Production Flows Through High Temperature Steam Line During Maintenance Work

Double Block and Bleed Pipeline Intervention Enhances Safety in Sardinia

NIVELLES, Belgium – September 15, 2014 – When engineers at the Saras Refinery in Sarroch, Sardinia needed to replace two valves on a section of line, which operates at 235°C and is connected to the steam collector MP, they knew that a complex intervention would be necessary, especially because the work would have to be carried out without interrupting production.

The Saras Refinery refines approximately 15 million tons of crude oil into petroleum products each year, which accounts for approximately 15 percent of Italy’s total refining capacity, so it’s crucial that it operates at optimum capacity year-round.

The intervention on the steam line would require a number of items in order that the operation would be successfully executed. The work scope featured the following:

- A comprehensive risk analysis in compliance with HSE standards to ensure personnel safety and plant integrity.
- An on-site production structure to make certain that the plant would continue to operate throughout the intervention.
- A detailed engineering plan outlining the entire intervention process.
- A production schedule of all necessary work, including dates and time required for each task.

Refinery operator Saras shares a long-term relationship with global pipeline services provider T.D. Williamson (TDW), which specializes in pipeline pressure intervention services and technology that make it possible to safely isolate a section of line while repair work is carried out, without shutting down production or operations. Because Saras and TDW had worked together in the past, they knew that they would each have to have a thorough understanding of the operation and site where the intervention would be carried out, as well as the specific sequence of necessary tasks.

To create a safe working environment, Saras requested that TDW carry out a STOPPLE® Train pipeline pressure intervention so that the high temperature steam line could be tapped, plugged and safely isolated without disrupting operations. The STOPPLE Train method uses field-proven Double Block and Bleed plugging technology to temporarily block sections of live pipelines. This unique design permits the simultaneous insertion of two
plugging heads through a single fitting. This method is preferable because it provides two barrier surfaces (including a bleed port for pressure and product evacuation) between the intervention work zone and the line’s internal pressurized contents.

**Greater first-time success rate improves efficiency, saves time**
When working on a high temperature line, the less time the line is isolated, the better. A major advantage of using this Double Block and Bleed isolation method – as opposed to a single block – is that the initial insertion is much more likely to achieve an immediate and complete isolation that prevents any product from seeping into the line past the plugging heads. This means that it has a much greater “first-time” success rate. As a result, the line is isolated more rapidly, allowing work on the high temperature line to take place immediately. It also means that because numerous attempts are not required to obtain a good seal, essential work is not delayed and is carried out within a very brief window of time, which is critical for high-temperature applications, since material properties are under extreme stress.

Working within the confined space of the refinery, the TDW team used a standard tapping machine to hot tap the high temperature 20-inch line, and the specially engineered STOPPLE Train system to plug it. Due to the extremely high temperature of the line, the equipment could not be allowed to remain in the line for more than 72 hours, but owing to the “first-time” success of the isolation, the intervention could be carried out in 48 hours. During this time the line was isolated at a safe operating pressure of 14 bar (203 psi) while the valves and corroded section of line were replaced, without disrupting refinery operations.

“The TDW team demonstrated an excellent ability to integrate with our internal structure,” said Mariano Russo of Saras. “Every technician worked with determination to accomplish this operation, in all of its complexity. We thank the entire team for their professionalism and commitment.”

Sarlux refinery is a wholly owned subsidiary of the Saras Group.

**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:** To obtain photos of the operation carried out by TDW for Saras at the Saras Refinery in Sardinia, please contact Waylon Summers below.

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