

Emergency Preparedness amongst Emergency Response Team in Managing Accidents at the Workplace

Azuddin Bahari¹, Hanum binti Hassan² and Razli Ahmad³

ABSTRACT

Hazardous materials are chemical substances, which if released or misused can pose a threat to the environment or health. Recently, various type of crisis or emergency due to hazardous materials handling had occurred at the workplace due to human negligence and weaknesses which causes loss of lives and property. Accidents at the workplace involving hazardous materials are most often due to release of chemical substances in plants. Actions have to be taken to address the crisis to prevent unauthorized access and to protect the installation and equipment. These initial tasks can be undertaken by Emergency Response Teams (ERT). The ERT is the first responder in emergencies while waiting for assistance from the relevant authorities such as the Fire and Rescue Department to deal with the crisis at hand. Hence, the paper aims to highlight the role of the ERT in managing accidents at the workplace involving hazardous material.

Keywords: role of ERT, regulations, emergency preparedness, safety measures

1. INTRODUCTION

Various type of crisis or emergency had occurred at the workplace due to natural phenomenon or human negligence and weaknesses which causes loss of lives and property. These happening which comprise of natural disasters and man-made disasters will persist in every business or industry if safety at the workplace is neglected. Emergency preparedness will help to minimize human, property, and economic losses due to any hazardous event.

In Malaysia, the management of disaster is governed by the National Security Council (NSC) Directive No. 20: POLICY AND MECHANISM OF DISASTER MANAGEMENT AND RELIEF COMMITTEE. The Directive interpreted “Disaster” and “Non-disastrous incidents”. In addition, at the moment, the specific act and regulation which deal with the safety at the workplace is the “Occupational Safety and Health (OSH) Act 1994”. Consequently, the NSC

¹ Associate Professor, School of Business innovation and Technopreneurship, azuddin @unimap.edu.my

² Lecturer, Center for Communication Technology and Human Development, hanum@unimap.edu.my

³ Center for Communication Technology and Human Development, razli@unimap.edu.my

directive and the OSH Act 1994 will be the term of reference used in this study of crisis or emergency at the workplace.

1.1 Aim

The aim of this paper is to illustrate the role of Emergency Response Team (ERT) in managing accidents or emergencies at the workplace involving hazardous materials vis-à-vis the Malaysian Mechanism of Disaster Management and the OSH Act 1994.

1.2 Definitions

Situation is defined as set of circumstances or state of affairs especially at a certain time (G.N. Garmonsway 1969).

Emergency is define as a serious event or situation requiring immediate action which can cause death or injuries to the employees, customers or civilian or can cause stoppage of business activities, interfere with the normal working operations, causes environmental pollution etc. Some of the examples of emergencies are such as fires, accidents involving hazardous materials, floods and flash floods, accident involving radioactive materials, explosions, disruption to line of communications (G.N. Garmonsway).

Disaster is defined as an incident which occurs unexpectedly, which is complex in nature, causes loss of life, destruction to properties or environment and grind down the activity of the community. Illustrations of the type of disaster which is covered under the aforementioned directives are (MKN Directive No 20 dated 11th May 1977):

- a. Natural disasters such as floods, storm, drought, erosions of the beach, soil, land slide or disaster caused by storm and heavy rain;
- b. Industrial disasters such as incident of explosion, occurrence of fire, pollution and spilling of dangerous and hazardous materials from factories, industrial depot and installations that process, produce and store the said materials;
- c. Accidents involving transporting, channelling and moving of dangerous materials;
- d. Collapse of buildings and structures;
- e. Air disasters which happen in populated areas and building areas;
- f. Train collusions or skidding;
- g. Burning, which involve vast areas or fire to high rise building or a special structure where there is a large crowd;
- h. Cracking and breaking up of hydro dams or reservoirs;

- i. Nuclear disaster and radiology involving insertion of nuclear or radioactive material where an accident may cause it to be widespread and loss to life, destructions to properties or pollutions to the environment and hinder daily activities;
- j. The release of poisonous gas in public; and
- k. Haze which causes alarm among the public and obstruct the machinery of the civil authorities or economic activity of the state.

