

**Steel Authority of India Limited
Durgapur Steel Plant
Environment Control Department**

1. Project Code :

2. Name of the Project : Expansion-cum-modernization plan of Durgapur Steel Plant (2.088 MTPA to 3.50 MTPA, Gross Hot Metal) and Captive Power Plant (40 MW) at Faridpur, Burdwan, Durgapur, West Bengal by M/s Steel Authority of India (SAIL)

3. Clearance Letter No. with date : Office Memorandum No. J-11011/492/2007-IA II (I), dated 10th Sept, 2007 Ministry of Environment & Forests, and subsequent amendments dtd. 23.12.08, 05.07.13, 20.11.14 & 19.02.16

4. Period of Compliance Report : 01.10.2018 to 31.03.2019

I. Specific Conditions :

S.N.	Conditions	Compliance Status
1	Dust extraction (DE) system with electrostatic precipitator (ESP) to Sinter plant, Steel melting shop (SMS) and DE system with ESP to Blast furnace (BF); DE system to dolomite calcination plant and coal based Power plant shall be provided to control emissions within 50 mg/Nm ³ . All the BFs shall be provided coal dust injection system to reduce air emissions. Waste flue gas generated in BF shall be reused in BF. High Pressure Liquid Aspiration (HPLA) system, new charging cars with screw feeders and hydro-jet door cleaners shall be provided to Coke oven battery. On-line stack monitoring facilities for all the stacks shall be provided and reports submitted to the WBPCB, CPCB and Ministry's Regional Office at Bhubaneswar.	<p>Dust Extraction system to New Dolomite Calcination Plant has been installed to control emissions within 50 mg/Nm³.</p> <p>Coal dust injection system has already been provided in all the Blast Furnaces.</p> <p>Hydro-jet cleaning system has been provided for the door and door frame cleaning of Coke Oven Battery No.2 & 5. The charging cars have been equipped with sealed charging sleeves along with screw feeding charging mechanism, magnetic lid lifter and lid & frame cleaning mechanism, High Pressure Liquid Aspiration (HPLA) system & water sealed AP covers have also been provided. All the doors of Coke Oven Battery # 2 & 5 are of zero leak type. Battery No.2 & 5 have also been equipped with Computerised Combustion Control system for maintaining optimum heating regime.</p> <p>Fugitive emission level like PLD, PLL, PLO etc. are maintained well within the norm in Battery No.2 & 5.</p>

		<p>On-line stack monitoring facilities have been installed and commissioned in all 37 nos. stacks with data transmission to CPCB server. Reports being regularly submitted to the WBPCB, CPCB and Ministry's Regional Office at Bhubaneswar.</p> <p>Although the environmental clearance for expansion cum modernization of Durgapur Steel Plant for 3.5 MT hot metal has been obtained, due to meltdown in global economy from Oct'08, the expansion plan was reviewed and capacity expansion limited to 2.45 MT hot metal. Facilities like New Sinter Plant-3, Re-building of Blast Furnace-1 and three Converter operation in SMS have not been installed under the undergoing modernization programme. Production capacity as per EC for the Expansion-cum-modernisation of Durgapur Steel Plant and production figures for the last three years are given in Annexure- I (Ref.: Amendment dtd. 19.02.16).</p>																																																		
2	<p>Gaseous emission levels including secondary fugitive emissions shall be controlled within the latest permissible limits issued by the Ministry, regularly monitored and records maintained. Guidelines / Code of practice issued by the CPCB shall be followed.</p>	<p>Coke Oven Battery No.2 & 5 have been provided with double Gas Collecting(GC) main which will maintain better/uniform suction inside the ovens and thus the fugitive emission from different parts of battery has been reduced.</p> <p>For existing units the above are regularly monitored and reports being sent to the State Pollution Control Board/ Central Pollution Control Board on monthly basis.</p> <p>Monitoring report of stack emission by third party is given below :- Unit: mg/Nm³</p> <table border="1" data-bbox="993 1037 1801 1408"> <thead> <tr> <th>S. N.</th> <th>Stack Location</th> <th>PM</th> <th>SO₂</th> <th>NO_x</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>Coke Oven Battery # 1</td> <td>44</td> <td>210</td> <td>131</td> </tr> <tr> <td>2</td> <td>Coke Oven Battery # 2</td> <td>37</td> <td>222</td> <td>127</td> </tr> <tr> <td>3</td> <td>Coke Oven Battery # 5</td> <td>35</td> <td>152</td> <td>121</td> </tr> <tr> <td>4</td> <td>Coke Oven Battery # 6</td> <td>41</td> <td>174</td> <td>85</td> </tr> <tr> <td>5</td> <td>Sinter Plant I</td> <td>102</td> <td>74</td> <td>38</td> </tr> <tr> <td>6</td> <td>Sinter Plant II</td> <td>81</td> <td>37</td> <td>18</td> </tr> <tr> <td>7</td> <td>Blast Furnace # 2</td> <td>12</td> <td>79</td> <td>47</td> </tr> <tr> <td>8</td> <td>Blast Furnace # 3</td> <td>16</td> <td>72</td> <td>43</td> </tr> <tr> <td>9</td> <td>Blast Furnace # 4</td> <td>8</td> <td>150</td> <td>83</td> </tr> </tbody> </table>	S. N.	Stack Location	PM	SO ₂	NO _x	1	Coke Oven Battery # 1	44	210	131	2	Coke Oven Battery # 2	37	222	127	3	Coke Oven Battery # 5	35	152	121	4	Coke Oven Battery # 6	41	174	85	5	Sinter Plant I	102	74	38	6	Sinter Plant II	81	37	18	7	Blast Furnace # 2	12	79	47	8	Blast Furnace # 3	16	72	43	9	Blast Furnace # 4	8	150	83
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10	Coal Dust Injection (CDI)	38	64	33
11	Ladle Furnace	27	70	35
12	NLCP#1	95	46	26
13	NLCP #2	84	39	22
14	NLCP #3	87	32	22
15	Power Plant Boiler # 1	12	142	87
16	Power Plant Boiler # 2	14	142	71
17	Power Plant Boiler # 3	7	158	76
18	Power Plant Boiler # 4	8	152	71
19	Power Plant Boiler # 5	14	153	113
20	Power Plant Boiler # 6	18	159	92
21	Power Plant Boiler # 7	11	176	75
22	Merchant Mill	21	115	48
23	Section Mill	19	69	25
24	W & A Plant	16	72	41

