

# The occupational safety and health act implementation



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Construction activities and work site is considered to be a high-risk occupation, with large number of fatalities and injuries every year, this inevitable truth suggests that having safety programs and procedures in construction sites is of great importance. Following the Occupational Safety and Health Act, safety planning in construction industry has improved significantly; Nowadays most of contractors have safety programs that is “Adoption of attitudes and the provisions of resources within an organization to mitigate the risks involved in any activity necessary for the achievement of organizational aims” (Osama Ahmed Jannadi, October 2003) and implement them on construction sites.

Safety plans include specific elements which have been proven to be effective for a safety program in order to help reduce number of fatalities and injuries and make construction sites a less hazardous working environment. It is important to notice that only having a well written and

comprehensive safety and health plan is not enough to have a safe and low-risk working environment, there are other elements that contribute to this goal. Factors such as how supportive is upper level management of a company towards the safety programs, Presence of a safety manager on site to direct implementation of safety plans, and selection of subcontractors that demonstrate a history of performing safe work, etc. are also important.

Upper level management usually has an intention to see the components of work as cost; Risk and safety as a means to mitigate it also can be represented in numbers related to cost. Studies show that cost of accidents as a percent of total cost of construction has been increasing in the past decades and it can be between 8 to 15 percent of total cost of a new construction that is a significant figure (Everett & Peter B., *Costs of Accidents and Injuries to Construction Industry*, 1995).

From a construction company perspective safety programs as a means of mitigating risk involved in the work should contain a subset of these elements that is found to be more relevant and effective to the company's type of work, this is usually done based on intuitive and experience of person/group in charge of providing the program. But recently there have been studies trying to use Risk Assessment Models (RAMs) (Osama Ahmed Jannadi, October 2003) or analytical research tools such as Delphi method (Hallowell & Gambatese, 2009) in order to provide better understanding (for safety managers in construction) of important factors in a safety plan. In this paper different contributing and relevant elements and issues from a construction company's perspective are investigated.

Safety regulations and standards were established formally in 1970 under Code of Federal Regulations (CFR) title 29, Chapter XVII "Occupation Safety and Health" act. The act is broken into different parts for different industries and part 1926 covers regulations related to construction. In addition to federal laws each state may provide its own regulations for construction activities under OSH act that is applied to construction work in that state. As of now every employer who works in "Construction" environment that is construction, repair, alternation, painting and decorations needs to comply with the regulations specified by part 1926. OSHA requirements for safety represent minimum standards for safety and the implication for any company is that if necessary take actions towards safety that are beyond OSHA regulations, for instance in a structural steel erection to comply with OSHA standards there is no need to provide fall protection at 6 feet but many companies feel the need to provide such personal protective equipment and measures for their employees at 6 feet, because they know that it will help provide a less hazardous work environment and reduce risk of falling for the workers. One example is Continental Building Systems that follows these beyond OSHA programs for fall protection or working near power lines (Continental Building Systems). As a construction company it is important to recognize hazards associated with any work and try to provide the best program in order to avoid it.

It is often usual in construction work sites that different crews from different subcontractors work at the same working area with general contractor's workers. For these "Multi-Employer" sites OSHA has certain rules and regulations effective from December 1999. It is important to note that in

multi-employer sites if there is a hazardous condition that is a violation from OSHA standards, First role of each of employers in the site needs to be determined, By OSHA standards employers can be creating, exposing, correcting, or controlling the unsafe conditions; The definitions of each role is thoroughly described in OSHA regulations (OSHA Directive number CPL 2-0. 124, (29 CFR OSHA 1926, 2009)). If an employer falls into any of these categories in a working site the responsibility is to take sufficient actions that meet OSHA's obligations. It is important for the General Contractors that are usually controlling employer in work sites to take reasonable actions in order to protect hazardous conditions, but not as frequent as the specialty worker crews and subcontractors that are creating the hazard or exposing their employers to it. As a construction company who hires other subcontractor a major effort to lower the risks is to investigate history of the subcontractors and try to choose subcontractors that have well executed safety plans for their work.

The later with respect to safety and lowering risks has two implications. First is the extent of experience that applicant has in the field of work he or she applying for, since experience helps the person to be more able to recognize and identify hazards and also to know the steps that are to be taken in order to mitigate risk and hazard. Second implication is to have a pre-employment testing for the applicant, the extent that a company wants to have applicants tested depends on many factors such as type of work, location of job site and its conditions, size of the employer, etc. and it may include Physical Examination and Laboratory Testing (Philip D Parks). For example one of the most critical Physical problems in construction is lifting heavy items and an

employee should be able to lift or carry typical construction weights if it is in his responsibilities, injuries that can be aggravated or worsen due to lifting need to be diagnosed so that employee is not exposed to such conditions, and reduce risk of injuries and probable compensation claims.

