



The Additional DG of Forests (Central)  
Eastern Regional Office  
Ministry of Environment, Forests & Climate Change  
Government of India  
A/3, Chandrasekharpur,  
**Bhubaneswar – 751 023, Odisha**

TSK/Env/C-05/ 06 /2020  
May 31, 2021

Dear Sir,

**Sub.:** Six monthly Compliance Report for Oct-20 to Mar-21 for Environmental Clearances in respect of Integrated Steel Plant of M/s. Tata Steel at Kalinganagar Industrial Complex, Duburi, Dist. Jajpur, Odisha.

**Ref.:** 1. MoEF&CC EC Letter No. J-11011/7/2006-IA-II(I) dated 7.11.2006 and successive amendments on 10.10.12, 13.05.15 and 20.12.2016.  
2. MOEF &CC EC letter No. J-11011/7/2006-IA-II(I) dated 24.12.2020

Kindly find enclosed Six-Monthly Compliance Report for the period from Oct'2020 to Mar' 2021 for the conditions stipulated in Environmental Clearance including amendments granted in EC to 6.0 MTPA and for Environmental Clearance granted to the expansion from 6 to 8 MTPA Crude Steel and 9 MTPA Finished Steel by our Integrated Steel Plant; for your kind considerations.

We trust the information furnished is in line with your requirement.

Thanking you,

Yours faithfully,

  
31.05.2021

**U S Parkhi**  
Head, Environment, KPO

Encl. a/a

Copy to MS, OSPCB, Bhubaneswar / CPCB Kolkata /OSPCB KNIC

**TATA STEEL KALINGANAGAR**

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Corporate Identity Number L27100MH1907PLC000260 Website [www.tatasteel.com](http://www.tatasteel.com)

# Six Monthly Environment Compliance Report Oct' 2020 to Mar' 2021

For  
**Integrated Steel Plant Project of Tata Steel**



Environment Department  
**Tata Steel Limited**  
Kalinganagar Industrial Complex  
Duburi- 755026  
Dist Jajpur, Odisha

**Six Monthly Compliance Status (Oct'20 to Mar'21) of Environmental Clearance including Amendment in EC for 6.0 MTPA Integrated Steel Plant at Kalinganagar, Duburi, District-Jajpur; 7<sup>th</sup> Nov 2006, 10<sup>th</sup> Oct 2012, 13<sup>th</sup> May 2015 and 20<sup>th</sup> Dec 2016**

<b>A</b>	<b>Specific Conditions as per EC dated 7.11.2006</b>	<b>Status as on 31.03.2021</b>
i)	<p>The gaseous emissions from various process units shall conform to the load/mass based standards notified by this Ministry on 19<sup>th</sup> May, 1993 and standards prescribed from time to time. The state Boards may specify more stringent standards for the relevant parameters keeping in view the nature of the industry and its size and location. At no time, the emission level shall go beyond the prescribed standards. On-line continuous monitoring system shall be installed in stacks to monitor SPM and interlocking facilities shall be provided so that process can be automatically stopped in case emission level exceeds the limit. Nox burners shall be installed to control NOx levels. VOCs from the coke oven shall be monitored and controlled as per CPCB guidelines. The new standards prescribed by the CPCB for coke oven plants shall be strictly followed.</p>	<ul style="list-style-type: none"> <li>• All the process units such as Coke Plant (CP), Sinter Plant (SP), Blast Furnace(BF), Steel Melting Shop(SMS), Hot Strip Mill(HSM) have been designed conforming to the load/mass standards notified by the Ministry to have the gaseous emissions under control and below the prescribed limits.</li> <li>• Online continuous stack monitoring systems have been installed at stacks of CP Battery No.1&amp;2, SP, BF#1, SMS, LCP and HSM to monitor SPM.</li> <li>• The units are in operation and emission levels were found within prescribed norms.</li> <li>• Low NOx burners are installed at CPP (8 Nos for each boiler in all three boilers) and in HSM reheating furnace (84 Nos)</li> <li>• VOC from coke plant is controlled by On-main charging by HPLA, Hydraulic doors, Door sealing, Door frame cleaner, etc. as per CPCB guidelines and the systems for both the Battery No. 1 as well as Battery -2 are in operations.</li> <li>• New standards prescribed by CPCB (31.03.2012) for coke ovens are being followed.</li> </ul>
ii.	<p>In-plant control measures for checking fugitive emissions from all the vulnerable sources like coke oven area, Sinter Plant, BF case house, BF stack house, and BOF shop etc. shall be provided. Further, specific measures like water sprinkling and dry fogging (DF) shall be carried out at the stock piles of raw materials, stacker reclaimer, conveyor transfer points and vibrating screens etc. Dust extraction system and bag filter shall be provided for room air cleaning such as sinter plant stock house, BF stock house and BF cast house, BOF shop and Ferro-alloys handling area in steel melting shop etc. Fume extraction system in steel refining units shall also be provided. Centralized de-dusting system i.e. collection of fugitive emissions through suction hood and subsequent treatment through bag filter or any other device and finally emitted through a stack of appropriately designed and height conforming to the standards for induction furnaces in the</p>	<ul style="list-style-type: none"> <li>• In plant control measures (like Dust extraction systems- DES, Dust Suppression System- DSS and Dry Fog dust suppression systems- DFSS) for controlling fugitive emissions from the vulnerable sources like coke oven area, Sinter Plant, BF cast house, BF stock house, and BOF shop etc.</li> <li>• Further specific measures like water sprinkling arrangement, tarpaulin covering etc. at stock piles of raw material handling unit have been provided.</li> <li>• To control fugitive dusts from conveyor, transfer points and vibrating screens DE, DSS and DFDS are provided at these locations.</li> <li>• Dust extraction system followed by De-dusting ESP has been provided at Sinter Plant. At Cast house and Stock house of Blast Furnace, separate dust extraction systems followed by ESPs have been provided. In SMS, secondary de-dusting unit (Cyclone separator followed by ESP) has been provided. Fume extraction system in steel refining units has been provided. All the stacks have been</li> </ul>

**Six Monthly Compliance Status (Oct'20 to Mar'21) of Environmental Clearance including Amendment in EC for 6.0 MTPA Integrated Steel Plant at Kalinganagar, Duburi, District-Jajpur; 7<sup>th</sup> Nov 2006, 10<sup>th</sup> Oct 2012, 13<sup>th</sup> May 2015 and 20<sup>th</sup> Dec 2016**

	industry shall be provided. Fugitive emissions shall be controlled, regularly monitored and records maintained.	<p>designed and installed to meet the requirement of stack heights as per guidelines, for proper dispersion and dilution of pollutants</p> <ul style="list-style-type: none"> <li>• Mechanized road sweeping machines have been deployed for regular road sweeping.</li> <li>• Speed limits are enforced for movement of vehicles at the site as per the factory limits</li> <li>• Roads (about 23 km) within the plant site are metaled/ concreted.</li> <li>• Certain areas in plants are paved/ contorted.</li> <li>• Water sprinkling on roads is being done through truck mounted water tankers (4-6 Nos as per season) to suppress road dust due to vehicular movement</li> </ul>
iii.	ESP shall be provided to sinter plant and blast furnace. New standards prescribed by the CPCB for coke oven shall be strictly followed. The Company shall install Waste Heat Recovery Boilers (WHRB) to recover the waste heat and generate power from the steam produces by the WHRB. The particulate emissions from the WHRB shall be controlled by installation of ESP as per CPCB specification and particulate emissions shall not exceed 50mg/Nm <sup>3</sup> . Further, the company shall install bag filter, After Burner Chamber (ABC), suction hood, dust extraction device and fume extraction system to control gaseous emissions from the WHRB.	<ul style="list-style-type: none"> <li>• Higher efficiency ESPs have been provided to Sinter plant, Blast Furnace and SMS.</li> <li>• Coke oven plant is designed to comply with new standards prescribed by CPCB for Coke Oven.</li> <li>• Waste Heat Recovery Boilers (WHRB) have been installed to recover waste heat which in turn shall be used for in-house power generation from the steam produces by WHRB.</li> <li>• Pollution Control Systems have been designed as per CPCB guidelines to control PM emissions below 50 mg/Nm<sup>3</sup>.</li> <li>• Coke Dry Quenching (CDQ) System is provided with bag filters.</li> </ul>
iv.	Total requirement of the water from Brahmani /Kharsua river shall not exceed 26.5 MGD. No ground water shall be drawn and used for the plant. The effluent quantity into the industrial drain leading to the Gonda Nalla shall not exceed 92m <sup>3</sup> /hr and shall conform to the prescribed standards. Ammonia, phenol and cyanide in the effluent should be treated separately and discharged only after meeting the norms prescribed by the OSPCB/CPCB/Ministry under E(P) Act. Cyanide shall meet the standard of 0.2 ppm. TDS in the effluent discharged shall not be more than 2,100 mg/l. The domestic wastewater after treatment in STP shall be used for green belt development.	<ul style="list-style-type: none"> <li>• Make up water requirement for the plant is &lt; 26.5 MGD. Present fresh make up water consumption is around 9.1 MGD.</li> <li>• Total effluent discharge envisaged is &lt; 92 m<sup>3</sup>/hr and it meets the standards prescribed by MoEF/ CPCB/OSPCB before discharge into Ganda Nalla.</li> <li>• Ammonia, Phenol and Cyanide in the effluent from Coke Oven plant is treated separately in BOD plant of Coke Plant. The BOD plant is in operation and the parameters like Ammonia, Phenol, Cyanide and TDS of treated wastewater is well within prescribed limits.</li> <li>• STP is in operation for treatment of domestic wastewater. Treated water from STP is utilized for plantation.</li> <li>• No groundwater is used for plant operations.</li> </ul>

