captions:

Image 1: The 30-year-old compressor had been out of service for a considerable time.

Image 2: The complete revamp was delivered in just eight months.

About Burckhardt Compression

Burckhardt Compression delivers leading compression solutions that enable a sustainable energy future and support the long-term success of its customers. The Group's business is driven by three global megatrends: a growing global population, increasing demand for energy security, and the ongoing energy transition. With its highly engineered reciprocating compressor systems and services, Burckhardt Compression plays a vital role across applications such as hydrogen, gas infrastructure, chemical processing, and industrial gases.

Through its brands Burckhardt Compression, PROGNOST, SAMR Métal Rouge, Shenyang Yuanda Compressor, and Fornovo Gas, the Group offers a comprehensive portfolio of reciprocating compressor technologies, digital monitoring solutions, and lifecycle services.

Founded in 1844, Burckhardt Compression has continuously evolved alongside its markets, from early engineering innovations to today's advanced compressor solutions. Headquartered in Winterthur, Switzerland, the company operates globally with 35 subsidiaries, as well as three manufacturing and five assembly sites.

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