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M.K. Shukla,
CGM, CIL, Delhi

No.J-11015/866/2007-IA.II(M)
Government of India
Ministry of Environment & Forests

Paryavaran Bhawan,
C.G.O.Complex,
New Delhi -110510.

Dated: 18th June 2007

To
General Manger (CP & P),
M/s Mahanadi Coalfields Ltd.,
At PO: Jagruti Vihar,
Burla, Dist. Sambalpur – 768020,
ORISSA.

Sub: Nandira Underground Coal mine Project (0.33 MTPA) of M/s Mahanadi Coalfields Ltd. (MCL), located in villages Jambubahali, Danara, Badajorada and Natedi, Tehsil Talcher, District Angul, Orissa- environmental clearance – reg.

Sir,

This has reference to letter No. 43011/97/2007- CPAM dated 29.06.2007 forwarding your application and your letters dated 26.06.2007, 09.10.2007, 15.10.2007, and M/s Coal India Ltd.'s letter dated 11.03.2008 on the above-mentioned subject. The Ministry of Environment & Forests has considered your application. It has been noted that the project is for **production of coal at a capacity of 0.33 MTPA (million tonnes per annum) in the Nandira Underground Coal mine Project. The total lease area is 370 ha** of which 15.78 ha is agricultural land, 325.38 ha is forestland, 28.41 ha is wasteland and 0.43 ha is surface water bodies. In addition, an area of 33.91 ha has been acquired for township. The entire lease area of 370 ha is for UG mining. There area no National Parks, Wildlife Sanctuary, Biosphere Reserves found in the 10 km buffer zone. However, a number of Reserve Forest are situated within the core and buffer zone. Forestry clearance has been obtained on 14.01.2005 for diversion of 325.78 ha of forestland. Nandira Jhar and Singada Jhar flow at a distance of 2.9 km and 1.8 km respectively from the ML boundary. The project does not involve major modification of the natural drainage. Project does not involve R&R. Mining will be underground by mechanised method involving mainly caving and in some sections involving sand stowing. **Rated capacity of the mine is 0.33 million tonnes per annum (MTPA) of coal production**. Mineral transportation of **1100 TPD** of coal is by rail. Ultimate working depth of the mine is 118 m below ground level (bgl). Water table is in the range of 2.7m – 8.56 m bgl during pre-monsoon and 3.32m – 5.92m bgl during post-monsoon. Mining has intersected water table. Peak water requirement is 1280m^3/d, of which 620 m^3/d is for drinking and obtained from Integrated Water Supply Scheme of Talcher Coalfields and the balance 660 m3/d is from mine sump water and used for sand stowing (605 m3/d) and for other mine operations. Life of the mine at the rated capacity is 30 years. Public Hearing was held on 16.08.2006. NOC has been obtained on 27.10.2006. The project has been approved by M/s CILBoard. Capital cost of the project is **Rs. 17.96 crores**.

2. The Ministry of Environment & forests hereby accords environmental clearance for the above-mentioned **Nandira Underground Coal Mine Project** of **M/s MCL for production of coal at 0.33 MTPA rated capacity in a total lease area of 370 ha** under the provisions of the Environmental Impact Assessment Notification, 1994 and subsequent amendments thereto subject to the compliance of the terms and conditions mentioned below:

A. Specific Conditions

(i) No depillaring operation shall be carried out below villages and other surface structures.

(ii) Solid barriers shall be left below the roads falling within the blocks to avoid any damage to roads.

(iii) Regular monitoring of subsidence movement on the surface over and around the working area and impact on natural drainage pattern, water bodies, vegetation, structure, roads, and surroundings should be continued till movement ceases completely. In case of observation of any high rate of subsidence movement, appropriate effective corrective measures should be taken to avoid loss of life and material. Cracks should be effectively plugged with ballast and clayey soil/suitable material.

(iv) Garland/surface drains (size, gradient and length) around the safety areas such as mine shaft outside the active subsidence area to divert the surface water from the ML and from low lying areas. Sump capacity should be designed keeping 50% safety margin over an above the peak sudden rainfall and maximum discharge in the area adjoining the mine sites. Sump capacity should also provide adequate retention period to allow proper settling of silt material. Sufficient number of pumps of adequate capacity shall be deployed to pump out mine water during peak rainfall.

(v) While extracting panels in the lower seam, all water bodies in the subsidence area shall be drained. Dewatering of the old goaves of the upper seam shall be continued as long as the lower seam is worked to prevent accumulation of large water bodies over working area.

(vi) Crushers at the CHP should be operated with high efficiency bag filters. Water sprinkling system should be provided to check fugitive emissions from crushing operations, conveyor system, haulage roads, transfer points, etc.

(vii) Conveyor belt for transportation of coal from coal face to CHP shall be a closed unit.

(viii) Drills should be wet operated.

(ix) A progressive afforestation plan shall be prepared and implemented for the undisturbed area and shall include area brought under green belt development, areas along roads, infrastructure, over surface where mining is being done below, along ML boundary an township outside the lease areas, etc, by planting native species in consultation with the local DFO/Agriculture Department. The density of the trees should be around 2500 plants per ha.

(x) Regular monitoring of groundwater level and quality should be carried out by establishing a network of exiting wells and construction of new peizometers. The monitoring for quantity should be done four times a year in pre-monsoon (May), monsoon (August), post-monsoon (November) and winter (January) seasons and for quality in May. Data thus collected should be submitted to the Ministry of Environment & Forests and tot eh Central Pollution Control Board quarterly within one month of monitoring.

