

Pantera Energy Company Improves Oil Production Operations with Modern SCADA System Powered by Kepware® and Inductive Automation

The Customer

Pantera Energy Company has been honing its ability to drill and produce oil and gas for over thirty years. With its headquarters in Amarillo, Texas, Pantera's initial projects were focused on drilling operations in the Texas Panhandle and Western Oklahoma. Pantera has achieved significant growth since opening its doors in 1982 due in large part to an aggressive acquisition program. The company has completed more than 200 major transactions to date that have allowed it to significantly expand operations and maintain a steady drilling program.

Today, staff and contractors manage over 1,300 wells that are owned and operated by the company. Leveraging three decades of experience, Pantera strategically pursues wells that it considers to be underdeveloped. Targeting deposits that many oil producers are unable to efficiently execute upon, the majority of Pantera's assets reside in areas that require significant knowledge of facility management, water handling, wellhead compression, and control and monitoring. On a daily basis, Pantera's staff manage pumping operations, roustabout crews, well servicing, and completion rigs, and also ensure that regulatory requirements are met.

"At Pantera, we understand that delivering value does not end with the drill bit," said Jerrod Kee, Operations Specialist at Pantera Energy Company. "From the field to the back office, we pride ourselves on a strong operating history focused on delivering a quality product each and every day."

The Challenge

While Pantera has always focused on production and drilling optimization, the increasing availability and evolution of powerful SCADA technologies motivated the company to further support these efforts. To this end, Pantera set out to identify and implement a cutting-edge SCADA system that could automate traditionally manual tasks, provide mobile accessibility to geographically remote sites, help prevent downtime, and scale over time.

Pantera historically relied on human pumpers for the daily monitoring and management of wellsite locations and produced water disposals. With a dispersed web of assets spanning much of Texas and Oklahoma, the company faced a major challenge in getting contractors to sites quickly and consistently. While there may always be a need for humans at the wellsite, Pantera recognized an opportunity to improve its processes through the real-time remote data acquisition, monitoring, and control of assets in the field. With the right SCADA technologies, the company could operate its wells at higher efficiencies by analyzing site-specific, day-to-day processes and adjusting them accordingly on a regular basis. In addition to uncovering daily insights, Pantera could also centrally compile and access key data to provide a more holistic view into the efficacy of the organization's operations. Pantera needed a right-size SCADA system with highly interoperable, reliable, and streamlined data communications technology at its core to support efficient and effective remote monitoring across a distributed and diverse architecture.

"We quickly discovered there was no shortage of vendors that claimed to be able to help us. It was clear that we had our work cut out if we hoped to research, secure, and implement a cutting-edge SCADA system that would address all of our unique challenges," said Kee. "We realized that we needed help to identify and build the right technologies, and that if the initiative was going to succeed, it would have to be a team effort—so we set out to find the ideal resources, both in-house and externally."

The Approach

After uncovering the challenge that lay ahead, Pantera sought an expert system integrator to help pinpoint ideal solutions. Following a thorough review process, the oil producer selected Champion Automation to help build its system. With a significant footprint in Texas and a strong reputation for building world-class SCADA systems for the Oil & Gas Industry, the company was a natural fit. Champion Automation's ability to implement multiple systems from different vendors would enable the configuration of a fully-custom, best-of-breed solution designed specifically for Pantera's unique architecture and workflows.

Upon review of Pantera's organizational goals and infrastructure, Champion Automation identified two key objectives for the company's SCADA system. First, the system would need a flexible

Organization:

Pantera is a family owned company founded in 1982 and headquartered in Amarillo, TX. The company manages pumping operations, roustabout crews, well servicing, and completion rigs as well as the necessary regulatory compliance. Pantera also maintains a consistent drilling program, handling everything from well design to rig selection to derive the most value for its partners.

Industry:

- Oil & Gas

Solution:

KEPServerEX®

- EFM Suite
- Modbus Driver
- Fisher ROC Driver
- ABB Totalflow Driver
- Weatherford 8500 Serial Driver

Ignition® (Inductive Automation)

and scalable SCADA solution at its core. Second, the system would require a highly efficient and reliable communications server that could provide real-time communications across many sites and devices. With these high priority capabilities in mind, the system integrator selected the Ignition SCADA solution from Inductive Automation and the KEPServerEX communications platform from Kepware.

