EXECUTIVE SUMMARY

FOR

PROPOSED EXPANSION OF STEEL MANUFACTURING UNIT BY REPLACING EXISTING INDUCTION FURNACE

IN THE EXISTING STEEL MANUFACTURING UNIT OF

M/S KISCO CASTINGS (INDIA) LTD.

Village- Nasrali, Guru ki Nagri, Anaj Mandi-Bhadla road,
Near Power Grid, Tehsil- Mandigobindgarh,
District-Fatehgarh Sahib, Punjab.

Prepared by

Chandigarh Pollution Testing Laboratory- EIA Division

(QCI/ NABET Certificate No: NABET/EIA/1922/RA 0146)

Address: E- 126, Phase- VII, Industrial Area, Mohali, Punjab- 160055.

Contacts: 0172-4669295, 5090312

E-mail: eia@cptl.co.in / cptleia@gmail.com

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1.0 Project Name and location

The proposed project i.e. M/s Kisco Castings (India) Limited. is a Secondary Metallurgical Process based industry. The plant is located at Village- Nasrali, Guru ki Nagri, Anaj Mandi-Bhadla road, Near Power Grid, Tehsil- Mandigobindgarh, District Fatehgarh Sahib, Punjab.

2.0 Products and capacities

It is proposed to enhance the capacity of their unit by replacing the existing furnaces of capacity 6.5 TPH to 12 TPH, and addition of one Electric Arc furnaces of capacity 15 TPH The capacity of the Steel Ingots/Billets after expansion will be 1,13,400 TPA.

The following are major equipment and machineries

Equipment and Machineries				
S.No.	**Source**	**Existing**	**Additional**	**After Expansion**
1.	Induction Furnace	1X6.5TPH(Upgraded)	1X12 TPH (IF)	1X12 TPH (IF)
2.	Electric Arc Furnace	--	1X15 TPH (EAF)	1X15 TPH (EAF)
3.	Laddle Refining Furnace (LRF)	01 No.	--	01 No.
4.	Annealing Furnace (3 No.)	1x9TPD 1X8TPD 1X10TPD	--	1x9TPD 1X8TPD 1X10TPD
5.	Concast	01 No.	--	01 No.
6.	DG Set	1X160KVA	Replace 160KVA with 400KVA	400KVA

After expansion the production details will be as under

PRODUCTS			
Product Name	**Existing**	**Additional**	**Total**
Steel Ingots/Billets, Steel castings, Forging & rolled material	27,300	86,100	1,13,400

3.1 Land Area

The industry is having 3.06 acres or 13278.3 $m^2$of land. No additional land will be required for expansion.

3.2 Raw Material Requirement

RAW MATERIAL (TPA)			
Capacity	**Existing**	**Proposed**	**Total**
MS Scrap, CI, Sponge Iron, Ferro Alloys	28,875	94,675	1,23,550
Source & Transportation	Local & international markets and transport through covered trucks		

3.3 Water Requirement

Water consumption in the unit shall be for twin purpose namely domestic and make up water for cooling tower (CT). Water requirement will be met through existing tube well. The detail of water requirement and water balance is given below:-

Water Requirement

Water Supply Source	**Existing Tube well**		
Quantity of Water Required	**Existing**	**Proposed**	**Total**
Domestic (KLD)	10.08	1.17	11.25
Cooling (KLD)	20	40	60
Total (KLD)	**30.08**	**41.17**	**71.25**

3.4 Power Requirement

The Power Requirement will be met by sourcing the power from Punjab State Power Corporation limited from nearby Sub-station. The detail of power requirement existing & after expansion is given below:-

