

A Strategic Construction Safety Program – Benefits and Guidelines for Implementation

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ABSTRACT

Today's construction projects are growing in complexity. In order to succeed on the global level, construction organizations must not approach construction safety and health as just another step in avoiding unwanted accidents or federal fines, but as a strategic tool, that if implemented effectively, will have the potential to maximize competitiveness and profit. A multitude of benefits accrue when a construction organization implements a strategic comprehensive safety program. The paper looks at the potential benefits and then proposes guidelines for implementing such a safety program. Major recommendations proposed for effecting successful strategic safety programs are: cooperation and teamwork from all layers of management and employee ranks for adopting comprehensive safety initiatives into the day-to-day operations of construction projects, and influencing fundamental changes in safety operations by developing new behaviors in the way construction projects are managed and the ways in which construction personnel train, communicate and interact with each other. In all, implementing such initiatives will fortify a construction company's reputation; increase profitability; and facilitate long-term success.

Keywords: Safety Program, Strategic Safety, EMR, OSHA, Construction Industry

1. INTRODUCTION

Although dramatic improvements have taken place in recent decades, the safety record in the construction industry continues to be one of the poorest (Huang and Hinze, 2006). Research shows that the major causes of accidents are related to the unique nature of the industry, human behavior, difficult work site conditions, and poor safety management, which result in unsafe work methods, equipment and procedures (Abdelhamid and Everett, 2000).

The loss or injury of trained and experienced workers, and the worker disruption to progress of work, undeniably represent reduction in the performance of construction. The cost of accidents which includes increased insurance cost, lost productivity and disruptions, provides an economic motivation to try and prevent accidents from happening: safety culture can set the tone for implementation of safety in construction site environments.

Recent improvements in safety management have taken place as a combination of efforts of owners, contractors, subcontractors, and designers. The owner's involvement has shown to favorably influence project safety performance by setting safety objectives, selecting safe contractors, and participating in safety management

during construction (Huang and Hinze, 2006). However, safety is implemented, in essence, by contractors on work sites who indeed need to adopt adequate safety related systems for the provision and control of work environment systems and human behavior. Hence presence of a safety culture in a contracting organization is immensely needed which should be concerned with the determinants of the ability to manage safety from top to bottom organizational attribute approach (Mohamed, 2003). This safety culture is largely dependent on a strategic comprehensive safety program.

The complexity of interrelationships between developers (owners), general contractors, subcontractors, suppliers, and the traditionalistic nature of the construction industry in general, have been slow to initiate strategic comprehensive safety programs and methodologies as a means to improve profitability, project collaboration, communications, competitiveness, and service quality.

This paper attempts to discover the applicable benefits and relevant factors that confront a construction concern when adopting strategic safety applications within the modern construction environment. The correlation between construction and safety protocols is explored through an examination of operational initiatives that allow a construction concern to harness existing market opportunities and aggregate increased financial strength in the modern world of heightened safety awareness and regulatory compliance by the governing bodies. The implementation of new ideas and methodologies can largely serve to reshape the organizational culture, structure, performance, profile, and competitiveness of the contemporary construction firm for the near and long-term future.

2. NEED FOR A STRATEGIC SAFETY PROGRAM IN CONSTRUCTION INDUSTRY

The following discussion attempts to demonstrate the need for strategic safety management in the construction industry. Current citation record and citation impact are discussed in order to justify the argument that today's construction industry, although thoroughly controlled by safety legislation and regulations, still demands an improved safety environment for at least two reasons: 1) reducing the number of fatal and non-fatal worker injuries, and 2) improving contractor Experience Modification Rating (EMR) values in order to make them "safe" i.e. curtail the high risks associated with being "unsafe". The authors further argue that as today's construction projects are growing in complexity, in order to succeed on the global level, construction organizations must not approach construction safety and health as just another step in avoiding unwanted accidents or federal fines, but as a strategic tool, that if implemented effectively, will have the potential to maximize competitiveness and profit.

