Executive Summary

1.0 Introduction

M/s. Meta Rolls & Commodities Pvt. Ltd. (MRCPL) is a company registered in Maharashtra, having registered office in Mumbai. The Firm was establish in 2004 and started its commercial operation in 2005 to manufacture M.S. Billets through concost technology. As per the TOR issued for the proposed activities, M/s MRCPL has proposed the expansion of M.S. Billets from 6600 TPM to 13200 TPM and new unit of 13200 TPM TMT bars. In this new expansion project the molten metal from the induction furnace will be poured directly to mold to produce TMT bars bypassing the process of re-heating of M.S. Billets.

The purpose of this Environmental Impact Assessment (EIA) study is to provide information on the surroundings and the extent of environmental impact likely to arise on account of the proposed expansion activities.

The objectives of the EIA study are:

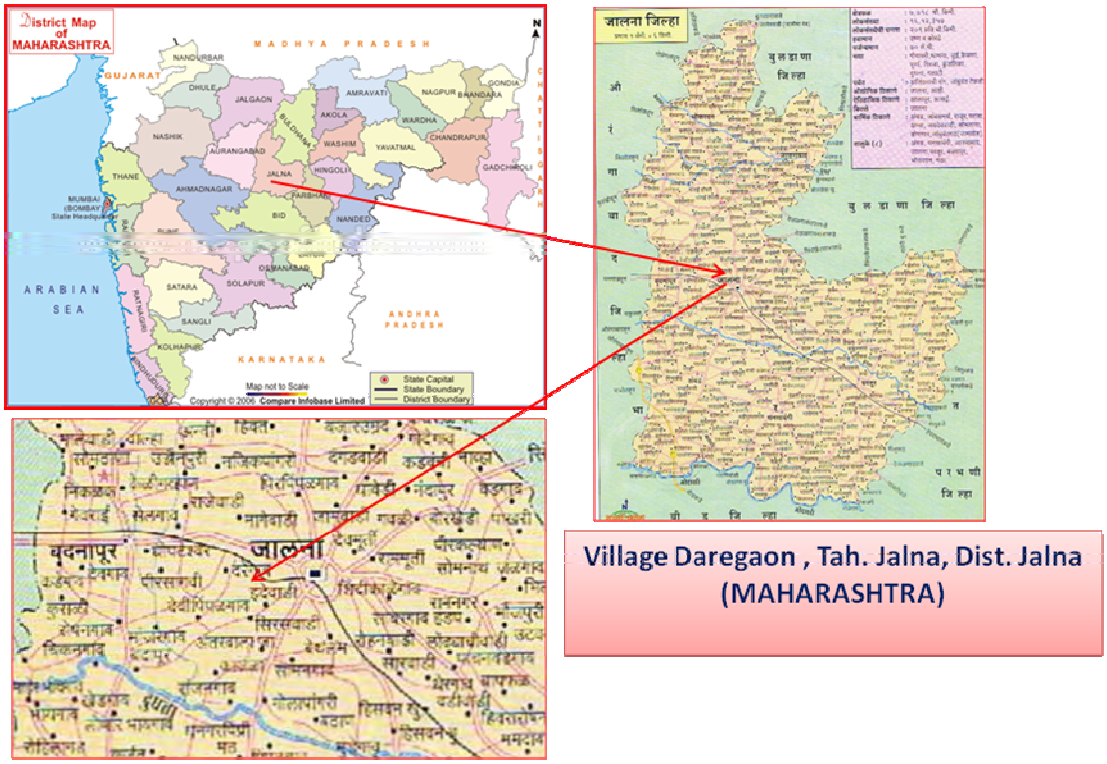
- To assess the present status (baseline) of air, water, land, noise, biological and socio-economic components of environment including parameters of human interest;
- To identify and quantify significant impacts of various activities of the generation of power
- To evaluate existing pollution controls measures and suggest modifications, if required;
- To prepare Environmental Management Plan (EMP) outlining control measures for mitigation of adverse impacts; and
- To delineate post project environmental quality monitoring program for management of emissions from the plant with increased capacity.
- To prepare risk assessment and disaster management plan.

