

Off-site Emergency plan



Objective of the plan

The objectives of the off-site emergency plan should make maximum use of the combined resources of the units and the outside services to:

1. Initially contain and ultimately bring the incident under control.
2. Minimize damage to property and the environment.
3. Rescue the threat casualties and safeguard other people.
4. Trace out the fatalities and provide assistance to their relatives.
5. Provide authoritative information to the media.
6. Secure the safe rehabilitation of affected areas.
7. Preserve relevant records and equipment for the subsequent enquiry into the causes and circumstances of the emergency.

DISASTER AND ITS MANAGEMENT

2.1 Disaster

A disaster is an unforeseen or unexpected event, which may result into injury to men or damage to property or both.

2.2 On-Site Emergency

If the accident / dangerous occurrence takes place in the factory and its effects are **confined to the factory premises** involving the workmen working in the factory, it is termed as 'ON-SITE EMERGENCY'.

2.3 Off-Site Emergency

If the effects of the accidents / dangerous happen inside the site/factory and it's occurrence are **felt outside the factory premises**, the situation thus generated is termed as 'OFF-SITE EMERGENCY'.

2.4 Causes for Disaster

Any one of the following may lead to a disaster

1. Explosion due to entrapping of water in molten metal.
2. Explosion and fire due to gas, coke, pitch and inflammable oils.
3. Leakage and spillage of chemicals.
4. Electrocution.
5. Collapse of structure.

2.5 Who formulates and carries out the plan?

The Central Government has notified a set of rules entitled "Chemical Accident (Emergency Planning, Preparedness and Response) Rules, 1996 as complementary to Manufacture, Storage and Import of Hazardous Chemical Rules 1989 under the Environment (Protection) Act 1986. This rule provides a statutory back up for setting up of crisis groups in districts level for management of chemical accidents. Under this set up it has been envisaged to set up functional control rooms at district level with information networking system. Each District has "District Crises Group". The district magistrate and collector is statutorily the chairman of the District Crisis Group.

2.6 Objective of the District Crisis Group

The Objectives of this crisis group is to –

1. Assess the anticipated emergency scenarios;
2. Develop an action plan to combat and contain the emergency;
3. Develop a scheme to generate public awareness;
4. Conduct mock drills to reduce response time;
5. Set up a control room for state-wide information networking;

2.7 Action Plan of the District Crisis Group

Emergency Plan has been prepared in the form of a manual and approved by the competent authority (Chairman cum District Magistrate & Collector) after several deliberations with the members of the District Crisis Group. Further this manual shall be updated as and when required. The action plan of the District Crisis Group can be broadly divided into three major groups viz,

- Pre-disaster plan
- During disaster plan
- Post-disaster plan.

2.7.1 Pre-disaster Plan

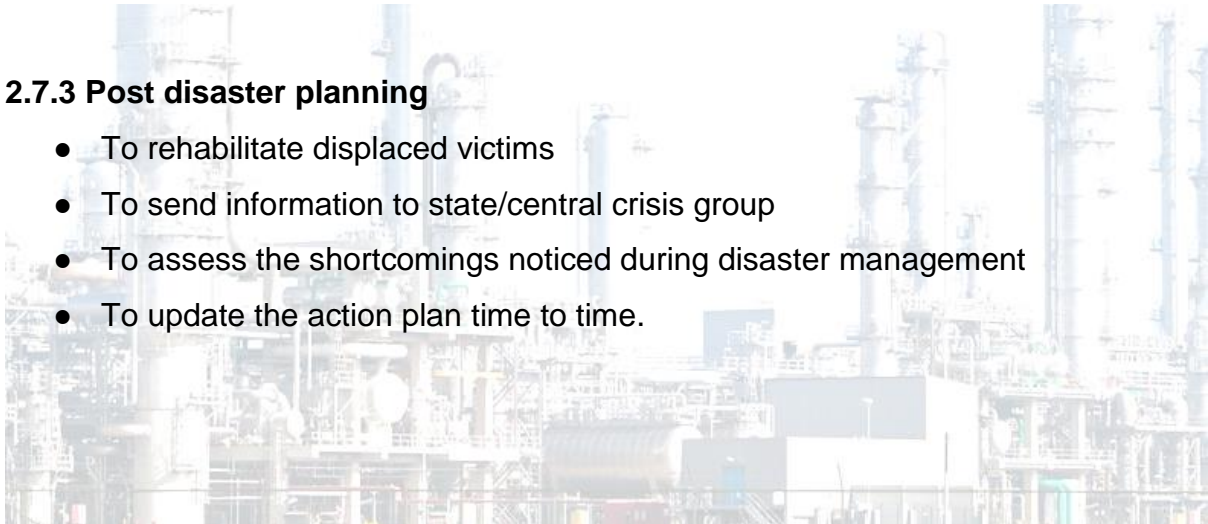
- To create awareness among the individuals about the precautions and remedial measures to be taken during a disaster.
- To assess the impact of foreseeable disasters in the district by reviewing the on-site emergency plans of installations / industries involving hazardous process.
- To formulate one “**District Off-Site Emergency Plan**”.
- To conduct mock drills to enhance response time.
- To identify the areas where local crisis group formation is needed.

