



Facility Automation Process Control

Client

Gas Processing Facility in Oklahoma

Industry

Natural Gas Processing
Midstream Operations

Solution

Facility Automation Advanced
Process Control Platform

Challenge

Gas processing facility experienced manual process control requiring constant operator attention, difficulty maintaining optimal processing conditions across multiple treatment units, limited automation capabilities for routine process adjustments, challenges coordinating operations between compression, dehydration, and NGL extraction systems, and high operating costs due to inefficient process control and energy consumption.

AI Consulting Approach

- **Process Control Assessment:** Production technology consultants evaluated existing control systems, process optimization opportunities, and automation potential using advanced process control and facility automation technologies.
- **Integrated Control Platform:** System combining process automation, optimization algorithms, and operational coordination to improve facility efficiency and reduce operating costs.

AI Solution

- **Process Automation Systems:** Platform automatically controlling process variables including pressure, temperature, and flow rates across gas treatment units with optimized setpoints and cascade control
- **Equipment Coordination Management:** System coordinating operations between compressors, separators, and processing units with load balancing and efficiency optimization
- **Energy Management Optimization:** Platform optimizing energy consumption across facility operations including compression, heating, and cooling systems with demand forecasting
- **Operations Monitoring Dashboard:** System providing facility-wide operations overview with automated alerts for process deviations and equipment malfunctions



Implementation (26 weeks total)

- Process Assessment (5 weeks)
- Control System Development (11 weeks)
- Facility Integration (8 weeks)
- Testing Commissioning (2 weeks)

Key Results

Process Optimization:

- 35% reduction in manual process adjustments, improved processing efficiency and product quality, enhanced equipment coordination and reliability

Energy Efficiency:

- 25% reduction in facility energy consumption, optimized equipment loading and operations, better process control consistency

Business Impact:

- Significant operating cost reduction, improved facility performance and reliability, 175% consulting ROI, enhanced competitive positioning in gas processing market

Technologies:

- Process automation systems
- advanced process control
- facility management platforms
- energy optimization tools
- operations monitoring dashboards