Copies of the report enclosed

Fugitive Emission monitoring data at Coke-oven Batteries :

Battery no.	PLD (%)	PLL (%)	PLO (%)	Charging Emission in sec/charge
Battery No. 1	3.88	0.47	1.62	62
Battery No. 2	2.75	0.31	1.07	27
Battery No. 5	2.90	0.22	1.23	36
Battery No. 6	3.51	0.40	1.49	58

		<p>Fugitive emissions monitoring data at Blast Furnaces & Steel Melting Shop</p> <table border="1" data-bbox="974 280 1780 565"> <thead> <tr> <th>Unit</th> <th>PM₁₀ (µg/m³)</th> <th>SO₂ (µg/m³)</th> <th>NO_x (µg/m³)</th> <th>CO (µg/m³)</th> <th>Pb (µg/m³)</th> </tr> </thead> <tbody> <tr> <td>Blast Furnace</td> <td>1950</td> <td>25.7</td> <td>37.3</td> <td>1812</td> <td>0.39</td> </tr> <tr> <td>Steel Melting Shop</td> <td>1471</td> <td>31.2</td> <td>46.3</td> <td>1430</td> <td>0.167</td> </tr> </tbody> </table> <p>Copies of the report enclosed</p> <p>Uploading of six monthly compliance status of the conditions stipulated in the environmental clearance, production figures and monitored data is done in SAIL's website at the following address: www.sail.co.in> Durgapur Steel Plant > Environment Clearance (EC) Orders</p>	Unit	PM ₁₀ (µg/m ³)	SO ₂ (µg/m ³)	NO _x (µg/m ³)	CO (µg/m ³)	Pb (µg/m ³)	Blast Furnace	1950	25.7	37.3	1812	0.39	Steel Melting Shop	1471	31.2	46.3	1430	0.167
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3	<p>Dust extraction system with bag filters shall be provided at various dust generating points. Covered conveyers, dry fogging and dust extraction system shall be provided to control fugitive emissions in Raw material handling area. Dust suppression through water sprinkling shall be adopted in coal and iron ore storage area. In-plant control measures for checking fugitive emissions from all the vulnerable sources shall be provided.</p>	<p>Dust extraction system with bag filters has been provided at various dust generating points. Covered conveyers, dry fogging and dust extraction system have been provided to control fugitive emissions in Raw material handling area. Dust suppression through water sprinkling has been adopted in coal and iron ore storage area.</p> <p>Dry fog dust suppression system has been installed at RMHP and Coke Oven coal crushing area .</p> <p>Dry fog dust suppression systems has also been installed at Blast Furnace 2,3& 4</p>																		
4	<p>Total requirement of the water from Harbor Pond at Durgapur Barrage on River Damodar shall not exceed 1,39,008 m³ /day as per prior 'Permission' accorded by the Damodar Valley Corporation. Effluent Treatment Plant (ETP) shall be installed for the treatment of process water. Blow down from new Power plant, BOD and BF shall be</p>	<p>Care has been taken in our modernization plan so that requirement of the water from Durgapur Barrage on River Damodar shall not exceed 1,39,008 m³ /day. Presently industrial water intake for the plant is approx. 50,000m³/day. BOD outlet water is used for coke quenching. Blow down from Power plant and BF is reused in pig casting machines. The treated waste water from existing processes are being taken to the system.</p>																		

