When Shale Gas Met Software: The Industrial Internet Will Monitor a Vast Pipeline Network

EXECUTIVE SUMMARY

Getting shale gas out of the ground is one thing. But taking it to customers is quite another. The shale gas boom is putting operators under pressure to move more gas to market faster. Columbia Pipeline Group (Columbia) runs a 15,000-mile gas pipeline network linking the Gulf Coast to the mid-Atlantic region and the Northeast. It will soon start using GE software and big data to monitor its network in almost real time, and streamline its operations and planning.

THE CHALLENGE

American pipeline operators are investing as much as $40 billion every year to maintain, modernize and expand their networks. The shale gas boom is putting operators under pressure to move more gas to market faster and more safely, and many U.S. pipelines have been in service for at least two decades.

"We need an agile and comprehensive pipeline solution that could be delivered quickly and allows for a more real-time view of pipeline integrity across our interstate natural gas pipelines," says Shawn Patterson, president of operations and project delivery at Columbia.

THE SOLUTION

Columbia will soon start using GE software and big data to monitor its 15,000-mile gas pipeline network in almost real time, and streamline its operations and planning.

The technology, called Intelligent Pipeline Solution, combines GE software and hardware with Accenture's data integration

expertise. It runs on Predix®, GE's industrial software platform, and links pipelines to the Industrial Internet for the first time.

The world's pipelines stretch for some 2 million miles, enough to wrap themselves 80 times around the equator. GE estimates every 150,000 miles of pipeline generates an amount of data equal the entire printed collection of the Library of Congress, or 10 terabytes.

RESULTS

Brian Palmer, chief executive of GE's Measurement & Control unit, says that the new system will help customers like Columbia make the right decisions at the right time to keep their assets safe. It will help them send repair machinery and crews where they are needed most, and speed up response time to problems.

The system is designed to harvest data from sensors installed along the pipes and equipment, sync it with external data sources and deliver to customers detailed analytics and risk assessment from key points of the network. "The goal is to help pipeline operators make proactive, rather than reactive decisions," Palmer says.

The "Intelligent Pipeline Solution" is the first commercial product GE and Accenture have offered up since they formed their software and big data partnership in 2013. The companies expect the system to be operational in the first half on 2015.

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ABOUT THE INDUSTRIAL INTERNET CONSORTIUM

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