

An Organisational Study about Safety Management

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Abstract

The Indian society and economy have suffered human and financial losses as a result of the poor safety record in the construction industry. The purpose of this study is to examine safety management in the construction industry. The study will collect data from general contractors, who are involved in major types of construction. Collected data include information regarding organizational safety policy, safety training, safety meetings, safety equipment, safety inspections, safety incentives and penalties, workers' attitude towards safety, labor turnover rates and compliance with safety legislation. The study will also reveal several factors of poor safety management. Thus the paper will conclude by providing a set of recommendations and strategies to contractors for improving their safety performance.

Key Words: Safety, Management, Analysis, Construction, Industry.

Introduction

The significance of the construction industry to the economic and social life of the country is noteworthy. The industry needs much investment and involves various types of stakeholders and participants. From the point of view of safety, the conditions normally encountered in the construction industry does not lend themselves to the degree of control, Possible in other industries where more stable conditions are generally obtained. The construction industry is usually very large, complex, and different from other industries. Hence it is prone to numerous health hazards.

Safety

For many years, safety professionals have been aware that the majority of workplace accidents are triggered by unsafe behaviors, and that their control is one of the keys to successful accident prevention. However, many organizations, even those companies with low accident rate have been frustrated by their inability to control unsafe acts.

Importance of Safety in Construction

Work sites can be dangerous places due to the number of people running around trying to get their job done and the amount of heavy-duty machinery being operated at any given time. That means there is an ever-present chance of serious injury not only for workers, but also site visitors and those living, travelling and working around sites.

Engineers, project managers, design drafters and others need to visit sites regularly to do their jobs. There's a good chance they might not know much about the power tools and large machinery in use every day. The same goes for people going about their daily routines near work sites. Working on large projects in busy urban environments can be especially dangerous, as there might be smaller buffers between dangerous debris and passers-by. That is why those working in such areas must always be aware of their surroundings.

In addition to the harm caused to the person injured, unsafe activity can end up costing valuable time and money that can ruin carefully planned budgets and schedules. Getting the injury taken care of and making up for the lost time can hurt efficiency. Although secondary to the wellbeing of workers, this is yet another reason why health and safety are so important when it comes to construction.

The construction industry has traditionally been considered as a hazardous occupation due to the high incidence of occupational injuries and fatal accidents. The number of fatal occupational accidents in construction all users the world is not easy to quantify, as information

on this issue is not available for most countries. The outlay on construction in successive live year plans of India has been in the range of 36% to 50%.

Need for Safety Management

The construction industry has some special features which have a direct bearing on the accident potential. In this trade the pattern of work is ever changing. The operations and physical circumstances change constantly unlike in the factories where the process, the method and the operations are generally respective. Timings and schedules vary considerably from place to place. The most important changing factor the change of men themselves. The inherent nature of construction jobs combined with the above factors make this industry as one with accident risks.



Main Factors Contributing in Safety Development

In general, there are several items which influence the safety performance that should be analyzed and specified in design and pre-construction stage in order to increase safety. Sawacha, Naoum and Fong (1999) explained different variables that effect safety on construction sites. In their research the impacts of the historical, economical, technical, procedural, organizational and environmental subjects are recognized in terms of how these items are connected to the level of site safety. The results show that variables regarding `the organization strategy are the most influential group of factors that has effects on safety performance in the United Kingdom construction industry. In another study conducted by Evelyn, Florence and Adrian (2005), the results of a postal survey of contractors in Singapore discussed.

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The obtained results of this research showed that site accidents take place when there are insufficient company policies, unsafe procedures, poor attitudes of construction personnel, low efficiency in management commitment and inadequate safety knowledge and training of staff. The study recommended that project managers must pay more attention regarding the factors determined above to enhance safety performance on construction sites and alleviate the frequency of accidents. From the above investigation, it can be understood that having the right policies in conjunction with safety management associated in design and pre-construction phase can greatly reduce accidents. One way that an owner should apply is to hire contractors who have proved a record of good safety performance. This factor should be considered during the processes of qualifying contractors for bidding work and ranking contractors for a contract award.

