ANNEXURE : XXX

M/s RUNGTA MINES LTD.

(CHALIYAMA STEEL PLANT)

CHALIMAMA, KESARGADIA

SERAIKELA - KHARSAWAN

ON-OFF SITE EMERGENCY

MANAGEMENT PLAN

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Vide Memo No 918 Dated- 5.4.2007

FORWARD

ON-OFF SITE EMERGENCY PLAN is a documented planning to tackle and mitigate any catastrophic or hazardous situation creating emergency like situation in a plant or factory. In addition to ensure safety to the extent possible, the document also takes care of the provisions and requirements of following Acts/Rule.

1. The Factories Act – 1948

2. Bihar Factories Rules – 1950

3. Factories Act (Amendment) – 1987

4. Hazardous Wastes (Management & Handling) Rules – 1989

5. Environment (Protection) Act - 1986

The support extended by the Director as well as the Officers in the preparation of this document is well appreciated.

It is felt strongly that this document shall go a long way to improve the preparedness for any emergency in the Factory.

Brij Bihari Tiwari
Competent Person

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इस कार्यालय के पत्र संख्या 4914 ।
दिनांक 16.1.2010 में उल्लिखित शर्त
के साथ अनुमोदित

16/1/2010
मुख्य कारखाना निरीक्षक

1. Introduction ; A(1-5)

A-1 : Major emergency like situation will arise if unwanted events is likely to affect several departments within the plant boundary or may cause injuries, loss of life, extensive damage to property of serious disruption outside. The mechanical hazards due to the arising out of the types of machinery installed, nature of process and the materials handled but the use of the substances (combustible material), handling or storages (if any) of flammable chemicals in the bulk quantities in the store. Lab etc. makes the industry more vulnerable to fire and explosion.

Planning for emergency is a part of responsibility of the management to protect both employees and public in the events of catastrophic situation. The FACTORIES ACT, 1984 as amended in the year 1987 and the Rules 13 and Rules 14 as envisaged under the Control of INDUSTRIAL MAJOR ACCIDENTS HAZARDOUS RULES, 1990 requires that every occupier shall draw up on-site Emergency management plan and detailed disaster control measures for his factory and makes them known to the employees and to the general public living in the vicinity of the factory.

A-2 : M/s RUNGTA MINES LTD. (CHALIYAMA STEEL PLANT) is engaged in the manufacturing of Sponge Iron. The factory is located in the at Vill.:Chaliyama,P.O.- Keshargadia,Dist- Seraikela-Kharsawan, Jharkand. The factory has been established in the year of 2007.

It is registered company under the Company's Act, with office at CHIBASA, JHARKAND , the License No. is 70012 / SBM.

Neighbourhood details -

East :- Chaliyama Vill.:

West :- kharkai River

North :- M/S S.P.Minerals (Crusher Plant)

South :- Highway (Chaibasa – Jamshedpur) 1 ½ KMS

Existing and proposed capacity is as :

1. Sponge Iron Plant of Capacity of total 700 M.T./Day.
   (7nos.× each of 100 tpd)
2. Mini Steel plan to manufacture of Iron & steel in primary & semi finished forms and include rerolling of iron and steel Capacity 0.20 mtpa (Induction Furnace 0.20mtpa).

Spong Iron or Direct reducing Iron, is a high ferrous charge material used as a substituted for scrap as the primary raw material in Induction furnace. It can be produced both from lumps and pellet from or in a compact and briquetted from known as not Briquetted iron.

In raw materials used is the direct reduction process are –

i) Lump ore

ii) Coal

iii) Dolamite

The raw materials are available in the vicinity as well as in the adjoining state Orissa.

The operation is of continuous nature. The factory runs around the clock.

Timings of Shifts:

- General Shift : 8 A.M – 5 P.M
- Shifts A : 6 A.M – 2 P.M
- Shifts B : 2 P.M – 10 P.M
- Shifts C : 10 P.M – 6 A.M

Details of workers:

- No of workers in general shift : 80
- No of workers in Shifts A : 40
- No of workers in Shifts B : 25
- No of workers in Shifts C : 25
- Total No. of workers working in day : 30
- Total No. of workers employed : 195

A-3 : The effect of any major accident that might occur naturally or physically can be minimized by putting into effect emergency plan. Disaster planning is just one means of ensuring safety for natural climates. It can be consider in isolation and its proper place is also to back-up the preventive measures which can be summarized as follows :

(i) To ensure that the plant and storage vessels and designed and installed to a good standard and in a location where hazardous are unlikely to arise from other plant or building nearby.

(ii) To ensure that proper work routings and effective maintenance procedures are set up.

(iii) To asses, what could still happen to cause an emergency situation , further preventing may still be possible.

(iv) To asses, what damages could arise to the people both on side and off side as result of these foreseeable and these could be mitigate by planned remedial and rescue measure.

A-4 : Information, in details, regarding any disaster which might have occurred in this factory in the past. This information should be given in the Table 1(ANNEXURE II).

A-5 : The main objective of the plan are to take immediate actions to meet any emergent situation making maximum use of the combined in –

(i) Plant and allied resources for the most effective, speedy and efficient rescue and relief operations. Those are briefly enumerated below.

(ii) To cordon and isolate the affected area for smooth rescue operation.

(iii) It will also show in true sense the awareness of management towards the safety of the personnel, properties as well as environment.

(iv) The plant will also provide the quick relief and rehabilitation.

(v) To rescue and treat casualties and safe guard the rest.

(vi) To identify any dead and provide for the needs of the relatives.

(vii) To provide necessary information to statuary agencies.

(viii) To provide information to the new media.

2. Manufacturing process ; B(1- 4)

B-1 : Following plant and machinery and required / involved in the process.

