New Gas Plant. Critical Timeline. Proven Results.

Control System Buildout for a new 400 MMcfd Gas Treating Facility

Executive Summary | Texas Automation Systems (TAS)

The Situation

Midstream operators across the Oil & Gas sector know the high stakes of bringing a new facility online: **the new control system must come online on time with operators trained and functional, with no room for delays in startup or operational readiness.**

In 2025, **Texas Automation Systems (TAS)** was engaged by a prominent **Midstream Gas Plant** to deliver the **complete control system implementation for a new 400 MMcfd gas treating facility**. **The project came with a strict, non-negotiable timeline for final integration, testing, and plant startup**. Meeting the aggressive schedule was critical to achieving first gas on target.

The Challenge

Implementing a full control system for a greenfield 400 MMcfd gas treating facility demanded precision and speed:

- Deployment of a **Rockwell Automation ControlLogix-based architecture** for the entire plant
- Design and deployment of a **fully redundant control system**
- Installation of all control, power, and network infrastructure
- Configuration, loop checking, and validation of approximately **500 total I/O points**
- Development of a **new plant-wide SCADA system** using **Inductive Automation's Ignition Platform**
- **Safe and efficient plant startup within the compressed timeline**

This was a high-visibility greenfield project where meticulous **planning, execution discipline, and close collaboration** would determine on-time success.

The TAS Solution

TAS delivered a modern, fault-tolerant PLC and SCADA architecture engineered specifically for high-availability Oil & Gas operations in a new-build environment.

Core Elements of the Solution

Modern Control Platform

- Rockwell Automation **ControlLogix** processors
- Redundant controllers operating in hot-standby configuration
- PlantPAX Logic and Templates

True System Redundancy

- Fully redundant PLC processors
- Fully redundant SCADA Servers
- Fully redundant power supplies
- Elimination of single points of failure

Plant SCADA & Visualization

- Plant-wide SCADA system built on **Inductive Automation's Ignition Platform**
- Primary and redundant Ignition Gateways
- Clustered Server Environment
- High-Availability 3-node Historian
- Real-time monitoring, alarming, and trending
- Operator-friendly HMI design with templates that mimic PlantPAX faceplates
- Scalable platform for future expansion

Six Months of Preparation for Seamless Commissioning

The key to success was **front-loaded engineering**. Over a six-month period prior to startup, TAS completed:

- Detailed control logic development using PlantPAX libraries
- Full I/O mapping and configuration
- SCADA screen and alarm development
- Redundancy and failure-mode testing
- Detailed startup planning for the commissioning team

By the time the plant reached mechanical completion, **every major risk had already been engineered out of the execution phase.**

Compressed Commissioning and Startup

Once the plant reached the final integration window, execution followed a disciplined, pre-planned sequence:

1. **Installation of redundant control, power, and networking infrastructure**
2. **Termination, loop-checking, and validation of all approximately 500 I/O points**
3. **SCADA verification with operations personnel**
4. **Controlled commissioning and startup**

Throughout the process, TAS engineers worked side-by-side with the plant's operations and construction teams. Their operational knowledge and responsiveness were critical to maintaining the strict timeline and ensuring a smooth, on-schedule startup.

The Results

✓ **Plant achieved successful startup on schedule within the aggressive timeline**
✓ **Zero safety incidents**
✓ **Zero unplanned downtime after plant startup**

Operational Benefits

- Dramatically improved system resiliency
- Elimination of single points of failure
- Modern, maintainable control and SCADA platform

Business Benefits

- Reduced long-term lifecycle and obsolescence risk
- Scalable architecture for future plant expansions
- Increased confidence in uptime and operability

Why This Matters to Operators

This project demonstrates that:

- **Greenfield control system implementations can be executed with aggressive timelines when properly prepared**
- **Modern PLC-based architecture using PlantPAX standards can deliver DCS-level reliability and operator familiarity**
- **Strict startup windows are achievable with the right engineering partner and disciplined execution**

For operators building new gas treating facilities or facing tight commissioning schedules, this case study provides a proven roadmap for successful implementation without compromise.