CITATION RECORD

The governing body that regulates occupational health and safety, OSHA, has been fervent in recent years in their quest to tackle the missteps of the construction industry. In fact, the recent spat of construction accidents and deaths within the residential construction boom throughout the country has only fueled their aim and ambition towards public health and safety. To mitigate the aggregation of accidents and deaths, OSHA has relied on its long-standing tools of prevention while inspecting construction sites – the issuance of citations upon discovery of code violations. According to OSHA's website (OSHA, 2008), the leading sources of OSHA violations are ranked and listed as follows (October 1, 2006 to August 30, 2007):

- Scaffolding - 8,030 violations
- Hazard communication - 6,641 violations
- Fall protection - 5,504 violations
- Respiratory protection - 3,904 violations (No. 5 in 2006)
- Lockout/Tag out - 3,711 violations (No. 4 in 2006)
- Powered industrial trucks - 2,871 violations (No. 8 in 2006)
- Electrical (encompassing wiring methods, components and equipment for general use) - 2,785 violations (No. 6 in 2006)
- Machine guarding - 2,743 violations (No. 7 in 2006)
- Electrical (general requirements) - 2,120 violations (No. 10 in 2006)
- Ladders - 2,054 violations (new standard as compared to 2006)

While violations indicate the existence of safety deficiencies, the by-product of these violations is the unintended accident and fatality rates within the construction industry. According to data from the Injuries, Illnesses, and Fatalities program at the U.S. Bureau of Labor Statistics (2007), the construction industry garnered 1,226 fatal occupational injuries (21% of all workplace fatalities across all industries) and 412,900 nonfatal injuries and illnesses (10.4% of all the country's nonfatal occupational injuries and illnesses) in 2006. The fatality rate was 10.8 per 100,000 employed in construction versus 3.9 per 100,000 employed in all industries, whereas the nonfatal injuries and illnesses incidence rate was 6.3 per 100 full-time workers in construction versus 4.6 per 100 full-time workers in all-private industry.

CITATION IMPACT

The divergence in accident rates and safety violations within individual firms has led to a preferential selection process when analyzing the ideal candidate amongst a pool of general contractors bidding for a potential construction contract. Thus, construction companies who embrace safety programs as an operational credo demonstrates a competitive advantage over those firms who do not. As such, an understanding of the uses and impacts of OSHA imposed violations is explored.

Clarke (2006) surmised that over the last few years the construction industry has used a company's OSHA citation history, or OSHA liability as a general indicator of a company's safety performance. Fair or unfair, Clarke indicated this somewhat myopic viewpoint has garnered significant impacts on prominent construction issues which include: requests for proposals, general contractor evaluations, lawsuits, expert witnesses, public relations, union grievances, year-end evaluations, insurance underwriting, and repeat violations as principles for discourse.

Request for Proposals. The first element, request for proposals (RFPs) relates to the responsibility of general contractors to provide information pertaining to current safety programs in force and the individual responsible for safety at the subject organization. Additionally, many contemporary owners ask for a contractor's recent citation history from OSHA (three to five years) as a qualifying determinant and request what steps were taken to prevent similar occurrences in the future for each and every citation. Thus, depending on the weight of the safety section in an RFP, a pronounced number of OSHA citations could negatively affect the RFP scoring process and ultimately, which company is awarded the project.

General Contractor Evaluations. General contractors may evaluate subcontractors with the same stringency imposed on them by owners. Various subcontracted work may not require using the "lowest qualified bidder." As such, a general contractor may opt for a higher bidder in work with better safety performance history. It may cost more, but it also reduces the GC's exposure to claims from subcontractor employees and uses a subcontractor citation history as a determinant for past safety performance.

Lawsuits. The defense strength of injury lawsuits may be compromised. By itself, a company's OSHA history may be introduced into evidence by injury claims arising from work-related accidents and based on the rate of recurrence and gravity of citations, such information can damage the defense to a claim.

Expert Witnesses. A company can utilize the services of expert witnesses to defend injury claims or appeals to an OSHA citation. Such safety experts leverage a company's OSHA citation history to prove that its safety programs are "effective in practice" and use it as an indicator of a company's safety program effectiveness.

Public Relations. The advent of copious information (i.e. the internet) and instant communications has unrestrained public relations and heightened public awareness. In fact, any construction company's entire OSHA history is readily available from the web. Any person or media organization can access and broadcast this information to the public within minutes of an accident occurring. Negative reports that detail a company's OSHA citation history can affect the public's perception of the company and impact current and potential clients that obtain such accident reports. Clearly, such information hampers the possibility of future work with potential clients.

Union Grievances. A company often utilizes the services of labor union representatives to defend a company's actions in union grievances. It is immaterial that the grievance is safety related or not, the company's OSHA history can still be a source for discussion in formal proceedings. Once more, a company's history of OSHA citations can be positive or negative depending on its history.

Year-End Evaluations. A company may include safety performance criteria in the annual review process of project managers, superintendents, etc. The number and severity of OSHA citations, or the absence of such citations may be used as a means to determine pay raises or bonuses.