Non-disastrous incident is defined as an accidental incidents in the form of critical or non-critical and involving a small number of victims and effects only to the related victims. The form of the accident or incident has no possibility of spreading. Among the non-disastrous incidents are the vehicle accidents, the small fire or a mishap in a lake or river. Such happening usually can be handled in a time by relevant agencies, using minimum resources and facilities at local level (MKN Directives No 18 dated 11th May 1977).

Hazardous materials are chemical substances, which if released or misused can pose a threat to the environment or health. Hazardous materials come in the form of explosives, flammable and combustible substances, poisons, and radioactive materials

(http://www.gocolumbiamo.com/EM/Disaster_Preparedness/hazmat.php).

1.3 Malaysian Mechanism of Disaster Management including Accident Involving Hazardous Materials

Does the Malaysian Mechanism of disaster management deals with accident involving hazardous materials? The mechanism will be discussed subsequently. In Malaysia, the management of disaster is governed by the National Security Council (NSC) Directive No. 20: POLICY AND MECHANISM OF DISASTER MANAGEMENT AND RELIEF COMMITTEE. This policy is an executive order from the Honourable Prime Minister was issued on 11th May 1997. The Directive interpreted “Disaster” and “Non-disastrous incidents”.

For disaster which is classified as non-disastrous, the relevant agencies can handle using minimum resources and facilities at local level. In case of disaster caused by fire or hazardous materials (hazmat), Fire and Rescue Department Malaysia will act as a main agency to handle it. District Police Chief or State Police Chief which is relevant, still hold the responsibility as commander of disaster operation on scene to coordinate the involvement of the other agencies. Among the non-disastrous incidents are the vehicle accidents, the small fire or a mishap in a lake or river. Therefore going by this directive, ERT has a role to contribute and play in both disastrous and non disastrous disaster in assisting the government machinery.

1.4 Roles and Profiles of ERT

In addition to the above mention directive for deployment of ERT in emergency situation there is the OSH Act 1994 which deal with the occupational safety and health at the workplace. The regulatory proviso for setting up of ERT in the organisation is implied and institute in:

- a. Part IV, Section 15, OSH Act 1994.
- b. OSH Act 1994, Occupational Safety and Health (Control of Industrial Major Accident Hazards) Regulation 1996.

An ERT is an in-house squad institute by the organization to deal with emergency situation which happen or may happen in its premise. An ERT is thus a special team that responds to emergencies to ensure proper personnel evacuation and safety, shut down building services and utilities, work with responding civil authorities, protect and salvage property, and evaluate areas for safety prior to re-entry David L. Goetsch (2005).

Business entity in Perlis which are in the Electricity, Gas, Water and Sanitary Services Sectors and the Manufacturing Sector such as Teknologi Tenaga Perlis Consortium Sdn Bhd, Cement Industries of Malaysia Berhad, Kilang Gula Felda Perlis Sdn. Berhad and etcetera have their own in house ERT. These ERT was established and trained to meet the internal needs of the business entity. These business organizations carry out training from time to time in their premises on emergency drills internally either taking place on their own or with cooperation of government agencies such as Fire and Rescue Department, Police, RELA and Civil Defense Department and The Red Crescent Society. Although these ERT are trained to meet the internal needs of their business entity, however in a major disaster such as chemical spillage, chemical plant release of hazardous gas, fire at the workplace, these ERT has to work closely with other relevant government agencies such as the Fire and Rescue Department. Though the employment of ERT has limitation but their contribution in emergency situations is immense as will be illustrate beneath. The other regulatory requirement which ERT must take cognizance of is:

- a. Fire Services Act and Regulation 1998 (Act 341)
- b. Akta Petroleum (Langkah-langkah Keselamatan) 1984
- c. Akta Bekalan Gas 1993.

Emergency team averts disaster at oil refinery

■ By Ridzwan Abdullah
news@nst.com.my

PORT DICKSON: A major blaze was averted at the Shell Malaysia oil refinery here when two of its crude oil storage tanks were struck by lightning and caught fire yesterday.

Fortunately, quick action by the Fire and Rescue Department and Shell's emergency response team (ERT) prevented what could have been a major disaster in the area.

There were no casualties reported.

