



INDIAN METALS & FERRO ALLOYS LIMITED

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Ref : PP/ENV/17/1717  
Date : 03.11.2017

Dr. A.K.Gupta,  
Joint Director,  
Ministry of Environment & Forests,  
Eastern Regional Office,  
A/3, Chandrasekharapur,  
Bhubaneswar – 751023.

**Sub : Half yearly compliance report of 2X60 MW Power Plant  
(from April'17 to September'17) .**

**Ref : 1. Clause no. 3 (xxii), of Environmental Clearance Letter  
No. J-13011/19/2008-IA.II(T) dt 09.05.2008  
2. Letter from MoEF, Eastern Regional Office dt 09.10.2007**

Dear Sir,

Reference above, we are enclosing herewith half yearly compliance report (April'17 to September'17) in Annexure – I and soft copy of the same in CD for your needful.

Thanking you,  
Yours faithfully,  
**for INDIAN METALS & FERRO ALLOYS LTD.**

**(B. Mohapatra)**  
**Sr. Vice President, Head – PBU & EIC, Choudwar.**

Encl : As above.

cc to : Member Secretary,  
State Pollution Control Board, Orissa,  
Paribesh Bhavan,  
A/118, Nilakanthanagar, Unit – VIII,  
Bhubaneswar – 751012.

cc to: Regional Officer,  
State Pollution Control Board, Orissa,  
586, Suryavihar, Link Road,  
Cuttack – 753012.

**COMPLIANCE TO CONDITIONS OF MOEF CLEARANCE FOR 12x60 MW POWER PROJECT**

Sl.No.	CONDITION	COMPLIANCE STATUS																					
i)	The total land requirement for the project shall be restricted to 60.00 acres.	60 acres land ,belonging to IMFA is already available. The relevant document has been sent to SPCB under the cover of letter no. SVP(O)/SPCB/07 Dt.30.08.07 as required while applying for NOC.																					
ii)	Sulphur and ash contents in the coal to be used in the project shall not exceed 0.4 % and 50% respectively.	Use of coal with sulphur & ash content limited to 0.4% & 50% respectively. <table> <tr> <th>Month</th><th>Ash%</th><th>Sulphur%</th></tr> <tr> <td>Apr'17</td><td>45.332</td><td>0.4108</td></tr> <tr> <td>May'17</td><td>47.478</td><td>0.4094</td></tr> <tr> <td>June'17</td><td>45.597</td><td>0.4298</td></tr> <tr> <td>July'17</td><td>46.586</td><td>0.4000</td></tr> <tr> <td>Aug'17</td><td>44.491</td><td>0.4518</td></tr> <tr> <td>Sept'17</td><td>48.054</td><td>0.4222</td></tr> </table>	Month	Ash%	Sulphur%	Apr'17	45.332	0.4108	May'17	47.478	0.4094	June'17	45.597	0.4298	July'17	46.586	0.4000	Aug'17	44.491	0.4518	Sept'17	48.054	0.4222
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iii)	Two stacks of 48 m height each have been proposed. Continuous on line monitoring equipments for SOx, NOx and Particulate will be provided. Exit velocity of flue gases shall not be less than 15 m/sec. Possibility of having a bi-flue stack may be explored and the stack height may be finalized in consultation with CPCB/SPCB.	Continuous on line monitoring equipments for particulate matter and Sox, NOx and CO has been fitted to each stack. Exit velocity of flue gas, 15m/sec (max), has been considered in equipment designing and are being taken care during operation.																					
iv)	High efficiency Electrostatic Precipitator (ESPs) shall be installed to ensure that particulate emission does not exceed 50 mg/Nm <sup>3</sup> .	Installation of High efficiency Electrostatic Precipitator (ESPs) have been completed. It is being ensured that during operation particulate emission is not exceeding 50 mg/Nm <sup>3</sup> . Results are noted below. <table> <tr> <th>Month</th><th>Boiler1</th><th>Boiler2</th></tr> <tr> <td>Apr'17</td><td>28</td><td>22</td></tr> <tr> <td>May'17</td><td>26</td><td>22</td></tr> <tr> <td>June'17</td><td>29</td><td>22</td></tr> <tr> <td>July'17</td><td>23</td><td>24</td></tr> <tr> <td>Aug'17</td><td>34</td><td>31</td></tr> <tr> <td>Sept'17</td><td>21</td><td>22</td></tr> </table>	Month	Boiler1	Boiler2	Apr'17	28	22	May'17	26	22	June'17	29	22	July'17	23	24	Aug'17	34	31	Sept'17	21	22
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Apr'17	28	22																					
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July'17	23	24																					
Aug'17	34	31																					
Sept'17	21	22																					
v)	CFBC boiler with lime injection with efficiency of sulphur removal upto 90% shall be provided.	Lime handling system has been deployed with injection system and sulphur removal upto 90%.																					
vi)	Dry low Nox burners shall be provided.	The CFBC boilers do not envisage any coal burners. Due to the state of the art technology the furnace temp is maintained low and hence the NO <sub>x</sub> emission is very low.																					
vii)	Adequate dust extraction system such as cyclones/ bag filters and water spray system in dusty areas such as in coal handling and ash handling points, transfer areas and other vulnerable dusty areas shall be provided.	Dust extraction system, consisting of fans, bag filters have been provided at coal and ash handling system. Also water spray/sprinkling system, dry fog system have been installed in dust prone areas (coal ground hopper, crusher house, screen house, stack yard) & are working satisfactorily.																					

