

Sri Balaji Forgings (P) Ltd.

WORKS :

E-908, RIICO Industrial Area,
Phase-III, Bhiwadi-301019,
Distt. Alwar (Rajasthan)



REGD. OFFICE :
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Phone : 01493-220363, Telefax : 01493-220902

Manufacturer of Forged Hand Tools

MOEF& CC, File No.IA/RJ/IND/529212/2015

Ref. No.

Dated :

Date: - 16.11.2016

To,

The Member Secretary ,(Industry -1)
Ministry of Environment, Forests and Climate Change,
Indira Paryavarn Bhawan, Aliganj,
Jor Bagh Road, New Delhi – 110 003

Sub:- Regarding for obtaining Environmental Clearance of our proposed expansion project manufacturing of Ingots/ Billets having production capacity from 26,000 TPA to 60,000TPA of M/s Sri Balaji Forging Pvt. Ltd. situated at RIICO Industrial Area, Bhiwadi, Alwar (Raj.).

Ref.: - MOEF& CC letter no. J-11011/ 138/ 2015 – IA. II (I) dated 28.09.2016.(Annexure-A)

Sir,

Kindly refer above cited references for the said subject.

In this connection, it is to state that, Sri Balaji Forgings Pvt Ltd vide letter dated 15/04/2016 had submitted Final EIA Report to the MoEF&CC, Gol for obtaining Environmental Clearance.

In response, MoEF&CC, Gol had included the proposal in Expert Appraisal committee Meeting held on 01/06/2016 for appraisal. During the meeting, Expert Appraisal Committee asked Sri Balaji Forgings Pvt Ltd to submit the additional information as mentioned in the Minutes of 7th EAC Meeting held on 01/06/2016.

The point wise information is mentioned as under:

S. No.	Query to be raised	Reply
1.	The site plan was given not to the scale. Since the area of the site is small, it was not possible to understand the degree of congestion that would be created after the larger induction furnaces and allied system would be put in place. It is requested to	Revised Layout maps indicating existing unit as well as proposed unit indicating storage area, plant area, greenbelt area, utilities etc is enclosed as Annexure – B.

	provide a to - the - scale plot plan clearly indicating internal paths, green belt, parking area, raw material storage area and fire and safety plan and its area in hectare.	
2.	Revised the TOR Point no. 3 (ix) regarding Hazard identification and support safety system clearly indicating the specific standards, On – Site and Off-Site Emergency Plan etc.	The hazard identification with respect to safety system has already been given in EIA/ EMP Report at Section – VII, Page No. 8 to 15 and the same has been circulated to all the Hon'ble Committee Members. The On – Site and Off-Site Emergency Plan has been again enclosed as Annexure – C for your kind reference.
3.	Revised TOR point No. 7 (xi) submitted be provided clearly indicating the pollution control equipments.	In the prescribed TOR point No. 7 (xi), we were asked to submit the Capital and Recurring cost for Environmental Pollution Control Measures. The same has been replied against the TOR point. However, in the EDS generated, mentioning the "Provide information about the Pollution Control Equipments". The detail of Pollution Control Equipments is enclosed as Annexure – D .

In view of the above compliances, it is requested to kindly consider our subject proposal in the ensuing Expert committee Meeting to be held in the month of Dec-20 for grant of Environmental Clearance.

Thanking You

Yours Truly

For Sri Balaji Forging Pvt. Ltd.

(Raja Ram Yadav)

CEO

F. No. J-11011/138/2015-IA II (I)

Government of India

Ministry of Environment, Forest and Climate Change
(I.A. Division)

Indira Paryavaran Bhawan
Jor Bagh Road, Aliganj,
New Delhi - 110003

E-mail: adraju@gmail.com
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To

Dated: 28th September, 2016

M/s Sri Balaji Forging Pvt. Ltd.
RIICO Industrial Area, Bhiwadi,
Alwar, Rajasthan

Subject: Expansion of manufacturing of Ingots/Billets (from 26000 TPA to 60000 TPA) by M/s Sri Balaji Forging Pvt. Ltd, located at RIICO Industrial Area, Bhiwadi, Alwar, Rajasthan.