The last fire reported at the refinery was in 1964.

When the fire broke out, there were initial fears of a repeat of the Petronas fuel tank farm blaze at the Johor Port in April last year, when one tank exploded and five others caught fire soon after.

The refinery at Port Dickson produces a comprehensive range of petroleum products, most of which are marketed in Malaysia.

Shell Malaysia, in a statement, said at 6.49am, the rim seals on two of its crude oil storage tanks caught fire.

The *New Straits Times* learnt that this happened when they were struck by lightning during a thunderstorm.

"Our emergency response team was immediately deployed on-site to control the situation," the statement issued by Shell Refining Company (FOM) Berhad said.



Workers gather outside the Shell Malaysia oil refinery after two of its crude oil storage tanks were struck by lightning and caught fire yesterday. (Inset) Smoke coming from one of the storage tanks.

They were soon joined by firemen from the Fire and Rescue Department, who managed to put out the fire at one of the tanks within an hour.

The fire at the second tank was extinguished by 10.30am.

Shell said the crude oil stored in both tanks were not "compromised" and there was minimal damage to the tanks.

As at 3pm, operations at the

plant was in the process of being restarted.

The company said all the relevant government authorities, including the Department of Environment, have been informed of the incident.

"We will continue to extend our fullest co-operation to the authorities, to assess the impact of the incident, and to investigate the cause."

State Fire and Rescue Department director Zambri Che Din said 52 firemen from the Seremban, Seremban 2, Port Dickson, Telok Kemang, Senawang and Rembau stations were deployed to the scene at 7.06am.

They were assisted by the ERT teams from Shell and ESSO.

Led by Superintendent

Khairul Azwan Ibrahim, the firemen controlled the fire by 8.08am and doused it completely at 10.50am.

State DOE director Rahani Hussain, when contacted, said a team of officers were immediately sent to the refinery to assess the situation.

"Our major concern was the likelihood of an oil spill, but fortunately there was none."

Disaster Scenarios Handle by ERT

There was a tragedy whereby, the quick, swift and responsive action of the ERT was able to avert a major disaster from happening. On 19 November 2007 two crude oil storage tanks belonging to Shell Malaysia oil refinery in Port Dickson were struck by lightning and catch fire. When fire broke out, the ERT was immediately deployed "on-site" to control the situation. A major blaze would have occurred. However the quick action of the company's ERT had averted the occurrence of a major blaze. The ERT Shell Malaysia oil refinery were soon joined by 52 firemen from Seremban, Port Dickson, Telok Kemang and Rantau fire stations and the ERT from ESSO. The fire which started AT 7.06 a.m. was controlled at 8.08 a.m. and doused completely at 10.30 a.m. As at 3pm operations at the plant was back to normal (New Straits Times, 20 November 2007).

Emergencies such as fires, chemical spills, leaks and explosion are all frequent industrial accidents. The main concern is to avert emergencies mention aforesaid. In cases of industrial accidents involving hazardous materials, Fire and Rescue Department Malaysia will act as the main agency to handle it. A

survey carried out to ascertain the emergency preparedness of the ERT and the organizations involving in hazardous materials and accident.

A quick random survey on 100 selected employees comprising from the various companies in Perlis. The analysis of the survey is explained forthwith.