1.1 SITE SELECTION CRITERIA

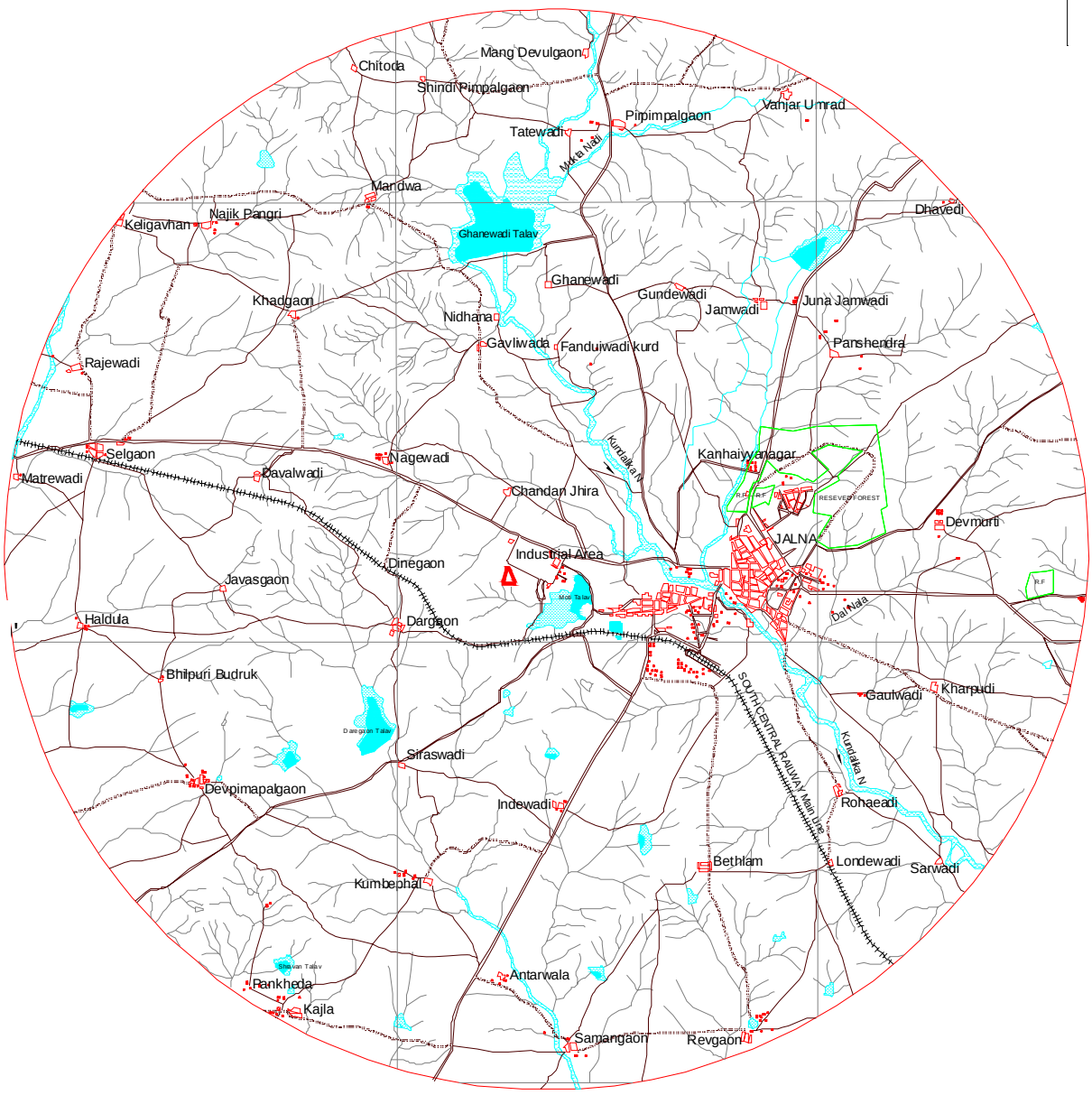
- Existing Plant in operation
- No Rehabilitation/Resettlement required.
- No National Park, Biosphere Reserve and Wildlife Sanctuary including Notified Eco Sensitive Areas within 10 km radius.
- No archaeological monument, interstate boundary and defense installation.
- No notified critically polluted area.
- No nallah/water body, public roads, forests within the project site.
- Availability of Raw Material.
- Availability of Water (200 m^3/Day) (source Ground Water). Water harvesting for entire area is done.
- Assured Power Supply.
- Market available for finished products.
- Availability of man power.
- Availability of industrial infrastructure due to adjacent Notified Industrial Area.