Power Requirement

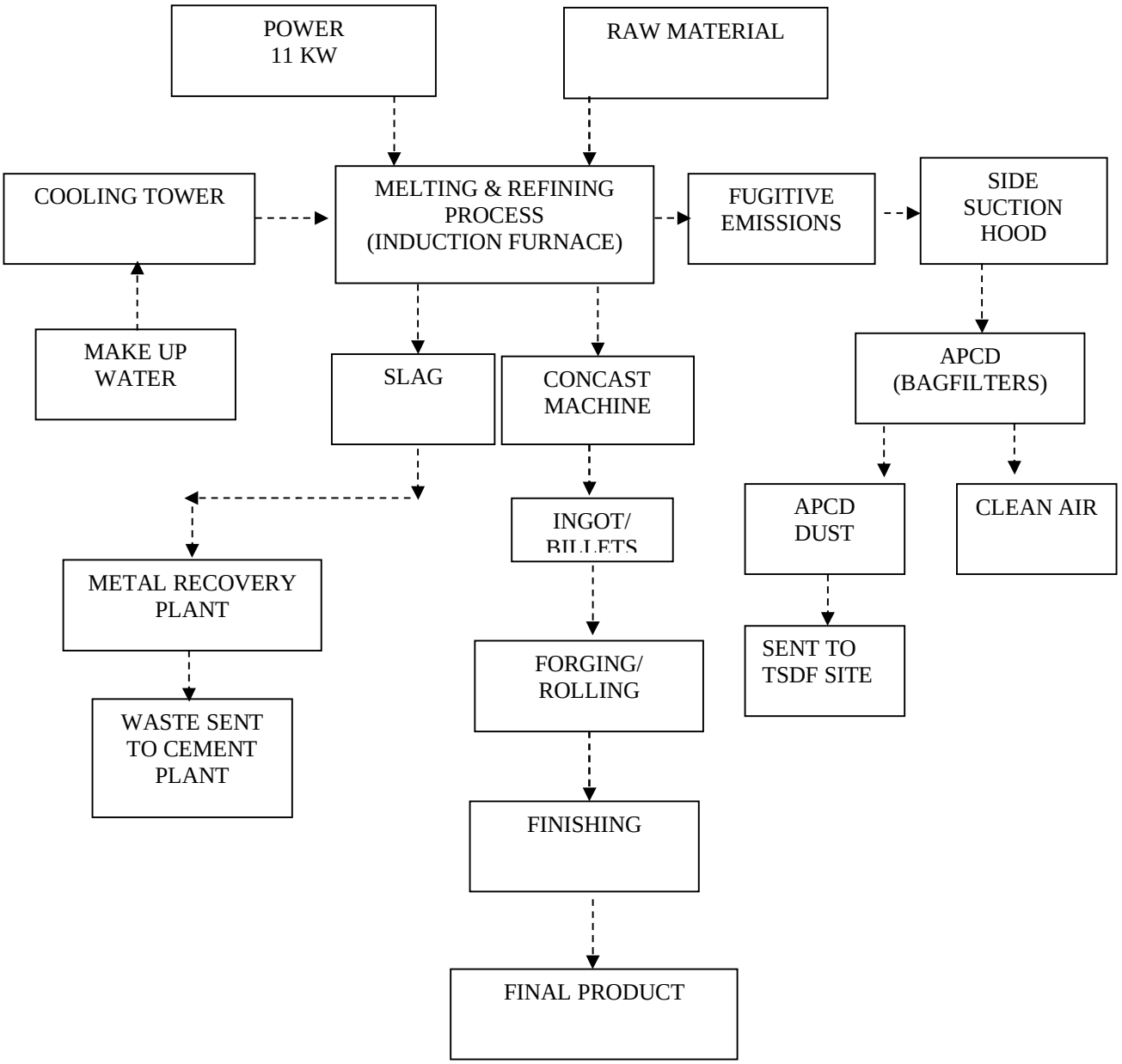
Source of Electricity	**Punjab State Power Corporation Limited (P.S.P.C.L.)**		
Total Load (MW)	**Existing**	**Additional**	**Total**
	3.5	7.5	11.0