Sir,

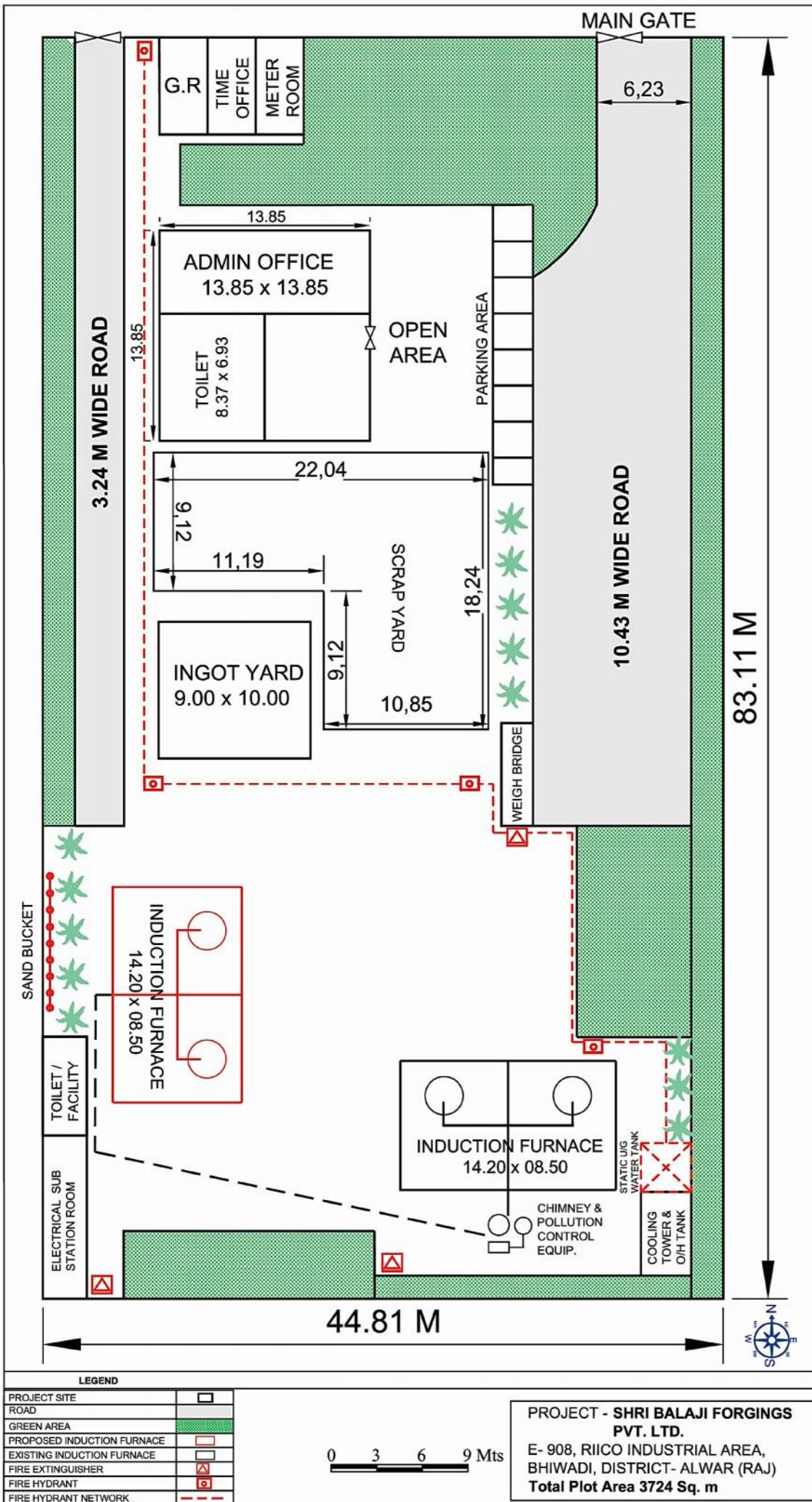
This has reference to your online application No. IA/RJ/IND/52912/2015 dated 15th April, 2016 regarding the project mentioned above. The proposal was considered by the Expert Appraisal Committee (Industry-I) in its 7th EAC meeting held on 30th May – 1st June, 2016.

2.0 The Committee advised to submit the following additional Information for further consideration of the proposal:

- i. The site plan given was not to the scale. Since the area of the site is small, it was not possible to understand the degree of congestion that would be created after the larger induction furnaces and allied system would be put in place. It is requested to provide a to-the-scale plot plan clearly indicating internal paths, green belt, parking area, raw material storage area and fire and safety plan and its area in hectare.
- ii. Revisit the ToR point No 3(ix) regarding Hazard identification and support safety system clearly indicating the specific standards, on-site and off-site emergency plan etc.
- iii. Revisit the ToR point No.7(xi) and provide information clearly indicating the pollution control equipments.

3.0 In view of the above, it is requested to kindly submit the above mentioned information for further consideration of the proposal

Yours Faithfully
(Amardeep Raju)
Scientist 'D'



Land Use Breakup of the total land of the project

Description	Existing land use		land use After expansion	
	Area (Sq.m)	% (Percentage)	Area (Sq.m)	% (Percentage)
Plant Area, Office Area (all covered area)	1675.8	45	1787.52	48
Paved Area (Road, Corridor, Parking) and drainage)	558.6	15.00	558.6	15
Green Belt Area	828.22	22.24	1228.92	33
Open Area	661.38	17.76	148.96	4
Total	3724	100	3724	100

Annexure-C

RISK ASSESSMENT

1.1 INTRODUCTION

Risk assessment study includes study of nature of hazards due to the proposed expansion activities including operations involved in process. The study includes:

- Preliminary identification of hazardous area of the unit.
- Identification of accident sequences and consequences
- Visualization and Analysis of Maximum Credible Accidental scenarios.
- Estimation of damage criteria.
- Study of characteristics of risk levels through study of nature of exposure, pathways and consequences of maximum credible accidental scenarios and presentation of results in terms of risk contours.

Hazard identification provides information on onsite hazardous substances, their nature, quantities and details of storage.

Preliminary hazard Identification is used to identify typical and often relatively apparent risk sources and damage events in a system. As each hazard is identified, the potential causes, effects, and severity of accidents and possible corrective and / or preventive measures are also listed.

1.2 IDENTIFICATION OF HAZARDS/RISK

Hazardous Materials to be handled

Material hazards: High Speed Diesel (HSD) as storage fuel oil for DG set.

Process hazards due to loss of containment during handling of hazardous materials or processes resulting in fire, explosion, etc

Mechanical hazards due to "mechanical" operations such as welding, maintenance, falling objects etc. - basically those NOT connected to hazardous materials.

