Advanced Welding Repair and Remediation Methods for In-service Pipelines DTRS56-03-T-0009

PHMSA ACCOMPLISHMENTS

Pipeline and Hazardous Materials Safety Administration

Pipeline Safety Research and Development

Technology Development for Improved Welding

Project Abstract

Develop low-hydrogen gas-metal arc-welding (GMAW) and flux-core arc-welding (FCAW) processes. Mechanize welding with multi-axis welding carriage and adaptive control/tracking for higher quality repair welds. This will allow in-service repair welding on future high strength/pressure pipelines where manual repair welding is not suitable. Over all objectives are: 1. Develop an automated welding system for use on in-service pipelines; 2. Implement a real-time adaptive control system to ensure reliable welding conditions; 3. Evaluate system performance, and validate the system.

PHMSA Funding: $ 414,929

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NET Improvement

The new automated system is approximately 2.3 times faster and 62% cheaper than manual welding. Work continues by Bug-O Systems to reduce the system mounting time in order to further improve cost effectiveness when compared to manual welding. Automated system time is 30-36 min for $176.00 estimated cost compered to around 2.5 hours for $ 280.85 per sleeve.

US Patent under DOT Contract:

N/A

Commercial Partner

BUG-O Systems, Inc.
http://www.bugo.com/


Courtesy BUG-O Systems, Inc.

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