DISASTER MANAGEMENT PLAN

INTRODUCTION

In view of the hazards associated with the Oil Exploration and Production industry, it is essential that a disaster control plan be evolved to effectively deal with the situation utilizing the available resources. There are many agencies involved in the activities associated with a disaster e.g. Government, Fire Service, Medical, Police, Army, Voluntary Organization etc.besides the various departments of the concerned organization itself which requires an organized multi - disciplinary approach to the problem.

The purpose of this DMP is to detail organizational responsibilities, actions, reporting requirements and support resources available to ensure effective and timely management of emergencies at, or affecting OEPL's operations associated in the Duarmara development block. The overall objectives of DMP are to:

- Ensure safety of people, protect the environment and safeguard commercial considerations
- Immediate response to emergency scene with effective communication network and organized procedures.
- Obtain early warning of emergency conditions so as to prevent impact on personnel, assets and environment;
- Safeguard personnel to prevent injuries or loss of life by protecting personnel from the hazard and evacuating personnel from an installation when necessary
- Minimise the impact of the event on the installation and the environment, by:
    - ✓ Minimizing the hazard as far as possible
    - ✓ Minimizing the potential for escalation
    - ✓ Containing any release.

LEGAL REQUIREMENTS FOR DISASTER PLANNING

Relevant statutory requirements, as given below and as amended from time to time, inter alia, are applicable for emergency response preparedness in E&P industry:

- *Oil Mines Regulation (OMR), 1984;*

- *Central Electricity Authority Regulation, 2010;*
- *Manufacture, Storage and Import of Hazardous Chemicals (MSHIC) Rules, 1989 and amended thereof;*
- *The Chemical Accidents (Emergency Planning, Preparedness and Response) Rules, 1996;*
- *Explosives Rules, 2008;*
- *Atomic Energy (Radiation Protection) Rules, 2004; etc*

Additionally, all statutory requirements notified by the Central Government or States, from time to time, shall be complied with, as applicable. Clause-72 of Oil Mines Regulations (OMR), 1984 requires the Mines owner to formulate a contingency plan for fire and clause-64 requires development of an emergency plan for petroleum pipelines specifying actions to be taken in the event of fire, uncontrolled escape of petroleum from pipelines. Also, Clause - 45(3) requires preparation of emergency plan for blow-out of oil and gas wells. The rules on "Chemical Accidents (Emergency Planning, Preparedness and Response) – 1996 compliments the set of rules on accident prevention and preparedness notified under the Environment (Protection) Act, 1986, in 1989 entitled "Manufacture, Storage and Import of Hazardous Chemicals Rules" and envisages a 4-tier crisis management system in the country. OEPL will follows safety guidelines and emergency response procedures as per the detailed regulations given in the Oil Mines Regulation 1984 and Oil Industry Safety Directorate (OISD) Standard 2000.

OBJECTIVES OF THE PLAN

The objectives of Disaster Management Plan (DMP) are to set out the appropriate course of action to mitigate the impact of an emergency event/incident. The plan provides procedures allowing all those involved to mobilize their resources in an orderly way and to react in time effectively. Disaster, in present context means an occurrence resulting in uncontrolled release of hydrocarbon and other associated developments. Most disasters have three common characteristic features i.e. loss of control, unwanted release of energy and failure to arrest chain of events. These may result in loss of life, damage to property, adverse effect on the environment and ecological imbalance.

This plan therefore aims at:

1. *To visualize the possible emergency scenario that are likely to occur;*

2. *To evolve a pre-planned methodology of carrying out various emergency combating plans;*
3. *To prepare detailed responses for each type of emergencies;*
4. *To train operating personnel by means of mock drills, so as to make them well acquainted with the response action;*
5. *To minimize the damage to the environment during emergency; etc*

The plan therefore, aims at immediate response to an emergency event to prevent escalation and also the response in the event of such escalation.

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

1. **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 safety officer.
2. **Evaluation and Accident Control Initiation:** 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.
3. **Containment 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.
4. **Clean-up and Disposal:** After the accident is effectively contained and controlled, the cleanup of the site of the accident and safe disposal of waste generated due to the accident are undertaken.
5. **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/incident 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 completed before the cleanup and disposal phase. However, the effort in all cases is to re-commence the operation as soon as possible.

