Executive Summary

For

Proposed Expansion of Mini Steel Plant
(Brownfield Project)

Project Proponent

GOEL

SHRI BAJRANG POWER & ISPAT LIMITED
At
Village Gondwara, Urla Industrial complex,
District Raipur, Chhattisgarh

Environmental Consultant

Pollution and Ecology Control Services

Near Dhantoli Police Station, Dhantoli, Nagpur

Accreditation no.: NABET/EIA/2023/SA 0165 valid upto 16th October 2022

Executive Summary

INTRODUCTION

The proposed project attracts the provisions of EIA Notification, 2006 and falling under Category "B" of Schedule, 3 (a) Metallurgical Industries (Ferrous and Non-ferrous). The project proponent made online application on 28th May 2021 along with Form-1, Pre-feasibility report and other documents for obtaining Terms of Reference (TORs) from concerned Regulatory Authority for undertaking detailed EIA study. The proposal was appraised in the 376th Meeting of SEAC(C.G.) held on 16th June 2021 and the committee prescribed ToRs for EIA study for the proposed Expansion of Mini Steel Plant at Kh No. 2/3 Village – Gondwara, Urla Industrial Complex, Tehsil- Raipur, District- Raipur ToRs vide letter OL/TOR/IND/Raipur/1674 dated 18.06.2021.

PROJECT DETAILS

Project at a Glance

1.1	Name of the Project Proponent:	**:**	Shri Bajrang Power and Ispat Ltd.
1.2	Location	**:**	Kh No. 2/3 Village – Gondwara, Urla Industrial Complex, Tehsil- Raipur, District- Raipur Chhattisgarh - 493 221
1.3	Office (Regd.)	**:**	Village – Borjhara, Urla Industrial Area, Tehsil- Raipur, District- Raipur Chhattisgarh - 493 221
1.4	**Existing Installed Capacity and Total Capacity after expansion**		

Particulars	**Existing**	**Proposed Expansion**	**Total Capacity After Expansion**
Steel Melting Shop 1	1,05,600 TPA (6X6T)	From 1,05,600 to 1,42,560 TPA (3x12 T Induction Furnace & Additional 1x12T Induction Furnace)	1,42,560 TPA (4X12 T)
Rolling Mill 1	59,500 TPA (Hot Charging)	From 59,500 TPA to 1,35,000 TPA (Hot Charging)	1,35,000 TPA (Hot Charging)

	Steel Melting Shop 2	NIL	2,22,750 TPA (5X15T Induction Furnace)	2,22,750 TPA (5X15T Induction Furnace)
	Rolling Mill 2	1,50,000 TPA (With Coal Gassifier)	From 1,50,000 to 2,10,000 TPA (Hot Charging Synchronising with SMS 2)/ (With Coal Gassifier)	2,10,000 TPA (Hot Charging Synchronising with SMS 2)/ (With Coal Gassifier)
	Total Capacity SMS	1,05,600 TPA	2,59,710 TPA (Capacity Addition)	3,65,310 TPA
	Total Rolling Mill	2,09,500 TPA	1,35,500 TPA (Capacity Addition)	3,45,000 TPA
	Captive Power Plant - 16 MW	16 MW (Coal Based)	NIL	16 MW
	Wire Drawing	1,25,000TPA	NIL	1,25,000TPA
	Fly Ash Brick Plant	72,000 TPA	NIL	72,000 TPA
	Refining Furnace	3 MVA	NIL	3 MVA

1.5	Total Project Area	:	Present Land utility: 18.5 Ha No Additional Land required for expansion
1.6	No. of Working Days	:	330 Days
1.7	Cost of Project	:	Proposed after expansion : Rs. 150 crores
1.8	Man Power Utilization	:	Present Manpower – 764 Additional manpower – 221 Total Man power after Expansion: 985

PROCESS DESCRIPTION

DESCRIPTION ABOUT PROCESS/SUB-PROCESS

The process flow diagram is enclosed for reference.

A. CAPTIVE POWER PLANT (Existing and no change in proposed expansion)

Coal Based Captive Power Plant

The Power Plant consists of 16 MW single cylinder, single stage fully condensing type of steam turbine. The Turbine inlet steams Pressure & Temperature are 64.0 Ata & 485°C respectively.