	<p>reused in pig casting machine and coke quenching in Coke ovens, new SMS slag yard for spraying as hot slag and slag granulation plant respectively. The treated wastewater from all other processes shall be recycled into the process to the maximum extent possible and reused either in the process or for dust suppression or green belt development. The additional treated effluent discharge to Singaran Nala and Tamla Nala shall not exceed 8,304 m³/day and discharged only after conforming to the norms prescribed by the WBPCB and under E(P)A Rules. Domestic effluent shall be treated in sewage treatment plant (STP) and used for dust suppression and green belt development.</p>	<p>The additional treated effluent discharge to Singaran Nala and Tamla Nala is well below 8,304 m³/day. In fact, presently total effluent discharge to Singaran Nala and Tamla Nala is approx. 21,600m³/day which is within the permissible limit and effluent is discharged only after conforming to the norms prescribed by the WBPCB and under E(P)A Rules. Domestic effluent is being treated in sewage treatment plant (STP) and is being used for green belt development.</p> <p>Cooling water consumption has been reduced by 2.2 million m³ /year over last three years.</p> <p>Specific water consumption has been reduced to 3.23 m³/TCS from 3.78 m³/TCS over the last three years.</p>						
5	<p>After expansion, only existing ash pond (85 acre) shall be used for ash disposal and no new ash pond shall be constructed without prior permission. All the fly ash from Captive power plant shall be used in brick manufacturing at site itself or provided to cement manufacturers or used for road making. Bottom ash shall be used for filling low-lying areas inside the plant premises. Compliance to fly ash notification 1999 and subsequently amended in 2003 shall be ensured.</p>	<p>The upcoming 2X20 MW captive power plant coming under the modernization scheme is being installed by M/s NSPCL and for which M/s NSPCL has taken a separate Environmental Clearance from MoEF& CC.</p> <p>In DSP's existing (old) Power Plant no fly ash is generated as it is having 4 nos. travelling grate stocker fired boilers which generate cinder which is being sold to outside buyers regularly. The details of generation and disposal of cinder is given below.</p> <p style="text-align: right;">(Figs. In Tonne)</p> <table border="1" data-bbox="1066 971 1789 1045"> <thead> <tr> <th>Year</th> <th>Generation</th> <th>% Disposal</th> </tr> </thead> <tbody> <tr> <td>Oct'18-Mar'19</td> <td>1762</td> <td>100</td> </tr> </tbody> </table>	Year	Generation	% Disposal	Oct'18-Mar'19	1762	100
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6	<p>As proposed in EIA/EMP, Dolo fines, Lime fines and Mill scales shall be fully utilized in Sinter plant. BF flue dust, BF sludge from gas cleaning plant, BOF slag ESP dust from Sinter plant shall be reused in the Sinter plant. Part of the BF sludge and BOF slag shall be dumped in existing waste dump area of DSP. BOF slag shall also be reused in BF, Sinter plant, construction as rail ballast (70%) or dumped (30%). BF slag shall be either sold or used for road construction. Waste refractories and cinder shall be either recycled or sold. Waste oil shall be sold to recyclers or</p>	<p>Effort has been given to utilize/dispose solid wastes as per the condition for Expansion-cum-modernization units.</p>						

properly disposed off as per Hazardous Waste (Management & Handling) Rules, 1989 and subsequent amendments.

Type and quantities of Solid waste generated and mode of their utilization during **Oct'18-Mar'19**:

S. N.	Product	Generation (T)	Mode of Disposal
1	BF Slag	424783	Sold to cement manufacturers & used for road making
2	BF Flue Dust	7303	Sold to market
3	BF Sludge	4308	Used for land filling
4	BOF Slag	165064	Used as flux for iron making, sinter making & steel making and used for rail ballast and road making
5	BOF Sludge	19294	Used in sinter plant
6	Mill Scale	26985	Used in sinter plant
7	Lime Fines	13813	Used in sinter plant
8	Waste refractory	2508	Sold to refractory manufacturers
9	Cinder	1762	Sold to market
10	Sinter plant ESP Dust	76040	Used in sinter plant

The total solid waste utilization is about 93.6%. At present, BF slag & Steel slag utilization is around 100% and 71% level respectively during 2018-19. Efforts are being made to further increase Solid waste utilization.

Waste/used oil is being sold to registered recyclers of Pollution Control Board through auction process as per Hazardous Waste (Management & Handling) Rules, 1989 and subsequent amendments.

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7	Green belt shall be developed in 250 ha.(>40%), out of 600 ha. area within and around the plant premises to mitigate the effects of fugitive emissions all around the plant as per the CPCB guidelines in consultation with DFO.	The details have been given in the prescribed format attached as Annexure -II.																				

II. General Conditions :

S.N.	Conditions	Compliance Status
1	The project authority shall adhere to the stipulations made by West Bengal Pollution Control Board (WBPCB) and State Government.	All the stipulations given by West Bengal Pollution Control Board are being strictly adhered to.
2	No further expansion or modification of the plant shall be carried out without prior approval of this Ministry.	This will be adhered to.
3	The gaseous emissions from various process units shall conform to the load/mass based standards notified by this Ministry on 19th May, 1993 and standards prescribed from time to time. The West Bengal Pollution Control Board (WBPCB) may specify more stringent standards for the relevant parameters	Necessary measures have been taken to control gaseous emission within norm in Expansion-cum-modernization units as mentioned above. The existing units are conforming to the standards specified by CPCB & WBPCB.

