



RESEARCH PAPER

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Construction health and safety model towards adoption

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Abstract

This study aimed to assess the safety and health of contractors in Zamboanga Del Norte, Philip-pines, in terms of workforce, workplace, and work implements. It also aimed to evaluate compliance with occupational health and safety standards regarding occupational safety and health training, a health and safety plan, civil works activities, and heavy equipment operations. It combined quantitative research with a self-created questionnaire that explains and forecasts concepts that can be applied to other people and locations and objectively measures the variable(s) of interest, selected, constructed, and standardized with validity and reliability in mind. The findings revealed that respondents only partially adhered to construction safety and health in personnel, workplace, and work equipment. Occupational health and safety criteria were partially met in occupational safety and health training, health and safety plans, civil works activities, and heavy equipment operations. The Level of Compliance for construction safety and health was also partially met. As a result, it is advised that construction companies will adopt the revised construction safety model.

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Introduction

The construction industries in developed and developing countries are stigmatized for poor performance (Enshassi and Abushaban, 2009). Unlike the manufacturing industry, the cyclical, fragmented, and volatile nature in terms of safety and health, the Real Estate Developers Association (REDA) and the Hong Kong Construction Association Ltd., or HKCA, have decided to form a partnership in which both occupational bodies will subsidize the way for participating companies to achieve specific performance targets within a given period through a Partnering Program. They provided manuals for employers, workers, and worker representatives that included a sound, malleable structure for addressing safety and health issues in small and medium-sized workplaces. They take a proactive approach to managing workplace safety and health with their procedures. It is more effective than traditional procedures, which are generally reactive after problems have already occurred, such as when a worker is wounded or sick. The proactive approach is used when a new standard or regulation is published. These rules identify is-sues and correct them before they become risks, causing damage, disease, or even death. Focusing on the procedures of a basic program and simple goals is the conceptual key to progress. From there, learn to design and assess outcomes. If safety and health measures are implemented in the workplace, your company's success can rise to new heights.

As a result of this situation, construction has a high rate of accidents, making it an unsafe industry. The degree of safety in this particular economic sector to determine by a collection of accidents that occurred within a given time interval. It is necessary to know accident trends to assess the level of safety and possible modifications (Szosta, 2014).

The high percentage of accidents and injuries in the construction industry globally enables us to evaluate our priority from past performance to the utmost determinants of safety and health. By giving attention to human factors, organizations can identify and

differentiate potential hazards of reckless behavior prior to the incidents of accidents or illness. One way to achieve this is to measure 'leading' safety factors, such as health and safety adoption. The objectives of this research are to identify the ways to adopt and implement the suitable and efficient health and safety construction towards adoption for the construction project in Zamboanga Del Norte to prevent accidents and injuries in the construction industry as well as to provide a safe working environment.

Occupational safety and health are concerned with the creation, promotion, and maintenance of workplace policies and programs that ensure employees' mental, physical, and emotional well-being and keep the workplace environment relatively free of actual or potential hazards that could injure employees (Nrrenda *et al.*, 2015). However, the number of articles regarding OSH in construction was small until fifteen years ago. Since 2001 the number of OSH publications relating to construction has increased. From different perspectives and using different tools researchers have studied occupational hazards in construction. (Sousa *et al.*, 2014) state that there are several tools and methods to investigate and understand occupational accidents in the construction industry.

Construction Occupational Safety and Health (COSH) programs in our country are primarily designed to prevent workplace injuries, illnesses, deaths, and the resulting suffering and financial hardship. It will have a significant impact on the lives and work performance of employees and employers because it will cause the project to be delayed.

Employers have discovered that applying these standards has numerous benefits, such as improving employee relationships and creating a cooperative climate between management and employees. They've been linked to 1. higher product, process, and service quality; 2. Higher employee morale; 3. Better recruitment and retention; and 4. A better reputation among customers, suppliers, and the community.

Number 13 of the Series of 1998 D.O. Construction Industry Occupational Safety and Health Guidelines emphasize the methodology to be used in estimating the cost of construction safety and health program, as required in Section 17. Construction safety must be considered at all stages of project procurement (design, estimate, and construction), and its cost must be integrated into the overall project cost under Pay Item "SPL- Construction Safety and Health" as a lump sum amount to be quantified in the detailed estimate, according to Section 17 of DOLE D.O. No. 1.3. House Bill No. 2962. An Act Establishing a Green Building Standard for Planning, Design, Construction, Operation or Maintenance Practices, Renovation, Expansion, and Retrofitting of Government Building Projects in the Country.

