

Industrial Hazards and Safety Measures in Pharmaceutical Industries

Ruwayd Tawfeeq Alhasadi

Department of Drug Technology, College of Medical Technology, Darnah - Libya

Abstract: *Industrial hazard in pharmaceutical industries means the danger or chance of accidental injury to the worker while engaged at his accustomed work in the plant, Identifying industrial hazards allows employers to protect their workers from accidents, injuries, and fatalities. Safety in simple terms means freedom from the occurrence of risk or injury or loss. Industrial safety refers to the protection of workers from the danger of industrial accidents when they work in the medicines factory.*

Keywords: Identity, Management, Accident, Worker

1. Introduction

Hazard is a term associated with a substance that is a likelihood to cause an injury in a given environment or situation like a medicine factory.

"Industrial hazard may be defined as any condition/substance produced by industries that may cause injury or death to personnel or loss of product or property".

Safety in simple terms means freedom from the occurrence of risk or injury or loss. Industrial safety refers to the protection of workers from the danger of industrial accidents.

Accidents: Human factor is the contributing cause of accidents in most situations. For people who are likely to have accidents, the treatment is divided into three main categories

- Medical assistance- in 13 percent of cases
- Personality readjustment- in 22 percent of cases
- Operating defects- the remaining 65 percent cases

Accident reduction: Accident proneness is acceptable to a certain extent, it does not mean that nothing can be done to reduce the number of accidents. Accidents can be reduced by two approaches

Actuarial approach- It involves studying statistics to determine accidents based on actual data.

The factors related to the accident frequency should be identified. The violations of safety rules must be identified. Safety educational campaign -Safety education must be conducted by management to the employee groups.

2. Literature Review

The following is a brief review of the work carried out by different researchers in the field of Hazard Identification and Risk Analysis (HIRA).

Qureshi (1987) had done a Hazard and Operability Study (HAZOP) in which potential hazards and identified by looking at the design in a dynamic manner

- To identify the nature and scale of dangerous substances.

- To give an account of the arrangements for the safe operation of the installation, for control of serious deviations that could lead to a major accident and for emergency procedures at the site.
- To identify the type, relative likelihood and consequences of major accidents that might occur.
- To demonstrate that the manufacturer (operator) has identified the major hazard potential of his activities and has provided appropriate controls [1].

Nor et al. (2008) studied risk related to loaders and dozers and were assessed and ranked. The hazards "failure to follow adequate maintenance procedure" and "failure of mechanical/electrical/ hydraulic components" were the most severe and frequent hazards for the loaders and they fell into the category of high risk [2].

Hassan et al. (2009) carried out a Quantitative Risk Assessment (QRA) into basic steps including system definition, hazard identification, frequency analysis, consequence modeling, risk calculations and assessment to determine the safest route for the transportation of hazardous material [1].

3. Definition

The term "industrial hazard" means the danger or chance of accidental injury to the worker while engaged at his accustomed work. This is a needlessly narrow interpretation of industrial hazard and one which blinds us to evils other than the so-called "industrial accident" evils which are even more disastrous and far-reaching in their effects than the accidents connected with employment. "The proper and accurate industry which impairs the earning power of a worker." this occupation, and above all, it is this concept of industrial hazard that I shall discuss [3].

General hazards in industries

- Fire hazards.
- Mechanical hazards.
- Electrical hazards.
- Chemical hazards.
- Pharmaceutical hazards.
- Radiation hazards.
- Dust explosion [4].

Volume 9 Issue 2, February 2020

www.ijsr.net

Licensed Under Creative Commons Attribution CC BY

Hazard identification

Hazard identification requires the employer, in consultation with the employees should identify the following:

- All reasonably predictable hazards which have the potential to cause an incident/accident.
- Likelihood, Severity, and Consequences of the accident/incident.

The Hazard Identification process is to identify hazards that could cause a potential major accident for the full range of operational modes, including normal operations, start-up, and shutdown, and also potential upset, emergency or abnormal conditions. Reassessment for Hazard Identification to be done whenever a significant change in operations has occurred or a new substance has been introduced [5].

