

Introduction Jeremy Chingo-Harris, Chair, Ergonomics Branch

Effective July 1, I have taken on the role of Chair of the Ergonomics Branch. It is with great pleasure that I welcome you to this second edition of the Ergonomics Newsletter. A special thank you goes out to Richard Hofman, our outgoing chair who was able to facilitate the initial startup of the Ergonomics Branch.

Branch membership continues to grow and we

had several people join the Ergonomics Branch during the PDC in Orlando. If you know of anybody that might be interested in joining, please reach out to them. We are still relatively new and need to get the word out that the Ergonomics Branch is available.

We still need to fill several key roles on our Ergonomics Advisory Committee. We currently

have openings for Executive Secretary, Membership Development and Website Task Force. We also need to fill the Vice-Chair position, which Rich Hofman is temporarily covering for us. It is imperative that we fill these positions as soon as possible. If you are interested in taking on one of these important roles, please contact me at Jeremy.ChingoHarris@ge.com

PDC Followup

Safety 2008 was an excellent success on many fronts. This was the first PDC since the launch of the Ergonomics Branch. Sunday night we kicked off with a very successful first branch meeting in conjunction with the IH Practice Specialty meeting lead by Administrator Eric Stager. We discussed many plans for the Ergonomics Branch both short-term and long-term.

During the conference ergonomics was the key topic of eleven sessions. Although the sessions were not sponsored by the Ergonomics Branch, the sessions were an excellent opportunity to make people aware of the branch and recruit members. They were also a great opportunity for new and potential branch

members to network and learn from industry leaders.

We are now gearing up for the Ergonomics Branch to sponsor several sessions for next year. Mark your calendars for Safety 2008 June 9-12 in Las Vegas!

Maximizing the Value of a Physical Demands Description (Synopsis from Safety 2008 presentation)

A physical demands description is a basic level of assessment of a job. It involves the documentation of the essential functions within a job, and the physical elements it requires to perform this job. In addition to establishing the presence of the demands, the analyst must also provide an estimate of the duration of exposure. Finally, for factors related to force production, the analyst must measure the level of force required to manually handle materials within the task. In other words, when performing a physical demands description, a person must evaluate the job, determine the forces applied, determine the postures attained, and determine the amount of time the worker is exposed to these factors. This sounds very similar to an ergonomics evaluation. So, why do many companies perform this evaluation separately?

There appears to be a misconception that it takes different skills to perform a physical demands description and an ergonomics evaluation. The true distinction is actually between the ability to evaluate job demands and risk of injury, and the ability to design a solution. The skills required for the evaluation of a job revolve around the ability to accurately identify postures and movements, measure forces and strength requirements, and establish levels of exposure to these key factors. Whether you simply document these factors in a physical demands description, or use the information to predict the risk of developing a musculoskeletal disorder, it is more a matter of understanding the tools versus understanding how to evaluate human activity. Therefore, if you have the knowledge and skills to perform one level of assessment, you are capable of performing the other (with proper training).

When looking at the content of a physical demands description and an ergonomics evaluation, the primary elements are virtually identical:

- Force
- Posture
- Exposure (repetition, static efforts)
- Environment
- Workstation (heights, reaches)
- Tools (grips, weights)

The difference comes in how you design the questions to gather this data. If the questions revolve solely around whether or not these factors are present, then you have a physical demands description. If the questions add a level of detail and sophistication, then this information can tell us the level of risk.

An important factor to consider here is time. Consider that it takes 30 minutes to gather data for a physical demands description, and 45 minutes to gather all the data for an ergonomics evaluation. If a significant amount of this data overlaps, would it not be a better use of time to gather the information one time for multiple uses? This would mean spending 45 minutes looking at a job once, versus 75 minutes looking at it twice. With a little bit of planning this approach can be achieved, and a job assessment would provide data for direct use in medical management of injuries (reactive) and the design of solutions to eliminate recurrence of this injury (proactive).

