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6.0 General

The hazard identification step is a key in developing an understanding of the contributors to the risk of operating a particular system or process. Once the hazards are identified, safeguards can be recommended, which can either prevent an event from occurring or reduce the consequences, if at all the event occurs.

A number of recommendations are made below regarding measures that should be taken to reduce the risks of any hazardous event occurring or, if it did, of mitigating the hazards arising.

6.1 Risk Mitigation Measures

The following risk mitigation measures at various locations are suggested.

6.1.1 Well Blow Out

A blow out, though rare, is the worst accident that can occur in a drilling operation that is often accompanied by fire and explosion exposing workers to serious danger to their lives, burns and poisoning. To understand the failure modes resulting to formation of kick and subsequent blow outs we have to understand the safety systems installed for blow out prevention.

Prevention of blow outs rests primarily on control of any kick in the well bore. A kick means entry of formation fluids into well bore in large enough quantity to require shutting in the well under pressure. Once a kick is detected, steps can be taken to control entry of formation fluids into the well bore by over balancing the expected bottom hole pressure with properly conditioned mud and operation of safety valves i.e. BOP, whereby the space between the drill pipes and the casings can be closed and well itself shut off completely. If the early signs of a lick in the well are ignored, it may lead to a blowout, which is a violent and uncontrolled flow of gas from a well bore. Several instruments are provided on a drilling rig for detection of kicks.
CHAPTER VI–RISK ASSESSMENT & DISASTER MANAGEMENT PLAN

6.1.1.1 Flow Sensor

A flow sensor is provided to detect any change in the rate of flow of mud in the flow line. In case of any sudden increase in the rate of flow, it gives an automatic alarm at the drillers control panel as also at the geologist's instrument cabin.

6.1.1.2 Blow Out Preventer

In a well, after the surface casing is in place the following blow-out prevention equipment is installed and maintained before resuming drilling.

- Annular preventer for closing the well regardless of size / shape of the drill string in the hole or no string in the hole.
- Double ram preventer, blind ram for closing against open hole as well as pipe ram for closing against drill pipes.
- Drilling spool located below the double ram preventer. The spool is provided with choke and kill lines which are connected to the choke and kill manifold. A non-return valve is provided in the kill line. Arrangements are made for circulating the kick out.

The blow out preventer, including its pipes and control values is pressure tested. Standard testing procedure is as below:

- During initial installation and after all subsequent installations, the equipment's are tested to full working pressure. The testing pressure for BOP mentioned in the Geo Technical Order (GTO) provides necessary guidance. Bag type preventer are however subjected to only 70% of the working pressure.
- Before drilling out cement from ant string or casing, the BOP is tested to the maximum calculated pressure that the casing can be subjected to.
- In case of repairs of BOP involving disconnecting a pressure seal, the BOP is tested to the working pressure but the bag type preventers is subjected only to 70% of working pressure.
- The BOP and its pipes and control values is “function” tested – once in each trip of blind ram type preventer.
• Once daily in case of pipe ram preventer.

• Once every week in case of annular preventer on drill pipe.

If during test, any blow out prevention equipment’s is found to be detective, drilling operation is not resumed until the BOP has been made serviceable.

There are two control panels for the BOP stack. One of them is on the derrick floor near the drillers stand, another at the accumulator (Koomy). The accumulator unit is located outside the safety perimeter. The control panel is equipped with pressure and flow indicators and suitable markings for close and open positions.

6.1.2 Failure of Mud System

Continuous monitoring of condition of mud in the well provides information useful for well control. The following instruments and equipments are used in the drilling mud system for this purpose:

• A pit level indicator registering increase or decrease in drilling mud volume. It is connected with an audio-visual alarm near the drillers control panel.

• A trip with float-marking device to accurately measure the volume of mud going in to the well. This is useful to keep the well feed with required quantity of mud at all times.

• A gas detector or explosimeter installed at the primary shale shaker together with an audio-visual alarm at the drillers control panel to indicate the well presence of gas-cut mud in the well.

• The kick in the well is prevented by keeping the hydrostatic head of the drilling fluid greater than the formation pressure. The primary control can be lost in the following situations:

• While tripping, if the well is not kept full with the required volume of mud.

• If there is reduction in hydrostatic pressure in the well due to swabbing, which may be caused if the drilling string is pulled out too fast or by a balled-up or clogged bit, which is indicated by insufficient filling of mud.
• If the specific gravity of the drilling fluid is not maintained as per the requirement.