2.7.2 During disaster plan

- To combat and contain the disaster.
- To inform the public for necessary self-protection measures.
- To evacuate & protect the affected areas.
- Treatment of victims.
- To activate combat/ mutual aid/ technical services.
- To restrict the entry points in the affected area.
- To maintain the law and order.
- To co-ordinate the functions of various agencies.
- To bring back normalcy.
- To provide authorized information to press and media.

2.7.3 Post disaster planning

- To rehabilitate displaced victims
- To send information to state/central crisis group
- To assess the shortcomings noticed during disaster management
- To update the action plan time to time.



2.8 Emergency Control Centre

The office of the District Magistrate & Collector, shall function as the Emergency Control Centre in case of an emergency. This Centre is well equipped with related data, communication facilities etc.

2.9 Assembly Points

A number of assembly points situated well away from the areas of risk, where employees / public are required to assemble in the event of emergency have been earmarked and publicized.

2.10 Evacuation

In case of an emergency, it is necessary to evacuate personnel from areas already affected or likely to be affected. Distinct alarms (siren) should be used to evacuate and to assemble the personnel in an orderly manner to the pre-determined assembly points.

2.11 Exercises

Mock Drills shall be conducted once in a year to train the employees of the industries & the general public, test the plan and to observe & rectify the deficiencies if any.

2.12 Repairing and Restarting

Before taking up repairs and restarting the plant, it is required to ensure that:

- All fires are extinguished without risk of re-ignition.
- The source of gas release is isolated.
- The gas cloud is disappeared, the concentration is within safe limits and the working areas are free from risk.

2.13 Information for Public

Leaflets containing concise instructions regarding actions to be taken by the general public in case of an emergency have been prepared beforehand in local language. These should be distributed to the public.

Communication Facilities:

VHF Station and Telecommunication Link

One Satellite telephone should be available with District Collector.

All Police stations are connected with VHF/Telephone.

Besides the above VHF installations, some blocks of the district shall be provided with VHF communication system and one at the District Control Room. The District Control Room has also been provided with two mobile VHF sets and two walkie-talkies. All officials connected with relief / rescue operation are having telephone connections.

ROLE AND RESPONSIBILITY OF VARIOUS DEPARTMENTS

5.1 Preliminary Considerations

The district authority needs to determine:

- Where, within the locality of the district, is there the potential for a major emergency, e.g. as the result of fire, explosion or large-scale release of toxic gases?
- Given the potential, what are the possible consequences in terms of risk to people and spread of damage?

How adequate are the existing resources and arrangements to handle the most serious foreseeable emergency?

- What further provision or action is needed?

5.2 Making the emergency known

- Inside the district.
- To the emergency services.
- To the key personnel of the district administration.
- To the neighboring districts.

5.3 Role of various departments

The various departments of the districts are responsible to work in a team to mitigate Emergency with minimum response time. Responsibilities of various departments are Indicated herewith.

