EXECUTIVE SUMMARY

1.0 INTRODUCTION

M/s R. R. Ispat , Raipur [C.G.] was a Limited Company, incorporated in May' 1999 by the Registrar of Companies, Madhya Pradesh & Chhattisgarh, Gwalior (M.P.). Consequent upon on the merger of R.R. Ispat Ltd. with Godawari Power & Ispat Ltd. which is an Integrated Steel Plant of Hira Group of Industries of Chhattisgarh) effective from 30.03.2011, the company was renamed as R.R. Ispat (A Unit of Godawari Power & Ispat Ltd.).

RR Ispat is an existing Wire Rod Mill with wire drawing facilities. The Registered Office of the company is situated at Plot No. 428/2, Phase-I, Industrial Area, Siltara, Raipur - 493111 (C.G).

It is a fully owned by M/s Godawari Power &Ispat Limited (GPIL), which is an Integrated Steel Plant located in Siltara Industrial Area, Raipur, Chhattisgarh. . RR Ispat plant is strategically located at Urla , district Raipur, which is a mineral rich area and a hub for the manufacture of long steel products. Urla is in Central India, which is 8 kms away from Raipur having its own railway siding for transportation of iron ore and coal. The Company has executed Expansion-cum-Modernization at the existing premises includes the establishment of a State-of-Art Block Mill, Up-gradation of Reheating Furnace.

2.0 PROJECT DESCRIPTION

RR Ispat is in a process of expansion of Rolling Mill plant. The existing major plant facilities and those envisaged under proposed expansion project alongwith their capacities are reported in following tables.

Major Existing Plant Facilities

Sr. No.	Plant Details	Units	Existing Units Capacity
1	Rolling Mill	TPA	1,00,000

Proposed Expansion Plant Facilities

Sr. No.	Plant Details	Units	Capacity
1	Rolling Mill	TPA	2,14,000

PROCESS DESCRIPTION

Rolling Mill

Qualitative raw materials MS Billets is tested and then pushed in re-heated furnace for reheating upto suitable temperature for rolling. The process involves :

- **TMT Bars** :

  The Rolling & Re-rolling Process is age old and adopted by one and all. The TMT Rods are already in the trade and have widely been accepted. All other Products constituting the product mix belong to the family of the conventional Rolled Products. The manufacturing of Binding Wires, an end product in literal terms; is carried out by the process of Wire Drawing.

- **Block Mill** :

  The tradition of the first adoption of new Technologies by the "Hira Group" continues at RR Ispat. The most modern State-of-the-Art Block Mill has been installed at RRI.. The Block Mill consists of sets of multiple Stands with even number of Rolls. The Block arrangement obviously increases the Mill Speed to a great extent.

- **Reheating Furnace** :

  The Raw Material (Billet) is first re-heated prior to Rolling in Reheating Furnace. The Gas Fired Pusher Type Reheating Furnace has been constructed as per the latest Furnace Technology to minimise the heat losses and optimise fuel consumption. The inside dimensions of the Furnace will be modified from 5 meters breadth x 26 meters length to 6.5 meters breadth x 26 meters length. with fire-wool blanket being used as additional insulation

material. The Furnace is having heating speed of 18 TPH. Now the heating speed will be increased to 30 TPH to achieve the production of higher capacity.

- **Roughing Mill**

The Roughing Mill is adoptable to raw materials of 130 x 130 mm to 100 x 100 mm billet as per availability in the market. It is having Roughing Mill Stand of Pinion Centre Distance of 510 mm Pinion, driven by 1500 HP 8 pole motor. Through repeated passes, The material is reduced to 65 x 65 / 44 x 44.

- **Intermediate Mill**

The Intermediate Mill is the continuous mill from Roughing Mill. The material from Roughing Mill is introduced in continuous mill having 2 – 4 passes where material is further reduced to required size of approx. 28 to 30 mm square / round. All the stands are independent and are run with 400 to 420 mm pinion with motor load in different stands ranging from 300 to 400 KW.

