

Atlas Pipeline Improves Production Efficiency at Natural Gas Processing Facility

RESULTS

- Improved gas production efficiency
- Minimized process upsets and plant shutdowns
- 42% reduction in operator time
- Saved \$725K on installation costs

CUSTOMER

Atlas Pipeline Partners L.P. is a full service midstream company providing reliable gas gathering, compression, processing and treating services to its customers.

CHALLENGE

In west Texas, Atlas Pipeline Partners built a new gas processing plant adjacent to an old plant to keep safety and production efficiency as high as possible, as the old plant was too old to refurbish. However, the capital investment was minimized by utilizing viable tanks, compressors, stabilizers and cooling towers in the old plant and integrating them with processing equipment in the new plant. A problem arose in bringing measurement and control points into the new control room, because the old vessels were now hundreds of yards away.

A wired solution was expensive. The assets are hundreds of yards from the control room, and trenching was not an option because accurate piping diagrams were not available due to the age of the plant. The operators were making rounds and manually reading stabilizer pressures and temperatures, compressor status, and cooling tower levels as well as inlet vessel and tank levels. It took two hours to read and record all 75 gauges, and this had to be done four to five times a day to give operators the best chance of finding a problem before it upset the process. Not only was this time consuming, the high frequency of operator rounds still did not provide adequate warning for operators to take corrective action. Problems like compressor failures and poor inlet vessel level control were causing process upsets and impacting production, with some issues causing shutdowns.



“The application gave us a centralized location to view our total plant process. Our operators do not have to make rounds to learn about potential problems. They can more efficiently operate the plant by seeing changes and problems when they occur.”

*Wayne Wauson
I&E and Field Supervisor*

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EMERSON
Process Management

SOLUTION

Atlas quickly realized that assets from the old plant had to be integrated into the control room, as manual monitoring was not providing the efficiency and productivity needed. To avoid the cost of wires and cable trays, a Smart Wireless network from Emerson was installed with 75 measurement points and three Smart Wireless gateways. "Wireless was our only way to do this project," said Wayne Wauson, I&E and Field Supervisor at Atlas. "Without it we would have spent three times as much, and the project would have been dragged out for months." The instruments included 55 wireless Rosemount 3051S pressure and DP level transmitters, 5 wireless Rosemount 648 temperature transmitters, 2 Emerson THUMS connected to Radar gauges and 18 discrete transmitters connected to compressors to report status, as well as other various devices.

The first gateway communicates to about 34 instruments. The second gateway communicates with 24 devices. The third gateway, communicates up to 1200 feet away with the remainder of the instruments.

Startup took only a day. "Most of the instruments were installed and communicating in a matter of minutes," said Wauson. "There were a few issues that took a little longer, but overall it was easy and seamless and took about a day to have them all communicating and showing up on DeltaV™." DeltaV is the digital automation system that monitors and controls critical plant processes. Operators are able to view process information from wireless devices in the same way as any of the wired field instruments. Maintaining the wireless instruments also has the same look and feel. AMS™ Suite: Intelligent Device Manager predictive maintenance software was integrated into the control network, so the plant can proactively maintain both wireless and wired field devices from both plants in the control room, including the Fisher® valves.

Now operators only go to the old plant in response to alarms from DeltaV, and even then they know exactly which vessel or asset needs maintenance. The wireless network has eliminated 8-10 hours of operator rounds per day, giving operators 42% more time to accomplish more productive tasks. "The application gave us a centralized location to view our total plant process," said Wauson. "Our operators no longer have to make rounds to learn about potential problems. They can more efficiently operate the plant by seeing changes and problems when they occur, and by taking immediate action."

Real-time information from the wireless network has improved operator response time, resulting in higher gas production efficiency. Operators are spending their time more productively and process upsets have been minimized. "The Emerson Wireless solution works as advertised," concluded Wauson. "We installed a device and could see it on the DeltaV in a matter of minutes. We are only using one-fifth of the capacity of the wireless gateways, so we can add instruments to the network with minimal cost and effort. The Emerson solution is truly plug and play, not plug and pray."



Three Smart Wireless Gateways communicate to 75 wireless devices up to 1500 feet away.

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RESOURCES

Emerson Process Management Oil and Gas Industry

<http://www2.emersonprocess.com/en-US/industries/oil-gas/Pages/OilandGas.aspx>

Emerson's Smart Wireless THUM™ Adapter

<http://www2.emersonprocess.com/en-US/brands/rosemount/Wireless/THUM-Adapter/Pages/index.aspx>

Rosemount 3051 Pressure Transmitters

<http://www2.emersonprocess.com/en-US/brands/rosemount/Pressure/Pressure-Transmitters/3051-Pressure-Transmitters/Pages/index.aspx>

Rosemount 648 Wireless Temperature Transmitter

<http://www2.emersonprocess.com/en-US/brands/rosemount/Temperature/Single-Point-Measurement/648-Wireless/Pages/index.aspx>

Rosemount 3051S Wireless Solutions

<http://www2.emersonprocess.com/en-US/brands/rosemount/Pressure/Pressure-Transmitters/3051S-Wireless/Pages/index.aspx>

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