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Occupational Safety and Health Management Systems in Industry: The Experience of Aykim Aluminum

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Abstract

The concept of an occupational health and safety management system has become common over the past 20 years. Occupational safety and health (OSH), including compliance with the OSH requirements pursuant to national laws and regulations, are the responsibility and duty of the employer.

A Model of Aykim Aluminum was introduced. Aykim Metal Industry and Trade Co., Ltd. was established in Aydin Koçarlı on 1976, 24,000 m² of which is closed, is currently working on a total of 100,000 m². Annual production capacity of Aykim Metal Industry 14,400 tons with the press, keeps 120- qualified personnel within. Export-oriented company since its inception, 86% of production is exported.

The purposes of the Company are to develop a policy of environmental protection and to keep the probable environmental effects under control, to increase the environmental responsibility awareness, to increase the environmental responsibility awareness of all employees, to prevent environmental pollution by following technological developments in scientific research and continuously improve environmental performance.

Aykim applies An Environmental Management System (EMS) that is a set of processes and practices that enable an organization to reduce its environmental impacts and increase its operating efficiency. It is necessary all companies would be compliance with the criteria's occupational health and safety management system.

Key worlds: Occupational health, Aykim aluminium, Safety management

Introduction

Occupational safety and health (OSH) is generally defined as the science of the anticipation, recognition, evaluation and control of hazards arising in or from the workplace that could impair the health and well-being of workers, taking into account the possible impact on the surrounding communities and the general environment. Recent data from the ILO, (International Labour Office) and from the World Health Organization (WHO) indicate that overall occupational accident and disease rates are slowly declining in most industrialized countries (ILO, 2003a) but are level or increasing in developing and industrializing countries (1).

According to the European Statistics on Accidents at Work (ESAW), every year in the 15 Member States of the

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European Union (EU) before the enlargements of 2004 and 2007 about 5,000 workers were killed in accidents at work and about 5 million workers were victims of accidents at work leading to more than three days' absence from work. In India and China, the rates of occupational fatalities and accidents are similar at, respectively, 10.4 and 10.5 per 100,000 for fatalities, 8,700 and 8,028 for accidents. In sub-Saharan Africa, the fatality rate per 100,000 workers is 21 and the accident rate 16,000. This means that each year 54,000 workers die and 42 million work-related accidents take place that cause at least three days' absence from work. In Latin America and the Caribbean, about 30,000 fatalities occur each year and 22.6 million occupational accidents cause at least three days' absence from work (2).

Operations in the hurt work industry may expose workers to a wide range of hazards or workplace activities or conditions that could cause incidents, injury, death, ill
health or diseases. The research focuses on 7 main areas: demographics of the study group, working conditions, safety and health hazards and practices on the job, safety and health
awareness and concerns about work, benefits, workers' rights and training, and increases in awareness and hazard identification.

Five key findings were reported by CPWR Technical report (3):

1) 86 of 87 workers said that they were afraid of getting hurt at work.
2) Every one of the 87 iron workers said that they would like to have formal
health and safety training.
3) While over 95 percent of workers used chop saws, over 90 percent did not receive face shields or eye protection.
4) 45 percent of workers said that they did not receive body harnesses from their employer.
5) Less than 20 percent of workers received healthcare benefits from their employer and only one worker had healthcare that covered the entire family.

Many industries have successfully implemented ergonomic solutions in their facilities as a way to address their workers' MSD (musculoskeletal disorders) injury risks. These interventions have included modifying existing equipment, making changes in work practices and purchasing new tools or other devices to assist in the production process. Making these changes has reduced physical demands, eliminated unnecessary movements, lowered injury rates and their associated workers' compensation costs and reduced employee turnover. In many cases, work efficiency and productivity have increased as well. Simple, low-cost solutions are often available to solve problems. Use the information on this page to see what has worked for others in your industry or in other industries. To reduce the chance of injury, work tasks should be designed to limit exposure to ergonomic risk factors. Where possible, engineering controls are the most desirable. Administrative or work practice controls may be appropriate in some cases where engineering controls cannot be implemented or when different procedures are needed after implementation of the new engineering controls. Personal protection solutions have only limited effectiveness when dealing with ergonomic hazards (4).

