No. J-11015/03/2008-IA.II(M)
Government of India
Ministry of Environment & Forests

Paryavaran Bhawan,
CGO Complex,
New Delhi-110510.

To

Dated: 18th March 2008

M/s Rajasthan Rajya Vidyut Utpadan Nigam Ltd.,
Vidyut Bhawan, Janpath,
Jyoti Nagar,
JAIPUR – 302005.

Sub: Parsa East and Kanta Basan Opencast Mine (10 MTPA) of M/s Rajasthan Rajya
Vidyut Utpadan Nigam Ltd.,of Hasdeo-Arand Coalfields in Tehsil Udaypur, Dist. Sarguja, Chhattisgarh - Terms of Reference (TOR) – reg.

Sir,

The undersigned is directed to refer to your letter no. RUVN/Dy.CE(Fuel)/XEN (F)/F./D.544 dated 29.12.2007 regarding the subject mentioned above and consideration of the same in the meeting of Expert Apprsial Committee (T&C) held on 26th -27th March 2008. It was noted that the proposal is for opening a new opencast coal mine project of 10 MTPA in two coal blocks – Parasa Eat and Kente Basan in Hasdeo-Arand Coalfields in district Surguja, Chhattisgarh. The coal is for meeting the req. of M/s RRVUNL's two proposed thermal power projects – Chhabra Phase-II (500 MW) and Jhalawar (Kalisind 1000 MW). The total ML area is 2767 ha of which 1995 ha is forestland consisting of only protected forest, 686 ha is agr. land and 86 ha is Govt. land. Surface miner is to be used for extraction of coal and OB removal by shovel-dumper. Coal washery unit designed for 10 MTPA of raw coal (28, 500 TPD) and consuming about 5700 m3/d of water is proposed at a later stage. Transportation to washery would be by conveyor belt. Of the total lease area, 2320 ha would be quarry area, 50 ha is for OB dumps, 20 ha is for infrastructure, and 377 ha is for safety zone and rationalisation area. Mine township would be outside the ML. Of the total quarry area of 2320 ha, 1995 ha would be reclaimed. R&R is applicable for 6 villages– Salhi, Hariharpur, Parsa, Kete, Ghatbarra and Parogiya for 472 PAFs found in the core zone. 70% of the area is tribal population. Average stripping ratio is 1:6.3. Ultimate working depth is 250m. At the end of mine life, avoid of 325 ha would left. Life of the proposed line is about 30 years. Despatch of coal form the Ml to the linked TPPs would be by rail at a distance of 70 km. It is proposed to establish a railway track, which is being surveyed. There are no major streams, canals, or rivers found in the study area. River Atem and Chhoti Chorni flow at a distance of

2 km and 4 km respectively from the lease boundary. The are also does not fall within 10km of any ecologically sensitive area.

The Committee desired that the linked coal washery unit should have been included in the proposal so that the combined impacts could be assessed. 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 establishing an opencast coal mine project of **10 MTPA rated capacity** based on the generic structure specified in Appendix III of the EIA Notification 2006.

(ii) An EIA-EMP Report would be prepared for 10 MTPA rated capacity based on 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 5.3 MTPA of coal production based on approval of project/Mining Plan for 10 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 clearly delineating the major topographical features such as the land use, 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 are found in the area, surface drainage of rivers/streams/nalas/canals, locations of human habitations, major constructions including railways, roads, pipelines, major industries/mines and other polluting sources..

(v) Land use map (1: 50,000 or 100,000 scale) based on a recent satellite imagery of the study area may also be provided with explanatory note of the land use.

(vi) Map showing the core zone delineating the agricultural land (irrigated and irrigated, uncultivable land (as defined in the revenue records), forest areas (as per records).

(vii) Contour map of 3m intervals and 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 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.

(viii) Break up of lease area as per different land uses and their stage of acquisition.

(ix) Break-up of lease area as per mining operations.

(x) Impact of changes in the land use due to the start of the project since part of the land being acquired is forestland and agr. land.

(xi) Collection of one-season (non-monsoon) primary base-line data on environmental quality - air (SPM, RPM, SOx and NOx), noise, water (surface and groundwater), soil.

(xii) Map of the study area (core and buffer zone clearly delineating the location of various stations superimposed with location of habitats, other industries/mines, pouting sources. The number and location of the stations in both core zone should be selected on the basis size of lease 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 as per ISI and surface water as per CPCB guidelines.