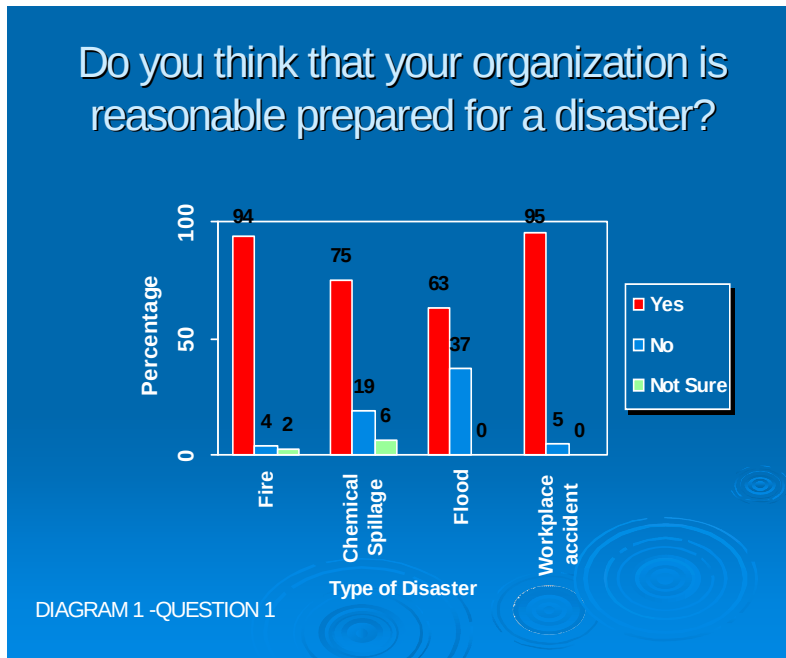


Figure 1: Diagram 1- Question 1

At the site of disaster in a business entity, such happening can be handled by the ERT as a first responder while waiting for the relevant assistance. From the random survey at Diagram 1, the respondents indicate that the organization or their place of work is prepared if a disaster happen. The respondents also indicate that the type of disaster their workplace is prepared is workplace accidents followed by fire and chemical spillage.

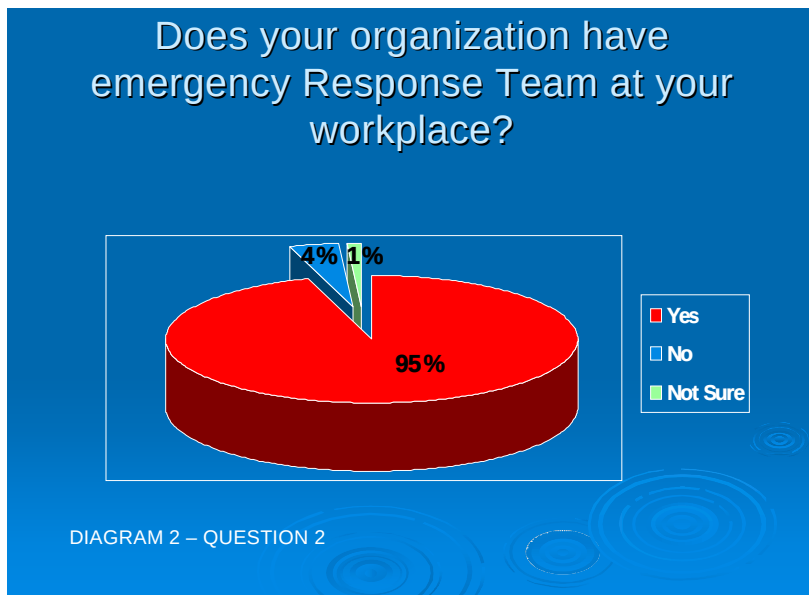


Figure 2: Diagram 2- Question 1

From the random survey at Diagram 2, the respondents indicate that ERT is established by the management at their workplace.

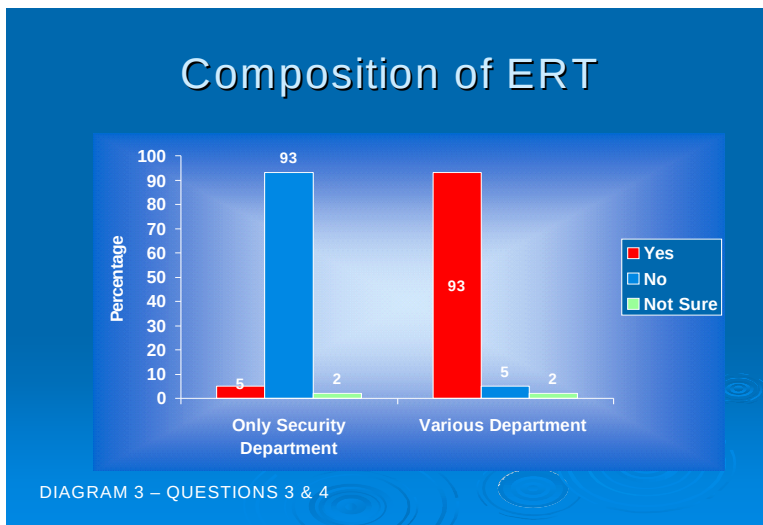


Figure 3: Diagram - Question 3 & 4

The respondents at Diagram 3 indicate that the composition of the ERT does not only consist of personnel from the Security Department but it is made up of volunteers from the various departments found in the business entity.