## **Safety Training for Employees**

Employee training is an integral part of any safety program; Employees who are trained and have learned safe work practices are less likely to show hazardous behavior and subsequently will result in lower rate of incidents and injuries. It is important to note that for a training program to be effective, it needs to be based on a thorough analysis of the task and safe work practices.

One of major issues in job-sites for host employer is to ensure that any person who is involved in the working zone is familiar with site-specific safety issues. For construction sites with multiple subcontractors, General contractor or host employer should require the subcontractors to train and explain their employees about the hazards associated in their work and safety measures that are required to perform the work in a safe and low risk manner. Daily briefing for employees on the work that needs to be done that day and safety issues related to it has been proven to be helpful in reducing risk of incidents (Hislop, 1999).

OSHA provides training programs for private sectors through OSHA Training Institute (OTI) and also extends its training reach to workers through its various Outreach Training Programs. In these programs qualified individuals who have completed OSHA trainer course and are authorized to teach other

students can teach workers 10-hour or 30-hour courses on construction safety. Nowadays numerous training programs are available for construction companies to train their employees with relatively low prices either online distance education or with instructors for a live class. This makes it more affordable to have frequent safety trainings for employees at one year intervals to make sure they are up to date with recent safety issues.

### **Qualified and Competent Person On-Site**

A competent person is someone who, “ through training and/or experience, is knowledgeable of the various Occupational Safety & Health Administration (OSHA) standards that apply to their workplace, is capable of identifying workplace hazards relating to their specific operations, and has the authority invested in him or her by their employer to correct the hazards to protect workers”. Therefore it is employer’s responsibility and based on employer’s judgment to determine who can be a competent person with needed skills and qualifications for a certain type of task. If a person has knowledge and experience in different construction tasks he or she can be a competent person in different types of tasks.

Identifying causes of incidents include two major components; first is the “ Work Element” that is act or condition that directly caused the incident, this direct cause needs to be identified quickly and be corrected. Second component is the “ Root Cause” of the incident that is the failure in system that allowed the deficiencies to occur in the work element. Identifying root cause may need a more thorough investigation but seems necessary to avoid recurrence (Incident Investigation Process and Exercise).

As a construction company after any incident the investigation needs to be done properly in order to identify working element and root causes of incidents and follow up on them to ensure they are corrected. Also it is important to identify any trend in incidents and accidents in job site.

## **OSHA Recordkeeping**

Defined by OSHA 1904. 1 all employers who are covered by OSH act have to keep OSHA injury and illness records unless they are exempt, a common exemption is for employers with 10 or less employees at any given time. Regulations require employers to keep record of fatalities, injuries, illnesses that meet certain criteria described in section 1904. 4(A) by recording in log of work-related injuries and illnesses (Form 300) summary of the incident (Form 300A) and injuries and illnesses incident report (Form 301) (OSHA Record Keeping Handbook (OSHA 3245-01R), 2005).

Recordable Incidents somewhat are based on companies policies, some companies may decide to record incidents that are not necessarily recordable based on OSHA regulations. This is proven to be a beneficial safety approach in order to identify trends and plan preventive safety measures (Davoudpour, 2010).

## **Workers' Compensation**

Workers' compensation insurance was enacted in order to protect injured employees by providing medical care for any injury, and in many cases, monetary payments to compensate for resulting temporary or permanent disabilities. Construction companies are required to subscribe to insurance for workers' compensation; but the premiums for construction industry is



higher than most of other industries (Agarwal & Everett, 1997), therefore it is an important cost issue to know how to reduce associated cost with workers' compensation. The cost also varies in different states and trades and crafts.

Suggested strategies in order to reduce cost of insurance are formation of industry groups for insurance and effective safety programs because cost of insurance is directly related to company's history of injuries and fatalities or in other words safety performance. There are several safety performance indicators but the most commonly used is Experience Modification Rate (EMR) as will be discussed, other safety evaluation criteria include Recordable Incident Rate (RIR), Lost Time Incident Rate (LTIR), Workers' Compensation Claims Frequency Indicator (WCCFI) among others (Hancher, Carza, & Eckert, 1996). Researchers have recommended different strategies in order to manage the workers' compensation and its cost; these strategies include education of employees and their representatives about workers' compensation's effects on business, contractors taking active role in interfacing with insurance companies and medical care providers, Modifying work for injured employees in order to keep them productive without risk of aggravating their injuries (Hancher, Carza, & Eckert, 1996).

## **Experience Modification Rate**

Experience Modification Rate is used to modify insurance premium for construction companies and is in essence an incentive for companies who have a history of performing safe and low risk as opposed to companies that have safety issues and more frequent injuries and fatalities. EMR is

calculated using different parameters that include: actual primary losses

(sum of costs below 5000\$/injury), actual excess losses (sum of costs above  
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5000\$/injury), weight (provided in state manuals), expected excess loss, expected losses and ballast. Sensitivity analysis shows that frequency of injuries and incidents has a greater impact on EMR compared to severity of injuries; Also EMR is noticeably reduced when hourly wages and total wages paid per year are increased (Hinze, Bren, & Piepho, 1996).