Insurance Underwriting. Since claims history is a major indicator in insurance underwriting, such companies incorporate OSHA statistics and citation history into their underwriting analysis, which can affect insurance premiums and/or a company's ability to obtain coverage.

Repeat Violations. The costs associated with repeat OSHA violations can be enormous. A repeat violation not only shows a lack of discipline and respect for safety standards, OSHA may impose additional fines up to seven times the original infraction amount.

Well run and profitable construction firms typically also support effective safety management programs, regardless of the direction of the insurance market (McDonald and Haymark, 2001). This is because a safe contractor, with a lower Experience Modification Rating (EMR), can create a substantial competitive advantage through superior safe experience. Moreover, safe owners are reluctant to permit contractors to bid work without acceptable EMRs. Thus the most important step in controlling costs is to run safe construction projects, which require strategic implementation of safety as a business process.

3. LITERATURE REVIEW

A company's safety program is a philosophy, belief and commitment that upper management has towards safety. Many successful companies define their safety program as the foundation at which their safety is built upon.

One of the earlier studies on the construction safety program by Hislop (1991) reached the conclusion that the success of a construction safety program depends to a great extent on management involvement. "Without serious and persistent management commitment, merely adopting a safety program does not yield desired results." The author pointed out that in order to successfully implement the safety program, effort should be made by management to establish policy, monitor implementation, provide feedback, and follow-up.

Smith and Roth (1991) identified how the owner's liability for safety is developed through the contract documents and court decisions relative to liability. Steps to reduce the potential liability for the owner and construction manager are also identified as part of an active safety management role.

Findley (2004) reports, "a comparison of construction safety management practices applied or recommended by government agencies; a description of the impact of worker protection programs on accident rates; and an analysis of successful worker protection programs [yielded] the following elements as essential to effective construction safety programs, to include:

- 1) A written, comprehensive safety and health program/plan
- 2) Safety and health responsibility and accountability clearly established and implemented;
- 3) Employees involvement in the design and operation of the safety and health program;
- 4) Employees possessing the overall fitness to perform the work;
- 5) Worksite analysis that identifies safety, health and ergonomic issues;
- 6) Safe work practices that effectively manage worksite hazards;
- 7) Frequent worksite inspections;
- 8) Emergency response planning performed to respond to rapidly changing hazards on construction worksites;

- 9) First aid and medical facilities that address the unique requirements of each worksite;
- 10) accidents that are properly investigated, reported and analyzed;
- 11) Training and safety meetings that are tailored to the specific hazards of a particular worksite;
- 12) Joint safety and health committees that encourage employee involvement; and
- 13) Contractor/subcontractor relationships for safety and health activities that are well-defined.”

Osama et al. (2006) conducted a survey to examine the correlation between management commitment to safety and the frequency of construction-related injuries and illnesses. Survey results point to a clear statistical correlation between management commitment to safety and injury and illness rates.

Choudhry et al. (2007) presented a robust conceptual model to provide a critical review of the term “safety culture”; along with distinct yet related concepts, i.e., safety climate, behavior-based safety, and safety system. The authors also compared the proposed model with available safety culture models in order to demonstrate its applicability in construction site environments.

Previous researches demonstrate the importance of safety program, and identify various factors which strongly affect the safety performance in construction industry. However, there seems to be no comprehensive analysis on the strategy of safety program. This paper, therefore, attempt to propose the strategic safety program which is applicable to the modern construction environment

4. BENEFITS OF A STRATEGIC SAFETY PROGRAM IN CONSTRUCTION INDUSTRY

A multitude of benefits accrue when a construction organization implements a comprehensive safety program, to include:

Reduced worker compensation claims – According to a report conducted by Liberty Mutual and published by the AFL/CIO (2005), the nation’s largest workers’ compensation insurance company, pontificated “the direct cost of occupational injury and illness is \$1 billion per week and the annual cost of these injuries is between \$198.4 billion and \$297.6 billion in direct and indirect costs [for all industries].” Furthermore, another report conducted by AON and detailed by Hunter (2005) showed that Florida pays \$26.30 per \$100 of payroll for workers’ compensation costs. The financial impact of these costs is an enormous burden to the construction industry as a whole. Therefore, it behooves a company to reduce workplace injuries resulting in lower claim rates.

