

COMPLIANCE TO EC CONDITIONS

(Capacity augmentation up to 100 KTPA)

MINISTRY OF ENVIRONMENT & FORESTS ENVIRONMENTAL CLEARANCE FOR AUGMENTATION OF SMELTER CAPACITY AT HIRAKUD BY RELOCATION OF POTS FROM BELGAUM FROM 65 KTPA TO 100 KTPA IN SAMBALPUR DISTRICT IN ORISSA BY M/s HINDALCO INDUSTRIES LIMITED

J 11011/53/2004-IA II (I), DATED : July 14, 2005

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| 1.0 | <p>This has reference to your communication No. Nil dated 2nd April 2004 along with application, EIA/EMP and related project documents, CD and subsequent clarifications furnished by you vide your letters dated 9th March, 2005 and 25th May, 2005 for environmental clearance on the above mentioned project. The Ministry of Environment and Forests has examined your application. It is noted that proposal involves expansion of alumina smelter plant capacity from 65 to 100 KTPA by adopting HSS technology.</p> <p>Land area required for the project is 13.5 ha. of which 11.48 ha. is for the existing plant. The project does not involve diversion of forest land and displacement of people. Water requirement would increase of 1079 m³/d to 1278 m³/d after the proposed expansion. Additional 200 m³ /d of water requirement will be met from cooling tower blow down from captive power plant (CPP) except for the drinking water. Water requirement will be met from the Hirakud reservoir. Orissa State Irrigation Department has given permission for drawl of 10 cusec of water from Hirakud Dam. Public hearing panel has considered the project in the meeting held on 21.12.2004. The Orissa State Pollution Control Board has granted NOC</p> | |
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| | <p>on 9.3.2005. Total cost of the project is Rs.232 crores.</p> <p>The Ministry of environment and Forests hereby accords environmental clearance to the above project under the provisions of EIA Notification dated 27th January 1994 as amended subsequently subject to strict compliance of the following specific and general conditions:</p> | |
| | A. SPECIFIC CONDITIONS: | |
| | <p>i. The gaseous emissions from various process units shall conform to the standards prescribed from time to time. The State Board may specify more stringent standards for the relevant parameters keeping in view the nature of the industry, its size and location. At no time the emission level should go beyond the prescribed standards. In the event of failure of any pollution control system adopted by the unit, the respective unit should not be restarted until the control measures are rectified to achieve the desired efficiency.</p> <p>Ambient air quality monitoring stations should be set up in consultation with the Orissa Pollution Control Board. Data should be regularly monitored and records maintained and report submitted to the Ministry/CPCB/SPCB once in six months.</p> | <p>We have installed FTP (dry scrubbers) to meet the prescribed standards from both MoEF and State pollution control Board. We are also regularly monitoring the particulate and fluoride emission from the FTP out let and the fugitive fluoride from the pot rooms and the results are being submitted to SPCB/CPCB/MOEF regularly.</p> <p>Seven numbers of ambient air quality stations are set up and regularly monitored and results are reported to SPCB every month and MoEF in six monthly report.</p> |
| | <p>ii. There shall be no discharge of process effluent. As reflected in the EIA/EMP report, there shall be zero effluent discharge from the smelter plant. In addition, efforts shall be made to re-use waste water from the existing plant. Wastewater from the domestic effluent after treatment in Sewage Treatment Plant shall conform to the prescribed standards. The treated effluent shall be used for green belt development.</p> | <p>We have already commissioned new ETP (250 KLD) in addition to existing Plant ETP (250 KLD) for treating smelter effluent which is working satisfactorily. The treated water is being recycled to the raw water tank and getting reused inside the plant.</p> <p>The new Plant STP (500 KLD) has already been commissioned and working satisfactorily. The waste water from colony (domestic effluent) is being treated in SSTP (300 KLD) and used for</p> |