Understanding EMR and its impact on calculating workers' compensation insurance's cost will help employers and companies to manage and reduce associated cost and make use of incentives as much as possible. Also it is important to consider that the cost of a serious incident or a bad year will show up after 2 years because of the way EMR is calculated and be paid off over three years (Everett & Thompson, Experience Modification Rating For Workers' Compensation Insurance, 1995), so companies end up paying for their own losses over the time and with some delay, this can be a management and financing factor for companies in order to split this cost in their overhead for different projects in a long period.

Main goal of elements discussed in this paper has been reduction of accidents and risk associated with it by using effective safety measures and programs. In reality an accident is inevitable and it has direct and indirect cost for the company these costs vary for insured and uninsured work. Main elements of costs for insured companies include direct costs workers' compensation insurance, public liability insurance, and property insurance; and indirect costs such as loss of productivity, disruption of schedules, administrative time for investigation and report, training for replacement personnel (Everett & Peter B., Costs of Accidents and Injuries to Construction Industry, 1995). On the other hand in uninsured cases costs include direct <https://assignbuster.com/the-occupational-safety-and-health-act-implementation/>

costs such as product and material damage, Legal costs, Fines, medical costs and indirect costs such as lost production time, investigation time/administration, supervisor's time, loss of expertise/experience, loss of morale, and bad publicity. For example in construction of a supermarket that is a typical construction project an accident caused a total damage equal to 700000 £ (8.5% of project price), in this case uninsured total costs were 11 times more than insured costs that is a considerable amount and considering bad publicity for future work, insurance is the rational way of planning for accidents and damages (Higginson).

## **Drug Testing**

Drug testing in workplace is gaining widespread acceptance in the construction industry in the past 3 decades. Due to high rates of alcohol and drug use between construction workers, and nature of construction work that is sensitive to safety issues and hazardous conditions can always be present drug testing and prevention strategies are parts of a safety plan for a safe work environment. As of 2000 about 50 percent of full-time workers are subject to some form of workplace drug testing, according to the Substance Abuse and Mental Health Services Administration, a division of the U. S. Department of Health and Human Services.

As a construction company perspective, considering research results on this subject that shows that companies that use drug-testing methods for their employees experience a 51% reduction of incidents within 2 years of implementation and its significant effect in reduction of workers' compensation experience modification rate, it is necessary to have drug-testing for new employees and periodical tests for workers. Indirect gains <https://assignbuster.com/the-occupational-safety-and-health-act-implementation/>

other than reduction in incidents and insurance costs is improving productivity of workers in a drug-free environment and also reducing absenteeism (Gerber & George, 2001).

## **Return to Work Policies**

Companies need a return to work policy for employees who have been injured to return them to employment as early as it is physically possible for the employee to continue work after the injury and the working conditions would not aggravate his or her injuries. In order to speed recovery and reduce insurance costs. In some cases, transitional temporary positions may be offered to the employee due to his or her conditions until full recovery. The job requirements should meet physician's restrictions, and the employee cannot return to his or her routine job without a release from the attending physician.

Immigrants comprise an increasingly larger percentage of the total construction labor force in the United States, 2.4 million, or around 24 percent (US Census Bureau 2006), of workers are foreign born. Most of immigrant workers in construction are Hispanic, near 1.4 million (Center of Construction Research and Training 2002), with more than half of them being from Mexico (American Community Survey, PUMS 2004). Studies show that injuries and illnesses of Hispanic workers compared to other ethnicity's workers such as non-Hispanic whites and blacks are higher (Robinson, 1989). Therefore in order to have an effective safety program it is critical to consider non-English speaking workers, main factors affecting safety in job site for immigrant workers is lack of training in their mother tongue,

communication problems with non-Hispanic workers especially in safety issues, and lack of understanding of safety signs and written procedures.

Recent studies suggest increasing designers' and engineers' role in construction safety. Proposed elements to be considered in design include reviewing the designs to ensure that the designs provide a reasonable level of worker safety (since the design is usually governed by criteria such as cost or function) and creating design documents for safety such as providing points of anchorage for fall arrest systems or points of anchorage for scaffolding (Toole, 2005). In order to reach a safe design designer should become more knowledgeable in construction safety and with OSHA standards and stay current with safety issues (Richard J. Coble, 1999).

Site-Layout can play an important role in safety in a construction job site. In crane operations safety protection against falling objects is required by OSHA, a further step is to plan site-layout to locate trailer and site offices and other high occupancy facilities out of the range of crane operations. Other element of safety in site-layout is location of storages for hazardous material such as explosives, toxic and flammable material or radioactive materials. Storages should be located in a manner that there is adequate separation between material or equipment that result in a hazardous combination, for example flammable material and power lines. Furthermore it is important in planning a site-layout to locate routes of equipment, vehicles and workers movement in a safe manner to reduce collisions especially at intersections (Rayes & Khlafallah, 2005).