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Valero utilizes advanced inspection technology to detect anomalies and maintain pipelines in top condition

SWINDON, England – July 2, 2014 – Imagine a pipeline network that stretches for miles, running through the countryside, under rivers, towns and busy streets. Then think about what it takes to maintain it, making certain that it operates smoothly and safely. It's an around-the-clock responsibility; one that requires vigilance and meticulous attention to make certain that every line is carefully inspected on a regular basis.

For Valero Energy Ltd, a subsidiary of international refiner and marketer of transportation fuels Valero Corporation, inspecting pipelines with efficient methods that generate data that offer a comprehensive picture of the condition of the line is critical. In the United Kingdom, Valero owns and operates the Pembroke Refinery on the west coast of Wales, the Mainline Pipeline, and associated feeder pipelines in Wales and England. Maintaining this complex refinery and vast network is demanding, calling for ongoing inspections to make certain every line is maintained to the highest standard.

To ensure that inline inspections of the lines are executed efficiently while generating the greatest amount of useful data, Valero recently retained global pipeline service provider T.D. Williamson (TDW). Valero's main objective was to rule out or identify threats to pipeline integrity.

TDW was to carry out inline inspections of several sections of the pipeline network using its Multiple Dataset (MDS) inline inspection platform with SpirALL® Magnetic Flux Leakage (SMFL) technology. Because the MDS tool generates multiple datasets in a single inspection run, it not only reduces inspection time, it closes the gaps inherent in individual inspection technologies. To illustrate, axial MFL is unable to detect anomalies that are located within the same magnetic field orientation. These include defects such as axial grooving and slotting; i.e., crack-like anomalies and preferential seam corrosion located in the long seam. SpirALL MFL technology was designed to locate anomalies with these narrow characteristics. In addition, by combining axial and SpirALL MFL, distinguishing between volumetric and planar or crack-like anomalies is much easier.

By using this technology to collect a wide range of in-depth data in a single inspection run, Valero would be able to assess the condition of each line, confident that they had a complete set of data upon which to formulate plans to repair or replace damaged or corroded sections.

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Collectively, the three diesel lines extend for 181 km, from Pembroke – running 16 km east – to nearby Waterston, from Seisdon – stretching north for 113 km – to Manchester, and from Seisdon – running east for 52 km – to Kingsbury in England. Due to the substantial length of the two Seisdon lines, launch of the tool was carefully planned to make certain that it took place in daylight hours so that its location would be properly pinpointed at critical monitoring points and at the receiver at the end of the line. The TDW team also carried out gauge runs on each line to ensure that the line was clear of any blockages that would prevent the inspection tool from completing the run.

Multiple datasets generate valuable information in one run

Working in close cooperation with the Valero team, TDW executed the inline inspection runs on all three lines on various dates during a 10-month period. Throughout the inspection campaign, pipeline pressure was closely monitored. The inspection runs were conducted at a constant speed of one to two meters per second to prevent the tool from becoming lodged in the line and to ensure that data gathered was of the highest quality. All data was validated and analysed before being forwarded to Valero for review and assessment. The three inspection runs were completed on schedule in a total time of just five days.

Given the quality and variety of data produced by the technology employed during this recent inline inspection campaign, TDW is preparing to inspect the 226 km Waterston to Seisdon line, the longest in Valero's UK pipeline network.

The recent inspection program is not the first time that Valero has sought out TDW to carry out inline inspection services in the UK. In 2013, the Pembroke to Waterston line was successfully inspected with the same technology, providing Valero with useful data to maintain pipeline integrity.

"It is very rewarding that Valero was able to benefit once again from the comprehensive data generated by the MDS platform and the reduction in downtime and overall cost," said Matthew Blackham, Project Manager for TDW. "We attribute much of the success of the project to the Valero planning and onsite teams, which were extremely dedicated to getting the job done safely and professionally. By working together with the TDW onsite technicians and data analysis team, the operation was an outstanding achievement. We look forward to working with them again this year," he added.

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.

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