1.2 DETAILS OF THE PROJECT SITE

Sr No	Particulars	Details
1	Project Site	Gut no. 48, Adjacent to MIDC Phase II Daregaon, Dist. Jalna, Maharashtra
2	Latitude	$19^0$51’37” N
3	Longitude	$75^0$51’00”E
4	Elevation above MSL	534m
5	Toposheet	47 M/13
6	Present landuse	Industrial land
7	Nearest National Highway/State Highway	Nearest State Highway is Auarangabad-Nagpur-Jalna Highway
8	Nearest Airport/ Air Strip	Aurangabad: 60 Kms
9	Nearest town	Jalna
10	Forest	2 Patches of RF at 4.5 km and 9 km
11	Water Bodies	Kundalika River 1.8 km North East



Location Map of the Proposed Project Site



1.3 PURPOSE OF EIA

The purpose of this report is to present the environment-related issues of the proposed expansion of M.S. Billets from 6600 TPM to 13200 TPM and new unit of 13200 TPM TMT bars of M/s Meta Rolls & Commodities Pvt. Ltd., Village – Daregaon, Tehsil & District Jalna, Maharashtra. This Integrated Steel Plant requires environmental clearance as per the EIA notification dated 14th September 2006 of the Ministry of Environment &

Forests, New Delhi (MoEF) as the project fall under the Category 'B' of the Schedule of EIA Notification, 2006.

2.0 PRCOESS DETAILS

- **Production Scenario**

Name of the Product	**Existing Capacity TPM**	**Proposed Capacity TPM**	**Total Capacity TPM**
M.S. Billets	6600	6600	13200
TMT Bars	-	13200	13200