Electrical hazards: electrocution, high voltage levels, short circuit, etc. Out of these, the material and process hazards are the one with a much wider damage potential as compared to the mechanical and electrical hazards, which are by and large limited to very small local pockets

1.2.1 TYPE OF ACCIDENTS

A. Erection / Commissioning

During erection stage, most of the accidents occur due to;

- Human errors (unsafe acts and unsafe conditions)
- Improper laying of cables
- Improper Housekeeping (keeping combustible material near welding / gas cutting operations)
- Material handling
- Handling of tools
- Working at heights/elevated levels
- Material handling with equipments like crane, hydraulic pay loaders, JCB, Proclaim
- Earth moving and filling
- Unsafe electrical practices

B. Process Operations

The excessive pressure may lead to serious injuries at the site.

- Malfunctioning of equipment
- Power failures
- Failure to take corrective steps in time.
- Failure of utilities
- System failure
- Ageing of erection equipments
- Improper communication

C. Storage and Transfer Operations

- Accidents due to mechanical failure and external impacts.
- Static electricity
- Thunder and lightning
- On the job

1.2.2 Accidents

- In the iron and steel industry, large amounts of material are processed, transported and conveyed by massive equipment that dwarfs that of most industries. Steel works typically have sophisticated safety and health programmes to address hazards in an

environment that can be unforgiving. An integrated approach combining good engineering and maintenance practices, safe job procedures, worker training and use of personal protective equipment (PPE's) is usually required to control hazards.

- Burns may occur at many points in the steel-making process: at the front of the furnace during tapping from molten metal or slag; from spills, spatters or eruptions of hot metal from ladles or vessels during processing, teeming (pouring) or transporting; and from contact with hot metal as it is being formed into a final product.
- Water entrapped by molten metal or slag may generate explosive forces that launch hot metal or material over a wide area. Inserting a damp implement into molten metal may also cause violent eruptions.
- Mechanical transport is essential in steel manufacturing but exposes workers to potential struck-by and caught- between hazards. Overhead travelling cranes are found in almost all areas of steel works. Most large works also rely heavily on the use of fixed-rail equipment and large industrial tractors for transporting materials.
- Safety programmes for crane use require training to ensure proper and safe operation of the crane and rigging of loads to prevent dropped loads; good communication and use of standard hand signals between crane drivers and slingers to prevent injuries from unexpected crane movement; inspection and maintenance programs for crane parts, lifting tackle, slings and hooks to prevent dropped loads; and safe means of access to cranes to avoid falls and accidents on crane transverse ways.
- Maintaining proper clearance for passage of large industrial tractors and other equipment and preventing unexpected start-up and movement are necessary to eliminate struck-by, struck-against and caught-between hazards to equipment operators, pedestrians and other vehicle operators. Programmes are also necessary for inspection and maintenance of equipment safety appliances and passageways.
- Good housekeeping is a cornerstone of safety in steel works. Floors and passageways can quickly become obstructed with material and implements that pose a tripping hazard. Large quantities of greases, oils and lubricants will be used and if spilled can easily become a slipping hazard on walking or working surfaces.
- Sharp edges or burrs on steel products or metal bands pose laceration and puncture hazards to workers involved in finishing, shipping and scrap-handling operations. Cut-resistant gloves and wrist guards will be often used to eliminate injuries.
- Foreign-body eye hazards will be prevalent in most areas, especially in raw material handling and steel finishing, where grinding, welding and burning will be conducted.

- Programmed maintenance is particularly important for accident prevention. Its purpose is to ensure the efficiency of the equipment and maintain fully operative guards, because failure may cause accidents. Adhering to safe operating practices and safety rules is also very important because of the complexity, size and speed of process equipment and machinery.

1.3 RISK ASSESSMENT

Risk will be assessed by:-

- Identification of potential hazard areas;
- Identification of representative failure cases;
- Visualization of the resulting scenarios in terms of fire (thermal radiation) and explosion;
- Assess the overall damage potential of the identified hazardous events and the impact zones from the accidental scenarios;
- Assess the overall suitability of the site from hazard minimization and disaster mitigation point of view;
- Furnish specific recommendations on the minimization of the worst accident possibilities; and
- Preparation of broad Disaster Management Plan (DMP), On-site and Off-site Emergency Plan, which includes Occupational Health and Safety Plan.
- Identifying potential risks to local people and local resources in the event of an emergency.

1.3.1 Risk Prevention Techniques

- Education and awareness
- Best practices Risk Based Maintenance Planning
- Hazard identification
- Quantitative Hazard Assessment
- Probabilistic Hazard Assessment
- Risk Quantification
- Risk evaluation
- Setting up risk acceptance criteria
- Risk comparison
- Maintenance planning

SAFETY AND HEALTH MEASURES

Safety organization

- Safety organization is of prime importance in the steel industry, where safety depends so much on workers' reaction to potential hazards. The first responsibility for management is to provide the safest possible physical conditions, but it is usually necessary to obtain everyone's cooperation in safety programmes. Accident-prevention committees, workers' safety delegates, safety incentives, competitions, suggestion schemes, slogans and warning notices can all play an important part in safety programmes. Involving all persons in site hazard assessments, behaviour observation and feedback exercises can promote positive safety attitudes and focus work groups working to prevent injuries and illnesses.
- Accident statistics reveal danger areas and the need for additional physical protection as well as greater stress on housekeeping. The value of different types of protective clothing will be evaluated and the advantages can be communicated to the workers concerned.

Training

- Training will include information about hazards, safe methods of work, avoidance of risks and the wearing of PPE. Before new methods or processes will be introduced, it may be necessary to retrain even those workers with long experience on older types of furnaces. Training and refresher courses for all levels of personnel are particularly valuable. They will be familiarized personnel with safe working methods, unsafe acts to be proscribed, safety rules and the chief legal provisions associated with accident prevention. Training will be conducted by experts and will make use of effective audio-visual aids. Safety meetings or contacts will be held regularly for all persons to reinforce safety training and awareness.