5.3.1 Public Relation Dep't. (District Information & Public Relation Officer)

Pre-disaster stage –

- To organize public awareness programs on safety procedures to be followed in case of a disaster through distribution of hand notes, talks, audiovisual programs and the likes.

During disaster –

- Dissemination of information through public address system regarding emergency Measures to be taken during evacuation plans.
- To avert panic among the public arising out of rumors.
- To interact with media.
- To issue authorized statements of district administration to assess and plan for Augmentation of existing facilities, if needed.

5.3.2 Role of Police Department (Superintendent of Police)

Pre-disaster stage –

- To identify access and escape routes to be followed during emergency so as to ensure passing of vehicles with least inconvenience.
- To document traffic control measures to be followed during emergency.
- To access and plan for augmentation of existing facility, if needed.

During disaster –

- Law & Order and traffic control.

Post-disaster stage –

- To protect the area

5.3.3 Fire Service Department (District Fire Officer)

Pre-disaster stage –

- To assess the requirement of fire tenders & other firefighting equipment required for the anticipated hazard scenario.
- To identify the source of water.
- To identify access and escape routes.

During disaster –

- Command and control the firefighting operations.
- Rescue the victim.

5.3.4 Health Department (Chief District Medical Officer)

Pre-disaster stage –

- To ensure adequate stock of medicines and antidotes for the identified hazard scenario.
- To identify ambulance services to be availed during emergency.
- To plan for additional capacity in the base hospital, if needed.

During disaster –

- To arrange for first aid at site of occurrence.
- To arrange for treatment at hospital.
- To arrange for deportation of affected persons for specialized treatment, if needed

5.3.5 Motor vehicle Department (Regional Transport Officer)

Pre-disaster stage –

- To identify, prepare and maintain a list of sources to be tapped for requisitioning transport depending on the gravity of the emergency.

During disaster –

- To ensure that required vehicles are available at control room.

5.3.6 Public Health Deptt. (Executive Engineer, Public Health Engg. Dept.)

Pre-disaster stage –

- To analyze possibility of water body contamination due to anticipated hazard scenario and to plan out remedial measures.

POTENTIAL HAZARDS IN THE DISTRICT

6.1 Identified hazards

Following are the potential hazards in any district

- Fire due to various reasons.
- Explosions due to various reasons.
- Chemical and Gas hazards.
- Electrical hazards.
- Collapse of Structures & Equipment.
- Major accident of transporting facilities.

6.1.1 Fire due to various reasons

Any industrial district is having different industries / installations involving hazardous process which requires substantial amount of electrical energy for various operations at elevated temperatures. The main sources of energy are power, minerals, oils and petroleum products. Therefore all such activities are highly prone to fire hazards. The anticipated causes of fire hazards are as follows.

- Fire in petroleum products.
- Fire in minerals.
- Fire in oil storage tanks.
- Fire in electrical cables / accessories.
- Fire in transformers.
- Wood and wild fire.
- Fire in oil lines.

6.1.2 Explosion due to various reasons

Owing to the reason that there are various pressure vessels and storage tanks of Combustible materials in the different industries / installations, the following are identified as explosion prone areas.

- Pressure vessels and pipelines such as boilers, compressors, storage tanks and Pressure pipe lines for air etc.
- Furnaces and casting machines.

6.1.3 Chemical and Gas Hazards

The following chemicals and gases are used in bulk for various purposes and therefore Chemical hazards are anticipated.

- Chlorine (Cl_2)
- Liquefied Petroleum Gas (LPG)
- Sulphur Dioxide(SO_2)
- Butadiene($\text{CH}_2=\text{CH}_2$)
- Ammonia (NH_3) and list down other chemicals.

6.1.4 Electrical Hazard

Supply of power for various productions and other activities is done at 440/230 KVA that poses a potential hazard on account of electrocution.

6.1.5 Collapse of structures and equipment

The size and weight of various metallic and masonry structures are very large and most of the activities are carried out indoors. Any collapse of these structures due to whatsoever reason can cause a major disaster. This factor therefore needs constant vigil.