OEPL will develop site specific on site and off site emergency plan which also includes linkages with local administration, local communities and other operators in the area to provide necessary support. However, salient features of proposed DMP are summarized below:

EMERGENCY CLASSIFICATION

Severity of accident and its likely impact area will determine the level of emergency and the disaster management plan required for appropriate handling of an emergency. Emergency levels and the action needed for each level are indicated below:

LEVEL 1 EMERGENCY

Disaster would be one in which emergency response personnel within the installation would be able to contain and deal effectively with the disaster and its aftermath. In this level of emergency, the response is site specific where site personnel are involved and it takes into account the proposition that the situation is controllable with the help of resources available at site. An installation-specific Emergency Response Procedure (ERP) is available at each installation for this level.

LEVEL 2 EMERGENCY

Disaster would require efforts from OEPL resources at the work centers. Level II response is normally activated when the incident Coordinator reaches the site and after an assessment and taking initial actions decides that the situation requires still bigger response by higher authorities of the company, due to severity of the incident, lack of resources or adverse media publicity, community response etc. From this point, the steps of this DMP are applicable.

LEVEL 3 EMERGENCY

Disaster would be of such a magnitude that it would be beyond the containing ability of work centres and would require mobilization of resources through local administration, mutual aid agencies and State / Central Govt. assistance. The CEC (Chief Emergency Co-ordinator) then activates the offsite DMP.

An accident involving very serious hazard and with likely impact area extending beyond 500 m from the operational area, that is, drilling area limits, such as, major fire, very large release of inflammable material. Major fires will usually have the triggering effect resulting in the propagation of explosion. In a level 3 emergency, evacuation of population in villages, if any, adjoining the operational area may sometime become necessary if threatened area extend to populated village area adjoining the site of the primary accident in a direction of maximum impact.

LEVEL 4 EMERGENCY

Disaster response is initiated when the Oilmax authorities after implementation and assessment of emergency procedures decides that the local resources are not capable to cope-up with the emergency situation. There are adverse business implications and the situation is worsening and drawing more and more adverse reactions which would require the intervention of Corporate & National level. For such responses, Corporate DMP has been prepared and will be available at each installation.

Finally, since every emergency situation is unique in characteristics, the exact plan would be decided by the competent authorities. This plan would, at best, serve as guide for drawing the exact plan.

On-site Disaster Management Plan (DMP) will meet the hazards created due to all Level 1 emergencies and most of the Level 2 emergencies. In addition to on-site DMP, off-site DMP may also have to be put into operation for some Level 2 and all Level 3 emergencies.

Luckily the maximum vulnerable zone may not be extended much beyond development drilling and testing area due to blow out and fire around HSD storage area. Therefore, Level 3 Emergency requiring evacuation of surrounding village population is not applicable in case of drilling and testing area. Even the Level 2 emergency is likely to be confined within a limited distance from the drilling site and HSD storage area, the evacuation of personnel only from affected area will be required. Even under the worst accident scenario, evacuation of less than 30 persons may be involved and damage, if any, to nearby installations is expected to remain confined within the operational area.

ON-SITE DISASTER MANAGEMENT PLAN

The On-site Disaster Management plan is activated in case the emergency requires mobilization of resources from the block manager. This plan is activated by the Chief Emergency Coordinator (CEC), block manager is the CEC at block level and will exercise control through the Block Emergency Control Room (ECR).

EMERGENCY ORGANIZATION

The existence of a well-defined emergency organization is the most vital part of an emergency preparedness plan drawn up to combat any emergency situation. On-site emergency organization chart will be appropriately activated and made functional while combating an emergency situation. The core action group of the emergency organization comprises of the various functionaries of the Duarmara block.

The Project Incharge, Duarmara block is head of the On-site emergency organization and is designated as the Chief Emergency Coordinator (CEC) at Block level. He will exercise control through the Emergency Control Room (ECR). The CEC is assisted by an expert team drawn from various disciplines.

The Chief Emergency Coordinator (CEC) will assume control through the Assistant Emergency Coordinator (AEC). The Chief Emergency Coordinator (CEC) may appoint Head Drilling Services / Head Well Services/Surface Area Manager as Assistant Emergency Coordinator (AEC).

The AEC will have the following expert representatives / services to function under his direct control and provide all the necessary assistance and inputs of men and material.