There is a Fluidized Bed Combustion (FBC type) of 70 TPH, at 66.00 k.sq(g) Pressure and 490°C temperature, steam capacity and are designed.

We will use Coal Fines/ Dolochar/ Char coal having GCV 3370 Kcal/Kg as a fuel from stock yard feeded to the raw feed hopper by means of conveyors, and then for Fluidized Bed Combustion (FBC) of Boiler to generate super-heated steam 70 TPH at 66 Kg/cm.sq. 485°C.

During the process of combustion of Coal/Char coal in AFBC, Ash will be produced; most of the ash will be carried along with the flue gas as fly ash. A very small percentage of ash will be drained from bottom of FBC furnace. As we provide ESP unit in path of flue gases, most of the fly ash will get collected and the clean flue gas will be diffused to the atmosphere through chimney.

B. <u>STEEL MELTING SHOP</u>

Manufacturing Process

The induction furnace continuous casting route is adopted for steel melting.

Raw material such as DRI (Sponge Iron), Pig Iron Scrap & Ferro Alloys is fed to Steel Melting Shop induction furnace through respective raw material dumpers and is unloaded in the charging bay of the steel melting shop. With the help of magnet crane the DRI is fed into the Sponge Iron Bins on over the furnace platform. Below these bins there are Weigh Feeders which is used to fed the DRI in controlled manner into the furnaces.

Plant return scraps from various generating points and purchased scrap is transported to the scrap bay of steel melting shop. One crane is provided in the scrap bay for unloading

and loading of scrap and pig iron in scrap buckets. These are transported to the furnace bay by electrically driven scrap bucket transfer car. The scrap buckets are weighed in the scrap bay. Scrap is stored on furnace working platform near the furnace for charging.

The scrap is charged into the crucibles for generating the hot heel for DRI charging. Necessary carbon in the form of pig iron/petroleum coke is added into the crucibles to ensure the availability of necessary carbon in the bath. Once the molten bath has been formed and minimum temperature of the bath has been achieved, sponge iron is charged in small batches and the slag formed is removed periodically. After the completion of charging sponge iron a sample is drawn to determine the composition of the bath. After achieving the desire malt analysis, temperature is raised to the tapping temperature and taking into account additions of predetermined amount of ferroalloys; to achieve the required tapping composition of the melt.

Continuous Casting

The continuous casting technology has gained worldwide acceptance because of high yield, economics of operation and better product quality. Hence, this technology is adopted for our steel plant casting the liquid steel into billets. The continuous casting machine is equipped with moulds, mould oscillating mechanism, secondary cooling segments, straightening unit and withdrawals, gas cutting unit, rigid dummy bar insertion system, run out roller tables, cross transfer mechanism and cooling bed. The caster is controlled from the pendant control panels and also from main control room, located on the casting platform and the auxiliary control room near the gas cutting unit.

The tap to tap time of the induction furnaces is matched with the casting cycle time so as to have maximum number of sequential cast.

The ladle is picked up by ladle handling crane and placed on the ladle stand. A refractory lined tundish, fully dried and fitted with preheated nozzles mounted on tundish, car is moved from the reserve position to the casting position.

Prior to the start of the casting operation, the dummy bar will be introduced into the mould. The gap between the dummy bar and mould walls is sealed with asbestos cords and small pieces of steel scraps are placed over the dummy bar head for chilling of initial metal. Water supply to mould, secondary cooling zone and machine cooling is switched on at this stage. When the liquid steel level in the tundish reaches a predetermined level, the tundish nozzles are opened. When the metal level in the mould reaches about 100-150 mm from its top, the drive of the mould oscillating mechanism as well as withdrawal and straightening unit is switched on. The withdrawal of dummy bar begins at the minimum speed and gradually increased to normal speed within few minutes. The mould is lubricated with liquid lubricant. During casting operation the metal level in the mould is maintained within predetermined limits by adjusting flow of metal into the mould or by adjusting the withdrawal speed.

