

F. No. J-11011/691/2007-IA II (I)
Government of India
Ministry of Environment, Forest and Climate Change
(I.A. Division)

Indira Paryavaran Bhawan
Jor Bagh Road, Aliganj,
New Delhi - 110003
E-mail: satish.garkoti@nic.in
Tele: 011: 24695316

Dated: 1st March, 2016

To

M/s Tata Steel Ltd.
Jamshedpur, District East Singhbhum,
Jharkhand

Subject: Expansion of Integrated Steel Plant [Crude Steel Production (from 9.7MTPA to 11MTPA), Sinter (8.0 MTPA – to 9.0 MTPA), Pellet (6.0 MTPA – 8.0 MTPA), Calcined lime (1.2 MTPA to 1.4 MTPA), Hot Metal (10.55 MTPA to 12.0 MTPA) and CPP (189.5 MW to 267.5 MW)] at Tata Steel Works by M/s Tata Steel Ltd., located at Jamshedpur, District East Singhbhum, Jharkhand - Environment Clearance regarding.

Sir,

This has reference to your online application No. IA/JH/IND/30339/2014 dated 27.08.2015 along with EIA/EMP report seeking Environment Clearance under the provisions of the EIA Notification, 2006 for the project mentioned above. The ToRs to the project were prescribed by Ministry of Environment, Forest and Climate Change vide letter No. J-11011/691/2007-IA.II (I) dated 28th April, 2015, for preparation of EIA/EMP report. The proposed project activity is listed at S.No. 3(a) in Metallurgical industries (ferrous & non ferrous) under Category 'A' of the Schedule of EIA Notification 2006. The project was earlier accorded Environmental Clearance by the Ministry on 11th May, 2010 for production of 9.7 MTPA Crude Steel.

2.0 M/s Tata Steel Limited (TSL) has proposed for expansion of Crude Steel Production from 9.7 MTPA to 11.0 MTPA capacity at Jamshedpur Steel Works in East Singhbhum District, Jharkhand. No additional land is required for the proposed expansion. The proposed expansion is within the existing plant boundary of 717 Ha. The project site is located between 22° 46' 11" - 22° 48' 08" N latitude and 86 ° 11' 30" - 86 ° 13' 36" E longitudes. No National Park/Wildlife Sanctuaries, Wildlife corridors, Elephant/Tiger Reserve exist within 10 km radius. The Dhan Chatani Reserve Forest (R.F), Kudada R.F, Dimna Jhar Protected Forest (P.F), Nandup P.F. and Dalma pahar P.F. are located in the study area. The manpower required for the project is 2000 persons during construction phase and 200 during operation Phase. The total estimated cost of the project is Rs. 1,877 crore (Project cost - Rs. 1,632 crore, Environment management cost is Rs. 195 crores, Cost towards the component of Enterprise Social Commitment is Rs. 50 crores). The Public Hearing

(PH) was exempted for the project. The existing capacities and proposed production plan of the project is given below:

	At 9.7 MTPA stage (Existing)	At 11.0 MTPA stage (Proposed)
Intermediate Products		
i. Coke Production (charge)	3.4	3.4
ii. Sinter Production (net)	8	9
iii. Pellet Production (net)	6	8
iv. Calcined Lime	1.2	1.4
v. Hot Metal	10.55	12.5
vi. Crude Steel	9.7 ± 5%	11.0 ± 5%
Captive power (MW)	189.5	267.5
Saleable Products		
i. Long Products	1.24	1.74
ii. Flat Products	5.83	7.00
iii. Semis	2.37	2.06

3.0 The raw materials required would be iron ore (lumps & fines), coking coal, limestone, dolomite & anthracite and additives like limestone, dolomite, bentonite, etc. The relative share of iron ore is about 60%, coal about 27% and balances 13% accounts for additives. The overall raw materials consumption rate would be about 3.26 t/t of crude steel. The existing raw materials supply sources of Tata Steel would continue to act as raw materials linkages for meeting the estimated requirements for the 11.0 MTPA expansion stage. The production units and capacities at 11.0 MTPA stage would be as follows:

Production Unit	Facilities at 9.7 MTPA stage	Production at 9.7 MTPA stage	Facilities at 11.0 MTPA stage	Production at 11.0 MTPA stage
Coke Ovens and By-products Recovery Plant	COB # 5-11	3.4 MTPA	COB # 5-11	3.4 MTPA
Sinter Plant	SP#1-4	8.0 MTPA	SP#1-4	9.0 MTPA
Pellet Plant	1 unit	6.0 MTPA	1 unit	8.0 MTPA
Blast Furnace	BF# C,F,G,H,I	10.55 MTPA Hot Metal	BF# C,D,E,F, G, H, I	12.50 MTPA Hot Metal
Lime/dolo Plant	Kiln#1-9	3600 TPD	Kiln#1-10	4200 TPD
LD Shop	LD#1-3	9.7 MTPA Crude steel	LD#1-3	11.0 MTPA Crude steel
Rolling Mill	New bar Mill - 1 unit	0.6 MTPA	New bar Mill - 1 unit	1.0 MTPA
	Wire Rod Mill -1 unit	0.37 MTPA	Wire Rod Mill -1 unit	0.5 MTPA
	Merchant Mill - 1 unit	0.265 MTPA	Merchant Mill - 1 unit	0.43 MTPA
	Hot Strip Mill -1 unit	3.55 MTPA	Hot Strip Mill -1 unit	4.3 MTPA
	TSCR - 1 unit	2.34 MTPA	TSCR - 1 unit	2.65 MTPA

	Cold Rolling Mill - 1 unit	2.19 MTPA	Cold Rolling Mill - 1 unit	2.19 MTPA
Captive Power	PH # 3 } PH # 4 } PH # 5 } By-product gas	147.5 MW 42 MW	PH # 3 } PH # 4 } PH # 5 } By-product gas	147.5 MW 47 MW
	TRT-BF G,H, I		TRT-BF G,H, I,F CDQ -Battery 5, 6, 7, 10 & 11 Waste heat recovery from Sinter Plant 3 & 4	55 MW 18 MW
CAPL (JV-JCAPCPL)	1 unit	0.6	1 unit	0.9

Combined capacity of all the products will be ≤ 11.00 MTPA.

4.0 It has been envisaged that additional power requirement for the expansion project is 80 MW, which would be met through in-plant generation, Power Grid Corporation of India Limited, Tata Power Company Limited, Industrial Energy Limited, Jojobera Power Plant and Damodar Valley Corporation. The total water requirement for the expansion project is 700 m³/hr, which will be met from plant existing water system through recycling.

5.0 Baseline monitoring study was carried out for one season (February to May, 2015) with respect to the soil, surface water, ground water, ambient air and noise quality in the study area.

6.0 Total Point source Gaseous Emission from the 11 stacks of proposed expansion would be about 19.5 kg/hr of particulate matter, 4.9 kg/hr of SO₂ and 41.1 kg/hr of NO_x, after installation of adequate Air Pollution Control devices. The vehicular emissions have also been accounted. There would also be fugitive emission from open as well as closed areas of the plant. Air pollution would be mitigated by installation of adequate Air Pollution Devices like ESP, Bag Filter, Scrubbers as per process requirements, technological alterations, adjustment of raw material quality, excess air control, regenerative burners, etc

7.0 It is estimated that after the expansion, project would generate solid wastes like slag, sludge, dusts etc. of about 6.1 million tons per year (350 op days), of which around 0.6 MTPA of solid waste need to be kept for storage and further processing. The generation of hazardous wastes would be about 14 TPD, consisting of mainly coal tar sludge and BOD sludge. Both would be recycled to coke making by mixing with coal charge.

8.0 The matter was considered by the Expert Appraisal Committee (Industry-I) in its 1st EAC meeting held during 18th -20th November, 2015. After detailed deliberations, the EAC (I) recommended the project for Environmental Clearance and stipulated Specific Conditions along with other environmental conditions while considering for accord of Environmental Clearance.

9.0 The Ministry of Environment, Forest and Climate Change has considered the application based on the recommendations of the Expert Appraisal Committee (Industry-I) and hereby decided to grant Environmental Clearance to the above mentioned proposal for

Expansion of Crude Steel Production (from 9.7MTPA to 11MTPA) at Tata Steel Works of M/s Tata Steel Ltd. under the provision of EIA Notification dated 14th September, 2006, as amended subject to strict compliance of the following Specific and General conditions:

A. SPECIFIC CONDITION:

- i. The project proponent should install 24x7 air monitoring devices to monitor air emissions, as provided by the CPCB and submit report to Ministry and its Regional Office.
- ii. The Project Proponent should ensure the compliance of environmental safeguard stipulated in the earlier Environment Clearance letter dated 11th May, 2010 and submit the compliance report to the Ministry and its Regional Office, Ranchi.
- iii. On-line ambient air quality monitoring shall be provided and sufficient air pollution control devices viz. Electrostatic precipitator (ESP), bag house, gas cleaning plant, bag filters etc. shall be provided to keep the emission levels below 50 mg/Nm³ by installing energy efficient technology. Low NOx burners shall be installed to control NOx emissions. At no time, the emission level shall go beyond the prescribed standards. Interlocking facilities shall be provided so that process can be automatically stopped in case emission level exceeds the limit. Efforts shall be made to further reduce PM10 and PM2.5 levels in the ambient air and a time bound action plan shall be submitted.
- iv. Existing Electrostatic Precipitator (ESP) shall be upgraded and provided to new units to control gaseous emissions within 50 mg/Nm³. Waste gas from the drying and grinding unit of pellet plant shall be cleaned by bag filters. Adequate provisions shall be made to control NOx emissions. Bag house shall be provided to Lime kilns.
- v. Land based fume extraction system shall be provided to coke oven battery to arrest fugitive emissions during charging and pushing operations. The coke oven gas shall be desulphurized by reduction of H₂S content of coke oven gas in the by-product recovery section to below 500 mg/Nm³. On-line charging with high pressure liquor aspiration (HPLA) for extraction of oven gas, leak proof oven doors, hydraulic door and door frame cleaner, water sealed AP caps and charging & pusher side emission extractor device shall be provided for the coke oven batteries to maintain VOC emissions within permissible limit. Land based fume extraction system for pushing emission control from coke ovens shall be provided.
- vi. All the standards prescribed for the coke oven plants shall be followed as per the latest guidelines. Proper and full utilization of coke oven gases in power plant using heat recovery steam generators shall be ensured and no flue gases shall be discharged into the air. Sulphur shall be recovered from the coke oven gases from new product plant.
- vii. Only dry quenching method in the coke oven in new battery shall be adopted.
- viii. The National Ambient Air Quality Emission Standards issued by the Ministry vide G.S.R. No. 826(E) dated 16th November, 2009 shall be followed.

- ix. In-plant control measures for checking fugitive emissions from all the vulnerable sources including bag filters and fume extraction system shall be provided. Dry fog dust suppression system / water sprinkling system shall be provided in raw material handling areas to control fugitive dust emissions. Fugitive emissions from different sources shall also be controlled by covered conveyors, water sprinkling in open yards and with dry fogging in the closed zones. Further, specific measures like asphaltting of the roads within premises shall be carried out to control fugitive emissions. Fugitive emissions shall be controlled, regularly monitored and records maintained.
- x. Gaseous emission levels including secondary fugitive emissions from all the sources shall be controlled within the latest permissible limits issued by the Ministry and regularly monitored. Guidelines / Code of Practice issued by the CPCB shall be followed. New standards issued by the Ministry vide G.S.R. 414(E) dated 30th May, 2008 shall be followed.
- xi. Traffic decongestion plan shall be implemented in a time bound manner to reduce emissions in the Jamshedpur city and separate budget shall be allocated for implementing the same. Maximum in bound and out bound material movement shall be done by railway wagons only to reduce dust emissions. Measures like covered conveyors for handling of bulk materials, centralized screening of iron ore, rationalization of weighing system, use of higher capacity vehicles etc. shall be adopted to reduce dust emissions. Mechanized vacuum cleaning of arterial roads shall be carried out on regular basis to further reduce dust emissions.
- xii. Vehicular pollution due to transportation of raw materials and finished products shall be controlled. Proper arrangements shall also be made to control dust emissions during loading and unloading of the raw material and finished product.
- xiii. All the wastewater from various units shall be treated in the common effluent treatment plant (CETP) for primary, secondary and tertiary treatment and shall be either recycled or used for dust suppression, slag quenching and green belt development etc. within the lease hold area. The phenolic effluent from the by-product recovery section of coke oven battery shall be treated in BOD plant. Wastewater containing suspended solids shall be passed through clariflocculation plant to recover and reuse the clarified water for cooling or cleaning. Mill effluent containing oil and suspended solids shall be passed through oil skimmers and filter press. No treated wastewater shall be released outside the premises and 'Zero' discharge shall be adopted by recycling all the treated waste water in the plant itself including from the existing plant.
- xiv. Efforts shall be made to make use of rain water harvested. If needed, capacity of the reservoir shall be enhanced to meet the maximum water requirement. Only balance water requirement shall be met from other sources.
- xv. Continuous monitoring of Total Organic Compounds (TOC) in the wastewater treated in BOD plant from the coke oven plant shall be done at the outlet of ETP (BOD plant). All the treated wastewater shall be monitored for pH, BOD, COD, oil &