3.5 Manpower Requirement

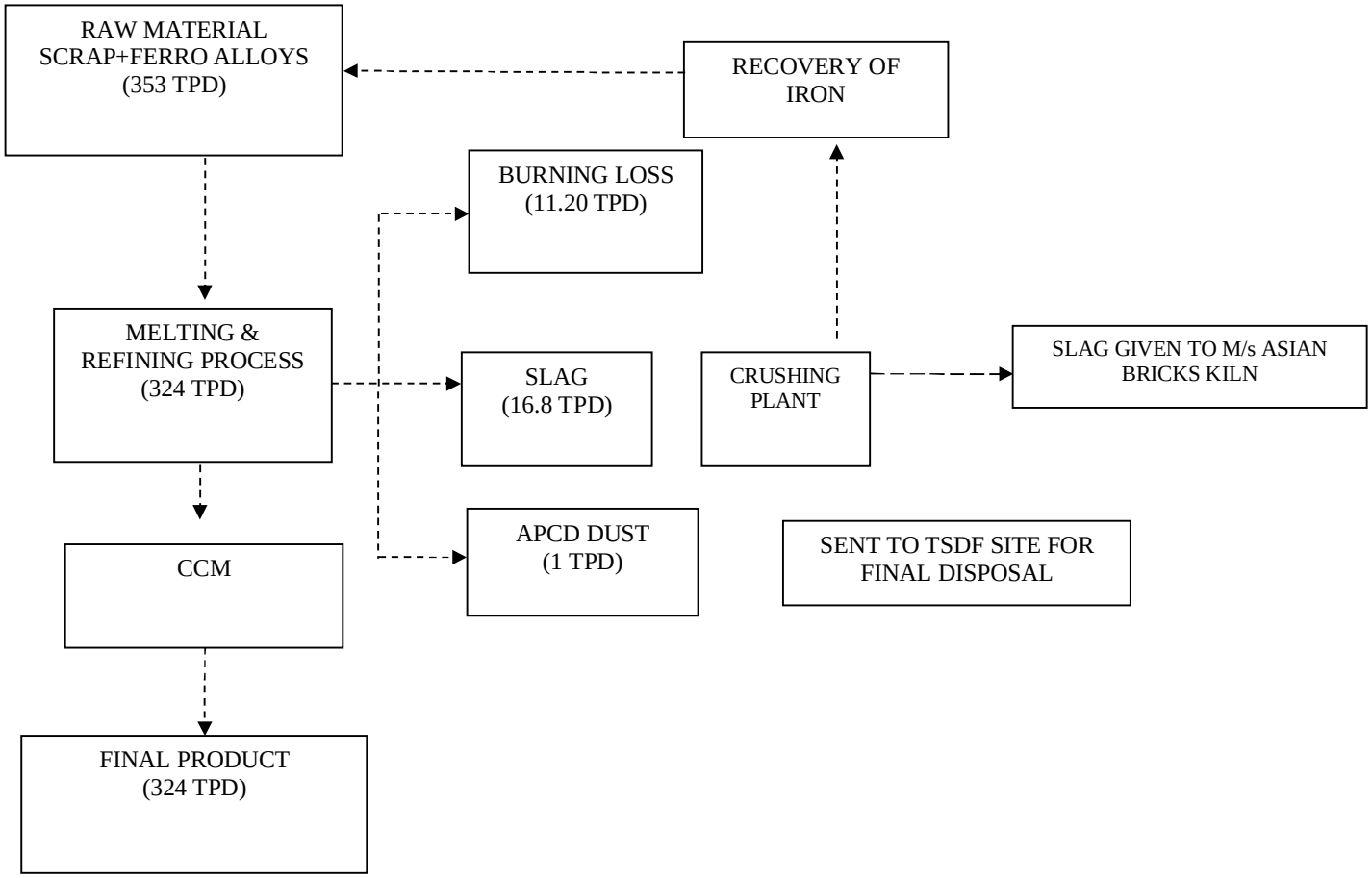
For expansion, additional 26 persons will be required. Total number of manpower after expansion will be 250 no's.

