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EVALUTION OF HEALTH AND SAFETY PROGRAMS AND ACTIVITIES AT CONSTRUCTION SITES

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ABSTRACT

It has been observed that accident were likely to happen when there were inadequate company policy, unsafe practice, poor management commitment and insufficient training of workers. Many accidents have been traced to those factors. An effective safety program can substantially reduce accidents because it can help management to build up safer means of operations and create safe working environment. The Objective of the study is to determine the level of compliance of the establishment of safety and health program and activities at construction sites. As it involves checking of occupational safety and health related document as contain in the construction industry standard CIS 10:2008 in the five selected sites. An average result of 59.29% compliances among the sites consider for the study were obtained, that safety program and activities document at construction sites are averagely documented and managed and that a few medium program and activities at the workplace are being neglected. It was recommended that safety program need to be more formal by providing an effective OSH responsibility, and communicated to all levels including appointing a competent and responsible person to manage OSH record and document at site.

Keyword: *construction, document, health, policy, safety, accident.*

INTRODUCTION

In recent years there has been speedy economic development most especially in the field of construction in Malaysia. The construction industry is currently being recognized as a major economic force as the industry produces 3.0% of the country GDP and with its fatality rate of more than 3 times of other workplace (SOCSO 2000, Omaran 2008).

The Malaysia government is concern about this fatality rates and the government through the construction industry development board has put more emphasis on the OSH issues at construction sites.

Safety programs, a proactive approach are one of the best ways in improving site safety performance (Hislop 1991, Aksorn *et al* 2008). An effective safety program can substantially reduce accidents because it can help management to build up safer means of operations and create safe working environment for workers (Anton 1989, Abdelhamid and Evertt,2000, Rowlinson 2003, Aksorn *et al* 2008). Health and Safety program and activities is a requirement of all construction sites that employed more than five (5) employees.

The objective of the paper is to determine the level of compliance of the establishment of safety and health program and activities. This involves checking of occupational safety and health related document and records. OSHA identified the following key elements referred to as the four-point workplace program also called the VPP (voluntary protection program) of all successful accident prevention programs;

a- The manager or management team leads the way, especially by setting policy, assigning and supporting responsibilities, setting an example and involving employees.
b- The worksite is analyzed continually to identify all hazards and potential hazards.
c- Methods of controlling or preventing existing or potential hazards are put in place and maintained.
d- Managers, supervisors and employees are trained to understand and deal with work-site hazards.

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In order to prevent accidents at construction sites and also to prevent costly OSH fines, there is need for proper documentation of safety and health programs on sites. Records of items such as policy statement, training and promotion, minute of meetings, information distributed to employees should be kept etc. This will allow for review and updating continually and demonstrate a good faith effort toward the safety and health of employees at construction sites.

Cheung *et al* (2004), safety and health issues at construction site have gained industry-wide attention, with an increasing number of centers and commissions in different parts of the world promoting construction safety and health, educating and training, consultancy services, research and strategies development and information dissemination.

It have been argued that having safety programs, good safety culture can be embedded in organization because it can encourage mutual cooperation between management and workers in the operation of the programs and decision that affect their safety and health. There is the need to understand what is contains in the health and safety program and health and safety activities; This according to Clifford *et al* (2001), in health and safety program, which is usually referred to as a policy and procedure manual or accident prevention standards, are document which are general in nature and provide general guidance on how the company handles safety-related issues. The safety program is the vehicle that is used to communicate the company philosophy. While health and safety activities focus on the site-specific activities and outline the appropriate element of the site's existing health and safety program to the related tasks.

On the order hand Rowlinson (2003) identified the objectives of creating a safety program at construction sites as a means to prevent improper behavior that may lead to accidents, to ensure that problems are detected and reported, and to ensure that accidents are reported and handle accordingly.

In addition Michael *et al* (1986), agree that program evaluation is vital to the success of any safety program and activities, this according to Michael *et al* (2005), that if education and training program on job health and safety are to provide means of addressing occupational illness and injury and in addition to control of hazards activities, through engineering and personnel protective equipment, then effectiveness of such program must be a basic concern, thus, program evaluation is necessary for activities of individuals responsible for health and safety training.

The program evaluation is useful to individual who are responsible for educating and training programs and who must be able to assess their efforts in those area.

MATERIALS AND METHOD

A structured or standardized questionnaire were used in the documents checking at five (5) different sites selected within Kuala Lumpur and its environment, i.e the construction industry standard (CIS),refer to as CIS 10: 2008. The document was developed as a safety and health in construction with the assistance of construction industry development board (CIDB) Malaysia. For the purpose of the work, the following conditions are applicable to the five (5) selected sites;

a- Must be a building/civil engineering construction sites,
b- Its contract price must be above 20m Malaysian Ringgit, and
c- The progress of the work must be between 25 – 75% completions.

There are 63 questionnaires available as contain in the construction industry standard for document check, thus some questions may not be applicable to some sites. The following formula were developed in order to determine the levels of compliances to the safety and health programs and activities on sites;

$$\frac{\text{Total number of 'C' scored}}{\text{63- number of 'NA'.}} \times 100. = \text{Percentage of level of compliances}$$

Where; 'C' = obtained scores. 'NA' = not applicable.