Figure 1 shows the overview of controls for MSD hazards (4).

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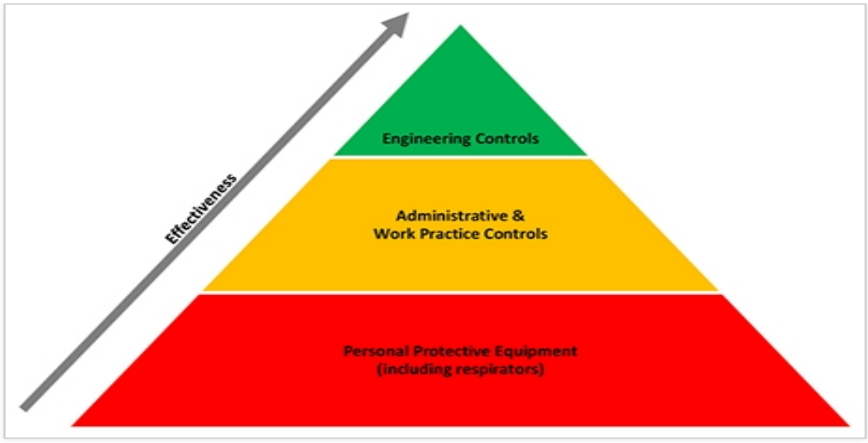


Figure 1. Overview of Controls for MSD Hazards (4)

Most of the thousands of industrial chemicals in use today have not been tested for their ability to affect reproductive function and development. Similarly, the relationships between such health effects and stresses, whether physical or mental, remain unclear. For this reason, it is not usually possible to conclude with certainty whether or not a particular exposure can cause harm. The surest way to reduce risks to workers is to minimize or prevent exposure to suspected hazards. Employers are responsible for training and protecting their workers. However, since so little is known about reproductive and developmental hazards, workers should also take the following steps to ensure their own safety (5-9):

* Store chemicals in sealed containers when they are not in use.
* Wash hands after contact with hazardous substances and before eating, drinking,or smoking.
*Avoid skin contact with chemicals.
* If chemicals contact the skin, follow directions for washing provided in the material safety data sheet (MSDS). Employers are required to have copies of MSDSs for all hazardous materials used in their workplace and to provide them to workers upon request.
* Review all MSDSs to become familiar with any reproductive or developmental hazards used in your workplace. If you are concerned about reproductive hazards in the workplace, consult your health care provider.
* To prevent home contamination:

.Change out of contaminated clothing and wash with soap and water before going home.

,Store street clothes in a separate area of the workplace to prevent contamination.

,Wash work clothing separately from other laundry (at work if possible).

,Avoid bringing contaminated clothing or other objects home.

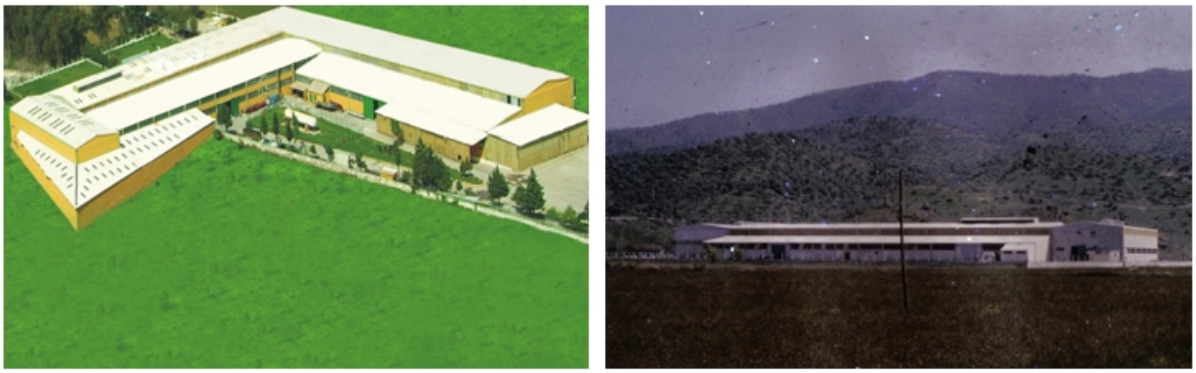
*Participate in all safety and health education, training, and monitoring programs offered by your employer.
*Learn about proper work practices and engineering controls (such as improved ventilation).
*Use personal protective equipment (i.e., gloves, respirators, and personal protective

clothing) to reduce exposures to workplace hazards.
*Follow your employer's safety and health work practices and procedures implemented by your employer to prevent exposures to reproductive hazards.