(xi) The Company shall put up artificial groundwater recharge measures for augmentation of groundwater resource if monitoring of water table indicates declining trend. The project authorities should meet water requirement of nearby village(s) in case the village wells go dry due to dewatering of mine.

(xii) The company shall obtain prior approval of CGWA/CGWB Regional Office for use of groundwater if any, for mining operations.

(xiii) Sewage treatment plant should be installed in the existing colony. ETP should also be provided for workshop and CHP wastewater.

(xiv) Besides carrying out regular periodic health check up of their workers, 10% of the workers identified from workforce engaged in active mining operations shall be subjected to health check up for occupational diseases and hearing impairment, if any, through an agency such as NIOH, Ahmedabad within a period of one year and the results reported to this Ministry and to DGMS.

(xv) Digital processing of the entire lease area using remote sensing technique should be done regularly once in 3 years for monitoring land use pattern and report submitted to MOEF and its Regional office at Bhopal.

(xvi) A Final Mine Closure Plan along with details of Corpus Fund should be submitted to the Ministry of Environment & Forests 5 years in advance of final mine closure for approval.

B. General Conditions

(i) No change in mining technology and scope of working should be made without prior approval of the Ministry of Environment and Forests.

(ii) No change in the calendar plan including excavation, quantum of mineral coal and waste should be made.

(iii) Four ambient air quality monitoring stations should be established in the core zone as well as in the buffer zone for SPM, RSPM, SO2 and NOx monitoring. Location of the stations should be decided based on the meteorological data, topographical features and environmentally and ecologically sensitive targets in consultation with the State Pollution Control Board.

(iv) Data on ambient air quality (SPM, RSPM, SO2 and NOx) should be regularly submitted to the Ministry including its Regional Office at Bhubaneshwar and to the State Pollution Control Board and the Central Pollution Control Board once in six months.

(v) Fugitive dust emissions from all the sources should be controlled regularly monitored and data recorded properly. Water spraying arrangement on haul roads, wagon loading, dump trucks (loading and unloading) points should be provided and properly maintained.

(vi) Adequate measures should be taken for control of noise levels below 85 dBA in the work environment. Workers engaged in blasting and drilling operations, operation of HEMM, etc should be provided with ear plugs/muffs.

(vii) Industrial wastewater (workshop and wastewater from the mine) should be properly collected, treated so as to conform to the standards prescribed under GSR 422 (E) dated 19th May 1993 and 31st December 1993 or as amended from time to time before discharge. Oil and grease trap should be installed before discharge of workshop effluents.

(viii) Vehicular emissions should be kept under control and regularly monitored. Vehicles used for transporting the mineral should be covered with tarpaulins and optimally loaded.

(ix) Environmental laboratory should be established with adequate number and type of pollution monitoring and analysis equipment in consultation with the State Pollution Control Board.

(x) Personnel working in dusty areas should wear protective respiratory devices and they should also be provided with adequate training and information on safety and health aspects.

Occupational health surveillance programme of the workers should be undertaken periodically to observe any contractions due to exposure to dust and to take corrective measures, if needed.

(xi) A separate environmental management cell with suitable qualified personnel should be set up under the control of a Senior Executive, who will report directly to the Head of the company.

(xii) The funds earmarked for environmental protection measures should e kept in separate account and should not be diverted for other purpose. Year-wise expenditure should be reported to this Ministry and its Regional Office at Bhubaneshwar.

(xiii) A copy of the environmental clearance letter will be marked to concerned Panchayat/ local NGO, if any, from whom any suggestion/representation has been received while processing the proposal.

(xiv) State Pollution Control Board should display a copy of the clearance letter at the Regional Office, District Industry Centre and Collector's Office/Tehsildar's Office for 30 days.

(xv) The Project authorities should advertise at least in two local newspapers widely circulated around the project, one of which shall be in the vernacular language of the locality concerned within seven days of the clearance letter informing that the project has been accorded environmental clearance and a copy of the clearance letter is available with the State Pollution control Board and may also be seen at the website of the ministry of Environment & Forests at http://envfor.nic.in.

3. The Ministry or any other competent authority may stipulate any further condition for environmental protection.

4. Failure to comply with any of the conditions mentioned above may result in withdrawal of this clearance and attract the provisions of the Environment (Protection) Act, 1986.

5. The above conditions will be enforced *inter-alia*, under the provisions of the Water (Prevention & Control of Pollution) Act, 1974, the Air (Prevention & Control of Pollution) Act, 1981, the Environment (Protection) Act, 1986 and the Public Liability Insurance Act, 1991 along with their amendments and Rules.

(Dr.T.Chandini)
Director

Copy to:

1. Secretary, Ministry of Coal, New Delhi.
2. Secretary, Department of Environment & Forests, Government of Orissa, Secretariat, Bhubaneshwar.
3. Chief Conservator of Forests, Regional office (EZ), Ministry of Environment & Forests, A-31, Chandrashekarpur, Bhubaneshwar – 751023.
4. Chairman, Orissa State Pollution Control Board, Parivesh Bhawan, A/118, Nilkanthanagar, Unit VIII, Bhubaneshwar – 751012.
5. Chairman, Central Pollution Control Board, CBD-cum-Office Complex, East Arjun Nagar, New Delhi -110032.
6. Member-Secretary, Central Ground Water Authority, Ministry of Water Resources, Curzon Road Barracks, A-2, W-3 Kasturba Gandhi Marg, New Delhi.
7. Shri M.K. Shukla, CGM, Coal India Limited, SCOPE Minar, Core-I, 4t Floor, Vikas Marg, Laxminagar, New Delhi.
8. District Collector, Angul, Government of Orissa, New Delhi.
9. Monitoring File 10. Guard File 11. Record File