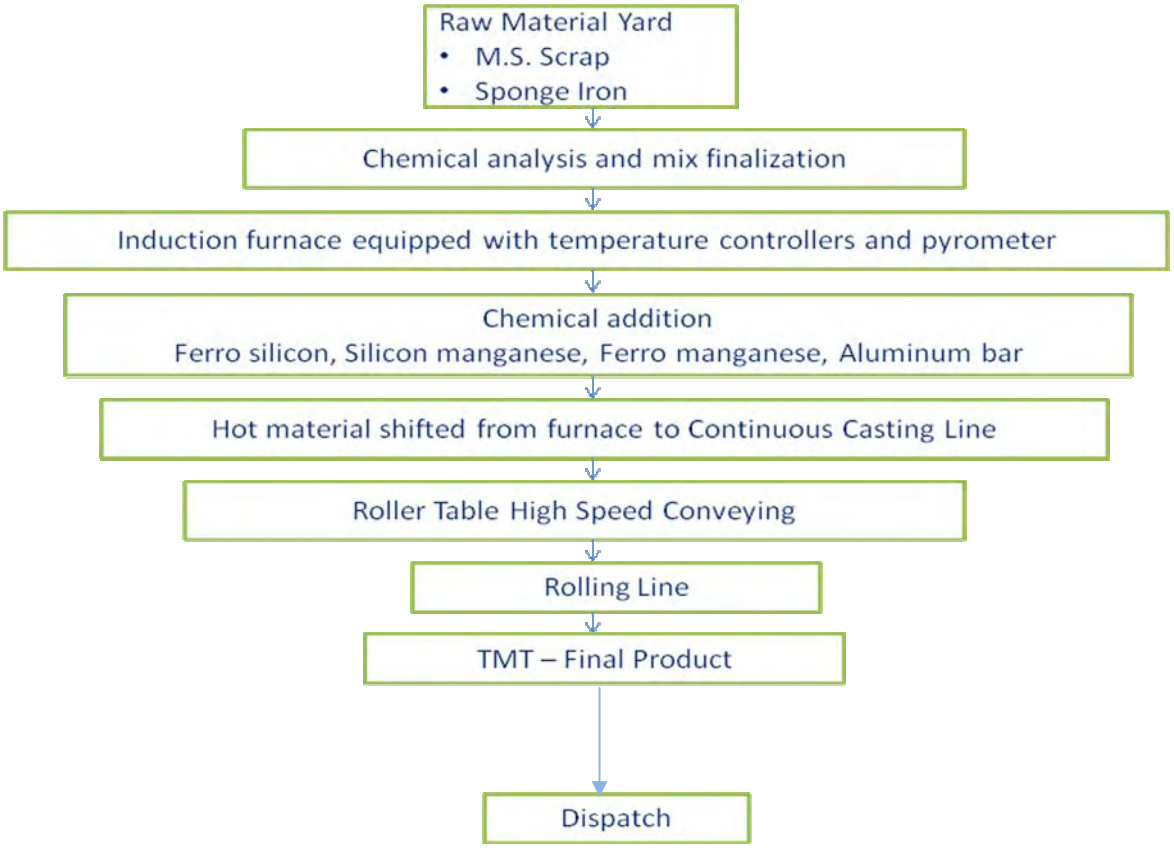
- **Raw Material Requirement**

Sr. No.	**Name of the Product**	**Raw Material**	**Requirement**
1	M.S.Billets	M.S. Scrap & Sponge Iron	13860 TPM (After Expansion)
2	TMT Bars	M.S. Billet in molten stage	13200 TPM

- The total water required for the proposed expansion plant and new plant will be 200m^3/day. The source of water will be met from captive bore well.
- The power required for the proposed expansion project and new project will be 15 MW which will be sourced from MAHADISCOM.
- The M/s. Meta Rolls & Commodities Pvt. Ltd. have procured 19.3 Acres of land in which the 33% (6.369 Acre) of the plot area have been identified for green belt. About 250 plants have been planted in the existing plant layout.

➢ **Process**

- The raw material (Sponge Iron, M S scrap) is charged into the furnace at temperature of about 1650^0C.
- The molten steel is then transferred to continuous casting line.
- From their it is transferred to Roller Table High Speed Conveying.
- Then it is transferred to Rolling line.
- In the new expansion project molten metal from the induction furnace will be poured directly to produce TMT bars in rolling mill bypassing the process of reheating of M.S. Billets.
- The finished product (TMT bars) is then subjected to final inspection and then the TMT Bars are dispatched.



- **Advantages of the Direct Pouring Method**

- No need of Re-heating the Billets
- Billets in molten condition will be directly fed to Hot Billet Rolling machine thus saving of fuel & electricity.
- No need of storing coal required in Gasifier for conventional rolling mill
- No space will be required for storage of Billets.
- Easy handling Process.
- No SPM emission as coal will not be used.
- No generation of Fly Ash.
- Less man power required.

3.0 Description of the Environment (Baseline Data)

3.1 Air Environment

The baseline environmental quality for the November, December and January – 2012-13 was assessed in an area of 10 km radius around the proposed project site.

During the study period, the wind speed measured at the site varied from 1.0 to 11.1 kmph. The predominant wind directions are from E and ENE.

