

Impact of safety in Resin Manufacturing industries

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ABSTRACT: Industrial safety is needed to check all possible chances of accidents for preventing loss of life and permanent disability of any industrial employees, any damage to machine and materials as it leads to the loss to whole establishment.

In this research, a set of critical safety management practices has been identified based on a thorough review of the prescriptive, practitioner, conceptual and empirical literature.

However, some factors are found to be common in industries irrespective of the type of industry.

This study identifies the critical safety management practices in major accident hazard chemical/process industry from the perspective of employees and the findings empirically support the necessity for obtaining safety specific management system certifications.



Introduction

The Industrial Revolution that took place in the eighteenth century changed forever the methods of producing goods. The most important change was the substitution of machines for people. This resulted in organization of work into large units called "factories", followed by direct supervision of the manufacturing process and efficient division of work among the labor. As the industrial revolution continued its rapid growth, unsafe production methods exacted a heavy toll on the workforce in terms of job-related injuries and deaths .

OBJECTIVE OF THE STUDY

Research Objective:

1. To understand awareness level and the principle of safety in relation to accident.
2. To study compensation, insurance rate etc., in case of accident in an organization.
3. To increase production means to a higher standard of living.

Research Design

The study based on secondary data which collected from website, journal, Newspaper & reports on safety.

- where most of the safety analysis is performed. This is due to problems with:
 - Controls and Displays
 - e.g. poorly designed, difficult to use, cumulative trauma, etc.
 - Electrical Hazards
 - e.g. occurs when a person is doing repairs and another person unknowingly turns the circuit on
 - Mechanical Hazards
 - results in cutting of skin, shearing, crushing, breaking, or straining
 - Pressure and Toxic Substance Hazards
 - asphyxiants, irritants, systemic poison, & carcinogens

Approaches to Hazard Control

- Optimization standpoint - the most critical or “high-risk” hazards should receive top priority
 - e.g. categories of hazard (matrix combines frequency and severity categories)

-Frequency	Catastrophic	Critical	Marginal	Negligible
Frequent	1	3	7	13
Probable	2	5	9	16
Occasional	4	6	11	18
Remote	8	10	14	19
Improbable	12	15	17	20
1 = Highest priority, 20 = Lowest priority				

Safety Analysis

Sequence for identifying potential hazards and recommendations for hazard reduction:

(Weinstein et al. 1978)

1. **Task Analysis** – How will product be used?
2. **Environment Analysis** – Where will product be used?
3. **User Analysis** – Who will use product?
4. **Hazard Identification** – What is likelihood of hazard with product?
5. **Generate Methods for Hazard Control** – What might eliminate hazards?
6. **Evaluate Alternatives** – How will alternative designs affect product performance?
7. **Select Hazard Control** – Given alternatives, what is best design to minimize hazards?

Reason for safety is important in resin manufacturing industries

- If you have good health and safety practices, you will see six main business benefits.
- Protect your staff
- Effective health and safety practices help you protect your staff from injury. This may mean you are more likely to retain skilled and loyal employees by preventing:
 - back pain and other musculoskeletal disorders - eg upper limb disorders - see safe manual handling at work and prevent RSI and upper limb disorders

Safety Measure by government

The Factories Act, 1948

No. FAC-2012/C.R.278/Lab-4 – In exercise of the powers conferred by section 112 and 115 read with section 41 of the Factories Act, 1948 (63 of 1948),

The National Safety Council has been notified as a Safety Auditor for carrying out safety audit

of the factories under the Maharashtra Factories (Safety Audit) Rules, 2014 vide the Maharashtra* State Govt. Notification No. FAC-2012/C.R.278/Lab-4 dated 24th February 2014.

- in which manufacturing processes, which involves use, storage, handling or processing of toxic or highly inflammable or explosive or hazardous chemicals or wherein such toxic
- or highly inflammable or explosive substances are likely to be generated or given out, are carried out, or in which the hazardous processes as listed in First Schedule of section 2 of the Factories Act, 1948 is carried out;
- or employing more than 250 workers.

Suggestion and recommendation for safety improvement

- The company should have a written safety policy covering all aspects of its operation.
- The safety policy should embody a statement of commitment to the provision of a safe and healthy work environment.
- Every employer shall ensure that all employees have the opportunity to be fully involved in the development of procedures developed for the purpose of identifying, eliminating, isolating and minimising significant hazards, or dealing with or reacting to emergencies or imminent dangers.
- Proper control measures should be adopted to ensure that health and safety considerations are accounted for in the following situations:
 - ✓ Planning for the establishment of an undertaking;
 - ✓ Before the introduction into the workplace of all hazardous and potentially hazardous substances;
- The establishment of production procedures.
 - In adopting efficient control measures, a system for identifying hazards and assessing risks should be adopted.
 - No substances shall be introduced into a work premises without information pertaining to:
 - What the substance is;
 - What hazards are likely to arise from its use;
 - What safety precautions are necessary; and
 - What treatment or action is necessary in the event of an emergency.
- The use of Material Safety Data Sheets is recommended.

Conclusion

This study attempted to design a comprehensive and yet simple instrument for scientifically examining how concepts and practices involved in safety management can be structured into a systematic framework for understanding the critical factors of safety management in industries and to understand the inter-relationships among those factors.

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