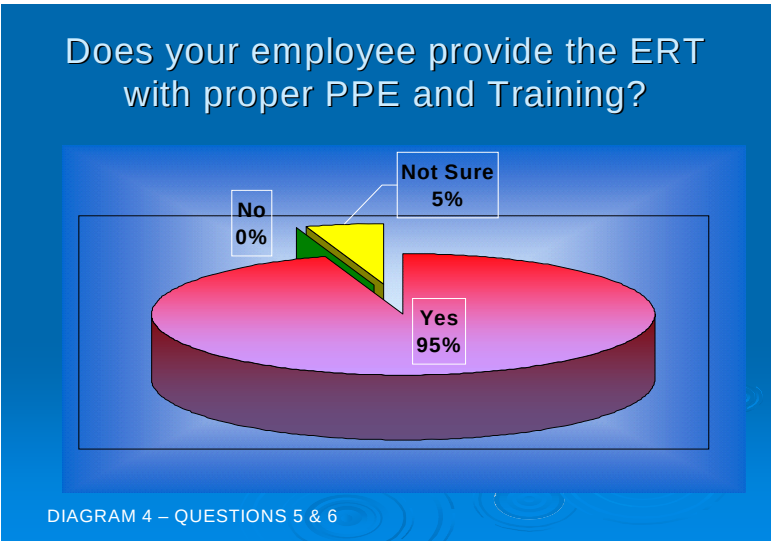


Figure 4: Diagram 4- Question 5 & 6

The survey at Diagram 4 also established that the ERT are provided with the necessary Personnel Protective Equipment (PPE) and they are trained to handle emergency situations. From the random survey it was established that business entities institute the ERT to meet their internal needs i.e. Industrial Emergencies or Workplace Accident such as chemical spillages, fires, on job injuries and etcetera.

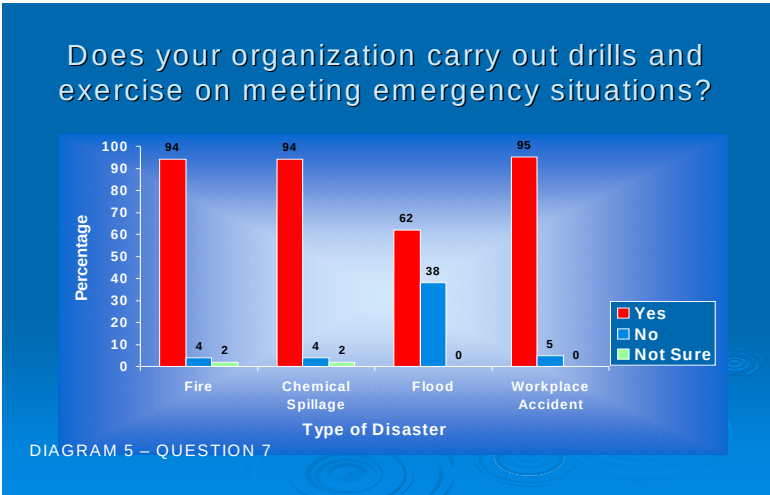


Figure: Diagram – Question 7

The survey on respondents as at Diagram 5 indicate that the organizations does carry out their emergency response training. According to the respondents the focus of the drills and exercise is on work place accidents followed by fire and chemical spillage.