6.1.6 Major accidents during transportation

Transportation of various combustible / inflammable materials, such as petroleum products, furnace oil, petrol, diesel, chemicals, gas cylinders and chlorine is done by trucks / road tankers and therefore pose a major source of disaster.

STRUCTURE, ROLE & RESPONSIBILITY DURING DISASTER

7.1 District structure

The following officers of the district assist the Collector and District Magistrate.

- Superintendent of Police.
- Sub-Collector.
- District Emergency Officer.
- District Information and Public Relation Officer.
- District Fire Officer.
- Chief District Medical Officer.
- Assistant Director of Factories & Boilers.
- Executive Engineer, Public Health Engg. Dept.
- Regional Transport Officer.
- Regional Officer, Pollution Control Board.

7.2 Role of the officers

In case of emergency / disaster, the role and responsibility of individual officers shall be the following:

- **Chief Coordinator (Declarer of Emergency)** - Collector & District Magistrate.
- **Dy. Chief Coordinator (Incident Controller)** – Sub Collector
- **Unit Coordinators** - District Emergency Officer.
 - District Fire Officer.
 - Assistant Director of Factories & Boilers.
 - Exe. Engineer, Public Health Engineering Dept.
 - Regional Transport Officer.
 - Regional Officer, Pollution Control Board.
- **Communication Coordinator** - District Information & Public Relation Officer

- **Health Service Coordinator** - Chief District Medical Officer.
- **Law & Order Coordinator** - Superintendent of Police.

7.3 Responsibility of the officers

DISTRICT CRISIS GROUP				
<div> <div>CHIEF CO-ORDINATOR</div> <div> <div></div> <div></div> </div> <div>MOBILISATION OF MATERIAL AND SERVICES</div> </div>				
DISTRICT FIRE SERVICE	SUPERINTENDENT OF POLICE	UNIT CO-ORDINATORS	CHIEF DISTRICT MEDICAL OFFICER	LOCAL & DISTRICT ADMINISTRATIVE AUTHORITY
Fire Service	Police Service	Technical Services	Medical Services	Local Authorities
1.Fire Fighting	1.Maintain law & order situation	1.Furnish technical Informations	1.Collection of Material Safety Data Sheets of Hazardous Substances	1.Actuate salvage measures
2.Plugging leaks	2.Control traffic	2.Prevent / control of pollution	2.Maintain inventories of medicines, anti-dotes and treatment-aids	2.Transportation of victims
3.Rescue	3.Cordning the area	3.Control of power supply system.	3.Actuate Ambulance & First-Aid Service	3.Educating public for self protection
	4.Evacuation measures from the risky area	4.Investigate in to the cause of event	4. Seek expert advices if required	4.Inform relatives of the victims
	5. Inform the public about the mishap & rescue			5. Maintain communication link
				6. To identify NGO's to serve
				7. Actuate relief camp

INFRASTRUCTURE FOR EMERGENCY SITUATIONS

In a state of emergency / disaster, it is imperative that a well-planned system is made and Disaster code developed to tackle the situation and minimize the losses.

8.1 Disaster Code

The following code has been devised to declare a state of emergency:

- The Declarer or his alternate shall make declaration of emergency through intermittent siren (alternate long and short pitch) for 5 minutes continuously.
- Declaration of emergency shall be conveyed to Control Room, Hospital, Fire Services, Police and other emergency service departments over phone or any other fast communication system.
- Public shall be trained to understand the coded audio sirens.
- After the emergency situation is brought under control, an “all clear siren” to be blown. This shall be notified by a continuous blowing of the siren for 5 minutes.

8.2 Communication during Emergency

The following sequence of communication shall be followed during emergency.

- The occupier of the factory / local police shall inform about the emergency to the Dy. Chief Coordinator (Incident Controller).
- Though the standard mode of communication shall be telephone / hotline / wireless, but in case malfunctioning of those, a special messenger shall be sent to the Dy. Chief Coordinator by the fastest possible means of transport.
- In case the Dy. Chief Coordinator is not available on account of tour / leave then he shall be officiated by his nominee.
- The Dy. Chief Coordinator (Incident Controller) shall in turn inform the Chief Coordinator (Declarer of Emergency) and seek his advice.
- The Chief Coordinator shall advise the Dy. Chief Coordinator (Incident Controller) to immediately rush to the spot of emergency, assess the situation and take overall control in his hands.
- Based upon the available information & communication from the spot of emergency, the Chief Coordinator shall advise for the blowing of siren to declare emergency.
- The Declarer shall inform the Superintendent of Police and other Unit coordinators.

