Flowstate Launches Compressible Pipeline Leak Detection Capability

Machine-learning-augmented detection uses standard measurements to distinguish leaks from normal behavior on natural gas, CO□, NGL, and olefin lines

Purple Logo

CASPER, WY, WY, UNITED STATES, May 4, 2026 /EINPresswire.com/ -- Flowstate Solutions, developer of the Flowstate Leak Detection System (Flowstate LDS), today announced the launch of new capabilities designed for compressible product pipelines. This will extend its solution beyond hazardous liquid applications to support natural gas, CO□, natural gas liquids (NGLs) - including purity products such as ethane and propane as well as unfractionated Y-grade streams - and liquefied olefins such as ethylene and propylene. The new solution gives operators a practical way to extend leak detection into systems where conventional approaches have often struggled.

“Compressible pipelines are difficult from a leak detection perspective because the physics are complex and normal operations can create the same signatures as a leak,” said Braden Fitz-Gerald, Chief Technology Officer at Flowstate. “Our novel approach leverages new capabilities available with physics-informed machine learning and combines it with proven methods for real-time leak detection. The result is a practical solution that can help operators more reliably monitor their systems.”

Flowstate’s new capability uses a machine-learning-augmented framework that learns expected fluid behavior from operational data and can then be used to model inventory changes in real time – overcoming the challenges of conventional approaches. Any detected imbalance is presented with quantified uncertainty and evaluated with statistical methods to determine if the results indicate a potential leak. Flowstate said the capability is designed around practical pipeline data requirements, using the measurements operators already collect at system inlets and outlets.

“Operators are being asked to monitor more complex assets with increased accountability. At the same time, they have less tolerance for nuisance alarms,” said Angie Schrader, Chief Operating Officer at Flowstate. “This solution gives them a practical way to extend monitoring into compressible systems.”

The product release is backed by validation in both a controlled high-pressure natural gas test loop and an operationally complex ethylene transmission pipeline. The solution was tested to not only demonstrate the ability to detect simulated leaks, but also to confirm no false positives were experienced during normal transient operations. The software has also been put in service on operational CO□, natural gas, and Y-grade pipelines.

“This launch didn’t happen overnight,” concluded Jerad Stack, CEO of Flowstate. “It reflects years of work with customers and research partners to take a proven liquids solution and expand it for more complex pipelines. We’re proud to reach this point and even more excited about what it means for the operators we serve.”

Flowstate is rolling the release out as part of its broader effort to expand leak detection coverage across more complex pipeline applications.

More information on Flowstate LDS for compressible pipelines, including a white paper on the technology and its validation, is available at https://flowstatesolutions.ai/leak-detection-for-compressible-fluids/

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