Enbridge's Intelligent Valve Placement: Minimizing risk, maximizing safety

At Enbridge, our top priorities are the safety of people, protection of the environment, and the operational reliability of our pipeline systems. Enbridge's Intelligent Valve Placement (IVP) program is a key component of our commitment to safety and operational reliability.

What's the benefit of the IVP program?

Our IVP program identifies and protects all water crossings and high-consequence areas along a pipeline right-of-way.

How is valve placement determined?

The IVP program is based on rigorous risk assessment, thorough engineering practices, and protection of people and the environment.

Who's in charge of pipeline safety?

The National Energy Board maintains oversight of Canadian pipelines— and, in a public letter to Enbridge in February 2015, commented that our IVP methodology "reflect(s) an evolving response in identifying and addressing concerns associated with pipelines".

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A key piece of safety equipment

Enbridge's Intelligent Valve Placement (IVP) methodology—our formalized approach to applying rigorous risk assessment and thorough engineering practices to valve placement—is designed to ensure intelligent valves are placed at the right location, to reduce potential release volumes along all pipelines in our system.

Isolation valves are used to control or halt the flow of crude oil and other liquids, and represent a key piece of safety equipment on a pipeline system. Enbridge meets or exceeds regulatory requirements by using an IVP program to determine valve placement across its system.

Remotely controlled valves are used to provide immediate response in the unlikely event of an emergency. They can be closed by staff at our Pipeline Control Center immediately upon detection of a problem, with full closure occurring within three minutes of activation.

Protecting high-consequence areas

We use our IVP program to determine optimal valve locations. Those locations can be influenced by a number of factors, including topography and the presence of water crossings and high-consequence areas—such as urban population centers, drinking water resources, environmentally sensitive areas, and commercially navigable waterways. Our IVP program optimizes valve locations along the pipeline, so that one valve can protect multiple water courses and/or high-consequence areas.

Enhancing natural isolation

Our primary consideration for valve placement is greatly reducing the potential flow of oil to lower elevations, particularly those in close proximity to major water crossings and high-consequence areas. Enbridge's IVP program protects those water crossings and high-consequence areas by taking advantage of gravity, using high points of topography to provide natural isolation of product between valves.

Intelligent process, right locations

Enbridge's IVP strategy is designed to ensure valves are placed at the right locations—identifying and protecting every point along the pipeline where we have determined that a release would pose a significant risk to people or the environment.

Our IVP program is just one element in Enbridge's multi-layered approach to safety, which includes rigorous design and construction standards, robust pipeline maintenance, inline inspections, leak detection, 24/7 system monitoring, and emergency response.

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