Chief Emergency Coordinator (CEC)	*Project Incharge, Duarara block*
Assistant Emergency Coordinator	*Head - DrillingServices /Well Services / Geophysical Services and Surface Are Manager*
On-Scene coordinator (OSC)	*Shift I/C in the initial phase & Installation Manager*
Logistics Coordinator	*Manager Logistics*
Safety Coordinator	*Head- EHS*
Material Coordinator	*Store Manager*
Medical Coordinator	*Medical Services*
Finance Coordinator	*Manager Finance*
Security Coordinator	*Head- Security*
Fire Safety Coordinator	*Manager Fire Services*

Communication Coordinator	*Manager -Personnel*
Public Relation Coordinator	*Manager -Personnel*
Welfare Coordinator	*Manager -Personnel*

ROLE OF CO- ORDINATORES (KEY PERSONNEL)

1. **Chief Co- Ordinator**

- *Declares Crisis / Emergency situations.*
- *Communicates with MD / Ministry, State Govt. high officials and releases*
- *Information's to press / mass communications media.*
- *Directs main Co-ordinators as deemed necessary arising out of Crisis situations.*

2. **Services Co-Ordinator**

- *Co- ordinates for fire control measures.*
- *Provision of emergency communication.*
- *Supply of essential services facilities like water, electricity, transport.*
- *Ensures provision of material, repair facilities at workshop.*
- *Provision of temporary accommodation, repair, removal of debris etc.*

3. **Administrative & Welfare Co- Ordinator**

- *Coordinates for security arrangements.*
- *Liaises with police and district civic authorities.*
- *Co-ordinates with Manager (block) for Rescue, Shelter and Medical relief operations.*
- *Informs the voluntary organizations to assist for rescue and relief operations.*
- *Public relations.*

4. **Medical Relief Co- Ordinator**

- *Organizes First Aid at the site of incidence.*
- *Arranges Ambulance Services.*
- *Medical relief camp in nearby Hospital and arranges extended services under.*

5. **Drilling & Workover Co-Ordinator**

- *Assesses damages to drilling/workover installations.*
- *Arranges salvaging of the affected installation.*
- *Act as chief co-ordinator till arrival of MD/President of OEPL as the case may be.*
- *Guide fire Service, security, ambulance at site.*

6. **Employee Relations & Welfare Co- Ordinator**

- *To participate in rescue and relief operations.*
- *To contact relatives of affected persons and provide Food/ Beverage etc. at reliefcamp.*
- *Contacts Union Officials.*

7. **Safety & Environment Co- Ordinator**

- *To liaise between the main Co- ordinators.*
- *To liaise with statutory Safety & Environment authorities i.e. Mines Safety*
- *Directorate, Petroleum & Explosive Safety Organisation, State/ Central Pollution Control Board, OISD etc.*

8. **Finance Co- Ordinator**

- *To give finance support for all activities arranged by Main Co- ordinators.*

9. **Operation Group Co- Ordinator**

- *To co-ordinate activities of Well control measures in case of impending blow out or Blow out with or without fire.*
- *To liaise with Services Co-ordinator for fire control measures and emergency standbyduty.*

EMERGENCY CONTROL ROOM

An Emergency Control Room shall be in place from where the operation to handle the Emergency are directed and coordinated. The ECR should be equipped with good communication facilities like Telephone (2 nos.), Radio Equipment, Wall Chart showing Locations of Installations, fire station, copy of the Disaster Management Plan, List of Key personnel, their addresses and telephone numbers, note pads etc.

A plan or plans of the works to show:

- ✓ *Areas where there are large inventories of materials, including oil storage, drillingmaterials;*
- ✓ *Sources of safety equipment;*
- ✓ *The fire water system and additional sources of water;*
- ✓ *Stocks of other fire extinguishing materials;*
- ✓ *Assembly points, casually treatment centres;*
- ✓ *Location of the works in relation to the surrounding community; and*
- ✓ *Lorry/ truck parks.*

Additional plans which may be marked up during the emergency to show:

- ✓ *Areas affected or endangered;*
- ✓ *Deployment of emergency vehicles and personnel;*
- ✓ *Areas where particular problems arise;*
- ✓ *Area evacuated; and*
- ✓ *Other relevant information*

EMERGENCY REPORTING

- ✓ When witnessing or receiving notification of an emergency, as much information as possible should be taken and/or conveyed to the relevant emergency activation authority. Where ever possible, all information should be logged in written form with time and date included and provided to the Incident Controller.
- ✓ Personnel working on the field may, at any time, be exposed to an emergency, which could take many forms, for example (but not limited to):

