

Robust Equipment Cuts Lifting Costs

By Colter Cookson and Tim Beims

As operators and upstream service companies grapple with unpredictable supply chains and a tight labor market, they have had to work both smarter and harder to continue powering the U.S. economy. Add in the desire to reduce environmental impacts and safety risks, and the standards they use to evaluate new ways of doing business can be quite high.

Emissions-Free Gas Lift

Improving facility design at gas lift sites can be one of the most effective and profitable ways for producers to address fugitive emissions, including methane, VOCs and hazardous air pollutants, suggests B.J. Ellis, president of Liftrock Integrated Lift Services. He says the company has developed a skid-mounted gas lift control system that is proven to eliminate 100% of methane emissions from gas lift operations.

“Conventional gas lift systems dump scrubber liquids into an atmospheric tank where they can flash off as gas and be emitted into the atmosphere. By contrast, this advanced control skid recirculates the liquids within a closed-loop system,” Ellis explains. “When any liquids flash into methane, that gas is repurposed to fuel the engines or is injected down hole through the compressor.”

There are additional benefits associated with the use of this gas lift control skid. “Today, it can be difficult to find experienced crews to properly set up gas lift facilities,” says David Stone, Liftrock’s sales manager. Stone points

out that inexperienced crews often make mistakes that lead to downtime or safety risks. “For example, I have often seen dump lines that dump into a vessel that is too far away, or that lack proper insulation, which can cause them to freeze frequently.”

To simplify the field work, the gas lift control system is fabricated in a controlled environment with rigorous quality assurance, Ellis relates. “Once the control skid reaches the well site, all the crew needs to do is join the interconnected piping. While this key feature can shorten construction times 30%-40%, the real benefit is consistency. The crew needs to know far less to set up a prefabricated control system for optimal uptime.”

Ellis says Liftrock drew on decades of compressor experience as it designed the skid. “Among the most common causes of downtime we found was freeze-ups in the dump lines leaving compressor scrub-

bers and heading to atmospheric tanks,” he notes. “These issues can begin occurring in temperatures around 60 degrees Fahrenheit because the pressure drop from the compressor scrubbers to the flowline, or to the associated atmospheric tank, causes the gas to expand and cool.

“Through the process design of this control system, we regulate the pressure drop such that we eliminate the freeze up potential,” Ellis says. “This design stops liquid-level shutdown events and eliminates the cost associated with injecting methanol, the traditional technique for mitigating freeze-ups.

“When we had the deep freeze in Texas in February 2021, none of the facilities equipped with these skids went down because of a liquid level freeze from compressor scrubbers,” he reports.

The gas lift control skid is equipped with instrumentation that measures the amount of gas it repurposes and sends a

This gas lift control skid from Liftrock Integrated Lift Services has been engineered to reduce emissions, ease equipment setup and improve reliability at gas lift sites. By capturing and reusing any liquids that flash into methane, Liftrock reports, the skid eliminates methane emissions.



Production Technology



monthly report to customers. According to Ellis, the repurposed gas generally covers the skid's rental cost. "Add in the operational benefits of eliminating liquid-level freeze-up events, and the skid becomes a revenue generator for customers rather than an expense," he says.

Ellis adds that the skid is designed for ultimate reliability. "We are gas-lift compression facility experts who have spent the majority of our careers working

in this area. When designing the skid, we spent more than a year addressing every variable we knew that was associated with compressor downtime, developing answers to prevent these issues—whether through the process design, control valve placement, insulation, heat tracing or telemetry," he says. "In fact, the skid's telemetry is robust enough that it generally can identify a potential problem and notify our operations per-

sonnel and our customers before it leads to downtime."

Summing up, Ellis says, "This skid-mounted control system is the only methane emissions mitigating solution on the market today that reduces operational burdens and downtime from gas lift facility operations while eliminating methane emissions. Because of this, the installed system generates a positive return for our customers, as it was designed."□