

Ref: JITPL/EHS/Derang Site/MOEF/03  
Date: 02.07.2012

To  
The Director (S),  
Ministry of Environment & Forests,  
Eastern Region,  
Government of India,  
A/3, Chandrasekharpur,  
BHUBANESWAR - 751023

**Sub: Six monthly compliance reports**

**Ref: MOEF New Delhi Environmental Clearance No: 13011/40/2008-IA.II (T) dated 29<sup>th</sup> September, 2008.**

Dear Sir,

Please find enclosed herewith the Six monthly compliance reports for the period October,2011 to March,2012 with respect to our Jindal India Thermal Power Ltd. along with the Monitoring Report, Part-I, Particulars of Greenbelt/ plantation under F( C ) Act 1980 and E(P) Act 1986 and Information on Rehabilitation in the prescribed Format for your kind perusal.

Thanking you,

Yours faithfully,  
For Jindal India Thermal Power Ltd.

**Dy.Director (Projects)**

Encl: As above.

# **HALF YEARLY COMPLIANCE REPORT**

**Period: October,2011 to March,2012**

**JINDAL INDIA THERMAL POWER LTD.**

**Ref: MOEF New Delhi Environmental Clearance No: 13011/40/2008-IA.II (T) dated 29<sup>th</sup> September, 2008**

<b>Sl.No.</b>	<b>POINTS</b>	<b>COMPLIANCE STATUS</b>
i.	The land requirement for the ash pond, township and water reservoir shall be reduced so as to ensure that the total land requirement for the project does not exceed 950 acres. Distance from HFL of Tikra River shall be maintained at least 500m as per siting guidelines.	We adhere.
ii.	Sulphur and ash contents in the coal to be used in the project shall not exceed 0.5% and 40% respectively at any given time.	We have Coal Linkage from MCL Coal fields & Coal Block in Talcher Area. Coal in this area has Sulphur content < 0.5% & Ash < 40%.
iii.	A bi-flue stack of 275 m height shall be provided with continuous online monitoring equipments for SO <sub>2</sub> , NO <sub>x</sub> and Particulate. Exit velocity of flue gases shall not be less than 22 m/sec.	It is being maintained.
iv.	High efficiency Electrostatic Precipitator (ESPs) shall be installed to ensure that particulate emission does not exceed 50mg/Nm <sup>3</sup> .	ESP with high efficiency is being installed to ensure Particulate Matter (PM) <50mg/NM <sup>3</sup> . ESP performance guarantee of supplier is attached as Annexure-01.
v.	Space provision shall be kept for retrofitting of FGD, if required at a later date.	Agreed.
vi.	Adequate dust extraction system such as cyclones/bag filters and ash handling points, transfer areas and other vulnerable dusty areas shall be provided.	Agreed.
vii.	Fly ash shall be collected in dry form and storage facility (Silos) shall be provided. 100% fly ash	Fly ash shall be collected in dry form and shall be disposed off to cement manufacturers and other interested parties. Balance fly ash shall be

	utilization shall be ensured from 3 <sup>rd</sup> year onwards. Utilization fly ash and bottom ash shall be disposed off in the ash pond in conventional slurry mode. Mercury levels along with other heavy metals (Pb, Cr, As etc.) should be monitored in the fly ash/bottom ash, leachates and effluents emanating from the ash pond.	sent to Ash Dyke through High Concentration Slurry Disposal System (HCSD), which reduces the water consumption and hence recycling of water is eliminated. Levels of mercury and heavy metal shall be monitored.
viii.	The ash pond shall be lined with impervious lining and ash pond embankment towards river should be stone pitched.	Impervious liner will be provided at bottom of the ash pond and stone pitching will be done in ash pond embankment towards river.
ix.	Closed cycle cooling system with cooling towers shall be provided. COC of at least 6 shall be adopted and the effluents shall be treated as per the prescribed norms.	Closed cycle cooling system with IDCT and COC of 6 is being complied. Effluent treatment plant as per the norms being provided.
x.	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. Arrangements shall be made that effluents and storm water do not get mixed.	The treated effluent will be re-circulated and re-used in plant to ensure zero discharge. Storm water drain to be made to discharge rain water without mixing with effluent during rainy season.
xi.	A sewage treatment plant shall be provided and the treated sewage shall be used for raising greenbelt/plantation.	It will be maintained.
xii.	Rain water harvesting should be adopted. Central Ground water 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 will follow. We have already informed CGWA. Proper Rain Water Harvesting Scheme is finalized.
xiii.	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	All safety measures shall be taken care to minimize spontaneous fires in coal yard. Full scheme shall be submitted to Ministry and regional office in due course.

