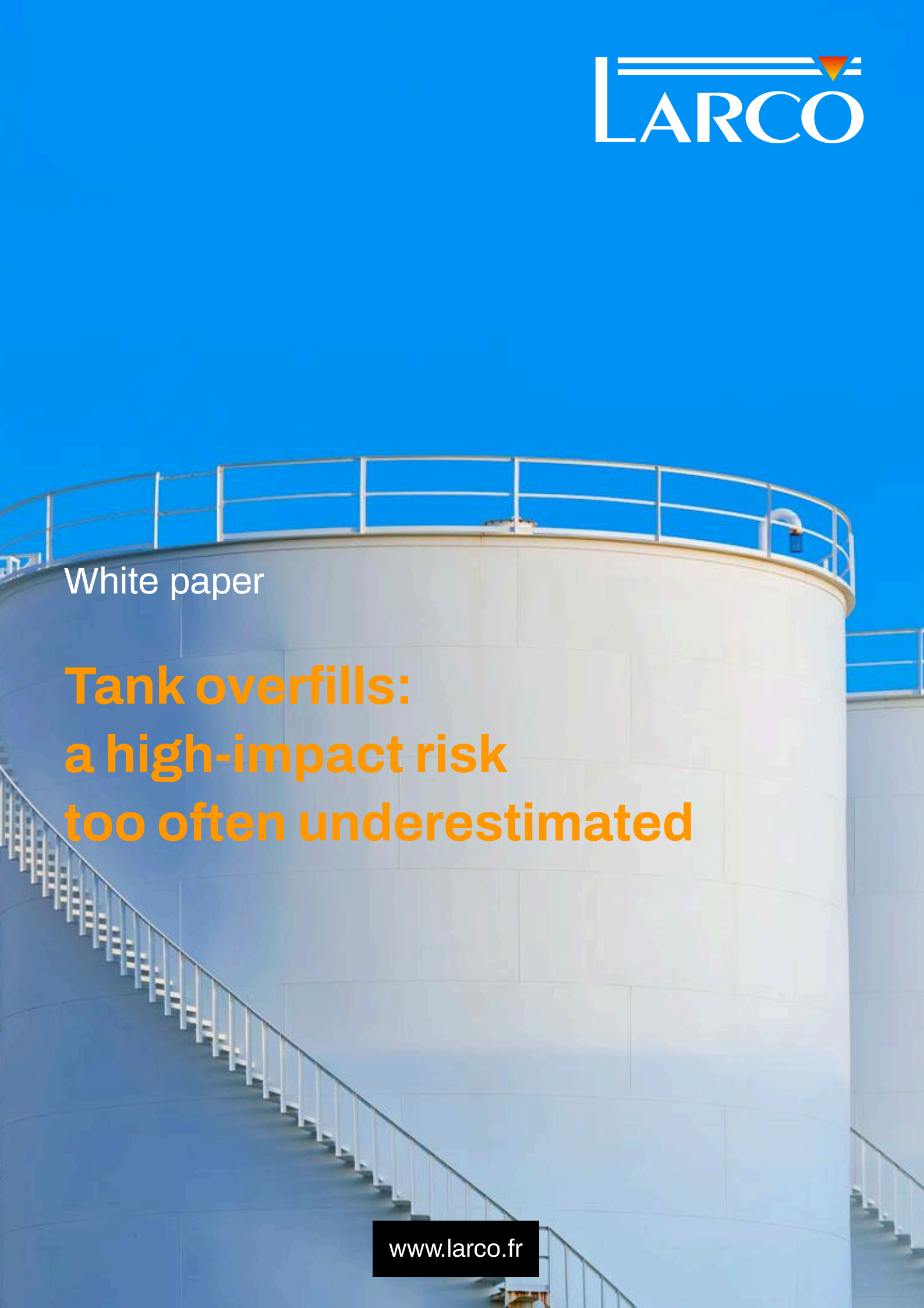

White paper

Tank overfills: a high-impact risk too often underestimated

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In the oil industry, as well as in airports and the mining sector, storage tanks play a vital role in holding fuel and other flammable products. However, these facilities are exposed to a major risk: accidental overfills.

When a storage tank is being filled via pipelines, ships, or trains, effective monitoring is crucial. A single error can result in the spill of hundreds of liters of hydrocarbons, with potentially catastrophic consequences.

Why is an overfill so dangerous?

When a tank overflows, it's not just about excess liquid. Once exposed to open air, hydrocarbons naturally release flammable vapors. In the presence of an ignition source (spark, short circuit, etc.), these vapors can ignite and cause fires or explosions. Within seconds, the entire site can be at risk, threatening not only workers and infrastructure, but also surrounding areas.

These incidents also release toxic gases and fine particles, worsening air pollution and posing a direct health hazard. And that's not all. If hydrocarbons overflow and reach the environment, the consequences can be disastrous. Near coastlines, an overfill can quickly contaminate shores, suffocating wildlife and vegetation and impacting the ecosystem for years...