	<p>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. Interlocking facilities shall be provided so that process can be automatically stopped in case emission level exceeds the limit.</p>																																																																																		
4	<p>Ambient air quality monitoring stations shall be set up as per statutory requirement in consultation with the WBPCB. Ambient air quality including ambient noise levels shall not exceed the standards stipulated under EPA or by the State authorities. Monitoring of ambient air quality shall be carried out regularly in consultation with WBPCB and data submitted to the CPCB and WBPCB regularly. The instruments used for ambient air quality monitoring shall be calibrated time to time.</p>	<p>Ambient Air monitoring stations are already there. In addition a Continuous AAQ monitoring station has been installed in township. Location and specifications have been finalized in consultation with WBPCB.</p> <p>Monitoring of ambient air quality is being done through NABL accredited M/s R V Briggs & Co. Private Ltd, and the data are regularly submitted to CPCB & WBPCB.</p> <p>AAQ report monitored by third party (M/sR V Briggs & Co. Private Ltd):</p> <table border="1" data-bbox="926 672 1892 1263"> <thead> <tr> <th rowspan="2">Sl. No.</th> <th rowspan="2">Parameter</th> <th rowspan="2">Unit</th> <th colspan="3">Location</th> </tr> <tr> <th>ED Works building</th> <th>R&C Lab Roof Top</th> <th>CISF Gate Pass site</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>PM₁₀</td> <td>µg/m³</td> <td>86</td> <td>70</td> <td>72</td> </tr> <tr> <td>2</td> <td>PM_{2.5}</td> <td>µg/m³</td> <td>56</td> <td>32</td> <td>38</td> </tr> <tr> <td>3</td> <td>SO₂</td> <td>µg/m³</td> <td>11.3</td> <td>21.0</td> <td>20.1</td> </tr> <tr> <td>4</td> <td>NO₂</td> <td>µg/m³</td> <td>69.4</td> <td>42.1</td> <td>37.0</td> </tr> <tr> <td>5</td> <td>Pb</td> <td>µg/m³</td> <td>0.024</td> <td>0.037</td> <td>0.037</td> </tr> <tr> <td>6</td> <td>Benzene</td> <td>µg/m³</td> <td>1.17</td> <td>2.16</td> <td>1.04</td> </tr> <tr> <td>7</td> <td>NH₃</td> <td>µg/m³</td> <td>21.3</td> <td>31.3</td> <td>34.0</td> </tr> <tr> <td>8</td> <td>CO</td> <td>µg/m³</td> <td>1.36</td> <td>1.12</td> <td>1.11</td> </tr> <tr> <td>9</td> <td>Ozone (O₃)</td> <td>µg/m³</td> <td>28.0</td> <td>22.1</td> <td>36.1</td> </tr> <tr> <td>10</td> <td>Benzo(a) Pyrene</td> <td>Ng/m³</td> <td><0.5</td> <td><0.5</td> <td><0.5</td> </tr> <tr> <td>11</td> <td>As</td> <td>Ng/m³</td> <td><0.25</td> <td><0.25</td> <td>0.26</td> </tr> <tr> <td>12</td> <td>Ni</td> <td>Ng/m³</td> <td>11.6</td> <td>10.6</td> <td>5.8</td> </tr> </tbody> </table> <p>Copies of the report enclosed</p> <p>Ambient noise level is monitored using calibrated instrument and the results are much below the prescribed norms (reports sent to WBPCB & CPCB)</p>	Sl. No.	Parameter	Unit	Location			ED Works building	R&C Lab Roof Top	CISF Gate Pass site	1	PM ₁₀	µg/m ³	86	70	72	2	PM _{2.5}	µg/m ³	56	32	38	3	SO ₂	µg/m ³	11.3	21.0	20.1	4	NO ₂	µg/m ³	69.4	42.1	37.0	5	Pb	µg/m ³	0.024	0.037	0.037	6	Benzene	µg/m ³	1.17	2.16	1.04	7	NH ₃	µg/m ³	21.3	31.3	34.0	8	CO	µg/m ³	1.36	1.12	1.11	9	Ozone (O ₃)	µg/m ³	28.0	22.1	36.1	10	Benzo(a) Pyrene	Ng/m ³	<0.5	<0.5	<0.5	11	As	Ng/m ³	<0.25	<0.25	0.26	12	Ni	Ng/m ³	11.6	10.6	5.8
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5	<p>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 shall conform to the standards prescribed under Environmental (Protection) Act, 1986 Rules, 1989 viz. 75 dBA (day time) and 70 dBA (night time).</p>	<p>Necessary measures have been taken to control noise level within norm for units under Expansion-cum-modernization. In various units, noise levels are regularly being monitored and monthly reports are being submitted to CPCB & WBPCB.</p> <p>Noise level monitoring report:</p> <p>Work Zone Noise</p> <table border="1" data-bbox="1115 495 1923 906"> <thead> <tr> <th>Sl. No.</th> <th>Location</th> <th>Noise Level Leq (dB(A))</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>Oxygen plant</td> <td>78.4</td> </tr> <tr> <td>2</td> <td>Blast Furnace</td> <td>82.3</td> </tr> <tr> <td>3</td> <td>Turbines (OPP)</td> <td>80.5</td> </tr> <tr> <td>4</td> <td>OPP (other areas)</td> <td>72.1</td> </tr> <tr> <td>5</td> <td>Mills (Rolling / forgoing)</td> <td>79.6</td> </tr> <tr> <td>6</td> <td>SMS</td> <td>74.8</td> </tr> <tr> <td>7</td> <td>SP</td> <td>71.3</td> </tr> <tr> <td>8</td> <td>Coke-oven area</td> <td>73.6</td> </tr> </tbody> </table> <p>Ambient Noise (at the boundary line of the plant)</p> <table border="1" data-bbox="1125 1047 1923 1307"> <thead> <tr> <th rowspan="2">Sl. No.</th> <th rowspan="2">Location</th> <th colspan="2">Leq (dB (A))</th> </tr> <tr> <th>Day time</th> <th>Night time</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>Main Gate</td> <td>71.8</td> <td>63.2</td> </tr> <tr> <td>2</td> <td>Tamla Gate</td> <td>68.3</td> <td>57.8</td> </tr> <tr> <td>3</td> <td>Gate No.2</td> <td>63.4</td> <td>56.1</td> </tr> <tr> <td>4</td> <td>Waria Gate</td> <td>59.1</td> <td>54.3</td> </tr> </tbody> </table>	Sl. No.	Location	Noise Level Leq (dB(A))	1	Oxygen plant	78.4	2	Blast Furnace	82.3	3	Turbines (OPP)	80.5	4	OPP (other areas)	72.1	5	Mills (Rolling / forgoing)	79.6	6	SMS	74.8	7	SP	71.3	8	Coke-oven area	73.6	Sl. No.	Location	Leq (dB (A))		Day time	Night time	1	Main Gate	71.8	63.2	2	Tamla Gate	68.3	57.8	3	Gate No.2	63.4	56.1	4	Waria Gate	59.1	54.3
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3	Turbines (OPP)	80.5																																																	
4	OPP (other areas)	72.1																																																	
5	Mills (Rolling / forgoing)	79.6																																																	
6	SMS	74.8																																																	
7	SP	71.3																																																	
8	Coke-oven area	73.6																																																	
Sl. No.	Location	Leq (dB (A))																																																	
		Day time	Night time																																																
1	Main Gate	71.8	63.2																																																
2	Tamla Gate	68.3	57.8																																																
3	Gate No.2	63.4	56.1																																																
4	Waria Gate	59.1	54.3																																																
6	<p>Occupational health surveillance of the workers shall be done on a regular basis and records maintained as</p>	<p>Occupational health surveillance report for the period Oct'18-Mar'19:-</p>																																																	

