

Basics of Occupational Safety and Health

Bagmita Bhagawati

(Deptt. Of Chemistry, Pragjyotish College, Guwahati, Assam, India)

Abstract: Occupational Safety and Health is the concept with the main aim of protecting the employee of any industry or workplace when he/she is engaged in work or employment. It is reported in the World Health Report of World Health Organization (WHO) that occupational risk factors account globally for a number of morbid conditions such as back pain, hearing loss, chronic obstructive lung disease, asthma, injuries, cancer and leukemia. Work plays a major role in people's lives which contributes for the socio-economic development on an international, national as well as on local level. It is impossible for a nation to go for any developmental work when its workers are weak and ill. Occupational health and safety is thus a multi-disciplinary area concerned with protecting the safety, health and welfare of people not only engaged in work or employment but also protect family members, nearby communities and other members of the public who are impacted by the workplace environment. This paper is prepared to address the fundamental aspects of Occupational Safety and Health, classification of Occupational hazards and some regulations prevailing in India.

Key Words: WHO, Occupational Safety and Health, Work

I. Introduction

Occupational Safety and Health is the concept with the principle aim of protecting the employee of any industry from harm when in the line of duty. Its objective is to curtail work related injuries, sicknesses and deaths by proposing standards that seek to enforce workplace safety and health. Occupational health and safety is a multi-disciplinary area concerned with protecting the safety, health and welfare of people engaged in work or employment. The aim of all occupational health and safety programs is to provide a safe work environment. On the other hand, it may also protect co-workers, family members, employers, customers, suppliers, nearby communities, and other members of the public who are impacted by the workplace environment. It may involve interactions among many subject areas, including occupational medicine, occupational (or industrial) hygiene, public health, safety engineering, chemistry, health physics etc.

The definition of Occupational health was adopted jointly by the International Labour Organization (ILO) and the WHO¹ at its first session in 1950 and revised at its twelfth session in 1995. The definition reads: "Occupational health should aim at: the promotion and maintenance of the highest degree of physical, mental and social well-being of workers in all occupations; the prevention amongst workers of departures from health caused by their working conditions; the protection of workers in their employment from risks resulting from factors adverse to health; the placing and maintenance of the worker in an occupational environment adapted to his physiological and psychological capabilities; and, to summarize, the adaptation of work to man and of each man to his job". In other words, occupational health and safety encompasses the **social, mental and physical well-being of workers**.

II. Importance of Occupational Safety and Health

Work plays a major role in people's lives, since most workers spend at least eight hours a day in the workplace such as plantation, office, factory, hospital etc. It is also observed that healthy workers are found to increase industrial output which in turn lowers the cost of production. The health and safety of workers are thus prerequisites for improvements in quality and productivity and are important for equitable and sustainable socio-economic development. But this is not the case for many workers. Every day workers are faced with a multitude of health hazards, such as dusts, gases, noise, vibration, extreme temperatures etc.

Unfortunately some employers assume little responsibility for the protection of workers health and safety. In fact, some employers do not even know that they have the moral and often legal responsibility to protect workers. As a result of the hazards and a lack of attention given to health and safety, work-related accidents and diseases are common in all parts of the world.

III. Occupational Hazards

Every occupation is associated with certain risks because of which the person can get certain diseases or Injuries etc. This can happen suddenly or may take some years. In simple words - "Occupational Hazards" mean damage to health or injuries at work place. Following two are the examples how Occupational Hazards Can happen suddenly and slowly:

- (a) A factory worker while working on some machine gets serious injury to his hand or worker working at a height falls down and gets head injury. Such “Occupational Hazards” happen suddenly.
- (b) A person getting exposed to radioactive material at work place e.g. X-ray technician, may develop hazards related to radiation exposure (like cancer) after many years. Such “Occupational Hazards” happen slowly.

Types of Occupational Hazards:

There are unlimited numbers of hazards that can be found in almost any workplace. There are certain obvious unsafe working conditions, such as unguarded machinery, slippery floors or inadequate fire precautions, but there are also a number of categories of insidious hazards including²:

- chemical hazards, arising from liquids, solids, dusts, fumes, vapours and gases
- physical hazards, such as noise, vibration, unsatisfactory lighting, radiation and extreme temperatures
- biological hazards, such as bacteria, viruses, infectious waste and infestations
- psychological hazards resulting from stress and strain
- hazards associated with the non-application of ergonomic principles, for example badly designed machinery, mechanical devices and tools used by workers, improper seating or poorly designed work practices.

The World Health identified and assessed the impact of new technologies like nanoparticles on worker health under the Global plan of Action on workers Health, adopted in 2007³. Most workers are faced not only with one hazard but a combination of the above hazards at work. Hazards often are built into the workplace. Therefore, trade unions must ensure that hazards are removed, rather than trying to get workers to adapt to unsafe conditions.

IV. Risk Assessment

Risk management is an integral part of performing occupational health and safety. Many workplaces have hazards. Hazards put employees at risk of injury or harm to health. Therefore health and safety need to be managed in a systematic manner. Occupational health and safety already is a legal requirement in most of the countries including India.

The Risk assessment is carried out where potential risk is associated with hazardous installation as the risk has potential effect on employees, local population, the environment or on the ecology. The Occupational Health and Safety management system makes use of risk management to assess the risk associated with hazards. The assessment process can be summarized as-

1. Identifying hazards
2. Assessing associated risks
3. Taking action to mitigate risks
4. Monitoring the effectiveness

Identifying hazards:

This is the first step to identify the hazards which can occur at the workplace and also have a significant effect outside the boundary of the workplace. A hazard is anything that is a threat to health and safety in an organization. Sources for hazard identification can be past incidents and accidents, input by employees, examining workplaces or work areas, review of safety instruction for equipment and materials, and advice from external consultants.