Injuries and/or fatalities	*Exposures*
Aggressive releases	*Fires and/or explosions*
Equipment hazards	*Impacts*
Extreme weather	*Adverse environments*

- ✓ When an emergency occurs, an appropriate and prompt response is required, providing precise action to control, correct and return the site to a safe condition.
- ✓ Timely action is also required to protect people, the environment and property from harm.
- ✓ Reporting Forms for actions to be considered, when witnessing an emergency or receiving a report of an emergency.
- ✓ All near misses and unsafe acts will be written in logbooks / reported in the 'Near miss, unsafe acts, hazards and sub-standard conditions report' and verbally communicated to the concerned Supervisor / Superintendent / Installation Manager at an appropriate opportunity.
- ✓ All accidents and incidents will be immediately reported to the Project Incharge (Chief Emergency Coordinator), and appropriate forms completed.
- ✓ All accidents and incidents occurring within the Field facilities will be reported to the Production Manager and Head- EHS as per Duarmara Block operator Incident Reporting and Investigation Procedure. This includes both situations where there is actual damage to health or equipment and also where there has been a threat of danger or a near miss.

SAFETY MEASURES FOR DRILLING INSTALLATIONS

❑ **Standing Order When Well Kicks And The Duties Of Person Employed On The Rig: Shut-In Procedure**

I. While Drilling

1. Stop Rotary.
2. Pick up Kelly to clear tool joint above Rotary table.
3. Stop mud pump and check for inflow. If yes,
    - *Raise Alarm*
    - *Close the Well by any the shut-in method.*

II. While Tripping

1. Raise Alarm

2. Position tool joint above Rotary Table and set pipe on slip
3. Install Full Opening Safety Value (FOSV) in open position on drill pipe and close.
4. Shut- in Well by any of the method.

III. While Out Of Hole

1. Raise Alarm
2. Close blind or Shear Ram.
3. Close Choke.
4. Open HCR/ Manual valve on Choke line.
5. Record SICP and Pit gain.

Positioning of Crew

Driller / Drilling Engineer/ SIC	- at remote choke control panel
Asst. Drilling Engineer/ Jr. Engineer	- on Floor to assist SIC
Derrick man/ Top man-I	- at Choke manifold
Derrick man/ lop man-II	- at Mud Pump
Floor men/ Rig men	- at Stand pipe/ on Floor
Rig Mechanic/ In- Charge (TS)	- at Rig Engines
Pump Fitter/ Technician	- at Mud Pump
Electrician/ in- Charge (Elect)	- at B.O.P Control Unit
Roustabouts/ Trade men	- at Mud Tanks and Pumps
Mud Chemist/ Operator	- at Shale Shaker tank
Geologist/ Mud logger	- at flow line/ MLU

IV. To effectively kill a kick the end of the string shall be closed to the bottom of the well so that bottom hole pressure can be monitored and use of excess mud weight can be avoided. So if a kick is detected during tripping the D. E. should take the following steps:

1. Sound alarm
2. Make up the internal BOP depending on the severity of the kick; he will take either of the following steps:

Case A - In case the kick is not severe i.e. rate of inflow is negligible:

1. Run in the string to bottom as far as possible, carefully comparing the actual displacement volume against theoretical displacement volume, while running in care shall be bottom to fill up the string with mud.
2. After reaching bottom make up the Kelly cock.
3. Open choke line
4. Close annular B.O.P
5. Slowly close the choke line valve
6. Make up Kelly
7. Take steps to record shut in drill pipe and casing pressures

Case B– If the kick is very severe the D.E. shall take the following steps:

1. Open choke line
2. Close annular preventer
3. Slowly close choke line
4. Record annulus pressure
5. Arrange for stripping the string to bottom

The stripping procedure is briefly described as under:

1. Reduce closing pressure on the annular preventer.
2. Strip into the well bore with B.P.V. on the string. Bleed off required volume of fluid into the trip tank with hand adjustable choke. Drilling fluid volume bleed off shall include volume required for proper gas bubble expansion.
3. After reaching bottom, any standard well killing procedure may be adopted to circulate the kick out. It is to be noted that stripping operation shall always be done under proper guidance and supervision.

V. Standing Order for Workover Well Blowout Shut- In Procedures

When one or more of the warning signs are observed, immediate steps shall be taken to shut- in the well. If there be any doubt, it can always be checked up afterwards as even a small flow turn into big blowout in no time.

