

CHAPTER-1. RISK ASSESSMENT

A disaster is an event trigger by natural or man-made causes that lead to sudden distribution of normalcy of life, causing widespread damage to life and property. Distribution can be caused due to occurrence of frequent hazards like earthquakes, fires, cyclones, terrorism, and chemical explosions. Level of risk majorly depends upon the various hazards for which any specific area is prone to also on the various physical, social-economic and institutional parameters. This chapter will cover an outline of disaster management plan to handle emergency situations as identified for the project and their respective emergency response

1.1. PURPOSE AND OBJECTIVE

The objective of emergency response is to:

- Ensure safety of people; protect the environment and safeguard commercial considerations of the project and the community;
- Immediate response to emergency situation with effective communication network and organized procedures;
- Obtain early inputs of emergency conditions so as to prevent impact on personnel, community, assets and environment;
- Safeguard personnel to prevent injuries or loss of life by:
 - Protecting personnel from the hazard;
 - Evacuating personnel from the site when necessary;
- Minimize the impact of the event on the project, community and the environment by:
 - Limiting the hazard as far as possible;
 - Limiting the potential for escalation; and
 - To localise the spread of impact.

For meeting the emergencies caused by major accidents, planning response strategies are termed as **Disaster Management Plans (DMPs)**. DMPs cannot be considered in isolation or act as a substitute for maintaining good safety standards in premises of every facility. The best way to protect against major accidents occurrence is by maintaining very high levels of safety standards.

Generally, the following five phases are involved in an emergency:

- **Discovery and Notification:** An event with an imminent threat of turning into an accident must first be discovered and the discoverer quickly notifies the same to the Auxiliary Team Controller, who will eventually inform safety officer.
- **Evaluation and Initiation of Accident Control:** Based on the evaluation of available information, the safety officer makes a rapid assessment of the severity of the likely accident and initiates the best course of action.
- **Suppression and Counter Measures:** Action is first taken to contain and control the accident by eliminating the causes which may lead to the spread of accident. Measures are also taken to minimize the damage to personnel, property and environment.
- **Clean-up and Disposal:** After the accident is effectively contained and controlled, the clean-up of the site of the accident and safe disposal of waste generated due to the accident are undertaken.

Documentation: All aspects of accidents, including the way it started and progressed as well as the steps taken to contain and the extent of the damage and injury, must be documented for subsequent analysis of accident for prevention in future, damage estimation, insurance recovery and compensation payment. It may be noted that some aspects of documentation, such as, photographs of the site of accident and main objects involved in the accident, survey for damage estimation, etc. may have to be carried out before the clean-up and disposal phase. However, the effort in all cases is to recommence the operation as soon as possible.

1.2. IDENTIFIED EMERGENCY SITUATIONS

Broadly, the emergency situations identified for the premises of site can be classified as:

Natural Hazard

- These are often sudden and intense resulting into considerable destruction, injuries and deaths. Population is the key factor inside premises; which is likely to perceive major impact because of magnitude and frequency of the hazard.
 - Flood
 - Earthquake

Man-Made Hazard

- These are anthropogenic in nature, can be sudden or progressive, which impacts with such severity that the affected community has to respond by taking immediate and exceptional measures including help from outside the community.
 - Fire and Explosion
 - Structural Collapse
 - Electrocution
 - Bomb Threat
 - Road Accidents and transportation of hazardous material, if any;

Each of the above events, which are not limited to these only, will be assessed in detailed as to the possibility of occurring during general operations of the premises, any construction activity, or non-routine activities along with the consequences that the event may cause.

7.2.1 PREPAREDNESS FOR THE EMERGENCY

The goal of preparedness for any emergency is to achieve a satisfactory level of readiness to respond to any disaster in order to save lives, minimize disaster damage, and enhance disaster response operations. The basic approach towards emergency preparedness will comprise of the following activities:

- Identify all risk associated with each building tower, so as to anticipate the actions to be taken as an emergency response be required.
- Establish an Auxiliary Management Team (AMT) to implement Emergency Procedures at each building;
- Develop a work plan with details regarding the course of action to be followed in order to minimize personal injury and property damage in the event of fire, flood, loss of ground, or natural disaster.
- Train the personnel in planning and responding to an emergency;
- Prepare a facility-wide, list of names and telephone numbers which will be available at each building in the premises. The list will include details of all management, trained emergency responders, and Fire and Police Departments.
- Test the arrangements and procedures in practice, as often as appropriate;

7.2.2 ROLES AND RESPONSIBILITIES

The details given in the subsections identify the inter-linkage and synchronization among the following:

- Site Main controller for each block
- Auxiliary Team controller with designated officers for the emergency management will be called Auxiliary Management Team (AMT);
- External agencies for local support

The primary roles of ***Site Main controller*** are to:-

- Respond to the on-site response plan in case of any emergency pertaining to the site;
- Utilize site and local resources;
- Set up Emergency Control Centre to direct emergency operations.
- Assess the magnitude of the situation and decide if evacuation is required from the affected areas;
- Direct the safe shutting down of the installations in consultation with ATC and other important officers, if necessary.
- Liaison with District Magistrate, Police, Fire Brigade and other agencies, if necessary in coordination with communication/liaison officer.
- Communicate all the things to Auxiliary Management Team via Auxiliary Team Controller till the affected area is cleared.
- Declare the “All Clear Situation” after the emergency is over.

Auxiliary Management Team (AMT)

AMT at the operating site under its control will have following role:

- Control the emergency and render the building or premises safe by the application of local resources; and Support the local response effort by co-coordinating additional equipment, personnel, and other external resources.
- The auxiliary Management Team will comprise of:

Auxiliary Team Controller—shall be the person who will supervise the following officers, forming as a team.