Management must provide good leadership, vision, and resources for an adequate safety and health program. Business owners, CEOs, managers, and supervisors at all levels must be fully committed to guiding the improvement of the workplace's safety and health performance, making worker safety and health a central organizational value, allocating sufficient resources to implement the safety and health program, and being transparent in demonstrating and communicating with workers.

In terms of workforce, workplace, and work implements, this study aimed to assess construction safety and health among contractor associations in Zamboanga del Norte, Philippines. It also aimed to assess compliance with occupational health and safety standards in occupational safety and health training, health and safety plans, civil works activities, and heavy equipment operations. It also aimed to determine compliance with construction safety and health regulations and develop a construction safety program that could be used before the project began.

Materials and methods

The construction industries in developed and developing countries are stigmatized with poor performance (Enshassi and Abushaban, 2009). Unlike the manufacturing industry, the cyclical, fragmented,

and volatile nature of the construction industry in the construction business, risk management has evolved into a dynamic partner. Accepting and managing risk has long been a part of the industry, and the ups and downs of your company will be measured as a result. Developers and their contractors both want to complete projects on time. In order to do so, each program should have clear instructions and a uniform policy between the customer and the owner in terms of corporate safety objectives. It appears to be a 'win-win' arrangement for the owner, the contractor, and the laborers.

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heavy equipment operations. It also aimed to determine compliance with construction safety and health regulations and develop a construction safety program that could be used before the project began.

Results

This section contains all of the findings related to the assessment of construction safety and health among

contractors in Zamboanga del Norte, Philippines, in terms of work-force, workplace, and work implements; compliance with occupational health and safety standards in terms of occupational safety and health training; health and safety plan; civil works activities; and heavy equipment operations.

Level of compliance on occupational safety and health in terms of workforce

As indicated in Table 1, there were four (4) items related to occupational safety and health in terms of workforce.

Table 1. Table 1. Level of compliance of the respondents on occupational safety and health in terms of workforce.

Indicators	Mean	Description
Non-Skilled Labor	1.5	Partially Complied
Skilled Labor	1.4	Partially Complied
Non-Skilled Professional	1.6	Partially Complied
Skilled Professional	1.9	Partially Complied
Average weighted mean	1.6	Partially Complied

Legend: (0.0-0.9 --> Not Complied; 1.0-1.9 --> Partially Complied; 2.0-3.0 --> Fully Complied)

Level of compliance on occupational safety and health in terms of workforce

Table 2 shows the compliance level of contractors in Zamboanga Del Norte on Occupational safety and health in terms of the workplace.

Table 2. Level of compliance of the respondents on occupational safety and health in terms of the workplace.

Indicators	Mean	Description
Welding and Fabrication Area	1.5	Partially Complied
Wood and Furniture Area	1.4	Partially Complied
Concrete and Masonry Area	1.6	Partially Complied
Formwork and Scaffolding Area	1.9	Partially Complied
Electrical Area	1.6	Partially Complied
Mechanical Area	1.9	Partially Complied
Painting Area	1.4	Partially Complied
Equipment Area	1.5	Partially Complied
Average weighted mean	1.6	Partially Complied

Legend: (0.0-0.9 --> Not Complied; 1.0-1.9 --> Partially Complied; 2.0-3.0 --> Fully Complied)

Level of compliance on occupational safety and health in term of work implements

Table 3 shows the level of occupational safety and health compliance among contractors in Zamboanga Del Norte in terms of work implements.

As shown in the table, there were eighteen (18) pieces of information relevant to occupational safety and health in terms of work implements. The average weighted mean for partial compliance is 1.28, and the average weighted mean for complete compliance is 1.6. This implies that the contractors did not wholly comply with Department Order No. 13 Construction Safety Program Standards.

They are working in areas where hot cutting and welding of metals, handling burning materials, working with live electricity above 50 volts, handling noisy, exposure to harmful dust, and a lack of oxygen are examples of this.

Table 3. Level of Compliance of the respondents on occupational safety and health in terms of work implements.

