Course Learning Outcomes for Unit III

Upon completion of this unit, students should be able to:

5. Examine key management approaches for addressing workplace ergonomics issues.
   5.1 Examine team-based strategies to address ergonomics-related hazards.

Reading Assignment

Chapter 6:
Elements of Ergonomics Programs

Chapter 7:
Biomechanics

Unit Lesson

In this unit, we get into the “meat and potatoes” of ergonomics. There is a great deal of very specific information found in this unit and in the required reading. In Chapter 6, the authors discuss ergonomics programs, which are broken down into specific categories. In this unit lesson, we will consider the role of the ergonomics team within the larger context of the ergonomics program. Such programs involve a team effort, which requires the commitment of top management and the involvement of a range of individuals including safety and occupational health experts and frontline employees. Employees are actually experts at doing their jobs and can offer important insight with respect to controlling ergonomic hazards. As your study of safety and health continues, you will delve into many different facets of safety management systems, and ergonomics will continue to be an important issue as you move forward.

Consider Amy who works as a cashier for a big-box store. Amy works long shifts standing up and often has to lean forward to handle merchandise. She is often required to lift heavy boxes out of the oversized shopping carts or flip them around to find the bar code in order to scan the product. Amy has an issue with her workstation, and you are summoned to conduct an ergonomics-based hazard analysis of the workstation. Of course, you are just one of the individuals who will be involved with performing the evaluation; there are others with specialized expertise whom you can rely on to help you do a thorough job of identifying hazards and recommending corrective actions.

As the safety professional, the first step will most likely include a cursory analysis of the workstation. Your focus will likely be that of an occupational safety and health generalist, and you will note any safety and health hazards that may be faced by Amy and other employees who do her job. Of course, your experience and education should provide you with a good understanding of potential issues you might face and an understanding of the specific functions of other experts whom you might want to call upon to include in the evaluation process should the evaluation be complex enough to require a team approach. For instance, if employees are sustaining cumulative trauma-related disorders, such as carpal tunnel syndrome or tendinitis, it may be well-advised to include an occupational health professional such as an occupational health nurse. In evaluations of complex operations, an occupational health physician may even be involved. The health professional will have specific training that will allow him or her to look at the potential injuries or illnesses that might be sustained as a result of working at the current workstation, and the training will also help him or her to understand what injuries or illnesses might be created by implementation of the recommended corrective actions. He or she will provide the team with the expertise to evaluate those injuries and may recommend periodic medical evaluations to identify cumulative trauma disorders early in order to avoid exacerbation of

the disorder. It is more than likely this individual will be brought in from the outside of the company, as very few companies have resident medical staff.

With that being said, if the workers at the company are part of a union, it will definitely be worth the time to have the union representative involved in the workstation hazard analysis and to be available to the employee. Unions play a very important role in representing workers at many facilities throughout the nation with respect to workers' compensation, benefits, and safety and health issues. Someone from management will also be a part of the evaluation team because the company will surely want to be kept informed of what is going on with the evaluation and how it may affect the company. If you are working for the company as a safety manager, you may fulfill this role.

When the team starts making suggestions as to how to fix the potential hazards identified in evaluating Amy's workstation, the manager will be looking closely at those suggestions and the feasibility of the corrective actions. Your suggestion might be to provide Amy with very good shoes to help prevent her from experiencing foot pain and leg fatigue, and those shoes might cost $100; however, there are 2,000 other employees just like Amy with similar job tasks, and you cannot get Amy shoes without making them available to everyone. Your team's fix might cost the company a quarter of a million dollars; therefore, management will want to be involved in the process to make sure that any money spent is money well spent. A part of the evaluation process will be to determine the cost savings of the fix versus the potential cost of going without the fix. Be ready for that.