1. Ground Hopper
2. Vibratory Feeders
3. Belt Conveyors
4. Roll & Impact Crusher
5. Vibrating Screens
6. Weigh Feeders
7. Rotary Kiln
8. Shell Air Fans & Cooling Air Fans
9. Pendulum Flaps
10. Hydro-thrust Mechanism
11. Central Oil/Coal Burner System
12. Transfer Chute
13. Air Compressor
14. Coal Injector with Piping
15. Roots Blower
16. Rotary Cooler Set
17. Water Pump
18. Pendulum Valve
19. Magnetic Seperators
20. Dust Settling Chamber

21. Water Spray System

22. Wet Scrapper

23. Emergency Stack System

24. D.G. Set

25. Pay Loader

26. Pollution Control Equipment

27. Weigh Bridge

28. Gas Cleaning System

B-2 : Sponge iron production using coal involves reducing iron-ore with coal or lignite. The reduction is carried out in a Rotary Kiln at a Pre determine temperature and controlled atmosphere. The input raw material i.e. iron ore , coal and limestone in the required calibrated sizes are fed into the rotary Kiln which is inclined and rotates at a required range of speeds.Due the inclination and the rotary motion of the Kiln, the raw material move from the feed to the discharge end. In the Process it gets pre - heated and reduced to sponge iron. The material discharged from the Kiln is taken into a rotary cooler where the material is cooled. The cooled product at about a temperature of 80° C. is discharge from the cooler and taken to the product separation and handling system. The product, which consists of sponge iron and non-magnetic such as char etc., is screened to the different size fractions and then magnetically separated by means of magnetic separators. Sponge iron is taken to a storage bin for dispatch. The char, which is not

magnetic and contains a certain amount of carbons, is taken into a separate bin and can be recycled if found suitable or alternatively sold as fuel for application such as in brick making and so on.

B-3 : RAW MATERIALS REQUIREMENTS & SPECIFICATIONS :

The major raw materials required for production of sponge iron are Iron ore, coal and limestone. The Fe content of the iron ore should preferably be 65% and above with a gangue content under 5%. In respect of coal,the fixed carbon should be 45% or higher, with ash not more than 25% Limestone, which is used as a desulphuriser , should have a CaO content of the above 45%. The approximate annual requirement of the above raw materials in the size fraction as indicated against each are as follows.

Iron Ore (5mm- 16mm)

Coal (0 – 20mm)

Limestone (1mm – 4mm)

The chemical composition of raw materials shall confirm to the following.

(i) IRON ORE :

Fe (T)	-	65.00% min.
$SiO_2 + Al_2O_3$	-	5.00% max.
S	-	0.01% max.
P	-	0.04% max.

(ii) COAL :

FC	-	45% min.
VM	-	28-32 %
Ash	-	25 % max.
Moisture	-	10 % max.

(iii) LIMESTONE :

should be brought near the storage and in course of handling and use of the substance Oxidizing material to be kept away from the oil. Adequate ventilisation is to be mentioned in the storage area.

(b) Extinguishing agents such as :

Foam

Carbon dioxide

Dry Chemical

Are to be maintained for fighting fire

(c) As regards health hazards, it is necessary to:-

i) Maintain adequate ventilisation to keep vapour concentration down.

ii) Prohibit aiphonig by mouth

iii) Provide protective clothing to avoid skin contact.

iv) Adequate First – Aid arrangements and facilities to be maintained.

$CaO + Mg O$ - 45 % min.
$SiO2 + Al2O3$ - 5% max.

B-4 : MAIN PLANT FACILITIES :

Major facilities of the plant are classified as follows :

(i) Raw material preparation and handling system :

The raw material iron ore or coal are received in the form of lumps is crushed in crusher and screened to the required sizes and conveyed to the prepared raw materials storage hoppers by means of conveyors.

(ii) Storage of raw material and feeding system :

Calibrated raw material (i.e., iron ore, coal and limestone) are stored separately in bins, which can hold stacks for one or two days. The raw materials in the required proportion are drawn from the storage bins by means of special volumetric feeders or electronic weighing and conveyed for feeding into kiln by means of conveyors.

(iii) The reduction unit consisting of feeding system :

The reduction unit consists of a Rotary kiln, the inside of which refractory castables and bricks. The kiln is supported on roller station and rotated of a variable speed AC motors and girth gear mechanism. Fans are mounted on the shell for providing secondary air. Central Burner and the coal throwing devices are provided at the discharge end. For initial heating oil is used. The rotary cooler is supported on two support stations and drive through AC drive and gear mechanism. The cooled materials is then discharge on the belt conveyor which is sent to the production separation system. The entire Reduction Unit (i.e.,

cooler and Kiln) is provided with specially sealing system to avoid leakage of out side air into the system.

(iv) Product separation and Storage System :

The cooler discharge material is taken to a vibrating screen where different size fractions are separated and passed through a set of magnetic separators for separating sponge iron from char. The products Sponge Iron lumps and sponge iron fines and by-products char, dolo-char are taken into the individual bunkers.

(v) Waste Gas System :

The waste gasses from the kiln pass through the dust - settling chamber where the coarser particles settle down. From the dust settling chamber the gasses move to the after burner chamber where the excess air available burns out the combustibles in it. The water is sprayed in the ABC where the dust particles coagulate and further settle in the DCS tank.

(vi) Waste Gas Cleaning System :

The hot gasses from the After Burning Chamber will be taken into the Gas conditioning Tower, where the gas temperature will be reduce from 950°C to 1200°C and then these gasses will be cleaned in Electro – Static Precipitator before the gasses are let of to the atmosphere.

3. SAFETY INSPECTION ; C (1-8)

C-1 : Safety inspection is a technique of discovering potential accident risks. This is one of the oldest of accident prevention techniques. Plant safety inspection became an important tool in accident prevention right from the early days of development. Just as inspection is an important function for carrying out quality control of the products manufactured, similarly plant safety inspection plays a vital role in accident prevention. Its purpose is to find out and remove the hazards in a job before an accident occurs.

C-2 : SAFETY MEASURES SUGGESTED :

The catch basin provided at the storage tank did not appear to be sufficient for the purpose of which it is erected. In the event of rupture of the tank or hole/ puncture at its periphery above the base (bottom) will cause the acid to gush out from the hole / punctured point with great force out of the tank which will cross over more then 2-3 water barrier wall the dyke and spread widely over in low lying areas, drains etc. and may come in contact with the flammable or oxidizing substance or metals which may be attacked by the acid with the formation of hydrogen, explosive limits of which are 4- 75% by volume in air. Thus the acid may react destructively and violently.