Reduced insurance costs and experience modification rates - The most widely used metric to determine the past safety performance of a contractors is the experience modification rating (EMR). Insurance contributor Gallagher (2006) reported: “the insurance industry developed experience rating systems as an equitable means of determining premiums for workers’ compensation insurance...these rating systems consider the average workers’ compensation losses for a given firm’s type of work and amount of payroll and predict the dollar amount of expected losses to be paid by that employer in a designated rating period, usually three years. [Such] ratings are based on a comparison of firms doing similar types of work, and the employer is rated against the average expected performance in each work classification. Losses incurred by the employer for the rating period are then compared to the expected losses to develop an experience rating [whereby] workers’ compensation insurance premiums for a contractor are adjusted by this rate...lower rates, meaning that fewer or less severe accidents had occurred than were expected, [will] result in lower insurance costs.”

Reduced expenses related to injuries - Accidents and the resulting injuries are not the only casualties on a worksite. Frequent causes of injury are attributed to the misuse or failure of tools and equipment. As such, an embedded cost for the repair and/or replacement of any damaged equipment or materials must be absorbed. Proper training on the safe operation and maintenance of such devices will help to mitigate the chances of these costs occurring.

Improved employee relations - The responsibility of management is to provide a safe and healthy working environment. Implementing a comprehensive safety program sends the message to employees that the company cares for their health and well-being. Subsequently, employees will respond in kind with increased morale, positive attitudes and job satisfaction that result in lower employee turnover and reduced absenteeism rates.

Increased productivity and work quality - A portion of productivity is lost for employees and supervisors attending job site accidents, not including the requisite time necessary to clean up and restart normal operations caused by the accident. This lost output cannot be recovered; only additional outputs and efforts can make up lost time. More importantly, such interruptions can last several hours that can threaten precise work schedules and engross curious workers more interested in the “action” surrounding the incident, rather than performing their tasks. Such circumstances may also have a direct impact on work quality. Again, a safety plan based on a strategic safety program will incorporate several elements of safe equipment (e.g. scaffolding, rigging, power-actuated guns, power tools, welding equipment) usage and operation; applying such techniques will not only improve the safety but also the quality, speed and performance of job site tasks.

Reduced administrative costs - Lesser-known expenditures of managing accidents and injuries are the time and costs required to process and manage information flow. A multitude of forms, to include; insurance files, workers’ compensation claim forms, OSHA accident logs and reports, and legal documents (litigation defense) direct attention away from daily operations; such activity has an implied cost. Again, reducing the frequency or existence of accidents reduces these outputs.

Reduced costs for training new employees - The costs of training new employees on the policies and procedures of a construction company can be substantial. In fact, Sharpnack (2006) reported that construction companies place the cost of losing employees and recruiting replacements from \$500,000 to \$750,000; this includes the costs associated with hiring, training and compensating the individual for a period of five years.

Updated safety equipment - Recent advances in safety equipment (e.g. lightweight harnesses, RFDI lanyards, etc.) have yielded stronger materials and better components. These innovations have increased the overall reliability of safety equipment; while improving the margin of safety should an accident occur.

Increased revenues – The most important component of any business, construction organization or not, is to increase revenues and chart long-term growth. The advent of a strategic comprehensive safety program (and a pristine safety record) may represent a competitive advantage or a core competency in relation to other firms competing for the same projects. Furthermore, this differentiation from the competition should be an important component in the dissemination of company materials and marketing efforts (e.g. bid presentations, brochures, websites, trade shows, etc.). All other matters being equal, the safety-directed construction company will fare better and win more public/private construction projects; more projects equates to additional revenues and ultimately, more profits.

5. GUIDELINES FOR IMPLEMENTING A STRATEGIC SAFETY PROGRAM

The implementation of a strategic comprehensive safety program begins with a broad analysis of the component strengths and weaknesses of established safety policies, past safety performances, violation history and management’s support towards such programs. During the implementation, following principles should be complied with in order to obtain success.

Establish Clear Goals and Objectives

The goals and objectives of the program must be clearly defined and accompanied by a scheduled timeline for achieving such safety improvements. Essentially, the goals and objectives act as a strategy that should be continually measured and improved in the short-term (1-year), intermediate term (3-year) and long-term (5-year).

Obtain Commitment from Management

The commitment of management must be visible if their subordinates are to believe and trust in the advent of safety programs and not simply promote a “paper” program. Management must commit adequate resources to fund the program. This includes the salary of the safety supervisor and funding of: safety materials (e.g. CDs, booklets, training courses, guest speakers, safety trade shows, etc.), monetary rewards and prizes (e.g. 30 days without incident, best safety idea, etc.), advances in safety technologies (e.g. RFDI lanyards, harnesses, hard hats, gloves, eye protection, ergonomic tools, barricades, safety netting and barricades, rigging equipment, signage, etc.).