Sl.No.	CONDITION	Half yrly compl	COMPLIANCE STATUS
viii)	Fly ash shall be collected in dry form and its 100 % utilization shall be achieved from day one.	Dry dense phase pneumatic ash handling system and ash silo have been deployed and 100% ash utilisation is being ensured. <u>Month</u> <u>Ash utilisation%</u> Apr'17                      100.03 May'17                      99.93 June'17                      99.89 July'17                      99.91 Aug'17                      100.05 Sept'17                      100.07	
ix)	No ash Dyke shall be created as part of this project; however, an area not exceeding one acre shall be earmarked for ash handling.	Dry ash handling system with ash silo has been installed. Hence no ash dyke will be created.	
x)	Closed cycle cooling system with cooling towers shall be provided. The effluent shall be treated as per the prescribed norms.	Closed cycle cooling system with cooling towers have been installed. The effluent are being treated as per the prescribed norm.	
xi)	The treated effluents conforming to the prescribed standards shall be re-circulated and reused within the plant. There shall be no discharge outside the plant boundary except during monsoon for storm water. Arrangements shall be made that effluents and storm water do not get mixed.	Effluent treatment plant (settling & pressure filtration) has been deployed. Treated effluent conforming to prescribed standard are being re-cycled & reused inside the plant. Arrangements have been made to avoid mixing of rain water and effluent water.	
xii)	A sewage treatment plant shall be provided and the treated sewage shall be used for raising greenbelt/plantation.	The sewage water is soaked through soak pit	
xiii)	Rainwater harvesting should be adopted. Central Groundwater Authority/ Board shall be consulted for finalization of appropriate rainwater harvesting technology within a period of three months from the date of clearance and details shall be furnished.	We have constructed rain water management system with multiple storage reservoirs, for collection and reuse of rain water. We have consulted and obtained clearance of that technology from Central Ground Water Board, South Eastern Region. Letter no. 5-22/SER/CGWB/2016-17 – 1014 dt 27.10.2016 in this regard has been submitted to your good office.	
xiv)	Adequate safety measures shall be provided in the plant area to check/minimize spontaneous fires in coal yard, especially during summer season. Copy of these measures with full details along with location plant layout shall be submitted to the Ministry as well as to the Regional Office of the Ministry at Bhubaneswar.	Separate fire hydrant system having fire hydrant reservoir, pumps and fire hydrant points surrounding the coal yard has been deployed. Drawing no. SGC-BEV-IMF-0103 showing all detail has been submitted to your good office. Vide our letter no. PP/ENV/13/391 dt 23.05.2013.	
xv)	Regular monitoring of ground water in and around the plant area shall be carried out, records maintained and periodic reports shall be furnished to the Regional Office of this Ministry.	Monitoring of ground water has been carried out at three locations. No abnormalities have been observed. Results were submitted to your good office. Latest result is furnished below <u>Location</u> <u>Tot Cr(mg/l)</u> <u>Cr+6(mg/l)</u> <u>Se(mg/l)</u> <u>Zn(mg/l)</u> Colony II wel      0.0016      <0.004      <0.001      0.0178 Champakswar Mandir 0.0012      <0.004      <0.001      0.0385 Ram Mandir      <0.001      <0.004      <0.001      0.1235	

