



SAFER, FASTER TURNAROUND STARTUP AT GULF COAST REFINERY

ULTRASONIC PRE-STARTUP TESTING FOUND FOUR LEAKS TRADITIONAL METHODS WOULD HAVE MISSED — BEFORE HF WAS INTRODUCED

PRE-STARTUP LEAK TESTING GAVE THE REFINERY CONFIDENCE TO INTRODUCE HYDROFLUORIC ACID INTO A FRESHLY TURNED-AROUND UNIT WITH ZERO LEAKS AT STARTUP

A major refinery with more than 140 years of operating history processes heavy, high-sulfur crude alongside lighter grades to produce gasoline, diesel, and aviation fuels, and employs more than 1,200 staff. During a turnaround of its Hydrofluoric Acid (HF) Alkylation unit, the site needed to confirm the unit was leak-free before reintroducing HF, a step where undetected leaks carry serious safety consequences.

CHALLENGE

Traditional pre-startup testing methods risk missing small leaks, leaks at elevated elevations, and leaks masked by background noise — any of which could go undetected until HF was already back in the unit. The refinery needed a more thorough method of confirming integrity before startup, without adding time to an already time-sensitive turnaround window.

SOLUTION

Hydrus Works' onsite technicians used intrinsically safe ultrasonic leak detection equipment to locate every potential process leak point across the unit. As each leak was identified, operators addressed it and the area was rechecked and confirmed before startup proceeded.

Ultrasonic pre-startup leak testing found leaks traditional methods missed, enabled a zero-leak startup, and became a standing best practice for the refinery's turnaround program.

RESULTS

Ultrasonic survey gave the refinery a faster, more thorough path to a leak-free startup — and changed how the site approaches every turnaround since.

- Identified leaks the customer would not have found with traditional methods, including a flange leaking on an overhead HF Alkylation tank
- Detected leaks at lower pressures and with less nitrogen than conventional testing requires
- Located leaks up to 20 feet overhead and leaks obscured by background noise
- Achieved zero leaks at startup, resulting in significant time savings on pre-startup testing
- Refinery now includes Hydrus Works' ultrasonic pre-startup leak checks on every turnaround for a safer, faster startup