Monitoring Conditions Leading to SCC/Corrosion of Carbon Steel

DTPH56-08-T-000013

PHMSA ACCOMPLISHMENTS

Pipeline and Hazardous Materials Safety Administration

Pipeline Safety Research and Development

Technology Development for Monitoring Corrosion

Project Abstract

This research project develop monitoring tools to determine when a pipeline or tanks are in a stress corrosion cracking (SCC) susceptible mode of operation and mitigative actions are needed to prevent corrosion SCC cracks. The developed monitoring tool was field tested in tank farms and pipelines. The major benefit of the project is to provide industry a reliable monitoring tool that enable timely corrective actions to be made. In addition to pipeline applications, this monitoring tool can be also used for other modes of ethanol transportation.

PHMSA Funding: $174,012

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NET Improvement

The research enabled validation of non-traditional approaches to measurement. The Polestar Technologies Optical Sensor does not involve electricity at the point of measurement. Therefore, there is no risk of creating a spark and igniting an explosion. Polestar sensors are connected to the transmitter by a fiber optic cable long enough to remotely station the transmitter in a safe area. Because of this research the sensors can safely measure oxygen (O2), pH, and carbon dioxide (CO2) while operating in Class 1, Div 1 environments of gasoline & ethanol mixtures such as E10.

US Patent under DOT Contract: N/A

Picture Courtesy Polestar

Commercial Partner

Polestar Technologies
https://polestartech.com &
https://polestartech.com/biofuels/