	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.	
xiv.	Storage facilities for axillary liquid fuel such as LDO and/ HFO/LSHS shall be made in the plant area where risk is minimum to the storage facilities. On site and off site Disaster Management Plans shall be prepared to meet any eventually in case of an accident taking place. Mock drills shall be conducted regularly and based on the same, modifications required, if any shall be incorporated in the DMP. Sulphur content in the liquid fuel will not exceed 0.5%.	Agreed.
xv.	Regular monitoring of ground water in and around the ash pond area shall be carried out, records maintained and six monthly reports shall be furnished to the Regional Office of this Ministry.	It will be carried out and records will be maintained after operation of the plant.
xvi.	A green belt of adequate width and density shall be developed around the plant periphery covering an area of at least 310 acres preferably with local species.	Green belt development is already started. We have made our own nursery with local varieties species of 100000 seedlings capacity. Since May 2012, we have planted 25000 local varieties of plants with spacing 2M x 2M within the factory premises.
xvii.	Adequate funds shall be allocated for undertaking CSR activities. Details of activities shall also be submitted to the Regional Office of the Ministry, SPCB and the Ministry.	An adequate fund is allocated for undertaking CSR activities which include education, health, sports, communication, drinking water supply, electrification, cultural activities etc. Details of activities are attached as Annexure - 2.
xviii.	First aid and sanitation arrangements shall be made for the drivers and other contract workers during construction phase.	One First Aid Centre is functioning with one qualified doctor and three Pharmacists round the clock in the site and first aid boxes with required medicines are also provided at different high risky points. Sanitation facilities at site is provided to the drivers and contract workers.
xix.	Leq of Noise levels emanating from turbines shall be limited to 75 dB (A). For people working in the high	Necessary precautions will be taken care. However, workers working in high noisy area will be supplied ear plugs and ear muffs as a

	noise area, requisite personal protective equipment like earplugs/ear muffs etc. shall be provided. Workers engaged in noisy areas such as turbine area, 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.	precautionary measures and periodically audiometric test will be performed to the workers. The noise level data of different areas are attached as Annexure - 3.
xx.	Regular monitoring of ground level concentration of SO <sub>2</sub> , NO <sub>x</sub> , SPM,RSPM and mercury 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.	In consultation with SPCB officials we have selected ambient air quality monitoring stations in different areas and the results are attached as Annexure - 4.
xxi.	Provision shall be made for the housing of construction labour within the site with all necessary infrastructure and facilities such as fuel for cooking, mobile toilets, mobile STP, safe drinking water, medical health care, crèche etc. The housing may be in the form of temporary structure to be removed after the completion of the project.	All the arrangements are provided at site by the company.
xxii.	The project proponent shall advertise in at least two local newspapers widely circulated in the region around the project, one of which shall be in the vernacular language of the locality concerned within seven days from the date of this clearance and copies of clearance letter are available with the State Pollution Control Board/Committee and may also be seen at Website of the Ministry of	It was maintained.

