



Pipeline Intervention Paves Way for Safe, Rapid Repair Works in Greece

Working with Intervention Technology in Potentially Lethal Environment Demands Heightened Security Measures, Innovative Engineering

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NIVELLES, Belgium – October 28, 2014 – Make no mistake. Executing repair works in refineries where *hydrogen sulfide* (H_2S) is present creates significant elevated safety risk. In fact, because even short-term exposure to high-level concentrations of H_2S can be fatal, every type of repair carried out in this type of potentially lethal and highly corrosive environment is approached with the highest level of security procedures.

Time was of the essence when the pipeline maintenance team at Hellenic Petroleum retained T.D. Williamson (TDW), a global piping services provider. The Greek operator needed TDW to create a safe working environment for its pipeline maintenance team to carry out repair works on a tower attached to a key gas line at its Aspropyrgos Refinery near Athens, Greece. TDW would provide this by completing a hot tap and STOPPLE® plug intervention to isolate the tower for repair works. The challenge? The product flowing through the line was fuel gas at 5 barg, containing 5 percent H_2S . The line would have to be cut, plugged, and safely isolated without shutting down production. In addition, due to the highly corrosive environment, the entire operation was to be completed in just 48 hours. The only alternative would have been to shut down the line and production unit, resulting in a complete halt in production. Hellenic wanted to avoid this costly scenario.

In preparation for the hot tap and plugging on the 14-inch tower feeding line attached to unit U-3500, and as an added safety precaution, TDW application engineers developed a special procedure to clean the isolated section so as to prevent H_2S from accumulating around the STOPPLE® plugging head and at the bottom of the line. In addition to purging the isolated section from content, nitrogen was flushed continually through the isolated section throughout the entire operation to make certain that it was clean and free of H_2S at all times. This enhanced safety process was completely effective, with no release of H_2S gas detected.

Following TDW's standard procedures for operating in sour service conditions, the hot tap and plugging equipment underwent special preparation prior to mobilization. This included treatment with a corrosion inhibitor and special lubricant to fully protect the equipment, ensuring flawless operation.

Repair works safely completed in nine days

With the customized equipment prepared, a standard STOPPLE plug and LOCK-O-RING® Plus completion plug, TDW technicians set to work on the intervention. Working in close quarters at



Pipeline Performance™



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the refinery, the team was acutely aware that the job had to proceed with extreme precision to safely isolate the line within the 48-hour window. The hot tap proceeded on schedule, and the line was securely plugged in just 40 hours. With the gas line safely isolated, the valve replacement team installed the new valve. Throughout the isolation, pressure in the line was maintained at 5 bar and production continued. The entire operation – including setup, hot tapping, plugging, valve replacement, and setting the completion plug – was completed in just nine days.

“We thank TDW for collaborating with us throughout every stage of the STOPPLE intervention project at the Aspropyrgos Refinery,” said Anestis Spiliotis, Mechanical Engineer – Machinery Maintenance Department and Project Supervisor for Hellenic Petroleum. “I would like to give special thanks to Mr. Akis Tsiomos for his valuable contribution, Mr. Willem Erven for his flawless performance, and the TDW team who worked on this project,” he added.

As a result of careful preparation, innovative engineering, and attention to detail, TDW provided a safe, H₂S-free environment in which essential maintenance was completed. “Given the risks posed by working in close proximity to H₂S and the narrow window of time, we are proud to have safely achieved the isolation for our customer,” said Gaelle Bruggeman, Project Coordinator for TDW. “Hellenic repaired its tower and, as a result, the Aspropyrgos Refinery’s outstanding operational availability remains,” she added.

About Aspropyrgos Refinery

The Aspropyrgos Refinery owns a large private port, an extensive crude oil distribution pipeline network connected to the crude oil unloading and storage installation in Pachi, Megara, and a distribution pipeline for finished and semi-finished products from and to the Elefsina refinery. It also has the main responsibility for fuel supply through its pipeline to the “Eleftherios Venizelos” Athens International Airport. In 2013, the Aspropyrgos refinery achieved an outstanding performance in terms of its operational availability (99.3 percent), with a particularly low number of main units’ downtime.

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About T.D. Williamson

Global pipeline service provider T.D. Williamson delivers a comprehensive portfolio of safe integrity pipeline system solutions for onshore and offshore applications, including hot tapping and plugging, pipeline cleaning, integrity inspection, pigging and non-tethered plugging technology for pressurized piping systems.

Note to editors:

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