



Centers for Disease
Control and Prevention
CDC 24/7: Saving Lives, Protecting People™

Mining Project: Applicability of Proximity Detection to Mobile Underground Coal Equipment

Keywords: Proximity detection Proximity detection systems

Principal Investigator	Jacob Carr, NIOSH OMSHR, 412-386-6877
Start Date	10/1/2014
Objective	To determine whether the proximity detection systems currently available to the underground coal mining industry provide protection to miners working near mobile haulage equipment such as shuttle cars and scoops.
Topic Area	Proximity Detection

Research Summary

This project has one research aim, as follows:

1. Determine whether the proximity detection systems currently available for use on mobile underground coal mining equipment provide protection against striking and pinning hazards.

Proximity detection systems are being used to improve safety of miners working near underground mobile equipment. However, little or no research has been conducted to quantify the performance of these systems and to determine whether they provide protection specifically against striking and pinning hazards. Extensive research has been conducted on proximity detection in relation to continuous mining machines, and the systems on the market for mobile equipment were developed based on this research. These systems are now being adapted to other mobile equipment such as shuttle cars and scoops.

AB78-COMM-25-1

This pilot project will determine the performance of these systems in terms of detection range, accuracy, repeatability, and reproducibility. Measured performance will be compared to ideal performance determined through simulations of machine motions designed to capture typical and extreme scenarios in the mine. The research aims to reduce traumatic injuries and fatalities in the mining workplace.

Ultimately, this project will produce an assessment of proximity detection systems for mobile underground coal haulage equipment, and could be used by stakeholders to improve system design and implementation.

See Also

An Active Proximity Warning System for Surface and Underground Mining Applications

An Environmentally Robust Proximity Warning System for Hazardous Areas

Innovative Safety Interventions: Feasibility of Using Intelligent Video for Machinery Applications

Intelligent Proximity Detection to Improve Miner Safety

Proximity Detection

Proximity Detection: A Continuing Research Imperative

Proximity Warning Systems for Mining Equipment

Recommendations for Evaluating & Implementing Proximity Warning Systems on Surface Mining Equipment

Test Results of Collision Warning Systems for Surface Mining Dump Trucks

Test Results of Collision Warning Systems on Off-Highway Dump Trucks: Phase 2

Page last reviewed: 4/8/2015

Page last updated: 4/8/2015

Content source: National Institute for Occupational Safety and Health, Mining Program