# PG&E Testing New Monitoring Technology for its Gas Pipelines

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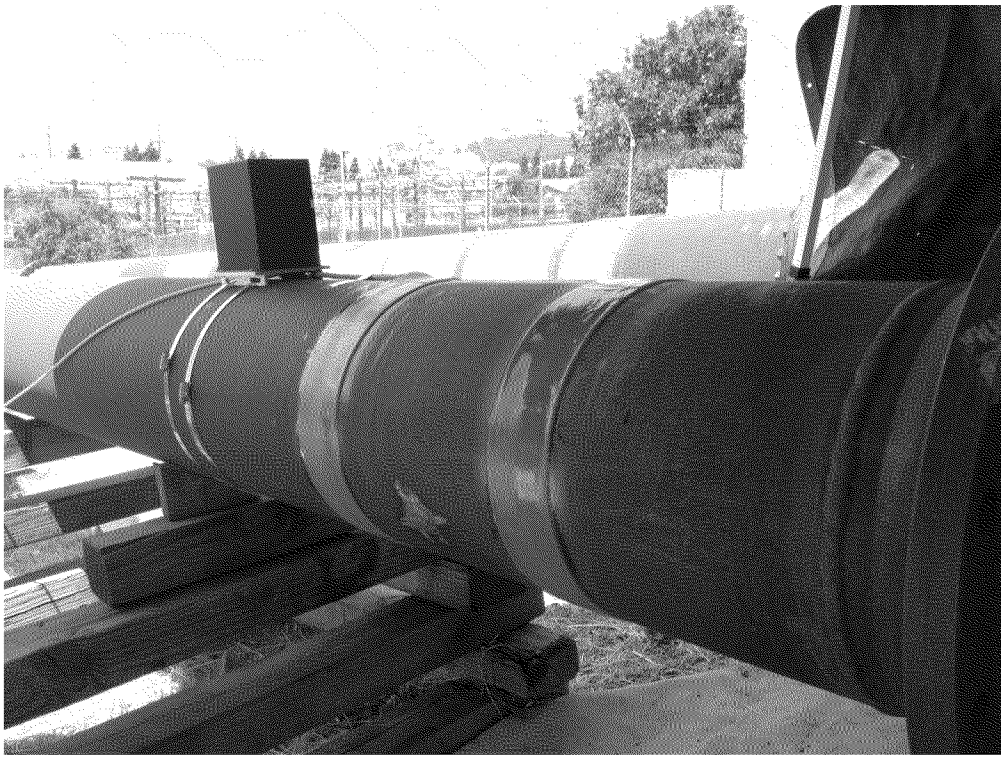
*By Debbie Felix*

At its Applied Technology Services facilities in San Ramon, PG&E coordinated a demonstration of new technology the company has been testing for its natural gas pipeline system. Developed by Silicon Valley-based Acellent Technologies Inc., the Real-time Active Pipeline Integrity Detection (RAPID) sensor system was designed to remotely monitor the structural health of pipelines by identifying potential concerns such as corrosion, cracks or other damage.

Tiny sensors embedded between strips of flexible film, which are wrapped around the outside of steel pipes, can one day provide PG&E real-time, detailed information about the condition of its pipelines, especially in locations that are particularly susceptible to damage. By sending and receiving ultrasonic waves through the thickness of the pipeline steel to a data acquisition box installed on the pipe, PG&E's Gas Operations' engineers will get an advance warning when the condition of a pipe changes.

"The RAPID technology can one day transmit an alert in real-time to our engineers when it detects damage to a pipeline", said François Rongere, PG&E's R&D and innovation manager in Gas Operations. "This assures a faster response and repair time," he added.

At the demonstration in San Ramon, two simulated corrosion cells of varying sizes and depths were installed on a test pipe using a plasma cutter. During the demonstration, Acellent's RAPID system located, measured and identified the depth of the corrosion cells. Next, PG&E will verify the accuracy of RAPID's findings using a laser scanner.



A data acquisition box sits atop a test pipe wrapped with sensors and covered with protective fiberglass (yellow bands) as part of new technology to remotely monitor pipeline health.

"We have been working on developing this technology for more than five years and we're happy to see it being tested for use by PG&E," said Mark Pappakostas, marketing director at Acellent Technologies Inc. "We're glad to be here today with the California Energy Commission and PG&E to take this big step forward on this innovative technology."

Representatives of the California Energy Commission (CEC), which is funding the research and development of RAPID technology through the Public Interest Energy Research (PIER) program, also attended the demonstration. "The RAPID system developed by Acellent is a prime example of pulling from other industries—such as aerospace and automotive—to demonstrate technologies California's pipeline operators, like PG&E, can use to improve the safety of our pipeline network," said Johann Karkheck, project manager at the California Energy Commission. "These technologies may otherwise go unnoticed which is the exact reason the PIER program was created."

Further testing is planned for this technology to eventually make it available for the many pipeline configurations and is expected to be finalized by the end of 2015.

The RAPID system is one of many cutting-edge technologies that PG&E is exploring for its natural gas system. Rongere says that "innovation is critical to improving gas safety, reliability and affordability."