The partially solidified billets after leaving the mould pass through strand guide roller segment where intensive but controlled cooling of billets is affected by water spray nozzles. The solidified billets are guided through withdrawal and straightening units before entering the gas cutting zone. The dummy bar is separated from the billet for the gas cutting unit and is stored till its introduction is required for the next hit. The cast billet is cut to predetermined length by gas cutting torches/ Hydraulic Shear. The sized billets are sent to Rolling Mill for hot charging through hot billet conveyor and/or delivered to the cooling bed through run out roller table and cross transfer mechanism. The billets are marked on cooling bed by the marking unit for identification/tracking.

ROLLING MILL

Raw Material required for the Rolling Mill is generally Ingot and Billets, produced in Steel Melting Shop.

Roughing Mill

The Red Hot Raw material namely Ingot/Billet from CCM is fed directly to the first stand of the Roughing Mill. The Roughing Mill comprises of roughing stand having roll size. The roughing mill is used for primary reduction of the raw material. This is being done

by rolling the material through various passes of the roughing mill. The roughing mill runs by drive system comprising of 1500 HP AC motor, high speed fly wheel, reduction Gear Box, pinion Gear Box etc.. After the primary reduction the material goes to intermediate mill for further reduction.

After the raw material comes out from roughing mill both the ends of the material will be sheared by Rotary Shearing for free entry into further passes. The material passes through Intermediate Mill comprising of six stands having individual DC drive.

The stands are arranged in continuous line with DC motors & Drives enabling to roll at high speed. DC motors and Thyristor Drive will drive these stands. The Flying Shear is installed in between the stand for cutting the cobbles (misroll) efficiently. Each stand has different passes wherein the hot material is further reduced.

Finally the product goes to the Finishing Mill for attaining the final shape and size.

Finishing Mill

The Finishing Mill consists of stands in continuous configuration. All these stands are equipped with DC motor and Thyristor drive. The material passes through these entire stands and finally comes out in the desired size and section.

After leaving the last roll stand of the finishing mill, the material passes through special water-cooling system for quenching with the well-defined penetration depth. Quenching results into a hardened surface structure of the material. After leaving cooling line, the remaining heat of the core of the Bar reheats the surface up to the equalizing temperature, thus tempering the hardened surface. The resulting heat-treated structure has high strength and good toughness properties. This entire process is the manufacturing process for TMT Bar.

Quenching system

The Quenching system consists of cooling pipes of different length having motorized valves for controlling the flow of water. The system is also equipped with pressure and

temperature gauges. High pressure water pumps are provided with butterfly valves so that water at desired pressure is available for rapid water quenching of bar to obtain the desired properties.

The cooling pipes also have air and water inlet system for better cooling. Installing a suitable compressor will generate compressed air of about 300 Cu NM/hr. at 0.5 Mpa.

The water used for water Quenching is collected in a scale pit. It is then cooled at cooling tower for re-use in the Quenching system. The entire system is equipped with various temperature gauges for measurement of the rolling temperature and equalizing the temperature for better quality control. The entire system being controlled by PLC system, which helps in maintaining accuracy of various process parameters such as Flow of water, pressure, temperature. Once the material leaves the Quenching system, it passes through a pinch-roll unit, i.e., a machine having 2 nos. cantilevered pinch roll. This machine is used for driving the Bar through the dividing shear after the Bar leaves the last stand. This is done with the help of a photo cell located just before the pinch roll unit which detects the Bar nose. A solenoid valve actuates the air cylinder of the pinch roll unit and the top pinch roll comes down to the Bar and keeps the Bar at mill speed after it leaves the last stand.

A Cooling tower with matching capacity shall be installed to ensure availability of cold water. Thereafter, the flying shear will be installed for cutting the material into desired length. Flying shear shall be operated with DC motor and is capable of cutting various sizes with best accuracy. The shear will have a digital drive, which will control the machine to follow the rolling speed so as to divide the bar suitable to cooling bed length.

After cutting, the finished material moves inside the Twin Channel installed on the cooling bed. The twin channel is installed all along the length at the side of the cooling bed. It consists of alternately opening flaps through a hydraulic cylinder. The Bar enters the closed flaps, which opens when the full bar has been received.

