

No. J-11015/288/2007-IA.II(M)
Government of India
Ministry of Environment & Forests

Paryavaran Bhawan,
CGO Complex, Lodi Road,
New Delhi-110003.

To

Dated: 22nd August 2007

M/s Jindal Power & Ltd.,
Tannar, Tehsil Gharghoda,
RAIGARH,
Chhattisgarh – 496 107.

Sub: Gare IV/2 and IV/3 Opencast and Underground Coal Mine (7 MTPA) of M/s Jindal Power Ltd. proposed at Tehsil Gharhoda, district Raigarh, Chhattisgarh - Terms of Reference (TOR) – reg.

Sir,

This is regarding consideration of the aforesaid proposal in the EAC (T&C) meeting held on 23rd -24th July 2007. It was noted that the company had obtained environmental clearance from MOEF on 22.04.2004 for its Gare IV/2 and IV/3 opencast coal mine project for a production capacity of 5.25 MTPA by opencast mining of the upper seams. The present application is for captive coal mining of the lower seams of the same Gare IV/2 and IV/3 mine by UG mining with a production capacity of 0.9 MTPA, in addition to opencast mining, for a total combined production capacity of 7 MTPA. The OC mine operations had begun on 24.05.2006. The total lease area of the mine, where both OC and UG mining would be carried out, is in the existing lease of area 964.65 ha, of which 48.20 ha is forestland. Forestry clearance has been obtained on 06.09.2004. The Mining Plan for 5 MTPA was approved by MOC on 25.01.2001, which had, however recommended the extraction of coal of the lower seams (I to V) by UG mining which are situated about 80-120m below the upper group (VI A to X), with the objective of recovering better grade coal as well as for mineral conservation. The coal produced is for captive use of the 1000 MW (4 x 250 MW) linked Thermal Power Station located at a distance of 10 km from the mine. Coal requirements of the 1000MW power plant had been earlier assessed at 5 MTPA having an ash content of 40 ± 1 % ash content. The boilers of the linked power house under construction have been designed for a raw coal feed of 40 ± 1 % ash content. The 1000 MW Power plant is pit head- at a distance of 7 km and had been planned to operate @ 5 MTPA with 40% ash content coal (as per thumb rule of 0.5 MTPA /100 MW).

It was further noted that the combined production of the mine by opencast and UG mining would be 7 MTPA over a total lease area of 964.65 ha. This would be achieved by maintaining the coal production by UG mining at a rated capacity of 0.9 MTPA while increasing the production of coal by OC mining to 6.25 MTPA. This is because, washability tests of coal samples collected from the adjoining IV/1 block of M/s Jindal Power & Steel Ltd. for seams IX, VIII and VII had indicated that the coal is of high ash content and coal washing would be a prerequisite to meet the boiler req. which would result in yield of 6000 TPD instead of the earlier 15000 TPD. Thus, this would require an increase of ROM production of coal to 9287 TPD in Seam VII. For meeting the full rated requirements of the power house, the total ROM production required would be 18287 TPD which works out to be 6.03 MTPA of coal (at 100% efficiency). At normal (85 %) efficiency, the designed capacity of the opencast mine would require revision to 7 MTPA as against the earlier 5.25 MTPA approved capacity. The coal in lower seams- of better grade D and E grade would help in reducing the ash content.

It was stated that the lower seams to be mined by UG method are for a maximum capacity of 0.9 MTPA. The mine would be developed by 3rd year of operation when the net production from OC mining would be reduced to a final level of 6.25 MTPA, when production from UG mining

-ii-

would be at 0.75 MTPA. The total combined production from both OC and UG mining would be 7 MTPA from year 2011-2012 onwards with complete development of UG mine.

It was further stated by you that of the total lease area, 722.26 ha is quarry area, 18.4 ha is for external dumps, 17.10 ha is for green belt, 18.40 ha is for embankment, and about 20 ha is for drivage and development of mine inclines, shaft and service buildings. It is proposed to backfill the mined out void and also partially store the OB generated in external OB dumps. Part of the ash from the power plant would also be accommodated in the void. Coal would be transported from the mine to the power plant by closed conveyors. It is not proposed to abstract surface water. Mine seepage water would be pumped to settling ponds and waste requirement would be met from the mine water. Excess mine pit water would be used for beneficiation of coal and no water would be discharged into the Kelo river. Regular water sprinkling along roads would be undertaken. CHP at mine would be provided with dust suppression measures and coal would be transported from CHP to power plant located at a distance of 10 km from the mine by pipe conveyors.

Based on the application along with documents and presentation thereon and discussions held, the Committee prescribed the following TOR:

- (i) Compliance of conditions of EC dated 22.09.2004.
- (ii) Specific modifications to earlier EIA-EMP vis-à-vis the present project.
- (iii) Specific modification of earlier Mining Plan vis-à-vis the Revised Mining Plan of the present project.
- (iv) To be an integrated EIA-EMP with the coal washery project.
- (v) Risk analysis of simultaneous operation of OC and UG mining to be carried out.
- (vi) An EIA-EMP Report should be prepared for a peak capacity of 7 MTPA expansion with incremental production of 1.75 MTPA (expansion from 5.25 MTPA to 7MTPA) and cover the impacts and management plan for the project specific activities of OC and UG mining and coal washery as well as combined impacts on the environment of the region, and the environmental quality – air, water, land, biotic community, etc. through collection of data and information, generation of data on impacts including prediction modelling for 7 MTPA (expansion from 5.25 MTPA to 7 MTPA) of coal production based on approval of revised project/Mining Plan.
- (vii) Collection of one-season (non-monsoon) primary base-line data on environmental quality – air (SPM, RPM, SO_x and NO_x), noise, water (surface and groundwater), soil.
- (viii) Map of the study area (core and buffer zone) clearly delineating the location of various monitoring stations (air/water/soil and noise – each shown separately) superimposed with location of habitats, wind roses, other industries/mines, polluting sources. The number and location of the stations should be selected on the basis of the proposed impacts in the downwind/downstream/groundwater regime. One station should be in the upwind/upstream/non-impact non-polluting area as a control station. Wind roses to determine air pollutant dispersion will be drawn and Prediction Modelling of AAQ (ISCT-3 (Revised) or latest available modelling) will be carried out. Wind roses to determine air pollutant dispersion will be drawn and Prediction AQOIP Modelling of AAQ (ISCT-3 (Revised) or latest available modelling) will be carried out. Monitoring should be as per CPCB guidelines. Parameters for water testing for groundwater as per ISI standards and surface water as CPCB guidelines.

(ix) Impact of mining and water abstraction and mine water discharge in mine on the hydrogeology and groundwater regime within the core zone and 10km buffer zone including long-term modelling studies on the impact of mining on the groundwater regime. Details of rainwater harvesting and measures for recharge of groundwater should be reflected.

(x) Detailed water balance should be provided. The break up of water requirement as per different activities in the mining operations, including use of water for sand stowing (if any) and for coal washery should be given separately. Source of water for use in mine, sanction of the competent authority in the State Govt. and impacts vis-à-vis the competing users.

-iii-

(xi) Impact of choice of selected use of machinery - and impact on air quality, mineral transportation, coal handling & storage/stockyard, etc, coal washery.

(xii) Impacts of mineral transportation – within and outside the lease for the 7 MTPA capacity. The entire sequence of mineral production, transportation, handling, transfer and storage of mineral and waste, and their impacts on air quality should be shown in a flow chart with the specific points where fugitive emissions can arise and the specific pollution control/mitigative measures proposed to be put in place. Examine the adequacy of roads existing in the area and if new roads are proposed, the impact of their construction and use particularly if forestland is used.

Details of various facilities to be provided in terms of parking, rest areas, canteen, and effluents/pollution load from these activities. Examine whether existing roads are adequate to take care of the additional load of mineral and their impacts.

Examine the number and efficiency of mobile/static water sprinkling system along the main haul roads within the mine, approach roads to the mine/stockyard/siding, and also the frequency of their use in impacting air quality.

Impacts of CHP on air and water quality. A flow chart of water use and whether the unit can be made a zero-discharge unit.

Plan for use of flyash from the linked TPP to be filled in the decoled void. Initial trials on the effects if any, of filling flyash on the groundwater quality requires to be undertaken before large scale operations of flyash utilisation to fill in the voids. A calendar programme of flyash dumping into the voids also requires to be reflected appropriately in the Revised Mining Plan.

(xvii) Conceptual mine closure plan along with the fund requirement for the detailed activities proposed there under. Impacts of change in land use of agricultural land for mining operations and whether the land can be restored for agricultural use post mining.

(xviii) Study on subsidence, measures for mitigation/prevention of subsidence, modelling subsidence prediction and its use during mine operation, safety issues.

(xix) Occupational health issues. Baseline data on the health of the population of the study area and measures for occupational health and safety of the personnel and manpower for the mine.

(xx) Including cost of EMP (capital and recurring) in the project cost and for final mine closure plan. The specific costs (capital and recurring) of each pollution control/mitigative measures proposed in the project until end of mine life and a statement that this is included in the project cost.

(xxi) Integrating in the Env. Management Plan with measures for minimising use of natural resources – water, land, energy, raw materials/mineral, etc.

(xxii) Public Hearing should cover the details as specified in the EIA Notification 2006, and include notices issued in the newspaper, proceedings/minutes of public hearing, the points raised by the general public and commitments made in a tabular form. If the Public Hearing is in the regional language, an authenticated English Translation of the same should be provided.

(xxiii) Status of any litigations/ court cases filed/pending on the project.

The following general points should be noted:

- (i) All documents should be properly indexed, page numbered.
- (ii) Period/date of data collection should be clearly indicated.
- (iii) Authenticated English translation of all material in Regional languages provided/enclosed with the application.
- (iv) After the preparation of the draft EIA-EMP Report as per the aforesaid TOR, the proponent shall get the Public Hearing conducted as prescribed in the EIA Notification 2006 and take necessary action for obtaining environmental clearance under the provisions of the EIA Notification 2006.
- (v) The letter/application for EC should quote the MOEF file No. and also attach a copy of the letter prescribing the TOR.
- (vi) The copy of the letter received from the Ministry on the TOR prescribed for the project should be attached as an annexure to the final EIA-EMP Report.

-iv-

(vii) After the preparation of the draft EIA-EMP Report as per the aforesaid TOR, it may be submitted to the State Pollution Control Board for Public Consultation/Public Hearing. After Public Consultation/Public Hearing, the same may be incorporated in the EIA-EMP and final EIA-EMP submitted to Ministry of Environment & Forests for obtaining clearance under the provisions of the EIA Notification of 2006.

Yours faithfully,

(Dr.T.Chandini)
Director

Copy to: Chhattisgarh Environment Conservation Board, 14/3 Park Street, Choubey Colony,
Raipur.