	Environment and Forests at <a href="http://envfor.nic.in">http://envfor.nic.in</a> .	
xxiii.	A separate environmental management cell with qualified staff shall be set up for implementation of stipulated environmental safeguards.	Environment Management Cell is already formed and headed by one Senior Executive (Environment).The details of EMC is attached as Annexure No-5
xxiv.	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.	It is being maintained.
xxv.	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.	Agreed.
xxvi.	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 are allocated for implementation of environmental protection measures. The item wise break up is attached as Annexure No-6
xxvii.	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.	The land development including construction work is already started. We will inform to your good office whenever commissioning of plant.

xxviii.	Full co-operation shall be extended to the Scientists/Officers from the Ministry / Regional Office of the Ministry at Bhubaneswar/ the CPCB/ the SPCB who would be monitored the compliance of environmental status.	We will extend our full cooperation to the Scientists/Officers.
---------	--	---

Ministry of Environment & Forests  
Regional Office  
BHUBANESWAR  
Monitoring Report  
PART-I  
DATA SHEET

File No.

1. Project type : Large Scale
2. Name of the Project : Jindal India Thermal Power Ltd.
3. Clearance/Approval letter(s) No. & date : 13011/40/2008-IA.II (T) dated 29<sup>th</sup> September, 2008
4. Locations
  - a. District(s) : Angul
  - b. State(s) : Orissa
  - c. Latitudes/Longitudes : Latitude- 21° 7' 10" – 21° 7' 47" N  
Longitude- 84° 58' 25" – 85° 0' 24" E
5. Address of Correspondence
  - a. Address of concerned Head of Organization (with pin code and Telephone/telex/fax numbers) : Sri P.K.Bhudhwar,  
Occupier,  
Jindal India Thermal Power Ltd.  
At/P.O.: Derang, P.S-Kaniha,  
Dist: Angul,orissa,  
Pin: 759117  
Tel:9583040700/701/702
  - b. Address of Head of project(with pin code and Telephone/telex/fax numbers) : Sri R.Kesavan, Dy.Director (Projects)  
Jindal India Thermal Power Ltd.  
At/P.O.: Derang, P.S-Kaniha,  
Dist: Angul, Orissa,  
Pin: 759117  
Tel: 9583040190

6. Salient features

a. Of the project

: The land identified for the proposed project is mostly barren uncultivable wasteland and partly rain fed single crop agricultural land, comprising of 25% of Government land and 75% of private land. There are no streams or nallahs in the project site. The land in elevation of about 105m a MSL.

The mean maximum & minimum ambient temperature in the area as per IMD Angul are recorded to be 40.9 degree centigrade (May) and 14.7 degree centigrade (December) respectively. The relative humidity varies from 66% to 80% at 0830hr and from 38% to 79% at 1730hr. The average annual rainfall in the region is about 1450.8mm. Seismically, the site falls under seismic zone-II, which indicates that the area is seismically stable.

b. Of the environmental management plans : Environmental Management Plan forms an integral part of the proposed project activities from design to operational stage to minimize the adverse impacts. The fugitive dust emissions due to coal fines from the stock pile of raw materials and fines dump in the open area will be controlled by dust suppression system of routine water sprinkling. Power plant will be equipped with integral pollution control system. The gases & fly ash leaving chimney will be passed through a series of pollution control equipments like ESP. Bag filters will be provided for control of fugitive emission from coal injection point. Noise level in the Core and Buffer Zone will be maintained within the statutory norms for the betterment of working personnel. Various steps will be proposed at the design stage to recycle and reuse of the process effluent aiming zero discharge. The solid waste will be dumped in a planned manner in layers with a layer of soil in between, and after thorough compaction, plantation will be raised over the solid waste dump. The green belt will be developed along the boundary, in the vacant areas, around office building etc. of the project site. An Environmental Management Cell is constituted for EMP implementation and monitoring purpose.