Sl.No.	CONDITION	Half yrly compl	COMPLIANCE STATUS
xvi)	A green belt of adequate width and density shall be developed around the plant periphery covering about 1/3 <sup>rd</sup> of the project area preferably with local species.	Provision has been kept for green belt development as required and plantation is being carried out regularly. Month      No. of saplings      Location      Name of saplings Apr'17      Nil May'17      Nil June'17      50      Plant area      Nimba, Baula, Kadamba July'17      1650      BPCo land,      Nimba, Chatiana, Kadamba Aug'17      14750      BPCo land, Baharampur      Nimba, Karanja, Chakunda Sept'17      1630      Plant area, ETP, Office      Nimba, Karanja, Lemon 14000 nos different fruit bearing saplings distributed between June to Sept'17 Ample care is being taken for growth and survival of the planted saplings.	
xvii)	First aid and sanitation arrangements shall be made for the drivers and other contract workers during construction phase.	One safety center along with first aid facility and one ambulance was provided. First aid boxes were provided at all major work places. Separate toilets for ladies and gents were provided.	
xviii)	Leq of Noise levels emanating from gas and steam turbines shall be limited to 75 dBA. For people working in the high noise area, requisite personal protective equipment like earplugs/ear muffs etc. shall be provided. Workers engaged in noisy areas such as steam & gas turbines, air compressors etc shall be periodically examined to maintain audiometric record and for treatment for any hearing loss including shifting to non noisy/less noisy areas.	Acoustic cover / enclosure for compressors and other noisy areas like coal crusher house have been provided to reduce the noise level. In addition to the above PPEs had been provided to the individuals. Medical examination for individuals are being conducted. Noise level is furnished below. Month      Noise level (day)      Noise level (night) Apr'17      57.8      56.6 May'17      57.2      56.3 June'17      56.0      55.3 July'17      55.9      55.3 Aug'17      55.3      54.9 Sept'17      56.6      56.3	
xix)	Regular monitoring of ground level concentration of SO <sub>2</sub> , NOx, SPM and RSPM shall be carried out in the impact zone and records maintained. If at any stage these levels are found to exceed the prescribed limits, necessary control measures shall be provided immediately. The location of the monitoring stations and frequency of monitoring shall be decided in consultation with SPCB. Periodic reports shall be submitted to the Regional Office of this Ministry	Regular monitoring of the ground level concentration are being carried out. Analysis results are furnished with this report.	
xx)	The project proponent shall advertise at least two local news papers widely circulated in the region around the project, one of them shall be in vernacular language of the locality concerned and within seven days of the date of this clearance letter, informing that the project has been accorded environmental clearance and copies of clearance letter are available with the State Pollution Control Board / Committee and may also be seen at the website of the Ministry of Environment & Forests at <a href="http://envfor.nic.in">http://envfor.nic.in</a> .	Advertised in New Indian Express & Samaya (vernacular language) on 31.05.08	