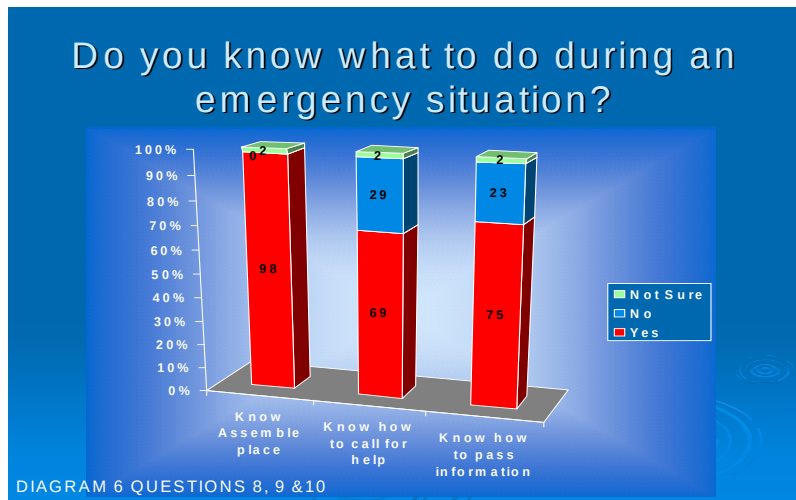


Figure 6: Question 8, 9, & 10

From the survey at Diagram 6, it was found that most of the respondents o indicate the awareness of the rendezvous or where to assemble in emergency situations and that most respondent indicate that they are aware of the process of alerting on site personnel during emergency situations. The respondents indicate they know how to pass relevant informations during emergency situations

It is concluded that business entity establish ERT in their organizations. The business entities are also prepared to meet any disaster situation which occurs at their premises.

2. RECOMMENDATIONS

With reference to exploratory study on the emergency preparedness of ERT in managing accidents at the workplace, it is established that business entity has equipped their ERT with the basic requirements to address workplace accidents. The ERT were given some form of training on administering emergency situations. However for improvement, it is proposed that:

- a. Management to intensify disaster awareness campaign from time to time towards all workers.
- b. Business entity to carry out inter agency and inter company training in emergency response. Designate a person who is responsible for arranging resources and assistance from outside organization.
- c. Management to vigorously propagate the procedure of notifying key personnel during an emergency.

3. CONCLUSION

Recently various types of crisis or emergency due to hazardous materials occur at the work place which causes loss of life and property. The OSHA 1994 requires the workers and the employers to be involved in ensuring a safe and conducive working environment at the workplace against risk to safety or health arising out of the activities of person at work. To ensure safety and health at workplace is an essential element to ensure that there be a strong employer commitment and strong worker participation. It is also the responsibility of the employer to provide proper safety equipment to his employees to enable the employees to undertake the assign tasks.

At this juncture, if any industrial accidents involving hazardous materials were to occur, the main concern is to avert or contain such emergency situations. The basis of action to be taken is based on the NSC Directive No 20 and the OSH Act 1994.

At the workplace ERT is the first responder in emergency involving hazardous materials while waiting for assistance from lead agencies. In the case of hazardous materials accidents the lead agency is the Fire and Rescue Department Malaysia. The tasks of ERT in emergency situation are to ensure disaster areas are secured; initial action to contain disaster is taken. In order to ensure that ERT is prepared for emergencies, the model of emergency management is recommended to be implemented.

REFERENCES

- Charles D. Reese (2003). *Occupational Safety and Health Management: A Practical Approach*, Lewis Publishers.
- David L. Goetsch (2005). *Occupational Safety and Health for Technologists, Engineers, and Managers* (Fifth Edition), Pearson Prentice Hall: 2005.

Disasters, Development and Environment, Edited by Ann Yarley University College, London, U.K., John Wiley & Sons, 1994.

G.N. Garmonsway (1969). Penguin Concise English Dictionary, Bloomsbury Book.

Laura G. Kaplan (1996) *Emergency and Disaster Planning Manual*, B.S.E.E., McGraw- Hill.

Mohamad Khan, Nor Azimah Chew Abdullah & Ab. Aziz Yusof (2005), *Keselamatan dan Kesehatan Pekerjaan dalam Organisasi*, Pearson Prentice Hall.

National Security Council Directive No. 20: POLICY AND MECHANISM OF DISASTER MANAGEMENT AND RELIEF COMMITTEE

Robert Kreiner and Angelo Kinicki (2000), *Organizational Behavior* (Sixth Edition), McGraw Hill/Irwin.

Robert A. Roskind (2000). *The Complete Disaster Home Preparation Guide*, Prentice Hall PTR.