Safety tips to help avoid injuries

- Identify the electric shock and arc flash hazards, as well as others that may be present.
- Use the right tools for the job.
- Isolate equipment from energy sources.
- Test every circuit and every conductor every time before you touch it.
- Work on electrical equipment and conductors only when de-energized.
- Lockout/tag-out and ground before working on equipment.
- Wear protective clothing and equipment and use insulated tools in areas where there are possible electrical hazards [9].

Objectives of Pharmaceutical industrial safety

- To prevent accidents in the plant by reducing the hazard to a minimum.
- To eliminate accidents caused work stoppage and lost production.
- To prevent loss of life, permanent disability and the loss of income of workers by eliminating causes of accidents.
- To evaluate employee's morale by promoting a safe workplace and good working conditions.
- To educate all members of the organization in a continuous state of safety mildness and to make supervision competent and intensely safety-minded [4].

4. Discussion

Based on the previous discussions, I would like to avoid the problems caused by industrial hazards, In all places of employment in the pharmaceutical plants in Libya, to embody this, they must behave safety posters should be put on the notice boards, Ventilation facility, Proper storage of dangerous materials, and fire extinguishers must be ready for any emergency. We need to use safety indicators like wall signs floor tape and floor signs to warn people about hidden dangers and to direct them to safety in case of emergency. Employees must be able to open an exit door from inside at all times without keys and even in the dark.

This point is an agreement with the previous study by dr.Raja abhilash. (Assistant professor S.R. college of pharmacy).

On the other hand, Review of safety awareness and safety training requirements of plant employees with respect to hazards, and workers should be wearing safety clothes and discipline within the pharmaceutical factory to ensure safety in the work area.

5. Recommendation

It should be apparent from the foregoing that any pharmaceutical industry, large or small, is particularly in need of expert counsel in matters affecting the health of workmen. Thorough knowledge of the literature of known poisons is essential for the industrial specialist in this field, but he must also have an alert readiness to detect and investigate possible new poisons. Together with the most intimate knowledge of all the manufacturing processes. Far as one may be from reaching this goal, the struggle towards it is full of interest and satisfaction [10].

6. Conclusion

Industrial hazards are anything that jeopardizes employee welfare, and they must be addressed by safety measures. Identifying industrial hazards allows employers to protect their workers from accidents, injuries, and fatalities. Safety in simple terms means freedom from the occurrence of risk or injury or loss. Industrial safety refers to the protection of workers from the danger of industrial accidents [11].

References

- [1] Paithankar, Amol. **Hazard identification and risk analysis in the mining industry.**
- [2] Diss. 2011.
- [3] Nor et al, **risk assessment for loader- and dozer-related fatal incidents in u.s. mining**, vol. 15, no. 2, June 2008, 65–75.
- [4] Royal Meeker, " **Industrial Hazard**" volume no 3,1919.
- [5] Reddy, B. Venkateswara, et al. "**International Journal of Medicine and Pharmaceutical Research.**" (2013).
- [6] Sankar. **Hazard Identification, Risk Assessment and Risk Control in Foundry**, volume 2 Issue 3,"2015".
- [7] SheikAllavudeen, Sankar. **Hazard Identification, Risk Assessment and Risk Control in Foundry**, Volume 2 Issue 3, "2015"
- [8] Bhattacharya, J. (2015). **Quality Risk Management– Understanding and control the risk in the pharmaceutical manufacturing industry. International. Journal of Pharmaceutical Science Invention**, 4(1), 29-4.
- [9] Reddy, B. V., Sandeep, P., Navaneetha, K., & Ujwala, P. (2013). *International Journal of Medicine and Pharmaceutical Research*.
- [10] Bhowmik, Debjit, et al. "**Recent Trends in Hazards in the Pharmaceutical Industry and Safety Precaution.**" (2014).
- [11] Watrous, R. M. "**Critical review: Health hazards of the pharmaceutical industry.**" *British journal of industrial medicine* 4.2 (1947): 111.
- [12] Bhowmik, Debjit, et al. "**Recent Trends in Hazards in the Pharmaceutical Industry and SafetyPrecaution.**"(2014).