• If there is loss of circulation, which may be caused either due to running in too fast, thereby, causing the weak horizons of the well to break or while drilling through a formation with cracks or cavity.

Use of protective fireproof clothing and escape respirators will reduce the risk of being seriously burnt. In addition, adequate firefighting facilities and first aid facilities should be provided, in case of any emergency.

6.1.3 Risk to Environment

In general, the frequency of leaks is low. Ensuring proper safety can still lower this frequency. Risk reducing measures include proper training for personnel, presence of well-trained engineers and strict adherence to safety management procedures to be incorporated in the plan.

6.1.4 Risks to Personnel

Good safety management, strict adherence to safety management procedures and competency assurance will reduce the risk. Safety practices are needed to carry out jobs safely and without causing any injury to self, colleagues and system.

For total safety of any operation, each team member must religiously follow the safety practices / procedures pertaining to respective operational area. If every team member starts working with this attitude, zero accident rate is not a distant dream.

Any operation is a team effort and its success depends upon the sincerity, efficiency & motivation of all team members. Safety in such operations is not a duty of a single person, but it is everyone's job.

6.1.4.1 Precautionary Measures for Falling Objects

• Provide safety helmets to protect the workers below against falling objects

• Barriers like a toe boards or mesh guards should be provided to prevent items from slipping or being knocked off the edge of a structure
**6.1.4.2 Recommendation for Safety Provision**

- The following are the recommendations given for safety provision:
  - House keeping
  - General lighting
  - Electric lighting
  - Supply and use of protective foot wear, helmets and equipment’s
  - Communication
  - Safety belts and life line
  - Safety warning signs
  - Protection against pollution of environment
  - Proper fencing.

**6.1.4.3 Recommendation for Provision of Personal Protection**

Safety of the people working at the site is important. So, provision should be made for the personal protection. Following are the recommendation given for provision for personal protection:

- Safety Shoe
- Safety Helmet
- Cotton Dungry
- Safety Goggles
- Ear Plugs
6.1.5 Recommendation for Provision for Fire Fighting

Exploratory drilling is carried out as per International and good Industry practice. Despite these measures, the possibility of accidents cannot be ruled out. In order to be ready to face risk of accidents provision for firefighting is made:

The following are the recommendation given for provision for firefighting:

- Firefighting equipment should be installed and maintained. Equipment includes foam type extinguishers, dry chemical powder extinguishers, carbon-dioxide extinguishers, fire tenders etc.
- All fire equipment’s should be maintained and should be of adequate capacity
- Mock fire drills should be conducted every month and observation should be recorded and analyzed
- Proper training should be given to all employees in fire fighting
- There should be provision for fire water system, foam system and fire alarm and communication system.

6.2 Need for Disaster Management Plan

Emergencies may occur due to many reasons. It may occur due to natural causes like earthquake, cyclone, flood etc. It may occur due to malfunction of standard working systems or practices. There can be no set criteria for assessing the gravity of a disaster in the abstract since this depends to a large extent on the physical, economic and social environment in which it occurs.

Several Government agencies, both at the Central and State levels, are entrusted with the responsibility of ensuring safety and management of hazardous chemicals under Acts and Rules made for the purpose. Despite these measures, the possibility of accidents cannot be ruled out. Exploratory drilling is carried out as per International and good Industry practice. Despite these measures, the possibility of accidents cannot be ruled out. In order to be ready to face risk of
accidents during exploratory drilling, a disaster management plan is prepared to mitigate the impact.

6.2.1 Objectives of Disaster Management Plan

The Disaster Management Plan (DMP) is aimed to ensure safety of life, protection of environment, protection of installation, restoration of production and salvage operations in this same order of priorities. For effective implementation of the Disaster Management Plan, it will be widely circulated and personnel training through rehearsals/drills.

The Disaster Management Plan would reflect the probable consequential severalties of the undesired event due to deteriorating conditions or through 'Knock on' effects. Further the management will be able to demonstrate that their assessment of the consequences uses good supporting evidence and is based on currently available and reliable information, incident data from internal and external sources and if necessary the reports of outside agencies.

To tackle the consequences of a major emergency within or in immediate vicinity of the project site, a Disaster Management Plan has been formulated.

The objective of the Disaster Management Plan is to make use of the combined resources of the plant and the outside services to achieve the following:

- Effect the rescue and medical treatment of casualties;
- Safeguard other people;
- Minimize damage to property and the environment;
- Initially contain and ultimately bring the incident under control;
- Identify any dead;
- Provide for the needs of relatives;
- Provide authoritative information to the news media;
- Secure the safe rehabilitation of affected area;
- Preserve relevant records and equipment for the subsequent inquiry into the cause and circumstances of the Emergency.
In effect, it is to optimize operational efficiency to rescue rehabilitation and render medical help and to restore normalcy.