A. While Drilling

1. Raise Kelly until the tool joint is above the Rotary table or working platform.
2. Stop pump
3. Close B.O.P.
4. Inform IM
5. Read and record the shut- in tubing pressure, the shut- in casing pressure and the pit gain.

B. While Tripping

1. Set top tool joint on slip (If cut- of-hole run back.)
2. Install and make up shut-in-valve in open position.
3. Close shut-in valve and B.O.P.
4. Pick-up and make circulation gear.
5. Open shut-in-valve.
6. Kill outfit engine.
7. Inform IM
8. Read and record the shut-in tubing pressure, the shut-in casing pressure and the pit gain.

Installing a full opening shut in valve instead of a drop in type valve is advisable as further operation such as running in of wire line tools if become necessary can be done through shut-in valve only.

VI. Responsibilities for Shut-In

Each member of the crew has different responsibilities during various shut-in/killing procedures.

A. While Drilling

- **Drilling Crews**

1. JE-II - At Engine Kill
2. TOPMAN-II - At pump
3. TOPMAN-I - At kill manifold
4. RIGMAN V - At well head
5. RIGMAN I-IV - At Derrick floor/ working platform

- **Engineering Crews**

1. Supervisor/ Fitter - Keep in touch with D.E.
2. Remaining - 2 at pumps + 2 at outfit engine
3. Engine Driver - Electrical Switch Board
4. Chemical Deptt. Crews - At flow line
5. Production Crews - Near the well head

- **Drilling Engineer**

1. Pick up Kelly to above Rotary Table/ Working platform
2. Stop pump
3. Close B.O.P
4. Inform Installation Manager / Higher Official.
5. Read & record shut in, tubing and casing pressures and pit gain.

B. While Tripping

- **Drilling Crews**

1. JE II - Engine Kill
2. Topman II - Double board
3. Topman I - Kill manifold
4. Senior Grade - Well head
5. (I-V above) - Derrick floor/ working platform

- **Engineering Crews**

1. Supervision/ Fitter - Keep-in with D.E.
2. Remaining Jugali - 2 at pump + at outfit engine
3. Engine Driver - Electrical switch board
4. Chemical Deptt. - At flow line
5. Production Crews - At welt head

- **Drilling Engineer**

1. Shut-in well immediately
2. If the string is out of hole run back as far as possible without any depth consideration set the top joint on slip. Direct crews to install shut-in value and close BOP.
3. If the string is already in hole set top too joint on slip and direct crews to install shut-in-valve, and close BOP.

4. Notify installation Manager / higher official.
5. Read & record shut-in tubing and casing pressures and pit gain.

- **Kill Procedures**

The following variables are generally considered in killing a well:

1. Present following status
2. Magnitude of the formation pressure
3. Formation fracture pressure
4. Casing & Tubing burst pressure
5. Limitations of the working string such as packer leaks, tubing holes etc.
6. Limitations of surface Equipment
7. After studying all known & unknown variable the kill procedure can be evolved under a given situation.

VII. Precautions To Be Taken After A Blowout Has Occurred

1. An area within 500m of the well shall be demarcated as danger zone.
2. An electrical installation within the danger zone shall be de- energised and an alternative DG shall be commissioned for area lighting.
3. Only approved torches or safety lamps shall he used within the danger zone.
4. No naked light or Vehicular traffic are to be allowed within danger zone.
5. A portable gas detector shall be made available to indicate the presence of inflammable gas.
6. Person engaged in well control shall be equipped with gas makes. Adequate firefighting equipment shall be mobilized at the well site at the earliest. It may be necessary to provide additional sources of water for fire fighting.
7. An emergency medical unit shall be arranged outside the danger zone to render prompt medical help as and when required. This shall be equipped with minimum life saving drugs. One ambulance or any suitable vehicle shall also be kept standby near the site.
8. Temporary accommodation like tents with canteen facility shall be erected near the site.

9. Proper Radio or Telephone communication system shall be made available near the site. A Control room at Duarmara shall be established & shall be monitored round the clock by officers of Sr. level.
10. Civil authorities shall be notified to warn the local inhabitants about the possible fire hazard. The danger zone shall be preferably cordoned off by Security personnel.
11. Transport facility to place additional pumps and tank ages shall also be available at site.

Contingency Plan to Prevent Blow-out

The following actions shall be taken by the Shift – in charge to bring the situation under control.