**Six Monthly Compliance Status (Oct'20 to Mar'21) of Environmental Clearance including Amendment in EC for 6.0 MTPA Integrated Steel Plant at Kalinganagar, Duburi, District-Jajpur; 7<sup>th</sup> Nov 2006, 10<sup>th</sup> Oct 2012, 13<sup>th</sup> May 2015 and 20<sup>th</sup> Dec 2016**

v.	Ground water monitoring around the solid waste disposal site/secured landfill (SLF) shall be carried out regularly and report submitted to the Ministry's Regional Office at Bhubaneswar, CPCB and OPCB.	<ul style="list-style-type: none"> <li>• Ground water level is monitored and variations are negligible.</li> <li>• Ground water quality is within the permissible limit.</li> </ul>																																							
vi.	BF slag shall be sold to the cement manufacturers after granulation. Non-granulated BF slag shall be used in road making. BOF slag shall not be dumped anywhere except used for making cement and road etc. proposed in EIA/EMP. Ammonia and tar shall be recovered and remaining solid waste shall be burnt. Gas cleaning plant sludge and mill scales shall be reused in the sinter plant. Char generated shall be used in FBC boiler. The kiln accretions shall be utilized for filling low lying areas. The entire quantity of fly ash generated during the process shall be utilized for making brick. ESP fly ash shall be made available to the cement plants and brick making plants whereas bottom ash shall be disposed off in a suitably designed landfill as per CPCB guidelines to prevent leaching to the sub-soil and underground aquifer.	<ul style="list-style-type: none"> <li>• BF slag is sold to cement manufacturers after online slag granulation process (RASA). Majority of BF slag is transported by rail.</li> <li>• Non-granulated BF &amp; BOF slag is used for road making.</li> <li>• BOF Slag is processed in Metal Recovery Plant and metallic portion is recovered and reused. Some portion of Non-metallic slag is also used in sinter plant and remaining portion is used in road, etc. in construction sites.</li> <li>• In COBPP, Tar and Sulphur is recovered as by-product and are sold.</li> <li>• Gas cleaning plant sludge and mill scales are utilized in sinter plant.</li> <li>• Mill scale from mills are utilized in sinter plant.</li> <li>• CPP boilers are by-product gas based boilers hence there is no char generation. As No coal is burned there is no any generation of fly ash &amp; bottom ash.</li> </ul>																																							
vii.	The company shall develop surface water harvesting structures to harvest the rain water for utilization in the lean season besides recharging the ground water table.	<ul style="list-style-type: none"> <li>• Surface run-off during the monsoon is collected and stored in the reservoirs constructed under rain water harvesting schemes.</li> <li>• Storm water pond with necessary pumping arrangement to recover storm water in raw water system has been made.</li> </ul>																																							
viii.	Green belt shall be developed in at least 33% area within and around the plant premises as per the CPCB guidelines in consultation with DFO.	<ul style="list-style-type: none"> <li>• Green Belt cover is being continuously developed within and around the project site, as well as outside the plant premises including rehabilitation colonies.</li> </ul> <div data-bbox="847 1529 1426 1895" data-label="Figure"> <table border="1"> <caption>CUMULATIVE TREE PLANTATION AT TSK</caption> <thead> <tr> <th>Financial Year</th> <th>Annual Plantation</th> <th>Cumulative Total</th> </tr> </thead> <tbody> <tr><td>FY10</td><td>792</td><td>792</td></tr> <tr><td>FY11</td><td>1130</td><td>1922</td></tr> <tr><td>FY12</td><td>4800</td><td>6722</td></tr> <tr><td>FY13</td><td>12622</td><td>19344</td></tr> <tr><td>FY14</td><td>29888</td><td>49232</td></tr> <tr><td>FY15</td><td>35437</td><td>84669</td></tr> <tr><td>FY16</td><td>78730</td><td>163399</td></tr> <tr><td>FY17</td><td>77335</td><td>240734</td></tr> <tr><td>FY18</td><td>100701</td><td>341435</td></tr> <tr><td>FY19</td><td>28072</td><td>369507</td></tr> <tr><td>FY20</td><td>103212</td><td>472719</td></tr> <tr><td>FY21</td><td>12415</td><td>485134</td></tr> </tbody> </table> </div> <ul style="list-style-type: none"> <li>• About 470 acres are under greenery. Survival rate is now achieved about 90%.</li> <li>• Avenue plantation was done at Jajpur town, Kalinganagar and Bhubaneswar.</li> </ul>	Financial Year	Annual Plantation	Cumulative Total	FY10	792	792	FY11	1130	1922	FY12	4800	6722	FY13	12622	19344	FY14	29888	49232	FY15	35437	84669	FY16	78730	163399	FY17	77335	240734	FY18	100701	341435	FY19	28072	369507	FY20	103212	472719	FY21	12415	485134
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**Six Monthly Compliance Status (Oct'20 to Mar'21) of Environmental Clearance including Amendment in EC for 6.0 MTPA Integrated Steel Plant at Kalinganagar, Duburi, District-Jajpur; 7<sup>th</sup> Nov 2006, 10<sup>th</sup> Oct 2012, 13<sup>th</sup> May 2015 and 20<sup>th</sup> Dec 2016**

ix.	Occupational Health Surveillance of the workers shall be done on a regular basis and records maintained as per the factories Act.	<ul style="list-style-type: none"> <li>• Initial &amp; Periodic medical check-up for workers are carried out and records for the same are maintained as per the Factories Act.</li> <li>• In FY 21, PME of employees could not be conducted due to COVID 19 pandemic till September 20, PME is resumed since October'20 and is continued.</li> <li>• To strengthen the Occupational Health Surveillance, a system has been made, in which, employee's Gate Pass is issued only after ensuring the initial medical check-up.</li> <li>• Well established Occupation Health Centre with qualified doctors and para-medical staff is providing required surveillance and data analysis.</li> <li>• Life-style related deficiencies are observed which are treated and followed up with individuals. No occupational related diseases are observed till date.</li> <li>• Special drives and control measures taken during Covid 19 situation.</li> </ul>
x.	Recommendations made in the CREP guidelines issued for the steel plants shall be implemented.	<ul style="list-style-type: none"> <li>• CREP recommendations are being implemented and summarized below:               <ol style="list-style-type: none"> <li>1. Coke Ovens: Fugitive emissions control system is in place. All the batteries are new one and having coal stamping, charging cum pushing (SCP) machines.</li> <li>2. SMS: Secondary fume extraction system has been installed.</li> <li>3. BF: Pulverized Coal injection facilities have been installed in Blast Furnace. TRT, Tar Free Runners, DE system at Cast House, etc. are also provided.</li> <li>4. Specific water consumption is less than 8 m<sup>3</sup>/t of flat product.</li> <li>5. Online monitoring facilities have been provided.</li> <li>6. Waste management systems are implemented.</li> </ol> </li> </ul>
xi.	Rehabilitation and Resettlement plan shall be implemented as per the revised R&R policy and in collaboration with the State Government in a time bound manner and report submitted to the Ministry, it's Regional Office at Bhubaneshwar and OPCB.	<ul style="list-style-type: none"> <li>• All 1234 Families have been rehabilitated within the framework of "Tata Steel Parivaar" concept as per R &amp; R policy of Odisha Government in consultation with the local administration. A dedicated team facilitates the resettlement &amp; rehabilitation effectively.</li> </ul>
xii.	The environmental clearance for the mining project and forest clearance for the forest land involved in the mining project shall be obtained from the Ministry prior to operation of the integrated Steel Plant. In case,	<ul style="list-style-type: none"> <li>• The matter is being pursued with State and Central Government.</li> <li>• Coal is being imported.</li> <li>• Source of iron ore is mainly from the mines of Tata Steel in Odisha.</li> </ul>

