



**MANAGEMENT OF OCCUPATIONAL HEALTH, SAFETY AND ENVIRONMENTAL ASPECTS
IN MAJOR CEMENT PLANTS OF RAJASTHAN (ACC & ULTRATECH.)**

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ABSTRACT

Management of potential industrial hazards, environmental risks & occupational injuries which may cause major anatomical or physiological issues among industrial workers is a greater challenge nowadays in every industrial operations now a-days. Traumatic occupational injuries leads to 10,000 deaths among workers annually. The International Labor Organization (ILO) has observed that an estimated 50 million work related injuries occur every year or 160000 every day. India's potential in infrastructure is vast and cement plays a vital role in the growth and development of the nation.

India is the second largest producer of cement in the world. The cement industry has been expanding on the back of increasing infrastructure activities and demand from housing sector over the past many years. The Indian cement industry is the second largest producer of quality cement that meets global standards. It comprises 130 large cement plants and more than 300 mini cement plants. The industry's capacity at the end of the year 2007-08 reached 188.97 million tonnes from 166.73 million tonnes at the end of the year 2006-07.

The Indian government has ranked different states in India in terms of cement production. Rajasthan ranks leading, followed by Andhra Pradesh, Madhya Pradesh, Tamil Nadu and Gujarat Management of Industrial Safety, occupational health and environment norms is become top priority of any cement plants. It is a positive cultural element that allows other improvements in other functions.

However, as work accidents and occupational diseases have an enormous impact on the health of workers and considerable economic and social impacts. In addition, with the increasing complexity of industrial tissue and with the rapidity that the techniques develop in the big factories, risks assessment becomes a crucial and strategic answer to preserve workers health and safety on the one hand and to maintaining a qualified labor on the other hand. The Health and safety performance of the cement plants eg ACC & Ultratech as a whole is improving due to line management ownership, stringent rules & enforcement by authorities, monitoring & benchmarking, social, economic reasons, heavy penalty for breach & fear of losing brand image. The good & prestigious cement companies like ACC (Lafarge-Holcim MNC) & Ultratech have demonstrated that it is possible to achieve good EHS culture by visible felt leadership & ownership. However still there is room for further improvement in performance of occupational health, safety & environment compliance. There is a particular need for these cement plant to encourage and help those plants that are significantly under-achieving to raise their EHS standards to ensure a sustainable industry that meets social and employment expectations. In addition, with the permanent evolution of work, even its risks, it becomes increasingly insufficient to establish occupational health & safety rules of, relying solely upon standards and regulations to comply, but move to awareness, information, training and motivation of employees as well as business partners on the role of health and safety at work, steps previously required for the implementation of a prevention, even to a mitigation measures relevant and effective. That allows to define a general policy of prevention and to bring to successful management of industrial risk, occupational illness & environmental norms within the entity.

Hence, it has become essential to give employees, business partners & all stake holders a real sense of safety, occupational health & environment that will predict and act in very affective way; objective of this work.

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INTRODUCTION

The Indian cement industry is the second largest producer of cement in the world just behind China, but ahead of the United States and Japan.

It is consented to be a core sector accounting for approximately 1.3% of GDP and employing over 0.14 million people.

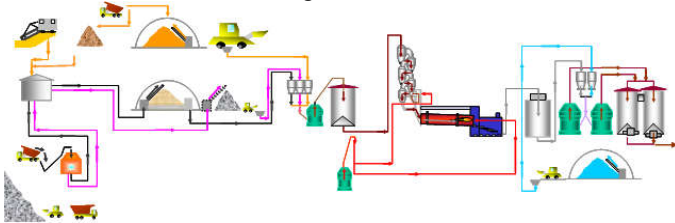
Management of occupational health, safety & environmental norms is the number one priority for the cement industries for its employees, business partners & all stake holders. And such positive culture can be seen in ACC & Ultratech cement plants in Rajasthan. Positive EHS cultural element allows other improvements in the plants. An administration that does not

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attain to manage occupational health, safety & environmental norms is not in a position to manage other functions.

However, as work related injuries and occupational illness have an enormous impact on the health of workers, considerable economic, social impacts & on image of plants. In addition, with the increasing complexity of industrial issue and with the rapidity that the techniques develop in the big factories, hazard identification, risks assessment becomes a crucial and strategic answer to preserve workers health and safety on the one hand and to maintaining a qualified labor on the other hand. These are data, among others, that have triggered the alarm signal and impose the necessity of an increased safety in the factories. Therefore, a priori assessment of these risks and the implementation of a prevention approach within a factory are required to become one of the main driving force of progress. Hence, for some employers, employees and their representatives, occupational health and safety at work mean so much. In addition, with the permanent evolution of work, even its risks, it becomes increasingly insufficient to establish general safety rules of, relying solely upon standards and regulations to comply, but move to awareness, information, training and motivation of employees as well as business partners on the role of health and safety at work, steps previously required for the implementation of a prevention, even to a mitigation measures relevant and effective.