	per the Factories Act.	<table border="1" data-bbox="1056 172 1923 654"> <thead> <tr> <th>Sl. No.</th> <th>Parameter</th> <th>Total (Nos.)</th> </tr> </thead> <tbody> <tr> <td>1.</td> <td>OHS Emergency</td> <td>10239</td> </tr> <tr> <td>2.</td> <td>Periodic Medical Examination</td> <td>3127</td> </tr> <tr> <td>3.</td> <td>Vision Testing</td> <td>1257</td> </tr> <tr> <td>4.</td> <td>Biochemistry</td> <td>12962</td> </tr> <tr> <td>5.</td> <td>Pathological Test</td> <td>213</td> </tr> <tr> <td>6.</td> <td>Pulmonary Function Test</td> <td>3103</td> </tr> <tr> <td>7.</td> <td>Audio Test</td> <td>2315</td> </tr> <tr> <td>8.</td> <td>ECG</td> <td>50</td> </tr> <tr> <td>9.</td> <td>X-Ray</td> <td>37</td> </tr> <tr> <td>10.</td> <td>Hygiene Survey</td> <td>23</td> </tr> <tr> <td>11.</td> <td>Hygiene Locations</td> <td>53</td> </tr> <tr> <td>12.</td> <td>Training</td> <td>102</td> </tr> </tbody> </table> <p data-bbox="1016 695 1843 724">The present manpower of DSP Works as on 31/03/2019 is as follows:-</p> <p data-bbox="1016 764 1923 865">No. of employees in works is 9017 and the no. of contract labours is 4250. The frequency of health checkup is once in a year. No noticeable disease has been observed.</p>	Sl. No.	Parameter	Total (Nos.)	1.	OHS Emergency	10239	2.	Periodic Medical Examination	3127	3.	Vision Testing	1257	4.	Biochemistry	12962	5.	Pathological Test	213	6.	Pulmonary Function Test	3103	7.	Audio Test	2315	8.	ECG	50	9.	X-Ray	37	10.	Hygiene Survey	23	11.	Hygiene Locations	53	12.	Training	102
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7	All the environment management measures given in the EIA/EMP shall be implemented and complied with.	Care has been taken for compliance of environment management measures given in EIA/EMP																																							
8	All the recommendations mentioned in the Corporate Responsibility for Environmental Protection (CREP) of CPCB issued for the steel plants shall be implemented.	Compliance to CREP guidelines given at Annexure-III																																							
9	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.	<p data-bbox="919 1162 1923 1263">As per the guidelines issued by West Bengal Pollution Control Board to Durgapur Steel Plant, water bodies must be developed for storing of rainwater and recharging of groundwater is not permitted.</p> <p data-bbox="919 1295 1923 1393">DSP has built up different water bodies/ponds in steel township & surrounding villages under CSR project besides DSP's main water reservoir at Waria. Surface Area wise details are given below :-</p>																																							

		Main Water Reservoir : 8,50,000 m ² MKM Park Lake : 2,80,000 m ² Waterbody at Vasundhara : 25,000 m ² Pond at Dampara : 728 m ² Pond at Akandara : 1,200 m ² Check-Dam at Baganpara : 3,472 m ² Pond at B-Zone Park : 8,190 m ²
	Proper housekeeping and adequate occupational health programmes shall be taken up.	For house keeping a committee has been constituted for overlooking the overall housekeeping of DSP. Lots of jobs like road widening, fencing and garden development , tree plantation, regular cleaning and sweeping of roads, repair and painting of building and structures etc. has been done.DSP has separate Occupational Health department solely responsible to carry out occupational health programmes. DSP is also certified to OHSAS 18000 and best practices being followed for occupational health and safety.
11	The company shall undertake eco-development measures including community welfare measures in the project area.	DSP is having laid down CSR policy and actions are being taken as per the policy. Detailed activities/projects undertaken are given in Annexure-IV . Around Rs. 216.3 Lakhs has been spent for CSR projects during the year 2018-19. SA 8000 : 2008 “ The Social Accountability Standards” certification done by DNV.
12	A separate environmental management cell to carry out various management and monitoring functions shall be set up under the control of Senior Executive.	Already exists. The organization structure of Environment Control Department consist of General Manager(Env. & Utilities), three DGM, one AGM and one Sr. Manager and one Asst. Manager with average experience of 15 years. The Air and Water laboratory is manned by 6 experienced senior analysts.