An industrial hygienist may also be a part of the team and will likely be involved with measurement and analysis of lighting, noise, and indoor air quality issues. The industrial hygienist may also be involved with taking biometric measurements. Chapter 7 discusses the biomechanics issue in greater depth. Take a look at the ideas presented by the authors in the chapter. If you do not have a background in medicine or the health-related professions, the chapter is quite good at describing the lever, fulcrum, and movement aspects of biomechanics. As you will note in this reading, there is a great degree of variation between individuals who make up the workforce. People come in a variety of shapes and sizes. This needs to be considered with respect to identifying workplace hazards and recommending corrective actions. Raising a work bench to accommodate a tall employee may cause problems if the next employee hired for the position is only 5 feet tall!

Potentially, there will be many others involved in the process. It is very common, for instance, to include frontline employees as they can provide special insight about the job that nobody else will necessarily be able to identify. An individual from human resources (HR) could be involved as well to deal with issues related to the Americans with Disabilities Act (ADA) or to ensure job descriptions reflect appropriate physical job requirements such as the requirement to be able to lift a specific amount of weight. HR may also be involved with making arrangements with healthcare facilities such as pre-screening of new hires.

One other person to consider for more complex workstation evaluations, of course, is the ergonomist. Professional ergonomists are often involved in helping to assess workstations at large manufacturing and food processing facilities. Some very large companies maintain a staff of full-time ergonomists. Also, it should be noted that ergonomists do not work in isolation any more than you would while conducting or managing an ergonomics evaluation. They almost always utilize a team approach that includes many of the professions we have discussed in this reading and frequently includes frontline employees and industrial engineers as a part of the overall evaluation process. It is clear that a given evaluation can range from being somewhat simple, such as in our present case with Amy, to very complex.

During the evaluation of the teams, there can be a great deal of information gathered to help assess the relevant ergonomics-related hazards. The information gathered during the evaluation combined with the company's injury and illness data and other safety committee findings provides the team with useful data for identifying ergonomic-related problems. This information is useful for understanding inherent hazards and for recommending corrective actions for the workstation or job task being evaluated. Corrective actions could involve anything from recommending footwear, adding floor mats, providing lift assistance devices, adjusting conveyor heights, redesigning keyboards, allowing other workers to provide assistance for more difficult tasks, improving lighting, implementing a job rotation, and even providing a stool that would help Amy to get off of her feet from time to time. Note that this list of controls includes engineering controls, administrative controls, and personal protective equipment (PPE).

Of course, managing an ergonomics management team is only one part of the overall management effort, as you will be able to discern from your readings. Overall, the management program should contain much more. Many standard setting organizations, for instance, recommend high-level management commitment and involvement of employees in safety-related programs (Pardy & Andrews, 2010). As mentioned above, the evaluation phase is a good place to involve employees, and employee involvement is very important for ensuring proper implementation of any management program (Amah & Ahiauzu, 2013). In addition to management commitment and employee involvement, other important aspects of an ergonomics program include implementation of controls identified as a result of workplace evaluation and analysis and a periodic program evaluation to ensure continuous improvement (Pardy & Andrews, 2010). Such a management approach is also encouraged in a number of industry-specific recommendations from the Occupational Safety and Health Administration (OSHA) for the control of ergonomics-related hazards (OSHA, n.d.). We will revisit this management approach in a later unit.

It should be clear that the main takeaway from this lesson is that ergonomics evaluations frequently require a multi-disciplinary team approach and serve an important role in the overall ergonomics management program. This is partly because, unlike a situation where person cuts his or her finger on a metal flange sticking out of a freshly cut piece of metal, ergonomics hazards are not always obvious. Likewise, when evaluating and designing a workstation, an opportunity presents itself to make the job tasks as efficient as possible in the interest of productivity. Employees who are injured or sore as a result of their job tasks are not likely to be efficient as workers who have the opportunity to operate in an ergonomically designed workstation. Individuals who have a wide range of expertise in evaluating workstations and overseeing the implementation of proper controls helps to ensure the safety and health of workers and optimizes productivity and quality work.

References

Amah, E., & Ahiauzu, A. (2013). Employee involvement and organizational effectiveness. *The Journal of Management Development*, *32*(7), 661-674.

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Pardy, W., & Andrews, T. (2010). *Integrated management systems: Leading strategies and solutions*. Plymouth, United Kingdom: Government Institutes.