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	environmental clearance for the mining proposal from State Govt/Govt. of India is not available, Ministry shall be regularly informed about the source of ore and coal.	
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B.	General Conditions as per EC dated 7.11.2006	Status as on 31.03.2021
i.	The project authorities must strictly adhere to the stipulations made by the Orissa Pollution Control Board (OPCB) and the State Government	<ul style="list-style-type: none"> <li>• During project execution and subsequent operation phases; TSK has strictly adhere to stipulation made by OSPCB and the state Government</li> </ul>
ii.	No further expansion or modification in the plant should be carried out without prior approval of the Ministry of Environment and Forests.	<ul style="list-style-type: none"> <li>• Amendments in the Environmental Clearance were granted by MoEF&amp;CC on 10.10.2012 and on 13.05.2015 vide letters no. J-11011/7/2006-IA. II. (I).</li> <li>• We have obtained EC from MoEF&amp;CC vide letter No. J-11011/7/2006-IA. II. (I).dtd, 24.12.20 for Expansion of Integrated Steel Plant from 6 to 8 MTPA Crude Steel and 9 MTPA Finished Steel.</li> </ul>
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 SPM, SO <sub>2</sub> and NO <sub>x</sub> are anticipated in consultation with the OPCB. Data on ambient air quality and stack emission should be regularly submitted to this Ministry including its Regional Office at Bhopal and the OPCB/CPCB once in six months.	<ul style="list-style-type: none"> <li>• Ambient Air quality monitoring Stations (7 nos.) are established.</li> <li>• Data on Ambient Air Quality and Stack emissions are submitted regularly on monthly basis to OSPCB and Half yearly basis to MoEF&amp;CC.</li> <li>• Data of Online Continuous Ambient Air Quality Monitoring Stations (CAAQMS) as well as Continuous Emission Monitoring Systems (CEMS) of Stacks are also being transmitted to the server of OSPCB through Real Time Data Acquisition System (RTDAS).</li> <li>• Remote calibration has been done by CPCB. CPCB has checked remote zero and span check facility installation of CEMS.</li> </ul>
iv.	Industrial waste water shall be properly collected, treated so as to conform to the standards prescribed under GSR 422 dated 19 <sup>th</sup> May, 1993 and 31 <sup>st</sup> December, 1993 or as amended from time to time. The treated wastewater shall be utilized for plantation purpose.	<ul style="list-style-type: none"> <li>• For Treatment of Industrial waste water and its recovery &amp; reuse, individual units like Coke Plant, HSM, SMS and BF etc. have individual Waste Water Treatment units in operation.</li> <li>• Excess treated water from individual treatment plant is sent to Central Effluent Treatment Plant (CETP). CETP is in operation with tertiary treatment. Treated water from CETP is used in process, dust suppression &amp; other uses.</li> </ul>
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	<ul style="list-style-type: none"> <li>• Low noise prone rotary equipment and vibration dampening has been one of the design aspects as a control measure for noise pollution.</li> </ul>

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<b>B.</b>	<b>General Conditions as per EC dated 7.11.2006</b>	<b>Status as on 31.03.2021</b>									
	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).	<ul style="list-style-type: none"> <li>• Provision of acoustic hoods, silencers in steam ejectors as well as sound proof enclosures have also been made at various internal sites.</li> <li>• Ambient noise levels are well within the prescribed limits.</li> </ul>									
vi.	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.	<ul style="list-style-type: none"> <li>• Environmental protection measures as proposed in the EIA and EMP report is being implemented.</li> <li>• Various socio-economic development activities for Health, Women Empowerment, Education, Sports &amp; culture, Infrastructure development etc. are on-going in 28 villages surrounding the project site. Recently, 5 medical mobile units have been added for immediate treatment to the local people.</li> <li>• Multi-specialty, 100 bedded hospitals (<b>Medica TS</b>) is now functioning very close to the plant site for facilitating health service to the community.</li> </ul>									
vii.	The project authorities shall utilize Rs. 1,525.00 Crores earmarked for the environmental pollution control measures judiciously to implement the conditions stipulated by the Ministry of Environment and Forests as well as the State Government along with the implementation schedule for all the conditions stipulated herein. The funds so provided shall not be diverted for any other purpose.	<ul style="list-style-type: none"> <li>• Funds earmarked for the environmental pollution control measures are not diverted and is being utilized only for the said purpose.</li> <li>• Till 31.03.2021; Rs.2147.53Crs have been spent for the environmental measures to comply the stipulated conditions.</li> </ul>									
viii.	The Regional Office of this Ministry at Bhopal/CPCB/OPCB will monitor the stipulated conditions. A six-monthly compliance report and the monitored data along with statistical interpretation shall be submitted to them regularly.	<ul style="list-style-type: none"> <li>• Six monthly compliance reports are being submitted regularly.</li> <li>• Last Report Sent on 01.12.2020.</li> </ul>									
ix.	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 OPCB/Committee and may also be seen at Website of the Ministry of Environmental and Forests at <a href="http://envfor.nic.in">http://envfor.nic.in</a> . 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	<ul style="list-style-type: none"> <li>• Complied.</li> <li>• Newspaper advertisement details: -</li> </ul> <table border="0" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left; border-bottom: 1px solid black;"><u>Newspaper</u></th> <th style="text-align: left; border-bottom: 1px solid black;"><u>Language</u></th> <th style="text-align: left; border-bottom: 1px solid black;"><u>Date</u></th> </tr> </thead> <tbody> <tr> <td>New Indian Express</td> <td>English</td> <td>13.06.06</td> </tr> <tr> <td>Sambad</td> <td>Odia</td> <td>13.06.06</td> </tr> </tbody> </table>	<u>Newspaper</u>	<u>Language</u>	<u>Date</u>	New Indian Express	English	13.06.06	Sambad	Odia	13.06.06
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<b>B.</b>	<b>General Conditions as per EC dated 7.11.2006</b>	<b>Status as on 31.03.2021</b>
	concerned and a copy of the same shall be forwarded to the Regional office.	
X	Project authorities should inform 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.	<ul style="list-style-type: none"> <li>• Complied.</li> </ul>

	<b>Additional Conditions vide letter dated 10.10.2012</b>	<b>Status as on 31.03.2021</b>
i)	The company shall install low NOx burners to mitigate NOx emissions from captive power plant.	There are three nos. of boilers of captive power plant. At each boiler, 8 Nos. of Low NOx burners have been installed to control NOx emissions.
ii)	Data on ambient air, stack and fugitive emission shall be regularly submitted online to Ministry's Regional Office at Bhubaneswar and Central Pollution Control Board as well as hard copy once in six months and display data on PM10, SO2 and NOx outside the premises at the appropriate place for the general public.	<ul style="list-style-type: none"> <li>• Six Monthly compliance reports are sent in soft copies to MoEF/ OSPCB. The same is also available at company web site.</li> <li>• AAQ data is displayed at the entrance of the Plant (Plant's Main Gate) for information to public through Electronic display board</li> <li>• Four nos. of CAAQMS (Two Nos. inside and Two Nos. outside plant premises) are in operation.</li> <li>• For monitoring of stack emissions, Online Continuous emission monitoring systems have been installed at all the operating units' viz. Coke Oven battery#2, Battery #1, CPP1, SP, BF, SMS, LCP and HSM and all are in operation.</li> </ul>
iii)	The National Ambient Air Quality Standard issued by the Ministry vide GSR No. 826(E) dated 16th November, 2009 shall be followed.	<ul style="list-style-type: none"> <li>• Air Quality standards conforming to NAAQS vide GSR 826 (E) has been referred for air quality monitoring and review.</li> </ul>
iv)	The project proponent shall also submit six monthly reports on the status of the compliances of the stipulated environmental conditions including results of monitored data (both in hard copies as well as by e-mail) to the respective Regional Office of MoEF, the respective Zonal Office of CPCB and SPCB. The Regional Office of the Ministry at Bhubaneswar/CPCB/SPCB shall monitor the stipulated conditions.	<ul style="list-style-type: none"> <li>• We are submitting the six-monthly compliance report in stipulated time.</li> <li>• Last Six-monthly compliance reports for the period Apr'20 to Sep'20 was submitted to MoEF/ OSPCB Regional Office both in soft copy on 01.12.2020.</li> <li>• Soft copy of the half yearly progress report was also being sent to roez.bsr-mef@nic.in.</li> </ul>
v)	The environmental statement for each financial year ending 31 march in Form-V as is mandated to be submitted by the project proponent to the concerned State Pollution Control Board as prescribed	<ul style="list-style-type: none"> <li>• Environment Statement for FY 2019-20 was submitted to OSPCB on 28.09.20 and the same for 2020-21 will be submitted before 30.09.2021.</li> </ul>

**Six Monthly Compliance Status (Oct'20 to Mar'21) of Environmental Clearance including Amendment in EC for 6.0 MTPA Integrated Steel Plant at Kalinganagar, Duburi, District-Jajpur; 7<sup>th</sup> Nov 2006, 10<sup>th</sup> Oct 2012, 13<sup>th</sup> May 2015 and 20<sup>th</sup> Dec 2016**

	<b>Additional Conditions vide letter dated 10.10.2012</b>	<b>Status as on 31.03.2021</b>
	under the Environment (protection Rules, 1986, as amended subsequently, shall also be put on the website of the company along with the status of compliances of environmental conditions and shall also be sent to the respective Regional Offices of the MoEF by e-mail.	<ul style="list-style-type: none"> <li>Both, Environment Statement and Status of Compliance of EC conditions have been uploaded on company's website <a href="https://www.tatasteel.com/corporate/our-organisation/environment/environment-compliance-reports/">https://www.tatasteel.com/corporate/our-organisation/environment/environment-compliance-reports/</a></li> </ul>
vi)	The company shall submit within three months their policy towards Corporate Environment Responsibility which should inter-alia address (i) Standard operating process/ procedure to being into focus any infringement/ deviation/ violation of the environmental or forests norms/ conditions, (ii) Hierarchical system or Administrative order of the Company to deal with environmental issues and ensuring compliances to the environmental clearances conditions and (iii) system of reporting of noncompliance/ violation of environmental norms to the Board of Directors of the Company and/or shareholders.	<ul style="list-style-type: none"> <li>Corporate Environmental Policy was submitted to MoEF; New Delhi vide our letter no. TSL/DEL/805/2013 dated 8.1.2013.</li> <li>Copy of the same was also submitted to MoEF, Bhubaneswar Office.</li> </ul>