A Model of Aykim Aluminum (10);

Aykim Metal Industry and Trade Co., Ltd. was established in Aydin Koçarlı on 1976, 24,000 m² of which is closed, is currently working on a total of 100,000 m². Annual production capacity of Aykim Metal Industry 14,400 tons with the press, keeps 120- qualified personnel within. Export-oriented company since its inception, 86% of production is exported.

The purposes of the Company are to develop a policy of environmental protection and to keep the probable environmental effects under control, to increase the environmental responsibility awareness, to increase the environmental responsibility awareness of all employees, to prevent environmental pollution by following technological developments in scientific research and continuously improve environmental performance. Aykim Metal Industry and Trade Co., Ltd. gives great importance to occupational health and safety. Picture 1 shows the Aykim Aluminum establised in Aydin Koçarlı. Aykim emphasis in human resources and scientific research.



Picture 1. Aykim Aluminum establised in Aydin Koçarlı on 1976

Why Aykim Aluminum ?

Aykim Aluminum continue to improve the production of durable goods through innovative uses of aluminium.

Aluminium has been identified as priority material for which sustainable management throughout its lifecycle would be accompanied by significant environmental, social and economic benefits. Aluminium is a very light metal, with a specific weight of 2.7 (g/cm3), which is one-third of that of steel. The strength of the metal can be increased by adding small quantities of other metals. it is highly corrosion resistant. The low weight reduces energy consumption related to transportation, and hence also emissions of greenhouse gases and other pollutants. Aluminium can refl ect both heat and light, and together with its low weight, makes it an ideal material for refl ectors in, for example, light fi ttings. High energy effi ciency in the refl ectors contributes to reduced environmental burden. Aluminium

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is a good conductor of heat and electricity, and in relation to its weight, is almost twice as good a conductor as copper. These properties make aluminium the material of choice to achieve energy efficient systems for electrical transmission systems and other applications, such as heat transfer components. Aluminium is ductile, and has a low melting point. It can easily be processed in a number of ways - both in a cold and hot condition (11,12).

Aykim produces aluminum in the features as mentioned above. Aykim applies An Environmental Management System (EMS) that is a set of processes and practices that enable an organization to reduce its environmental impacts and increase its operating efficiency.

Basic factors of an EMS are as follows (13);

- Reviewing the company's environmental goals
- Analyzing its environmental impacts and legal requirements
- Setting environmental objectives and targets to reduce environmental impacts and comply with legal requirements
- Establishing programs to meet these objectives and targets
- Monitoring and measuring progress in achieving the objectives
- Ensuring employees' environmental awareness and competence
- Reviewing progress of the EMS and making improvements

In the Picture 2 Aykim units are suitable to public health. They have been working in accordance with the hygiene and health at work. The aim is to establish the opinion of occupational safety and health management systems in this domain.

Picture 2. Aykim units are suitable to public health. They have been working in accordance with the occupational safety and health management systems.

