Occupational Health Hazards and Safety Management for Industrial Workers

Kumuda Bandhu Jadab

The new technological inventions in present days have changed the human life and brought a significant change in the standard of living of every individual from prince to pariah in the society. Thus life without technology is highly unthinkable in the contemporary world and rapid industrialization is the outcome of such need of the mankind. At the same time industrialization has brought in its wake many problems like industrial accidents and other occupational health related issues of the workers working in the industries. Despite of a plethora of legislations at national level[2] and International level and various safety mechanisms[3] and devices are suggested and standard of work environment are advised, at many times it is found that by breach of safety norms there is rise in consequences such as accident, dangerous occurrence, occupational disease apart from emergency and disaster in various industries. Such consequences effect for about 70 percent of adult men and up to 60 percent of adult women throughout the world, estimated 40 million adults are finally effected or loss their life in the industrial sector[4]. Such incidents create a moral pressure among the user of such goods produced. Now a days the consumers in advanced countries are feeling guilty of the matter that they are enjoying the sweat and blood of the persons working for their enjoyment. And the workers are forced to work in an unsafe working condition only for their subsistence. This leads to a situation that the real benefit of industrialization is although available to the purchaser but not reaching to the persons responsible for its production. Thus, it creates a disparity and discontentment among the later group. This can be eliminated by taking greater care and better planning in the managerial level of the industrial establishments. The present paper is an attempt to verify the concept of occupational safety and health hazards for the industrial workers, Occupational Health and Safety Management Systems provided by international level and suggests measures to eliminate accident and other occupational health related issues.

Occupational safety and health

Occupational Safety and Health[5] (OSH) is a cross-disciplinary area concerned with protecting the safety, health and welfare of people engaged in work or employment. The goal of occupational safety and health programmes is to foster a safe and healthy work environment. As secondary effects, OSH 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 as well as reduce medical care, sick leave and disability benefit costs. OSH may involve interactions among many subject

areas, including occupational medicine, occupational (or industrial) hygiene, public health, safety engineering / industrial engineering, chemistry, health physics and ergonomics. The International Labour Organization (ILO) and the World Health Organization (WHO) have shared a common definition of occupational health, i.e. "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 workers 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"[6].The main focus in occupational health is on three different objectives: (i) the maintenance and promotion of workers' health and working capacity; (ii) the improvement of working environment and work to become conducive to safety and health and (iii) development of work organizations and working cultures in a direction which supports health and safety at work and in doing so also promotes a positive social climate and smooth operation and may enhance productivity of the undertakings. The concept of working culture is intended in this context to mean a reflection of the essential value systems adopted by the undertaking concerned. Such a culture is reflected in practice in the managerial systems, personnel policy, principles for participation, training policies and quality management of the undertaking."[7]

Three reasons for occupational safety and health are (1) Duty of reasonable care; unacceptability of putting health and safety of people at risk; society's attitude to moral obligations; making the moral case to senior management.(2) The preventive (enforcement), punitive (through criminal sanctions), and compensatory effects of law. (3) Direct and indirect costs associated with incidents and/or unhealthy workplaces and their impact on the organization (includes insured and un-insured costs).

Hazard the terminology used in OSH varies between countries, but generally speaking: A hazard is something that can cause harm if not controlled. The outcome is the harm that results from an uncontrolled hazard. A risk is a combination of the probability that a particular outcome will occur and the severity of the harm involved. Thus, "Hazard", "risk" and "outcome" are used in other fields to describe e.g. environmental damage, or damage to equipment. However, in the context of OSH, "harm" generally describes the direct or indirect degradation, temporary or permanent, of the physical, mental, or social well-being of workers.

Occupational Health Hazards

Occupational health hazards refer to the potential risks to health and safety for those who work outside the home. According to the World Health Organization, this represents about 70 percent of adult men and up to 60 percent of adult women throughout the world. In addition, an estimated additional 40 million adults enter the global workforce each year[8]. Of course, the specific occupational health hazards faced by this large and growing number of people depend on the region and its economic standing.

