

How Colonial Protects the Pipeline

Colonial Pipeline Company

Construction & Design Standards

Maintaining the safety and integrity of its underground refined liquid petroleum products pipeline is Colonial's first priority. It starts with design and construction standards that help to maintain the integrity of steel pipe. One hundred percent of Colonial's pipeline has an external coating to inhibit corrosion. In addition, Colonial installs cathodic protection systems along our pipeline. These systems use a low-level electrical current to connect the pipeline to a more easily corroded "sacrificial metal," which helps to inhibit pipeline corrosion.

Pipeline Operations Computer Monitoring

Colonial also uses computerized technology to monitor flow rates, pressures, pump operating status and valve positions all day and night, every day of the year. Pipeline controllers can shut down a pipeline section within seconds, if an emergency situation is identified.

Internal Inspection Tools

Since its beginnings in 1962, Colonial has used numerous techniques and inspection devices to test the integrity of its pipelines. In-line inspection devices, known as "smart pigs," allow Colonial to inspect the internal surface of its pipelines. On average, Colonial inspects more than 2,000 miles of its 5,500-mile pipeline system every year.

Since 1985, Colonial has used a device called a "deformation pig" to take precise readings of its large-diameter lines. Deformation pigs look for dents or buckles in the pipe. Other high-tech pigs, use magnetic flux leakage technology to detect corrosion as small as a half-inch in size. In 1994, improvements in

technology led to the introduction of the elastic wave tool, which uses ultrasound to detect microscopic cracks in the pipeline. When these inspection devices identify defects, Colonial is able to uncover the pipeline, investigate the problem and repair the line before the defects become problematic and threaten the environment or human safety. Typically, Colonial makes hundreds of proactive and preventative repairs each year.

Integrity Management Plan

Both smart pig and cathodic protection data is integrated to develop system-wide risk profiles that are used as part of Colonial's system integrity program. This program is conducted under the watchful eye of federal regulators that specify repair criteria and timeframes for various defects when they are identified.

Comprehensive Pipeline Protection Practices

In addition to in-line inspections, Colonial also monitors pipeline integrity in a number of ways:

- Flying the pipeline right of way weekly, weather permitting, to perform visual inspections from the air.
- Mowing the entire ROW annually, and trimming trees and overgrowth as necessary so the line remains visible from the air and the ground.
- Supporting the nationwide "811—Call Before You Dig" program. Colonial inspectors respond to over 300 locate tickets each day.
- Dispatching ground patrol to visually inspect the pipeline ROW.
- Rewarding citizens for reporting unauthorized activities or suspicious behaviors along the pipeline right of way that could signal potential risk.
- Installing heavier-wall pipe or pipeline casings where the line extends beneath roads and river crossings. □