	<b>Additional Safeguards vide letter dated 13.5.2015</b>	<b>Compliance status as on 31.03.2020</b>
2i	Project proponent should install 24x7 air and water monitoring devices to monitor the air emission and effluent discharge, as provided by Central Pollution Control Board (CPCB) and submit the report to Ministry and its Regional office	<ul style="list-style-type: none"> <li>To monitor the ambient air quality, 7 nos. of continuous ambient air quality monitoring station (CAAQMS) have been installed and are in operation.</li> <li>Continuous emission monitoring system (CEMS) have been installed at all the major stacks like Coke Battery No. 1 &amp; 2, Captive power plant, Sinter Plant, Blast Furnace, Steel Melting Shop, Lime Calcination Plant and Hot Strip Mill.</li> <li>Online Water quality monitoring stations installed at the outlet of BOD plant of Coke Oven Unit.</li> </ul>
2ii	For Wet quenching: permission to start the coke ovens with wet quenching till CDQ is stabilized by June 2016, thereafter maintain wet quenching as a standby and use for 20 days (3 weeks) in a year or per annum for maintenance or operation exigencies	<ul style="list-style-type: none"> <li>CDQ unit for Battery No. 1 &amp; 2 is in operation.</li> <li>Wet quenching system is maintained as standby</li> </ul>

**Six Monthly Compliance Status (Oct'20 to Mar'21) of Environmental Clearance including Amendment in EC for 6.0 MTPA Integrated Steel Plant at Kalinganagar, Duburi, District-Jajpur; 7<sup>th</sup> Nov 2006, 10<sup>th</sup> Oct 2012, 13<sup>th</sup> May 2015 and 20<sup>th</sup> Dec 2016**

2iii	For LDO: Use of LDO for generation of power in power plants and DG set till Blast Furnace gas is available for power generation in power plants and there after maintain LDO as "Standby" and use for 15 days (two weeks) per annum for maintenance or operational exigencies.	<ul style="list-style-type: none"> <li>•BF Gas generated is used for power generation in Captive Power Plant.</li> <li>•LDO is being maintained as standby fuel.</li> <li>•DG sets are operated only in case of exigencies.</li> </ul>
	<b>Additional Conditions vide letter dated 20.12.2016</b>	<b>Compliance status as on 31.03.2021</b>
7.i	For Wet quenching: permission to start the coke ovens with wet quenching till the CDQ is stabilized by November 2016, thereafter maintain wet quenching as a standby and use for 20 days (3 weeks) in a year or per annum for maintenance or operational exigencies.	<ul style="list-style-type: none"> <li>•CDQ unit for Battery No. 1 &amp; 2 is in operation.</li> <li>• Wet quenching system is maintained as standby</li> </ul>

**Six Monthly Compliance Status (Oct'20 to Mar'21) of Environmental Clearance for expansion of Integrated Steel Plant from 6 MTPA to 8 MTPA Crude Steel and 9 MTPA Finished Steel by Tata Steel Ltd at Kalinganagar Industrial Complex, Jajpur, Odisha**

<b>A.</b>	<b>Specific Conditions: -</b>	<b>Compliance status as on 31.03.2021</b>
I	Green belt shall be developed in 33 % of the plant area in first two years and maintained later for gap fillings, casualty replacements and ensuring survival	<ul style="list-style-type: none"> <li>• Job initiated to add additional 215 ha area under greenery.</li> <li>• Qualified/trained staff is engaged to maintain the plantation and ensure survival.</li> </ul>
ii	Biodiversity park being developed shall have a section on Species that control air pollution. It will also have a section of locally rare and endangered species	<ul style="list-style-type: none"> <li>• Land for Bio-diversity Park is ear marked by Jajpur Administration and under process of allotment.</li> <li>• Necessary elements will be ensured in the park</li> </ul>
iii	Plant shall be ZLD. Reverse Osmosis and Multiple Effect Evaporator (MEE) shall be provided for Coke Oven effluent treatment.	<ul style="list-style-type: none"> <li>• Noted and shall be complied.</li> </ul>
iv	Pollution control systems and equipment shall be upgraded/ designed to achieve less than 30 mg/Nm <sup>3</sup> particulate matter. In existing systems, the bags under scheduled replacement cycle shall be replaced with PTFE bags.	<ul style="list-style-type: none"> <li>• Pollution control systems and equipment are in expansion are designed to achieve less than 30 mg/Nm<sup>3</sup> particulate matter emission.</li> <li>• PTFE bags shall be installed.</li> </ul>
V	PP shall minimize and control Dioxins/Furan emissions from sinter plants, charging and pushing emissions from Coke Ovens and mercury emissions from power plants. Dioxins and furans shall be monitored half yearly. Monitoring reports shall be submitted regularly to RO.	<ul style="list-style-type: none"> <li>• Noted and shall be complied.</li> <li>• Monitoring shall be carried out six monthly.</li> <li>• Monitoring data shall be a part of six monthly compliance report.</li> </ul>
Vi	Adequate space shall be kept vacant for installation of dioxin control in future	<ul style="list-style-type: none"> <li>• Space shall be provided and kept vacant for future installations.</li> </ul>
Vii	The data acquired through CEMS, shall be used for control of processes to control the stack emissions. This should include the MIS for closing the non-conformity loop.	<ul style="list-style-type: none"> <li>• Noted and shall be complied.</li> </ul>
Viii	SMS Slag shall be used as soil conditioner in watershed management area to supplement micro nutrients	<ul style="list-style-type: none"> <li>• Tata Steel undertook studies for use SMS slag as soil conditioner.</li> <li>• Knowledge of same will be used to supplement micro nutrient in greenery development.</li> </ul>
Ix	PP shall recover and recycle unburnt carbon from BF flue dust and GCP sludge	<ul style="list-style-type: none"> <li>• Noted and shall be complied.</li> </ul>
X	PP shall use steam and CO <sub>2</sub> to age and fix the SMS slag for use as concrete for road making	<ul style="list-style-type: none"> <li>• Infrastructure for weathering of SMS slag through open steam aging is completed.</li> <li>• Closed steam aging is under design.</li> <li>• Weathered slag used for road making.</li> </ul>
Xi	100 percent waste utilization shall be ensured. PP shall install a state-of-the-art Waste Recycling Plant (WRP) to process various types of slags and wastes generated in the plant to recover and recycle metallic, fluxes, aggregates and boulders	<ul style="list-style-type: none"> <li>• Waste shall be utilized to maximum possible extent within plant.</li> <li>• Metallic recovery and recycling from slag is envisaged for 100 % utilization.</li> </ul>
Xii	PP Shall use ultra-low NO <sub>x</sub> burner with three stages, combustion, flue gas recirculation	<ul style="list-style-type: none"> <li>• Provision of Ultra-low NO<sub>x</sub> burners shall be made.</li> </ul>

**Six Monthly Compliance Status (Oct'20 to Mar'21) of Environmental Clearance for expansion of Integrated Steel Plant from 6 MTPA to 8 MTPA Crude Steel and 9 MTPA Finished Steel by Tata Steel Ltd at Kalinganagar Industrial Complex, Jajpur, Odisha**

<b>A.</b>	<b>Specific Conditions: -</b>	<b>Compliance status as on 31.03.2021</b>
	and auto combustion control system in the new plant	
Xiii	Specific water consumption post expansion shall not exceed 4 m <sup>3</sup> per ton of crude steel and specific power consumption shall be less than 620 kwh per ton of crude steel as committed in the reply to ADS points	<ul style="list-style-type: none"> <li>Measures shall be taken to optimize water consumption and specific power consumption to ensure the same does not exceed 4 cum/tcs and 620 Kwh/tcs respectively.</li> </ul>