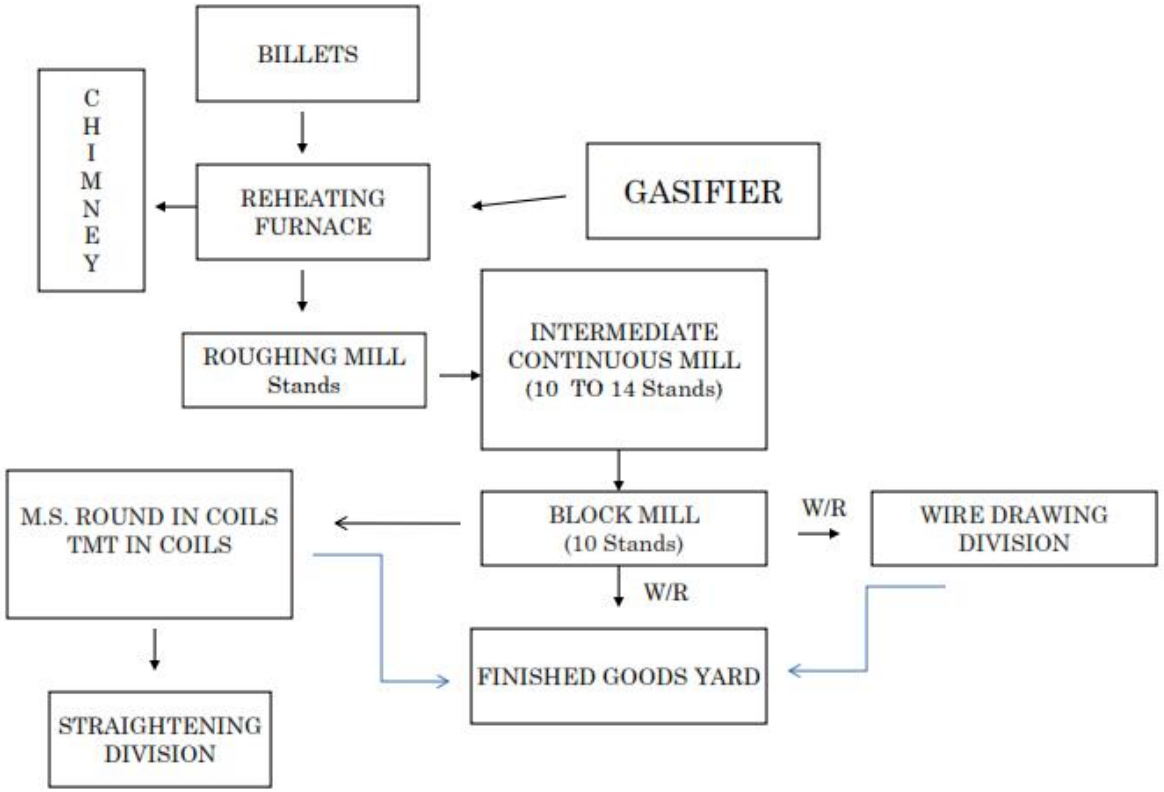
- **Continuous & Block Mill:**

The Continuous Mill comprises of 8 to 10 horizontal stands. From the continuous mill, the output comes out approx. 13 mm square / rounds. From there it passes to the state of art Block Mill with variable speed from 30 m/second to 75 m/second. It is being run by two 800 KW DC motors. The speed of the motors is being varied as per the requirement of the product and tonnage of product needed as per section. The output of finishing mill is 5 mm dia to 12 mm dia of wire rods, round in coils, CTD bars / coils, TMT bars / coils.

- **Finishing Section**

The Finishing Section consists of Coilers, Coil Pushers, Cooling Conveyors, Cooling Blowers, Cooling Bed to produce wire rods, round in coils, CTD bars / coils, TMT bars / coils. The pieces of cut rolled product are tested for size, % Elongation, Bend & Re-bend and weight per meter. After visual inspection the bars are bundled and kept in slot for dispatch.