The ambient air quality monitored at 8 locations selected based on predominant wind direction, indicated the following ranges;

PM_{10} - 25.2 to 56.4 µg/m^3.
$PM_{2.5}$ - 9.4 to 26.9 µg/m^3
SO_2 - 6.6 to 14.4 µg/m^3
NO_x - 7.3 to 18.1 µg/m^3

Industrial Area Residential, Rural Area (CPCB Norms)	100 μg/m^3	60 μg/m^3	80 μg/m^3	80 μg/m^3

The concentrations of PM_{10}, $PM_{2.5}$, SO_2 and NO_x were found within the National Ambient Air Quality Standards (NAAQ).

3.2 Water Environment

A total 8 samples including four surface & four ground water samples were collected and analyzed. The water samples were analyzed as per Standard Methods for Analysis of Water and Wastewater, American Public Health Association (APHA) Publication.

The data indicates that the ground water as well as the surface water quality are below the stipulated standard for drinking water (IS 10500 – 1993 except high concentration of total coli form in surface water, which may be due to the human activities.

3.3 Noise Environment

Recorded Noise Levels in the core zone of proposed project site, are in the range of 26.1(night time) to 55.4 dB (A) (day time) at all eight monitoring stations. Maximum levels of noise have recorded in day hours which are natural as our most of activities have done in day hours.

Noise levels measured at all eight stations (N-1, N-2, N-3, N-4, N-5, N-6, N-7 and N-8) are very low and well within limit of either 55.0 dB(A) for Residential Area or 75.0 dB(A) for Industrial Area as given in MoEF Gazette notification for National Ambient Noise Level Standard.

3.4 LAND ENVIRONMENT

Four soil samples were collected from agriculture, waste land and barren land in order to assess the existing soil conditions around proposed project site.

The observations of soil characteristics are discussed parameter wise below;

- Texture of all soil samples are silty-loam and silty-clay-loam in Texture Classification.

- Soil samples from agriculture land have pH values between 7.72 to 7.85 and sample from waste land have 7.68 to 7.86 and sample from Barren land have 7.94 to 8.02 ranges of pH values. The pH values are indicating nature of soil samples as between slightly neutral to slightly alkaline.
- Soil samples from agriculture land have Organic Matter between 0.30 to 1.86 % and sample from waste land have between 0.40 to 1.20 % and sample from Barren land have between 1.17 to 1.37 Organic Matter. These values represent average fertility of soils.
- Soil samples from agriculture land have concentration of Available Nitrogen values ranged between 122.3 to 754.4 kg/ha and samples from waste land have range between 163.1 to 489.3 samples from Barren land range between 475.47 to 554.72 kg/ha Available Nitrogen value.
- Soil sample from waste land have concentration of Available Phosphorous values ranged between 39.0 to 49.2 kg/ha, soil samples from agriculture land have concentration of Available phosphorous as its values are 75.9 to 122.1 kg/ha and soil samples from Barren land have concentration values ranges from 19.5 to 33.9 kg/ha.
- Characteristic of Barren land and waste land soil is a little deficient in nutrients concentration. Whereas, agricultural land soil is moderately suitable for cultivation of climatic crops and have good fertility.

3.5 Flora and Fauna

Natural Flora and Fauna are important biotic components for environment. The various terrestrial biological components which can be influenced by proposed activities in the form of emissions.

Flora

A plant observed in the study area are Aam, Babul, Jamun, Chichwa etc**.**

Fauna

During the survey, enquiries were made from the villagers residing in the study area about existence or damage to crop and human life by any wild animals. Almost all the

villages were visited during the field survey. The domestic animals were observed during the survey. The fauna observed are Kharghosh, Cheel, Nag, Dhaman etc.

No National Park, Sanctuary, Elephant or Tiger Reserve is situated within 10 km radius area surveyed around the project site. No migratory route of wild animals has been reported to have existed in the study area.

- **Landuse:** It was observed based on the census data 2001 that study area comprises of 53.88% of Unirrigated area, 25.57% of forest, 7.77% of Irrigated Area, 7.36% of Culturable Waste land, 5.42% of area not under cultivation.