- It is suggested that in the event of rupture of the tank considering the acid in the tank is at its optimum level. The floor beneath the

tank and also of the entire pit/dyke or any catch basin, the surface of the wall around the tank should be of acid resistance type.

- The storage tank should be protected from direct sun light and covered with anti corrosive paint to prevent corrosion from moisture and fumes.
- Provided with stair ways permanently with platforms where necessary for convenient and safe access to all parts of the tank.
- A drain connection at the lowest point in the tank discharging into a safe place.

C-3 : HOUSEKEEPING :

It is good to notice continuous improvement in house keeping. In factory housekeeping does not only mean cleanliness, but a place for everything and everything in its place. Cleaning and house keeping tasks are unpopular with workers because they are considered menial and with management who often consider them to be unproductive. It is well known fact that poor housekeeping is a major factor in accident causation leading to human injury and loss to productivity. Therefore, continuous effort of the management should be applied to make housekeeping good. Good housekeeping also demands knowledge, co-operation and participation for the employees. Hence, the need for training and instructing employees and motivating them to follow good practices is also necessary.

All workplaces, machinery/plants/equipments and ways were found in neat and clean condition and nowhere was found any untidiness. There are provided easy means of access to all part of the plant and floors, platforms, stairways and passageways and gangways are kept free from obstructions.

There is a system made for housekeeping to be good and effective. Every Monday from 11 AM to 12 Noon team of senior officers visit various locations of the plant to check the cleanliness and see that everything is on its place.

C-4 : STORAGE :

Diesel is used for generating hot water in the HOT WATER GENERATORS installed in the factory and also for running the DG-Set for which it is kept stored also. The auto –ignition temp (b) explosive.

Limits and (c) flash – points of the substances are : (a) 256.6°C; (b) 0.7 to 5% by volume, and (c) 22°C to 96°C respectively.

Petroleum products including the Diesel are hazardous when the properties of vapour and air are in explosive range. A source of ignition such as a match, electrical spark, a spark from steel from steel of lint, a lightening strike etc and if the vapour and air ratio is within the flammable limits, there will be fire or explosion fro which apart from taking necessary safety measures, an emergency plan should also be prepared.

C-5 : EXPLOSION HAZARDS :

Atomized oil in the presence of oxygen of air behaves in the same manner as any inflammable gas and there is always a danger of explosion in the combustion chamber or furnace in which the fuel use is

oil. Whether atomized by air or steam. All such mixtures whether atomized oil or gases or even pulverized combustible solids, like pulverized coal have two limits of inflammability, though incase of solids these limits vary depending upon the fineness of the pulverized solids. If the concentration of the fuel in the air is below a certain limit it does not form an explosive mixture, similarly, when the concentration is above the higher limit, the mixture ceases to be explosive. A mixture of such fuel in air is therefore an explosive mixture within these two limits. These limit may also very with temperature and pressure. It will appear, therefore that if in a confined space, namely in a furnace chamber or even a room there is a mixture of any fuel in air within the limits of inflammability, is likely to explode as soon as a source of ignition of the optimum temperature is supplied. Great precautions are, therefore, necessary in handling such fuels, gases, dust or fumes.

C-6 : TRANSPORATION :

Following vehicles are available with the plant for transport on ownership or contract basis.

Car -

Truck -

Dumper -

Tractor -

Hired vehicles can also be arranged within a short notice in case of any emergency.

C-7 : (A) (i) Safety Audit is an important and useful technique for industrial managements whereby they can obtain a systematic critical appraisal of the effectiveness of a company's safety programmed

which is undertaken with a view to suggest improvement and up gradation.

(ii) Safety Audit is a useful technique to test the effectiveness of a company's safety program. It keeps the operating personal alert to process hazards, reviews operating procedure for necessary revision, seeks to identify hazardous equipments or process changes.

(iii) Safety Audit means a systematic critical examination of an Industrial operation to identify potential hazards and level of risks.

(iv) Safety Audit is an important tool intended to assist management in its basic aim to achive a highly efficient and profitable operation.

(B) It is also suggested that the person in charge of transfer, Operation shall ensure that transfer, operation are stopped In the event of :

a) Any leakage observed

b) A fire occurring in the vicinity

It was told that necessary instruction have been given in regard.

The suggestions regarding lifting machines , lifting tackles and pressure vessels/compressors in the earlier audits are being complied.

C-8 : (A)The board objective is to critically evaluate the safety program , Particularly the system , to identify and control the hazards and check that audit does not comply with minium statutory standards but also it meets the standard code of practice.

The specific objectives are :

* To see the operation / maintance is carried out and check that there are normal practices.

* To rectify and bring forth any design or process deficiency which has come up during expansion ,modification or the course of time.

* To specify the area of high risks and recommend them for more detail risk analysis studies.

* To check the plant personnal for security training , fire fighting and management of the plant emergencies.

*To see whether the organization meets the statutory rules and regulations of the Government or not.

*To educate plant personnel on safety and loss prevention.

*To look into waste management and environment control.

*To expose overall conditions of the plant.

(B) SAFETY COMMITTEE:

Safety committee plays a very important role in implementing the safety and loss prevention programme of a company. Workers participation is very significant in the safety committee. The management have formed safety committee consisting of equal number of representative of workers and management. It should be ensured that safety committee meets as often as necessary but at least once in very

quarter. It was reported that safety committee meets quarterly. The tenure of the safety committee should not exceed two years and the workers representative of the committee be elected by the workers. Safety committee plays a very important role and is one of the mot management's safety functions. Most of the safety activities and workers complaints and suggestions are implemented through this committee.

FUNCTIONS & DUTIES OF SAFETY COMMITTEE :

- Promoting co-operation between the workers and the management in maintaining proper safety and health at work and reviewing periodically the measures in this regard.
- Creating safety awareness amongst all workers and under taking educational training and promotional activities.
- Carrying out health and safety surveys and identifying the causes of accident.
- Looking into the complaints made on the likely hood of an eminent danger.
- Reviewing the implementations of the recommendations made by it.

(C) : It was informed that inspections being done on regular basis, checklist being reviewed for all work areas and corrective action developed on the basis of the findings of the inspections are implemented and monitored.