Risk Analysis in the Design Stage

Identifying future risk in design stage will greatly decrease the loss of accident to people or properties. The collaboration between the designer and client will be resulted in a safety risk analysis for each project option. This approach will be applied by assessing the relationship among the stakeholders, the public, the final users of the facilities and the environment. This strategy will concentrate what can happen, how and why it can happen in the implementation of the tasks. It will also focus on separating acceptable risks from the risk of dangerous activities. Moreover, the level of risk will be classified by comparing the severity and probability.

Training Strategy

It is clear that training has a contributing role in defining management practices to enhance safety performance. Providing regular training sessions increase the awareness of employees about hazardous tasks. On the other hand, the safety training is very useful as it allows employees to predict future accidents or near misses. In order to improve the quality of safety and health in a large scale, the management level should consider a systematic and comprehensive safety approach at construction site. This approach should be clearly explained by specific procedure for each hazardous activity which has been identified in design stage. The

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process should be clear and understandable for everyone. Moreover, the organization should hold safety and health training program for new employees. This strategy will put the orientation of the organization in a preventive process. Workers who are properly trained would make a correct decision in deal with incidents associated with their workplace. With the aim of training the organization can prevent from accidents and injuries as it informs their employees about adherence to safety regulations.

Reward Policy

To improve the safety culture in construction workplace creating of reward system is necessary which runs parallel to safety education and training. On the other hand, the safety based on incentive program reinforces the reporting of accidents or any unsafe act that leads to an accident. The policy within the organization should be based on the prevention of accident, not punishment after any accident take place. The rewarding system can be monetary (economic type) or job promotion.

Management Commitment to the Implementation of Safety Culture The policy selected by manager in relation to safety issues is effective in the development of safety level within an organization. Defining clear procedures and providing safety standards such as the Occupational Safety and Health Act 1970 (OSHA) will help to run process properly. In addition, the management is responsible to allocate people with the sufficient level of competency and knowledge as a representation in each part of the work. This approach will respond the need of workers in terms of problem solving.

Contractor Comply with Safety Regulation

The contractor commitment to comply with safety rules should be recognized in every construction project. Therefore, hiring contractors with a record of good safety performance during the bidding process is prioritized by client. Contractor attitudes toward safety range from minimal compliance to total commitment, so concerned owners should consider past safety performance of contractors during the bidding process and when awarding the contract. All

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owners have a legal right to use reasonable care to correct or warn contractors of any non-apparent hazards present on the site which could affect the safe performance of the construction and to use reasonable care to prevent contractors from injuring others on the site, owners can implement following strategies to achieve better safety performance such as: Identify safety rules and guidelines that the contractor must comply.

- Providing a permit system regarding the potentially hazardous tasks.
- Force the contractor to allocate an accountable supervisor to coordinate safety on the site.
- Discuss about safety issue at regular meetings between owner and contractor.
- Develop safety monitoring during construction

Development of Safety Performance

Regarding to eight previous elements, in this part an efficient approach is recommended as a guideline to assist the team members in the construction industry to manage their safety in their workplaces. We required preventing accident because of 3 reasons as mentioned in below:

1) Humanitarian Reason: to ensure that people are safe and healthy at work and nobody suffers from accident due to the work activity.

2) Legal Reason: to comply with provisions of law which, specify standards to ensure safety and health at work.

3) Economic Reason: to prevent losses due to accident in term of expenses on medical, compensation, property damage, downtime, etc. This guideline measures safety on site and includes

- 1) Creating safety and health regulation
- 2) Identify hazard
- 3) Assess and evaluation risk
- 4) Decide precautions
- 5) Record findings
- 6) Review and update

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Step 1: Creating Safety and Health Regulation

Safety policy is contained some notification that exhibit responsibilities, commitments, culture, behavior and requirement to ensure that a workplace is safe, healthy and acceptable. So this statement will encourage all the employees and other people in the site that are affected by the site condition to pay attention to these notifications to increase safety performance. The responsibility of this policy is as below: Create a condition to ensure that workers are operating in safe and healthy environment

- Decline the situation that cause to create risk
- Provide safe tools and equipment
- Provide reliable method and procedure for doing work
- Provide needed information, training, and instruction regarding to site condition and type of

Step 2: Identify the Hazard

Hazard can cause different injuries to the workers and sometimes can cause death. Therefore, identifying the hazard is important to control risk and decreasing accident in site. In site all the materials, equipment, machineries, and also work activity can cause hazard. Therefore, we have to evaluate work place and work activities to identify hazards or find the resource of hazards. Hazards can be physical, healthy, chemical, biological, and humanitarian. Some regular causes of physical hazard are falling from scaffold, moving heavy burden manually, cutting by machine, burning by firing materials, straining, injury by another person and etc. while chemical hazards are related to chemical materials that are utilized in a project such as glues and correction fluids to industrial solvents, dyes, and acids. Regulation is required for using chemical materials by workers.