7. Break up of the project areas (in ha)

Forest area	: Nil
Non-forest area	: 950 Acres
<hr/> Total	: 950 Acres

8. Break up of the project affected population : No village in the project area

Number of oustees

<hr/> Homestead	Land oustees	Landless/ Artisans
-----------------	-----------------	-----------------------

Nil

9. Financial Details

a. Project cost as originally planned and subsequent revised estimates and the years of price reference : Rs.5400 Crores

- b. Allocations made for environmental management plans, with item wise & year wise break up : Rs.257 Crores @ Rs.26.1 Crores per year  
Details are given as Annexure no-06
- c. Benefit cost ratio/internal rate of return & the year of assessment :
- d. Whether(c) includes the cost of environmental management as shown in (b) above : Yes
- e. Actual expenditure incurred on the environmental management plans so far : Project Expenditure EMP Expenditure
10. Status of construction
- a. Date of commencement (actual and/or planned) : 2010
- b. Date of completion (actual and/or planned) : 2012 (1<sup>st</sup> Phase)
- c. Date of commissioning : 2012 (1<sup>st</sup> Phase)

Project process details	Dates of		
	Construction	Completion	Commissioning
1. <u>Engineering and other project components</u>			
2. Environmental Management and Pollution Control components			
	a. ESP		
	b. Bag Filters		
	c. Permanent Water Sprinkler		

Date:

SIGNATURE:

MINISTRY OF ENVIRONMENT AND FORESTS  
EASTERN REGIONAL OFFICE  
A/3, CHANDRASEKHARPUR, BHUBANESWAR-751023

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

1. a) Name of the Project : Jindal India Thermal Power Ltd.  
b) Env't. / Forest Clearance Nos. : 13011/40/2008-IA.II (T) dated 29.09.2008
- 2 Location, Block/Sub.Divn. /Dist/State : At/P/O:Derang,Block:Kaniha, Dist: Angul, Orissa
3. Address for communication : Jindal India Thermal Power Ltd. At/P/O:Derang,Block:Kaniha, Dist: Angul, Orissa
- 4 Existing vegetation in the area/region
  - a) Species (trees/shrubs/grasses/climbers) : **Trees**: Sissoo, Teak, Gumbar, Chhatiana, Mango, Chakunda, Palm,Kadamba, Mango, Guajava,Chakunda etc.  
**Shrubs**-Arakha, Kurei, Basanga, Ban sorish etc.  
**Grasses**-Khari, Bena, Dooba, Broom grass, Bamboo, etc.  
**Climbers**: Atundi,Bichhuati, Baidanka,Siali etc.
  - b) Major prevalent species of each type : Palm
- 5 Land coverage by the project
  - a) Total area under the project : 950Acres
  - b) Area covered for basic infrastructure (roads/ building/ factory etc.) : 1.Factory & Building:....Acres  
2.Roads: ....Acres  
3.Drains & Pipeline:.....Acres
- 6 Details about natural vegetation
  - a) Name and number of tree/ species felled : Nil
  - b) Name and number of plant species still available in the area : Nil
  - c) By protecting the area will indigenous stock come up : No

d) Extent of greenbelt developed : No

7 Plantations required to be carried out as per

a) Conditions of Environmental clearance in ha. /Nos. : 2500 nos

b) Conditions for Forest Act (c) clearance in ha. /Nos. :

c) Voluntarily in ha. /nos. :

8 Details of plantation

a) Total area available for plantation in each category : 310Acres

i) Green Belt	ii) Dumps	iii) Back filled area	iv) Road sides	v) Block plantation
---------------	-----------	-----------------------	----------------	---------------------

25.0 acres

b) Plantation details (category wise & methodology used): Plantation is carried out this year.

Year of plantation	Species planted	Spacing	Height attained	Total area covered	Area still available
2011	Local	2M x 2M	3 ft	25.0 acres	285 acres
2012					

c) Survival of plantation : 1<sup>st</sup> year 2<sup>nd</sup> year 3<sup>rd</sup> year 4<sup>th</sup> year 5<sup>th</sup> year

-Total plantations (No.) - 25000

-Survival (No.) - 17600

-Survival rate (%) - 70.4

9 Agency carrying out plantation and maintenance : JITPL in house team

10 Financial details (year wise) plantation wise and item wise

Sl. No.	Year	Funds allocated	Expenditure made	Average cost of each surviving plant in Rs.
01	2011-12	Rs886000.00	Rs.1040000.00	Rs.59.09