The cooling bed is an Automatic Rake type Moving Cooling Bed. The Automatic cooling bed moves the finished bar to the discharge end with the help of walking beam. This system has advantage of getting a straight length material, thereby giving better finish to the material. This system has less involvement of labour. The cooling bed shall be provided with one Aligning device, which consists of 30 nos. individual driven Rollers, which shall be arranged in the stationary rake system of the cooling bed in front of discharge device. The main function of the aligning device shall be to align the nose of the rolled bar in direction of forward transportation, ensuring 100% fix length material. The material is then finally sheared by Shearing machine in the length of 11-12 meters and shifted to the loading area. It is then bundled and packed. After proper internal inspection, the material is released for dispatches.

Brick Manufacturing: The wastes (residues) in the form of Ash, Lime Powder, Gypsum are mixed together in a raw material mixing machine, transferred to Brick moulding machine and dried in open atmosphere.

C. MANUFACTURING PROCESS OF HB WIRE

The Wire Bed is placed on the Drawing Drum Block behind the Descaler Machine. The power is given to drive the wire rod through descaler assembly machine, so that the scaling on the wire rod can be removed.

Subsequently, the descaled wires are passed through the first die box of drawing machine for reduction in size.

The wires are wounded in a drum for further processing. Through overhead rollers the wire are again passed to second set.

Drawing Die Machine and then to third set Drawing Die Machine which continues to fourth set of Drawing Die Machine where the wires comes out of 80% of reduction.

Then finally the wires are passed through fifth set of Drawing Machine and the finished products are collected in form of HB wires.

The wires are checked for quality parameter and then the wires are bundled and stacked and moved to finished goods yard for dispatch.

D. Rolling Mill with coal Gasifier

a. Ingot / Billet are being stacked near the conveyor belt of the furnace.
b. It will be pushed into the Reheating Furnace for heating up to 1200^{o} C.
c. The red hot raw material is then injected out of the furnace by using Injector and is fed Roughing Mill.
d. Red hot raw material sheared by Rotary Shearing for free entry into further passes.
e. Red hot raw material passes through Intermediate Mill.
f. After leaving the last roll stand of the finishing mill, the material passes through special water-cooling system for Quenching.
g. Once the material leaves the Quenching system, it passes through pinchroll unit.
h. After cutting the finished material moves inside the Twin Channel installed on the cooling bed.
i. The cooling bed shall be "Automatic Rake type Moving Cooling Bed". The Automatic Cooling Bed moves the finished bar to the discharge end with the help of waking beam.
j. The material is then finally sheared by Shearing machine in the length of 11/12 meters and shifted to the loading area.

E. Refining Furnace (3MVA) for refining of MS Round & CTD Bars &/or MS Ingots & Billets.

Electric Liquid Refining Furnace is a refining furnace where old and used Iron & Steel Scrap, Sponge Iron are liquids refined and brought required chemistry. This is a basic steel making process where Detrimental Elements, impurities like Sulphur, phosphorous, Chromium, zinc, Tin etc., are eliminated during processing. This ability makes it superior to induction furnaces where only melting is possible and not the refining.

ELR Furnace Electrical power is supplied through three phase Graphite Electrodes which strikes on Liquids and Refining takes place. After Refining Liquid metal is treated with

fluxes like lime, Fluorspar, Iron Ore etc. for removal of impurities like Sulphur, Phosphorous, chromium, carbon etc. After refining, slag containing impurities are removed/ skimmed off and fresh slag is made. Steel bath is deoxidized with Deoxidizers like Aluminum, Silico Manganese, and Ferro Silicon etc. Liquid Metal is heated to required Temperature and then tapped in Ladle from where it is transferred to Billet casting machine for casting into required size and length.

DESCRIPTION OF ENVIRONMENT

Air Environment

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

PM_{10} : 36.5 to 96.4 µg/m^3.

$PM_{2.5}$: 22.2 to 52.4 µg/m^3

SO_2 : 6.2 to 18.6 µg/m^3

NO_x : 14.8 to 38.4 µg/m^3

Industrial Area	PM_{10}	$PM_{2.5}$	SO_2	NOx
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).

Water Environment

A total 16 samples including eight surface & eight 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 (BIS 10500 – 2012) except high concentration of total coli form in surface water, which may be due to the human activities.

Noise Environment

It has been found that in the proposed expansion plant, noise levels are in the range of 30-72 dB (A) at all eight 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 are well within limit of either 65.0 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.

