1st Quarterly Report – Public Page

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Contract Number: **DTPH5614H00004**

Prepared for: US DOT – PHMSA

Project Title: Improving Models to Consider Complex Loadings, Operations Considerations, and Interactive Threats

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Objective: Some pipeline failures suggest that interactions of resident conditions with changing operations or environments may increase the probability of failure, reduce the failure stress, change the mode of failure from a leak to a rupture, cause development of a condition not detectable by assessment methods in use, or cause the shift of a condition from stable to unstable. The objective of this project is to develop guidance for pipeline operators in the form of advanced interaction matrices, decision processes, and data needs for identifying and evaluating complex or interactive situations.

Results and Conclusions:
This is the 1st Quarter of 14 planned quarters of activity. Planned activities were:

- Planning and carrying out a kickoff meeting for stakeholders (PHMSA, Kiefner, and the Technical Advisory Group)
- Task II.A.1, review of prior work on the subject of pipeline integrity threats and their interaction.

The above activities were completed.
Task II.A.1 reviewed definitions of integrity threats presented in a number of industry standards, including API 1160, ASME B31.8-S, and DNV RP-F116. Consideration of interactions specified in those standards and also CSA Z662, the Pipeline Defect Assessment Manual, and API PPTS Advisory 2009-5. The guidance offered substantially overlapped with respect to pipelines, with some exceptions where the scope of the document was targeted to specific applications (e.g. offshore pipelines, or hazardous liquid facilities).

Plans for Future Activity:
The next step is Task II.A.2, a review of incident data in order to identify actual occurrences of interactions. The results are expected to inform the processes for identifying potential threat or risk identification processes to be developed later in this project.