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Basic Criteria

The following were the basic criteria, for document check consider for the work:

a- OSH Policy: there are 6 questions under the OSH policy which were aimed at examine the company OSH policy statement and to see if the policy is written in local language and also to ascertain who signed the policy statement.
b- OSH organisation: under the OSH Organisation there are 11 questions which are aimed at verifying the document that contain duties and responsibilities and how those duties and responsibilities are communicated to the respected persons.
c- HIRARC: Hazard Identification, Risks Assessment and Risks Control, contain 5 questions, which are aimed at examine, if HIRARC are incorporated in safety induction training module and also to examine if HIRARC are continuously updated and maintained.
d- Training and Promotion: consist of 8 questions, aim at determining if OSH training programs are available and conducted, at the same time to determine if promotion of OSH by audio and video are being practiced.
e- Machinery management: contain 5 questions, which are aimed at examine documents related to hazardous materials and non-hazardous materials, and also to examine document related to waste management procedures.
f- Emergency response plan (ERP): contain 4 questions, which are aimed at checking the availability of copies of ERP.
g- Accident investigation and reporting: there are 8 questions, which are aimed at examine the availability of accidents investigation and reporting procedure and to examine the document that shows that those involves in accidents investigation and reporting are properly trained for the job.
h- Records management and performance monitoring: there are 9 questions which are aims at examine the availability of OSH record management procedure and also to determine who is responsible for managing the OSH records and documents.

RESULT AND DISCUSSION

Table 1 shows the scores of the five sites;

Table 1: Results of scores of the five sites.

Site A	Site B	Site C	Site D	Site E.
88.33%	35%	57.63%	80%	35.48%.

Source: researcher analysis.

From the table, site A has the highest score i.e 88.33%While site B has the lowest scores i.e 35%. As for site A, it means that virtually all the document as regard to safety and health in construction sites that need to be check and verified are properly documented and well managed by the sites officers. While those of site B are not properly documented and well managed i.e poorly documented and managed by the sites officers. Therefore, the average scores obtained from the five sites is 59.29%, i.e 3-star in ranking which means that all documents as regard to potential and significant risk/hazard at the construction site are averagely managed and documented, but still there are other work related activities at workplace that are not properly managed and documented.
Table 2 shows the combined scores of document check of the all five sites i.e scores obtained and the total scores.

Table 2: scores of five sites on document check.

Components	Obtained scores	Total scores.
OSH policy.	28	30
OSH organization.	38	55
HIRARC	15	25
Training and Promotion	24	40
Machinery Management	21	31
Material Management	11	23
Emergency Response Plan (ERP)	11	20

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Accident investigation and reporting.	9	19
Records Management and performance monitoring.	31	45

Source: researcher analysis

Also figure 1 shows the performances of the 9 basic criteria;

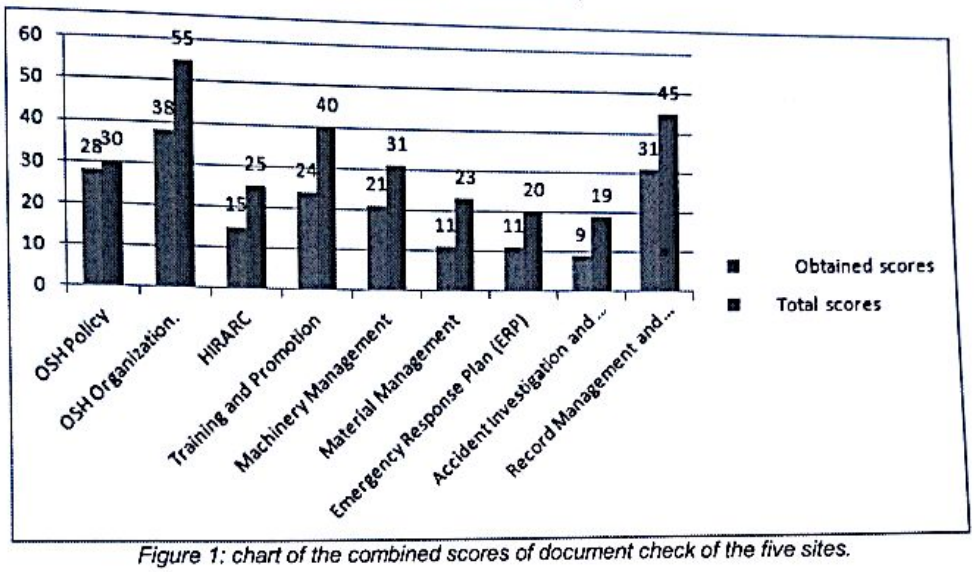

Figure 1: chart of the combined scores of document check of the five sites.

From both the table and the figure above, accident investigation and reporting perform below average and this means no proper procedure for accident investigation and most accident that occur are not properly documented and managed. Other components that need improvement are OSH organisation, training and promotion and record management and performances.

CONCLUSION AND RECOMMENDATION

Effective documentation involves an arrangement in a structured ways in order to serve a well-defined purpose. This study identified 9 basic critical point of safety program implementation, in which the study conclusion was drawn from. Therefore, it was concluded that safety program and activities documents at construction sites are averagely documented and managed, and that a few medium program and activities at workplace are being neglected.

The study recommended that safety programs have to be more formal, thereby providing an effective OSH responsibility and communicated to all levels including providing safety orientation and employing safety promotion through various means. Furthermore, it was recommended that a competent and responsible person be assigned to manage OHS records and documents on site.

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