6.2.2 Disaster Management Plan: Key Elements

Following are the key elements of any Disaster Management Plan:

- Basis of the plan
- Accident prevention procedures/measures
- Accident/emergency response planning procedures
- Recovery procedure

6.2.2.1 Basis of the Plan

Identification and assessment of hazards is crucial for emergency planning and it is therefore necessary to identify what emergencies could arise during the production of Oil and Natural Gas. Hazard analysis and the consequence analysis are, therefore, considered as the basis of DMP.

Major hazards/accidents are categorized into the following events involving flammable materials:

- Hazards from spread of fire, explosion or release of flammable substances from the wells, platforms and storage tank
- Hazards from high levels of thermal radiation for limited duration
- External interference such as excavation resulting in blow out of well. Ignition of the released gas from well blow out can cause heat radiation at some distance from the well.

6.2.2.2 Accident Prevention Procedures / Measures

OISD standard 174 gives the codes for well control and standard 189 sets out engineering requirement for firefighting equipment for drilling rigs. Standard Industry practice is to be adopted.

A separate plan is provided to deal with the situations, which necessitate emergency action. The emergency response plan includes details of the
organizational response to emergencies and the safety precautions to be observed in preventing loss of life and damage to property.

a) Operation and Maintenance

Oil and Gas industry experiences throughout the world have shown that the main physical dangers that well faces during operation are mechanical damages caused by excavation works adjacent to the well. To guard the well against damage, a system of regular surveillance and inspection to warn of mechanical or corrosion damage is employed.

Following are the main factors, which determine whether the well will stay free of significant defects:

- The well Protection against external interference such as caused by nearby excavations
- Changes in the well environment
- Adequate well markers

b) Protecting the Well from External Interference

- It is essential to protect the well from being struck or damaged by third parties.
- The primary defense against this occurrence will be:
  - Liaisons with third parties likely to excavate near the well. ONGC shall identify, then make them aware of the well and gather advance notifications of their activities
  - Regular Patrolling of the well to monitor third party activities nearby to the wells. The patrolman should be instructed to report on the following activities, taking place in the vicinity of the well:
    - Ground movement and changing water courses
    - The removal of surface soil or material, tipping or stacking of materials over the well
    - Any other activity which may affect the well

c) Fire Prevention Planning and Measures
Fire is one of the major hazards, related to Oil & Natural Gas well. Fire prevention and code enforcement is the area of responsibility of the fire service.

Safe operating practices reduce the probability of an accidental fire on a platform. Personnel should understand their duties and responsibilities and be attentive to conditions that might lead to fire. The following precautions are recommended:

- There should be provision for safe handling and storage of dirty rags, trash and waste oil. Flammable liquids and chemicals spilled on platform should be immediately cleaned
- Containers of paints and hydrocarbon samples, gas cylinders for welding and cutting should be stored properly. Gas cylinders should be transported in hand-carts
- Cutting and welding operations should be conducted in accordance with safe procedures
- Smoking should be restricted to designated platform areas and “no smoking” areas should be clearly identified by warning signs
- Platform equipment should be maintained in good operating condition and kept free from external accumulation of dust and hydrocarbons. Particular attention should be given to crude oil pump, seals, diesel and gas engines which could be potential source of ignition in the event of a failure
- The Disaster Management Plan will address the issue of a fire event at any location on the well and the procedure to be adopted in the very unlikely event of this occurring.
- If a fire starts in any well, that section of the well will be isolated by closing the section (block) valves, as quickly as possible and surrounding facilities will be cooled with water.

d) Technological Emergencies

The probability of the accidental release of gas or liquid hydrocarbons or a blowout during the drilling of the exploratory well is very low, and any likely consequences
discussed are therefore nominal. However, such accidents can occur, and the overall environmental emergency response method is to:

- Obtain an early warning of emergency conditions so as to prevent a negative impact on personnel, the environment, and assets
- Safeguard personnel to prevent injuries or loss of life by either protecting personnel from the hazard and/or evacuating them from the facilities
- Minimize the impact of such an event on the environment and the facilities by mitigating the potential for escalation and, where possible, containing the release.
- Evacuate villages, if necessary
- ONGC has contingency plans in case of Blowout, Oil spills & other related emergencies to effectively respond to any such incidents that might arise during the project life cycle.
- ONGC has a comprehensive site specific emergency management plan complying with the MSIHC (Manufacture, Storage & Import of Hazardous Chemicals) Rules. The plan will take into account both on-site and off-site consequences of probable accidents and be based on the existing planning documents mentioned above. Subsequently the plans will be linked with local administration, local communities, and other operators in the area to provide a necessary support to ONGC to manage the emergency and also to disseminate information on the hazards associated with the emergency.