<b>B</b>	<b>General conditions</b>	
<b>I</b>	<b>Statutory compliance:</b>	
i	The Environment Clearance (EC) granted to the project/ activity is strictly under the provisions of the EIA Notification, 2006 and its amendments issued from time to time. It does not tantamount/ construe to approvals/ consent/ permissions etc., required to be obtained or standards/conditions to be followed under any other Acts/Rules/ Subordinate legislations, etc., as may be applicable to the project	<ul style="list-style-type: none"> <li>Noted and shall be complied with the same.</li> <li>Consent to Establish for 'expansion of integrated steel plant for production of crude steel capacity from 6 MTPA to 8 MTPA and production of finished steel of capacity 9 MTPA' was granted by OSPCB vide letter No. 2249 Ltrd 15.02.21</li> </ul>
<b>II</b>	<b>Air quality monitoring and preservation</b>	
I	The project proponent shall install 24x7 continuous emission monitoring system at process stacks to monitor stack emission as well as Continuous Ambient Air Quality Station (CAAQS) for monitoring AAQ parameters with respect to standards prescribed in Environment (Protection) Rules 1986 as amended from time to time. The CEMS and CAAQMS shall be connected to SPCB and CPCB online servers and calibrate these systems from time to time according to equipment supplier specification through labs recognized under Environment (Protection) Act, 1986 or NABL accredited laboratories	<ul style="list-style-type: none"> <li>To monitor the ambient air quality, 7 nos. of continuous ambient air quality monitoring station (CAAQMS) have been installed and all are in operation.</li> <li>Continuous emission monitoring system (CEMS) is proposed to be at all the major stacks of coming under expansion.</li> <li>The CEMS and CAAQMS are connected to SPCB and CPCB online servers</li> <li>Regular Calibration is and will be done for CEMS and CAAQMS.</li> </ul>
ii	The project proponent shall monitor fugitive emissions in the plant premises at least once in every quarter through laboratories recognized under Environment (Protection) Act, 1986 or NABL accredited laboratories	<ul style="list-style-type: none"> <li>Fugitive emissions in plant premises through NABL accredited laboratories shall be monitored at least on quarterly basis.</li> </ul>
iii	The cameras shall be installed at suitable locations for 24X7 recording of battery emissions on the both sides of coke oven batteries and videos shall be preserved for at least one-month recordings.	<ul style="list-style-type: none"> <li>Additional cameras if required shall be installed in future to meet the requirement.</li> </ul>
iv	Sampling facility at process stacks and at quenching towers shall be provided as per CPCB guidelines for manual monitoring of emissions	<ul style="list-style-type: none"> <li>Sampling facilities in the proposed stacks of process stacks shall be provided as per CPCB guidelines.</li> </ul>

**Six Monthly Compliance Status (Oct'20 to Mar'21) of Environmental Clearance for expansion of Integrated Steel Plant from 6 MTPA to 8 MTPA Crude Steel and 9 MTPA Finished Steel by Tata Steel Ltd at Kalinganagar Industrial Complex, Jajpur, Odisha**

<b>B</b>	<b>General conditions</b>	
v	Appropriate Air Pollution Control (APC) system shall be provided for all the dust generating points including fugitive dust from all vulnerable sources, so as to comply prescribed stack emission and fugitive emission standards	<ul style="list-style-type: none"> <li>• Air pollution control equipment at all the vulnerable sources shall be provided to control emission below the stipulated norms.</li> </ul>
vi	The project proponent shall provide leakage detection and mechanized bag cleaning facilities for better maintenance of bags	<ul style="list-style-type: none"> <li>• Provision for leakage detection and mechanized bag cleaning for upcoming facilities are envisaged.</li> </ul>
vii	Secondary emission control system shall be provided at SMS Converters.	<ul style="list-style-type: none"> <li>• Secondary emission control system is in operation at SMS converters and will be extended to additional facilities.</li> </ul>
viii	Sufficient number of mobile or stationery vacuum cleaners shall be provided to clean plant roads, shop floors, roofs, regularly	<ul style="list-style-type: none"> <li>• Noted and shall be complied.</li> </ul>
ix	Recycle and reuse iron ore fines, coal and coke fines, lime fines and such other fines collected in the pollution control devices and vacuum cleaning devices in the process after briquetting/ agglomeration	<ul style="list-style-type: none"> <li>• All fines like coal, iron ore, lime fines, coke fines etc. collected through pollution control device is recycled and reused in process.</li> <li>• Same practice shall be adopted for upcoming units.</li> </ul>
x	The project proponent use leak proof trucks/dumpers carrying coal and other raw materials and cover them with tarpaulin	<ul style="list-style-type: none"> <li>• Leak proof trucks/ dumpers with tarpaulin cover is used for carrying raw materials.</li> </ul>
xi	Facilities for spillage collection shall be provided for coal and coke on wharf of coke oven batteries (Chain conveyors, land based industrial vacuum cleaning facility).	<ul style="list-style-type: none"> <li>• Facilities for spillage collection are available and shall also be provided for upcoming units.</li> </ul>
xii	Land-based APC system shall be installed to control coke pushing emissions.	<ul style="list-style-type: none"> <li>• Land- based APC to control coke pushing emission are available for operating coke plant and shall also be installed for upcoming unit(s).</li> </ul>
xiii	Monitor CO, HC and O2 in flue gases of the coke oven battery to detect combustion efficiency and cross leakages in the combustion chamber.	<ul style="list-style-type: none"> <li>• Online monitoring system for monitoring of CO, HC and O2 in flue gases of the coke oven battery to detect combustion efficiency and cross leakages in the combustion chamber shall be provided for proposed unit.</li> </ul>
xiv	Vapour absorption system shall be provided in place of Vapour compression system for cooling of coke oven gas in case of recovery type coke ovens.	<ul style="list-style-type: none"> <li>• Noted and shall be complied.</li> </ul>
xv	In case concentrated ammonia liquor is incinerated, adopt high temperature incineration to destroy Dioxins and Furans. Suitable NOx control facility shall be provided to meet the prescribed standards.	<ul style="list-style-type: none"> <li>• Noted and shall be envisaged.</li> </ul>
xvi	The coke oven gas shall be subjected to desulphurization if the Sulphur content in the coal exceeds 1%.	<ul style="list-style-type: none"> <li>• Desulphurization of coke oven gas shall be done and Sulphur shall be recovered as pellets and same shall be sold as by-product.</li> </ul>
xvii	Wind shelter fence and chemical spraying shall be provided on the raw material stock piles	<ul style="list-style-type: none"> <li>• Suitable system is being studied and designed, which will withstand the cyclones in this area.</li> </ul>

**Six Monthly Compliance Status (Oct'20 to Mar'21) of Environmental Clearance for expansion of Integrated Steel Plant from 6 MTPA to 8 MTPA Crude Steel and 9 MTPA Finished Steel by Tata Steel Ltd at Kalinganagar Industrial Complex, Jajpur, Odisha**

<b>B</b>	<b>General conditions</b>	
xviii	Design the ventilation system for adequate air changes as per prevailing norms for all tunnels, motor houses, Oil Cellars.	<ul style="list-style-type: none"> <li>• Noted and shall be complied.</li> </ul>
xix	The project proponent shall install Dry Gas Cleaning Plant with bag filter for Blast Furnace and SMS converter.	<ul style="list-style-type: none"> <li>• Dry GCP proposed in new BF and SMS area.</li> </ul>
xx	Dry quenching (CDQ) system shall be installed along with power generation facility from waste heat recovery from hot coke	<ul style="list-style-type: none"> <li>• CDQ is proposed in new coke units.</li> <li>• Steam will be recovered and used.</li> </ul>
<b>III.</b>	<b><i>Water quality monitoring and preservation</i></b>	
i	The project proponent shall install 24x7 continuous effluent monitoring system with respect to standards prescribed in Environment (Protection) Rules 1986 vide G.S.R 277 (E) dated 31st March 2012 (Integrated iron & Steel); G.S.R 414 (E) dated 30th May 2008 (Sponge Iron) as amended from time to time; S.O. 3305 (E) dated 7th December 2015 (Thermal Power Plants) as amended from time to time and connected to SPCB and CPCB online servers and calibrate these system from time to time according to equipment supplier specification through labs recognized under Environment (Protection) Act, 1986 or NABL accredited laboratories.	<ul style="list-style-type: none"> <li>• Suitable systems will be installed in proposed units wherever it its required as per guidelines of OSPCB and CPCB.</li> </ul>
ii	The project proponent shall monitor regularly ground water quality at least twice a year (pre-and post- monsoon) at sufficient numbers of piezometers/ sampling wells in the plant and adjacent areas through labs recognized under Environment (Protection) Act, 1986 and NABL accredited laboratories.	<ul style="list-style-type: none"> <li>• Noted and shall be complied.</li> </ul>
iii	The project proponent shall provide the ETP for coke oven and by-product to meet the standards prescribed in G.S.R 277 (E) dated 31st March 2012 (Integrated iron & Steel); G.S.R 414 (E) dated 30th May 2008 (Sponge Iron) as amended from time to time; S.O. 3305 (E) dated 7th December 2015 (Thermal Power Plants) as amended from time to time as amended from time to time;	<ul style="list-style-type: none"> <li>• ETP for coke oven and by-product is proposed in new units of coke plant.</li> </ul>
iv	Adhere to 'Zero Liquid Discharge'	<ul style="list-style-type: none"> <li>• Noted and shall be complied.</li> </ul>
v	Sewage Treatment Plant shall be provided for treatment of domestic wastewater to meet the prescribed standards	<ul style="list-style-type: none"> <li>• Noted and shall be complied.</li> </ul>
vi	Garland drains and collection pits shall be provided for each stock pile to arrest the runoff in the event of heavy rains and to check the water pollution due to surface run off.	<ul style="list-style-type: none"> <li>• Noted and shall be complied.</li> </ul>