A. On experiencing Kick, following safety actions to be taken, if BOP fails to seal Well Mouth

Sl.No.	Situations	Actions
1	Alert crew to ensure escape if situation worsens	Shift I/C
2	Divert flow partially, intermittently or fully to waste pit (safe distance)	Drilling crew
3	Send SOS message to Base Office, (i) By EPABX (II) By Emergency Vehicles	Shift I/C
4	Switch off all engines/ generators	I/C Mech/ Elect
5	Remove all inflammable material away	Rig Crew (Drilling/ Mech./ Elect.)
6	Remove important Records to Safe place	Rig Crew (Drilling/ Mech./ Elect.)
7	Remove costly instruments/ equipments to safe place	Rig Crew (Drilling/ Mech./ Elect.)

B. If the Blow out is sudden and massive while initial safety action could not be performed

Sl.No.	Situations	Actions
1	Carry out rescue operation for Top man and move other Rig crew to safe distance	Shift I/C
2	Send SOS message to Base Office, (i) By EPABX (II) By Emergency Vehicles	Shift I/C
3	Reorganize to try operations like BOP, Diversion of flow etc. as listed in (A), if situation permits	Shift I/C
4	If heavy spillage occurs, try to contain in the restricted area	Shift I/C
5	Alert the inhabitants, if private residence near	Geologist/ Chemist

ESSENTIAL SERVICES

1. Water Supply

On declaration of Emergency situation, Manager (Water Supply) and his team would organize availability of Water supply for Fire fighting and drinking water requirement. He would check up the feasibility of maintaining water from central water supply station, failing which he would commission the same from available Tube wells.

2. Transport and Salvage Equipment

Manager (Transport) would check up the fleet and driver's availability or- all Rescue, Salvage, Transport operations and provide the services.

3. Telephone Communication

On declaration of Emergency situation, Incharge- Control Room would check up the feasibility of operation the telephone exchange on mains supply. He would keep ready such alternate arrangements to operate the exchange with portable DG Sets. He would ensure that emergency telephones at declared control rooms are made available readily and available wireless sets at critical operational centers are in working condition.

4. Electricity

One declaration of Emergency situation, Manager (Elect.) and his team would ensure that Power supply is cut off immediately where ever required so. He would try to maintain

Power supply at critical locations like Medical relief centers, Water supply sources etc. Manager (Elect.) and Manager (Water Supply) would organise to provide electricity at essential centers, in case Mains power supply from Power station could not be made available there.

5. Civil Engineering Jobs

One declaration of crisis situation, Manager (Civil) would organise gangs for debris removal, construction of temporary camps, etc.

During the critical phase of emergency, all out efforts would be made for meeting the needs of rescue, relief and fire fighting operation. During this phase maintenance of services like water and electricity for other purposes would receive lower priority. While restoring services, high priority would be given for maintenance of drinking water supply, then electricity.

DO'S AND DON'TS
Do'S ✓ *Release only authorised, verified written information* ✓ *Keep accurate records and logs of all enquiries and news coverage.* ✓ *Escort the Press and government agencies to the nearest safer place at theemergency site.* ✓ *Have a designated Spokesman.* ✓ *Know what information can and cannot be released.*
Don't's ✓ *Speculate on the causes of an emergency.* ✓ *Speculate on the resumption of normal operations.* ✓ *Speculate on the outside effects of emergencies.* ✓ *Speculate on the value of losses and damages.* ✓ *Place blame of emergencies.* ✓ *Allow crowd in the affected area (Those who have no role assigned in the disasterplan should stick to their jobs).* ✓ *Spread rumours.*

CONCLUSION

Even though the key contact personnel chart and role clarity are spelt out, experience has shown that in critical situation like a disaster, there is invariably some sort of panic at the beginning. Each Co-ordinator shall have a manual which will help him to train the personnel under him. This can be achieved if regular mock drills are undertaken. Each and everyone will become more conscious of the type of roles they will have to play to successfully combat the crisis situation.

OFF-SITE DISASTER MANAGEMENT PLAN

Offsite emergency preparedness is covered in the Chemical Accidents (Emergency Planning, Preparedness and Response) Rules, 1996. The following are the Block operator's responsibilities towards generation of the Offsite Emergency Plan:

- To provide basic information on Risk and Environmental Impact Assessment to the Local/District Authority, Police, Fire Brigade, Doctors, surrounding industries and the public and to appraise them on the consequences and the protection/prevention measures and control plans and seek their help to manage the emergency.
- To assist the Tinsukia District Authorities in preparing the Off-site Emergency Plan.