Indicators	Mean	Description
Work near unprotected areas	1.2	Partially Complied
Work involving the pouring of concrete	1.1	Partially Complied
Work involving the laying of asphalt	1.5	Partially Complied
Working with derricks and cranes	1.7	Partially Complied
Working with the earth moving equipment	1.2	Partially Complied
Manual excavation or digging	1.2	Partially Complied
Work on top of or near bodies of water	1.1	Partially Complied
Work where hot cutting and welding of metals	1.5	Partially Complied
Work involving exposure to or handling of hot Materials	1.7	Partially Complied
When working with live electricity above 50 volts	1.2	Partially Complied
Work involving the handling of noisy	1.2	Partially Complied
Work involving exposure to harmful dust	1.1	Partially Complied
Work that may involve shortage of oxygen	1.5	Partially Complied
Working with atmospheres containing contaminants above recommended threshold limit values for airborne contaminants	1.0	Partially Complied
Working with organic solvents or toxic and/or corrosive chemicals	1.2	Partially Complied
Working near vehicular traffic	1.1	Partially Complied
Work involves working underwater	1.6	Partially Complied
Working at night under low lightning conditions	1.0	Partially Complied
Average weighted mean	1.28	Partially Complied

Legend: (0.0-0.9 --> Not Complied; 1.0-1.9 --> Partially Complied; 2.0-3.0 --> Fully Complied)

Level of compliance of the respondent as to occupational safety and health training

As presented in table 4, there was nine (9) level OSH compliance standards in terms of OSH Training: The AverageWeighted Mean is 1.37.

Table 4. Level of compliance as to occupational safety and health training.

Indicators	Mean	Description
Basic Occupational Safety and Health (BOSH)	1.4	Partially Complied
Construction Occupational Safety and Health (COSH)	1.5	Partially Complied
Basic First Aid	1.1	Partially Complied
Scaffolding Safety	1.6	Partially Complied
Rigging Safety	1.7	Partially Complied
Heavy Equipment Operation's Safety	1.1	Partially Complied
Basic Driving Safety	1.2	Partially Complied
Electrical Safety	1.5	Partially Complied
Fall Arrest Safety	1.3	Partially Complied
Average weighted mean	1.37	Partially Complied

Legend: (0.0-0.9 --> Not Complied; 1.0-1.9 --> Partially Complied; 2.0-3.0 --> Fully Complied)

Level of compliance of the respondent as to occupational safety and health training

As presented in Table 5, there were Fourteen (14) level OSH compliance standard in terms of OSH Plan. It has an average weighted mean of 1.31.

Table 5. Level of compliance as to safety and health plan

Indicators	Mean	Description
Hazard controls	1.2	Partially Complied
Warning and barricades	1.0	Partially Complied
Temporary lightings	1.3	Partially Complied
Confined Space Entry Procedures and Permit	1.9	Partially Complied
Emergency response plan	1.3	Partially Complied
Providing site storage facilities	1.2	Partially Complied
Safety Installation, Use and Dismantling of Hoisting Equipment	1.0	Partially Complied
Testing, inspection, and certification of heavy equipment	1.3	Partially Complied
Workers Skills certification	1.9	Partially Complied
Safety while Using Transport Facilities	1.3	Partially Complied
Health Care and First Aid Facilities	1.2	Partially Complied
Worksite Toilet and Sanitary Facilities	1.0	Partially Complied
Work Schedules and Working Hours	1.3	Partially Complied
Waste Disposal	1.9	Partially Complied
Average weighted mean	1.31	Partially Complied

Legend: (0.0-0.9 --> Not Complied; 1.0-1.9 --> Partially Complied; 2.0-3.0 --> Fully Complied)

Level of compliance of the respondent as to civil works activities

Table 6 illustrates the degree of compliance of construction workers as to civil work activities. The average weighted mean has a rating of 1.18.

Table 6. Level of compliance as to civil work activities.

Indicators	Mean	Description
Working with Concrete Masonry Units	1.1	Partially Complied
Working with Scaffold-Erections	1.0	Partially Complied
Work involving exposure to or handling of Hot Materials	1.1	Partially Complied
Working with Piping works	1.4	Partially Complied
Work with painting	1.3	Partially Complied
Average weighted mean	1.18	Partially Complied

Legend: (0.0-0.9 --> Not Complied; 1.0-1.9 --> Partially Complied; 2.0-3.0 --> Fully Complied)

Level of compliance of the respondent as to heavy equipment operations

Table 7 describes the degree of compliance of construction workers as to heavy equipment operation. The overall result has a rating of 1.18 described as partially complied.