**Six Monthly Compliance Status (Oct'20 to Mar'21) of Environmental Clearance for expansion of Integrated Steel Plant from 6 MTPA to 8 MTPA Crude Steel and 9 MTPA Finished Steel by Tata Steel Ltd at Kalinganagar Industrial Complex, Jajpur, Odisha**

<b>B</b>	<b>General conditions</b>	
vii	Tyre washing facilities shall be provided at the entrance of the plant gates.	• Noted and shall be complied.
viii	CO <sub>2</sub> injection shall be provided in GCP of SMS to reduce pH in circulating water to ensure optimal recycling of treated water for converter gas cleaning	• Noted and shall be studied.
ix	The project proponent shall practice rainwater harvesting to maximum possible extent	• Noted and shall be complied.
x	Treated water from ETP of COBP shall not be used for coke quenching	• Treated water from ETP of COBP shall be further treated in CETP for reuse.
xi	Water meters shall be provided at the inlet to all unit processes in the steel plants	• Noted and shall be complied.
xii	The project proponent shall make efforts to minimize water consumption in the steel plant complex by segregation of used water, practicing cascade use and by recycling treated water	• Noted and shall be complied.
<b>IV.</b>	<b>Noise monitoring and prevention</b>	
I	Noise quality shall be monitored as per the prescribed Noise Pollution (Regulation and Control) Rules, 2000 and report in this regard shall be submitted to Regional Officer of the Ministry as a part of six-monthly compliance report.	• Noise quality is monitored regularly and report is submitted along with six monthly compliance reports.
<b>V.</b>	<b>Energy Conservation measures</b>	
I	The project proponent shall provide TRTs to recover energy from top gases of Blast Furnaces.	• TRTs to recover top gases of Blast furnace is available for operating unit and shall also be provided for proposed expansion.
ii	Coke Dry Quenching (CDQ) shall be provided for coke quenching for the coke oven plant	• CDQ is provided for operating coke plant and is also envisaged for proposed units.
iii	Waste heat shall be recovered from Sinter Plants coolers and Sinter Machines	• Noted and shall be complied.
iv	Use torpedo ladle for hot metal transfer as far as possible. If ladles not used, provide covers for open top ladles	• Torpedo ladles are used for transfer of hot metals.
v	Use hot charging of slabs and billets/blooms as far as possible	• Noted and being followed.
vi	Waste heat recovery systems shall be provided in all units where the flue gas or process gas exceeds 300°C.	• Noted and shall be implemented.
vii	Explore feasibility to install WHRS at Waste Gases from BF stoves; Sinter Machine; Sinter Cooler, and all reheating furnaces and if feasible shall be installed.	• WHRS is envisaged at Sinter Cooler and proposed BF.
viii	Restrict Gas flaring to < 1%.	• Most of the by-product gases shall be utilized as fuel and flaring shall be restricted, except during shutdowns.
ix	Provide solar power generation on roof tops of buildings, for solar light system for all common areas, street lights, parking around	• Solar power generation shall be envisaged.



**Six Monthly Compliance Status (Oct'20 to Mar'21) of Environmental Clearance for expansion of Integrated Steel Plant from 6 MTPA to 8 MTPA Crude Steel and 9 MTPA Finished Steel by Tata Steel Ltd at Kalinganagar Industrial Complex, Jajpur, Odisha**

<b>B</b>	<b>General conditions</b>	
	project area and maintain the same regularly;	
xi	Provide LED lights in their offices and residential areas	• In offices and residential areas only LED lights shall be provided.
xii	Ensure installation of regenerative type burners on all reheating furnaces	• Regenerative type burners on reheating furnace shall be provided.
<b>VI</b>	<b>Waste management</b>	
i	An attrition grinding unit to improve the bulk density of BF granulated slag from 1.0 to 1.5 Kg/l shall be installed to use slag as river sand in construction industry	• Shall be studied for feasibility.
ii	Tar Sludge and waste oil shall be blended with coal charged in coke ovens	• Noted and shall be complied.
iii	Carbon recovery plant to recover the elemental carbon present in GCP slurries for use in Sinter plant shall be installed	Noted and shall be complied.
iv	Waste recycling Plant shall be installed to recover scrap, metallic and flux for recycling to sinter plant and SMS	• Noted and shall be complied.
v	Used refractories shall be recycled as far as possible	• Used refractories shall be reused and recycled to maximum possible extent.
vi	SMS slag after metal recovery in waste recycling facility shall be conditioned and used for road making, railway track ballast and other applications. The project proponent shall install a waste recycling facility to recover metallic and flux for recycle to sinter plant. The project proponent shall establish linkage for 100% reuse of rejects from Waste Recycling Plant	• SMS slag after metal recovery shall be reused to maximum possible extent.
vii	100% utilization of fly ash shall be ensured. All the fly ash shall be provided to cement and brick manufacturers for further utilization and Memorandum of Understanding in this regard shall be submitted to the Ministry's Regional Office	• We do not envisage generation of fly ash as coal burning for power generation is not envisaged immediately.
viii	Oil Collection pits shall be provided in oil cellars to collect and reuse/recycle spilled oil. Oil collection trays shall be provided under coils on saddles in cold rolled coil storage area	• Oil collection pits for collection and reuse of oils shall be provided.
ix	Kitchen waste shall be composted or converted to biogas for further use	• Kitchen wastes shall be separately handled to convert into compost or biogas.
<b>VII</b>	<b>Green Belt</b>	
i	Green belt shall be developed in an area equal to 33% of the plant area with a native tree species in accordance with CPCB guidelines. The greenbelt shall inter alia cover the entire periphery of the plant	• Green belt development in 33 % area is in progress as per CPCB guideline and planned to inter alia cover the entire periphery of the plant.
ii	The project proponent shall prepare GHG emissions inventory for the plant and shall submit the program for reduction of the	• GHG inventory as WSA method done every year.

**Six Monthly Compliance Status (Oct'20 to Mar'21) of Environmental Clearance for expansion of Integrated Steel Plant from 6 MTPA to 8 MTPA Crude Steel and 9 MTPA Finished Steel by Tata Steel Ltd at Kalinganagar Industrial Complex, Jajpur, Odisha**

<b>B</b>	<b>General conditions</b>										
	same including carbon sequestration including plantation	• CO2 emission reduction activities are being implemented.									
<b>VIII</b>	<b>Public hearing and Human health issues</b>										
i	Emergency preparedness plan based on the Hazard identification and Risk Assessment(HIRA) and Disaster Management Plan shall be implemented.	• Emergency preparedness plan based on Hazard identification and risk assessment and Disaster Management plan is on place and shall be modified with expansion implemented.									
ii	The project proponent shall carry out heat stress analysis for the workmen who work in high temperature work zone and provide Personal Protection Equipment (PPE) as per the norms of Factory Act.	• Personal Protection Equipment (PPE) as per the norms of Factory Act is mandatory to all workmen. Heat stress analysis shall be conducted for specific areas.									
iii	Occupational health surveillance of the workers shall be done on a regular basis and records maintained	• Occupational health surveillance of all workers is done regularly once in a year.									
<b>IX.</b>	<b>Corporate Environment Responsibility</b>										
i	The project proponent shall comply with the provisions contained in this Ministry's OM vide F.No. 22-65/2017-IA.III dated 30/09/2020	• Noted and shall be complied.									
ii	The company shall have a well laid down environmental policy duly approve by the Board of Directors. The environmental policy should prescribe for standard operating procedures to have proper checks and balances and to bring into focus any infringements/deviation/violation of the environmental / forest / wildlife norms /conditions. The company shall have defined system of reporting infringements /deviation / violation of the environmental / forest / wildlife norms / conditions and / or shareholders / stake holders. The copy of the board resolution in this regard shall be submitted to the MoEF&CC as a part of six-monthly report.	• Corporate Environmental Policy was submitted to MoEF; New Delhi vide our letter no. TSL/DEL/805/2013 dated 8.1.2013.									
iii	A separate Environmental Cell both at the project and company head quarter level, with qualified personnel shall be set up under the control of senior Executive, who will directly to the head of the organization	• Separate Environmental cell with well qualified personnel in the field is in existence.									
<b>X</b>	<b>Miscellaneous</b>										
i	The project proponent shall make public the environmental clearance granted for their project along with the environmental conditions and safeguards at their cost by prominently advertising it at least in two local newspapers of the District or State, of which one shall be in the vernacular language within seven days and in addition this shall also be displayed in the project proponent's website permanently.	<p>• Newspaper advertisement details: -</p> <table border="1"> <thead> <tr> <th><u>Newspaper</u></th> <th><u>Language</u></th> <th><u>Date</u></th> </tr> </thead> <tbody> <tr> <td>Orissa Post</td> <td>English</td> <td>30.11.20</td> </tr> <tr> <td>Sambad</td> <td>Odia</td> <td>30.11.20</td> </tr> </tbody> </table>	<u>Newspaper</u>	<u>Language</u>	<u>Date</u>	Orissa Post	English	30.11.20	Sambad	Odia	30.11.20
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**Six Monthly Compliance Status (Oct'20 to Mar'21) of Environmental Clearance for expansion of Integrated Steel Plant from 6 MTPA to 8 MTPA Crude Steel and 9 MTPA Finished Steel by Tata Steel Ltd at Kalinganagar Industrial Complex, Jajpur, Odisha**