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| | | plantation , green belt and gardening etc. |
| iii. | <p>In plant, control measures for checking fugitive emissions from spillage/ raw materials handing shall be provided. Fluoride emissions shall be monitored from the existing pot room, proposed pot room and in the forage around the smelter complex and the data submitted regularly to the Ministry/RO Bhubaneswar and SPCB. Further, dry scrubbing system to control the emissions from the pot lines shall be provided. The fluoride emissions shall not exceed 0.8 kg/t of aluminium produced in the proposed expansion. In the existing plant, the fluoride emission level of 0.8 kg of aluminium produced shall be met by December 2008. Further, the pot emissions through fume treatment plant shall not exceed 0.30 kg/tonne of aluminium produced.</p> | <p>Pre-baked technology has been adopted to reduce the fugitive fluoride emissions. Monitoring of fluoride emission from pot rooms and forage fluoride around smelter complex is being done regularly and we will continue to monitor and present the data to the Ministry/RO, Bhubaneswar and SPCB on the stipulated basis. Dry scrubbers have been provided for 35 KTPA expanded capacity also.</p> <p>We have already converted all our HSS pots to prebake with dry scrubbing system and present fluoride emission is within 0.8 kg/Mt Al.</p> <p>The emissions from stack and fugitive are within limit.</p> |
| iv. | <p>Fugitive fluoride emissions from the pot rooms shall not exceed 0.4 kg./MT of aluminium produced. Fugitive emissions shall be monitored and report submitted regularly to Ministry/RO, Bhubaneswar and SPCB.</p> | <p>As stated in our addendum to the EIA, the fugitive fluoride emissions from pot rooms shall not exceed 0.4 kg./MT of aluminium produced. Fugitive fluoride is being monitored and reported to ministry /RO and SPCB.</p> |
| v. | <p>Solid waste generated from the smelter plant will be spent pot lining (2200 TPA), used oil (3 KLPD) and used batteries. The spent pot lining generated from the smelter shall be properly treated and disposed off as per CREP's recommendations.</p> | <p>We are storing SPL inside covered shed, as per the authorization from OPCB.</p> <p>Further, as a part of re-utilization programme, we have carried a trial run for co-incineration of SPL in our CPP boiler as a fuel mix along with Coal with due permission from SPCB/CPCB. The results found very encouraging.</p> <p>Again as per the SPCB, we have implemented SLF for hazardous wastes. The used oil is partially recycled/ used for lubrication and rest is burnt as fuel along with coal in captive power plant.</p> <p>Used batteries are being returned to suppliers on buy back.</p> |

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| vi. | A green belt of adequate width and density shall be developed within and around the plant premises as per the CPCB guidelines. | We have more than 3.5 lakh surviving trees in and around the factory, colony, public roads and vacant areas in the vicinity of the plant complex. Since 2001 we have already planted more than 1.2 lakhs of trees in and around the colony, public roads and vacant areas in the vicinity of Hirakud. Every year we plan to plant around 20,000 saplings. We do not have adequate space for green belt. However, the total area of the smelter plant is around 28.37 acres where as we have developed green coverage by doing plantation in about more than 82 acres of land. |
| vii. | Occupational Health Surveillance of the workers shall be done on a regular basis and records maintained as per the Factories Act. | <p>Periodic medical surveillance tests are being done and recorded. During the year 2012-13, we have conducted following occupational health surveillance.</p> <ul style="list-style-type: none"> - Pre-employment health surveillance against new recruitment- 72 - Periodic medical health surveillance for permanent employees- 1223 - Periodic medical health surveillance for contractual employees- 2306 <p>No significant abnormalities detected during regular screening of any employees. Treatment and advice was given for minor ailments detected during check up.</p> <p>We have also conducted a specific health survey of our employees through Fluorosis Research and Rural Development Foundation headed by Prof. (Dr.) A.K.Susheela to assess the impact of fluoride on workers health.</p> |
| viii. | Company shall undertake rain water-harvesting measures to recharge the ground water and action plan in this regard should be submitted to the Ministry. | A study has been carried out through the Dept. of Civil Engg., A.U.College of Engineering, Andhra Univ., Visakhapatnam [Prof. (Dr). S. Ramakrishna Rao] for development of |

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| | | rain water harvesting structures at both plant and colony. A team from the said university visited Hiraikud during May & June 2007. Site survey has been carried out for identification of suitable location. Geophysical test were conducted in ten locations. Collection of rain fall data and selection of infiltration test well were carried out during February 2008. The final report has been received. The report states that the scope for ground water recharge through rain water harvesting in Hindalco area is very little for the reasons- a) ground water utilisation for the industry is very low b) due to the presence of shallow water table and c) hard rock at shallow depth. |
| ix | All the recommendations made in the Charter of Corporate Responsibility for Environment protection (CREP) for the aluminium sectors shall be strictly implemented | We will strive to implement the recommendations of CREP. Compliance to CREP recommendations is attached (Annexure-I). |
| | B. GENERAL CONDITIONS: | |
| i. | The project authorities must strictly adhere to the stipulations made by the Orissa Pollution Control Board and the State Government. | Being complied. |
| ii. | No further expansion or modifications in the plant should be carried out without prior approval of the Ministry of Environment and Forests. | Being complied. |
| iii. | Adequate ambient air quality-monitoring stations shall be established in the downward direction as well as where maximum ground level concentration of SPM, SO ₂ and NO _x are anticipated in consultation with the State Pollution Control Board. Data on ambient air quality, fugitive emission and stack emissions should be regularly submitted to this Ministry including its Regional | Seven no. of ambient air monitoring stations have been installed. The ambient air quality, fugitive fluoride and stack emissions are done as stipulated and the data are regularly submitted to the SPCB every month. The same is submitted to ministry's regional office at Bhubaneswar and the Central Pollution Control Board at least once in six |

