F4.4

Title: Survey Evaluation of the Fire Fighter Fatality Investigation and Prevention Program

Authors: **Wassell J**, Peterson K, Amandus H

Introduction: In the Fire Fighter Fatality Investigation and Prevention Program (FFFIPP), NIOSH conducts investigations of fire fighter line-of-duty deaths to formulate recommendations for preventing future deaths and injuries. This evaluation was conducted to assess the effects of these recommendations on safety knowledge, attitudes, and behavior of fire fighters and to identify strategies for improvement.

Methods: During spring 2006, a Fire Department Survey was mailed to the Fire Chiefs of a stratified random sample of 3,000 fire departments across the country. The sample included the following specific groups: all 208 fire departments that had experienced a FFFIPP investigation as of December 31, 2003; a random sample of 215 fire departments where a fire fighter fatality had occurred but no FFFIPP investigation had been conducted; the 10 largest fire departments (by size of the protected population); and a stratified random sample of 2,575 fire departments where there had not been a fatality as of December 31, 2003. The survey consisted of 62 items related to standard operating procedures, standard performance requirements, fire fighter training, communication of safety practices and investment in safety equipment.

Results: The overall response rate for the survey was 54.9%. Most officers surveyed were familiar with NIOSH and have read a FFFIPP report; over half were not familiar with the FFFIPP investigation program itself. Fire department officers learn about FFFIPP recommendations primarily through NIOSH mailings, trade publications, and websites. NIOSH recommendations have been used by some 11,000 fire departments to update the content of their training programs.

Conclusions: The kinds of fire departments that most likely follow NIOSH's safety guidelines are career fire departments in large, urban jurisdictions in the Northeast. The most common recommendation from the survey is for improvements in the ways FFFIPP materials are disseminated and marketed.

Session: **F5.0**

Title: Safety Practice I

Moderator: Mahmood Ronaghi

F5.1

Title: Operator Presence System: From Design to Implementation

Authors: **Ammons D**, Powers J, Brand I

Introduction: Due in part to human factors concerns hydraulic stump cutters have historically not been equipped with an Operator Presence System. Manufacturers and dealerships provide extensive documentation on the proper operation and safe use of the machine. However, some operators who have not followed these procedures have been injured. An Operator Presence System could be useful in preventing accidents where the operator approaches the cutter wheel with the clutch still engaged. Such a system must permit productive operation without interfering excessively with operator interaction with controls and creating operator difficulties such as hand/arm fatigue. To solve this problem, NIOSH and Vermeer Manufacturing Company collaborated to investigate applying capacitive sensing technology to detect the operator at the controls of a stump cutter.

Methods: Vermeer and NIOSH agreed that NIOSH would investigate the feasibility of detecting an operator's location at the stump cutter controls. If this was determined to be feasible, Vermeer would refine and change the design as necessary and adapt it to hydraulic stump cutters. To this end, Vermeer provided NIOSH with various stump cutter components and general guidelines for mounting locations. NIOSH developed prototypes, conducted initial testing, and determined that sensing the operator's hand capacitively was probably feasible. Vermeer built from the successful work of NIOSH, made substantial improvements, and configured the design for use on hydraulic stump cutters. Field trials have now proven this design to be successful on the Vermeer SC252 and production has begun.

Results/Conclusions: The result of this successful collaboration between NIOSH and Vermeer will help reduce the likelihood of injuries to an operator who approaches the cutter wheel without first disengaging the cutter wheel drive. Details regarding the early developments of this safety system along with the mechanisms used to establish this partnership will be discussed.

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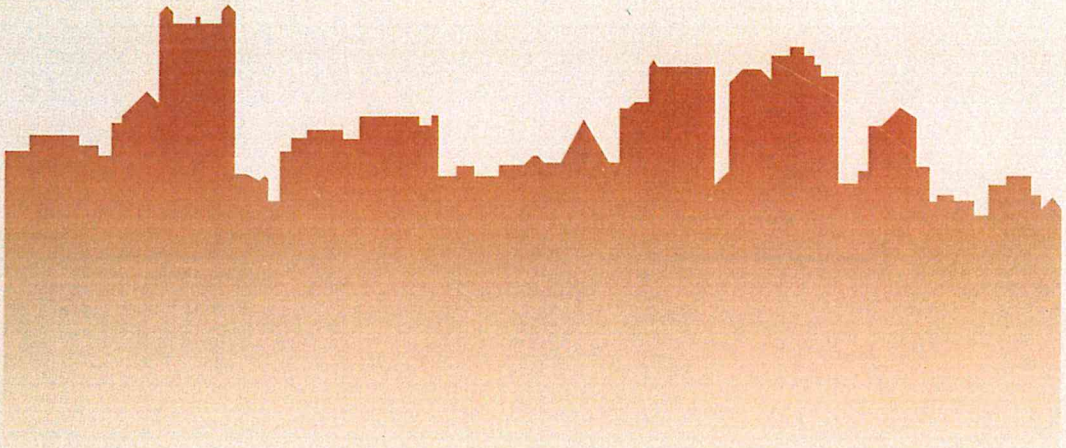

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