-----  
:  
11 Inspection of plantation by field experts and their  
comments and their comments and follow up  
actions

12 Remarks/ any other information :

Officer in Charge

\*\*\*\*\* \*\* \*\*\*\*\*

**Report-II**

**PROFORMA FOR PROVIDING INFORMATION ON REHABILITATION**

\*\*\*\*\*

1. No. of villages affected : Not applicable as no villages are affected.
2. Families affected : SC ST OTH TOTAL
3. Compensation package offered per family :

---

State/Centre norms	Project package
--------------------	-----------------


---

- 
4. Budget estimate for rehabilitation :
- a) Total outlay :
- b) Amount paid/used :
5. Employment details :
- a) Total employment to be provided :
- b) Employment given so far :
6. Rehabilitation & Resettlement details :
- a) No. of families rehabilitated :
- i) Name of the site :
- ii) Families rehabilitated : SC ST OTH TOTAL
- b) Families yet to be rehabilitated :
- i) Name of the site(s) :
- ii) No. of families : SC ST OTH TOTAL
7. Any other information :

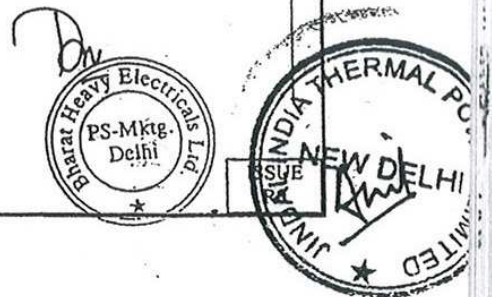
**DATE:**

**SIGNATURE:**

**Annexure-01**

SPEC.NO. TCE.5404A-C-500-001	JINDAL INDIA THERMAL POWER LIMITED <b>2 x 600 MW/600 MW + 10% THERMAL POWER PROJECT                  AT DERANG, ANGUL,ORISSA</b>	VOLUME - II SECTION: F3  SHEET 3 OF 11
Package : BTG CONTRACT	TITLE <b>SCHEDULE OF PERFORMANCE GUARANTEES</b>	

Particulars	Value Inclusive of design, manufacture and all other tolerances including measurement uncertainty	Applicable Test Codes	Remarks
h) Dust concentration at ESP outlet with all fields in service at 100% SGMCR for the worst coal firing (Maximum)	50mg/Nm <sup>3</sup>	EPA Method 17	
i) Total dissolved solids in steam leaving steam drum at 100% SGMCR (maximum)	0.02 ppm (Annexure -1)		
j) Desuperheating spray water quantity for superheat steam temperature control for steam generator at  100% of SGMCR 80% of SGMCR 60% of SGMCR.	Will vary from 3% to 6% of BMCR flow  _____ t/hr _____ t/hr _____ t/hr		
k) Total dissolved solids in steam leaving final super heater at 100% SGMCR: (maximum)	0.02ppm (Refer Annexure-1)		
l) Boiler and Turbine as a whole should sustain in house load operation when there is a load throw off for a minimum period of one (1) hour to resynchronize the unit with the grid	Yes/No		
m) Coal mill performance at maximum mill capacity for fineness of .70 % through 200 mesh.	60 t/h for Design coal.		
n) Steam Generator Maximum Continuous Rating (SGMCR) under worst coal firing.	2000 t/h		



**Annexure-02**

**DETAILS OF CSR ACTIVITIES**  
**JINDAL INDIA THERMAL POWER LTD**  
**DERANG, ANGUL, ORISSA**

Jindal has undertaken the following CSR activities up to March,2012.

