

Technology Brief

Ergonomic Tools Evaluation/Development Program

Description: A comprehensive review and evaluation program to evaluate and develop ergonomic tools for gas operations.

Status: Industry-wide and international search is currently underway

BENEFITS

This project represents a consolidated program to address tools typically used by gas operators. In the past, efforts have been disjointed and directed at individual tool items with a limited degree of ergonomic testing. The project will provide companies with a full understanding of the ergonomic tools/methods that are commercially available or under development that have potential to improve operations and reduce employee injuries that are typically encountered when performing routine work. Examples of new tools commercially available that may be considered are shown in Figures 1 and 2.

Furthermore, the program will improve employee on-the-job safety and reduce injuries that negatively impact job performance. This will improve productivity by reducing worker lost time and generally create a healthier, more satisfied workforce. The intent is to provide companies with the necessary information that will enable them to help better identify overall employee safety benefits.

compensation costs and are looking for ways to reduce injury statistics and improve productivity. Use of better-designed tools and practices that consider ergonomics and biomechanics is becoming a growing consideration in the tool evaluation process. Many utilities are looking at this issue and are beginning to examine work practices and equipment to improve work performance and reduce injuries.



Figure 1: Non-Stick Shovels

In the past, NYSEARCH completed studies on various types of barholing tools with Rochester Institute of Technology, and additional ergonomic work is being done by others including the University of Wisconsin in Milwaukee and the University of Utah. In the gas industry, there are significant opportunities for improving tools and work methods employed by utility field personnel. A coordinated systematic program that includes an appropriate level of ergonomic testing, field evaluations and training will help assure that better tools and practices are adopted and successfully transferred to company field operations.

BACKGROUND

Utilities are facing rising medical and

TECHNICAL APPROACH

The objective of this program is to provide a

comprehensive approach to identify the state-of-the-art in tools, methods and their use in gas operations. Once identified, several tools will be selected to validate their physical benefits and field trials will be performed by member companies. Working with an ergonomic consultant, NYSEARCH is identifying new tool applications and coordinating tool deployment and monitoring. The project is: 1) Collecting and analyzing utility, manufacturer, and university ergonomic tool improvement efforts within the US and overseas; 2) Designing, testing, evaluating and presenting strategies for tool deployment; and 3) Monitoring productivity improvements in an effort to reduce employee injuries.



Figure 2: Ergonomic Meter Carriers

The project tasks include: 1) establishing the current state of the art in commercial and pre-commercial tools, 2) performing selective ergonomic analysis on some tools to validate ergonomic improvements and, 3) conducting rigorous field trials of selected tools. (Figure 3)

The tool areas and/or specific tools to be examined were determined by member companies funding the project. Based on previous and ongoing work in the industry the following work areas have been identified to have the greatest potential for work related injuries: Wrench-work, Barholing, Excavation, Pavement Breaking, Lifting/Loading, Vehicle

Design and Slips/Falls. The first program task is a detailed report that include: a review of research findings, analysis of injury statistics, best practices, pros/cons and costs. In addition, tool availability, needed improvements and tools that will require ergonomic testing will be included.



Figure 3: Heath — Barhole Tool

PROGRAM STATUS

Analyses and investigative report on the state-of-the-art in ergonomic tools have been completed and presented to member companies. Based on their interest, ergonomic tools are being selected for evaluation and/or improvement.

Highlights

- International Ergonomic Review
- Goals include:
 - Reduce employee injuries
 - More productive workforce
 - Improve worker safety

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