Sl.No.	CONDITION	Half yrly compl	COMPLIANCE STATUS
xxi)	A separate environment management cell with qualified staff shall be set up for implementation of the stipulated environmental safeguards.	Separate environment management cell with qualified staff has been set up and functioning. Furnished below their name & contact number. Name M.Mukhopadhyay J.P.Mahapatra M.Mishra A.Samantray S. Panda Contact number 9777588612 9777444162 9937299612 9777441673 9777440152	
xxii)	Half yearly report on the status of implementation of the stipulated conditions and environmental safeguards shall be submitted to this Ministry/ Regional Office/CPCB/SPCB.	Is being complied. Last report was sent on 15.05.2017 Letter No : PP/ENV/17/350.	
xxiii)	Regional Office of the Ministry of Environment & Forests located at Bhubaneswar will monitor the implementation of the stipulated conditions. A complete set of documents including Environmental Impact Assessment Report and Environment Management Plan along with the additional information submitted from time to time shall be forwarded to the Regional Office for their use during monitoring.	Is being complied.	
xxiv)	Separate funds shall be allocated for implementation of environmental protection measures along with item-wise break-up. These cost shall be included as part of the project cost. The funds earmarked for the environment protection measures shall not be diverted for other purposes and year-wise expenditure should be reported to the Ministry.	Separate funds have been allocated as projected in our letter UPL/ENV/08/143 dt 12.4.2008 addressed to your good office and are ensured not to divert this for other purposes.	
xxv)	The project authorities shall inform the Regional Office as well as the Ministry regarding the date of financial closure and final approval of the project by the concerned authorities and the dates of start of land development work and commissioning of plant.	Purchase order dt 04.04.09 has been placed on M/s Thermax as EPC contract for supply of equipment along with erection and commissioning of the project. Financial closure has already been obtained. Land development of the project has already been completed. Plant commissioned on 31.12.2012.	
xxvi)	Full cooperation shall be extended to the Scientists/Officers from the Ministry / Regional Office of the Ministry at Bhubaneswar /the CPCB/the SPCB who would be monitoring the compliance of environmental status.	Is being complied.	
xxvii)	The project proponent shall submit six monthly reports on status of implementation of the stipulated environmental safeguards to the MoEF, its regional office, Central Pollution Control Board & State Pollution Control Board. The project porponent shall upload the status of compliance of EC conditions on their website and update the same periodically and simultaneously send the same by e-mail to MoEF.	Is being complied. Last report was sent on 08.11.2016 Letter No : PP/ENV/16/1768.	
xxviii)	The project proponent will upload the compliance status in their web site and update the same from time to time at least six monthly basis. Criteria pollutants levels such as SOx, NOx, SPM, RSPM (from stack & ambient air) shall be uploaded on their web site and also be deployed at the main gate of Power Plant.	Compliance status of EC condition are being uploaded in our website. Display of the said parameters at main gate have been made.	

Monitoring data

<b>AMBIENT AIR QUALITY &amp; STACK EMISSION DATA OF 2X60 MW PP (APRIL'2017 – JUNE'2017 )</b>																
	<b>Back side of ETP</b>				<b>120 MW PP main gate</b>				<b>Near Canteen</b>				<b>Boiler 7</b>		<b>Boiler 8</b>	
Month/week	PM10	SO2	NO2	PM2.5	PM10	SO2	NO2	PM2.5	PM10	SO2	NO2	PM2.5	PM	SO2	PM	SO2
April'1st week	85	16.4	10.8	35	92	14.2	11.4	36	92	16.5	10.8	32				
	89	16.5	10.8	30	88	17.2	11.2	36	92	15.1	10.2	38				
2nd week	86	13.6	10.4	34	85	13.8	9.8	37	94	15.3	10.6	48	28	201		
	90	12.9	10.5	44	89	16.9	11.4	36	95	14.2	10.2	42				
3rd week	82	15.5	9.7	34	63	16.2	11.6	30	88	14.8	10.3	44				
	95	18.5	12.4	46	86	15.2	9.6	42	88	14.3	10.1	45				
4th week	90	18.7	13.2	46	92	16.5	11.2	48	90	17.3	11.6	47			22	173
	95	14.3	10.5	44	88	18.7	13.5	40	92	16.5	11.3	46				
May's 1 st week	92	14.3	10.9	35	82	13.8	11.1	38	95	16.2	10.9	40				
	87	15.8	12.3	37	88	12.8	10.8	30	90	13.9	9.8	34				
2nd week	85	14.8	10.5	28	80	15.9	9.9	32	85	13.8	9.5	28				
	88	14.6	10.4	30	89	15.9	12.3	30	92	14.7	11.5	35				
3rd week	95	17.3	12.1	45	88	15.3	11.3	48	85	15.4	10.6	48	26	148		
	87	16.3	10.2	46	79	12.3	10.1	50	90	11.8	9.6	46				
4th week	94	12.8	9.7	50	90	11.8	9.4	46	85	14.1	10.5	40			22	141
	96	13.8	10.2	36	64	12.8	10.1	26	60	13.7	9.6	28				
June's 1 st week	91	14.3	10.2	32	85	13.5	10.2	30	89	14.1	10.8	36				
	92	13.2	10.5	40	88	12.8	9.4	34	95	15.1	9.8	34				
2nd week	84	14.6	10	25	54	13.8	9.4	20	65	14.8	10.2	24	29	199		
	60	15.2	9.5	28	57	14.7	9.8	22	80	15.7	10.8	32				
3rd week	75	15.2	11.3	26	66	16.8	11.3	26	74	16.5	11.1	32				
	76	14.5	10.4	30	61	13.6	9.7	28	85	15.9	10.8	32				
4th week	60	13.9	10.1	30	68	14.1	9.2	25	78	13.7	9.5	27			22	159
	66	12.5	9.6	26	48	12.7	9.2	23	68	14.2	10.5	28				