4.0 Anticipated Environmental Impacts & Mitigation Measures

- **Impact on Air Quality**

Air pollution sources are raw material handling and transport system. The fugitive emissions from the sources will be suppressed by water sprinklers. All vibrating screens and weigh feeders below the hopper; day bins etc are totally covered to prevent leakages of dust. All material transfer points are connected with dust suppression water nozzles to avoid air pollution.

Ventury scrubbers will be provided for the extraction of dust particles in Induction Furnace.

Predictions have been carried out using AERMOD for study period. The predicted ground level concentrations obtained when superimposed on the baseline concentrations are within the prescribed NAAQ Standards for residential areas.

- **Noise Environment**

Noise levels generated in the project site will be confined to the noise generating plant units hence the impact of noise levels on surroundings will be insignificant.

Noise levels will be attenuated by providing encasement of noise generating equipment, noise proof cabins to operators, noise generating sources will be insulated by providing

suitable enclosures, Inlet and outlet mufflers will be provided which are easy to design and construct and all the rotating items will be well lubricated.

- **Water Environment**

The total water requirement for the proposed activities is 200 m^3/day. There will not be any impact on the water quality as no wastewater will be generated from the process. The sewage generated from the toilets and bathroom of the proposed facility will be 2 m^3/day which will be disposed through septic tank.

- **Impact on Flora Fauna**

The reserved forest in the study area is in patches. There is no designated ecological park or Bio Reserve/Wild life sanctuary in the 10 km radius of the proposed plant site. The impact on terrestrial ecology will be negligible and shall be insignificant.

- **Solid Waste Generation**

The solid waste generation in the proposed activities is given below.

Solid Waste Generation & Mitigation Measures

Waste	Quantity	Mitigation Measures
Metal Slag & Fine Dust	660 TPM	Non-Hazardous, non-toxic will be used for hardening of internal roads / working area

- **Impact on Socio-Economic Environment**
  - ✓ The impact on socio-economic environment will be positive due to the increase in employment, opportunities to the local people, during operation phase 280 technical and nontechnical people will be employed and improvement in transport, communication, health and educational services.

- ✓ M/s Meta Rolls & Commodities Private Limited is equally conscious for the all round socio-economic development and is committed to raise the quality of life and social well being of communities where it operates. Its CSR initiatives will be prioritized on local needs, which focus on Health, Education, Sustainable Livelihood, Social Mobilization, Infrastructure Development and Environment Conservation.

5.0 ENVIRONMENTAL MONITORING PROGRAM

The environmental monitoring is important to assess performance of pollution control equipment installed in the expansion project of M/s Meta Rolls & Commodities Pvt. Ltd. The proposed expansion of M.S. Billets from 6600 TPM to 13200 TPM and new unit of 13200 TPM TMT Bars The sampling and analysis of environmental attributes including monitoring locations will be as per the guidelines of the Central Pollution Control Board/ State Pollution Control Board.

Environmental monitoring will be conducted on regular basis by M/s Meta Rolls & Commodities Pvt. Ltd to assess the pollution level in the proposed plant as well in the surrounding area. Therefore, regular monitoring program of the environmental parameters is essential to take into account the environmental pollutant of the study area. The objective of monitoring is:

- To verify the result of the impact assessment study in particular with regards to new developments;
- To follow the trend of parameters which have been identified as critical;
- To check or assess the efficiency of the controlling measures;
- To ensure that new parameters, other than those identified in the impact assessment study, do not become critical due to the commissioning of proposed facilities;
- To check assumptions made with regard to the development and to detect deviations in order to initiate necessary measures;
- To establish a database for future Impact Assessment Studies for new projects.

The attributes, which needs regular monitoring, are specified below:

- Air quality
- Water and wastewater quality;
- Noise levels;
- Soil quality;
- Ecological preservation and afforestation; and
- Socio Economic aspects and community development

Environmental Budget

Total cost of the project will be Rs 4500 lakhs. The budgetary provision for EMP will be as Rs. 80lakhs.

