

No. J-11015/214/2010-IA.II(M)
Government of India
Ministry of Environment & Forests

Paryavaran Bhawan,
CGO Complex,
New Delhi-110510.

To

Dated: 27th June 2011

Chief General Manager (E&F),
M/s South Eastern Coalfields Ltd.,
Bilaspur, Chhattisgarh.

Sub: Kartali East OCP (2.5 MTPA with a peak capacity of 3.75 MTPA in an ML area of 855.906 ha) of M/s South Eastern Coalfields Ltd., located in dist. Korba, Chhattisgarh - Terms of Reference (TOR) – reg.

Sir,

This is with reference to letter no. 43011/21/2010-CPAM of MOC dated 14.05.2010 which was considered in the EAC (T&C) meetings held on 30th -31st August 2010 and your response thereto dated 23.03.2011, which was further considered in EAC (T&C) meeting held on 23rd -24th May 2011. During consideration of the proposal in the EAC meeting held on 30.08.2010, it was decided that the various options available would be studied to reduce the overall height of the external OB dumps and to reduce the area as the forestland in non-mineralised area would be used as external OB dumps for storing OB. It was also decided that the depth of the final water body being left at the post mining stage requires to be studied and presented before the Committee for further consideration of TOR. A response dated 23.03.2011 was further considered and two possible options were presented before the Committee:

- **In option- I**, it was proposed to plan an ext. OB dump of lesser height i.e. 90 metres and 60 metres from ground level but this would require an additional 40 ha forestland for storing 31.65 Mm³ of OB as no revenue land is available.
- **For option –II**, it was proposed that the external and internal dumps would be of 120 m above ground level till the end of mine life and the dump would remain barren for a period of 17 years before rehandling began. However, afforestation of this dump for 17 years would develop plantation, the felling of which would not be permitted by the Forest Dept.. It was informed that height of both external and internal OB dump if reduced to either 90 m or 60 m would reduce the depth of the water body. OB dumps would remain barren for more than 17 years and would be a source of fugitive emission and re-handling will also increase dust pollution as it would require blasting. This also places a financial burden of about Rs 406.58 Crores for costs for rehandling of OB.

The Committee noted that OB dumping in forest area is not a favoured option. The Committee was also of the view that OB kept without stabilisation for 17 long years is also not environmentally sound and desired that grass with small shrubs may be developed to ensure that the OB is stabilised. The Committee desired that the depth of the final void should not be more than 60-70m and a study could be initiated by an independent institution with ecological discipline.

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

- (i) An EIA-EMP Report would be prepared for **2.5 MTPA with a peak capacity of 3.75 MTPA in an ML area of 855.906 ha** based on the generic structure specified in Appendix III of the EIA Notification 2006.
- (ii) An EIA-EMP Report would be prepared for **2.5 MTPA with a peak capacity of 3.75 MTPA in an ML area of 855.906 ha** and cover the impacts and management plan for the project specific activities 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 **2.5 MTPA with a peak capacity of 3.75 MTPA in an ML area of 855.906 ha** of coal production based on approval of project/Mining Plan for **2.5 MTPA with a peak capacity of 3.75 MTPA**. Baseline data collection can be for any season except monsoon.

- (iii) A map specifying locations of the State, District and Project location.
- (iv) A Study area map of the core zone and 10km area of the buffer zone (1: 50,000 scale) clearly delineating the major topographical features such as the land use, surface drainage of rivers/streams/nalas/canals, locations of human habitations, major constructions including railways, roads, pipelines, major industries/mines and other polluting sources. In case of ecologically sensitive areas such as Biosphere Reserves/National Parks/WL Sanctuaries/ Elephant Reserves, forests (Reserved/Protected), migratory corridors of fauna, and areas where endangered fauna and plants of medicinal and economic importance found in the 15 km area of the buffer zone should be given.
- (v) Land use map (1: 50,000 scale) based on a recent satellite imagery of the study area may also be provided with explanatory note of the land use. Satellite imagery per se is not required.
- (vi) Map showing the core zone delineating the agricultural land (irrigated and unirrigated, uncultivable land (as defined in the revenue records), forest areas (as per records), along with other physical features such as water bodies, etc should be furnished.
- (vii) A contour map showing the area drainage of the core zone and 2-5 km of the buffer zone (where the water courses of the core zone ultimately join the major rivers/streams outside the lease/project area) should also be clearly indicated as a separate map.
- (viii) A detailed Site plan of the mine showing the various proposed break-up of the land for mining operations such as the quarry area, OB dumps, green belt, safety zone, buildings, infrastructure, CHP, ETP, Stockyard, township/colony (within and adjacent to the ML), undisturbed area and if any, in topography such as existing roads, drains/natural water bodies are to be left undisturbed along with any natural drainage adjoining the lease /project and modification of thereof in terms of construction of embankments/bunds, proposed diversion/rechannelling of the water courses, etc., approach roads, major haul roads, etc.

