

How smart PIGs keep pipelines safe

Smart PIGs are probes that clean and inspect pipelines to prevent leaks and environmental damage. In a natural gas line, PIGs are powered by natural gas pressure pushing them onward. Outfitted with computers, GPS, sensors and magnets that transmit data to engineers, smart PIGs can pinpoint any signs of trouble.

WHAT THEY LOOK FOR: Stress, corrosion, gouges, dents and cracks.

WHY ARE THEY CALLED PIGS? In addition to being an acronym for **P**ipeline **I**nspection **G**auges, they also make a squealing noise when running through a pipe.

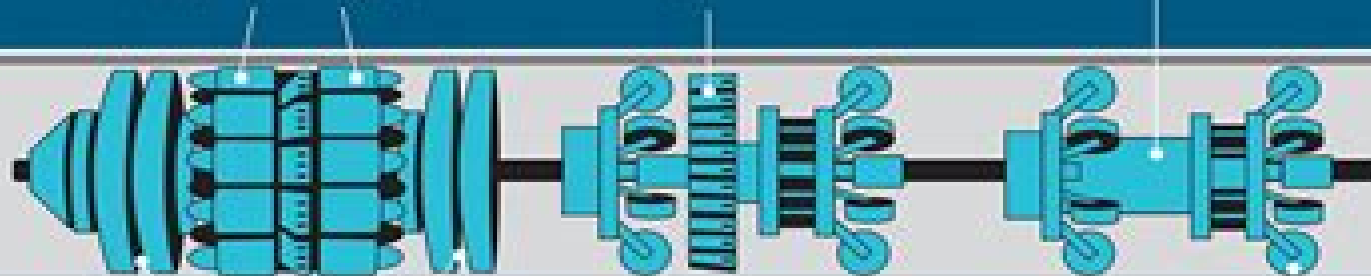
HOW BIG ARE THEY? When PIGs are used to inspect Duke Energy natural gas lines, they can be up to 18 feet long and can inspect pipes that are up to 30 inches in diameter.



PIPE WALL THICKNESS SENSORS
are powerful magnets.

CALIPER SENSORS
measures any dents on the pipe.

BATTERY AND DATA STORAGE CONTAINER



DRIVE CUPS
for propulsion through the pipe.

ODOMETER WHEELS
keep the PIG centered in the pipe and measure speed and distance traveled.

Smart Clean Pigs

**Mohammad Reza
Rahimpour, Mohammad Amin
Makarem, Maryam Meshksar**

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