6.3 Disaster Management Plan

In case of emergency – Onsite and Offsite following Disaster Management Plan will immediately come into force

Disaster Management Organization will assume control and responsibility in case of any emergency situation. The function and responsibilities of various functionaries of the organization are discussed below.

6.3.1 Disaster Management Team Members

Following are the members of Contingency team constituted at CBM-Development Project to meet any emergency situation:
CHAPTER VI–RISK ASSESSMENT & DISASTER MANAGEMENT PLAN

a) Controller of the disaster management committee (DMC)
   - Project Manager

b) Dy. Controller of disaster management committee
   - Head Surface Team
   - Head Drilling/Workover Services
   - Head Engineering Services
   - Location Manager drilling Services
   - Head –HR-ER
   - Head Sub-Surface Team
   - Head –F&A

c) Co-ordinators
   - Head-HSE
   - Head of the Medical Section
   - Head Security
   - Head HR-ER - Welfare and Public Relation

6.3.2 Responsibilities

Controller of the disaster management committee is whole sole in charge of the any situation which leads to a disaster and Dy. Controllers of disaster management committee will have full supported to controller. Responsibilities are well defined in the DMP for controller and Dy. controller

6.3.2.1 Controller of the disaster management committee (DMC)

Head of the Asset will be the controller of the DMC in Ahmedabad Asset. He will take overall control of the emergency operations.

   i. Takes all major decision regarding handling of emergency /disaster.
   ii. Co-ordinates with all groups to provide resources at site.
   iii. Set a control room at base and keeps overall control of all the activities.
   iv. Declares state of emergency.
v. Enforces the disaster management scheme.
vi. Organizes meeting at site / Asset base and draws schedule of action.
vii. Forms task force and assigns responsibilities to control the situation.
viii. Provides amenities at camp.
ix. Interact with District Collector.
x. Liaison with outside organisation.
xi. Seeks technical expertise of the crisis management team
xii. Co-ordinate with Sectoral / Corporate offices

6.3.2.2 Dy. Controller, ST (Surface Team)

In case of an emergency in Surface activities - His responsibilities are as follows:

i. Works under direct orders of Controller of DMC during emergencies.
ii. Organisation of emergency team.
iii. Sounding of general alarm and timely warning.
iv. Procurement, deployment and maintenance of necessary equipment.
v. Ordering of complete or partial shutdown of units.
vi. Liaison with allied civil agencies for mutual help.
vii. Evacuation, salvage, rescue and rehabilitation.
viii. Preparation of disaster report.
ix. Reporting to the controller on all important matters.
x. Arranging for the expert enquiry, photographers, documentation and public relation work.
xi. Setting up of on-site control room and keeps its executive control.
xii. Interaction with Regional Crisis Management Terms and Assist their efforts.
xiii. Mobilization of resources.

6.3.2.3 Dy. Controller, Drilling Services / Workover Services

In case of an emergency in DS / WOS) His responsibilities are listed below

i. Works under direct orders of Controller of DMC during emergencies.
ii. Organization of emergency team.
iii. Procurement deployment and maintenance of necessary equipment.
iv. Sounding of general alarm and timely warning.
v. Ordering of complete or partial shutdown of unit.
vi. Liaison with allied civil agencies for mutual help.
vii. Evacuation, salvage, rescue and rehabilitation.
viii. Preparation of disaster report.
ix. Reporting to the controller on all important matters.
x. Arranging for the expert enquiry, photograph, documentation and Public relation work.
xi. Setting up of on-site control room and keeps its executive control.
xii. Interaction with Regional Crisis Management teams and Assist their Efforts.
xiii. Mobilisation of resources.
xv. Removal of debris from drill site.
xvi. Preparation of mud.
xvii. Killing of well.
xviii. Capping of well.

