

Quarterly Report

Date of Report: July 29, 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

2. Public Page

ASSESSMENT MODEL FOR DAMAGE PREVENTION EFFECTIVENESS

Status of Work thorough June 30, 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.

Project activities carried out in this reporting period include review and analysis of damage incident data collected by the Common Ground Alliance DIRT database and those reported in NTSB, TRB and GRI reports and other literature sources. As a verification of the fault tree model, the root causes identified in historical data were compared to those derived from the minimal cut sets of the fault tree model. The comparison shows that the model prediction is in general consistent with historical data trends.

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