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| | Office at Bhubaneswar and the State Pollution Control Board/ Central Pollution Control Board once in six months. | months. |
| iv. | Industrial wastewater shall be properly collected, treated as to conform to the standards prescribed under GSR 422 (E) dated 19 th May, 1993 and 31 st December, 1993 or as amended from time to time. The treated wastewater should be utilised for plantation purpose. | Complied. We have two unit (250KLD each) of effluent treatment plant (ETP) and a new Plant STP (500KLD) for treating smelter effluent and sewage respectively, which is working satisfactorily. The treated water is being recycled to the raw water tank and getting reused inside the plant. |
| v. | The overall noise levels in and around the plant area should be kept well within the standards (85 dBA) by providing noise control measures including acoustic hoods, silencers, enclosures etc. on all sources of noise generation. The ambient noise levels should conform to the standards prescribed under EPA Rules, 1989 viz. 75 dBA (day time) and 70 dBA (night time). | Complied. Silencers have already been fitted to discharge vent of the solenoid for point feeders in the electrolytic cells. The ambient noise level is complied. |
| vi. | M/s Hindalco shall comply with the Hazardous Waste (Management & handling) Rule, 2003 and Hazardous Chemicals Rules, 2000 and amendments there under. | Being complied |
| vii. | The project proponent shall also comply with all the environmental protection measures and safeguards recommended in the EIA / EMP report. Further, the company must undertake socio-economic development activities in the surrounding villages like community development programmes, educational programmes, drinking water supply and health care etc. | We have already initiated several socio-economic development activities in the surrounding villages like community development programmes, educational programmes and health care, multi-cropping etc. About Rs. 452.66 Lacs have been spent at Hirakud complex towards community development projects including periphery development during April 2012 to March 2013. |
| viii. | The project authorities will provide adequate funds both recurring and non-recurring to implement the conditions stipulated by the Ministry of Environment | As stated in the EIA report, we have already allocated Rs. 39 crores towards addressing the environmental issues and to implement the conditions stipulated by |

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| | and Forests as well as the State Government along with the implementation schedule for all the conditions stipulated herein. The funds so provided should not be diverted for any other purposes. | the Ministry of Environment and Forests, as well as the State Government. These funds have not been diverted for any other purpose. |
| | ix. The regional Office of this Ministry at Bhubaneswar/Central Pollution Control Board / State Pollution Control Board will monitor the stipulated conditions. A six monthly compliance report and the monitored data along with statistical interpretation shall be submitted to them regularly. | Being complied. |
| | x. The Project Proponent shall inform the public that the project has been accorded environmental clearance by the Ministry and copies of the clearance letter are available with the State pollution Control Board/ Committee and may also be seen at Website of the Ministry of Environment and Forests at http://envfor.nic.in . This should be advertised within seven days from the date of issue of the clearance letter, at least in two local newspapers that are widely circulated in the region of which one shall be in the vernacular language of the locality concerned and a copy of the same shall be forwarded to the Regional Office. | Complied. |
| | xi. The project Authorities shall inform the Regional Office as well as the Ministry, the date of financial closure and final approval of the project by the concerned authorities and the date of commencing the land development work. | Already communicated in our earlier compliance Report. |
| 3.0 | The Ministry may revoke or suspend the clearance, if implementation of any of the above conditions is not satisfactory. | - |

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| 4.0 | The Ministry reserves the right to stipulate additional conditions if found necessary. The Company in a time bound manner will implement these conditions. | - |
| 5.0 | The above conditions will be enforced, inter-alia under the provisions of the Water (Prevention & Central of Pollution) Act, 1974, the Air (Prevention & Control of Pollution) Act, 1981, the Environment (Protection) Act, 1986, Hazardous Wastes (Management and Handling) Rules, 2003 and the Public Liability Insurance Act, 1991 along with their amendments and rules. | - |