



PIPELINE AND SYSTEM SAFETY

Enbridge invests heavily in pipeline safety through our pipeline and system integrity programs, which encompass the tools, technologies and strategies needed to ensure that our pipelines and facilities are checked and inspected for safety and reliability.

PREVENTION

We believe that pipeline safety and reliability begins with prevention. This means recognizing conditions that have been known to cause failures in the past — including third-party excavation damage, worker error, corrosion (a chemical reaction between the environment and the pipeline steel that reduces the pipe wall thickness), and cracking or denting — then working to minimize the risks. It also means adopting the most advanced leak prevention technologies available, following environmentally sound construction practices and taking a proactive approach to training, inspection, testing and repair.

PATROLLING THE LINE

Prevention also means regular inspections to identify potential trouble spots along the pipeline. Using aircraft, land vehicles and foot patrols, we regularly monitor the right-of-way, carefully watching for potentially damaging activities such as unauthorized digging and construction.

MAINTAINING THE PIPELINE

Because of their location and the products they carry, pipelines may come in contact with water, bacteria and various chemicals, all of which can corrode or cause the steel to wear. Both the interior and exterior of the pipe are potentially subject to corrosion, which we combat by:

- Using special coatings.
- Scheduling regular monitoring of our prevention systems.
- Periodically conducting inline inspections to check for corrosion.
- Scheduling excavation and repair programs when inline inspections show early signs of corrosion.
- Stopping the early signs of corrosion by re-applying the coating or replacing sections of pipe.
- Using cathodic protection (an electrical current that is applied to the pipeline to prevent corrosion).
- Using inspection instruments to clean and inspect pipelines from the inside (inline inspection).

We continue to pursue new methods to prevent or manage corrosion. Currently, we are helping to lead research and development of integrity programs.



SETTING LEAK REDUCTION TARGETS AND PERFORMANCE GOALS

Enbridge's goal is always zero leaks and we set company-wide leak reduction targets across our liquids pipelines systems. In fact, a portion of each of our annual employee and executive performance reviews measures their performance against that goal.



CONDUCTING INLINE INSPECTIONS

Our use of inline inspection instruments is a key element of Enbridge's liquids pipeline integrity program. We use these tools to measure the size, frequency and location of even small changes in the walls of our pipes. We also use them to inspect the insides and outsides of our pipes on a millimeter-by-millimeter scale. When we find features that require repair, we excavate and correct the problem or replace a section of pipe.

Most of the changes we find are minor and do not threaten the integrity of our pipes. With repeated inspections, we can monitor changes in features over time to ensure they don't worsen.



PIPELINE INTEGRITY DIG PROGRAMS

Enbridge's regular monitoring and inspection program alerts us to locations that we must check for corrosion, cracks, dents or other features. If our inline inspections alert us to a change in the pipeline, we conduct an integrity dig. Each dig involves excavating a section of buried pipe such that we can carefully clean and examine it. If we find a defect, we repair it, recoat and re-bury the pipe. In some cases, we cut out old sections of pipe so we can weld in new pipe.

We conduct all integrity digs to the highest environmental standards and, following our own advice to the public, dig safely, calling ahead so that other underground utilities can be marked and protected before one of our backhoes begins digging. We also train workers, welders and inspectors, and ensure that our contractors who are working near the pipeline are qualified.



INCREASED FOCUS ON SYSTEM INTEGRITY

Although we haven't yet achieved our goal of zero incidents, we have achieved continuous improvement in our operations. In 2004, to reduce the number of small spills within our stations and terminals, we added system integrity measures such as a leak-reduction team and small-piping-integrity initiatives to our existing pipeline integrity program.

Since 2006, a cross-functional team of 12 experts in engineering, operations and pipeline integrity has helped to guide a leak-reduction program for our network of facilities, including pump stations and terminals. That team's efforts have paid off. We have seen a reduction in the number and magnitude of leaks at our facilities over the past five years.