

Exceeding Expectations

- In just three months, LSI upgraded three separate compressors. One compressor usually takes six to nine months by itself.
- Compressor station systems were upgraded from 1950's-era components to modern technology.
- LSI created a seamless interface between two very uncommon platforms.

“We Need Our Most Crucial Compressor Stations Completely Modernized To Meet Emission Standards And Improve Functionality.”

What Our Client Said

We provide energy and natural gas services to customers all over the United States. This is a very important task that requires the utmost reliability. Our most critical compressor stations and the GE PLCs, RTUs, Relay Logic and pneumatic system controls that are responsible for operating the stations are becoming obsolete. Our stations no longer meet emission requirements. We need a partner that can successfully update these systems and perform work during normal compressor maintenance periods without creating any additional downtime beyond this.

What We Heard

Our situation is far too complex for a simple replacement solution. We need LSI's team of industry experts to develop a plan to completely modernize our station controls, compressor systems and unit controls, systematically, while maintaining normal operation. These compressor stations are crucial in maintaining proper gas flow and pressure, so they cannot be compromised during the modernization process.

What We Did

LSI knew from experience that this project was going to require extensive organization and planning. Because three projects had to be executed simultaneously, we chose an EPC (Engineering, Procurement and Construction)-style approach. Reverse engineering was the first step in understanding the dynamics of the existing compressor system and controls. LSI's team designed and researched every component necessary to modernize the system. Systems were updated from 1950s-era components to modern technology. By systematically integrating new RTU technology as well as GE RX3i platform components into the existing GE infrastructure, compressor stations were upgraded to successfully meet emission requirements with minimal disruption.

LSI provided:

- Systems integration
- Project management
- System design
- Fabrication
- Installation
- Testing
- Development of drawing standards
- Programming and interface to Bristol Babcock RTUs
- Cape Software simulation
- GE RX3i
- Rosemount
- Vibration monitoring
- Altronic
- Iconics

The Results Speak For Themselves

Minimal downtime

Using an EPC-style approach gave LSI the ability to successfully coordinate every stage of this project, ensuring that it ran smoothly and resulted in almost no downtime.

Worry-free project management

LSI was able to provide the customer with peace of mind by managing all the moving parts of the project. LSI managed the electrical and mechanical contractors during the replacement of all skid-mounted electrical, pneumatic and hydraulic systems as well as the installation of new catalytic and emission control systems.

System testing without disruption

A Medium Fidelity Simulation utilizing Cape Software was used as a testing platform to simulate errors in both the RTU and PLC systems. This testing gave clarity as to what would happen if there was an actual problem taking place, allowing critical ESD logic to be tested without potential damage to millions of dollars' worth of equipment.

Emission standards achieved

Extensive oil, vibration and temperature monitoring was conducted to make sure that all mechanical and emission requirements were met with the new system. In the end, the upgraded system was significantly more effective than the previous one as well as being environmentally friendly.

Outstanding turnaround rate

LSI's team upgraded a total of three compressors during the three-month project. This is remarkable when you consider that a single compressor upgrade typically requires six to nine months for this particular customer.

Improved efficiency

Obsolete relay logic and Bristol Babcock series RTUs were replaced with ControlWave® Micro controllers. These new, modernized controls allow the compressor stations to operate much more efficiently than before. All control panels were designed and fabricated by LSI's team prior to installation.

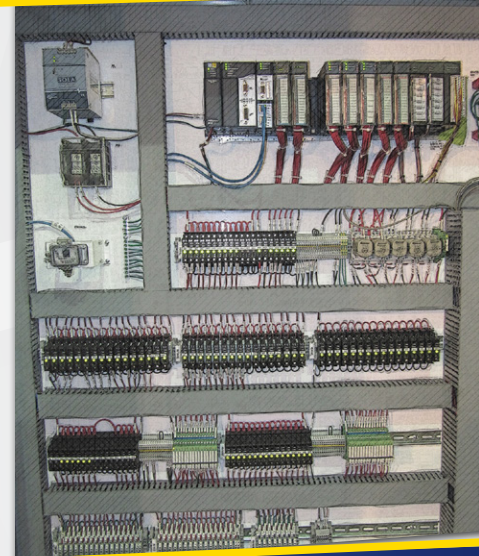
Increased confidence thanks to reverse engineering

Reverse engineering allowed LSI's team of engineers to gain the knowledge needed to successfully rework all instrumentation, pneumatic systems and emission controls. Every piece of the system was dissected and evaluated. This provided detailed information without requiring the client to gather or guess at it.

A successful ongoing partnership

Upon completion of this project, eight compressors and three stations were modernized from the ground up. A path forward was developed and a partnership for another compressor conversion and installation was initiated. The customer knows that they can count on LSI to listen to their needs and create a solution that works for them.

Let LSI listen to your challenges today. Together, we can modernize your processes without disrupting your productivity.



LSI listened,
then we went to work.
Our experienced team of engineers redesigned and replaced every part of the existing compressor stations to successfully modernize both operation and efficiency. This not only improved functionality, but also made it easier to monitor and repair potential problems occurring in the system.

LSI's engineering and management skills were utilized to exceed client expectations in the modernization of a critical energy distribution system.