<b>SL.NO.</b>	<b>ITEMS</b>	<b>UP TO March,2012 (in Rs.)</b>
01.	Road	23327162.00
02.	Drinking water	1911099.00
03.	Sanitation	200000.00
04.	Electrification	2363653.00
05.	Health	3008552.00
06.	Education	2530917.00
07.	Socio cultural	461843.00
08.	Project JIBIKA (Jindal India for Business & Industrial contract Action )	1164000.00
09.	Relief	22480.00
10.	Dust suppression	671600.00
11.	Vocational Training	114099.00
	<b>TOTAL</b>	<b>35775405.00</b>

## Annexure - 3

### SOUND PRESSURE LEVEL MEASUREMENT

M/S-JINDAL INDIA THERMAL POWER LTD.

Period: October, 2011 to March, 2012

Sl.No.	Locations	Position	SPL dB(A)
01.	Near RCO Complex	Centre	46.1
02.	Near First Aid Station & Gate	Centre	51.4
03.	Near Labour hutment (Ghantianali Area)	Centre	45.8
04.	Near Techpro Office and Gate near NTPC ash pond area	Centre	41.5
05.	BTG Area	Centre	64.2

Note: Survey Conducted by in house team of JITPL Environment Department.

Annexure - 4

AMBIENT AIR QUALITY RESULTS  
M/S: JINDAL INDIA THERMAL POWER LTD  
PERIOD: OCTOBER 2011 TO MARCH 2012

Units in microgram/M<sup>3</sup>

Sl.No.	Locations	Parameters	Concentration	CPCB standards
01.	Near RCO Complex (Monitoring Station No.1)	RPM	92.3	150
		SPM	197.4	500
		SO <sub>2</sub>	8.3	120
		NO <sub>x</sub>	14.7	120
		CO	BDL	5000
02.	Near First Aid Station & Main Gate (Monitoring Station No.2)	RPM	96.3	150
		SPM	152.4	500
		SO <sub>2</sub>	9.2	120
		NO <sub>x</sub>	17.5	120
		CO	BDL	5000
03.	Near Labour Hutment (Monitoring Station No.3)	RPM	99.3	150
		SPM	164.5	500
		SO <sub>2</sub>	10.3	120
		NO <sub>x</sub>	15.4	120
		CO	BDL	5000
04.	Near Techpro Office (Stacker Reclaimer) (Monitoring Station No.4)	RPM	94.3	150
		SPM	172.4	500
		SO <sub>2</sub>	9.3	120
		NO <sub>x</sub>	14.5	120
		CO	BDL	5000

BDL-Below Detection Level

Note: The monitoring was done by M/s-Nature Care, Bhubaneswar.

**Annexure No- 5**

**ENVIRONMENT MANAGEMENT CELL**  
**MANPOWER DETAILS**  
**JINDAL INDIA THERMAL POWER LTD**

<b>SL.NO.</b>	<b>NAME</b>	<b>DESIGNATION</b>	<b>QUALIFICATION</b>
01.	Dr.K.K.Raut	Head(Environment)	Ph.D (Environment)
02.	Mr.Anil Kumar	DGM-Civil	B.Tech (Civil)
03.	Mr.S.Parija	AGM-Electrical	B.Tech (Electrical)
04.	Mr.U.K.Jena	DGM-Civil	B.Tech(Civil)
05.	Mr.A.K.Rout	Dy.Manager(Horticulture)	M.Sc.(Horticulture)
06.	Mr.P.Moharana	Manager-CSR	MBA (Rural Management)

Annexure No-6

COST PROVISION FOR ENVIRONMENTAL MEASURES

JINDAL INDIA THERMAL POWER LTD.

Sl.No.	Description of Item	Capital Cost (Rs in Crores)	Recurring Cost (Rs in Crores)
1	Raw water treatment system	90	9.0
2	Wastewater treatment system	5	0.5
3	Rainwater harvesting system	2	0.2
4	Air pollution control systems including ESP	90	9.0
5	One bi-flue RCC stack (275m height)	60	6.0
6	Noise pollution control systems	8	0.8
7	Environmental Monitoring / Environmental Laboratory	0.5	0.2
8	Occupational health & safety	0.5	0.2
9	Green belt development	1.0	0.2
	<b>Total</b>	<b>257</b>	<b>26.1</b>