Area Code	**Category of Area**	**Limits in dB(A) Leq**	
		Day time	**Night time**
A	Industrial Area	75	70
B	Commercial Area	65	55
C	Residential Area	55	45
D	Silence Zone**	50	40

**** Silence zone is defined as area up to 100 meters around premises of hospitals, educational institutions and courts. Use of vehicle horns, loud speakers and bursting of crackers are banned in these zones

Land Environment

Eight Soil samples were collected analyzed for physico-chemical characteristics at selected locations in the study area to assess the existing soil conditions around the proposed project site. The relevant parameters show the following characteristics.

The observations of soil characteristics are discussed parameter wise below;

a) Texture of soil samples are Silt Clay.
b) Colour of soil samples are yellowish, brownish, blackish brown.
c) The Organic Matter of soil samples are in the range of 0.41 to 0.76 g/cc
d) pH values of soil samples varied between 6.4 to 7.46.
e) Soil samples have conductivities between 164.1 to 525.6 mmhos/cm

ANTICIPATED ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

Air Environment:

Impact on Air Quality

The major pollutants of air in a proposed plant are the particulate matters from the various stacks and fugitive emissions due to material handling. Company is presently taking all measures to effectively control the air emissions and periodic monitoring of the stack emissions & ambient air quality is being done to monitor the pollutant concentrations. Same will be continued after the proposed expansion. During operation phase, air emissions both gaseous and fugitive will be on account of process emissions from stack of induction furnace and existing power plant as well as transportation of men and material. The impacts on air quality due to source of the air pollutant in the proposed facilities have been identified.

Mitigation Measures

- Bag filter of Capacity 50000 m3/Hr will be installed in furnaces.
- All internal roads are tarred.
- Stack is well equipped with continuous emission monitoring system along with remote calibration facility for gaseous parameters.
- 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} 100 $\mu g/m^3$, $PM_{2.5}$ 60 $\mu g/m^3$ SO_2 80$\mu g/m^3$ and NO_x 80 $\mu g/m^3$ prescribed by CPCB.
- Water sprinklers are installed in the existing plant to control dust emission.

Action plan to control Fugitive emissions

- All Internal roads are paved to prevent the fugitive dust emission due to vehicular movement.
- Speed limit in plant premises is in control.

- All transportation vehicles carry/ will carry a valid PUC (Pollution under Control) Certificate.
- Flow of vehicles is being/will be maintained.
- Proper traffic management is being/will be undertaken.
- Proper servicing& maintenance of vehicles is being/will be carried out.
- Proper dust masks are being/will be provided to workers coming in direct contact of fugitive emissions
- Adequate greenbelt will be developed in the plant area. Greenbelt acts as a surface for settling of dust particles and thus reduces the concentration of particulate matter in air.
- Water Sprinkling is being /will be done to reduce fugitive emission in the plant and maintain the ambient air quality within CPCB standard.
- Ambient air quality is being/will be regularly monitored, so as to keep a check on the emissions of different pollutants.
- Fugitive emission sources are being /will identified and monitored at regular basis.

Impact on Noise Levels and Mitigation Measures

During operation, the major noise generating sources are crushing mill, auto loading section, electric motors etc. These sources will be located far off from each other. Under any circumstances the noise level from each of these sources will not exceed 85 dB (A).

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

The general mitigation for the attenuation of the noise are given below:

- ❖ Encasement of noise generating equipment where otherwise noise cannot be controlled
- ❖ Providing noise proof cabins to operators where remote control for operating noise generating equipment is feasible.
- ❖ In all the design/installation precautions are taken as specified by the

manufacturers with respect to noise control will be strictly adhered to;

- ❖ High noise generating sources will be insulated adequately by providing suitable enclosures;
- ❖ Use of lagging with attenuation properties on plant components / installation of sound attenuation panels around the equipment
- ❖ Other than the regular maintenance of the various equipment, ear plugs/muffs are recommended for the personnel working close to the noise generating units;
- ❖ All the openings like covers, partitions will be designed properly
- ❖ Inlet and outlet mufflers will be provided which are easy to design and construct.
- ❖ All rotating items will be well lubricated and provided with enclosures as far as possible to reduce noise transmission. Extensive vibration monitoring system will be provided to check and reduce vibrations. Vibration isolators will be provided to reduce vibration and noise wherever possible;
- ❖ The insulation provided for prevention of loss of heat and personnel safety will also act as noise reducers.