Engineering and administrative measures

- All dangerous parts of machinery and equipment, including lifts, conveyors, long travel shafts and gearing on overhead cranes, will be securely guarded. A regular system of inspection, examination and maintenance is necessary for all machinery and equipment of the plant, particularly for cranes, lifting tackle, chains and hooks. An effective lockout/tagout programme will be in operation for maintenance and repair. Defective tackle will be scrapped. Safe working loads will be clearly marked, and tackle not in use will be stored neatly. Means of access to overhead cranes will, where possible, be by stairway. If a vertical ladder must be used, it will be hooped at intervals. Effective arrangements will be made to limit the travel of overhead cranes when persons will be at work in the vicinity.
- There is a never-ending need for good housekeeping. Falls and stumbles caused by obstructed floors or implements and tools left lying carelessly can cause injury in themselves

but can also throw a person against hot or molten material. All materials will be carefully stacked, and storage racks will be conveniently placed for tools. Spills of grease or oil will be immediately cleaned. Lighting of all parts of the shops and machine guards will be of a high standard.

Industrial hygiene

- Good general ventilation throughout the plant and local exhaust ventilation (LEV) wherever substantial quantities of dust and fumes will be generated or gas may escape are necessary, together with the highest possible standards of cleanliness and housekeeping..
- With a view to improving the work environment, induced ventilation will be installed to supply cool air. Local blowers may be located to give individual relief, especially in hot working places. Heat protection can be provided by installing heat shields between workers and radiant heat sources, such as furnaces or hot metal, by installing water screens or air curtains in front of furnaces or by installing heat-proof wire screens. Fixed arrangements to allow cooling time before entry into the furnaces are also essential.
- Acclimatization leads to natural adjustment in the salt content of body sweat. The incidence of heat affections may be much lessened by adjustments of the workload and by well-spaced rest periods, especially if these are spent in a cool room, air- conditioned if necessary. Light meals will be preferred during working hours. Salt replacement is needed for jobs involving profuse sweating and is best achieved by increasing salt intake with regular meals.
- Wherever possible, sources of noise will be isolated. Remote central panels remove some operatives from the noisy areas; hearing protection will be required in the worst areas. In addition to enclosing noisy machinery with sound-absorbing material or protecting the workers with sound-proofed shelters, hearing protection programmes have been found to be effective means of controlling noise-induced hearing loss.

Personal protective equipment

- All parts of the body are at risk in most operations, but the type of protective wear required will vary according to the location. Those working at furnaces need clothing that protects against burns-overalls of fire-resisting material, spats, boots, gloves, helmets with face shields or goggles against flying sparks and also against glare. Safety boots, safety glasses and helmets are imperative in almost all occupations and gloves are widely necessary. Strict supervision and continuous propaganda are necessary to ensure that personal protective equipment is worn and correctly maintained.

Medical supervision

- Pre-placement medical examinations are of great importance in selecting persons suitable for the arduous work in iron and steel making. For most work, a good physique will be required: hypertension, heart diseases, obesity and chronic gastroenteritis disqualify individuals from work in hot surroundings. Special care will be needed in the selection of crane drivers, both for physical and mental capacities.
- Medical supervision will pay particular attention to those exposed to heat stress; periodic chest examinations will be provided for those exposed to dust, and audiometric examinations for those exposed to noise; mobile equipment operators will also receive periodic medical examinations to ensure their continued fitness for the job.

1.4 DISASTER MANAGEMENT PLAN

Rapid development has posed wide-ranging hazards threatening safety and health of people. Accidents may adversely affect the environment and the people living in the vicinity. These accidents can be minimized to a great extent by proper procedures, handling and training but it may be difficult to reach zero risk or absolute safety level. Whenever such incidents do occur in order to prevent loss of lives and damage to property, it becomes necessary to take immediate steps to control the situation. This can be achieved through a planned advance preparation to face such a situation with respect to both on site and off site emergencies.

A Vulnerable Areas

Maximum Credible Areas (MCA) of consequence that could be needing consideration in disaster management plan are work shed, machinery storage and feed areas of raw materials, area of DG Sets, loading/unloading areas of materials.

Analysis of Vulnerable Areas

From the analysis of the above zones the action suggested are discussed as below:

- All storage of raw materials & feed areas will be demarcated & placed in conformity to the safety act & its prescription to prevent any hazards.
- The people involved in such work places will be protected with all BIS certified Personal Protective Equipments and given adequate training on safe operation and disaster control, if arises.
- Only trained personnel will be allowed to work at risky areas under strict supervision

- Provision of protective gear, masks, hand gloves etc. will be provided to all employees in the raw materials feed areas.
- Good Ventilation and cleaning the above areas in multitude times of working hours.
- Occupational Health hazard survey will be undertaken for all employees from the beginning of their employment.

B On- Site Emergency Plan

(i) Objectives

The objective of the On-site Emergency Plan should be to make maximum use of the combined resources of the plant and the outside services to

- Effect the rescue and treatment of casualties
- Safeguard other personnel in the premises
- Minimize damage to property and 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 areas
- Preserve relevant records and equipment for the subsequent enquiry into the cause and circumstances of emergency

Action Plans

The Action Plan should consist of:

- Identification of Key Personnel
- Defining Responsibilities of Key Personnel
- Designating Emergency Control Centres and Assembly Points
- Declaration of Emergency
- Sending All Clear Signal
- Defining actions to be taken by non-key personnel during emergency

Key Personnel

The actions necessary in an emergency will clearly depend upon the prevailing

circumstances. Nevertheless, it is imperative that the required actions are initiated and directed by nominated people, each having specified responsibilities as part of coordinate plan. Such nominated personnel are known as Key Personnel.