In case of any proposed diversion of nallah/canal/river, the proposed route of diversion/modification of drainage and their realignment, construction of embankment etc. should also be shown on the map.

Similarly if the project involves diversion of any road/railway line passing through the ML/project area, the proposed route of diversion and its realignment should be shown.

- (ix) Break up of lease/project area as per different land uses and their stage of acquisition.
- (x) Break-up of lease/project area as per mining operations.
- (xi) Impact of changes in the land use due to the start of the projects if much of the land being acquired is agricultural land/forestland/grazing land.
- (xii) Collection of one-season (non-monsoon) primary baseline data on environmental quality - air (PM10, PM2.5, SO_x, NO_x and heavy metals such as Hg, Pb, Cr, As, etc), noise, water (surface and groundwater), soil along with one-season met data coinciding with the same season for AAQ collection period.
- (xiii) Map of the study area (1: 50, 000 scale) (core and buffer zone clearly delineating the location of various stations superimposed with location of habitats, other industries/mines, polluting sources. The number and location of the stations in both core zone and buffer zone should be selected on the basis of size of lease/project area, the proposed impacts in the downwind (air)/downstream (surface water)/groundwater regime (based on flow). One station should be in the upwind/upstream/non-impact/non-polluting area as a control station. The monitoring should be as per CPCB guidelines and parameters for water testing for both ground water and surface water as per ISI standards and CPCB classification wherever applicable.
- (xiv) Study on the existing flora and fauna in the study area (10km) carried out by an institution of relevant discipline and the list of flora and fauna duly authenticated separately for the core and buffer zone and a statement clearly specifying whether the study area forms a part of the migratory corridor of any endangered fauna. If the study area has endangered flora and fauna, or if the area is occasionally visited or used as a habitat by Schedule-I fauna, or if the project falls within 15 km of an ecologically sensitive area, or used as a migratory corridor then a comprehensive Conservation Plan should be

prepared and submitted with EIA-EMP Report and comments from the CWLW of the State Govt. also obtained and furnished.