4.0 Process Description

Flow Chart of Manufacturing Process



Material Balance



5.0 Description of Mitigation Measures

The purpose of mitigation measures is to avoid, reduce or minimize unwanted impacts on the environment. To minimize & control the Flue Gas emission from the stack attached to furnace & DG Set, M/s Kisco Castings (India) Ltd. has already installed separate water scrubber with I.F & canopy with DG set. About 16.8 TPD of slag which is not a H.W will be generated and the same after recovering of iron will be supplied to M/s Asian Bricks Kiln under proper agreement. STP is provided for treatment of domestic effluent. Treated effluent is used for plantation in the premises. The industry is regularly operating and maintaining its APCD and ensuring that the emissions are adequately collected and concentration of air pollutants in its emissions conforms to the emission standards laid down by the board.

6.0 Cost Details

Existing cost of the project is Rs. 15.20 Cr. and total cost for the expansion has been estimated Rs. 22.80 Cr.

Rs. 229.1 lakhs has been kept for Environment Management Plan.

7.0 Site Details

M/s Kisco Castings (India) Ltd., Nasrali, Guru ki Nagri, Anaj Mandi- Bhadla road, Near Power Grid, Tehsil- Mandigobindgarh, District Fatehgarh Sahib, Punjab is having its global coordinates as Latitude 30°40'44.33"N, 30°40'45.28"N, 30°40'42.22"N and 30°40'40.38"N & Longitude 76°17'42.33"E, 76°17'39.58"E, 76°17'35.85"E and 76°17'37.53"E.

Mandigobindgarh is the nearest city and also the nearest railway station (about 1 km). Nearest Airport is Chandigarh which is at 50 km from site. No National Parks/ Wildlife Sanctuaries/ Biosphere Reserves/ Reserved Forests exist within 10 km radius of project site.

8.0 Baseline Environmental Data and their impacts

Various Environmental factors as existing in the study area which are liable to be affected by the activities have been assessed both quantitatively and qualitatively. Baseline environmental data generation of study area was carried out during the period October- December, 2021.

8.1 Ambient Air Quality

The $PM_{2.5}$, PM_{10}, SO_2, NO_2, CO levels were monitored at eight locations in the study area for three months (October-December, 2021). The P98 levels of criteria pollutants are as follows: $PM_{2.5}$ is 48.5 μg/m^3, PM_{10} is 81.5 μg /m^3, SO_2 is 18.6 μg/m^3, NO_2 is 36.9 μg/m^3 and CO is 0.65 mg/ m^3. The baseline air quality level is within the National Ambient Air Quality Standards prescribed for industrial, residential, rural & other area and also satisfies the air quality index (AQI) w.r.t. health bracket for all the monitoring. **(Standards are 60, 100, 80, 80μg/m^3 and**

4.0mg/m^3 for $PM_{2.5}$, PM_{10}, SO_2, NO_x and CO respectively). Due to better pollution abatement facilities, proposed expansion will have insignificant impact on existing air quality.

8.2 Water Quality:

Eight groundwater samples and one surface water sample were collected from the study area for chemical and biological analysis. The groundwater quality of the study is satisfactory. No metallic or bacterial contamination was found in the water quality. But bacterial contamination is found in surface water. Since, no waste water will be discharged on land; water quality is not likely to be impacted.

8.3 Noise Environment

Ambient noise levels were monitored at 8 locations in the study area. Noise levels at the Project site was found to be 73.8 dB (A) in day time and 58.6 dB (A) at night. The highest levels were observed at Project Site. The baseline noise levels are well within the National Standards. Proposed expansion will have less impact than existing one due to better pollution control facility.