According to the report of Burton J (14); hazards that pose threats to physical safety of workers include, for example, mechanical /machine hazards; electrical hazards; slips and falls from heights; ergonomic hazards such as repetitive motion, awkward posture and excessive force; flying fragments that could injure an eye; or risk of a work-related motor vehicle crash. Physical safety hazards, with the notable exception of motor vehicle crashes, are usually the first type of hazard to be included in health & safety legislation, when it exists. If injuries result from these hazards, they are also the most probable to be covered by any kind of workers' compensation that is in place (again, with the exception of motor vehicle crashes and also musculoskeletal disorders (MSDs). In spite of the likelihood that most countries have some sort of legislation to prevent these types of injuries, they continue to occur at a distressing rate. Out of the two million estimated deaths from occupational injuries and illnesses, in 1998 approximately 346,000 were due to traumatic workplace injuries 115 with an additional 158,000 due to motor vehicle crashes that occurred in the course of commuting.116 What is most disturbing is that the estimated fatality rate per year per 100,000 workers ranges from a low of <1 to a high of 30 in different countries. And the estimated accident rate (an injury requiring at least three days absence from work) ranges from a low of 600 per year per 100,000 workers, to a high of 23,000. Lack of control can contribute directly to an injury. However, indirect influences can be just as dangerous. Workers experiencing psychosocial hazards may:

• sleep badly
• over-medicate themselves
• drink excessively
• feel depressed
• feel anxious, jittery and nervous
• feel angry and reckless (often due to a sense of unfairness or injustice)

When people engage in these behaviours or fall prey to these emotional states, it is more
probable they will:

• become momentarily distracted
• make dangerous errors in judgement
• put their bodies under stress, increasing the potential for strains and sprains
• fail in normal activities that require hand-eye or foot-eye coordination.

The American Institute of Stress has developed the following Traumatic Accident Model (15).

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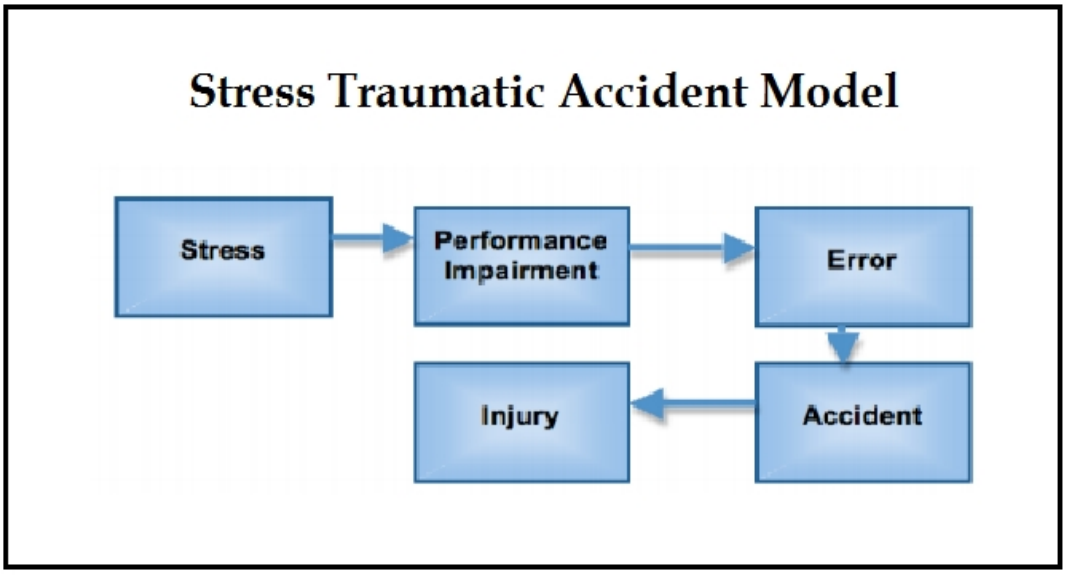

Figure 1. The American Institute of Stress Traumatic Accident Model (15).

Occupational health and safety management systems must have the following components has showed in Figure 2.

Figure 2. Occupational health and safety management systems (16).

The concept of an occupational health and safety management system has become common over the past 20 years. Occupational safety and health (OSH), including compliance with the OSH requirements pursuant to national laws and regulations, are the responsibility and duty of the employer. The employer should show strong leadership and commitment to OSH activities in the organization, and make appropriate arrangements for the establishment of an OSH management system. The system should contain the main elements of policy, organizing, planning and implementation, evaluation and action for improvement (17-22).

As a result, it is necessary all companies would be compliance with the criteria's reported above. Quantitative, qualitative and mixed methodological approaches can all contribute to developments in the occupational safety and health management systems.

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