Assessing associated risks:

Prior to assessing risks these risks associated to the identified hazards have to be determined. Typically, a risk is assessed by its likelihood and its consequence.

The risk assessment will allow prioritizing risks for taking mitigating actions. Some of the aspects like frequency of occurrence, duration of risk occurrence and number of people being exposed etc. may be helpful to determine the likelihood of a risk. Accordingly the consequences have to be determined. Whenever people are harmed the consequences can be expressed in terms of seriousness of the illness or injury. This has further to be put in relation to who is harmed, especially people at a particular risk such as expectant mothers or young people. Risk assessment will be completed with prioritization of risks and assigned risk factors to understand the scope of mitigating actions required.

Taking action to mitigate risks:

Mitigating actions are the actions that reduce the likelihood or consequence of the associated risk which may be taken after assessment of the associated risk. These are the actions that remove the hazard and eliminate the risk, replace the hazard by a less dangerous one, modify the process design, isolate the hazard from workers, use of engineering solutions such as a new machinery or plant, use of administrative controls e.g. new procedures etc.

Monitoring the effectiveness:

The action which is taken for mitigating risk needs careful monitoring and it should be reviewed on two levels as highlighted below:

- (i) To ensure that the actions taken are effective and continue to be effective.
- (ii) To ensure that the actions taken causes no new hazard/risk.

The procedures have to be audited to ensure they are being followed as intended. After completing one entire cycle of risk management the next has to be scheduled to ensure that always the best actions are taken and new hazards are included into risk management.

Risk management of occupational health and safety is beneficial for reduction of risk, competitive advantages, compliance with legal requirements and improvement of overall performance.

V. Key Regulations in respect of Occupational Health & Safety in India:

An organization for its smooth and effective functioning must ensure health and safety of its employees. In India along with other countries also Occupational Safety and Health(OSH) occupies an important place among progressive industries and companies to reduce the OSH risks and workplace. Now- a-days many companies have a complete health, safety and environment policy which have opted various certificates in OHS. The major legislations relating to Occupational Health and Safety in India are:- the Factories Act, 1948; the Mines Act, 1952 ; Dock Workers (Safety, Health & Welfare) Act, 1986; Indian Explosives Act, 1884; Building and Other Construction Workers (Regulation of Employment and Conditions of Service) Act, 1996; Dangerous Machines (Regulation) Act, 1983; Municipal Solid Waste (Management and Handling) Rules, 2000; the Environment (Protection) Act, 1986etc. The Directorate General of Mines Safety (DGMS) and the Directorate General of Factory Advice Service and Labour Institutes (DGFASLI) are the two field organisations of the Ministry of Labour and Employment in the area of occupational safety and health in mines, factories and ports. The Constitution of India has also specified provisions for ensuring occupational health and safety for workers in the form of three Articles i.e. 24, 39(e and f) and 42.

The Government of India has declared a **National Policy on Safety, Health and Environment at Workplace** on 20th February, 2009⁴. The salient features of the National Policy are as under:

- (i) It recognizes safe and healthy working environment as a fundamental human right.
- (ii) It aims at enhancing the well-being of the employees and the society at large by eliminating work related injuries, diseases, etc.
- (iii) It enumerates the goals to be achieved and brings into focus the objective of continuous reduction in the incidence of work related injuries and diseases.
- (iv) It describes the action programme with nine key strategies i.e. Enforcement, Development of National Standards, Compliance, Awareness, Research and Development, Skills Development, Data Collection, Practical Guidance and Incentives.
- (v) It also provides for regular review at least once in five years.

VI. Conclusion

In every occupation workers usually face number of hazards in the workplace. So, occupational health and safety is integral to the success of any development. It addresses the broad range of workplace hazards from accident prevention to the more insidious hazards including toxic fumes, dust, noise, heat, stress, etc. The most effective accident and disease prevention begins when work processes are still in the design stage when safe conditions can be taken into consideration, rather than attempting to solve problems after they have already developed. In order to develop a successful health and safety programme, it is necessary that a constant medical supervision is necessary as the health of employees as well as employers is always on the surveillance. This will help in early detection especially in cases when illness is beyond treatment and irreversible.

Thus, it can be concluded that occupational safety and health is a major area of concern as it is an essential part of risk management and its failure may led to catastrophic results. Therefore, the aim of occupational safety and health should be to achieve healthy and safe working environment as healthy workers will be better motivated which will contribute better-quality products and services and in turn will enhance the overall quality of life of individuals and society.

Reference

- [1]. "Occupational Health Services And Practice". Ilo.org. Retrieved 2015-04-15.
- [2]. Concha-Barrientos, M., Imel, N.D., Driscoll, T., Steenland, N.K., Punnett, L., Fingerhut, M.A., Prüss-Üstün, A., Leigh, J., Tak, S.W., Corvalán, C. (2004). Selected occupational risk factors. In M. Ezzati, A.D. Lopez, A. Rodgers & C.J.L. Murray (Eds.), *Comparative Quantification of Health Risks*. Geneva: World Health Organization.
- [3]. "Risks and nanotechnology: the public is more concerned than experts and industry" (PDF). Nature Publishing Group. 2007. Retrieved 2015-04-15.
- [4]. National Policy on Safety, Health and Environment at Workplace. [http:// www.dgfasli.nic.in/info 1.htm](http://www.dgfasli.nic.in/info 1.htm). Accessed, April 27, 2015.