Table 7. Level of Compliance as to heavy equipment operations

Indicators	Mean	Description
Earth Moving Operations	1.5	Partially Complied
Lifting & Rigging Operations	1.6	Partially Complied
Fast Moving Operations	1.2	Partially Complied
Light Tender Operations	1.1	Partially Complied
Average weighted mean	1.35	Partially Complied

Legend: (0.0-0.9 --> Not Complied; 1.0-1.9 --> Partially Complied; 2.0-3.0 --> Fully Complied)

Level of compliance on construction safety and health

Table 8 illustrates the compliance level of contractors on construction safety and health with an average weighted mean of 1.38 described as partially complied.

Table 8. Level of Compliance on Construction safety and health

Indicators	Mean	Description
Safe Policy	1.8	Partially Complied
Health and Safety risk assessment	1.2	Partially Complied
Health and Safety Training in Construction Sites	1.2	Partially Complied
Working Environment	1.3	Partially Complied
Welfare Facilities	1.6	Partially Complied
Legislation and Enforcement of Health and Safety Regulation	1.2	Partially Complied
Average weighted mean	1.38	Partially Complied

Legend: (0.0-0.9 --> Not Complied; 1.0-1.9 --> Partially Complied; 2.0-3.0 --> Fully Complied)

Occupational health and safety constraints related to construction practices

Table 9 stipulated some related constraints of construction practices on occupational health and safety. All items were related closely to each other and described as partially complied.

Table 9. Occupational health and safety constraints related to construction practices

Indicators	Mean	Description
Confined Space	1.5	Partially Complied
Work at Heights	1.6	Partially Complied
Electrical	1.4	Partially Complied
Heavy Equipment	1.2	Partially Complied
Average weighted mean	1.4	Partially Complied

Legend: (0.0-0.9 --> Not Complied; 1.0-1.9 --> Partially Complied; 2.0-3.0 --> Fully Complied)

Discussion

It illustrates that almost all of the respondents agreed that the contractors Association in Zamboanga del Norte, Philippines, has only partial compliance with the requirements as stipulated in the D.O. Number 13, Series of 1998 as governing guidelines for occupational safety and health in the construction industry with an average weighted mean of 1.6. Only a few of them responded as they fully complied. It implies a need to adopt the designed construction health and safety model.

As indicated in Table 2, eight (8) pieces of information related to occupational safety and health in the workplace.

The average weighted mean was 1.6. As the overall rating of the respondents with partial compliance. It emphasized that the welding and fabrication area workplace has only partially complied, including wood and furniture area, concrete and masonry area, formwork and scaffolding area, and electrical, mechanical, painting and equipment area. This implies that the construction safety program standards stated in Department Order No.: 13 are not fully complied with by contractors. It shows that there's a need for the authorities to conduct safety inspections regularly and that the adoption of the model is highly recommended.

Workers also work in environments with contaminants beyond specified airborne contaminants threshold values, working with organic solvents or caustic chemicals, vehicular traffic, working underwater, and working at night under low illumination conditions. It indicates that workers at some building sites may be provided with adequate working procedures. Contractors can also apply the construction health and safety model to create a safe and secure working environment.

It goes to show that some of the workers have only a few basic training on occupational safety and health training specifically on basic occupational safety and health; construction occupational safety and health (COSH); basic first aid; as well as safety on scaffolding, rigging, heavy equipment operation, basic driving, electrical, fall arrest.

Table 5 shows that contractors did not meet all of the required requirements in their construction sites, including hazard control, warning and barricades, temporary lighting, confined space entry procedures and permits, emergency response plan availability, partial compliance with providing site storage facilities, installation of safety materials in general, and dismantling of hoisting equipment; and partial compliance on testing and inspection. They also offer partial compliance with worksite toilet and sanitary facilities, work schedules and working hours, and waste disposal facilities. This means that almost all construction companies in Zamboanga Del Norte will have to implement a new construction health and safety model to improve their current situation.

The findings found that the workers did not fully comply with all indications of civil work activities, particularly in working with concrete masonry units, scaffold erections, exposure to or handling of hot materials, pipework, and painting. The construction contractor in Zamboanga Del Norte was not fully complying with all of the required preventive measures of the construction safety program standards as indicated in Department Order No.: 13.

The findings revealed that the contractors' level of compliance with heavy equipment operations was insufficient. Partial compliance with earthmoving, lifting, and rigging operations and partial compliance with fast-moving and light tender operations. This indicates that the contractors association should adopt the researcher's construction health and safety model.