An off-site emergency plan organization has essentially two parts:

A. *Formation of the Local Crisis Group: This Group is headed by the Deputy Collector or the Magistrate of the Industrial area and is responsible for the management of any industrial emergency confined to the local area.*

B. *Formation of the District Crisis Group: This Group is headed by the District Collector of the District and is responsible for any major Industrial emergency affecting Local and beyond any industrial area of the District.*

The composition of the Off-Site Crisis Group is covered in. Since, the actual offsite plan requires the participation of outside agencies; this report does not dwell further on the issue.

Figure 7.3: Composition of Offsite Crisis Group

COMMUNICATION SYSTEMS NETWORK

An efficient and reliable communication system is required for the success of the emergency plan. The efficient communication system is required to alert:

- *Emergency Authorities and Services*
- *Neighbouring area and public in the vulnerable zone*

The communication system requires the following:

- *Communication between Control Room to other units in the terminal*
- *Hotlines between Control Room to Emergency Services, Meteorological Station and the mutual aid members*

- *Paging system and alarm for with the Control Room for alerting the employees*
- *P&T Telephone lines*

A communication flow chart is to be prepared and kept in the Control Room. An up-to-date Telephone Directory of key personnel concerned with the emergency should be available at all times. These matters should be documented and kept within the Disaster Management Plan manual. The Disaster Management Plan Manual is required to maintain a record of police stations, hospitals and fire brigade stations in the area to seek assistance in dealing with emergency situations. The emergency team of Block operator should liaise with these agencies and with district officials and furnish them information on the possible hazards, extent of damage and actions to be taken by them during such emergencies.

ROLE OF EXTERNAL SERVICES

Police	The Police should assist in cordoning off the accident site; organize evacuation and removing any seriously injured people to the hospitals. They shall divert traffic as and when necessary.
Fire Brigade	The fire brigade shall organise to fight fires other than gas fires and provide assistance as required.
Hospitals and Doctors	Hospitals and doctors should treat any injuries, which may primarily be burn injuries.
Mutual Aid from Neighboring Installations	Block operator may also depend on the local facilities handling emergencies. They will have to arrange with the local administration for providing services, such as fire fighting and medical needs during incident particularly in the nearby regions. Telephone links with neighboring industries and customer facility control rooms should be established.

PUBLIC INFORMATION SYSTEM

During a crisis following an incident, the people of the area and a large number of media representatives would like to know about the situation from time to time and the response

of the district authority to the crisis. It is important to give timely information to the public in order to prevent panic and rumors. The emergency public information could be carried out in three phases.

Before the Crisis

This will include the safety procedure to be followed during an emergency through posters, talks and mass media in different languages including local language. Leaflets containing do's/don'ts should be circulated to educate the people in the vicinity

During the Crisis

Dissemination of information about the nature of the incidents, actions taken and instructions to the public about protective measures to be taken, evacuation etc. are the important steps during this phase

After the Crisis

Attention should be focused on information concerning restoration of essential services, travel restrictions, etc

WARNING SYSTEM

In an off-site management plan, one of the most important prerequisites is a good 'Warning System'. Efficient warning system will save lives, prevent injuries and reduce losses. The Emergency Co-ordinator - Onsite in consultation with Emergency Co-ordinator Offsite will decide the appropriate warning system and implement it. The warning systems are of the following types:

- ✓ Disaster Warning (Maximum Credible Loss Scenario) High pitched continuous wailing siren
- ✓ Fire/Toxic Release
- ✓ Long siren followed by short siren
- ✓ All Clear

Depending upon the nature of hazards and the area affected, other methods of warning may be used as follows:

- ✓ Out-door warning sirens
- ✓ Public address system with police
- ✓ ARP sirens

- ✓ Mass media
- ✓ Door to door visit by Civil/Defence Personnel
- ✓ Telephone contact with schools and other organisations/public institutions
- ✓ Information to be provided at common gathering places such as village canteens, shops, etc.

SERVICES SUPPORT SYSTEM

A major off-site incident may affect a number of units and the surrounding colonies. Hence in addition to the communication, warning, public information, fire fighting system, following additional service support will be required:

- ✓ Health and medical services
- ✓ Transportation services
- ✓ Security and police
- ✓ Media
- ✓ Mutual aid services

A telephone directory containing the contact numbers of all these support services should be documented and be part of the offsite disaster management plan.