The Key Personnel are:

- Site Controller (SC)
- Incidental Controller (IC)
- Liaison and Communication Officer (LCO)
- Fire and Security Officer (FSO)
- Team Leaders (TL)

Site Controller (SC)

In the emergency situation, decisions have to be taken which may affect the whole or a substantial part of the plant and even places outside. Many of these decisions will be taken in collaboration with the other officers at the plant and the staff. It is essential that the authority to make decision be invested in one individual. In this plan, he is referred to as the 'Site Controller'. The Plant Manager (however called) or his nominated deputy will assume responsibility as SC.

Incident Controller (IC)

In the emergency situation, someone has to direct the operations in the plant area and co-ordinate the actions of outside emergency services at the scene of incident. The one who will shoulder this responsibility is known as 'Incident Controller' in this plan. A Senior Operations Officer or an officer of similar rank of the unit may be nominated to act as the IC.

Liaison and Communication Officer (LCO)

Operations Officer or any other officer of deputy rank will work as LCO and will be stationed at the main entrance during emergency to handle Police, Press and other enquiries. He will maintain communication with the IC

Fire and Safety officer (FSO)

The Fire and Safety Officer will be responsible for fire fighting. On hearing the fire alarm he shall contact the fire station immediately and advise the security staff in the plant and cancel the alarm. He will also announce on PAS (public Address System) or convey through telephones or messengers to the SC, IC and LCO about the incident zone. He will open the gates nearest to the incident and stand by to direct the emergency services. He will also be responsible for isolation of equipment from the affected zone.

Team Leaders (TL)

A number of special activities may have to be carried out by specified personnel to control as well as minimize the damage and loss. For this purpose designated teams would be available.

Each team will be headed by a Team Leader (TL). Following teams are suggested:

- Repair Team
- Fire Fighting Team
- Communication Team
- Security Team
- Safety Team
- Medical Team
-

Responsibilities of Key Personnel

Site Controller (SC)

- On getting information about emergency, proceed to Main Control Centre
- Call in outside emergency services
- Take control of areas outside the plant, which are affected
- Maintain continuous communication, review situation and assess possible course of events
- Direct evacuation of nearby settlements, if necessary
- Ensure that casualties are getting enough help
- Arrange for additional medical help and inform relatives
- Liaison with Fire and Police Services and Provide advice on possible effects on outside areas
- Arrange for chronological recording of the emergency
- Where emergency is prolonged, arrange for relieving personnel, their catering needs etc.
- Inform higher officials in head office
- Ensure preservation of evidence
- Direct rehabilitation work on termination of emergency

Incident Controller (IC)

- On getting emergency information, proceed to Main Control Centre
- Activate emergency procedure such as calling in various teams
- Direct all operations within plant with following priorities:
 - Control and contain emergency

- Secure safety of personnel
 - Minimise damage to plant, property and the environment
 - Minimise loss of material
- Direct rescue and repair activities
- Guide fire-fighting teams
- Arrange to search affected area and rescue trapped persons
- Arrange to evacuate non-essential personnel to safe area/assembly point
- Set up communications network and establish communication with SC
- Arrange for additional help/equipment to key personnel of various teams
- Consider need for preserving all records, information for subsequent enquiries

Liaison and Communications Officer

- To ensure that casualties receive adequate attention, arrange additional help if required and inform relatives
- To control traffic movements into the plant and ensure that alternative transport is available when need arises
- When emergency is prolonged, arrange for the relief of personnel and organize refreshments/catering facility
- Advise the Site Controller of the situation, recommending (if necessary) evacuation of staff from assembly points
- Recruit suitable staff to act as runners between the Incident Controller and himself if the telephone and other system of communication fail. –Maintain contact with congregation points
- Maintain prior agreed inventory in the Control Room
- Maintain a log of the incident on tape
- In case of a prolonged emergency involving risk to outside areas by windblown materials - contact local meteorological office to receive early notification of changes in weather conditions

Fire and Safety Officer

- Announce over the PAS in which zone the incident has occurred and on the advice of the Shift Officer informs the staff to evacuate the assembly
 - Inform the Shift Officer In-charge, if there is any large escape of products
 - Call out in the following order:
- 1) Incident Controller or his nominated deputy

- 2) Maintenance Officer
- 3) Personnel and Administrative Officer
- 4) Departmental Head in whose area the incident occurred
- 5) Team Leaders (TL)

Emergency Control Centre

The Emergency Control Centre will be the focal point in case of an emergency from where the operations to handle the emergency are directed and coordinated. It will control site activities.

Emergency management measures in this case have been proposed to be carried from single control Centre designated as Main Control Centre (MCC)

MCC is the place from which messages to outside agencies will be sent and mutual aids and other helps for the management of emergency will be arranged. It will be located in the safe area. It will be equipped with every facility for external and internal communication, with relevant data, personal protective equipments to assist those manning the centre to enable them to co-ordinate emergency control activities. CC will be attended by SC.

