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COMPREHENSIVE STUDY TO UNDERSTAND LONGITUDINAL ERW SEAM FAILURES

Submitted by, Battelle in collaboration with
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The objective of the proposed project is to assist the PHMSA in favorably closing NTSB Recommendation P-09-1 arising from the Carmichael MS pipeline rupture involving an ERW seam, which directed that the PHMSA conduct a comprehensive study of ERW pipe properties and the means to assure that they do not fail in service. The work is anticipated to validate that periodic use of the current ERW seam integrity assessment methods (hydrostatic testing and in-line inspection using a crack-detection tool) are the best means to prevent ERW seam ruptures. The work will address the characteristics of ERW seams that make them susceptible to failure, and it will identify the factors the pipeline operators must consider in order to assure that their ERW pipelines are safe.

In this quarter, the data collected on operator's experience with early generation ERW pipelines, focusing on the effectiveness of in-line inspection and hydrotesting as they apply to verifying the integrity of early generation ERW pipelines is being assessed to show the track record of hydrostatic testing, the track record of in-line inspection, and review of U.S. vintage seam failures. We will continue to collect problem pedigree pipe removed and have it shipped to Battelle for cleaning and assessment. The challenge remains to acquire pipe samples in a timely fashion and get the program back on schedule. We have compiled a database of 280 ERW and flash-weld seam failures and a draft report has been completed. We also prepared a draft literature review report on selective seam weld corrosion for internal review. A suitable approach to evaluate the effectiveness of cathodic protection against selective seam weld corrosion has been developed and long-term tests are continuing.