- Fire/ Safety Officer;
- Evacuation Officer;
- Communication/Liaison Officer and;
- Medical Officer.

The primary roles of **Auxiliary Team controller** are to:-

- Coordinate with Site Main Controller to address the emergency with the help of Auxiliary Management Team.
- Provide advice on possible effect on areas and outside the premises to the local & district administration about the incident and probable need for evacuation;
- Direct all the operations within the affected areas with priorities for safety personnel minimize damage to the property and environment;
- Ensure that the non-essential staff, workers of the areas affected are evacuated to the gathering areas and the area is searched for casualties;
- Direct the supervisor of the affected areas for the safe guarding of the personnel, minimize the damage to site and environment;
- The role of the members of Team is a detailed below:

Fire/ Safety Officer

- Reports to Auxiliary Team Controller and assist him in all matters;
- Consult site supervisor of the area regarding special precautions such as type of material involved in fire;
- Arrange first aid to the casualties and other emergency equipments;
- In post accident condition to gather information on the material /equipment involved in the accident and its danger potential, its effect on humans and environment;
- Assist site controller in maintaining the emergency equipment; and Assist the site controller in conducting / evaluating mock drills.
- All the fire fighters shall work under his guidance at the time of emergency.

Evacuation Officer

- Proceed to emergency area and report to Auxiliary Team Controller and acts as per the instructions;
- Consult the affected area site supervisor for evacuation of the employees;
- Advice all the employees except auxiliary management team to assemble at gathering area;
- If required nearby employees also to be evacuated;
- To perform head count at gathering area and shall record names;

- Compare the names with the attendance list if any missing inform to Auxiliary Team Controller.
- Proceed to the emergency area and report to the Auxiliary Team Controller after getting the information regarding emergency through telephone or through messengers; He will reserve specified messengers to act as runners between the auxiliary main controller and himself;
- He handles all the transmission to the emergency control centre and dispatched from it, including those to outside agencies and technical information source;
- As per the auxiliary main controller's instructions, he will pass information to other members, if required.

Communication/Liaison Officer

- As soon as he receives the information he should proceed to the emergency control centre and report to the auxiliary main controller;
- He has to co-ordinate with all the outside agencies who offer assistance to an emergency response supporting team;
- He shall know who represents the various agencies and where and how to contact them;
- Some of the agencies liaised with are the law, enforcements, public fire services, red cross, rescue and emergency services, local government officials (Police), utility personnel (telephone, electrical, water), health officials, hospitals and ambulance services, lawyer for legal advice (if necessary).
- He is to ensure that casualties received adequate attention and the alternate transport, when in need;
- When emergency is prolonged he shall co-ordinate with supply officer to arrange for the relief of rescue or fire fighting personnel and organize refreshments or catering facilities;
- He is responsible for evacuation of the nearby area people, if situation warrants.

Medical Officer:

- On receipt of information keep him ready and alert his staff to attend serious and urgent cases;

- The medical officer is responsible for providing first aid to those injured/ rescued and making that they are promptly transported for further treatment if required;
- Co-ordinate the supply officer for medical supplies;
- He should familiar with antidotes for specified materials.

1.3. SPECIFIC EMERGENCY RESPONSE PROCEDURE

Actions are mainly procedures which are to be performed during or immediately after a disaster to minimize suffering and losses through emergency communication, medical assistance, evacuation and search and rescue. Procedures for such events are required and must be understood by all staff, which to be detailed out at later stage.

Procedure: Fire

A fire is the unplanned and undesired combustion of materials that poses a threat to employees, visitors and property.

The purpose should be to reduce the possibility of a fire in the practice, as well as specify the equipment and policies that are to be used in case of a fire. The designated fire officer makes it mandatory to ensure that every employee is taught how to use a fire extinguisher. Fire extinguishers are to be located at conspicuous locations with basic instructions.

Procedure is as follows:

- On hearing the alarm designated fire officer shall immediately contact the Control Room extension to confirm the location and extent of the fire.
- To inform Auxiliary Team Controller;
- Proceed to the location of the fire and take charge of the operation.
- Depending on the extent of the fire or its potential for spreading, he shall utilize the resources at his command to contain or extinguish the fire until the fire brigade arrives.
- All Staff with no designated fire duties shall see that their work area is left safe and report immediately to the nearest assembly point.
- Account for all staff on record.
- Inform the security personnel at the gate to expect the fire brigade and to direct them by the chosen route.

Procedure: Earthquake

An earthquake is a sudden shaking of the earth caused by the breaking of rock beneath the earth's surface and followed by a series of vibrations. Earthquakes can cause buildings and bridges to collapse, telephone and power lines to fall.

Procedure is as follows:

All persons shall protect him/ her as best as possible during an earthquake by finding the nearest safe location, such as:

- Beneath a study desk
- Between a door structure
- In a wide open area
- Outside and away from the building
- All persons must leave the building after the shaking stops.

Procedure: Bomb Threat

Actions taken in response to such a threat should be prompt and assure the safety of residents while a bomb threat may be a hoax, all such threats should be treated seriously.

Procedure is as follows:

- Do not touch anything electrical including turning lights on or off.
- Do not take a phone off the hook or replace it.
- Do not use radios or cellular telephones.
- Do not move anything that looks out of place,

If a suspected bomb device is found, take note of the location, but do not touch it. Notify the police regarding the where about of any suspected bomb device. Once it is determined that a bomb threat has been made, the Site Main Controller will coordinate evacuation of the facility by telling residents that there is a gas leak or similar condition that requires immediate evacuation.

7.1. RESETTLEMENT AND REHABILITATION

The redevelopment project shall involve shifting of existing staff colony's population for a while. However the government accommodation or proper alternate shall be given to them in meanwhile