(xiii) Details of mineral reserves, geological status of the study are 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 should be included.

(xiv) 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. The use of surface miner/rock breaker to be examined to eliminate drilling ad blasting operations.

(xv) The Committee noted that since Schedule-I fauna and important medicinal plant species are reportedly abundant in the study area, a. detailed inventorisation would be required along with Conservation Plan for the endangered flora-fauna and with comments of the Chief Wildlife Warden of the State Government. Study on the existing flora and fauna in the study area 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. Study on the existing flora and fauna in the study area 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 project falls within 10km of an ecologically sensitive area, then a comprehensive Conservation Plan should be prepared and furnished along with comments form the CWLW of the State Govt. The Plan must incorporate dedicated corridors for movement of elephants within the region.

(xvi) A detailed Area Drainage Study should be carried out and on impact of diversion of the nala on the surface hydrology studied. Impact of mining on hydrology, modification of natural drainage, diversion and channelling of the existing rivers/water courses flowing though the ML and adjoining the lease and

the impact on the existing users and impacts of mining operations thereon. Impact of construction of embankment on the surface hydrology of the area.

(xvii) Detailed water balance should be provided. The break up of water requirement for the mine should be given separately.

(xviii) Detailed hydrology and hydrogeology studies required to be carried out. Mine pit water to be used after mien development intersects water table. Details of the source of water during the intervening period along with approval of the competent authority should be provided. Source of water for use in mine, sanction of the competent authority in the State Govt. and impacts vis-à-vis the competing users. Water req. estimated for drinking appeared to be high and requires to be reworked.

(xix) Impact of mining and water abstraction use in mine on the hydrogeology and groundwater regime studies with at least one pumping test to analyse the aquifer characteristics within the core zone and 10km buffer zone including long–term modelling. Details of rainwater harvesting and measures for recharge of groundwater should be reflected.

(xx) Impact of blasting, noise and vibrations. Examine if surface miner and/rock breaker could be used to avoid blasting.

(xxi) AAQ stations established near the edge of 10m buffer zone should be relocated close to habitation and one control station. Impacts of mining on the AAQ, predictive modelling using the ISCT-3 (Revised) or latest model. Since the linked TPS is to be located within the 10 sq. m study area, the Committee desired that the AQIP Modelling should be carried for the integrated operation of the Coal Mine and the TPS at their peak capacity.

(xxii) Impacts of mineral transportation – within and outside the lease along with flow-chart indicating the specific areas generating fugitive emissions. Impacts of transportation by belt conveyors, 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.

(xxiii) 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 based on slope stability studies with a max of 28^{o} angle as the ultimate slope. The dumps should be situated away form the diverted nala with a distance of at least 100m from the nala and any other water course. Sections of dumps (ultimate) (both longitudinal and cross section) with relation to the adjacent area should be shown.

(xxiv) Impact and management of wastes and issues of rehandling and backfilling as part of progressive mine closure and reclamation.

(xxv) 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.

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

(xxvii) Disaster Management Plan and risk assessment.

(xxviii) Integrating in the Env. Management Plan with measures for minimising use of natural resources – water, land, energy, etc.

(xxix) Progressive Green belt and afforestation plan (both in text, figures as well as in tables prepared by MOEF). Selection of species (local) for the afforestation/plantation programme base don original survey/landuse.

(xxx) Conceptual Final Mine Closure Plan with financial allocation including decommissioning and details of post-mining land use developments and for habitat restoration of land/habitat to pre-mining. Plant species should be native species and exotics should be avoided for habitat restoration.

(xxxi) Including cost of EMP (capital and recurring) in the project cost and for progressive and final mine closure plan.

(xxxii) Detailed R&R Plan with specific details addressing tribals, their relocation, land, livelihood options, etc under the existing legislations as applicable. Detailed R&R Plan with data on the existing socio-economic status of the population 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 the schedule of the implementation of the R&R Plan.

(xxxiii) Detailed plan for socio-economic and welfare measures. The PP may explore establishment of cooperatives with some run by women involving enterprise/skills/resources of the local area and involving local communities.

(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 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) Manpower req. was high and should be re-examined.

(xxxvii) 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 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.

After the preparation of the draft EIA-EMP Report as per the aforesaid TOR, and the public Hearing conducted as prescribed in the EIA Notification 2006 and the proponent will take necessary action for obtaining environmental clearance under provisions of the EIA Notification 2006.

Yours faithfully,

(Dr.T.Chandini)
Director

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