This regulation should create according to effect of chemical materials on skin that is initial problem and also examine long term effect of these materials. Biological hazards contain every kind of viruses and bacteria that may lead infection and substances from animals that can

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cause health problems. Therefore, biological regulation for more protection and increase safety is required. Human factors are related to the mental and physical capacity of the worker. Workers must have the ability to do their duty and work place and system should be comfortable and without stress. For instance, pregnant women, people with disabilities, older worker, or young worker with no experience have higher accident rate. All the employees must be informed about the hazards that can existence in the site regarding type of work. Record of previews accident, experience of the expert people, and different kind of standards can assist employees to determine the resource of hazard. Furthermore, we can use professional people to provide safety statement and identify hazards but the advisor is required to know about the situation, kind of work and must have an adequate experience.

Step 3: Assessment and Evaluation of Risk

Possibility of harm to the people by hazard is risk that has different severity and frequency. Risk is also related to the number of people who will be affected by hazard. The magnitude and serious of the harm and also the number of the worker that are affected is important for assessing risk. Risk assessment must be done by own employees in the work therefore, if the experience and expertise of the worker is not enough, the company must provide the competent person to assist them. There is different quantitative and qualitative risk assessment that we have to choose suitable one regarding to the project and site condition.

Step 4: Decide What Precautions Are Required

You have to use proper method and tools regarding the situation to preventing risk. Law requirement is one of the important strategies that must be followed by all the employers. Law is going to make a guideline on how evaluate the risk and increase safety. Most of the times improving safety and start to protect from the hazard is no so expensive but it is creativity, for example using non slip material in slipper surface or sometimes change the method and procedure to do the work can be useful and effective. Some of the precaution is as below:
Reliable and clean work condition

- Using safeguard in high level

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- Using skilled worker
- Enough training for worker
- Provide reliable inspection
- Availability of emergency aid
- Availability of protective equipment

Step 5: Record Finding

All the finding of the risk assessment must be record in safety statement. It means mention more hazard and dangerous situation that can affect employees in workplace. Therefore, company rule, manufacturing instruction, and choosing appropriate attitude is related to these records. This finding must be update and related to the work position because of increasing safety and also decline risk. Some documents that can assist us to add several useful notifications to the safety policy which is utilized in the organization are according to the following: Manual instruction of materials and plants

- Company regulations.
- Operating instructions.
- Manufacturers' instructions.
- Company safety and health procedures.

Step 6: Review and Update

Using safety statement should be one of the important parts of the work and everyday this statement should be available for inspection in the workplace. This statement should be obvious and relevant to the work. Significant change in workplace or kind of the work that can add new hazard to the employee cause to provide new statement related to these hazards. Employees are responsible to amend safety statement if necessary. Sometimes employee cannot do it and should take help from professional persons. Employee should consider some important issues to revise safety statement as below: Safety statement must be related to the work condition

- Examine hazards, risks, risk assessment and identify essential safety protector
- Use practical methods to implement in site

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- All the notification should be according safety and health performance standard
- Consider all the humanitarian, legal, and economical reason for preventing hazard and risk

Conclusion

The work environments in construction activities are generally more hazardous, than other industries due to the use of heavy equipment, dangerous tools, and hazardous materials, all of which increase the potential for serious accidents and injuries. Therefore, it is evident that a focused dedication inwards safety is needed from construction at all levels. It can be inferred from the survey data that safety managers have the opportunity to influence and enhance the sense of safety and the quality of the work environment. Owners of large projects can more actively participate in construction safety management in each stage of project execution including project design contract selection, contract development, the construction phase, selecting safe contractors, and developing the safety culture on the projects through safety training and safety recognition programs

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