Besides regular inspection some necessary inspections are to be carried to meet the statutory requirements (e.g. inspection/examination of pressure vessels, lifting machines, lifting tackle, etc.) These inspection are carried out as specified in statutes. Inspection also helps they safety management programme in many other ways:

- Regular inspection carried out in plant cannot escape the notice of workmen. This in effect, is an indirect way of demonstrating the managements interest in the safety and welfare of employees and thus contributes to better plant relations.
- Safety inspection brings to light areas where waste can decreased, processes can be improved and productivity increased. This results in better management of resource.
- Safety inspection results in contact with the employees and discussions with them on their difficulties in ensuring safety. Apart from the fact that this will bring forth useful suggestions for employees; such contacts automatically results in better understanding and mutual help which leads to all round success of the safety programme.

4. Medical Aid and services : D(1- 4)

D-1: (A) In view of the number of workers employed in the factory a whole – time Medical Officer is not required to be employed statutorily in the factory.However 4(Four) Nos. FIRST-AID-BOXES are maintained, and company vehicle is also to teat and carry the injured persons respectively to the hospital have been provided. The Co. have made arrangement with the local nursing homes at Chibasa. Out of 4(Four) FIRST-AID-BOXES, 2(Two) is kept in the office of the factory and 2(Two) at the shop-floors. They contain all the medicines and the contents as prescribed under Rule 64(c) of the Jharkhand Factories Rules.

(B) In addition to the services mentioned above, a room having good ventilation, plenty of light (both natural and artificial) conveniently located in respect of the plants of the factory and close to the entrance of the factory with ruining water and toilet close-by (First-Aid Room) with the following equipment shall be provided: -

(a)	Stretches	:	2 Nos.
(b)	Blankets	:	2 Nos.
(c)	Moveable Curtains		

(C) In the factory, a room been earmarked known as FIRST - AID-POST. The following medicines are also available.

i) Medicine – for treatment of common oilments.
ii) Surgical – Sterilised dressing materials antiseptic lotions.
iii) Burns – Lotions & ointments for burn injuries.

(D) As stated by the management. 5 (five) persons are trained in giving First-Aid.

Sl. No.	NAME OF THE STAFF	DESIGNATIONS	EXPERIENCES
1.	K.C.OJHA	STORE-INCHARGE	3 YEARS
2.	LALIT RAI	SECURITY OFFICER	1½ YEARS
3.	S.C.PARIDA	ASS. MANAGER(MECH.)	2½ YEARS
4.	VIVEK DAS	SHIPT- INCHARGE	2 YEARS
5.	PRAVEEN RAM	ASS. MANAGER(PROCESS)	2½ YEARS

(E) Employees are the assets of the company. Special care and more attention is therefore, paid to their health and safety. Medical check-up of the employees is performed by the company doctor's engaged by the company. A first-aid kit is always kept in readiness in the plant control room. Services of Gyatri Nurshing home, Chaibasa is taken for indoor medical treatment of employees.

D-2 : (A) Following medical facilities are available near the plant whose services can be utilized as per requirements :

Sl.No	NAME(Public Hospitals, Nursing Home)	Location	Distance
(i)	GYATRI NURSHING HOME	Chaibasa	12KMS
(ii)	GOVT. HOSPITAL	Chaibasa	12KMS

D-3 : In case of emergency medical facilities are available in near vicinity. Following vehicles are available with the plant for Emergency on ownership or contract basis.

Car -

Ambulance (M/Van) -

Hired vehicles can also be arranged within a short notice in case of any emergency.

D-4 : Evacuation, rescue and medical relief to the affected people will be initiated and continued in the affected area with the help of local police and nearby industries till the control of situation is taken over by the district magistrate or his representative.

5. Slavage and fire fighting : E(1-5)

E-1 : Discussed with Mr S.Mukerjee, Manager (Safety) and the Security Officer, Mr Lalit Rai, who have ultimate control over the entire fire fighting arrangement in the plant. At stated by them Twenty (20) Nos. of fire extinguishers are available in the plant. Hydrant ring is also laid in the plant. Ten(10) Nos. gun metal hydrant valve is provided and near each valve one hydrant box is installed with one with one length of RRL type hose gunmetal nozzle to meet an emergency.

E-2 : The company is maintaining close liaison with nearby industries and their fire fighting services. In case of any emergencies arising out of adverse situation, the fire-fighting services as aforesaid can be obtained on request to tackle the situation.

E-3 : Sufficient water is always available for meeting the fire hazard. Water stored should not be used for any other purpose except for fire fighting. Although Five (5) Nos. of persons are trained in the fire fighting equipments but in addition to that they should also be trained in handling / using compressed air breathing Apparatus (CABA) when expose to dense smoke as a result of Fire Fighting Arrangement Seven(7) Nos. of portable fire extinguishers for class ABCD type and Seven(7) number of sand bucket type fire extinguishers have been installed in the plant for use as first aid measure to fight five at incipient stage.Water supply points have been provided at different locations. These water supply points are having the provision of fitting hoses for fire fighting

operation. Continuous supply of water is maintained in the system Mock-drill is performed at an interval of 3 months to check the readiness for emergency.

E-4 : As stated by the management 5(Five) persons are trained for the fire fighting.

Sl. No.	NAME OF THE STAFF	DESIGNATIONS	EXPERIENCES
1.	K.C.OJHA	STORE-INCHARGE	3 YEARS
2.	LALIT RAI	SECURITY OFFICER	1½ YEARS
3.	S.N.OJHA	SHIPT- INCHARGE	2 YEARS
4.	PANKAJ ACHARYA	ASS. MANAGER(PROCESS)	2 YEARS
5.	S.MUKERJEE	MANAGER(SAFETY)	2½ YEARS

E-5 : OTHER ARRANGEMENTS OUTSIDE THE FACTORY

Following Fire fighting arrangements are available near the plant whose services can be utilized as per requirements :

Sl.No	NAME(Govt. Fire Station, Fire fighting Squards)	Location	Distance
1.	GOVT. FIRE STATION	CHAIBASA	12KMS
2.			