The process flow diagram of the rolling mill is given in following figure



Process Flow Diagram (Rolling Mill)

3.0 DESCRIPTION OF THE ENVIRONMENT

Air Environment

The predominant wind directions were from W (16%), from NW (12%). Average wind speed was 2.95m/sec during monitoring period.

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

PM_{10}: 23.4 to 78.4µg/m^3.

$PM_{2.5}$: 17.8 to 51.2µg/m^3

SO_2 : 10.1 to 25.2µg/m^3

NO_x : 10.4 to 33.0µg/m^3

Industrial Area Residential, Rural Area (CPCB Norms)	PM_{10}	$PM_{2.5}$	SO_2	NOx
	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 11 samples including three 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

Noise levels measured at eight stations are within limit of 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.

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

Four 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 characteristics of the soil sample were compared with different depths for respective parameters.

The observations of soil characteristics are discussed parameter wise below;

a) Texture of soil samples from agriculture lands are silty-clay loam and loam sample from waste land issandy-loam in Texture Classification.

b) Colour of soil samples from agriculture and waste land are grey and yellow in colour.

c) The bulk density of soil samples from agriculture land are in the range of 1.31 to 1.66 g/cc and sample from waste land are in the range of 1.52 to 1.57 g/cc.

d) Soil samples from agriculture land have pH values between 6.5 to 7.53 and sample from waste land have 7.67 to 8.12. The pH values are indicating nature of soil samples is acidic to alkaline.

e) Soil samples from agriculture land have conductivities between 0.052 to 0.405mmhos/cm however; conductivity of soil sample from waste land ranges between 0.288 to 0.436mmhos/cm.

f) Soil samples from agriculture land have Organic Matter between 0.05 to 0.93% and sample from waste land have between 1.22 to 1.66 % Organic Matter. These values represent good fertility of soils.

4.0 Anticipated Impacts & Mitigation Measures

Impact on Air Quality

The impacts on air quality due to source of the air pollutant in the proposed expansion facilities have been identified.

Sources of Emissions

Emissions released from the stack during operation phase will get dispersed in the atmosphere and finally reach the ground at a specified distance from the sources. From the proposed expansion activities the possible environmental impact on air quality has been envisaged due to the following sources.

Raw Material Handling / Transport System

The possible pollutants are fugitive dust emissions from raw materials handling areas viz. loading / unloading, etc. Raw materials will be fed to hopper with the help of pay-loader / tipper.

Mitigation Measures

- The raw material handling section is provided with mist system.
- All rotary equipments like fans, blowers, pumps & compressors, rolling mills are being of low noise design. The grouting of this equipment is made free from vibrations.
- Heat recuperator has already been provided.
- Adequate dust suppression system like fog type and water spray system is installed in the material handling system and at transfer points, loading points.
- Good house-keeping practices are adopted in the plant premises.
- Sprinkling of water is being done at frequent intervals by using sprinklers mounted at different locations.

- Water sprinkling is also being done along with roads and work zone areas to reduce the fugitive dust.
- Trucks and other vehicles are maintained and serviced regularly to reduce air emissions.
- Usage of respiratory protective equipment by all employees.

Noise Levels

During operation, the major noise generating sources are 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

Mitigation Measures

The noise levels stipulated by Central Pollution Control Board at any point of time will not exceed the standards.

- By providing padding at various locations to avoid sharp noise due to vibration.
- 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.
- The insulation provided for prevention of loss of heat and personnel safety will also act as noise reducers.

Impact on Water

The total water requirement for the proposed expansion project is 50 m^3/day. There will not be any impact on the water quality as the water system is in close loop used for cooling rolls in the process. The sewage generated from the toilets and bathroom of the proposed expansion facility will be treated in septic tank followed by soak pit.

