

QUARTERLY REPORT – PUBLIC PAGE

**Investigate Fundamentals and Performance Improvements of
Current In-Line Inspection Technologies for Mechanical
Damage Detection**

Date of Report: October 31, 2007

Contract No: DTPH56-06-000016

Prepared For: United States Department of Transportation
Pipeline and Hazardous Materials Safety Administration
Office of Pipeline Safety

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LEADING PIPELINE RESEARCH

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Technical Status

Technical progress was slowed during the past quarter. This was due primarily to:

1. Industry review of the Phase I report remains on-going. The project team is scheduling a group meeting for November to discuss any issues in the Phase I report that will need revision or additional comment.
2. A delay in the pull testing from Project A (within DTPH56-06-T-000016). Rosen is conducting the pull tests during November 2007 in Germany. Blade engineers may travel to Germany to participate in a portion of the pull testing. Further information on this progress is provided in the quarterly report for Project A.
3. Blade continues to work to gather past inspection data and test results from the pipe section that is being used for the testing.

As reported last quarter, the Phase I report is complete. The report summarizes the findings of the project completed to date (Tasks B-1, B-2, and B-3) and makes recommendations for Phase II testing. This report has been posted on the PRCI website for comments. Comments have been received from member companies and the team is scheduling the Phase I comments and review meeting prior to final approval and issue of the Phase I report.

Project A, within DTPH56-06-T-000016, fabricated a sample of 30 inch NPS x 3 meters line-pipe with 13 manufactured mechanical damage features. The recommendations for Phase II testing included the detailed direct measurement of these mechanical damage features. The MD1-1 technology incorporates one of the current caliper technologies studied within the current research (Phase I).

Work was initiated on Tasks B-5.1 and B-6.1. This included the initiation of testing to investigate repeatability and reliability of select technologies; and the initiation of laboratory/field tests to investigate validate Type I and II error of select technologies. Blade performed detailed measurements of the manufactured mechanical damage features in September 2007. Data from multiple caliper pulls to be performed in Nov-Dec 2007 will be evaluated against the caliper inspection tool to identify refined caliper performance.

Results and Conclusions

The results and findings detailed in the Phase I report were presented in the previous quarterly report (dated July 31, 2007). This report is currently under review and no new results have been added at this time. Once the report has been completely reviewed and revised it will be released to the DOT.

Work was initiated this quarter on Tasks B-5.1 and B-6.1 however; no results have been reached at this point. Blade performed detailed measurements of the manufactured mechanical damage features in September 2007 (see Figure 1). Data from multiple caliper pulls to be performed in Nov-Dec 2007 will be evaluated against the caliper inspection tool to identify refined caliper performance.

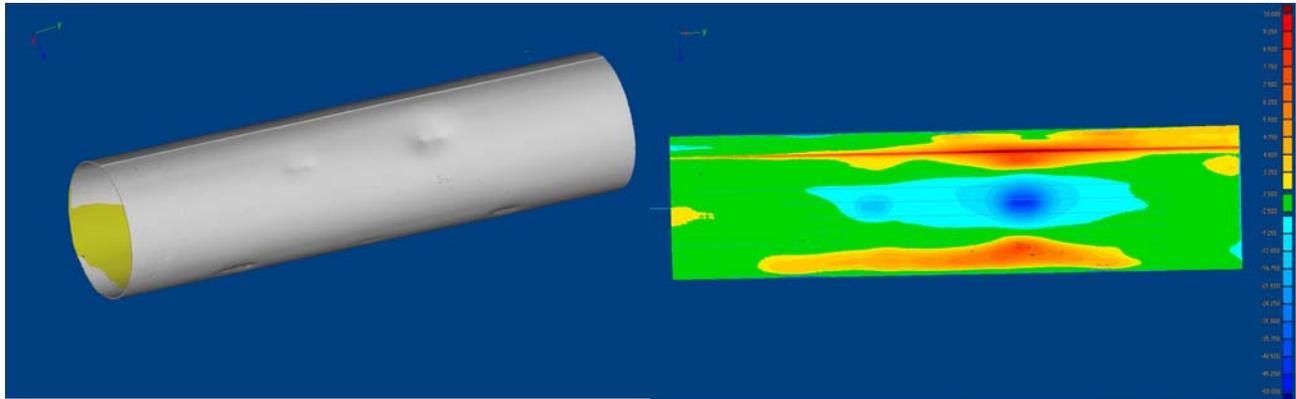


Figure 1: Results from Laser Mapping measurements taken from the MD1-1 calibration test piece.

Schedule

Item No.	Task No.	Task	Status
1	B-2.1	Data Collection	Complete
2	B-1	Finalize Company Participation	Complete
3	B-2.2	Data Collection and Review	Complete
5	B-3.1	Data Analysis and Quantitative Review	Complete
6	B-2.2	Data Collection – Vendor Reviews	Complete
7	B-3.2	Data Analysis	Complete
8	B-3.3	Data Analysis	Complete
11	B-3.2	Data Analysis	Complete
12	B-7.2	Phase I Report	Complete
15	B-7.2	Phase I Report & Phase II Recommendations	Complete
16	B-4	Confirm Supplemental Testing Activities	Complete
18	B-5.1	Reliability Studies – Testing	On-going
19	B-6.1	Validation Tests – Lab/Field Tests	On-going
20	B-7.1	Project Meeting	Planned
21	B-8.1	Program Management	On-going

Plans for Future Activity

Depending upon available schedule and budget resources, the pull through segment may be made available to the other participating technologies for comparison tests.

Project A, within DTPH56-06-T-000016 ECT #203 (MD1-1), is anticipated to run the newly developed dual field tool with a 30-inch pipeline in late 2007. This new ILI tool will have incorporated, within the vehicle, the DAMC(EM) technology G. Detailed validation excavations will be conducted by the Pipeline Operator in 2007-2008. Direct Examinations would be conducted considering the controls and protocols developed from the detailed mechanical damage feature mapping together with the caliper technology pull tests. This data will allow for

critical comparisons between technologies would be conducted from evaluation of predicted measurements (prior to excavations and thus negating re-bound effects) and control of validation measurement error. As with the above ground testing, only one size of inspection tools could be accommodated with this trial pipeline approach, but from the bias observed in the operators' databases it has been concluded that a full understanding of performances and tolerances for current technologies may not be possible from continued data mining alone. Technology E (three axis Hall Sensor) provides a technically unique approach to detection and discrimination of mechanical damage limited to geometric changes (dents and local changes). With a complete understanding of the population of mechanical damage in the 30-inch trial pipeline, the other technologies will be invited to run their mechanical damage technologies in that pipeline segment, with first priority being Technology E. In this way a true system performance for dent measurement can be validated for Technology E (using Tech G data) as well as POD, POI and POFC for Technology E.