- (xv) Details of mineral reserves, geological status of the study area and the seams to be worked, ultimate working depth and progressive stage-wise working scheme until end of mine life should be reflected on the basis of the approved rated capacity and calendar plans of production from the approved Mining Plan. Geological maps and sections should be included. The progressive mine development and Conceptual Final Mine Closure Plan should also be shown in figures.
- (xvi) Details of mining methods, technology, equipment to be used, etc., rationale for selection of that technology and equipment proposed to be used vis-à-vis the potential impacts.
- (xvii) Impact of mining on hydrology, modification of natural drainage, diversion and channelling of the existing rivers/water courses flowing through the ML and adjoining the lease/project and the impact on the existing users and impacts of mining operations thereon.
- (xviii) Detailed water balance should be provided. The break up of water requirement for the various mine operations should be given separately.
- (xix) Source of water for use in mine, sanction of the competent authority in the State Govt. and impacts vis-à-vis the competing users.
- (xx) Impact of mining and water abstraction use in mine on the hydrogeology and groundwater regime within the core zone and 10 km buffer zone including long-term modelling studies on. Details of rainwater harvesting and measures for recharge of groundwater should be reflected in case there is a declining trend of groundwater availability and/or if the area falls within dark/grey zone.
- (xxi) Impact of blasting, noise and vibrations.
- (xxii) Impacts of mining on the AAQ, predictive modelling using the ISCST-3 (Revised) or latest model.
- (xxiii) Impacts of mineral transportation – within and outside the lease/project along with flow-chart indicating the specific areas generating fugitive emissions. Impacts of transportation, handling, transfer of mineral and waste on air quality, generation of effluents from workshop, management plan for maintenance of HEMM, machinery, equipment. Details of various facilities to be provided in terms of parking, rest areas, canteen, and effluents/pollution load from these activities.
- (xxiv) Details of waste generation – OB, topsoil – as per the approved calendar programme, and their management shown in figures as well explanatory chapter with tables giving progressive development and mine closure plan, green belt development, backfilling programme and conceptual post mining land use. OB dump heights and terracing should be based on slope stability studies with a max of 28° angle as the ultimate slope. Sections of dumps (ultimate) (both longitudinal and cross section) with relation to the adjacent area should be shown.
- (xxv) Impact and management of wastes and issues of rehandling and backfilling and progressive mine closure and reclamation. The Committee noted that OB dumping in forest area is not a favoured option. The Committee was also of the view that OB kept without stabilisation for 17 long years is also not environmentally sound and desired that grass with small shrubs may be developed to ensure that the OB is stabilised. The Committee desired that the depth of the final void should not be more than 60-70m and a study could be initiated by an independent institution with ecological discipline.
- (xxvi) Flow chart of water balance. Treatment of effluents from workshop, township, domestic wastewater, mine water discharge, etc. Details of STP in colony and ETP in mine. Recycling of water to the max. possible extent.
- (xxvii) Occupational health issues. Baseline data on the health of the population in the impact zone and measures for occupational health and safety of the personnel and manpower for the mine.
- (xxviii) Disaster Management Plan.
- (xxix) Integrating in the Env. Management Plan with measures for minimising use of natural resources - water, land, energy, etc.
- (xxx) Progressive Green belt and afforestation plan (both in text, figures as well as in tables prepared by MOEF). and selection of species (local) for the afforestation/plantation programme based on original survey/landuse.
- (xxxi) Conceptual Final Mine Closure Plan, post mining land use and restoration of land/habitat to pre- mining. A Plan for the ecological restoration of the area post mining and for land use should be prepared with detailed cost provisions.
- (xxxii) Including cost of EMP (capital and recurring) in the project cost and for progressive and final mine closure plan.

- (xxxiii) Details of R&R. Detailed project specific R&R Plan with data on the existing socio-economic status of the population (including tribals, SC/ST, BPL families) found in the study area and broad plan for resettlement of the displaced population, site for the resettlement colony, alternate livelihood concerns/employment for the displaced people, civic and housing amenities being offered, etc and costs along with the schedule of the implementation of the R&R Plan.
- (xxxiv) Public Hearing should cover the details of notices issued in the newspaper, proceedings/minutes of public hearing, the points raised by the general public and commitments made by the proponent should be presented in a tabular form. If the Public Hearing is in the regional language, an authenticated English Translation of the same should be provided.
- (xxxv) In built mechanism of self-monitoring of compliance of environmental regulations.
- (xxxvi) Status of any litigations/ court cases filed/pending on the project.
- (xxxvi) Submission of sample test analysis of:
Characteristics of coal - this includes grade of coal and other characteristics – ash, S and heavy metals including levels of Hg, As, Pb, Cr etc.
- (xxxviii) Copy of clearances/approvals – such as Forestry clearances, Mining Plan Approval, NOC from Flood and Irrigation Dept. (if req.), etc. wherever applicable.

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 provided in Regional languages.
- (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.
- (vii) The final EIA-EMP report submitted to the Ministry must incorporate the issues in TOR and that raised in Public Hearing. The index of the final EIA-EMP report, must indicate the specific chapter and page no. of the EIA-EMP Report where the specific TOR prescribed by Ministry and the issue raised in the P.H. have been incorporated. Mining Questionnaire (posted on MOEF website) with all sections duly filled in shall also be submitted at the time of applying for EC.
- (viii) The aforesaid TOR has a validity of two years only.

The following additional points are also to be noted:

- (i) Grant of TOR does not necessarily mean grant of EC.
- (ii) Grant of TOR/EC to the present project does not necessarily mean grant of TOR/EC to the captive/linked project.
- (iii) Grant of TOR/EC to the present project does not necessarily mean grant of approvals in other regulations such as the Forest (Conservation) Act 1980 or the Wildlife (Protection) Act, 1972.

Yours faithfully,

(Dr.T.Chandini)
Director

Copy to: Chairman, Chhattisgarh State Environment Conservation Board, 1-Tilak Nagar, Shiv Mandir Chowk, Main Road, Avanti Vihar, RAIPUR-Chhattisgarh – 492001.