8.3 Infrastructure available and procedural activities

Once the Disaster has been identified and the preliminary communication and activities have been initiated, the following departments shall extend all-out help to minimize the losses in terms of man, material and machines. In order to ensure the preparedness to handle and control such a difficult situation, a definite infrastructure has been developed by various key departments.

8.4 District Health Department

The Chief District Medical Officer being the most vital officer in a “Disaster” situation, it is required to be in a state of preparedness. He is the overall in charge for the medical facility. He is to ensure that adequate personnel are identified and briefed from time to time to review the state of preparedness within the department. Availability of trained staff and nominated First Aiders, updating their knowledge, maintaining necessary stock of medicines and other medical gadgets and life saving devices etc are his prime responsibility.

In case of “Emergency Call” from the Declarer of Emergency or any other source, the Medical Shift-in-charge shall immediately respond, make necessary arrangements and take following actions:

- Inform Chief District Medical Officer immediately.
- Make arrangements in the hospital to receive and treat the affected persons.
- Keep the life saving devices and medicines ready for use.
- Arrange to send ambulances/along with medical personnel, first-aid facilities and life saving devices to the location of disaster, if required.
- Inform all “On-duty” and “Off-duty” medical staff residing in the vicinity and also the nominated “First Aiders” for assistance.

After the arrival of Chief District Medical Officer or his alternate the overall charge shall be taken over by him. He shall initiate the following course of action.

- Relieve the Shift-in-charge for field duty.
- Assess the situation and if required, ask for medical aid from other sources.

The aforesaid request shall either be routed through “Emergency Declarer” or directly depending upon the situation.

8.5 Fire Services

The Fire Services is another vital agency in order to control and handle a situation of disaster. The department is therefore kept in a state of ever preparedness round the clock. District Fire Officer is also the in-charge for Fire Services facility. His prime responsibility is to ensure that the department is adequately manned and suitably trained to handle any situation of disaster. Review meetings are to be conducted periodically to identify and fulfill the departmental needs in terms of updating knowledge through training, checking of firefighting facilities, system development, latest firefighting technology etc. He should also collect information about the potential fire hazards in various industries / installations.

The District Fire Officer is also to ensure the following mandatory requirements:

- a) To propagate Fire Safety through awareness programs to the public.
- b) To maintain the firefighting devices and to keep appropriate record.
- c) To carry out regular inspection in all industries/installations involving hazardous process to assess risk of fire.
- d) To co-ordinate with civic authorities and industries for mutual aid.
- e) To arrange periodic Mock Drills.

In case of “Emergency Call” from the Declarer of emergency or any other source, the Shift In-charge of Fire Station shall immediately respond and make necessary arrangements to take following actions:

- To inform the District Fire Officer immediately.
- To make necessary arrangement of firefighting devices along with personnel to be deputed to the affected location.
- To inform all ‘On-duty’ and ‘Off-duty’ staff to rush for assistance.
- After the arrival of District Fire Officer or his alternate, the overall charge shall be taken over by him & shall immediately initiate the following course of action:
 - Send SOS calls to civic authorities and nearby industries for assistance either directly or through Emergency Declarer depending upon the situation.

- Shall rush to the spot of disaster and take overall charge to control the fire.

8.6 Police

The Police have a very important role to play during the Disaster. So this department should be adequately prepared to handle any such situation round the clock. The prime responsibilities of this department are as follows:

- a) Overall law and order situation of the entire affected area and nearby localities.
- b) To carry out security rounds during emergency particularly of the delicate zones, make observations and take appropriate steps to maintain fool-proof security of the men, materials and machines.
- c) To keep vigil on the entry and the activities of the public.
- d) In case of any Emergency or Disaster, extend help in terms of cordoning of the affected zone, assist in the fire fighting and rescue operation.