13	As mentioned in the EIA/EMP, Rs. 338.60 Crores and Rs. 32.25 Crores earmarked towards capital cost and recurring cost /annum respectively for environment pollution control measures shall be used to implement the conditions stipulated by the Ministry of Environment and Forests as well as the State Government. The funds so provided shall not be diverted for any other purpose.	<p>Care has been taken to utilize the proportionate amounts for the ongoing Expansion-cum-modernization towards pollution control measures.</p> <p>Amounts spent on various environment protection measures during last 3 years is as follows: (Figs. In Rs. Crores)</p> <table border="1" data-bbox="1056 386 1871 461"> <thead> <tr> <th>Year</th> <th>2016-17</th> <th>2017-18</th> <th>2018-19</th> </tr> </thead> <tbody> <tr> <td>Expenditure</td> <td>30.98</td> <td>13.12</td> <td>17.97</td> </tr> </tbody> </table>	Year	2016-17	2017-18	2018-19	Expenditure	30.98	13.12	17.97
Year	2016-17	2017-18	2018-19							
Expenditure	30.98	13.12	17.97							
14	The Regional Office of this Ministry at Bhubaneswar / CPCB / WBPCB shall monitor the stipulated conditions. A six monthly compliance report and the monitored data along with statistical interpretation shall be submitted to them regularly.	Six monthly compliance report is being sent to MoEFCC, Bhubaneswar and monthly monitoring reports for the existing units are being sent to CPCB/ WBPCB. After the expansion-cum-modernisation the report will also include these new areas. Six monthly compliance report is also available at SAIL's website.								
15	The 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.	<p>Agreed.</p> <p>All the facilities under the ongoing Expansion-cum-modernization have been completed.</p>								
16	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 West Bengal Pollution Control Board /Committee and may also be seen at Website of Ministry of Environment and Forests at http://envfor.nic.in . This should 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 shall be forwarded to the Regional Office at Bhubaneswar.	Done. The same was sent to your office also.								

Annexure-I

Production Capacity as per EC for Expansion-cum-Modernisation of Durgapur Steel Plant and Production Figures for last three years

Sl. No.	Product	Capacity after Expansion (in MMTPA) (as per EC dtd.10.09.07)	Amended Capacity after Expansion (in MMTPA) (as per Amendment dtd.19.02.16)	Production in 2016-17 (in MMTPA)	Production in 2017-18 (in MMTPA)	Production in 2018-19 (in MMTPA)
1	Gross Coke from Coke Ovens	1.7	1.7	1.27	1.31	1.43
2	Gross Hot Metal from Blast Furnaces	3.5	2.45	2.31	2.28	2.52
3	Liquid Steel from Basic Oxygen Furnaces	3.08	2.2	2.04	2.04	2.22
4	Gross Sinter from Sinter Plant	4.739	3.009	3.17	3.16	3.37
5	Dolomite	0.694	0.694	0.058212	0.055215	0.046801

Sl. No.	Product Mix	Capacity after Expansion (in '000' TPA)(as per EC dtd.10.09.07)	Capacity after Expansion (in '000' TPA) (as per Amendment dtd.19.02.16)	Production in 2016-17 (in '000' TPA)	Production in 2017-18 (in '000' TPA)	Production in 2018-19 (in '000' TPA)
1	Merchant Mill products (TMT bars & Plain rounds)	306.7	330	313	324	340
2	Skelp Mill products (Skelp in coils)	220	0	0	0	0
3	Wheels	86	160	24.7	23.8	20.8
4	Axles	19.8		2.4	1.95	2.4
5	New Bar & Rod Mill products					
	a) Wire rod products	500	0	0	0	0
	b) Bars and Merchant products	700	800	0	0	0
6	New Medium Structural Mill products	1000	1000	39.188	97.402	171.439
7	Cold Pigs	214	39	97.6	59.85	68.87

Sl. No.	By-Product	Capacity after Expansion (in TPA)	Production in 2016-17 (in TPA)	Production in 2017-18 (in TPA)	Production in 2018-19 (in TPA)
1	Ammonium Sulphate	16740	13317	13028	14270
2	Crude Benzol	11616	9359	11754	11259
3	Crude Tar	62544	50769	50219	54599
4	Granulated Slag	888696	496213	451400	556084