6. Disaster management ; F(1-3)

F-1 :(A)The plan of co-ordination :- Communication includes physical and administration means by which plant operator can rapidly notify plant management and offsite emergency response agencies and the public. The also include emergency response which must be taken to protect health and safety of the plant personnel and the public, without adequate communication successful disaster planning can not be exercised.

(i) The communications system between the factory and local authority i.e. local administrations police health authority fire stations factories in the vicinity etc. should always function day-night.

(ii) There will be unified sources of Liason for dealing with outside agency to avoid confusion at any stage at the time of emergency.

(iii) The management will provide advice to all the outside Organizations which become involved in handling the off - site emergency and which will need previously to formiliarize themselves with some of the technical aspects of the works activities e.g. emergency services medical assistance and also water work authorities.

Disaster / Emergency Planning Committee :- It is expected that the Chairmen of the DISASTER CO-ORDINATION COMMITTEE will co-ordinate planning with the emergency services. The committee will be consisting of members from Police Health Services, Fire Brigades Factory

Inspectorates, Pollution Control Board, representative From Industries Identified having an Off- site consequences. The factory M/S RUNGTA MINES LTD.(CHLIYMA STEEL PLANT) will keep the Committee informed about the available resources equipment and facilities including the assistance that may be available from the local nursing homes, hospitals, fire stations maintained that should be provided to meet emergencies.

(B): Appointment of key personnel :- To tackle the situation during emergency, following person will hold key position and command the activities of different services in close co-ordination.

i) Chief Controller :-

ii) Works incident controller :-

iii) Works main controller :-

iv) Other key personnel's (Senior managers etc) :-

v) Essential workers :-

vi) Non-essential workers :-

In case of an emergency, works incident controller, works main controller and the safety personnel may wear some distinctly coloured dresses, helmets etc to facilitate recognition even form a distance. Since at the times of a disaster such confusions likely to be created, it may be essential to develop an attitude of confidence and control among workers by way of guidance and active leadership through a senior and experienced person of the factory.

RESPONSIBILITIES & DUTIES OF THE CHIEF CONTROLLER :

The Officer on special duty, Sri Nand Lal Rungta, Director and alternately Sri Mukund Lal Rungta, Directors of the Factory shall be the chief Controller. Till such time he takes over the full control the and all the actions, till the MD arrives at the scene/site shall be managed by the Site Controller. When the MD is present or when he arrives at the site, all major decision shall be taken him in consultation with the site Controller. The role of the chief controller and the Site Controller are indentical and complementry. The chief Controller shall also reallocated & fix responsibility as per need.

Person (s) supported to be present during onset of the disaster are those who are directly in charge of production. Such personnel are trained to take charge of the emergency on site until the Manager (Prod.) or his nominated deputy who shall be the INCIDENT CONTROLLER and are responsible for implementing the emergency plan.

When an emergency arises, the on – site Incident Controller shall be alerted and based on the available evidence will assess the scale of the incident and decide whether a major emergency exists or is lickely to take shape. If an emergency exists, the Incident Controller will activate the On-site Plan. The I.C. shall take appropriate steps to minimize the escalation namely by isolating the location from sources of the electrical, heat or fuel emergency and human movement. The next step depending upon the serous ness, shall be to inform the following :-

(i) Doctor on duty & first aiders.

(ii) Fire Service

(iii) Chief Controller

Depending upon the nature of emergency , the Site controller shall ensure that the following are informed / notified as appropriate ;

(i) Nearest Fire Services

(ii) Ambulance

(iii) Local Authorities

(iv) Police

(v) Factory Inspector

RESPONSIBILITIES & DUTIES OF THE WORKS INCIDENT CONTROLLER

As soon as he aware of the emergency and its locations, the works incident controller will proceed to the scene and on arrival he will.

1. Assess the scale of emergency and decide if a major emergency situation exists or is likely. On this decision he will activate the subsequent major emergency procedure.
2. Direct all operations within the affected area with the following priorities:
    - Secure the safety of personnel;
    - Minimize damage to plant, property and the environment;
    - Minimize loss of material

3. Direct rescue and fire fighting operations until the arrival of the outside fire brigade, when he will relinquish control to the senior officer of the brigade.

4. Ensure that the affected area is searched for unattended casualties.

5. Ensure that all non-essential workers in the affected area evacuate to the appropriate assembly point.

6. Set-up a communications point and establish Radio /Telephone/Messenger contact (as appropriate) with the emergency control centre.

7. Pending the arrival of the works main controller, assume the duties of the post and, in particular:

   - Direct the shutting down and evacuation of plant and areas likely to be endangered by the emergency;
   - Ensure that the outside emergency services have been called in;
   - Ensure that key personnel have been called in.

8. Report all significant development to the works main controller.

9. Provide advice and information, as required, to the senior officer of the Fire Brigade.

10. Have regard to the need to preserve evidence that would facilitate any subsequent enquiry into the cause and circumstances of the emergency.

RESPONSIBILITIES & DUTIES OF THE WORKS MAIN CONTROLLER

As soon as he aware of the emergency the works main controller will proceed to the emergency control centre on arrival he will.

1 Relieve the works incident controller of responsibility for overall control.

2 On declaration of a major emergency, ensure that the outside emergency services are called in, and, where required, that nearby firms are informed.

3 Ensure that key personnel are called in.

4 Exercise direct operational control of those parts of the works outside the affected area.

5 Maintain a speculative continuous review of possible developments and assess these to determine mot probable course of events.

6 Direct the shutting down and evacuation of plants in consultation with the works incident controller and key personnel.

7 Ensure that casualties are receiving adequate attention. Arrange for additional help, if required. Ensure that relatives are advised.

8 Liaise with Chief Officers of the Fire & Police Services and with the experts on fire, safety, health etc. provide advice on possible effects on areas outside the works.

9 Ensure the accounting for personnel.

10 Control traffic movement within the works.

11 Arrange for a chronological record of the emergency to be maintained.

12 Where the emergency is prolonged, arrange for the relief of personnel and the provisions of catering facilities.

13 In the case of prolonged emergencies- involving risk to outside areas by wind blown materials – contact the local meteorological office to receive early notification of impending changes in weather conditions.

