

Risk Assessment and Disaster Management Plan & Hazard Control w.r to Ferro Alloys Division of M/s Misrilall Mines Pvt. Ltd., Pankapal, Jajpur, Odisha

Occupational Health and Safety: The industries, where multifarious activities are involved during construction, erection, testing, commissioning, operation and maintenance, the men, materials and machines are the basic inputs. Along with the boons, the industrialization generally brings several problems like Occupational Health and Safety Hazards.

The industrial planner, therefore, has to properly plan and take the steps to minimize the impacts of industrialization and to ensure appropriate occupational health, safety including fire plans. All these activities again may be classified under construction and erection, operation and maintenance. The proposed safety plan is given below.

Occupational Health: Occupational health needs attention both during construction and erection and operation and maintenance phases. However, the problem varies both in magnitude and variety in the above phases.

- **Construction and Erection:** The occupational health problems envisaged at this stage can mainly be due to constructional accident and noise. To overcome these hazards, in addition to arrangements to reduce it within TLV's, personal protective equipment should also be supplied to workers.
- **Operation and Maintenance:** The problem of occupational health, in the operation and maintenance phase is due to noise hearing losses. Suitable personnel protective equipment should be given to employees. The working personnel should be given the following appropriate personnel protective equipment.
 - Industrial Safety Helmet
 - Crash Helmets
 - Face shield with replacement acrylic vision
 - Zero power plain goggles with cut type filters on both ends
 - Zero power goggles with cut type filters on both sides and blue color glasses
 - Welders equipment for eye and face protection
 - Cylindrical type earplug
 - Ear muffs
 - Canister Gas mask
 - Self contained breathing apparatus
 - Leather apron
 - Aluminized fiber glass fix proximity suit with hood and gloves
 - Boiler suit

- Safety belt/line man's safety belt
- Leather hand gloves
- Asbestos hand gloves
- Acid/Alkali proof rubberized hand gloves
- Canvas cum leather hand gloves with leather palm
- Lead hand glove
- Electrically tested electrical resistance hand gloves
- Industrial safety shoes with steel toe
- Electrical safety shoes without steel toe and gum boots

Full fledge casualty facilities should be made available round the clock for attending emergency arising out of accidents, if any. All working personnel should be medically examined at least once in every year and at the end of his term of employment as well while joining the company. This is in addition to the pre-employment medical examination.

Details of Occupational Health Program Policy of the Company

- In order to prevent the occupational health hazard, MMPL-FAP carry out entry level and periodical medical examination under Section 69 of the Factories Act by the certified Surgeon.
- MMPL-FAP carrying out health check up program by qualified medical Surgeon quarterly in every quarter of the year and maintaining a health register prescribed under Rule 14 of the Factories Act in Form No- 17, which is being verified by Assistant Director Factories during his visit.
- MMPL-FAP has appointed a qualified medical Surgeon to monitoring day-to-day occupational health hazard and check-up the workmen on a regular basis to prevent occupational health hazard.
- The records are maintained in Form 31A (Prescribed under Rule 62-J) by the Company. Occupational health check up carried out for Chest X – Ray, Audiometric, Spirometry, Vision Testing and ECG are covered.

The Comprehensive Occupational Health Report: The Comprehensive Occupational Health Report of M/s Misrilall Mines Pvt. Ltd., Ferro Alloys Plant is also carried out w.r.to Periodical Medical Examination.

Safety Plan: Safety of both men and materials during construction and operation phases is of concern. The preparedness of an industry for the occurrence of possible disasters is known as emergency preparedness plan. The disaster in proposed plant is possible due to leakage of hazardous chemicals like chlorine, collapse of structures and fire/explosion etc. The details of the fire fighting equipments which will be installed are given below;

- Dry Chemical Powder (DCP)
- CO₂
- Foam type
- Soda acid type
- Fire buckets and Fire Hydrants

Keeping in view the safety requirement during construction, operation and maintenance phases at the proposed plant, the following regulations will be followed.

- Allocate sufficient resources to maintain safe and healthy conditions of workplace.
- Take steps to ensure that all known safety factors are taken into account in the design, construction, operation and maintenance of plants, machinery and equipment.
- Ensure that adequate safety instructions are given to all employees.
- Provide wherever necessary protective equipment, safety appliances and clothing, and to ensure their proper use.
- Inform employees about materials, equipment or processes used in their work, which are known to be potentially hazardous to health or safety.
- Keep all operations and methods of work under regular review for making necessary changes from the point of view of safety in the light of experience and upto date knowledge.
- Provide appropriate facilities for first aid and prompt treatment of injuries and illness at workplace.
- Provide appropriate instruction, training, retraining and supervision to employees in health and safety, first aid and to ensure that adequate publicity is given to these matters.
- Ensure proper implementation of fire prevention methods and an appropriate fire fighting service together with training facilities for personnel involved in this service.
- Organize collection, analysis and presentation of data on accident, sickness and incident involving personal injury or injury to health with a view to taking corrective, remedial and preventive action.
- Promote through the established machinery, joint consultation in health and safety matters to ensure effective participation by all employees.
- Publish/notify regulations, instructions and notices in the common language of employees.
- Prepare separate safety rules for each type of occupation/processes involved in a project.

- Ensure regular safety inspection by a competent person at suitable intervals of all buildings, equipment, work places and operations.

Safety Organization:

Construction and Erection Phase: A qualified and experienced safety officer is appointed. The responsibilities of the safety officer is inclusive of identification of the hazardous conditions and unsafe acts of workers and advice on corrective actions, conduct safety audit, organize training programs and provide professional expert advice on various issues related to occupational safety and health. He is responsible to ensure compliance of Safety Rules/ Statutory Provisions. In addition to employment of safety officer by plant, every contractor, who employs more than 250 workers, should also employ one safety officer to ensure safety of the worker, in accordance with the conditions of contract.

Operation and Maintenance Phase : When the construction is completed the posting of safety officers is in accordance with the requirement of Factories Act and their duties and responsibilities should be as defined thereof.

Safety Circle: In order to develop the capabilities of the employees in identification of hazardous processes and improving safety and health, safety circles would be constituted in each area of work. The circle consists of 5-6 employees from that area. The circle normally meets for about an hour every week.

Safety Training: A full-fledged training centre is set up at the plant. The Safety Officers will provide safety training with the assistance of faculty members called from Corporate Sectors, Professional Safety Institutions and Universities. In addition to regular employees, limited contractor labors also is provided safety training. To create safety awareness safety films are shown to workers and leaflets etc. Some precautions and remedial measures which are adopted to prevent fires are as follows.

- Compartmentation of cable galleries, use of proper sealing techniques of cable passages and crevices in all directions would help in localizing and identifying the area of occurrence of fire as well as ensure effective automatic and manual fire fighting operations;
- Spread of fire in horizontal direction would be checked by providing fire stops for cable shafts;
- Reliable and dependable type of fire detection system with proper zoning and interlocks for alarms are effective protection methods for conveyor galleries.
- Housekeeping of high standard helps in eliminating the causes of fire and regular fire watching system strengthens fire prevention and fire fighting; and
- Proper fire watching by all concerned would be ensured.

Health and Safety Monitoring Plan: All the potential occupational hazardous work places will be monitored regularly.

The health of employees will be monitored once in a year for early detection of any ailment due to exposure to hazardous chemicals.