- grease, cyanide, phenolic compounds, Chromium⁺⁶ etc. besides other relevant parameters.
- xvi. Regular monitoring of influent and effluent and surface, sub-surface and ground water shall be ensured and treated wastewater shall meet the norms prescribed by the State Pollution Control Board or prescribed under the E(P) Act whichever are more stringent. Leachate study for the effluent generated and analysis shall also be regularly carried out and report submitted to the Ministry's Regional Office at Ranchi, Jharkhand, SPCB and CPCB.
- xvii. All the blast furnace (BF) slag shall be granulated and provided to cement manufacturers for further utilization in cement making as per the MOUs signed with various companies including M/s Lafarge, M/s Eco-cement & M/s ACC. LD slag after metal recovery shall be used in sinter plant, blast furnaces and LD convertor, aggregates making, road ballast making, soil conditioning etc. All the flue dust generated shall be recycled within the plant to the maximum extent. Mill scales, LD sludge, lime fines and flue dust shall be recycled back to the sinter plant. The BF gas cleaning plant sludge shall be used for manufacturing briquettes.
- xviii. As proposed, coal tar sludge and BOD sludge shall be recycled for coke making by mixing with the coal charge and used in the coke ovens. Chromium sludge shall be disposed in a HDPE lined secured landfills as per the CPCB guidelines within the complex. All the other solid waste including broken refractory mass shall be properly disposed off in environment-friendly manner. Oily waste and spent oil shall be provided to authorize recyclers/reprocesses.
- xix. All the slag shall be used for land filling inside the plant or used as building material only after passing through Toxic Chemical Leachability Potential (TCLP) test. Toxic Chromium sludge and other hazardous substances recovered from the slag and output waste shall be disposed off in secured landfill as per CPCB guidelines.
- xx. Proper handling, storage, utilization and disposal of all the solid waste shall be ensured and regular report regarding toxic metal content in the waste material and its composition, end use of solid/hazardous waste shall be submitted to the Ministry's Regional Office at Ranchi, Jharkhand SPCB and CPCB.
- xxi. Proper utilization of fly ash shall be ensured as per Fly Ash Notification, 1999 and subsequent amendment in 2003. All the fly ash shall be provided to cement and brick manufacturers for further utilization and 'Memorandum of Understanding' shall be submitted to the Ministry's Regional Office at Ranchi.
- xxii. A Risk and Disaster Management Plan alongwith the mitigation measures shall be prepared and a copy submitted to the Ministry's Regional Office at Ranchi, Jharkhand SPCB and CPCB within 3 months of issue of environment clearance letter.
- xxiii. As proposed, green belt shall be developed in more than 33 % area within and around the plant premises as per the CPCB guidelines in consultation with DFO.
- xxiv. Prior permission from the State Forest Department shall be taken regarding likely impact of the expansion of the proposed steel plant on the reserve forests. Measures

shall be taken to prevent impact of particulate emissions / fugitive emissions, if any from the proposed plant on the surrounding reserve forests viz. Jora Pahar PF, Sand Pcha Rahar PF, Deluse RF located within 10 km radius of the project. Further, Conservation Plan for the conservation of wild fauna in consultation with the State Forest Department shall be prepared and implemented.

- xxv. All the recommendations made in the Charter on Corporate Responsibility for Environment Protection (CREP) for the Steel Plants shall be implemented
- xxvi. At least 5 % of the total cost of the project shall be earmarked towards the corporate social responsibility and item-wise details alongwith time bound action plan shall be prepared and submitted to the Ministry's Regional Office at Ranchi. Implementation of such program shall be ensured accordingly in a time bound manner.
- xxvii. The company shall provide housing for construction labour within the site with all necessary infrastructure and facilities such as fuel for cooking, mobile toilets, mobile STP, safe drinking water, medical health care, crèche etc. The housing may be in the form of temporary structures to be removed after the completion of the project.

B. GENERAL CONDITIONS:

- i. The project authorities must strictly adhere to the stipulations made by the Jharkhand Pollution Control Board and the State Government.
- ii. No further expansion or modifications in the plant shall be carried out without prior approval of the Ministry of Environment, Forests and Climate Change (MoEFCC).
- iii. At least four ambient air quality monitoring stations should be established in the downward direction as well as where maximum ground level concentration of PM₁₀, PM_{2.5}, SO₂ and NO_x are anticipated in consultation with the SPCB. Data on ambient air quality and stack emission shall be regularly submitted to this Ministry including its Regional Office at Ranchi and the SPCB/CPCB once in six months.
- iv. Industrial wastewater shall be properly collected, treated so as to conform to the standards prescribed under GSR 422 (E) dated 19th May, 1993 and 31st December, 1993 or as amended form time to time. The treated wastewater shall be utilized for plantation purpose.
- v. The overall noise levels in and around the plant area shall be kept well within the standards (85 dBA) by providing noise control measures including acoustic hoods, silencers, enclosures etc. on all sources of noise generation. The ambient noise levels should conform to the standards prescribed under EPA Rules, 1989 viz. 75 dBA (daytime) and 70 dBA (nighttime).
- vi. Occupational health surveillance of the workers shall be done on a regular basis and records maintained as per the Factories Act. 32