Impact on Water and mitigation Measures

Total water requirement for the proposed project will be about 1405 KLD. Water requirement for the project will be sourced from Kharun river.

Shri Bajrang Power and Ispat Limited is committed to ZERO Discharge of waste water. 4.5 KLD Industrial waste water generated from SMS will be treated in settling tank.

21 KLD of Domestic waste water will be taken to adequately designed STP. The treated water will be recycled for utilization in Green Belt Development.

Solid Waste Generation

The solid waste generation and utilization from the proposed project is given below:

Solid Waste Quantity and Disposal

S.N.	SOLID WASTE	EXISTING	PROPOSED	METHOD OF DISPOSAL
1.	Slag	14,400 TPA	49800 TPA	After crushing and screening and material removal, it is being used in our Fly ash bricks plant as a raw material and if balance is being used in construction of inside by pass roads and levelling of low lying area. and/or sale to crusher plants.
2.	Fly Ash	66,000 TPA	66,000 TPA	Being used in our own Fly Ash Bricks Plant and balance supplied to outside Fly Ash Bricks and block Manufacturing units/Cement Manufacturing unit /Land Filling.
4.	Miss Roll and End Cutting	9775 TPA	13733 TPA	Used in our Steel melting shop
5.	Mill Scale	6435 TPA	10597 TPA	Used in our Steel melting shop

Impact on Socio-Economic Environment

Shri Bajrang Power and Ispat Limited is already providing direct employment 764 workers and on completion of the expansion, there will be addition of 221 people. Since the plant is located in the Raipur district in which trained manpower are already available therefore the employment will be mostly given to local people therefore there will not be any substantial increase in the population of local villages. However, due to increase economic growth, the local youth will be benefited with respect to employment.

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.
- The overall impact on the socio economic environment will be significant.

ENVIRONMENTAL MONITORING PROGRAMME

Shri Bajrang Power & Ispat Limited is carrying out the Environmental Monitoring on regular basis. The methodologies adopted for environmental monitoring are in accordance with the CPCB guidelines.

The environmental monitoring points is done considering the environmental impacts likely to occur due to the operation of existing and proposed project as the main scope of monitoring program is to track, timely and regularly, the change in environmental conditions and to take timely action and adopt mitigation measures for protection of environment.

Project Cost:
Existing Cost: Rs. 230 Crores
Proposed cost for the expansion project: Rs. 150 Crores.
Total Cost after expansion: Rs. 380 Crores.

Total Rs. 800 lakhs as a capital investment and 67 lakhs as recurring cost has been earmarked for implementation of Environmental Management Plan for proposed expansion.

ADDITIONAL STUDIES

The additional studies as per the ToR issued by SEIAA, Chhattisgarh are Public Consultation, Risk Assessment, & Disaster Management Plan.

PROJECT BENEFITS

- This project will contribute towards development activities as per its share.
- Rain water harvesting will be done for groundwater recharging that will maintain and improve the ground water table.
- Plantation will be carried out under CER fund in nearby area.

As per the Office Memorandum No. 22-65/2017-IA.III dated 20th October 2020 based on the need of the local people, Local Gram Panchayat and District authorities, CER will be spent.

ENVIRONMENTAL MANAGEMENT PLAN

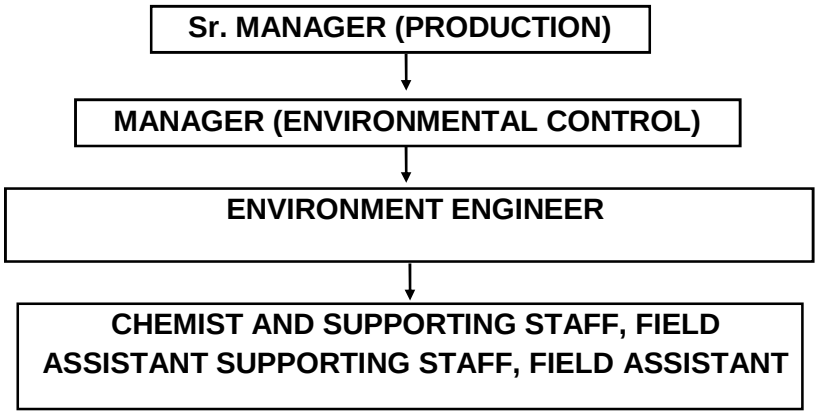
For effective implementation of the monitoring program, it is necessary to have a permanent organizational set-up. An environmental monitoring and control cell has been established. The Environmental Cell is functioning under the control of the General Manager along with the EMS team of the company to monitor the environmental measures.

