

Quarterly Report

Date of Report: May 3, 2005

Contract Number: DTRS56-04-T-0006

Prepared for: DOT and PRCI

Project Title: Effectiveness of Prevention Methods for Excavation Damage

Prepared by: C-FER Technologies

ASSESSMENT MODEL FOR DAMAGE PREVENTION EFFECTIVENESS

Status of Work thorough March 31, 2005

C-FER Technologies

Mechanical damage continues to be one of the main failure causes for oil and gas pipelines. Prevention of equipment impact is the most effective mitigation method because failures due to equipment impact tend to occur immediately following the impact event. The design of a successful damage prevention program requires an understanding of the effectiveness associated with conventional prevention methods and new technologies. Such effectiveness can be obtained from a model that estimates the impact frequency associated with different prevention methods.

The overall objective of this project is to develop, calibrate and validate a logic model that can be used to estimate the frequency of impact due to third-party excavations based on pipeline and right-of-way condition and damage prevention practices.

Work performed to date included the completion of Tasks 1 and 2. Task 1 involved the gathering of data required for model development. It consisted of a literature review and industry surveys to identify prevention methods against excavation damage. Utilizing the information collected in Task 1 and building on C-FER's prior work in this area, a new fault tree model was developed in Task 2 to enhance the characterization of conventional damage prevention methods and to address new prevention technologies. The new model provides a tool to better characterize both conventional prevention methods and new technologies.

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