However, the following are some of the most common occupational health hazards faced by workers worldwide. Topping the list of occupational health hazards internationally are structural failures and mechanical accidents. This includes structures vulnerable to adverse weather

conditions, moving and/or unprotected parts of machinery, or general equipment failure. These occupational health hazards exist fairly equally in developed and undeveloped countries, regardless of industry. One of the most common work-related injuries to occur globally is the development of musculoskeletal disorders caused by heavy lifting and performing tasks that require repetitive motions. These occupational health hazards are also responsible for the most incidents of disability claims, whether temporary, long-term, or permanent. Muscle injuries due to physical stress most often occur in occupations such as construction and farming, while repetitive motion injuries are most often sustained in environments related to services that typically involve heavy typing and data entry. Also grouped into this category of occupational health hazards are ergonomically poor working conditions and equipment. Hearing loss is another hazard encountered by those who work in industries such as construction and manufacturing. In fact, hearing loss ranks with mechanical hazards in terms of being one of the most common occupational health hazards in both developed and developing countries. Typically, hearing loss occurs over time from chronic exposure to noisy machinery without the use of earmuffs designed to protecting hearing. Even long-term exposure to vibrations can contribute to hearing loss. Exposure to chemicals and other biological agents account for one of the most common and most harmful of occupational health hazards that effect several industries. The health risks from these hazards include liver damage, cancer, and reproductive disorders from chronic exposure to pesticides, heavy metals, and corrosive substances. Health care workers are at particular risk for contacting diseases such as HIV/AIDS, tuberculosis, and hepatitis B and hepatitis C. Others, such as those who work in agriculture, are at increased risk of infections caused by fungi and parasites. Other groups are impacted by a high incidence of skin and respiratory disorders due to exposure to allergens, such as mold, bacteria, and organic dusts.

Occupational health and safety management in international level

The International Labour Organization (ILO) : published a standard ILO-OSH 2001[9], which is similar to OHSAS 18001. The system is based on five steps Policy, Organizing, Planning & Implementation, Evaluation, and Action for improvement. This is supported by auditing with an emphasis on continuous improvement. The ILO management system was created to assist employers to keep pace with rapidly shifting and competitive industrial environments. The ILO recognizes that national legislation is essential, but sometimes insufficient on its own to address the challenges faced by industry, and therefore elected to ensure free and open distribution of administrative tools in the form of occupational health and safety management system guidance for everyone. This open access forum is intended to provide the tools for industry to create safe and healthy working environments and foster positive safety cultures within the organizations.[10]

OHSAS 18000 is an international occupational health and safety management system specification. It comprises two parts, 18001 and 18002 and embraces a number of other publications. OHSAS 18000 is the internationally recognized assessment specification for occupational health and safety management systems. It was developed by a selection of leading trade bodies, international standards and certification bodies to address a gap where no third-party certifiable international standard exists. This internationally recognized specification for occupational health and safety

management system operates on the basis of policy, planning, implementation and operation, checking and corrective action, management review, and continual improvement.

Mechanism to identify safety and health hazards

Hazards, risks, outcomes are interlinked and having cause and effect relationship. For example, repetitively carrying out manual handling of heavy objects is a hazard. The outcome could be a musculoskeletal disorder or an acute back or joint injury. The risk can be expressed numerically as 0.5 or 50/50 chance of the outcome occurring during a year, or in relative terms "high/medium/low", or with a multi-dimensional classification scheme like situation-specific risks. Therefore for the safety management there should be Hazard Assessment and Risk Assessment before taking any precautions.

Hazard Assessment

Hazard analysis or hazard assessment is a process in which individual hazards of the workplace are identified, assessed and controlled/ eliminated as close to source (location of the hazard) as reasonable and possible. As technology, resources, social expectation or regulatory requirements change, hazard analysis focuses controls more closely toward the source of the hazard. Thus hazard control is a dynamic programme of prevention. Hazard-based programmes also have the advantage of not assigning or implying - there are "acceptable risks" in the workplace. A hazard-based programme may not be able to eliminate all risks, but neither does it accept "satisfactory" — but still risky— outcomes. And as those who calculate and manage the risk are usually managers while those exposed to the risks are a different group, workers, a hazard-based approach can by-pass conflict inherent in a risk-based approach.

