

PERFORMANCE STUDIES

Field Reports from Cook Compression

PROJECT SERVICES

REPORT# 124

Cook Projects Group Drives Customer Savings with Capacity Increases

SCENARIO

Since 2001, the Cook Compression Projects Group has helped customers define efficiencies, improve reliability, advance safety, and realize OPEX and CAPEX savings. The group's expertise lies in long-term, multi-functional projects that require comprehensive understanding of both equipment and processes – and that significantly affect the customer's bottom line.

Late in 2016 the Cook Compression Projects Group was challenged with the task of identifying practical opportunities for an end user to free up one or more compressors in its fleet of 15+ identical operating compressors located across several sites. The compressor operators had noted that the units were at their capacity and mechanical limitations. Having spare or standby equipment would provide flexibility to plan and perform compressor maintenance without halting production, significantly improving up-time and operational reliability and reducing operating expenses for the plants.

SOLUTION

The compressor OEM offered two options: add a new complete compressor train to each site or bore the cylinders oversized to increase the flow of each compressor. A technical review by Cook Compression identified a third solution: upgrade the existing compressors' pistons, rods, valves and wear parts. The upgrade would leave the cylinder bore size the same, preserving the cylinder's maximum allowable working pressure (MAWP). It would also eliminate the need to remove the cylinder for boring, saving valuable runtime.

Late in 2017, Cook Mechanical Field Services applied the upgrades to the first compressor. The two-day turnaround included installation of new piston and rod assemblies, new Manley® valves with suction unloaders, and rebuilt packing and wiper cases, as well as modifications to the compressor heads.

RESULTS

The customer's equipment analyst has confirmed that the predicted ~2 mmscfd (10%) increase in flow has been achieved, without exceeding the mechanical limits of the driver and compressor frame rod load limits. This 10% increase in flow per unit is enough for the end user to place one compressor at each site on standby and still meet the plants' flow requirements.

For more details about Project Services, contact your Cook Compression representative or visit cookcompression.com.



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