14 Issue authorized statements to the news media. Where appropriate, inform head office.

15 Ensure that proper consideration is given to the preservation of evidence.

16 Control rehabilitation of affected areas on cessation of the emergency.

DUTIES OF ESSENTIAL WORKERS

These duties may include :

1. Extra first-aiders to deal with casualties.

2. Emergency engineering work, e.g. the provision of extra of replacement lighting, isolating equipment, providing temporary by-pass lines.

3. Transporting equipment to the incident from other parts of the works.

4. Moving tankers or other vehicles from areas of risk.

Carrying out atmospheric tests :-

a. Acting as runners in cases of communication difficulties.

b. Manning of works entrances in liaison with the police, to direct emergency vehicle entering the works, to control traffic leaving the worker and the turn away of make alternative arrangements for visitors and other traffic arriving at the works.

c. Manning of assemble points to record the arrival of evacuated personnel.

d. Assistance at casualty reception areas to record details of casualties.

e. Assistance at communication centes to handle out-going and in-coming calls and to act as messengers, if necessary.

f. Conducting of visitors and contractors to a place of safety.

DUTIES OF NON-ESSENTIAL WORKERS

In affected and vulnerable plants, all non-essential workers should evacuate the area and report to a specified assembly point. The need to evacuate non-essential workers from plants and areas not immediately affected will be determined by the size of works and the foreseeable rate at which the incident may escalate.

F-2 : (A) EMERGENCY CONTROL CENTRE :

The emergency control centre is the place from which the operations

to handle the emergency are directed and coordinated. An emergency control centre should be established and equipped with adequate means of communications to several locations inside and outside the works together with relevant data and equipments which will assist those manning the centre to be conversant with the developments in situation and enable them to plan accordingly. The emergency control center should be manned by the Works Main Controller, the key personnel, and the senior officers of the outside services. Other personnel need not have access to the control centre.

Emergency control centre should be sited in an area of minimum risk, so far as this is possible, and close to a main road to allow for ready access by a radio equipped vehicle for use if other systems fail or extra-communication facilities are needed. An alternative centre, similarly equipped, should be available at different location. If necessary, the police will assist in setting-up an Emergency Control Centre, remote from the works.

Such Emergency Control Centre for emergency could be the Fire Station or Security Room or some other convenient place. It should contain:

1. An adequate number of external and internal telephones. It is strongly recommended that some of these be ex-directory or capable of use for transmitting calls only. This measure will avoid a situation where out-going calls cannot be made due to the telephone switchboard being

overloaded with calls from anxious relatives & press etc.,Radio equipment, loud speakers, etc., Plan or plans of the works to illustrate:-

2. Areas with large inventories of hazardous materials e.g. tanks, reactors, drums and storage places where a number of compressed gas cylinders and stored.

- Locations of radio active sources, if any.
- Sources of safety equipments.
- Fire hydrant system and alternate supply sources.
- Stock of other fire fighting materials.
- Works entrance and round system, updated at the time of emergency to indicate any road which is impassable.
- Assemble points, casualty treatment centre.
- Location of the works in relation to surrounding community.
- Assembly points, first-aid centre / casualty treatment centre.

3. Additional works plans on which may be illustrated, during the emergency:

a. Areas affected / endangered.

b. Deployment of emergency vehicle and personnel.

c. Areas where particular problems arise, e.g. fractured pipelines.

d. Areas evacuated.

e. Other relevant information :-It would be useful if all these plans can be covered with plastic or glass sheets on which pen markings can be made or erased as required during emergency operations.

4. A few copies of the on-site emergency plan.

5. Note pads, pens, pencils to record messages received and any instructions for delivery by runners.

6. Nominal rolls of employees.

7. Addresses of the employees.

8. List of key personnel, addresses and telephone numbers.

9. A tape recorder with battery and cassettes on which the incident occurred, actions being taken and progress could be recorded.

10. Roll call boards listing the names of all persons department - wise and shift – wise which should be placed in the allocated places called assembly points. All personnel including visitors and contractor's men, except those who are detailed to fight emergency or such services, shall proceed to such allocated points as soon as an evacuation is ordered over public address system or orally by the section in-charge and roll call taken. Section in-charges should see that these boards are always kept up to date. The assembly point in-charge shall report to control centre immediately any absentee unaccounted for persons. He will also keep the group until advised to move or return to work by the main controller or any other person predominated by him.

11. Torches, explosimeters, some extra sets of personnel protective equipments, artificial respirators, gas masks etc.

(B) : Action On-Site :

(i) Making emergency known to key personnel, concerned persons and agencies :- Once emergency is declared, all the key personnel will rush to the emergency control room except senior controller and incident controller who should be available in their respective units/plants /sections for the action to be taken to meet the emergency and co-ordinate activities in consultation with chief commanding officer concerned.

As soon as the emergency control room will be manned by an officer nominated by the chief controller whose function shall be –

1. To be responsible for operation of emergency control room and dispatch of massages.
2. To decide on the priority of dispatch of massages.
3. To liaison with all activities and keep upto date and accurate information of the situation.

(ii) Evacuation :- At list four person from the dully formed rescue team explained in the action Plan shall be trained for removing victims from the debris of the affected area to a safer area where medical assistance can be administered and if need be the victims can be easily

transported to the nearest hospital. These persons should be trained in first aid technique. The unit should keep at least 2 stretchers available and the above person should also be trained to prepare emergency stretchers.

The unit plans to procure a heavy duty mobile crane to be used for removing debris to rescue victims and till such time local authorities and the others sector shall be requested to assist under predetermined mutual aid programme.

(iii) : Rehabilitations :- A situation may arise in which some affected and dazed persons are required to be shifted to a safer place. Such persons may or may not be injured physically. Such a place shall be devoid from hazards impacts and shall have facility for clean drinking water and other normal facilities.

(iv) : Supply services :- In charge of purchase and stores would be commanding officer of this service. He will act under the control and guidance of chief commanding officer, i.e. project officer.

His function shall be :-

1. Planning, organizing and procuring necessary materials and equipment.
2. Storage of materials and equipment at accessible location for quick distribution on demand.
3. Obtaining requirements of materials and equipment from commanding officers of various services.