- vii. The company shall develop rain water harvesting structures to harvest the rain water for utilization in the lean season besides recharging the ground water table.
- viii. The project proponent shall also comply with all the environmental protection measures and safeguards recommended in the EIA/EMP report. Further, the company must undertake socio-economic development activities in the surrounding villages like community development programmes, educational programmes, drinking water supply and health care etc.
- ix. Requisite funds shall be earmarked towards capital cost and recurring cost/annum for environment pollution control measures to implement the conditions stipulated by the Ministry of Environment, Forest and Climate Change (MoEFCC) as well as the State Government. An implementation schedule for implementing all the conditions stipulated herein shall be submitted to the Regional Office of the Ministry at Ranchi. The funds so provided shall not be diverted for any other purpose.
- x. A copy of clearance letter shall be sent by the proponent to concerned Panchayat, Zila Parishad/Municipal Corporation, Urban Local Body and the local NGO, if any, from whom suggestions/representations, if any, were received while processing the proposal. The clearance letter shall also be put on the web site of the company by the proponent.
- xi. The project proponent shall upload the status of compliance of the stipulated environment clearance conditions, including results of monitored data on their website and shall update the same periodically. It shall simultaneously be sent to the Regional Office of the MOEFCC at Ranchi. The respective Zonal Office of CPCB and the SPCB. The criteria pollutant levels namely; PM₁₀, SO₂, NO_x (ambient levels as well as stack emissions) or critical sectoral parameters, indicated for the projects shall be monitored and displayed at a convenient location near the main gate of the company in the public domain.
- xii. The project proponent shall also submit six monthly reports on the status of the compliance of the stipulated environmental conditions including results of monitored data (both in hard copies as well as by e-mail) to the Regional Office of MOEFCC, the respective Zonal Office of CPCB and the SPCB. The Regional Office of this Ministry at Ranchi / CPCB / SPCB shall monitor the stipulated conditions.
- xiii. The environmental statement for each financial year ending 31st March in Form-V as is mandated to be submitted by the project proponent to the concerned State Pollution Control Board as prescribed under the Environment (Protection) Rules, 1986, as amended subsequently, shall also be put on the website of the company along with the status of compliance of environmental conditions and shall also be sent to the respective Regional Office of the MOEFCC at Ranchi by e-mail.
- xiv. The Project Proponent shall inform the public that the project has been accorded environmental clearance by the Ministry and copies of the clearance letter are available with the SPCB and may also be seen at Website of the Ministry of

Environment, Forests and Climate Change (MoEFCC) at <http://envfor.nic.in>. This shall be advertised within seven days from the date of issue of the clearance letter, at least in two local newspapers that are widely circulated in the region of which one shall be in the vernacular language of the locality concerned and a copy of the same should be forwarded to the Regional office at Ranchi.

- xv. Project authorities shall inform the Regional Office as well as the Ministry, the date of financial closure and final approval of the project by the concerned authorities and the date of commencing the land development work.

10.0 The Ministry may revoke or suspend the clearance, if implementation of any of the above conditions is not satisfactory.

11.0 The Ministry reserves the right to stipulate additional conditions if found necessary. The Company in a time bound manner shall implement these conditions.

12.0 The above conditions shall be enforced, inter-alia under the provisions of the Water (Prevention & Control of Pollution) Act, 1974, the Air-(Prevention & Control of Pollution) Act, 1981, the Environment (Protection) Act, 1986, Hazardous Wastes (Management, Handling and Transboundary Movement) Rules, 2008 and the Public (Insurance) Liability Act, 1991 along with their amendments and rules.


(Dr. Satish C. Garkoti)
Scientist 'F'

Copy to:-

1. The Secretary, Department of Environment, Government Jharkhand.
2. The Chairman, Central Pollution Control Board, Parivesh Bhavan, CBD-cum-Office Complex, East Arjun Nagar, New Delhi, 110 032.]
3. The Chairman, Jharkhand State Pollution Control Board, Town Administrative Building, HEC Dhurwa, Ranchi-824004.
4. The Additional Principal Chief Conservator of Forests (C) Ministry of Environment, Forest and Climate Change, Regional Office (ECZ), Bungalow No. A-2, Shyamali Colony, Ranchi – 834002
5. Guard File / Record File/Monitoring file.

(Dr. Satish C. Garkoti)
Scientist 'F'