Common hazards in cement plant can be classified as below -



Quarry and Blending	Processing	Milling & Distribution
Fixed Plant & Machinery	Fixed Plant & Machinery	Fixed Plant & Machinery
Electricity	Electricity	Electricity
Working at Heights	Lifting & Supporting Loads	Lifting & Supporting Loads
Vehicle & Mobile Equipment	Pressurized Systems	Pressurized Systems
Confined Space	Working at Heights	Working at Heights
Explosive Handling & Use	Vehicle & Mobile Equipment	Vehicle & Mobile Equipment
Particulate Solids (Dust)	Confined Space	Confined Space
Ergonomics & Manual Handling	Digging & Excavation	Particulate Solids (Dust)
Noise	Particulate Solids (Dust)	Ergonomics & Manual Handling
Hot Work (ignition sources)	Ergonomics & Manual Handling	Noise
Housekeeping	Noise	Hazardous Substances
	Hazardous Substances	Hot Work (ignition sources)
	Hot Work (ignition sources)	Housekeeping
	Hot Material	Working Near Water
	Housekeeping	

The pollutants in the cement industries of Rajasthan being controlled through various environmental techniques eg bag house, dust collectors & ESP. Good preventive maintenance of machines & regular monitoring helps up to a great extent to maintain environmental norms. Nowadays CEMS (continuous emission monitoring system) is directly linked to pollution control board servers and they can directly monitor the compliance level.

To prevent from occupational diseases mentioned cement plants are well ensuring pre-employment medical examinations, periodical medical examinations, Industrial hygiene & monitoring programs etc. Awareness of employee's

as well as business partners being improved through various training programs, wellness programs.

Objectives of the study

- To identify the Occupational health, safety and environment related hazards, aspects & riskin major cement plants of Rajasthan under study.
- Gap identification and analysis between ideal situation and current status of occupational health, safety and environmental standards in these plants.
- Addressing the gaps identified.
- Provide possible corrective actions for all the identified aspects & hazards.
- Recommendation of corrective action for identified gaps.

METHODOLOGY ADOPTED

Firstly the national policies and legal framework relevant to the Industrial safety, occupational health & environment management will be reviewed, to understand the legal requirements and still existing gaps.

- Baseline data collected from major cement plants of Rajasthan. Data is being collected for different activities and processes of cement manufacturing. Questionnaires and checklists were being used for the study.
- Occupational health, safety & environmental aspects were being monitored in the industry.
- Compliance of various statutory regulations and standards followed by these plants was being checked thoroughly.
- Various problems related to occupational health, safety and environment in the industry was being addressed.

- Mitigation strategies and corrective actions based on findings and best practices adopted by the industry were being provided.
- Conclusion, recommendations and the scope for future studies were being given.

RESULT AND OBSERVATIONS

1. Mentioned cement plants are providing all basic and job specific personnel protective equipment's to all employees & business partners.

2. Strict compliance of rules, regulations related to Industrial safety, health & environment standards is being done.
3. It is having a fully-fledged occupational health, safety policy & manual.
4. It provides proper training to all business partners and employees.
5. It is having advanced technology designed equipment's and machineries to manufacture premium quality of cement.
6. It has sufficient equipment's to control and prevent environmental degradation.

- Benchmarking the best practices and measures with the leading competitors to ensure best EHS compliance in the industry.
- Use earmuff or ear plug where the noise level is more than prescribed limit.
- Full compliance of pre-employment & periodical medical examinations.
- Detailed Investigations of all injuries, environmental non compliances & occupational illness to prevent reoccurrence.

CONCLUSION

Control measures at source, path and personal exposure to the hazards, together with education in occupational health, safety & environment are the ideal means of preventing occupational diseases and injuries from the manufacture of cement. Stakeholder's knowledge about the hazards associated with their jobs and their education especially instructions on standard operating procedures and use of personal protective measures is helpful to reduce and may even eliminate some occupational health risks.

Thus it can be seen that the health and safety problems in cement plants can be reduced by maintaining safe working conditions, preparation and implementation of safe operating procedures, study of environmental conditions, and enforcement of safety procedure, training of employee and periodic medical examinations and use of personal protective equipment. All these activities are possible only with the commitment of top management and co-operation of employees as well as active participation of supervisory staff.

Recommendations

- Visible felt leadership of top management towards EHS compliance.
- Carry out each job with hazard identification & risk assessment.
- Carry out all hazardous jobs with permit to work system compliance.
- Ensure Isolation, lock out tag out try out of all identified energy sources before commencement of work.
- Scheduled maintenance of all machines.
- All construction material i.e. beam, pipes, power equipment etc which cannot be remove to a safe location, they are to be lashed in place in the best possible manner known.
- Use of fabric filter system (baghouses) instead of electrostatic precipitator will be more reliable and efficient.
- Covered conveyor belts for transportation of raw materials, covered shed for additives.

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