Following facilities would be available in the MCC:

- P&T phones, mobile phones, intercoms, and wireless
- Fax and telex
- Emergency manuals
- Blown up area maps
- Internal telephone directories
- District telephone directories
- Emergency lights
- Wind direction and speed indicator
- Requisite sets of personal protective equipment such as gloves, gumboots and aprons
- MCC will be furnished with call out list of key persons, fire, safety, first aid, medical, security, police and district administrative authorities. MCC will also contain safety data pertaining to all hazardous materials likely to cause emergency and well-defined procedures of fire fighting, rescue operations, first aid etc.

Assembly Point

In an emergency, it will certainly be necessary to evacuate personnel from affected areas and as precautionary measure, to further evacuate non-essential workers, in the first instance, from areas likely to be affected, should the emergency escalate. The evacuation will be effected on

getting necessary message from i.e. On evacuation, employees would be directed to a predetermined safe place called Assembly Point. Proposed Location: Area opposite to service building will be the Assembly Point where all non-key personnel would assemble on getting direction over Public-Address System.

Outdoor assembly points, predetermined and premarket, will also be provided to accommodate evacuees from affected plant area(s). Roll call of personnel collected at these assembly points, indoor and outdoor will be carried out by roll call crew of safety team to account for any missing person(s) and to initiate search and rescue operations if necessary.

Declaration of Emergency

Mutual Aid

Procedure: All factories may not be equipped with an exhaustive stock of equipment/materials required during an emergency. Further, there may be a need to augment supplies if an emergency is prolonged.

It would be ideal to pool all resources available in the and nearby outside agencies especially factories during an emergency, for which a formal Mutual Aid scheme should be made among industries in the region.

Essential Elements

Essential elements of this scheme are given below:

- Mutual aid must be a written document, signed by Location In-charge of all the industries concerned
- It should specify available quantity of materials/ equipment that can be spared (not that which is in stock)
- Mode of requisition during an emergency.
- It should authorize the shift-in-charge to quickly deploy available material/equipment without waiting for formalities like gate pass etc.
- It should spell out mode of payment/replacement of material given during an emergency
- It should specify key personnel who are authorized to requisition materials from other industries or who can send materials to other industries
- It should state clearly mode of receipt of materials at the affected unit without waiting for quantity/quality verification etc.
- Revision number and validity of agreement should be mentioned
- This may be updated from time to time based on experience gained

Emergency Management Training

The Key Personnel would undergo special courses on disaster management. This may preferably be in-plant training. The Managers, Senior Officers and Staff would undergo a course on the use of personal protective equipment. The Key Personnel belonging to various Teams would undergo special courses as per their expected nature of work at the time of emergency. The plant management should conduct special courses to outside agencies like district fire services to make them familiar with the plant layout and other aspects, which will be helpful to them during an emergency.

Mock Drills

It is imperative that the procedures laid in this Plan are put to the test by conducting Mock Drills. To avoid any lethality, the emergency response time would be clocked below 2 minutes during the mock drill.

1st Step: Test the effectiveness of communication system

2nd Step: Test the speed of mobilisation of the plant emergency teams

3rd Step: Test the effectiveness of search, rescue and treatment of casualties

4th Step: Test emergency isolation and shut down and remedial measures taken on the system

5th Step: Conduct a full rehearsal of all the actions to be taken during an emergency

The Disaster Management Plan would be periodically revised based on experiences gained from the mock drills.

Fire Fighting System

- Fire water is sourced from the raw water storage tanks of adequate capacity.
- An exclusive pipeline connecting water storage tank and plant area (vulnerable areas) with adequate pump is envisaged to fight any fires.
- Fire water pump containing combination of diesel and electrically driven pumps.
- Portable and mobile extinguishers, such as pressurized water type, carbondioxide type, foam type, dry chemical powder (DCP) type located at strategic locations throughout the plant.

Other safety Measures

Considering that fire and explosion is the most likely hazard in such installations, the plant is being provided with systems to guard against such hazards. Salient among these are:

- A proper layout to prevent and minimize the effects of any hazardous situation

- Provision of operating systems to conduct the process through well established safe operating procedures
- Provision of a fire protection system to control fire
- Provision of flame-proof lighting system in the fire prone areas

Proposed First Aid and Medical Facilities

The First Aid Medical Centre has been/will be proposed. It will be fully equipped with emergency facilities. It will be open round the clock. Adequate number of first aid boxes will be kept at strategic locations. Required stock of first aid medicines will be maintained.

[C] OFF-SITE EMERGENCY PLAN

Organizations involved and responsibilities and liaison arrangements between them

City Fire Services

To combat fire and carry out other emergency operations as per the need In case of fire, the fire brigade is the best help from outside. Even in a disaster not involving fire, the fire brigade could be of good help, inside the plant and outside, in view of their specialized equipments and expertise in rescue and relief.

Responsibilities

- To reach the accident spot as soon as possible with all necessary equipments to extinguish the fire.
- To provide all other necessary help depending on nature of emergency.

Police

To manage and control the mob, violence, sabotage or outbreak if any; Cordonning of the area and help in fire fighting and other emergency operations.

In case of emergency the police department has a number of functions to perform; these are:

Responsibilities

- Maintain law and order situation near the Depot premises.
- To control the traffic to facilitate the victims to reach hospitals as early as possible.
- To restrict entry of any unauthorized persons.
- To set up communication to assist in disaster management operation.
- To take control of surrounding transport facilities and assist in disaster management operation by shifting injured persons and casualties to nearby hospitals.
- To assist in fire fighting and other emergency operations.

Hospital

Prompt and efficient medical aid is important in an emergency situation. The first center inside the Depot cannot cope up with all the treatment requirements; the right approach to this problem is to have arrangements with nearby hospitals so that in case of an emergency, services and facilities available with the nearby hospitals can be utilized.