Annexure-II

FORMAT FOR PROVIDING PARTICULARS ON GREEN BELT/PLANTATION
UNDER F© ACT 1980 AND E(p) ACT 1986

1.	a) Name of the Project	Expansion-cum-modernisation of Durgapur Steel Plant
	b) Env. /Forest Clearance Nos.	EC letter no. J-11011/492/2007-IA-II(I) dated 10.09.2007
2.	Location, Block/Sub. Divn./Dist/State	Faridpur, Burdwan, Durgapur, West Bengal
3.	Address for communication	General Manager (Env. & Utilities), Durgapur Steel Plant, Durgapur – 713203
4.	Existing vegetation in the area region :	
	a) Species (trees/shrubs/grasses/climbers)	Woody plants
	b) Major prevalent species of each type	Sonajhuri (Acacia species), Teak plant, Sisoo plants, Krishna Chura&RadhaChura
5.	Land coverage by the project :	
	a) Total area under the project	20.5 hectares
	b) Area covered for basic infrastructure (roads/buildings/factory etc.)	Records not available
6.	Details about natural vegetation :	
	a) Name and number of trees/species felled	Nil
	b) Name and number of plants and species still available in the area	Nil
	c) By protecting the area will indigenous stock come up	Not applicable
	d) Extent of green belt developed	387.9hectares (from 2009-10 to 2018-19)
7.	Plantation required to be carried out as per :	
	a) Conditions of Environmental clearance in ha./ Nos.	Green belt to be developed in 250 hectare within and around the plant premises

	b) Conditions for Forest Act (c) clearance in ha. /Nos.	Not applicable
	c) Voluntarily in ha. /Nos.	-

8.	Details of plantation					
a) Total area available for plantation in each category						
i)Green Belt	ii)Dumps	iii)Back filled area	iv)Road sides	v)Block plantation		
387.9 ha	-	-	-	-		
b) Plantation details (category wise & methodology used)						
Year of Plantation	Species planted	Spacing	Height attained (in ft.)	Total area covered (in hectares)	Area still available	
2014-15	Woody plants	2.5 metres	5 – 12	21.45	n.a.	
2015-16	-do-	-do-	4 – 10	72.52	-do-	
2016-17	-do-	-do-	4 – 9	19.25	-do-	
2017-18	-do-	-do-	3 – 6	80.94	-do-	
2018-19	-do-	-do-	2- 4	24.28	-do-	
c) Survival of plantation		1 st year	2 nd year	3 rd year	4 th year	5 th year
		2014-15	2015-16	2016-17	2017-18	2018-19
- Total plantation (No.)		42300	115900	30800	140000	40000
- Survival (No.)		36010	98585	26193	118860	38400
- Survival (%)		85.13	85.06	85.04	84.90	96.00
9.	Agency carrying out plantation and maintenance	i) Horticulture & Social Forestry Department, Durgapur Steel Plant ii) Divisional Forest Office, Govt. of West Bengal, Bidhan Nagar, Durgapur				

10.	Financial details (year wise) plantation wise and item wise			
Sl. No.	Year	Funds allocated (Rs. Lakhs)	Expenditure made (Rs. Lakhs)	Average cost of each surviving plant (in Rs.)
1.	2014-15	23.16	23.16	64.31
2.	2015-16	23.36	23.36	23.69
3.	2016-17	18.81	18.81	71.81
4.	2017-18	25	25	21.03
5.	2018-19	24	24	62.5
11.	Inspection of plantation by field experts and their comments and follow up actions		Records not available	
12.	Remarks/ any other information		Plantation target for 2019-20 is 50,000 nos.	

Compliance to CREP guidelines

1. Coke Oven Plants

- PLD, PLL and PLO are all within norm.

Battery No.	PLD (%)	PLL (%)	PLO (%)	Charging emission (sec/ charge)
Battery No. 1	3.88	0.47	1.62	62
Battery No. 2	2.75	0.31	1.07	27
Battery No. 5	2.90	0.22	1.23	36
Battery No. 6	3.51	0.40	1.49	58

- Rebuilding of Coke Oven Batteries

- Bat # 1 Rebuilding – To be taken up from Apr' 2020
- Bat # 2 Rebuilding – Completed
- Bat # 3 Rebuilding – Cold Repair from Apr'2017 to Dec'2019
- Bat # 4 Rebuilding – Phased out
- Bat # 5 Rebuilding – Completed
- Bat # 6 Rebuilding - Cold and Hot repair from March'2016 to Jun'2017; Rebuilding planned from Oct'2021

2. Steel Melting Shop

Fugitive Emissions :

Reduction level at present is 85 % through the following actions :

- a. Mouth jam cleaning being carried out on requirement basis instead of opportunity basis to result proper sealing of skirt over converter mouth
 - b. Iron ore & dolomite being charged in small batches instead of 500 kg or 1 ton
 - c. Scrubber cleaning being done after every 250- 300 heats
 - d. To have proper suction and to reduce puffing at converter mouth gas flow being maintained by running ID fan at a speed of +1300 rpm
- **100 % Reduction by Installation of Dog House- Order placed on M/s SMS GmbH, Germany on 30.01.2019. Completion will take 20 months from order placement.**

3. Blast Furnace

Direct inject of reducing agents :

- CDI in operation in all the three Blast Furnaces

4. Solid Waste/ Hazardous Waste Management

Utilisation of SMS/ BF Slag during 2018-19 :

Waste	Generation (T)	Utilisation (T)	% Utilisation
BOF Slag	313733	223430	71.2
BF Slag	819009	819009	100
Total	1132742	1042439	92

Efforts to enhance BOF slag utilization :

- Efforts taken for utilization of weathered BOF/Steel Slag for road making by NRRDA under Pradhan Mantri Gram SadakYojna .