<b>B</b>	<b>General conditions</b>	
ii	The copies of the environmental clearance shall be submitted by the project proponents to the Heads of local bodies, Panchayats and Municipal Bodies in addition to the relevant offices of the Government who in turn has to display the same for 30 days from the date of receipt	Copies of environmental clearance has been submitted vide our letter No. Proj/TSK/ 2021 /033 dtd. 06.01.2021
iii	The project proponent shall upload the status of compliance of the stipulated environment clearance conditions, including results of monitored data on their website and update the same on half-yearly basis.	<ul style="list-style-type: none"> <li>• Status of Compliance of EC conditions along with monitoring data are uploaded on company's website <a href="https://www.tatasteel.com/corporate/our-organisation/environment/environment-compliance-reports/">https://www.tatasteel.com/corporate/our-organisation/environment/environment-compliance-reports/</a></li> </ul>
iv	The project proponent shall monitor the criteria pollutants level namely; PM10, SO2, NOx (ambient levels as well as stack emissions) or critical sectoral parameters, indicated for the projects and display the same at a convenient location for disclosure to the public and put on the website of the company.	<ul style="list-style-type: none"> <li>• Environmental monitoring is carried out on regular basis and monitoring data is also submitted along with six monthly compliance reports.</li> </ul>
v	The project proponent shall submit six-monthly reports on the status of the compliance of the stipulated environmental conditions on the website of the ministry of Environment, Forest and Climate Change at environment clearance portal	<ul style="list-style-type: none"> <li>• We are submitting the six-monthly compliance report of ECs in stipulated time.</li> <li>• Last Six-monthly compliance reports for the period Apr'20 to Sep'20 of ECs granted in 2006 and amendments thereon was submitted to MoEF/ OSPCB Regional Office both in soft copy on 01.12.2020.</li> <li>• Soft copy of the half yearly progress report was also being sent to roez.bsr-mef@nic.in.</li> <li>• We are hereby submitting first six-monthly compliance report of EC granted in December'2020.</li> </ul>
vi	The project proponent shall submit the environmental statement for each financial year in Form-V to the concerned State Pollution Control Board as prescribed under the Environment (Protection) Rules, 1986, as amended subsequently and put on the website of the company.	<ul style="list-style-type: none"> <li>• Environment Statement for FY 2019-20 was submitted to OSPCB on 28.09.20 and the same for 2020-21 will be submitted before 30.09.2021.</li> <li>• Both, Environment Statement and Status of Compliance of EC conditions have been uploaded on company's website <a href="https://www.tatasteel.com/corporate/our-organisation/environment/environment-compliance-reports/">https://www.tatasteel.com/corporate/our-organisation/environment/environment-compliance-reports/</a></li> </ul>
vii	The project proponent 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, commencing the land development work and start of production operation by the project.	<ul style="list-style-type: none"> <li>• Noted and shall be complied.</li> </ul>

**Six Monthly Compliance Status (Oct'20 to Mar'21) of Environmental Clearance for expansion of Integrated Steel Plant from 6 MTPA to 8 MTPA Crude Steel and 9 MTPA Finished Steel by Tata Steel Ltd at Kalinganagar Industrial Complex, Jajpur, Odisha**

<b>B</b>	<b>General conditions</b>	
viii	The project proponent shall abide by all the commitments and recommendations made in the EIA/EMP report, commitment made during Public Hearing and also that during their presentation to the Expert Appraisal Committee	<ul style="list-style-type: none"> <li>• We shall abide by our commitments and recommendations made in the EIA/EMP report.</li> </ul>
ix	No further expansion or modifications in the plant shall be carried out without prior approval of the Ministry of Environment, Forests and Climate Change (MoEF&CC).	<ul style="list-style-type: none"> <li>• Noted.</li> <li>• Necessary approval shall be taken prior to any expansion or modification in the plant.</li> </ul>
x	Concealing factual data or submission of false/fabricated data may result in revocation of this environmental clearance and attract action under the provisions of Environment (Protection) Act, 1986.	<ul style="list-style-type: none"> <li>• Noted.</li> </ul>
xi	The Ministry may revoke or suspend the clearance, if implementation of any of the above conditions is not satisfactory.	<ul style="list-style-type: none"> <li>• Noted and shall be complied.</li> </ul>
xii	The Ministry reserves the right to stipulate additional conditions if found necessary. The Company in a time bound manner shall implement these conditions	<ul style="list-style-type: none"> <li>• Noted and shall be complied.</li> </ul>
xiii	The Regional Office of this Ministry shall monitor compliance of the stipulated conditions. The project authorities should extend full cooperation to the officer (s) of the Regional Office by furnishing the requisite data / information/monitoring reports	<ul style="list-style-type: none"> <li>• Noted and shall be complied.</li> </ul>
xiv	Any appeal against this EC shall lie with the National Green Tribunal, if preferred, within a period of 30 days as prescribed under Section 16 of the National Green Tribunal Act, 2010	<ul style="list-style-type: none"> <li>• Noted.</li> </ul>

**Six Monthly Compliance Status (Oct'20 to Mar'21) of Environmental Clearance for 6.0 MTPA Integrated Steel Plant 7<sup>th</sup> Nov 2006, 10<sup>th</sup> Oct 2012, 13<sup>th</sup> May 2015 and 20<sup>th</sup> Dec 2016 and expansion from 6 MTPA to 8 MTPA Crude Steel and 9 MTPA Finished Steel, 24<sup>th</sup> Dec 2020 by Tata Steel Ltd at Kalinganagar Industrial Complex, Jajpur, Odisha**

**Annexure- 1**

AMBIENT AIR QUALITY (INSIDE PLANT)														
Period: Oct'20 to Mar'21 (Monthly Average)														
Sl. No	Sampling Stations	Month	PM <sub>10</sub> µg/m <sup>3</sup>	PM <sub>2.5</sub> µg /m <sup>3</sup>	SO <sub>2</sub> µg/ m <sup>3</sup>	NO <sub>x</sub> µg / m <sup>3</sup>	CO mg/m <sup>3</sup>	Ozone (O <sub>3</sub> ) µg/m <sup>3</sup>	Lead (Pb) µg/m <sup>3</sup>	Ammonia (NH <sub>3</sub> ) µg/m <sup>3</sup>	Benzene (C <sub>6</sub> H <sub>6</sub> )	Benzo (a) Pyrene ng /m <sup>3</sup>	Arsenic (As) ng /m <sup>3</sup>	Nickel (Ni) ng/m <sup>3</sup>
1	Coke Oven	Oct'20 To Mar'21	88.1	49.7	8.4	34.5	0.97	<10	<0.01	<20	< 2.0	BDL	< 2.0	< 2.0
2	Power Plant		80.0	48.6	6.8	20.3	0.89	<10	<0.01	<20	< 2.0	BDL	< 2.0	< 2.0
3	Gate-1		79.4	41.7	7.3	24.8	0.79	<10	<0.01	<20	< 2.0	BDL	< 2.0	< 2.0
4	HSM		86.7	49.2	8.1	28.8	0.84	<10	<0.01	<20	< 2.0	BDL	< 2.0	< 2.0
5	Gate No:4		83.4	40.0	7.9	30.7	0.91	<10	<0.01	<20	< 2.0	BDL	< 2.0	< 2.0
6	SMS		86.4	47.6	7.4	29.9	0.77	<10	<0.01	<20	< 2.0	BDL	< 2.0	< 2.0
<b>C.P.C.B Standard</b>			<b>100 (24 Hrs.)</b>	<b>60 (24 Hrs.)</b>	<b>80 (24 Hrs.)</b>	<b>80 (24 Hrs.)</b>	<b>2 (8 Hrs.)</b>	<b>100 (8 Hrs.)</b>	<b>1 (24 Hrs.)</b>	<b>400 (24 Hrs.)</b>	<b>05 (Annual)</b>	<b>01 (Annual)</b>	<b>06 (Annual)</b>	<b>20 (Annual)</b>

**Six Monthly Compliance Status (Oct'20 to Mar'21) of Environmental Clearance for 6.0 MTPA Integrated Steel Plant 7<sup>th</sup> Nov 2006, 10<sup>th</sup> Oct 2012, 13<sup>th</sup> May 2015 and 20<sup>th</sup> Dec 2016 and expansion from 6 MTPA to 8 MTPA Crude Steel and 9 MTPA Finished Steel, 24<sup>th</sup> Dec 2020 by Tata Steel Ltd at Kalinganagar Industrial Complex, Jajpur, Odisha**

