

## Quarterly Report

### Public Page

Date of Report: *June 30, 2014*

Contract Number: *DTPH56-14-H-00003*

Prepared for: *Government Agency: DOT*

Project Title: *Strain-based design and assessment in critical areas of pipeline systems with realistic anomalies*

Prepared by: *Center for Reliable Energy Systems (CRES), C-FER, NIST, and CANMET*

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For quarterly period ending: *June 30, 2014*

#### **1 Work Completed in this Quarter**

It was proposed to change the full-scale pipe and curved wide plate (CWP) tests on the transition welds between pipes and fittings to the transition welds between pipes of different wall thicknesses. Additional full-scale tests on pipes without discontinuities or anomalies were proposed to provide additional reference points. Those changes were proposed through communication with the project team members and need to be approved by PHMSA.

Preliminary specimen dimensions and instrumentation plans for the full-scale pipe and CWP tests were developed. The small-scale material test matrix was developed based on the need of the large-scale tests.

Material requirements for the full-scale pipe and CWP tests were revisited in light of the availability of large diameter pipe materials. The procurement process is progressing.

Finite element (FE) analyses were conducted to support the development of the specimen dimensions and instrumentation plans. The FE results showed that the proposed specimen dimensions are adequate.

Monthly reports were submitted online. Two online progress review meetings were held on 5/13/2014 and 6/23/2014, respectively. One peer review meeting was held on 5/22/2014.

#### **2 Work Planned for the next Quarter**

The work planned in the next quarter includes: (1) finalizing the test protocols and procedures, (2) pipe procurement and weld fabrication, (3) small-scale material tests, (4) finite element analyses and sensitivity studies, and (5) project management, monthly and quarterly reports, and meetings.



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