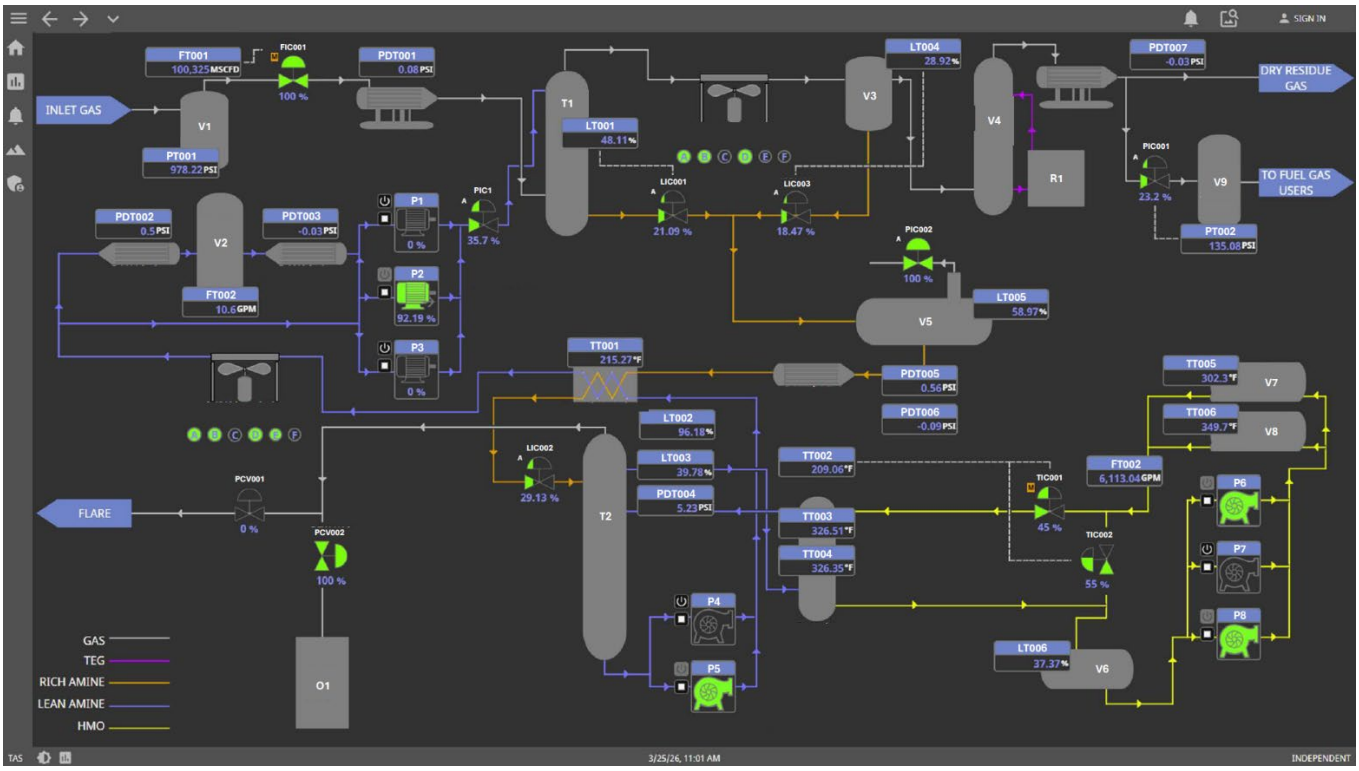
Why Texas Automation Systems

TAS specializes in **high-risk, mission-critical automation projects** where failure is not an option. Our approach combines:

- Deep Oil & Gas domain expertise
- Rigorous upfront engineering
- Proven redundancy and networking architecture
- Collaborative execution with plant operations teams

The result is control systems that are **reliable, scalable, and built for the realities of modern industrial operations**.

Process Diagram



Let's Talk

If your facility is facing:

- An aging DCS or PLC platform
- A constrained outage window
- The need for higher availability and future flexibility

Texas Automation Systems is ready to help.