4. Arrange issue and transport of equipment and materials to emergency services to meet their requirements.

(v) : Welfare services :- Following arrangement under the control and guidance of project officer shall be made:-

1. Provide shelter to affected persons.
2. Arrange stock of essential commodities.
3. Arrange clothing and medicine for the affected person.

Arrange drinking water if the supply is disrupted.

(C) : Action Off-Site :- The off site emergency plan is a logical and computable extension of the on site emergency plan.It is dealt with those incidents which have the potential to harm persons or the environment outside the boundary of the premises. Occupier of the factory will provide sufficient information to enable the local authority to formulate the off- site plan also covers the actions outside the works. The roles of various agencies who may be involved in the implementation of an off side plan or give below:-

i) Off site plan will developed by the District Local Authority. There will be existence of an excellent Communications system between the factory and local authority.

ii) The communications system between the factory and local authority i.e. local administrations police health authority fire stations factories in the vicinity etc should always function day-night.

iii) There will be unified sources of Liason for dealing with outside agency to avoid confusion at any stage at the time of emergency.

iv) The management will provide advice to all the outside Organisations which become involved in handling the off-site emergency and which will need previously to fomiliarise themselves with some of the technical aspects of the works activities e.g. emergency services medical assistance and also water work authorities.

(D) : Procedures for testing and updating the plan.

Simulated emergency preparedness exercises and mock fire fighting exercises in collaboration with external agencies including mutual-aid scheme resources and in consultation with district emergency authority.

The procedures of informing the commencement and the termination of emergency to the workers and the outside population using siren and public address system the siren should be sounded in the tones of different styles to indicate the commencement and termination of an emergency, and to clarify its purpose :-

Role of the Civic Authorities (Administration, Police etc.), Civil Defiance, Fire Brigade, Doctors, Hospital Authorities, Experts, Transport Facilities - Roadways , Railways , neighboring factories, shelter centre, local offices of pollution control Board, Explosive department and Directorate of Factories etc.

All these actions should be given in a well conceived and organized sequence.

(E) : Hazard prevention and emergency planning for harboring area outside the plant boundary is combined responsibility of the plant management and local administration. However, prime responsibility of incidental hazard rests on the management of the industries.

In spite of all efforts and measure taken to prevent the hazard, a serious or emergency like situation may arise which may effect the nearby community. In such a situation the help of the state government machinery is mot needed to contain and control the unwanted events. The district authority is in the commanding position to mobilize nearby resources of emergency service including those of state government.

Making plan in advance (by management and external Authorities /agencies)

(F) : Roles and statutory duties of outside agencies for example Police department shall be required to carry out the following jobs :-

i) State government hospital and local nursing homes will be require to extend their medical facilities for the treatment of injured and affected persons.

ii) Vicinity around the factory would be alerted and emergency situation will be announced in the adjourning area.

iii) Traffic on roads will be warned of the situation and shall be diverted away from affected area.

iv) Evacuation, rescue and medical relief to the affected people will be initiated and continued in the affected area with the help of local police and nearby industries till the control of situation is taken over by the district magistrate or his representative.

v) Traffic control, provisions of alternate traffic, regulation of traffic within the area of responsibility

vi) Assisting the medical and evacuation teams to work without any hindrance and further help to the medical department in evacuating the casualties / vocations .

vii) Helping in evacuation of persons and domestic animals in the affected area.

viii) Preventing unauthorized entry of the personnel into the affected area. Role and statutory duties of other agencies should also be spelt out.

F-3 : Rescue and Relief Operation Plan :

Rescue and relief operation plan should be formulated keeping in view all possible incidents, such as fire / explosion/release of toxic materials / spillage of hazardous materials / release of radio - active materials.

i. Raising the alarm.

ii. Declaring the major emergency.

iii. Making the ..... known to :

- Those inside the works.

- The outside emergency services.
- Key personnel outside normal working hours
- To authorities or contact reasons of neighboring factories.

इस कार्यालय के पत्र संख्या 49/पी:
दिनांक 16.1.2010 के उल्लेखित शर्तों
के साथ अनुमोदित

16/1/2010

मुख्य कारखाना निरीक्षक
महाराष्ट्र मुंबई

7. Major risk occurrence ; G(1-2)

G-1 : (A) : INDENTIFICATION OF HAZARDS :

The factory is fraught with mechanical accident hazards due to typical nature of the machinery / equipments installed there in the safe- guarding of the equipments has been complicated by the wide range of operations and operating conditions.

The most frequent of injuries are :-

Being struck by lying ashes.

Using material handling equipments improperly.

Being burned by hot scale.

Bursting of pressure vessels / Air tanks etc.

However, there are several mechanical hazards on accounts of unsafe acts / Conditions apart from the those described above, but the accidents / incidents arising of the mechanical hazards would not give rise to an emergent situation.

Storage of Diesel oil and use there of may cause fire/explosion if it is not unloaded, stored and handled with great care. Fire/Explosion, it is occurs may cause an emergent situation.

(B) PRESSURE VESSELS :

Explosion in a pressure vessels may also cause an emergent situation and need preparedness and planning for emergencies. The cause may be :-

Corrosion of the metal of the vessel to a point where it will not longer with stand working pressure.

Vibration of the vessel or its connected piping.

Faulty safety devices.

G-2 : COLLAPSE OF STRUCTURE :-

This may cause due to weakness and fatigue developed.
Probability may be failure of lifting tools & tackles.

HAZARDS AND IN BUILT SAFELY :

There is risk of Fire , explosion , toxic gas , due to evolution of the Carbon mono oxide and other hydrocarbons during the process in the rotary Kiln. However in built safety has safely has been produced.