Monitoring data

<b>AMBIENT AIR QUALITY &amp; STACK EMISSION DATA OF 2X60 MW PP (JULY'2017 –SEPTEMBER'2017 )</b>																
	<b>Back side of ETP</b>				<b>120 MW PP main gate</b>				<b>Near Canteen</b>				<b>Boiler 7</b>		<b>Boiler 8</b>	
Month/week	PM10	SO2	NO2	PM2.5	PM10	SO2	NO2	PM2.5	PM10	SO2	NO2	PM2.5	PM	SO2	PM	SO2
Jul;y'1st week	57	15.8	12.1	26	49	14.2	10.8	17	55	14.1	11.8	22				
	52	16.3	11.6	34	53	14.5	10.5	30	58	13.8	10.8	28				
2nd week	41	13.7	9.6	27	46	13.9	9.9	26	45	14.6	10.2	28	23	166		
	44	13.5	10.4	28	40	14.2	11.7	22	48	14	11.1	29				
3rd week	28	14.1	10.6	16	35	13.6	10.9	20	30	13.7	11	25				
	38	14.8	11.2	28	40	13.8	12.3	25	52	14.7	12.7	18				
4th week	28	13.5	10.8	20	43	14.2	11.2	22	35	14.1	10.3	24			24	178
	55	15.6	11.8	32	58	15.1	11.2	26	62	14.7	11.7	23				
August's 1 st week	44	13.8	11.6	28	40	13.2	11	27	50	13.8	11.5	30				
	34	13.1	10.7	32	43	13.6	11.2	24	38	12.8	10.5	26				
2nd week	50	13.8	12.1	25	45	13.7	11.8	21	62	14.2	11.5	27	34	188		
	42	12.6	9.8	25	54	13.7	11.3	28	44	12.8	10.2	32				
3rd week	44	12.1	9.8	34	46	11.9	9.6	25	40	12.4	9.9	32				
	40	12.6	9.3	30	32	11.9	9.7	18	44	12.2	9.5	22				
4th week	38	13.8	10.5	24	37	13.2	10.8	22	38	12.5	9.8	22			31	180
	36	12.8	10.4	26	35	12.1	9.6	20	40	12.6	10.8	24				
Sept's 1 st week	58	14.1	12.6	40	48	13.8	11.2	23	55	15.2	11.7	25				
	76	15.1	10.2	39	69	14.3	10.5	34	62	14.2	12.3	38				
2nd week	49	11.6	9.8	39	42	13.7	10.5	28	48	13.2	10.8	32	21	164		
	48	13.1	9.4	27	41	12.7	9.2	24	42	12.4	10.1	34				
3rd week	40	12.3	9.8	24	40	12.1	9.6	38	48	13.5	10.4	40			22	190
	40	12.8	9.2	34	31	12.1	8.8	28	44	12.9	9.5	22				
4th week	72	13.9	10.5	45	70	12.5	9.8	30	82	13.6	10.4	35				
	46	13.5	9.8	28	38	13.2	10.6	26	70	14.1	10.8	40				

Env expenditure, CSR, Plantation

Period	Expenditure incurred on environmental management & solid waste (fly ash) disposal	Plantation, green belt development	CSR activities undertaken
Apr'17 to Sept'17	Operation – Rs.17,51,059/-- Maintenance – Rs.46,58,118/- <hr/> Total – Rs.64,09,177/-  Solid waste disposal Rs. 63298694/-	Apr'17 - Nil May'17 - Nil Jun'17 - 50 July'17 - 1650 Aug'17 - 14750 Sept'17 - 1630. 18080 nos. Saplings planted during April – Sept'17  In addition to above plantation carried out by us, 14000 fruit bearing saplings were distributed to nearby areas free of cost.	Free mediacal check up through out the period near Kapaleswar Laxmi Mandap carried out. 200 nos prefabricated desk and bench were distributed to nearby seven nos schools.  Total expenditure under CSR = Rs.7,51,200/-