

## Second Quarterly Report– Public Page

Date of Report: *February 28, 2014*

Contract Number: DTPH56-13-T-000008

Prepared for: *Pipeline and Hazardous Materials Safety Administration, TransCanada Pipeline, Enbridge Pipeline, and PRCI*

Project Title: “In-Ditch Validation Methodology for Determination of Defect Sizing”

Prepared by: *Applus RTD & Kiefner and Associates*

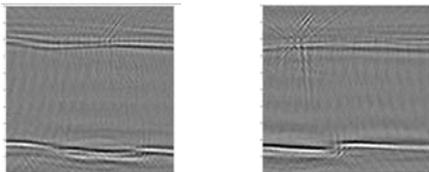
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For quarterly period ending: *February 28, 2014*

### ***Project Status***

- 5 Multiple samples were obtained during the quarter of which a few with some of the best opportunities to obtain a number of flaws and compare the resultant flaws with metallographic sections were selected. Others may be tested in subsequent quarters.
- 6 A higher sampling rate capability and a test scanner for the IWEX system were developed. New software was completed in Rotterdam increasing the data acquisition or sampling rate. The increase in sampling speed was a factor of 11 to 16 depending upon wall thickness. A factor of 11 increase was obtained for 6-mm (~¼-in) wall and a factor of 16 increase was obtained for 10-mm (~0.400-in) wall. This increase in sampling rate was made possible by more efficient processing of the data during the scanning process. A scanner for the IWEX system for automated scanning axially down the pipe was designed and implemented. The scanner is a modification of scanners used for other UT techniques at ApplusRTD. The scanner was tested in Houston and on the 16-in samples at the Kiefner lab in Columbus, Ohio. It appears to work successfully.
- 7 Initial Testing was performed on 8-in, 16-in, and 24-in samples. The 1st quarter ended with a test that yielded no results from tests on 8-in pipe. To determine the problem a short section of the 8-inch pipe was sent to researchers in Rotterdam for testing. Results indicated there was a problem with procedures which were corrected for the later 16-inch tests.

Testing has proceeded with data gathering on the 16-in samples in Columbus, the last week of February. The scanner was set up to take IWEX, PA and TOFD data simultaneously with each measurement sitting side by side and just a few inches apart. Although a complete report of the UT data gathered has not been finalized, the result appear successful. Below are images from a section of the seam with good seam on the left and a lack of fusion anomaly with poor ID trim on the right.



Testing for 24-inch submerged arc-welded pipe located in Canada proved initially unsuccessful. It appears software modifications will be needed to account for the larger distance between the transducers. A second round of tests is planned for mid to late March after the modifications and proof testing on a sample piece at the shop in Houston.