Establish the Responsibilities of Safety Supervisor

As with any program, the success of a wide-ranging safety program begins with the operational and financial support of the management team, from both field office and home office personnel. Project managers, supervisors, administrators, and managers alike must work together and embrace teamwork when developing and managing such programs.

Although safety programs can be administered through the teamwork approach, a more ideal conduit is to employ an experienced safety supervisor skilled in all matters relating to OSHA compliance and safety. As such, the first prudent step in implementing a safety program is to designate a safety supervisor/director to oversee all construction projects and allocate resources so they can perform such duties. Chart 1 shows the responsibilities of safety supervisor in safety program.

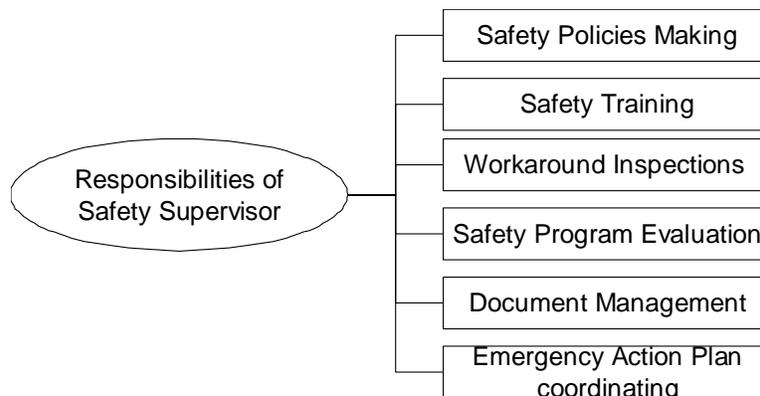


Chart 1: Responsibilities of Safety Supervisor

The importance of the safety supervisor to facilitate change and manage safety cannot be underscored—their responsibilities can be substantial. Typically, safety supervisors select the appropriate program/aterials for their particular construction classification; keep abreast on changing safety policies and governmental regulations (e.g. OSHA, NIOSH, EPA, state/local authorities).

Safety Supervisor also performs workaround inspections. They monitor the compliance of the safety policies and procedures, and make sure that the safety program is executed correctly.

Another responsibility of safety supervisor is to evaluate the effectiveness of existing programs and operations. Proper evaluation begins with a site-specific analysis that identifies the project description and general access; site security; emergency response to hazard types; the methodology to reduce or eliminate hazards; current training programs and their deficiencies; evaluation of subcontractor safety rules and procedures; and the frequency of site safety inspections and meetings.

It is also safety supervisor’s responsibility to conduct training courses on the proper use and management of safety observation techniques, personal protective equipment (e.g. harnesses, boots, hard hats, goggles, face shields, gloves, earplugs, etc.), barricading and netting, CAZs (control access zones), cranes and rigging,

scaffolding, machine guarding, lockout/ tagout, confined-space entry, excavation, heavy equipment, chemical/hazardous material storage, compressed gas cylinder storage (welding) and material stocking among a litany of subjects.

Another role they must perform relates to document management and record keeping. This involves managing various OSHA forms [incident logs (OSHA 300) and accident investigations], workers' compensation claims, employee medical histories, subcontractor certifications on fall protection and heavy equipment, subcontractor hurricane preparation plans, safety awards/recognition (public relations), MSDS reports, safety checklists, and internal safety violations. Safety supervisors also serve as guides for the various unannounced inspections including: OSHA inspectors, bonding company agents, and voucher control agents (bank representatives) who verify construction milestones in relation to their investment.

Additionally, safety supervisors are key participants in coordinating an Emergency Action Plan (EAP). As such, they develop safety escape routes, evacuation routes (contamination), and general accident prevention programs. Should a site worker is injured or killed, they typically respond with first aid, contact the appropriate emergency service personnel (e.g. ambulatory, fire, police, EPA, etc.), and follow-up with the individual post-emergency.

Finally, safety supervisors are frequently involved in the administration of drug testing and drug/ alcohol outreach programs for the company (depending on the company scale). Statistically, according to a recent poll of 305 construction companies, ranging in size from 4 to 196 employees and reported by Finley [8], only 51 percent of respondents reported having a full-time, dedicated safety supervisor.