6.0 ADDITIONAL STUDIES

Risk analysis and possible hazards details

S.No.	Operation process Equipment /areas	Possible Hazardous	Precautionary measures	Measures to be taken if any hazard occurs
1	Control Rooms	Electrical Shock possible due to short-circuit.	Earth leakage circuit breaker is installed.	In an event of electric leakage main supply should be immediately shut off.
2	Welding Gas Oxygen LPG and /Acetylene cylinders	Fire hazards caused by flames and leakage.	1. Emergency kit is kept readily available in store and working place. 2. Fire fighting equipments powder / Foam type extinguishers on vehicle and mounting on walls are kept readily available. 3.Hydrant system provided at conspicuous place. 4. Fire fighting trained	1 Installation of inert gas Nitrogen, Carbon dioxide. Equipments to take care of fire hazards in the factory are being installed. 2. Hydrant point will be for gas cylinders stores and point where welding operation is done.

S.No.	Operation process Equipment /areas	Possible Hazardous	Precautionary measures	Measures to be taken if any hazard occurs
			man is employed. 5. Cylinders are handled carefully without dropping or rolling. 6. Precaution to ensure that cylinders are not allowed to dash with each other. 7. Sand bed cushion available for the purpose of unloading cylinders. 8. Periodic inspection done to avoid accident of any kind.	
3	Electrical transformer	Electrical power	Shock proof insulated PCC Platform.	Immediate Cut off the power supply, treat the injured for electrical shock
		Fire 1	Firefighting equipment (i) Sand buckets. (ii) Fire extinguisher.	Immediately fight fire with available resources, summon outside help if necessary.
4	Diesel Oil/ Transformer Oil etc. storage.	Fire hazard may be possible if directly comes in contact.	1. Fire proof system made available and fighting equipment like Foam, extinguishers and hydrant system, etc., are kept.	Proper care is to be taken while storing and keeping the oil drums.
5	Lab Chemicals	In case of bottle breakage, causes burns and damage to respirator systems due to inhalation.	1. Proper care should be taken while handling the chemicals. 2. First Aid Box should be available at Site with all necessary and required medicines. 3. Firefighting equipment like Extinguishers, sand buckets should be available always.	Instruction Boards to be displaced for knowledge of other workers to take care of the situation in the event of occurrence.

Disaster Management Plan

The word 'disaster' is synonymous with 'emergency' as defined by the Ministry of Environment and Forests (MoEF). An emergency occurring in proposed expansion of M.S. Billets from 6600 TPM to 13200 TPM and new unit of 13200 TPM TMT Bars is one that may affect several sections within it and/or may cause serious injuries, loss of lives, extensive damage to environment or property or serious disruption outside the plant. It will require the best use of internal resources and the use of outside resources to handle it effectively. The DMP will consist of "On-site Emergency Plan" and "Off-site Emergency Plan" and will be prepared in consonance with the guidelines laid by the MOEF.

7.0 ENVIRONMENTAL MANAGEMENT PLAN

- **OPERATION PHASE**

Air Environment

The following Environmental Management Plan will be implemented to control air emissions from Induction Furnace.

- ✓ The primary fume pick up from Induction Furnace will be by a canopy hood placed over the furnace and to convey the same single walled MS duct will be employed.
- ✓ Venturi Scrubber followed by a stack will be installed.
- ✓ Fugitive emission from material unloading operations, material transfer points will be controlled fully with total enclosure.
- ✓ Fugitive as well ambient air quality monitoring shall be carried out on regular basis to ensure the compliance with National Ambient Air Quality Standards (NAAQS). The ambient air quality within the factory premises shall not exceed the standards (PM_{10} 100μg/m^3, $PM_{2.5}$ 60μg/m^3 SO_2 80μg/m^3, NO_x 80μg/m^3 and CO 04μg/m^3) prescribed by CPCB.
- ✓ The monitoring frequency of air quality shall be as per the consent issued by State Pollution Control Board and reports shall be submitted as part of compliance. The records will be maintained.