Solid Waste Generation

The solid waste generation in the existing and proposed expansion activities are given in following table

Solid Waste Generation & Mitigation Measures

Units	Quantity (TPA) Existing	Quantity (TPA) Post-expansion	Management
Solid waste in rolling mill			
Mill Scale	2,080	4,365	Used as Rawmaterial in Pellet/Ferro/SMS plants and Induction Furnace of our associat unit.
From : Gasifier			
Clinker Granules	3,600	6,848	Sale to fly ash brick plant manufacturers

Tar Generation Details

R.R.ISPAT (A UNIT OF GODAWARI POWER & ISPAT LTD.)	
DETAIL OF MONTHLY COAL TAR GENERATION(FY 2016-17)	
MONTH	GENERATION (KG)
APRIL	365
MAY	220
JUNE	324
JULY	352
AUGUST	329
SEPTEMBER	368
OCTOBER	-
NOVEMBER	12
DECEMBER	234
Management - Tar is used as fuel and sold to authorized dealers.	

Impact on Socio-Economic Environment

The impacts of the proposed expansion project, during its operation, on demography and socio-economic condition can be identified as follows.

- Negative impacts can be depletion of natural resources like water and land, depletion in air quality if proper mitigative measures are not taken.
- Increase in employment opportunities and Reduction in migrants to outside for employment.
- Growth in service sectors.
- During operation phase additional 55 technical and nontechnical people will be employed.
- Increase in consumer prices of indigenous produce and services, land prices, house rent rates and Labour prices.
- Improvement in socio-economic environment of the study area.
- Improvement in transport, communication, health and educational services.
- Increase in employment due to increased business, trade commerce and service sector.
- The overall impact on the socio economic environment will be significant.

The management of M/s. RR Ispat has proposed to give preference to local people for recruitment in semi skilled and unskilled categories.

Socio-economic Environment

In order to mitigate the adverse impacts likely to arise out of the proposed project activities and also to minimize the apprehensions of the local people, it is necessary to formulate an affective EMP for smooth initiation and functioning of the project. The recommendations are given below:

- Communication with the local community should be institutionalized and done on a regular basis by project authority to provide an opportunity for discussion.
- Project authorities should undertake regular environmental awareness programmes on environmental management measures being undertaken for improving their quality of life.
- To mitigate the strain on existing infrastructure adequate provision of basic amenities viz. education, health, transport etc. should be made considering the immigrating population and the work force in the area.

- Job opportunities are the most demanding factor, the local people having suitable skill should be considered for employment.
- 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 co-ordination.

5.0 Environmental Monitoring Programme

The environmental monitoring is important to assess performance of pollution control equipment installed in the proposed expansion project of M/s. R R Ispat. The proposed expansion project is of expansion of rolling mill from 1,00,000 TPA to 2,14,000 TPA. 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. R R Ispat to assess the pollution level in the proposed expansion 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

6.0 Environmental Management

The management of the M/s RRI has taken all the necessary steps to control and mitigate the environmental pollution in the existing project and will continue to do the same in the proposed expansion project. The environmental management plan briefs all the elements of environment pollution controlling systems proposed by the project proponent in operation phase. The environmental management plan describes briefly the action plans to be implemented during the post project monitoring stage as per the Ministry of Environment and Forest (MoEF) New Delhi, Central and State Pollution Control Board guidelines.

7.0 Conclusion

It can be concluded that there would be negligible impact in the buffer zone due to the proposed expansion of rolling mill. The project shall contribute to the socio-economic development, strengthening of infrastructural facilities like medical, educational etc. The plant shall be operated keeping "Sustainable Development" of the region in mind.

Further, management is committed to contribute towards improving socio-economic status of the surrounding local community.

Environmental monitoring is a successful tool for the management for implementation of adequate & effective environmental measures. It also helps the management to take mid-course correction, if required based on the environmental monitoring results. Considering the above overwhelming positive impact on the community, there shall be overall development of the area. Hence, it is requested that an environmental clearance may be granted for this upcoming project.