Process in built safety

Activity	Observation
1. Interlock device for critical operation and equipments	Kiln main drive is interlocked with oil pump of its gear box. Shall air fans are interlocked with waste gas fan. Emergency cap opens it waste gas fan trip to release the over pressure inside the kiln. During running of group of drives in sequence, if any drive of the group trips then proceedings drives continue to run to prevent material spillage. Alarm signal attached to cooler discharge bin for over rated capacity if high alarm continues for 15 minutes them rotary cooler, kiln &

	feed system automatically stop.
2. Indication and alarm system for process parameters control	Computerised programme system is adopted in technology. Blinker indicator provided at the panel for indicating any fault in the Factory. and also start blowing,in case of PLC failure total system fails and kiln hold in taken.
3. Overpressure relif devices	Emergency stack hydraulically operated automatically opens during power failure, and also can be release of pressure. It can be operated manually.
3. The plants run by Coal base technology. No gas is used as a fuel.	The hot gasses producing during exothermic reaction are discharge dust settling chamber where coarse dust settle and hot gasses flow to evaporation cooler via after burning chamber where combustible gases and fine coal dust are burned. The hot gasses are cooled in evaporation

cooler and entered the electrostatic precipitator and the clean gas escaped through stack. Check list for dust settling chamber, after burninig chamber wet scrapper, evaporation cooler available at job location.

8. Public awareness system : H(1- 3)

H-1 : Safety Awareness among workers:

(a) Details of training and re-training programmes for the personnel of safety and fire departments & the workers.

These training programmes should at least include the following :

1. Lectures
2. Seminars and workshop
3. Practical exercises
4. Distribution and practice of safety instructions
5. Safety quiz contest / completions for individuals as also for groups
6. Display of the safety posters & safety slogans at a convenient and conspicuous places
7. Explanation of instructions (in the language easily understood by workers) about the possible hazards involved in handling of chemicals and methods to deal with such hazards failing which possible emergency situations are likely to arise.
8. Developing safety instructions for every job and ensuring practice of these instructions / booklets or manuals by the workers.
9. Making the workers known about the :

- Physical and health hazards arising out form the exposure of handling of substances;
- Measures taken to ensure safety and control of physical and health hazards;
- Measures taken by workers to ensure safe handling, storage and transportation of hazardous substances;
- Meaning of various labels and markings used on the containers of hazardous substances;
- Use of personal protective equipments
- Sings and symptoms likely to be manifested on exposure of the hazardous substances and to whom to report;
- Measures to be taken in case of any spillage or leakage.

H-2 : Public awareness and disclosure of information to public

(a) Methods to educate the public for facing any possible chemical emergency;

(b) Details of the factory's emergency warning system for the general public;

(c) General advice on the action as to what members of the public should take on hearing the warning;

(d) Details of the sources which can give further information to public;

(e) Methods for keeping the public informed by making the provision of preferably one person of factory to serve as liaison officer with the public;

(f) List of contact person and telephone numbers of radio and T.V. for use at short notice;

H-3 : Public Awareness System

Many communities develop a formal public information procedure during an incident. This may include pamphlets, authoritative newspaper stories, periodic radio and T.V. announcements, and instructive programmes for school, inmates of hospitals, as well as for the dependent aged persons.

It is important to provide accurate information to the general public in order to prevent panic. Some citizens simply want to know that is happening while other citizens may need to be prepared for possible evacuation or they may need to know as to what they could do immediately to protect themselves as well as others. As certain information will need to e communicated quickly, radio and Television will be much more important than newspaper in most cases of hazardous materials release. In less urgent cases however, newspaper articles do provide detailed information to enhance public understanding and clean-up. One person should be identified to serve as spokesperson.

It is strongly recommended that the individual identified has training and experience in public information, community relations, and / or

media relations. The spokesperson can identify for the media, the appropriate individuals who have specialized knowledge about the event and its consequences. The chain of command should, therefore, include this spokesperson. Other members of the response team should be instructed to direct all communication and public relations issues to this one person.

ANNEX – INDEX

Annexure – I

Annexure –II

Annexure – I

A-4 : Table I

SL.		
Date		
Accident		
Place		
Cause		
Time when accident occurred		
Time consumed in controlling the situation		
No. of persons working on the spot at that time		
Total No. of Persons affected Pub-In-lic Side the Factory		
Total No. of persons died Pub-In-lic Side the Factory		
Effected on the survivors	IMMEDIATE	
	DELAYED	
Details of Safety arrangements done after the accident		

Annexure – II

CHEMICAL INFORMATIN SAFETY SHEET

(DIESEL OIL)

1 THE NAME OF THE SUBSTANCE :

DIESEL OIL : GAS OIL
A COMPLEX mixture of
Hydrocarbons

2. THE PHYSICAL & CHEMICAL PROPERTIES AND OTHER CHARACTERISTICS :

(a)	Sp. Gr.	:	0.8-0.91 (20^0C)
(b)	Vapour Density	:	3.0 - 5.0
(c)	Flash Point	:	22^0C to 96^0C
(d)	Explosive Limits	:	0.7 to 5% Vo by air
(e)	Auto lgntion temp	:	256.6^0C

Oily liquid light brown color

Characteristics odour (about 0.1 ppm odour thereshold)

Solubility (Water)

3. THE PHYSICAL HAZARDS OF THE SUBSTANCE :

(A) HAZARDS

1. FIRE : Moderate when exposed to Heat or Flame, can reset with oxidizing materials Flash back may occur along the vapour trail

2. EXPLOSION : Moderate when exposed to heat or flame

4. THE HEALTH HAZARDS OF THE SUBSTANCES INCLUDING THE SIGN & SYMPTOMS.

(a)	INHALATION	:	Dizziness, Headache
(b)	INGESTION	:	Mauses, Vomiting, Irritation of mouth and Gastro intestinal tract may follow.
(c)	ASPIRATION	:	Rapidly developing potentially Fatal chemical pnemonotitis.
(d)	SKIN & EYE CONTACT	:	Prolonged or repeated contact may remove natural fat from the Skin. Skin chapping or cracking or Dermatitis may be the result CASES Skin caner have also come to the notice.

5. THE PRIMAY ROUTE (S) OF ENTEY : As above

6. THE PERMISSIBLE LIMITS OF EXPOSURES AS PRESCRIBED UNDER THE SECOND SCHEDULE U/S 41-F OF THE FACTORIES ACT.

THRESHOLD LIMIT VLUE (TLV)
MAXM. ALLOWABLE CONCENT RATION = 5 MG/M^3

7 ANY GENERAL CONTROL MEASURE FOR SAFE HANDLING :

(a) It is necessary that no open flame or heat