Responsibilities

- Depute doctors and nurses to site with ambulance.
- To provide immediate medical relief to casualties.
- Augmentation of equipments, drugs and doctors.
- To provide first aid on the spot to casualties.
- To take all out efforts on war footing to save maximum lives.
- To continue treatment to casualties till all of them are attended and properly shifted to medical centers.

Medical Facilities

The nearest medical facilities are available in Bhiwadi. The other medical facilities available from outer agencies are as follows:

Antidotes and emergency medicines

General medicine such as antiseptic, analgesic, Anti-Snake Venom etc available in the first aid centre.

Details of specialist doctors in the town and Details of hospital in nearby cities

The other local hospitals available in nearby cities are given below and specialist doctors are available in these hospitals.

Sl.No.	Name of Hospital	Address	Contact nos.
1	Star Hospital	Vasundhara Nagar, U.I.T. Opposite Bus Stand, U.I.T., Bhiwadi, Rajasthan 301019	01493-395000
2.	Gopinath Hospital	H - 226, Industrial Area, Bhiwadi, Rajasthan 301019 (India)	01493 516 143

3.	Hospital and Trauma Centre Pvt Ltd, Mathura	A-8, Bhagat Singh Colony, Near Axis Bank, R. T. O Road, Bhiwadi, Rajasthan 301019	01493 513 020
4.	ESIC Hospital	Plot No 1202 Sec 29, RIICO Industrial Area, Bhiwadi, Rajasthan 301019	2323 4092

District Collectorate/ Administration

- To supervise of all off-site emergency operations; order to evacuate off-site population.
- Local administration means those who are responsible for administration of the geographical area where the Depot is located.

Responsibilities

- To protect the citizens.
- To assess the situation for overall control.
- To monitor the functioning and need of various agencies in rescue operation at site.
- To requisite and make available the services and facilities available in the area like hospitals, doctors, transport, police, fire brigade and so on.
- To coordinate the activities outside the Depot in view of their authority and experience in coordinating rescue and relief operations.

RTO

To clear all approach roads to and from corporation area for free flow of vehicular traffic, which is engaged in combating the emergency and demarcate parking area for vehicles to evacuate population.

Controller of Explosives & Factory Inspectorate

- To provide expert advice and help in coordinating emergency operations with government agencies.
- The inspector of factories is expected to be a friend and a guide to industrial establishments. His involvement is a matter of course, since he would be officially connected with inquiries after the disaster.

Responsibilities

- To coordinate with local govt. body e.g. collectorate, civil hospital, police department etc. as well as surrounding voluntary organizations.
- To act as Off-site emergency controlling authority.
- To inform public for precautionary measures.

Voluntary Organizations

Voluntary organizations could help in relief and humanitarian services to victims in case of any emergency.

Responsibilities

- To assist in rescue operations and first aid to the victims.
- To arrange transport, refreshment and shelter.
- To take necessary assistance from social organizations like Red Cross Society, Scouts, NCC, Rotary, Lions clubs etc.

Other Installations near to the site

Industrial installations or oil installations present near the site should help to combat the fire with the fire fighting equipments present in their locations.

Responsibilities

- To provide the strongest possible support and resources to the plant managers so that the best accident prevention and emergency preparedness procedures are in place in the industrial facility.
- To encourage their facility managers to commit themselves fully to the awareness and preparedness for emergencies at local level process.
- To monitor the involvement of their facilities in the process.

Contact numbers of district administration in case of emergency

Sr.No.	Authority/ Agency	Contact Number (Office)
1	District Collector & District Magistrate Alwar	0144-2337565 Fax-0144-2336101
2	Superintendent of Police, Alwar	0144-2337453
4	Chief Medical Officer	0144-2340145
5	Fire Brigade Service Centre (Sh. Narpal Singh)	101, 222700, 512101, 9461412291

6	Addl. SP Bhiwadi	01493-223797, 223710, 9784842103
7	M.L. Agarwal, Govt. Referal Hospital	01493-225766, 221311, 224421, 9461044750
8	Sh. Mahendra Singh Bundel, Govt. Referal Hospital	01493-225766, 221311, 9414908165
9	Sh. Rakesh Soni, Govt. Referal Hospital	01493-221311, 224421, 223870, 9414223261
10	Sh. P.K. Gupta, SMO, ESI	01493-220970
11	Plant CEO	9352884311
12	Safety Officer	

Safety training of personnel and mock drill / rehearsing emergency procedures

On appointment of every personnel it is essential to provide training to cope with all types of perceived emergencies. Training is to be provided for:

- Properties and hazards of the steel industry as given in the report.
- Knowledge, location and use of fire fighting and protective equipments.
- Emergency actions for various emergency scenarios.
- Many organizations use table-top exercises to test their emergency plans. These are very cost-effective because they do not interrupt the day today running of the plant and because the organizer of the exercise can "arrange" for a variety of difficulties to be taken.
- Full-scale exercises, providing a realistic rehearsal setting, will still be needed to complement the tabletop exercises.
-