Designing to Reduce the Potential for Musculoskeletal Injury

When jobs are developed by engineering or process/product/equipment designers, safety must be considered and ergonomics integrated into the design. By having tasks with ergonomics risk factors, we face not only a loss of productivity and quality but also the potential for injuring the employees and creating greater costs of doing business. As an example, materials must be brought to the workplace, whether it is an industrial setting or an office setting for the work to be performed. These activities are often ignored by engineers and facility designers of workplaces and tasks. Education is the key for designing safety and ergonomics into any process. Time and money could be saved if the jobs were free of risk factors.

Ergonomic risk factors are found when boxes, equipment and tools have to be delivered as part of the work process. Generally, engineers don't consider the most common risk factors which are:

- Manual Material Handling (lifting lowering pushing pulling holding and carrying)
- Repetitions
- Forces
- Awkward Postures

These are the problems. When jobs are designed the go beyond the limits and capabilities of the employees, the red flag of complaints, or actual injuries surface. If we would think more to designing to fit people with jobs that can be performed by the majority of the population including gender and age any company can become more profitable. Having to identify ergonomic and safety risk factors after the equipment has been purchased, the employees training and the jobs being performed, the dollars for fixes become more expensive.

We need to take the US manufacturing, healthcare and office environments to a new level of prevention, and stop having to redo that which has already been done.

Ergo Members

Welcome to New Branch Members

James Meegan
Ruth McCafferty
Denise Murphy
Jason Johnson
Christopher Gates
Serena Hibbard
Cynthia Roth
Roby Robinson

Ergonomics at Constellation Energy

Recently Constellation Generation Group has been focusing more attention toward ergonomics in the workplace by conducting awareness presentations, training sessions, and site evaluations throughout their fleet of nuclear and fossil generation plants. The biggest impact has been creating better awareness among the work force that workplace stressors do exist. The realization is that ultimately these stressors manifest themselves in various types of muscle sprains and strains. Prior to this initiative employees thought of ergonomic issues as being only associated with the office environment.

In many ways the solutions to avoiding these stressors can be simple. Relocation of valves, changing the position of the worker as he or she performs their job and purchasing equipment that is more flexible and user friendly (e.g, carts with larger wheels). These solutions can sometimes be minimal in cost but add to the efficiency and productivity as well as reduce the potential risk associated with the job.

In a recent visit by an ETC ergonomist at one of our nuclear facilities we discovered that our security personnel while carrying their required equipment during routine rounds created excessive weight loads in one part of the body. The solution was to wear a vest instead of a waist belt that would spread the weight across their body. This not only improved carrying of such equipment but got the employees involved in the final decision of the type of vest that was selected. Employees were allowed to use and test a variety of vests during the trial period. In the end employees participated in the process which improves worker acceptance.

At a fossil generating facility an employee complained of arm strain while performing work in a front end loader. After an evaluation of the equipment it was determined that the shifting mechanism (lever) had excessive force causing the employee muscle strain to the arm while he repetitively engaged this device. The solution was to contact the manufacturer and replace the shifter mechanism with one of lesser force. Follow-up training was performed at this facility to educate the work force about ergonomics and the relationship between the human body and the work environment.

The lessons learned throughout the fleet have been to include ergonomic considerations whenever evaluating and controlling hazards in the workplace. Also include ergonomic considerations whenever employees are performing routine safety observations in the field. Finally, employees should be encouraged to report muscle pains and strains as early as possible to ensure proper treatment and corrective actions are performed to eliminate potential ergonomic hazards in the field.

Ergo Meetings

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| Oct 1 - Oct 5, 2007 | Human Factors and Ergonomics Society 51st Annual Meeting, Baltimore
http://www.hfes.org/web/HFESMeetings/07annualmeeting.html |
| Nov 27 - Nov 30, 2007 | National Ergonomics Conference and Exposition, Las Vegas
http://www.ergoexpo.com/ |