There were Six (6) level OSH compliance vis a vis the standard of construction safety P standards based on the Department Order No.: 13. Safety policy and health/safety risk assessment were partially complied with by the contractors, including health and safety training in construction sites and working environments as well as welfare facilities and legislation enforcement of health and safety regulations. This means that the level of compliance in construction health and safety is deficient since all the requirements have only partially complied with.

In terms of OSH Constraints, there were four (4) levels of compliance, as shown in table 9. Compliance with the results also suggested associated practices of contractors as to limiting space of construction safety, work at heights, and heavy electrical equipment, with an average weighted mean of 1.4 as reported by the respondents. This found that almost all contractors did not follow the construction health and safety model to the letter.

Construction Safety Program Model Description

More than only safety management is addressed by the Construction Safety Program. It's all about ensuring that practitioners are in a secure environment. All safety programs are rigorously implemented and closely monitored. Every day, construction accidents occur in our country. This is because construction companies lack a Department of Labor and Employment-approved safety program (DOLE). Before the construction begins, the construction administration must prepare a safety program. At least one (1) registered construction firm's owner must employ a safety practitioner to carry out daily safety programs to prevent worker injury or death.

This content responds to the need to stay abreast of new advances and techniques in building construction that is safe and applicable to educational institutions.

This Construction Safety Manual is designed for construction practitioners, safety personnel, construction managers, engineering students, and other stakeholders and clients in the construction industry to use as a resource for sound, efficient, and effective management of educational construction facilities and resources, as well as making them safe and conducive to construction learning activities. Its use will support the construction-based management philosophy inherent in the construction safety practices initiative's principles.

The construction safety program manual contains the following:

Health And Safety Policy ensures the adoption of safe work practices and procedures that comply with all regulatory requirements on Health and Safety, particularly the Occupational Safety and Health Standards and D.O. 13 - Guidelines Governing Occupation-al Safety and Health in the Construction Industry. They maintain and review the

Company's Health and Safety Program regularly to ensure its adequacy and effectiveness and identify existing job hazards and eliminate or reduce their risks to employees.

General Safety Rules to ensure the safety and health of our employees, protect the company's property, and provide all Company Employees with safe and healthy working conditions. Each employee must familiarize themselves with and adhere to these safety rules. If everyone uses their assigned safety equipment and follows the established safety rules, most accidents can be avoided allowing for a safe and successful construction project.

Personal Protective Equipment shall be the primary method to eliminate or reduce exposure to workplace hazards.

It cannot mitigate the hazard for which everyone must wear the required PPE. It also includes protection for the head, eyes, face, feet, and hands in its specifications and usage.

Department Order 13 prohibits the use of safety belts for fall arrest full body harness is required and defective components must be removed from service. Respiratory Protection because construction workers are frequently exposed to respiratory hazards like hazardous dust, gases, fumes, mists, and vapors. Despite these drawbacks, respiratory protective equipment is the only practical control for many construction operations.

Housekeeping in Job sites and Office Areas housekeeping and general cleanliness are essential for preventing accidents. It addresses specific housekeeping requirements and good housekeeping practices, as these are essential for fire and accident prevention in growing construction companies.

Materials Storage General rules for material storage are as follows: dry, raw materials, finished product, flammable, and compressed gas storage require procedures to pre-vent fires, keep exits and aisles clear, and avoid injuries and illnesses. Storage of Materials/Products, Flammables, Compressed Gas, Lumber, and Dangerous Chemicals.

Fall Protection it is a policy that ensures all construction areas are devoid of uncontrolled fall hazards. All employees are appropriately trained in fall prevention and protection. The procedure is inspected and monitored to determine its effectiveness.

Electrical Safety Program aims to prevent electrical injuries and property damage. Installing, repairing, or replacing electrical components or equipment is restricted to personnel qualified by this program.

Scaffolds describe the policy on erecting, moving, dismantling, or altering under the supervision of a competent person.

Confined Space only allows authorized and trained personnel to enter the confined space or act as safety watchmen. Emergency Response emphasizes that all affected personnel shall be trained in the Emergency Response Plan.