Hazardous Wastes

- Utilisation of tar sludge/ ETP sludge :

Tar sludge and ETP sludge are blended with coal and charged into Coke Oven Batteries

- Inventorisation of hazardous waste :

Being done as per Hazardous Waste (M & H) Rules

5. Water Conservation/ Water Pollution

- Specific Water consumption for 2018-19 is 3.23 m³/tcs (<5 m³/tcs)

- CO-BP effluent treatment plant is running efficiently and meeting effluent discharge standards

Location of the sampling point	Parameters monitored (mg/l, except pH)							
	pH	TSS	Phenol	Cyanide as CN ⁻	BOD	COD	Amm. Nitrogen	O & G
<u>COBP Effluent</u> Outlet to BOD plant	6.45- 8.03	14-41	0.22- 0.51	0.043- 0.162	8- 17	125-138	15- 32	3.4- 4.5

6. Installation of Continuous Stack and AAQ systems

- Installation of Continuous stack monitoring system :

Continuous Stack Monitoring systems installed and commissioned in all 37 no. stacks with online data transmission to CPCB server since February'2019.

- Online ambient air quality monitoring station :

- Commissioned in March 2011 in DSP township.
- On-line data transfer on real time basis is being done to the CPCB server from the CAAQM Station

7. Efficient functioning of pollution control equipment

Pollution control equipments are being maintained and run efficiently. Compliance report in this regard is being submitted to CPCB every quarter.

8. Life Cycle Assessment (LCA) study recommendations

Raw Material usage

- Sinter in BF burden increased to around 70 %
- Recycling of iron ore fines, mill scales and BOF sludge being done
- LD slag is being used in BF, SP and in other areas
- CDI commissioned in all BFs

Improvement in Iron & Steel Making Process

- 100 % steel production through LD route
- 100 % steel processed through continuous casting

Clean Technology Development

- CDI in Blast Furnaces-2, 3 & 4
- Bell Less Top at BF-3
- Curtain Flame ignition system for ignition of sinter mix at Sinter Plant

Integrated energy management

- By-product gases are being used for power generation, Rolling mill reheating furnaces etc.
- Energy intensive Blooming & Billet Mills have been phased out and replaced by energy efficient production through Caster route

Integrated waste water management

- Water consumption 3.23 m³/tcs
- Waste water treated in effluent treatment plants of Coke Oven, Blast Furnace, Continuous Casting Plant, Rolling Mills etc. and re-circulated back into process

9. Clean Technology Measures

- Castable runners installed in Blast Furnaces

- Reuse of the waste containing flux & ferrous waste. BOF Slag is being used in BF, SP, Foundry and mill scales, lime fines is used for sinter making. Scrap is being charged in Blast Furnace and BOF.

- Reduction of Green House Gases

By-product gases are being used as fuel and for power generation and continuous efforts are being made to reduce power consumption

- Resource conservation

Waste utilization & water consumption have improved

Year	Waste Utilisation (%)	Water Consumption (M ³ /TCS)
2017-18	92.7	3.29
2018-19	93.6	3.23

- Up-gradation of environment monitoring laboratories and training

Environment Laboratory is ISO 14001 certified and equipped with all latest instruments

- Improve overall House Keeping

House keeping has improved. Further improvement and beautification jobs are taken up regularly.

Corporate Social Responsibility

Annexure-IV

Sl	Sector	CSR Activities / Projects
1	Education	Running and management of a Primary School – SAIL KanyaShikshaNiketan – from July 2018 to March 2019 for underprivileged / BPL girl child.
2	Education	Educational activities at the Model Steel Villages (MSVs)
3	Healthcare	Regular Free Health Check-up Camps at all the 11 MSVs of DSP.
4	Healthcare	Running of a Free Medical Unit (called NIVEDITA) at DSP Township
5	Healthcare	Regular Free Health Check-up Camps at all the 6 Peripheral Villages.
6	Healthcare	Running of Free Mother & Child Care Unit at DSP MahilaSamaj premises for the period from August 2018–March 2019.
7	Healthcare	Free Eye Camp at DSP Mahila Samaj premises
8	Healthcare	Free Health Check up Camps at SAIL Kanya Shiksha Niketan, Durgapur Handicapped Happy Home & HOPE Schools
9	Livelihood Generation / Vocational Training	Running of Vocational Training Institute (Shilpangan) for unemployed youth including women for livelihood generation on Mobile Repair, Fabrication, Computer Hardware & Software, House Wiring etc. Running of technical courses in Healthcare services area, e.g. Physiotherapy, Pathological Lab & ECG Technician courses at NIVEDITA.

10	Women Empowerment	Running of Vocational Training courses on Dress Making, Garments Designing & Embroidery, Hair and Skin Careforwomen for the period from July 2018 - March 2019.
11	Rural Development	Repair jobs at MSVs
12	Rural Development	Sports & Cultural activities at MSVs.
13	Art & Culture	Running & Maintenance of Durgapur Museum
14	Art & Culture	Durgapur Grameen Nritya Sangee tPratiyogita
15	Sports	Grameen Football & Kabaddi Pratiyogita
16	Environment	Removal of Plastic Wastes from Steel Township for the period from July 2018- March 2019.

Contact Person :

Sri AsokMajumdar,
Dy. General Manager,
Environment Control Department,
Durgapur Steel Plant,
Durgapur – 713203 (W.B)