Risk Assessment

Mines face certain types of hazards which can disrupt normal activities abruptly and lead to disaster like fires, inundation, and failure of machinery, explosion, to name a few depending upon the nature of process.

Definition and Scope

A major emergency in a work is one, which has the intensity to cause serious injury or loss of life. It may cause extensive damage to property and serious disruption both inside and outside the work. It would normally require the assistance of emergency services to handle it effectively. Emergency may be caused by a number of different factors; it will normally manifest itself in two basic forms, viz fire, explosion or toxic release.

An important element of mitigation is emergency planning i.e. recognizing that accidents are possible, assessing the consequences of such accidents and deciding on the emergency procedures, both on site and off site that would need to be implemented in the event of an emergency. Emergency planning is just one aspect of safety and cannot be considered in isolation.

Objective

The overall objectives of the emergency plan are:

(a) To localize the emergency and, if possible eliminate it; and

(b) To minimize the effect of the accident on people and property.

Elimination requires well planned process/technology and its effective implementation, so that such situation should either not arises or if it comes, a pre warning is received for timely action in built or by preparedness for zeroing the effects. Minimizing the effects may include prompt action, rescue, and first aid, and evacuation, firefighting and also passing on information promptly to people living nearby.

The following natural / manmade problems may be encountered during the mining operation as linked to its process explained in Chapter-2:

- Slope failures at the mine faces.
- Accident due to storage of explosive and blasting.
- Accident due to nature of terrain

It is an opencast mining. The height & width of benches shall be kept 6m & 6.0m with face slope 70^0. Mineral shall be exploited with the adoption of drilling & blasting. The

blasted material broken manually, loaded into trucks manually as well as with the help of an excavator.

The recovery of Limestone has been taken as 100% of the total excavation as per the past experience within the area. Due to past exploration work it was revealed that no mining losses/processing losses observed.

All the statutory precautions should be taken for quick evacuation as per the Mines Act 1952, the Mines Rules 1955, Rule of MMR- 1961 and the Rules of MCDR-1988.

7.3.1 POSSIBLE DISASTERS TOGETHER WITH CORRECTIVE AND REMEDIAL MEASURES ARE DESCRIBE AS UNDER

7.3.1.1 Disasters due to failure of slopes

The rocks are blasted to win the mineral causing cracks and opening in natural binding. Such loose rocks may fall at any time causing damage to human life and machinery. The only remedy to the affect to such situation is to dress the blasted part. All necessary precaution will be taken as per REG.115 (1) of MMR 1961 to avoid any disaster.

Sliding of waste dump is an equally severe risk like quarry slope failure.

7.3.1.2 POSSIBLE DANGERS DUE TO STORAGE OF EXPLOSIVES

Explosives-

Material used in explosive is-

1. Slurry explosive
2. ANFO with safety fuse
3. Ordinary detonators

All precautions as per MMR 1961 will be observed. Minimum cording safe distance of 500 m is maintained during blasting.

The access is restricted, the timings of blasting are duly notified and announcements are made.

7.3.1.3 CARE AND MAINTENANCE DURING TEMPORARY DISCOUNTENANCE.

Mining lease is a continuous working mine. At the time of temporary discontinuance of mine, notice (as per Rule 24 of MCDR, 1988 & Reg.6 of MMR, 1961) will be sent to IBM and mines Safety authorities. Notice will be accompanied as per Rule 24 of MCDR, 1988, vide, Form no.D-1.All precautionary steps will be taken into account in respect of care and maintenance.

7.3.2 DISASTER PREVENTION MEASURES.

In order to take care of above hazard / disasters and overall safety at mining site the following control measures have been envisaged:

- Checking and regular maintenance of garland drains and bunds to manage run-offs. As a precautionary measures before onset of monsoon, garland drain is developed to divert water from outside the mining area. The rainwater thus diverted is coursed to natural nallahs or collected in the sumps. This helps to control the inflow of water from the virgin areas into the mine workings. The floors of different benches are gently sloped so that working remain water free.
- Entry of unauthorized persons will be prohibited.
- Firefighting and first aid provision shall be kept in the mining area as well as in tractor trolleys or trucks. In addition basic infrastructure as ropes and digging tools including saw, torches shall be made available at site.
- Safety equipment such as safety boots, helmets, goggles etc. will be made available to the employees and regular checked for their use.
- Training and refresher courses for all the employees working in the mine.
- Working of mine as per approved plan and regularly updating the mine plans.
- Regular maintenance of mine faces.
- Regular maintenance and testing of all mining equipment as per manufacture's guidelines.
- Increasing the awareness of safe practices through competitions, posters and other similar drive.
- It will be ensure that drivers are properly trained in hill driving, have licenses. Use of mobile phones while driving shall be strictly prohibited.
- Numbers of local health centres, police and ambulance providers shall be displayed at mining site. A tie up shall be done to ensure that workers are taken to nearest hospital without any delay.
- Workers blood group shall be noted so that at the time of accident the information can be provided.
- Work shall be suspended during monsoons as well as other heavy rainy days.
- No work shall be allowed at night
- Workers will not stay at site at night.

- The haul road shall be suitably laid down as per guidelines for hill roads and proper berms shall be maintained. The road slopes shall be provided vegetative protective measures in addition.
- Numbers of Project proponent and Site Supervisor shall be displayed at site as well as on vehicles.

Since the mine has been in operation in past, the following, and an evidence of some of the activities as being undertaken in past is given from photograph.