Risk assessment

Modern occupational safety and health legislation usually demands that a risk assessment be carried out prior to making an intervention. It should be kept in mind that risk management requires risk to be managed to a level which is as low as is reasonably practical. Therefore the assessment should be to – 1.Identify the hazards; 2.Identify all affected by the hazard; 3.Evaluate the risk and 4. Identify and prioritize appropriate control measures.

The calculation of risk is based on the likelihood or probability of the harm being realized and the severity of the consequences. This can be expressed mathematically as a quantitative assessment (by assigning low, medium and high likelihood and severity with integers and multiplying them to obtain a risk factor), or qualitatively as a description of the circumstances by which the harm could arise.

The assessment should be recorded and reviewed periodically whenever there is a significant change to work practices. The assessment should include practical recommendations to control the risk. Once recommended controls are implemented, the risk should be re-calculated to determine of it has been lowered to an acceptable level. Generally speaking, newly introduced controls should lower risk by one level, i.e., from high to medium or from medium to low. Thus the risk of the occupational health hazard can be controlled if cannot be zeroed by a sincere and effective managerial effort for the hazard and risk management, but it is found for various reasons the management of the industrial unit are not taking effective measure to curb the potential risk areas causing danger to the workmen . Further the Government is also not ensuring that the industries are maintained the safety norms and standards as per law.

Conclusion

Occupational health and safety now has an impact on every worker, in every work place, and those charged with managing health and safety are having more and more tasks added to their portfolio. The most significant responsibility is environmental protection. The skills required to manage occupational health and safety are compatible with environmental protection, which is why these responsibilities are so often bolted onto the workplace health and safety professional.

On an international scale, the World Health Organization (WHO) and the International Labour Organization (ILO) have begun focusing attention on the labour environments in developing nations with projects such as Healthy Cities.[11] This focus is well-placed, as many developing countries are caught in a trap: They have fewer resources to invest in OSH, yet because of this, they must also suffer from increased costs of work-related illnesses and accidents.

Suggestions:-

To overcome from such a position every factory or establishment should make a safety audit of the factory's safety and health system and formulate an action plan to eliminate accident and other occupational health related issues. This can be done by:-

- Making internal safety audit and external safety audit at a regular interval preferably once in a year.
- Verify the compliance of standards with the prescribed standards.
- Identify plant conditions and operating procedures that could lead to accidents.
- Maintenance of plant and operating system that can cause accident.
- Educating the personnel working in hazardous area about the prospective hazards and about the safety mechanisms that can help them in dangerous situation.

Such steps can be helpful to mitigate- the number of accidents .

The safety Audit system should also be concerned about the fallowing things to mitigate occupational health hazard:-

- Concerned about the products, by products , the raw materials used and the chemicals used in the factory or establishment and its effect on the work environment.
- The type of occupational health problems faced by the workers of the establishment.
- The amount of heat and toxic materials emitted by the establishment.
- Identify the areas potential of occupational diseases.
- A regular Heath check-up of the working persons for the occupational diseases.

Finally it can be stated that the sincerity in the managerial level of the industries to take effective steps to mitigate the health hazards of the workmen can definitely be helpful to curb the occupational health hazard among the workmen and they also can enjoy the industrialization.

A 2007 Factsheet from the European Agency for Safety and Health at Worksites :

Countries with less developed OSH systems spend a far higher percentage of GDP on work-related injury and illness — taking resources away from more productive activities. [...] The ILO estimates that work-related illness and accidents cost up to 10 % of GDP in Latin

America, compared with just 2.6 % to 3.8 % in the EU.

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Kumuda Bandhu Jadab, Plot No.C-449, Sector - 6, Markat Nagar, Cuttack - 14.

Hon'ble Chief Minister Shri Naveen Patnaik laying foundation stone of Urban Tribal Hostel at Ghatikia on 30.09.2012