In case of any “Emergency Call” from the “Declarer of Emergency” or any other source, the Officer-in charge of the local police station shall immediately take steps to activate the following actions:

- a) Inform the Superintendent of Police immediately.
- b) Advise the staffs of the station to rush to the spot and cordon the affected area.
- c) Inform all other police stations.

8.7 District Welfare & Public Relation Department

This Department has a very important role to play in a “Disaster” situation. The affected personnel of any Disaster and their family members require not only rescue and medical help but are in need of psychological support to overcome the trauma. The prime functions and responsibilities of this department are as follows:

- a) To provide and maintain basic amenities required at the time of disaster in the identified “Assembly Points” in terms of mattresses, bed sheets, blankets, benches, drinking water, air coolers, fans, toilets, first-aid boxes etc.
- b) Sufficient stock of foodstuff to be maintained.
- c) To inform the relatives and meet the special needs of the affected personnel.
- d) To make arrangement for shelter for casualties and their relatives.
- e) To arrange additional vehicles, if required.
- f) To convert the existing facilities such as schools, clubs, guest houses into medical/welfare/accommodation facilities and also as “Assembly Points”.
- g) To co-ordinate with local social organizations for providing assistance.
- h) To communicate with press and media with the prior approval of “Declarer of Emergency”. All the data regarding the condition of casualties to be monitored and provided to the media.

COMMUNICATION AND EVACUATION DURING DISASTER

During Disaster, it becomes extremely difficult to assess the emergency, its gravity, reasons, and damages and to activate the required resources to bring the situation under control. It is therefore imperative to identify and establish some basic needs for such a situation, which are as follows:

9.1 Mass Communication

The first and foremost action is to communicate the entire concerned mass about the emergency situation and make them alert to take appropriate action. For this purpose, CODED SIREN has been designed as an effective mass communication. Siren with alternate short and long pitch for continuous five minutes is the coded signal for the

Disaster. After the situation is brought under control, it is equally important to communicate “All Clear” signal. A continuous siren for five minutes shall notify this condition.

9.2 Emergency Control Room

In case of any Disaster it is essential that the “Declarer” or his alternate from a pre-decided and designated spot having all required facilities control the entire situation. Office of the Collector and District Magistrate has been identified as the “Disaster Control Room”. This control room shall be utilized by the Declarer to have overall control of the situation, communicate his decisions/instructions to the Incident Controller and other concerned personnel, and communicate with civic authorities and nearby industries.

The following facilities have been provided in this control room:

- (i) District layout drawing.
- (ii) List of emergency telephone numbers.
- (iii) Emergency lighting system.
- (iv) List of key personnel of the industries/installations involving hazardous process and the unit coordinators.
- (v) Demographic map of District.
- (vi) List of first-aid / medical centers.
- (vii) P&T, Intercom and hotline phone facilities.
- (viii) Public address system (PAS)

9.3 Evacuation

Emergency evacuation of all affected personnel has to be done immediately from their affected area to a safer place, which is termed as “Assembly Point”. The routes to be followed to reach the assembly point shall be known as “Evacuation Routes”. Both the “Assembly Point” and “Evacuation Routes” are pre-determined, free from danger and have been marked on the district rescue layout drawing.

9.4 Assembly Points

The "Assembly Points" should be provided with the following facilities:

- Sufficiently ventilated accommodation.
- Free flowing potable water and toilets.
- First-aid boxes.
- Stretchers.
- Telephones - Both internal and P&T with directory.
- List of important telephone numbers.
- Sufficient stock of food stuff and beverages.
- Emergency illumination

9.5 Rescue Routes

At the break, out of any disaster it becomes essential to evacuate the affected personnel from the locations and assist them to collect in the identified assembly point. In order to carry out the evacuation, two "Rescue Routes" have been identified and designated. These routes have been marked in the district rescue layout drawing.

The following precautions to be ensured

- To provide identification boards near entry, exit & turnings of the rescue routes.
- To keep the rescue route free from any obstructions.
- To provide proper illumination with the emergency services.
- To maintain the roads in good condition.



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