Longer Term Clean Up

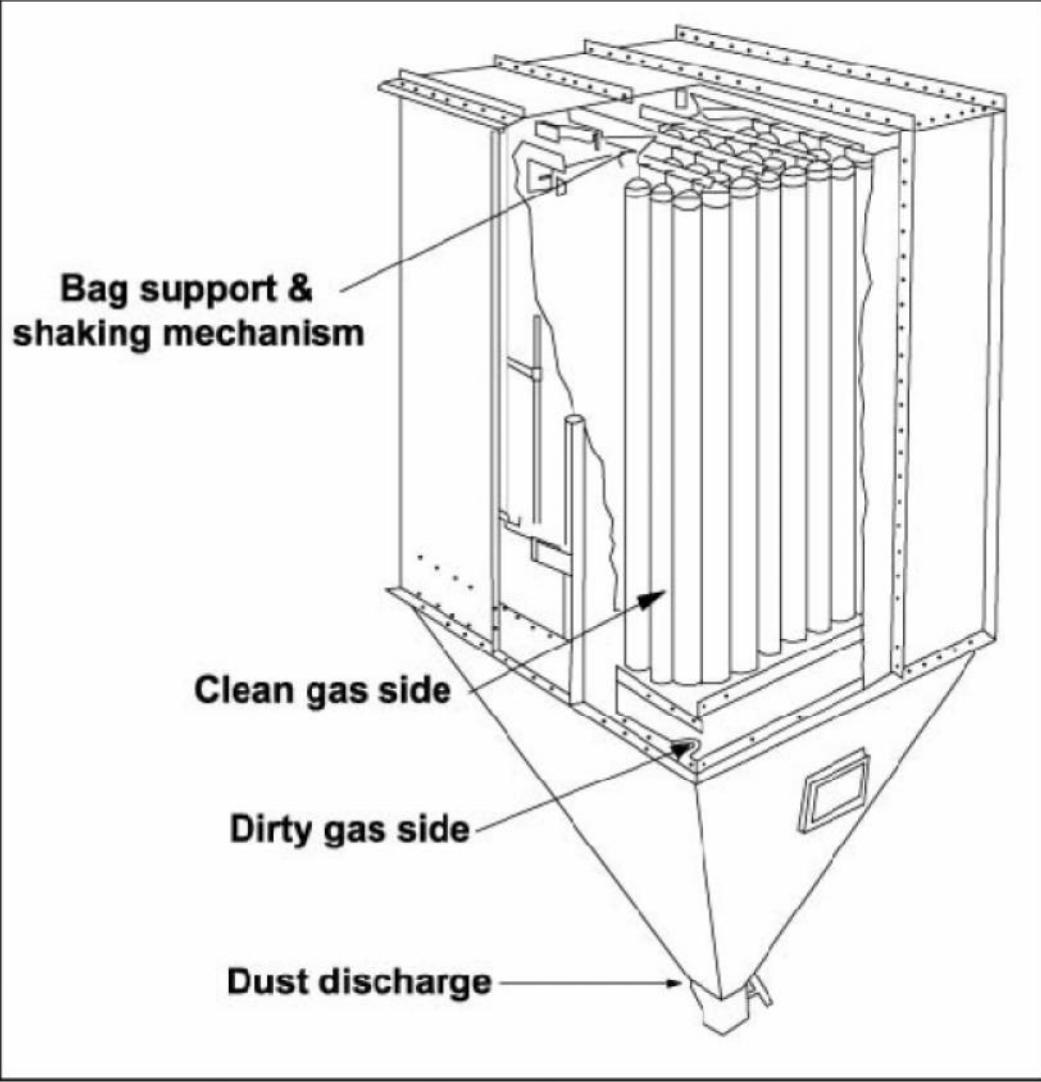
- I. Regular cleaning and housekeeping is practiced in the Depot.
- II. Find out the causes for an accident/disaster.
- III. Calculate economical as well as material losses.
- IV. Provide the necessary facilities to the causalities.
- V. Recruitment of other lab ours in place of injured lab ours or employees to continue the work in the plant.
- VI. Repairing of the machines and equipments if any.

Annexure-D

Details of Pollution Control Equipments

1. Bag Filter

The collection mechanism for particulates in the filters is by means of interception, inertial impaction and diffusion. Inside the filter, cylindrical fibers are intercepted in the flow path of air and the particles are collected onto these fibers by mechanisms interception, inertial impaction and diffusion. The pulse jet collector is continuous automatic filter capable of filtering dust laden air through a felted non-woven filter media. The dirty air containing particulates enters the filter through the module inlet nozzle. A specially designed baffle plate distributes incoming gas uniformly in the filter housing and drops out heavy particulates into the hopper. The dust laden gas then travel upwards and pass through a number of cylindrical filter bags which retain the dust particles on the external surface while allowing the clean gas to pass through the module outlet nozzle. As the filtering process starts, the collected dust begins to form a dust cake, which eventually diminishes the porosity of the filter bags. This reduction in porosity is measured in U-tube manometer or low DP switches. As the pressure drop increases, the throughput volume of the collector decreases. To measure a moderate pressure drop of the system, a differential pressure switch will be used or a U- tube manometer. When pressure drops of over 140mmWC are achieved, a manual starting of timer can be done or else through automatic starting of timer by signal input to by a Dp switch connected across the bag filter. The cleaning system consists of an electronic timer, which actuates the coil of solenoid valve. This solenoid valve is mounted on a diaphragm valve and thus actuating solenoid valve will open up diaphragm valve momentarily to let compressed air impulse to the bags. This impulse of air jets into the bags and thus cleaning them. The dust adhered onto the outer surface of the bag gets released and falls into the hopper. The cleaning process takes place row by row.



2. Stacks for D. G. Set:-

Two D.G. sets with cumulative capacity of capacity 250 kVA (125 kVA each) are already installed. The adequate stack height of the D.G. set along with acoustic enclose is already provided as per the norms of the CPCB.

$$\text{Height} = 0.2 * 125$$

= **2.2 m** (on each stack above the building.)
