TesTex STATE OF THE ART PRODUCTS AND SERVICES FOR NON-DESTRUCTIVE TESTING

FROM THE FIELD

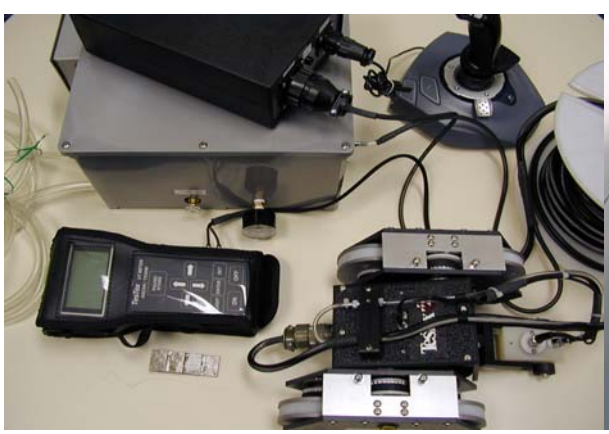
Problem:

A large Chemical plant in Kentucky that produces synthetic compounds was suspecting wall loss in a vertical process tank. Areas of pitting and uneven surfaces were visually observed at a distance during scheduled outages, but due to accessibility, no quantitative data could be obtained. The engineers at this facility needed to know if this tank was reliable enough to be used productively and safely in the upcoming months. A forced outage would bring down the entire process line until repairs or replacements could be made. A quick and comprehensive inspection detailing the wall thickness of this piece of equipment was needed. Due to the configuration of the tank, the wall area needing measured was twenty feet higher than any platform or ladders could reach. The only available in-house solution was to build scaffolding so that inspectors could access the damaged areas, but this would be too time consuming and very costly.

Solution:

TesTex was summoned to put together an inspection team and gather appropriate equipment for weekend work on short notice. The equipment needed to inspect this remotely located carbon steel tank was the TesTex Viper Crawler System. The Viper is a lightweight crawler (under 8 pounds) developed by TesTex to carry Ultrasonic and Low Frequency Electromagnetic Technique equipment for inspections of hard to reach areas. By using permanent magnets, the Viper can traverse vertically up and down and horizontally across magnetic surfaces. This particular application called for the Ultrasonic package, which included a transducer and water supply as a couplant for continuous thickness readings. The water supply was a stream of water pumped through a long small diameter hose that filled the cavity between the transducer and the tank wall. This water pocket conforms evenly to the rough surface of the tank allowing accurate continuous thickness measurements. The crawler was placed on the wall of the tank in the highest reachable area. The strong magnetic wheels held the crawler securely to the tank wall. The motorized crawler, which is guided by a joystick, began an upward path

to the top of the tank. Using a remotely connected logging U.T. Meter, a continuous stream of data was collected and archived. A total of 14 passes around the inner circumference of this tank were performed. Several areas of severe wall loss were found. The lowest measurements showed wall remaining of 0.088" out of a nominal 0.250" wall thickness. Due to the condition of this tank, the company decided to retire the tank.



The pictures above show the complete Viper Package and also the Viper Crawler on a Tank.

Conclusion:

TesTex was able to provide a fast and economically viable solution to this problem. The crawler has been used in many remote and normally unreachable areas. A flare stack at this plant was also inspected during this same job. The Viper Crawler System has successfully inspected pipelines, columns, smoke stacks, and tanks of different shapes and sizes.

For more information on the TesTex, Inc. Viper Crawler System or other TesTex products and services, please contact us at testex-ndt@verizon.net or call us at (412) 798-8990.