

DOT 460 Quarterly Report – Public Page

Date of Report: October 3, 2014

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Prepared for: DOT

Project Title: “MWM-Array Characterization of Mechanical Damage and Corrosion”

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Public Page Section-

This project is aimed at advancing JENTEK’s MWM-Array technology to provide quantitative characterization of pipeline corrosion and mechanical damage as measured through coatings or insulation. Also of interest are higher resolution images produced with the coatings or insulation removed. For mechanical damage, quantitative characterization includes geometric variations and multidirectional residual stresses (near the surface and deeper within the pipeline). In addition, this program will develop capability to detect cracks at damage sites. For corrosion, enhanced high resolution imaging of both external and internal corrosion will be developed for specific applications to support life management decisions. The JENTEK team will build on demonstrated MWM-Array and MR-MWM-Array detection capabilities to deliver substantially enhanced characterization of damage and a practical means for implementation. This technology has been successfully applied in the aerospace and manufacturing industries and, compared to conventional NDE methods, provides substantially improved performance for imaging curved surface and buried damage through coatings.

During the sixteenth quarter of this program, we have: (1) Continued refinement and modification of the new crack depth measurement tool, with the goal towards transition for field deployment and commercialization. We coordinated a field demonstration of our SCC crack imaging and depth estimation tool with a pipeline operator. However, due to inclement weather at the dig location, we could not perform the demonstration. We are in discussions to coordinate another dig location to demonstrate our SCC crack imaging and depth estimation tool. (2) Completed field demonstration for detection and characterization of internal and external corrosion through insulation and weather jacket. We performed a field demonstration of our corrosion imaging system at an oil major facility for detection and characterization of internal and external corrosion through insulation and weather jacket. JENTEK provided training of the corrosion imaging system to an NDE service provider, who performed the field demonstration, with JENTEK providing service support. (3) Continued evaluation of transition requirements for SCC crack mapping and depth measurement tool as well as the corrosion imaging tool. We have started to investigate certification requirements for operation of our systems in the field. We have also continued development of training coursework for NDE service personnel as well as manuals and procedure documents to operate the equipment.

The point of contact for this program is Todd Dunford (Email: todd.dunford@jenteksensors.com; Phone: 781-373-9742).

General Information required on all Public Quarterly Reports

Results and Conclusions:

This section summarizes progress made in this program. This project is aimed at advancing JENTEK's MWM-Array technology to provide quantitative characterization of corrosion and mechanical damage to pipelines.

Progress has been made in a number of areas:

- Perform demonstrations and field trials for SCC mapping and crack depth measurement – Field Demonstration – We coordinated a field demonstration of our SCC crack imaging and depth estimation tool with a pipeline operator. However, due to inclement weather at the dig location, we could not perform the demonstration. We are in discussions to coordinate another dig location to demonstrate our SCC crack imaging and depth estimation tool.
- Perform demonstrations and field trials for detection and characterization of internal and external corrosion through insulation and weather jacket – Field Demonstration – Completed a field demonstration of our corrosion imaging system at an oil major facility for detection and characterization of internal and external corrosion through insulation and weather jacket. JENTEK provided training of the corrosion imaging system to an NDE service provider, who performed the field demonstration, with JENTEK providing service support.
- Evaluation of transition requirements – Continued evaluation of transition requirements for SCC crack mapping and depth measurement tool as well as the corrosion mapping tool. We are defining the remaining obstacles to operation of our systems in the field. We have also continued development of training coursework for NDE service personnel as well as manuals and procedure documents to operate the equipment.

Planned Future Activities:

N/A