Ignition expands “supervisory control and data acquisition” to encompass the entire enterprise, unifying all the major software layers in today’s industrial facilities (like HMI, SCADA, and MES) into a single, cross-platform solution. To meet Pantera’s complex connectivity and scalability needs, Champion selected Kepware’s KEPServerEX, which communicates with industrial devices and applications using a library of more than 150 protocols. KEPServerEX leverages OPC and IT-centric interfaces (such as SNMP, ODBC, and web services) to provide users with a single source for industrial data.

“No other OPC platform on the market was as flexible, ubiquitous, and easy-to-use as KEPServerEX.” said Jeff Klumpp, Project Manager, Champion Automation. “Its ability to communicate with leading field devices such as Weatherford, Fisher ROC, and ABB Totalflow and support key industry protocols like Modbus would prove invaluable for Pantera. When we coupled KEPServerEX with the rich functionality and usability of Ignition, our goal was to build a system that would allow Pantera to be completely self-sufficient.”

The Results

Since working with Champion Automation to build its Ignition SCADA system with KEPServerEX, Pantera has deployed Kepware’s Modbus and Weatherford drivers to communicate to productive equipment (like compressors and rod pump controllers) at their wellsites, providing data to local monitors as well as centralized SCADA repositories. The system also uses Kepware’s ABB Totalflow and Fisher ROC drivers to communicate with Pantera’s new, modern flow computers for more accurate real-time Electronic Flow Measurement (EFM) data.

Looking ahead, Pantera plans to deploy the SCADA system across much of its organization to eventually connect hundreds—if not thousands—of devices. With the expansive library of protocols and standards available within the KEPServerEX platform, the system will effectively support Pantera’s aggressive acquisition

Organization Impact & Benefits

- Increased ability to communicate with a wide range of PLCs
- Streamlined technical architecture by leveraging an OPC platform with a single user interface
- Enabled remote login and shutdown via VNC monitors
- Improved operational insight through analysis of EFM data
- Bridged legacy equipment with more modern technology
- Provided scalability for future growth and acquisitions
- Increased employees’ quality of life and morale



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Jerrod Kee
Operations Specialist, Pantera Energy Company

strategy, ensuring that the company will be able to easily integrate any equipment secured through acquisition. With the primary goals of streamlining processes, providing better vision into operations, and supporting extreme scalability, the system is already proving to be a major success.

While there is still a role for human pumpers at Pantera, the new SCADA system provides remote login capabilities to enable data access and operational control for managers off-site. This means that Pantera now has real-time insight into operational anomalies that would have traditionally required daily manual visits to uncover. Pantera can remotely access or operate Virtual Network Computing (VNC) displays from any browser or mobile operating system. This level of access and control allows Pantera to prioritize its most productive wells and bridge the gap between cutting-edge and legacy equipment.

In addition to boosted productivity, the SCADA system provides Pantera with real-time remote intervention and management of production operations. This functionality prevents contractors from driving to a remote wellsite (potentially outside of standard business hours) in order to manually suspend operations. For example, if a purchaser plant goes down, remote shutdown allows Pantera to stop gas flow and avoid equipment damage and/or product loss immediately. Remote shutdown also helps avoid more common industry failures like salt-water disposal spills, and can be used to shut down wells during virtually any emergency situation.

“It was important that we implement an intuitive single-pane solution in order to encourage adoption and use, and that’s exactly what we’ve accomplished with Ignition and KEPServerEX,” said Kee. “We couldn’t find another SCADA system that was capable of supporting applications for metering, compressors, salt water disposal, and pump off controllers. Not only are we seeing substantial ROI in terms of revenue, but the quality of life at Pantera has significantly improved as a result of the new system.” Jerrod Kee.

Kepware Technologies is a software development business of PTC Inc., headquartered in Portland, Maine. Kepware provides a portfolio of software solutions to help businesses connect diverse automation devices and software applications and enable the Industrial Internet of Things. From plant floor to wellsite to windfarm, Kepware serves a wide range of customers in a variety of vertical markets including Manufacturing, Oil & Gas, Building Automation, Power & Utilities, and more. Established in 1995 and now distributed in more than 100 countries, Kepware’s software solutions help thousands of businesses improve operations and decision making.

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J7855-PanteraEnergyCompanyImprovesOilProduction-EN-1016