On land, hydrocarbons can seep into the soil and pollute groundwater, potentially affecting drinking water supplies in the long term. This is why it's so important to implement effective preventive measures to avoid such accidents.

Redundancy: an essential safeguard to ensure storage tank safety

Today, most storage terminals are already equipped with radar level gauges that continuously measure tank levels. These radars are essential tools for monitoring stored volumes, but they are primarily process instruments. Their main role is to support operational monitoring, not to guarantee absolute safety in the event of an overfill risk.

This raises an important question: is it enough to rely on a single technology to prevent major incidents?

Given the increasing safety requirements, it has become essential to strengthen system reliability through a redundant approach. Adding overfill prevention probes, independent from the main gauging system, provides an extra layer of protection and enables immediate response in case of malfunction.

The limitations of radar level gauges when it comes to safety

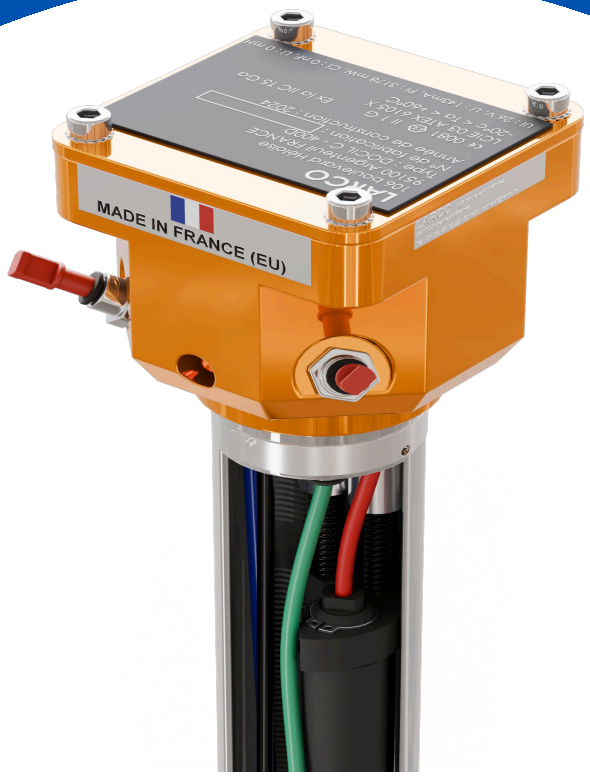
While radar level gauges are widely used in the industry, they are primarily designed for stock management. Here are their main limitations when it comes to preventing overfills:

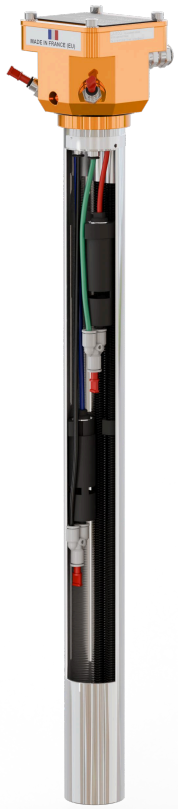
- They are integrated into process systems, and a communication failure or calibration error can lead to inaccuracies.
- They are not dedicated to safety; their primary function is to monitor stored volumes, not to trigger immediate critical alerts.
- They can be affected by external conditions, such as buildup on the liquid surface or electromagnetic interference, reducing their reliability in critical situations.

The overfill prevention probe: an essential solution dedicated to safety

The DOCIL 400 overfill prevention probe, developed by LARCO, is designed to provide optimal protection for industrial site operators.

Unlike radar level gauges, which are primarily process management tools, these probes are fully dedicated to safety and serve as an independent physical barrier against overfills.





Why choose the DOCIL 400 overfill prevention probe?

Proven reliability: Used in numerous oil depots worldwide, the DOCIL 400 probe is a benchmark safety device trusted by major oil companies. Each probe is tested on dedicated test benches before shipment to ensure optimal performance.

Precision and responsiveness: The probe provides immediate detection of critical levels and triggers alerts independently from the main gauging system. It can be adjusted to the specific needs of each oil depot and offers two product detection levels—high and very high—allowing operators to activate tailored safety measures.

Automated safety measures: When connected to an automation system, the probe can instantly trigger protection measures such as shutting off supply valves, transferring product between tanks, or activating audible and visual alarms in the event of a safety threshold being exceeded.

Simplified maintenance: Unlike other solutions that require full disassembly, the DOCIL 400 is equipped with a real-condition test system. This means there is no need to dismantle or disconnect the probe to check its proper operation. In addition, all electronics are integrated into the probe head, making maintenance operations easier.

Certifications and compliance: The DOCIL 400 probe is ATEX and SIL 2 & 3 certified, ensuring optimal reliability in the most demanding environments.

Interested in the DOCIL 400?

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