- ✓ Avenue plantation will be strengthen further to control fugitive emissions & gaseous pollutants to keep clean and healthy environment.
- ✓ During induction melting of steel scrap, lot of sparks gets generated. For the purpose of arresting sparks & flame, it is necessary to have a arrestor which arrests sparks. The device provided will be a centrifugal cyclone, which removes sparks and also collects coarser particles. The collected dust in the cyclone hopper can be drained periodically into a drum when the system is shut or a continuous motorized rotary air lock valve can be provided.

➢ **Noise Environment**

- ✓ The areas where noise levels are high will be partitioned off, noise levels will be minimized at the source, and noise reflection and transmission will be minimized.
- ✓ The workers working in the high noise areas will be provided with ear muffs/ear plugs.
- ✓ Acoustic laggings and silencers will be provided in equipment wherever necessary. Ventilation fans shall be installed in enclosed premises.
- ✓ The silencers and mufflers of the individual machines shall be regularly checked
- ✓ The noise level shall not exceed the limit 75 dB (A) during the day time 70 dB (A) night time within the plant premises.
- ✓ Avenue plantation around the plant area will reduce the noise level further. Training of personnel is recommended to generate awareness about damaging effects of high noise levels.

➢ **Water Environment**

During plant operation no waste water will be generated from M.S. Billets and TMT Bars as the water is being used for cooling the products which will be evaporated and condensed, water if generated will be recycled. Provision for oil/grease separators will be made to skim oil / grease, if any in the waste water. After skimming of the oil water will be stored in guard pond. Domestic waste will be disposed through Septic Tanks along with soak pits.

- **Rain Water Harvesting System (RWH)**

  RWH structures have already been provided in the existing facilities.

- **Land Environment**

  Strengthening of the existing green belt

  The plantation will helps to capture the fugitive emissions and attenuate the noise apart from improving the aesthetics quality of the region Avenue plantation within the plant and green belt development area will be further strengthen. The selection of the species will be finalized in consultation with the local Forest Department.

- **Management Plan of Solid waste**

  - Process needs refractory lining and is being changed every month.
  - Solid waste of slag generation will be about 660 TPM in the proposed Expansion project.
  - Solid waste is non hazardous and non-toxic in nature.
  - Solid waste will be use for land filled, in own premises.
  - Temporary Landfill will be designed for slag and dust as per the guidelines of MoEF New Delhi.

- **Socio Economic Environment**

  The project proponent would aid in the overall social and economic development of the region. The plant will give employment to about 280 people of local area. In order to mitigate the adverse impacts likely to arise in the proposed project activities and also to minimize the apprehensions to the local people, it is necessary to formulate an affective EMP for smooth initiation and functioning of the project. The suggestions are given below:

  - ✓ Communication with the local people will be established regular basis by project authority to provide an opportunity for local youth.
  - ✓ Project authorities will undertake regular environmental awareness program on environmental management

- ✓ Job opportunities are the most demanding factor, the local people as per their education will be employed.
- ✓ For social welfare activities to be undertaken by the project authorities, collaboration should be sought with the local administration, gram panchayat, block development office etc for better coordination.

- **Occupational Safety & Health Management**

Project proponent will provide all necessary provisions under Factory Act. In addition a Safety committee will be formed and manned by equal participants from Management and Workers. All personal protect equipments like Safety shoes, helmet & uniform will be issued to each employee based on the nature of job involved. In case a person inhales CO, he should be removed to fresh air and given mediated oxygen through a mask for 30 minutes and if required cardiopulmonary resuscitiation should be performed.

- **Conclusion**

The potential environmental, social and economic impacts have been assessed. The proposed expansion activities will have the marginal impacts on the local environment. With effective implementation of proposed environment management plan and mitigation measures, these impacts will be insignificant. Implementation of the project has beneficial impact in terms of providing direct and indirect employment opportunities. This will be a positive socio-economic development in the region.