6.3.2.4 Dy Controller – Support Manager

i. Assistance in procurement and supply of materials.
ii. Assistance in getting clearance from Custom, Port Authorities and Air Lines
iii. Co-ordination of stores function within ONGC and outside the Organization
iv. Settlement of insurance claims

6.3.2.5 Dy. Controller-Head HR/ER

He will coordinate the various requirements of the situation pertaining to MM Section, Finance, Administration, etc. He will provide the facility such as Food, Accommodation, Transport, etc. to Member of Fighting team at location as well as at base. He will also extend all logistic facilities for movement of Man and Material including requirement of Heavy Vehicle Crane, etc.
6.3.2.6 Dy. Controller - Head Well Services

He should arrange all the well testing equipment and provide services required from W.S.S. & co-ordinate with Head Well Testing for various tools, equipment, expert to control this well flow. He should participate in planning and execution for well control activities along with his well testing team and C.M.T.

6.3.2.7 Dy. Controller-Head HSE

He will coordinate the various safety aspects of situation such as removal of Power source, monitoring gas level, movement of vehicle with spark arrester, switching of H.T. Line with the help of Electricity Board, educating nearby population not to use fire source. He will be in touch with statutory body forwarding information of the situation and get guidelines from them.

6.3.2.8 Dy. Controller-Head SST

He will provide the basic input to situation of disaster and asses the damages, redressal measures from Reservoir point of view.

6.3.2.9 Dy. Controller-Head ES

- Provide technical support related to Civil, Electrical & Mechanical Services
- To provide & approve drawing and design required for emergency operations.

6.3.2.10 Dy. Controller-Head Finance

- Financial assistance in mobilizing equipment/services & materials
- Obtaining approval for foreign exchange
- Assistance in documentation for insurance claims
- Financial assistance in compensation for damage of life and property

6.3.3 Head Of Emergency / Crisis Management Team:

Emergency Team (Crisis Management Team)

i. Every group of the Asset & Location should have emergency teams in all discipline which should form part of the overall emergency force.
ii. Names, addresses and duties of every individual of the team should be notified and displayed prominently.

iii. All members should be trained and made to attend periodical rehearsal and exercises, and

iv. Practice the use of different equipments and should be well conversant with the directions and drills contained in the manual.

Responsibilities should include:

i. Alerting security, fire and other Plant emergency services.

ii. Brief the Controller on the Latest situation in his area.

iii. Timely warning to the employees and their families.

iv. Mobilization of team of experts.

v. Control and Supervision of the working of the teams and their relief on Shift basis.

vi. Preparing report on the disaster.

6.3.4 CO-ORDINATORS:

6.3.4.1 Safety Coordinator:

Head HSE will be the Safety Co-ordinator.

i. To send concerned safety Officer at site on first call.

ii. Assesses the overall safety situation.

iii. Maintains all statutory requirements regarding personnel safety and Environment Management.

iv. Assesses the environment impact of any disaster and suggests method for containment.

v. Keeps the chronological record of all events during an emergency.

vi. Remains available at the site of disaster.

vii. Assists post emergency enquiries.
6.3.4.2 **Medical coordinator** :

Head of the Medical section would be the medical Co-ordinator. Following are the functions & responsibilities of Medical Co-ordinator.

i. Forms a team with the help of first aid trained personnel of the asset. Mobilizes first aid teams with adequate medical facility at emergency site.

ii. Establish a medical centre at emergency site.

iii. Keeps a medical kit (equipment, medicines, aids etc.) for immediate treatment of different kinds of injuries of illnesses particularly asphyxia, unconsciousness, bleeding, fractures and burns at city dispensary so that same could be immediately made available alongwith a doctor at the emergency site on receipt of first information for onsite treatment of the victims.

iv. Arranges treatment of the injured at ONGC dispensaries at Ahmedabad, Colony, Chandkheda and other hospitals.

v. Liaison with hospitals.

vi. Follow up with hospitals about injured persons.

6.3.4.3 **Security Coordinator** :

Head of the fire and security will be the security Co-ordinator. Responsibilities and functions of the security Co-ordinator are as follows.

i. Directs fire officer.

ii. Dispatches fire tenders to emergency site.

iii. Identifies special fire fighting equipments.

iv. Arranges security forces (Civil Defense, TA Personnel, CISF) at the emergency site.

v. Ensures cordonning off the emergency site area, banning entry of unauthorised person and security of property of the ONGC, important records etc.

vi. Prevents theft, looting, sabotage and espionage.

vii. Co-ordination with police / defence if required.
viii. Arranges evacuation.
ix. Controls mob and inspires confidence among a crowd of disorganised, confused and frightened individuals.
x. Responsible for post emergency scrutiny.
xi. Suggests corrective steps for future implementation.

