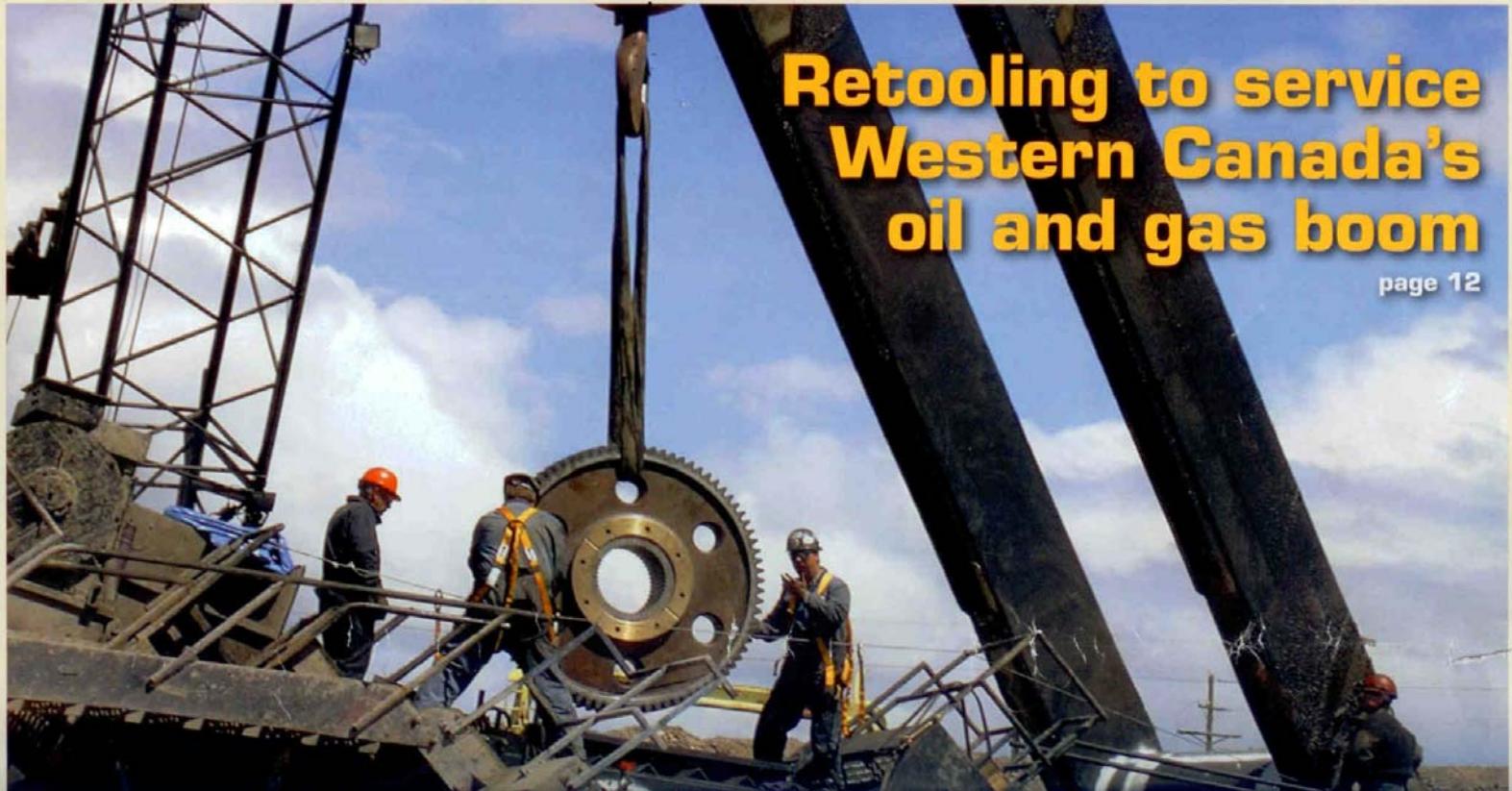


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PRODUCT NEWS



**Retooling to service
Western Canada's
oil and gas boom**

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Pipeline protection: Thinking small leads to big idea

by Andrew Topf, Associate Editor

Oil companies depend on the structural integrity of pipelines to transport their products to market.

