A Quantitative Non-destructive Residual Stress Assessment Tool for Pipelines

DTRT57-12-C-10054

PHMSA ACCOMPLISHMENTS

Pipeline and Hazardous Materials Safety Administration

Pipeline Safety Research and Development

Technology Development for Improved Mechanical Damage Assessment

Project Abstract

The project objectives are:
1. Begin calibrations to develop eStressTM system to quantify residual stress on all common grades of pipeline steel. 2. Calibrate it to quantify the residual stress measurements. 3. Calibrate it for all other variables of steel pipelines. 4. Calibrate it for lift-off variations due to coatings, corrosion product, etc. 5. Field package completion for the system. 6. Determination of optimum data for integrity management program. 7.Develop training procedures, manuals, new codes and standards for the acceptable residual stress and mechanical damages.

PHMSA Funding: $1,000,000

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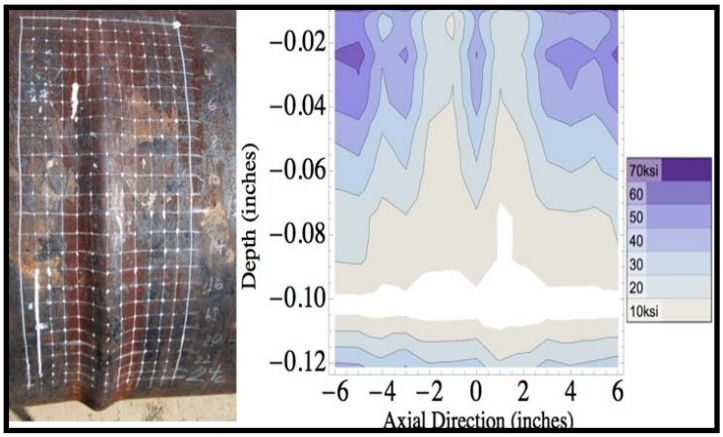
NET Improvement

This inspection tool quantitatively measures residual stress in pipeline damage to determine the susceptibility of damaged regions to failure. The eStress™ system provide much more insight into the nature and severity of the stresses near dents and damage regions. This technology coupled with modeling will differentiate between good and bad amount of stress.

US Patent under DOT Contract:
N/A

Commercial Partner

Generation 2 Materials Technology LLC
http://www.g2mt.com/



Courtesy Generation 2 Materials Technology LLC

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https://primis.phmsa.dot.gov/rd/performance.htm