6.3.4.4 Welfare & Public Relation Coordinator:

Head of HR/ER in the Asset will function as welfare and Public relation Coordinator. His / Her responsibilities and functions will be as follows:

i. Appraises of the actual situation, prevailing at the site to personnel & family members and to civil authorities as and when directed by Controller of DMC.
ii. Arranges setting up of camps at emergency site.
iii. Ensures supply of food and other essential amenities at emergency site.
iv. Maintenance of record of personnel at site, dead, injured & missing personnel.
v. Arranges for financial compensation.
vi. Handles all situations relating with public relations after due approval of Controller of DMC.
vii. Photography or filming of Emergency site.
viii. Discharges functions as directed by Controller of DMC.
ix. Arranges rehabilitation work.
x. Hospitalities of outside dignitaries.

6.3.5 Role of Emergency Control Room

EA to ED-Asset Manager will establish Emergency control room at base complex of CBM Development Project, Bokaro, Emergency control room will function under control and directives of Controller of DMC.

i. The control room should be located at a pre-selected place.
ii. It will work as nerve centre for all emergency operations.
iii. It should be equipped with charts and maps and diagrams of the whole oil fields of the asset.

iv. All instructions and documents pertaining to different emergencies should be available there.

v. All Communication facilities including wireless communication should be available there.

vi. The Controller of DMC, Dy. Controller and other key personnel should be located near the control room to supervise and control emergency operations.

6.3.5.1 Responsibility of Control Room includes:

i. Command and control of the entire operation.

ii. Mobilisation of manpower of security, fire and medical emergency teams.

iii. Establishment of communication with outside agencies.

iv. Collection and analysis of up-to-date situation reports and its dissemination to concerned officials.

v. Keeping the management well informed at close intervals about the crisis situation and the rescue and relied operations.

vi. Requisition of manpower and material from outside.

vii. Replenishment of essential supplies.

viii. Maintenance of record of dead, injured and missing persons.

ix. Maintenance of record of losses and recoveries.

x. Information to statutory bodies viz. DGMS, OISD, GPCB etc.

6.3.5.2 Responsibilities of Incharge Fire Services:

i. Sends fire officer/assistance immediately to the emergency site.

ii. Informs head of fire section and nearby fire station by quickest available communication means.

iii. Record occurrence properly and appraise to deputy controller concern/control room.
iv. Keeps equipments/appliances ready for additional help.

6.3.5.3 Responsibilities of Fire Officer:

Fire officer deputed at emergency site by head of the fire section will carry following responsibilities.

i. On arriving at the site **he / she will assume full responsibilities for putting of the fire.**

ii. He/ she will take charge of all fire fighting appliances & equipment.

iii. He/ she will follow up and supervise the fire fighting operations in consultation with fire co-ordinator.

iv. Organises fire-fighting crew.

v. Guides working personnel at emergency site in fire fighting.

6.3.6 Operation Evacuation:

If the situation is out of control the area around the well would be evacuated. The decision in this regard would be taken by appropriate authorities of Location / Asset who would take stock of the situation and earmarks the areas to be evacuated.

Operation evacuation would be carried out by Security Officer in co-coordinating with district authorities.

6.3.7 Offsite Disaster Management Plan

**Responsibilities of Off Site Coordinator / District Magistrate:**

- He will ensure assistance from disaster management cell at district, block and village level.

- He will harness technical assistance from
  - Meteorological Department
  - Defence Services

- He will coordinate with state disaster management authority of Gujarat
• He will direct / seek advice coordinators of DMP from ONGC with respond to any local / national / international technical support or service specific to oil industry.

• He will coordinate all the search and rescue operations.

• He will instruct police, fire services, and medical services of district for necessary activities.

• He will deal with media for passing on any information with regard to disaster control.
ONGC Crisis Management Team Set-up

CHAPTER VI–RISK ASSESSMENT & DISASTER MANAGEMENT PLAN

Oil and Natural Gas Corporation Ltd.
CHAPTER VI–RISK ASSESSMENT & DISASTER MANAGEMENT PLAN

OFFSITE DISASTER MANAGEMENT PLAN

Controller / Coordinator of scene from ONGC

If required will seek international oil industries specific technical support

DISTRICT MAGISTRATE / DISTRICT COLLECTOR CONTROLLER OFF SITE DMP

If need arises will seek assistance from

Will activate

State level disaster authority

State level nodal ministries

Panchayat level disaster authority / committee

Central level nodal ministries

Village level disaster authority/committee