When a pipeline is breached, the results can be catastrophic to the company involved. Bad publicity, exorbitant clean-up costs, and a potentially crushing lawsuit are all part of a worst-case scenario, not to mention disruption to normal operations and the loss of valuable product.

Pipeline breaks are always possible when you're moving oil and gas, but an American company says it can substantially minimize the risk with a product that continues to insulate the pipeline while also preventing corrosion, one of the main causes of a breach.

Corrosion is the deterioration of essential properties in a metal due to reactions with its surroundings. Corrosion Under Insulation (CUI) occurs at the interface of a metal surface and the insulation on that surface. The corrosion is particularly hard to detect because it occurs beneath the insulation.

CUI inspections are generally not completed regularly enough to eliminate this problem due to the cost of insulation removal and replacement, and the cost of labour.

Moisture combined with oxygen is the largest factor contributing to corrosion.

The insulating material over the pipe, tank or equipment creates conditions that encourage buildup of moisture and resulting corrosion. The corrosion is often more severe due to the insulation not allowing evaporation and the insulation acting as a carrier, where moisture in one area moves through the insulation to another area.



CUI is a serious problem for the oil and gas industry.

A study by Exxon Mobil Chemical showed the highest incidence of leaks in the refining and chemical industries is due to CUI, with corrosion accounting for between 40 and 60 percent of pipeline maintenance costs.

The solution, by Florida-based Industrial Nanotech, is a thin coating called Nansulate that provides corrosion resistance and also has a low thermal conductivity, allowing it to act as an insulator.

The coating can be used on the entire length of pipeline, where it's usually sprayed on, or brushed onto leak-prone areas such as an elbow joint or weld.

The coating is hydrophobic, meaning it repels water.

The patented "nanotechnology" – the manipulation of matter on a molecular level – has distinct advantages over traditional pipeline insulation such as rock wool or polyurethane foam, says Francesca Crolley, VP operations and marketing for Industrial Nanotech.

She said other insulating and cor-

rosion-resistant materials are applied separately, and are often several inches thick, whereas the Nansulate is an "all-in-one" application.

And unlike other insulation, which has to be removed during inspection, usually at great expense to the pipeline operator, the Nansulate clear coating provides for easy and continuous inspection.

"The biggest breakthrough our technology has made is that we're able to have such a great insulating ability and corrosion resistance in a clear film coating," said Crolley.

The product is currently used for exterior pipeline applications, but a new epoxy version will soon be available for pipelines running underground or underwater, noted Crolley.

Recent and upcoming projects utilizing the Nansulate technology include 250 kilometres of pipeline for Brazilian oil company Petrobras, which is seeking to recover up to eight billion barrels of light crude; coatings by Abu Dhabi Gas Industries Ltd. (GASCO) at its Ruwais plant; and a variety of offshore and onshore topside oil and gas equipment housings.

Outside the oil and gas sector, Nansulate is being used on pipelines in the biofuels industry, in dairies, and in textile plants, where tanks and dyeing machines are common.

Here the Nansulate coating provides an unexpected benefit.

Crolley said by lowering the temperature of the pipeline a plant stands to reduce its energy consumption by up to 20 percent – with one textile plant reporting a \$40,000 drop in its monthly heating bill.

Industrial Nanotech, Inc.

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Pipelaying equipment from Russia now available in North America

Side boom pipe layers with maximum lifting capacity from 25.6 to 104.5 tons are now available to the North American market from Russian heavy machinery builder, Chetra Industrial Machinery.

A minimum number of controls and their convenient placement means fatigue-free operation throughout the working shift. In order to ensure safety, the pipelaying equipment has hook and

boom lift limiters to stop the winch automatically and closed-type disk brakes prevent loads from falling.

Wide track gauge and large ground contact area combined with easy-to-adjust counterweights provide increased stability and a high level of safety.

Chetra Industrial Machinery

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