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Ergonomics Pilot Program for the Petrochemical Industry

**Bruce Cunningham
Union Carbide Corporation
P.O. Box 471
Texas City, Texas 77590**

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ABSTRACT

Positive results can be achieved through an approach incorporating certain core elements that are implemented in a simple, informal, site-specific manner. The approach presented in this paper sets a framework for a worksite ergonomics program while providing employers the flexibility to implement site-specific efforts. The approach also provides employers with flexibility to determine the appropriate level of effort to effectively address hazards.

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United States General Accounting Office

Report to Congressional Requesters

WORKER PROTECTION

Private Sector Ergonomics Programs

Yield Positive Results

GAO/HEHS-97-163

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**An Effective Program
Includes a Core Set of
Elements**

Experts, available literature, and officials at our case study facilities generally agreed that, to be effective, an ergonomics program should include a core set of elements or provisions to ensure management commitment, employee involvement, identification of problem jobs, development of controls for problem jobs, training and education for employees, and appropriate medical management. These core elements are said to be typical of any comprehensive safety and health program and together, they can help an employer ensure that ergonomic hazards are identified and controlled and that employees are protected. Research provides a wide spectrum of options for how these elements can be implemented, requiring varying levels of effort on the part of employee and employees. In addition, federal and state-operated OSHA programs have undertaken a number of enforcement and education efforts to encourage employers to adopt the core elements of an ergonomics program.

Management Commitment

Occupational safety and health literature stresses that management commitment is key to the success of any safety and health effort. Management commitment demonstrates the employer's belief that ergonomic efforts are essential to a safe and healthy work environment for all employees. Specific ways in which management commitment can be demonstrated include:

- assigning staff specifically to the ergonomics program and providing time during the workday for these staff to deal with ergonomic concerns;
- establishing goals for the ergonomics program and evaluating results;
- communicating to all staff the program's importance, perhaps through policy statements, written programs, or both; and
- making resources for the ergonomics program itself, such as by implementing ergonomic improvements or providing training to all employees or to staff assigned to the ergonomics program.

Employee Involvement

Involving employees in efforts to improve workplace conditions provides a number of benefits, including enhancing employee motivation and job satisfaction, improving problem-solving capabilities, and increasing the likelihood that employees will accept changes in the job or work methods. Some of the ways in which employee involvement can be demonstrated include:

- creating committees or teams to receive information on ergonomic problem areas, analyze the problems, and recommendations for corrective action;
- establishing procedure to encourage prompt and accurate reporting of signs and symptoms of MSDs by employees so that these symptoms can be evaluated and, if warranted, treated;

- undertaking campaigns to solicit employee reports of potential problems and suggestions for improving job operations or conditions; and
- administering periodic surveys to obtain employee reactions to workplace conditions so that employees may point out or confirm problems

Identification of Problem Jobs

A necessary component of any ergonomics program is the gathering of information to determine the scope and characteristics of the hazard that is contributing to the MSDs. Especially in this element, research has highlighted a wide variety of ways employers can identify problem jobs or job tasks. For example, a relatively straightforward way to identify problem jobs is for employers to focus on those jobs where there is already evidence that the job is a problem, because MSDs have already occurred or symptoms have been reported. For this approach, employers could use the following methods to identify problem jobs:

- following up on employee reports of MSDs, symptoms, discomfort, physical fatigue, or stress;
- reviewing the OSHA 200 logs and other existing records, such as workers' compensation claims; and
- conducting interviews or symptom surveys or administering periodic medical examinations.

A more complex approach to identifying problem jobs before there is evidence of an injury entails employer's looking for workplace conditions that may contribute to MSDs. This more complex method could include screening and evaluating jobs for particular workplace conditions that may contribute to MSDs, such as awkward postures, forceful exertions, repetitive motions, and vibration. Screening and evaluation could be achieved through walk-through observational surveys, interviews with employees and supervisors, or the use of checklists for scoring risk factors.

Experts and recent literature also recognize that employers may have to prioritize which jobs or job tasks will receive immediate attention. It is generally agreed that jobs in which MSDs are being

reported should be given top priority. Factors to consider in prioritizing problem jobs might be whether past records have noted a high incidence or severity of MSDs, which jobs have a large number of affected employees, or whether changes in work methods for that job will be taking place anyway.

The first step in eliminating the hazard is to analyze the job or job task to identify the ergonomic hazards present in the job. Once ergonomic hazards have been identified the next step is to develop controls to eliminate or reduce these hazards. Research offers a hierarchy of controls that can be put in place.

Analyzing the job or evaluating an employee's workstation to identify the ergonomic hazards present in the job can involve a variety of activities, including:

- observing workers performing the tasks, interviewing workers, or measuring work surface heights or reach distances;
- videotaping a job, taking still photos, measuring tools, or making biomechanical calculations (for example, of how much muscle force is required to accomplish a task) in order to break jobs down into component tasks and identify risk factors present; and
- administering special questionnaires

Efforts to develop appropriate controls can include

- "brainstorming" by employees performing the job in question or by team members performing the analysis;
- consulting with vendors, trade associations, insurance companies, suppliers, public health organizations, NIOSH, labor organizations, or consultants; and
- following up to evaluate the effectiveness of controls.

Analyzing and Developing Controls for Problem Jobs

The hierarchy of controls is as follows;

- Engineering controls are generally preferred because they reduce or eliminate employees' exposure to potentially hazardous conditions. They include changing the workstation layout or tool design to better accommodate employees (for example, adopting better grips for knives to reduce wrist-bending postures) or changing the way materials, parts, and products are transported to reduce hazards (such as using mechanical assist devices to lift heavy loads).
- Administrative controls refer to work practices and policies to reduce or prevent employee exposure to hazards, such as scheduling rest breaks, rotating workers through jobs that are physically tiring, training workers to recognize ergonomic hazards, and providing instruction in work practices that can ease the task demands or burden.

Training and Education

Identifying and controlling MSDs requires some level of knowledge of ergonomics and skills in remedying ergonomic hazards. Recognizing and filling different training needs is an important step in building an effective program. The different types of training that a facility might offer include:

- overall ergonomics awareness training for employees so they can recognize general risk factors, learn the procedures for reporting MSDs or symptoms, and become familiar with the process the facility is using to identify and control problem jobs and
- targeted training for specific groups of employees because of the jobs they hold, the risks they face, or the roles in the program, such as for line supervisors and managers to recognize early signs and symptoms of MSDs; for engineers to prevent and correct ergonomic hazards through equipment design,

	<p>purchase, or maintenance; or for members of an ergonomics team to perform job analysis and develop controls.</p>
<p>Medical Management</p>	<p>An employer's medical management program is an important part of its overall effort to reduce MSDs, even though this program may exist regardless of whether the employer has implemented an ergonomics program. A medical management program emphasizes the prevention of impairment and disability through early detection of injuries, prompt treatment, and timely recovery for the employee. Different ways facilities can carry out medical management include:</p> <ul style="list-style-type: none">• encouraging early reporting of symptoms of MSDs and ensuring that employees do not fear reprisal or discrimination on the basis of such reporting;• ensuring prompt evaluation of MSDs reports by health care providers;• making health care providers familiar with jobs, perhaps through periodic facility walk-through or review of job analysis reports, detailed job descriptions, or videotapes of problem jobs; and• giving employees with diagnosed MSDs restricted or transitional duty assignments (often referred to as "light" duty) until effective controls are installed on the problem job, and conducting follow-up or monitoring to ensure that they continue to be protected from exposure to ergonomic hazards.

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