<b>Noise Monitoring Report</b>																	
<b>Period: Oct'20 to Mar'21</b>																	
Sl. No	NOISE MONITORING LOCATIONS	Oct'20		Nov'20		Dec'20		Jan'21		Feb'21		Mar'21		Average			
		in dBA (Day Time) 06.00am to 10.00pm	in dBA (Night Time) 10.00pm to 06.00am	in dBA (Day Time) 06.00am to 10.00pm	in dBA (Night Time) 10.00pm to 06.00am	in dBA (Day Time) 06.00am to 10.00pm	in dBA (Night Time) 10.00pm to 06.00am	in dBA (Day Time) 06.00am to 10.00pm	in dBA (Night Time) 10.00pm to 06.00am	in dBA (Day Time) 06.00am to 10.00pm	in dBA (Night Time) 10.00pm to 06.00am	in dBA (Day Time) 06.00am to 10.00pm	in dBA (Night Time) 10.00pm to 06.00am	in dBA (Day Time) 06.00am to 10.00pm	NOISE STANDARDS Day time (in dBA)	in dBA (Night Time) 10.00pm to 06.00am	NOISE STANDARDS Night time (in dBA)
1	Sinter Plant	63.1	54.6	66.2	54.9	67.3	52.1	67.9	55.8	69.8	53.3	67.7	55.9	67.0	75	54.4	70
2	Blast Furnace	70.4	51.7	68.8	52.4	66.6	52.7	65.8	51.3	67.4	56.6	70.6	54.3	68.3	75	53.2	70
3	SMS	61.7	58.3	78.4	46.9	57.4	53.3	66.2	49.4	62.8	51.2	74.9	51.7	66.9	75	51.8	70
4	Gate-1	66.9	52.5	58.1	50.8	67.7	51.2	61.9	53.9	66.4	59.3	68.3	55.9	64.9	75	53.9	70
5	RMHS	69.3	54.8	66.7	48.6	68.4	56.8	67.9	51.4	63.8	48.2	67.9	49.1	67.3	75	51.5	70
6	HSM	71.2	51.4	68.1	48.3	69.2	53.2	69.4	51.1	68.3	51.8	64.2	55.3	68.4	75	51.9	70
7	LCP	69.5	56.1	56.7	51.5	68.3	49.7	64.8	49.9	60.7	51.9	62.9	49.9	63.8	75	51.5	70

**Six Monthly Compliance Status (Oct'20 to Mar'21) of Environmental Clearance for 6.0 MTPA Integrated Steel Plant 7<sup>th</sup> Nov 2006, 10<sup>th</sup> Oct 2012, 13<sup>th</sup> May 2015 and 20<sup>th</sup> Dec 2016 and expansion from 6 MTPA to 8 MTPA Crude Steel and 9 MTPA Finished Steel, 24<sup>th</sup> Dec 2020 by Tata Steel Ltd at Kalinganagar Industrial Complex, Jajpur, Odisha**

GROUND WATER QUALITY MONITORING REPORT									
Period: Oct'20 to Mar'21									
Sl. No.	Parameter	Standard as per BIS: 10500	Oct'20	Nov'20	Dec'20	Jan'21	Feb'21	Mar'21	Average
1	pH Value	6.5-8.5	6.93	6.71	7.16	6.96	7.18	7.36	7.1
2	Colour	5	CL	CL	CL	CL	CL	CL	CL
3	Odour	U/O	U/O	U/O	U/O	U/O	U/O	U/O	U/O
4	Taste	Agreeable	AL	AL	AL	AL	AL	AL	AL
5	Turbidity (NTU), max	5	1.8	2.6	1.4	1.7	0.62	0.28	1.40
6	Anionic Detergents, mg/l, max	0.2	ND	ND	ND	ND	ND	ND	ND
7	Aluminium as Al, mg/l, max	0.03	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
8	Alkalinity, mg/l, max	200	132	94	102	131	128	110	116.2
9	Total Hardness (as CaCO <sub>3</sub> ), mg/l, max	300	122	132	102	96	122	164	123.0
10	Electrical Conductivity at 25°C, µmho/cm	\$	531.7	327	231	172	488	192	323.6
11	Calcium (as Ca), mg/l, max	75	40.1	32.8	36.4	46	32.6	33.4	36.9
12	Magnesium as Mg, mg/l, max	\$	8.1	10.2	8.4	4.1	8.2	14.8	9.0
13	Sodium as Na, mg/l, max	\$	4.3	4.2	13.8	5.4	5.6	6.1	6.6
14	Potassium as K, mg/l, max	\$	1.2	2.4	4.6	1.8	1.8	1.9	2.3
15	Copper (as Cu), mg/l, max	0.05	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
16	Iron (as Fe), mg/l, max	0.3	0.23	0.16	0.14	0.12	0.26	0.2	0.19
17	Manganese (as Mn), mg/l, max	0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
18	Chloride (as Cl), mg/l, max	250	9.6	11.6	20.6	10.6	9.8	26.8	14.8
19	Sulphate (as SO <sub>4</sub> ), mg/l, max	200	6.1	9.2	13.6	6.8	7.8	24.8	11.4
20	Nitrate (as NO <sub>3</sub> ), mg/l, max	45	27.4	2.9	8.2	29.6	28.4	7.1	17.3
21	Fluoride (as F), mg/l, max	1	0.11	0.07	0.1	0.01	0.06	0.03	0.06
22	Phenolic Compounds (as C <sub>6</sub> H <sub>5</sub> OH), mg/l, max	0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
23	Mercury (as Hg), mg/l, max	0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
24	Cadmium (as Cd), mg/l, max	0.01	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
25	Selenium (as Se), mg/l, max	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
26	Arsenic (as As), mg/l, max	0.05	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004
27	Cyanide (as CN), mg/l, max	0.05	BDL	BDL	BDL	BDL	BDL	BDL	BDL
28	Lead (as Pb), mg/l, max	0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
29	Zinc (as Zn), mg/l, max	5	0.44	0.62	0.49	0.54	0.46	0.14	0.45
30	Nickel as Ni, mg/l, max	\$	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
31	Total Chromium as Cr, mg/l, max	\$	0.04	0.01	0.18	0.018	0.13	0.02	0.07
32	Chromium (as Cr+6), mg/l, max	0.05	0.016	0.004	0.007	0.005	0.016	0.006	0.01
33	Mineral Oil, mg/l, max	0.01	ND	ND	ND	ND	ND	ND	ND
34	Total Coliform, MPN/ 100 ml	\$	<1.1	ND	ND	ND	ND	ND	ND
35	E-coli, MPN/ 100 ml	\$	Absent	Absent	Absent	Absent	Absent	Absent	Absent
36	Total Dissolved Solids, mg/l, max	500	162	128	156	174	174	290	181
37	Residual, free Chlorine, mg/l, min	0.2	ND	ND	ND	ND	ND	ND	ND
38	Boron mg/l, max	1	BDL	BDL	BDL	BDL	BDL	BDL	BDL

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**VOC MONITORING REPORT OF COKE OVEN**

(Monthly average from Oct'20 to Mar'21)

Sl. No	Monitoring Location	Month	Benzene (C <sub>6</sub> H <sub>6</sub> ) µg/m <sup>3</sup>	Benzo (a) Pyrene ng/m <sup>3</sup>
1	Coke Oven Plant	Oct'20 to March'21	1.38	0.16
2	Near Coke Oven Battery#1		<2.0	BDL
3	Near Coke Oven Battery#2		<2.0	0.13
4	Near CDQ Area		1.51	BDL
<b>C.P.C.B Standard</b>			<b>05 µg/m<sup>3</sup> (Annual)</b>	<b>01 ng/m<sup>3</sup> (Annual)</b>

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**Six Monthly Compliance Status (Oct'20 to Mar'21) of Environmental Clearance for 6.0 MTPA Integrated Steel Plant 7<sup>th</sup> Nov 2006, 10<sup>th</sup> Oct 2012, 13<sup>th</sup> May 2015 and 20<sup>th</sup> Dec 2016 and expansion from 6 MTPA to 8 MTPA Crude Steel and 9 MTPA Finished Steel, 24<sup>th</sup> Dec 2020 by Tata Steel Ltd at Kalinganagar Industrial Complex, Jajpur, Odisha**

**Some Photographs**



**Water reservoir pump house inside plant**



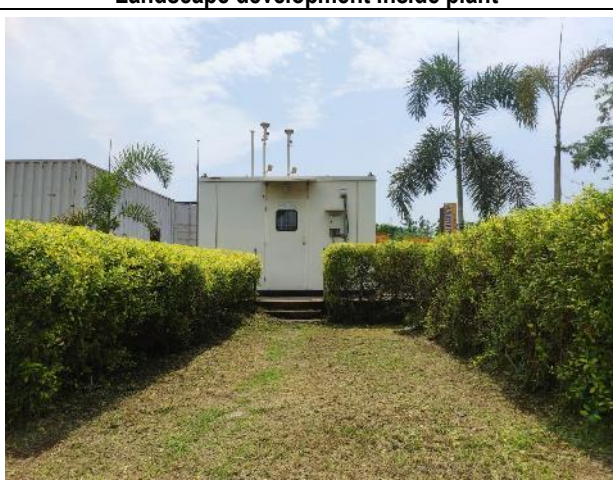
**Mist type high jet water sprinkler for dust suppression**



**Landscape development inside plant**



**Vertical garden and digital display board at Main gate**



**Online Ambient Air Quality Monitoring Station inside plant**



**Work Zone Noise Monitoring**

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