Of course, such administration is not limited to the safety supervisor; general management and other supervisors (e.g. structural, interior, etc.) have responsibilities as well. Their primary responsibility is to provide a safe working environment for all subcontractors to perform their specific task. Another responsibility of management is to support the efforts of the safety supervisor as a legitimate member of the construction team (traditionalism) for all levels to witness.

Since supervisors are the most visible members of a construction site, their vast experience carries the most influence. Their responsibilities to safety awareness manifests by enforcing safety rules and regulations upon the subcontractors under their supervision, providing training to workers on the proper use of equipment and ways to avoid specific hazards; and promoting the reporting of injuries and near-misses as a means for safety education.

Develop Training Programs

A series of documents (e.g. safety manuals, safety flyers, signage) and training programs must be developed or made available in languages other than English (e.g. Spanish, Creole) that relate to the diversity in the subject workforce. Thus, communication and cooperation is emphasized as vital components of a successful safety program.

Associate Safety Performance with Pay Raises and Bonuses

Establishing external and internal safety performance scores as a section within each worker's annual review process towards determining pay raises and bonuses is significant. The external safety performance review relates to OSHA-based violations, citations and remedies, whereas the internal safety performance review relates to the company's own observation of worker violations. Consequently, the monetary element will reinforce the attitude that safety is paramount to the organization and a key factor in employee compensation.

Get Employees Involved

The safety program should mandate monthly, if not weekly meetings to discuss job site hazards, near misses, and changing conditions that may impact safety. All workers should be encouraged to voice their opinion and offer recommendations without repercussion or insult (traditionalism).

Inaugurating a safety recognition program that rewards employees with money, prizes or other compensation (e.g. time-off) as an incentive for promoting safety ideas and awareness, and for having outstanding safety performance scores is essential.

The safety plan should require that each employee become certified in OSHA's 10-hour or 30-hour industry outreach safety program. This comprehensive program details safety standards and regulations of all construction issues through computer presentations, followed by chapter quizzes. Upon completion, each employee receives documentation (i.e. wallet card) certifying their attendance and understanding of the program's basic safety concepts, procedures, and hazards.

Select Subcontractors with High Safety Performance

Prequalifying and analyzing each subcontractor's safety performance record as a major determinant for subcontractor selection would be helpful; such information will ensure the subject subcontractor emphasizes safety and health in the performance of their duties.

Conduct Constant Evaluation and Continual Improvement

Implementing a safety program should entail constant evaluation (e.g. audits) and continual improvement as an operational directive.

In concert, clear goals and objectives, the commitment from management, full-time safety supervisor, safety training (OSHA) classes, incentive policies, employee involvement, subcontractor selection, incentive policy, and constant evaluation and continual improvement all combine to form essential components of a strategic safety program.

6. CONCLUSIONS AND RECOMMENDATIONS

Safety management should be given the same level of importance as that accorded to the more usually considered areas of time, cost, and quality management. In the United States, government agencies such as OSHA have done their part to promote a zero injury environment. However, the key to proper safety execution is not necessarily through strict guidelines and standards, but through effective strategic initiatives, first supported by an organization's senior management, then integrated via specific safety management implementation tools/ systems, and finally by continuous follow up and monitoring to ensure continuous improvement.

This paper elaborates the benefits of a strategic construction safety program, and presents the guidelines for implementing such a program. The recommendations for effecting successful safety programs are dependent on several factors. Firstly, adopting comprehensive safety initiatives into the day-to-day operations of construction projects will require cooperation and teamwork from all layers of management and employee ranks. Secondly, clearly defined goals and objectives must be measurable and attainable for such programs to succeed. These fundamental changes in safety operations will require new behaviors in the way construction projects are managed and the ways in which construction personnel train, communicate and interact with each other. In total, implementing such initiatives will fortify a construction company's reputation; increase profitability; and facilitate long-term success.

Successful implementation of comprehensive safety management in the construction industry can be achieved through persistence, positive hands-on leadership, upfront preparation and continuous maintenance of a sensible plan. The following basic steps are identified:

- i. Obtain owner commitment to safety management. This is crucial to success.
- ii. Generate awareness, educate project staff and change attitude.
- iii. Develop and document approach to safety management to projects.
- iv. Prepare project safety management plans for all levels of work.
- v. Install organization and managing bodies.

- vi. Institute proper tools and techniques which may enable the participants perform formal safety management.
- vii. Promote staff participation and contribution by pre-task meetings and initiate brainstorming sessions.
- viii. Review safety management plans and measure performance.
- ix. Strive for continuous improvement.

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