8.4 Soil Quality

Eight soil samples were collected from the study area and analyzed. The texture of soil is sandy loam. The organic matter, nitrogen, potassium and phosphorus content of the soil are moderate. The pH of all the soil samples is within the acceptable range. No impact on soil will be there for proposed plant as no waste will be discharged on land.

8.5 Ecological environment

Ecological data has been collected through secondary sources and by site visits. The tree species kikar, Jamun, Peepal and Mango etc are the dominant plant species of the study area. Mongoose, porcupine, jungle cat, cobra, krait, snakes, hare, pigeon and variety of birds are the common animals of the study area. No endangered species of plants and animals are found in the study area, so no impact on ecological environment.

8.6 Sensitive Ecosystem:

Within the study area, no plant or animal species were found to be on the endangered list. No ecologically sensitive area like biosphere reserve, tiger reserve, and migratory corridors of wild elephant, wetland, national park and wildlife sanctuary are present in the study area. Agriculture and industrial workers dominate the occupational structure of the study area.

Several induction furnaces, rolling mills, ferroalloy plants, brick kilns, and other small units are present in the study area.

8.7 Socioeconomic Condition:

Socioeconomic status has been studied through secondary sources and by site visits. The social requirements identified such as Drinking water requirement, Promotion of Educational institutions and Medical facilities to the villagers (especially Senior Citizens and infants or pregnant ladies). Community centers, recreation facilities etc will also be developed as part of social responsibility.

9.0 Possible Hazards & Risks from Secondary Metallurgical Industries

The various process operations, which are having potentially high risk to human exposure and which have high levels of attention area identified in **Table.**

Table: Possible Risk

S.No.	Plant Area	Possible Deviation from normal operation	Likely Causes	Consequences
1	Furnace	Re-circulating and cooling water coming in contact with the molten iron or slag.	Leakage of water from the walls Spurting of metal/ slag.	Explosion under extreme cases.
		Presence of Oil & Grease and other Impurities in raw materials.	Fire	Sudden catches fire & flames
2	High Power Transformer	Oil temperature being very high.	Varying room Temperatures.	Sudden flashing of fire or bursting.
3	High Tension Electrical Installation	Heavy sparking at the pot heads and the joints.	Loose joints, cable cut, burning of fuses, short circuits etc.	Sparks in the beginning, devastating fire if neglected.

10.0 Emergency Plan

Emergency planning is primary for the protection of plant personnel and people in nearby areas and the environment that could be affected by unplanned hazardous events. Furnaces are associated with fire and electrical hazard due to sudden generation of pressure or temperature that leads to damage, injury and death. Temperature and pressure are closely related, and when flammable or combustible mixture is present in process equipment that leads to worst consequences. Thus, an engineering evaluation will be done for worst-case scenario.

11.0 CER Activities (Corporate Environmental Responsibility)

Proposed plant will result in growth of the surrounding areas by increased direct and indirect employment opportunities in the region including ancillary development and supporting infrastructure. Special emphasis on Financial and Social benefits will be given to the local people. Development of social amenities will be in the form of medical facilities, education to underprivileged and creation of self-help groups.

In lieu of Corporate Environmental Responsibility, the OM dated 30th Sept., 2020 issued by MOEF&CC superseding OM dated 1st May, 2018 shall be followed and commitments made by project proponent to address the concerns raised during public hearing will be part of EMP.

No adverse effect on environment is envisaged as proper mitigation measures will be taken up for the same.

12.0 Environment Monitoring Plan

Regular monitoring of all significant environmental parameters is essential to check the compliance status vis-à-vis the environmental laws and regulation. The frequency of the monitoring will be as follows:

- The ambient Air quality shall be monitored at project site and two upward and downstream locations once every quarter for $PM_{2.5}$, PM_{10}, NO_x & SO_2, and CO levels during the Construction Phase and Operational Phase.
- The Ambient Noise Levels, Water Quality, Effluent etc. shall also be monitored once every six months or as per EC conditions.