Welding and Cutting Welding and cutting are significant sources of fire and injury, so they should be indicated. It is also intended to emphasize the management's duties and responsibilities to provide training for all employees performing welding work, develop and monitor effective hot work procedures, provide safety equipment for desirable results, and provide adequate and appropriate PPE for all hot work. This also ensures that super-visors oversee all hot work operations that all hot work equipment and PPE are in safe working condition, and that only trained and authorized employees can perform hot work. That permits are utilized for all hot work performed outside of assigned areas. This policy also requires employees to adhere to all hot work procedures, use the proper PPE for hot work, inspect all hot work equipment before use, report equipment problems, and avoid using damaged work equipment. Tool Safety is a policy for utilizing tools to make numerous tasks easier. Inefficient use or maintenance can pose significant risks in the workplace. Employees who utilize tools must be appropriately trained in their use, adjustment, storage, and maintenance. This policy addresses the safety of electrical, pneumatic, powder-driven, and hydraulic hand tools. It also specifies the duties and responsibilities of management, including providing the appropriate tools for assigned tasks, ensuring that they are stored safely, training employees, and repairing equipment. It outlines the duties and responsibilities of employees to adhere to proper tool safety guidelines, report tool defects and malfunctions, and store tools properly when the work is complete.

Materials Handling "First in, First out Policy" is also a policy that ensures proper storage and handling procedures are carried out by "Standard Practice." It specifies that the construction company is responsible

for providing site storage facilities and identifying the potential location of the general materials storage area, such as aisles with sufficient, safe clearance, through doorways, and whenever there are turns and passages; ensuring that the storage of materials does not pose a hazard. Bag containers or mega bags, stored in tiers, are stacked, blocked, interlocked, and limited in height so that they are stable and secure against collapse; ensure that the storage area is kept free from accumulations of materials that constitute hazards from tripping, fire, explosion, or pest harborage; ensure that there are required clearance limits on passageways used by delivery trucks and cargo forwarders, and ensure that all covers and guardrails are in place.

Mechanical Equipment it is a policy that ensures that every part of the structure, machinery, and equipment shall be of good design, good mechanical construction, sound material, adequate strength, free from defects; kept in good working condition; manufactured following the Occupational Safety and Health Standard; and there is a warning and safety signage upon installation and dismantling, as well as a clean worksite.

Testing, Inspection, and Certification of Heavy Equipment is a procedure for the utilization of heavy equipment that has been inspected, tested, and Certified Safety for Use by a DOLE Accredited Testing Organization following the OSH Standards, As Amended, D.O. 13 and D.O. 16; follows all the registration requirements following the registering bodies such as LGU and Department of Labor and Employment; ensures that quarterly testing and inspection of heavy equipment and other mechanical equipment.

Transport Facilities There is a policy regarding providing service vehicles from the town proper and/or worker barracks to jeep line streets. It also ensures the availability of an emergency vehicle for use in an emergency. In addition, it ensures that all company drivers possess valid licenses and have completed a defensive driving course.

Health Care and First Aid Facilities as required by the Occupational Safety and Health Standard, a policy ensures that healthcare and first aid facilities are available for workers on the site.

The Welfare Facilities consist of a written procedure for Worksite Toilets and Sanitary Facilities. It also ensures that the construction company will provide separate comfort rooms for men and women and toilets and sanitary facilities for the project's personnel. It will also include a provision for a temporary canteen within the compound, the provision of safe potable drinking water with monthly water analysis reports from the supplier, and the installation of a project site office where no stay-in workers are permitted.

Hours of Work and Rest is a policy that ensures employees receive rest breaks during work hours and that the company provides (1) a one-hour lunch break and (2) two fifteen-minute breaks (morning and afternoon breaks). It also includes Work Schedules and Working Hours for Regular working days; the day of rest. This policy also emphasizes that management has the right to change, delay, or amend the work schedule to accommodate changes in the conditions prevailing at the workplace, emphasizing the most efficient use of time and the company's best interests.

Safety Inspection There is also a written procedure for inspecting the work areas to identify problems and hazards before their cause accidents or injuries. It also aids in determining the efficacy of safety program management and serves as a guide for ensuring regulatory compliance and a safe workplace. In addition, it outlined the duties and responsibilities of the Safety Officer/Project Engineer/Supervisors in conducting informal daily safety inspections and ensuring all unsafe conditions are corrected, as well as conducting documented weekly reviews and ensuring all dangerous conditions are updated.

Conclusion

Contractors are responsible for providing a safe, accident-free, and healthy work environment for all employees.

However, exceptional safety and health are not the results of chance. They result from everyone's hard work and observance of all company policies.

Everyone must cooperate to ensure safety. Therefore, communication between management and employees must be maintained at all times. Workers who observe hazards or other safety issues or believe they require additional training must inform their supervisor. Supervisors and management must address these concerns and take corrective action when necessary.

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