The cell is responsible for monitoring ambient air quality, stack emission, ambient noise in the plant and vicinity, waste water quality and discharge, quality of water bodies receiving effluent, workplace air quality and maintenance of analytical instruments. Additional responsibilities of the cell include the following:

- Conducting annual environmental audit and submit audit report to State pollution Control Board (MPCB);

- Submission of all statutory reports and returns.
- Conduct regular training programs to educate plant personnel on environmental awareness.
- Inform the management regularly about conclusions/results of monitoring and recommend environmental protection measures.

The Organogram of Environment Management Cell is as follows:-



Organogram of Environment Management Cell

MANAGEMENT DURING CONSTRUCTION PHASE

No additional construction is required as the proposed expansion activities will be carried out in the existing plant premises.

MANAGEMENT DURING OPERATION PHASE

Air Emission Management

There will be two major source of air pollution in the plant, fugitive emissions from various material handling and transfer points and flue gases generated from various combustion units.

Fugitive emission is collected using suitable fume extraction system, connected to bag filter. The shed of casting shop is provided with sufficient height. Ventilation system at skylight disperses uncollected emissions outside the shed and maintains clean work environment.

Dust Suppression System

Raw material & Finished Products will be transported by road. It will be ensured that all trucks carrying raw material are tarpaulin covered.

Internal roads are being Tarred / Concreted with installation of water sprinklers to suppress dust due to transportation.

Proper Dust Suppression is proposed in the premises, sprinkling on internal roads, regular checkup & maintenance of vehicles, it will be ensured that all trucks/dumper will be covered by Tarpaulin.

Water spraying on raw material is being done to control the fugitive emissions

Noise Environment

- By providing padding at various locations to avoid sharp noise due to crushing activity.
- Other than the regular maintenance of the various equipment, ear plugs/muffs are recommended for the personnel working close to the noise generating units;
- Noise pollution control measures will be provided in respective departments by way of providing silencers and proper selection of less noise prone machinery and by development of green belt..
- The insulation provided for prevention of loss of heat and personnel safety also act as noise reducers.

Water Environment

The company will follow “the zero wastewater discharge concept” and the entire wastewater will be recycled to the plant for various uses after treatment. As no wastewater will be discharged outside the plant premises, there will be no impact on the water quality of any surface water bodies of the area.

Management Plan of Solid waste

Major solid wastes generated from the rolling mill are mill scale and clinker ash from gasification system, which are being utilized as raw material in other manufacturing units.

The generated solid waste from SMS is not a hazardous waste; hence it can be easily disposed to ground filling & road leveling after recovery of metal.

- Generated Dolochar from Sponge Iron plant of Borjhara & Tilda units is being used in 16 MW AFBC power plant at Gondwara plant of M/s. SBPIL unit.
- Generated slag from SMS after crushing and screening being used in brick manufacturing plant and/or sale to crusher plants
- 100% Mill scale is being used for captive consumption in SMS Plant as raw material.
- Miss-Roll and End Cuts 100% are being used in captive consumption in Steel Melting Shop as raw materials.
- The fly ash generated from power plant is being utilized in our own Fly Ash Bricks Plant and remaining if any, shall be supplied to other Bricks manufacturing Units and Cement Plant.

Socio Economic Environment

Shri Bajrang Power & Ispat Limited would aid in the overall social and economic development of the region. The existing industry is providing employment to about 764 people and on completion of the expansion, there will be addition of 221 people In order to mitigate the adverse impacts likely to arise in the proposed expansion 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.
- There are opportunities for local people apart from job in indirect employment in transport, business, canteen etc.
- 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.