LESSONS LEARNED DATABASE

Title: **Pro-Active Safety Activities To Prevent Ergonomic Injuries**

Identifier: **G-2002-OR-BJCETTP-1202**

Date: **2002-12-09**

Lesson Learned Statement:

Pro-active measures should be taken to evaluate the potential for musculo-skeletal injuries, repetitive motion injuries, and cumulative trauma injuries and taking steps to eliminate the causes of these type injuries.

Discussion:

The K-25/K-27 Hazardous Material Abatement Project presents some unique hazards for over 40 workers doing physically demanding work that involves significant bending and crawling on their knees for long periods of time. Performance Abatement Services, Inc. (PAS), a Bechtel Jacobs Company subcontractor doing Hazardous Material Abatement, has taken proactive steps to address potential musculo-skeletal injuries, repetitive motion injuries, and cumulative trauma injuries that could be associated with this work. PAS hired AMARC, a safety consulting company that specializes in targeting and eliminating these type injuries.

Analysis:

PAS and AMARC implemented a four step approach that includes conducting baseline employee physical capacity evaluations, on site job analysis, worker and management training, and injury management.

Recommended Actions:

This program has shown significant success and led to increased performance in safety, productivity and increased employee morale. Highlights of the program include:

1. Baseline Employee Physical Capacity Evaluation - Comprehensive musculo-skeletal

examinations are conducted for each employee. This evaluation provides management with an objective determination of the individual's physical abilities and allows them to ensure employees are not placed in positions where the demands of the job could exceed their maximum physical capabilities causing unnecessary musculo-skeletal disorder (MSD) injuries. The examination includes:

- An interview with the employee concerning relevant past medical history to identify any old or existing injuries/problems that could lead to employee discomfort or place the employee at high risk for a MSD if exposed to a particular job task on a continuous basis.
- Range of motion testing of all joints in all planes.
- Manual muscle testing.
- Posture analysis.
- Lifting analysis.
- Body mechanic awareness testing.
- Balance assessment.
- Endurance assessment.
- Dexterity testing.
- Flexibility assessment.
- MSD sign and symptom testing for any physical limitations or weaknesses that may increase the employee's risk for job related musculo-skeletal disorders.

2. Job-Site Analysis - MSD injuries often arise from poor workstation/job design and cause significant work loss requiring expensive medical treatment. AMARC visited the worksite and performed several job-site analyses at the start of the project. The objective of this analysis was to observe workers performing their tasks, evaluate the worker's body mechanics and lifting techniques, and study the environment in which they are working to determine if there are changes that could be made to eliminate excessive hazards that can cause MSD injuries. AMARC also evaluated the hand tools, safety equipment, personal protective equipment, and job functions. Recommendations included:
    - Holsters for the screw guns used by the transite removal crew. This eliminated the continuous bending over to pick the gun up after removing a screw or a piece of transite.
    - Replacing the manual wire mesh cutting tool with powered shears.
    - Adding wrist supports to personal protective equipment (PPE) for certain work tasks to provide extra wrist support and alleviate wrist fatigue and discomfort that can lead to carpal tunnel syndrome.
    - Providing employees with a 5-gallon bucket to carry their equipment to the work area and allowing the employee to sit when the job tasks allows, limiting the need for excessive kneeling.
    - Organizing the employee's daily job tasks to allow for rotation of job tasks on a regular basis.
3. Training - Improper body mechanics and unsafe work practices that arise because of a worker's lack of understanding or a lack of instruction in proper posture and body mechanic training may contribute to a significant number of injuries. Both workers and frontline management receive training that includes lectures on proper lifting techniques, back injury prevention, and heat stress. Frontline management also receives an additional six hours of training focusing on normal musculo-skeletal structure and function, the disease process and mechanism of injury, how to

identify MSD hazards in the work environment, early signs and symptoms of MSD injuries, worker motivation and empowerment techniques to use for prevention of injuries, how the attitude they present to the worker can effect the injuries in the workplace, ergonomics recognition, and how to properly manage the worker who complains of fatigue and /or discomfort to prevent that from becoming a MSD injury.

4. Injury Management - If an injury occurs injury management works closely with medical treatment personnel to ensure proper disposition and potential reassignment of personnel is accomplished to allow the employee to return to the job safety and without additional aggravation of the injury.

Originator:

Bechtel Jacobs Company, LLC; Larry May; (865) 576-4018

Validator:

Carl Witherspoon

Contact:

Joanne E. Schutt, (865) 483-0554

Name Of Authorized Derivative Classifier:

J. L. McNelly

Name Of Reviewing Official:

Dirk D. Holt

Priority Descriptor:

Green / Good Work Practice

Keywords:

Musculo-Skeletal; Repetitive Motion; Cumulative Trauma Injuries; ergonomic

References:

None

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Decontamination & Decommissioning
Human Factors
Occupational Safety & Health - General

ISM Category:

Analyze Hazards

Hazard:

Ergonomics / Lifting

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