

COMPLIANCE TO EC CONDITIONS **[1x 100 MW (UNIT # II)]**

STATUS AS ON 31st MARCH, 2012 ON COMPLIANCE OF CONDITIONS AND SAFE GUARDS LAID DOWN BY GOVT. OF INDIA, MINISTRY OF ENVIRONMENT OF FORESTS VIDE MEMORANDUM NO: J-13011/1/99 – IA.II (T) OF 25 APRIL, 2005 & 04 AUGUST, 1999 FOR 1X100 MW CPP

Condition No: 2. (i)

All the conditions stipulated by Orissa Pollution Control Board vide their letter no. 10039/Ind-II-NOC-906 dated 27th May, 2003 should be strictly implemented.

All the condition stipulated in the NOC of SPCB has been strictly implemented.

Condition No: 2. (ii)

A stack of height of not less than 130 m shall be provided with continuous online monitoring equipment.

A single Stack of height 130 mtr has been provided.

Forbes Marshall-Codel make both Opacity Monitor (Model No: DCEM-2100) and Continuous Flue gas Analyser of SO₂, NO_x and CO₂ (Model No: GCEM 4000) have been installed in Unit # 2 Main Stack.

Condition No: 2. (iii)

Electrostatic precipitators of efficiency not less than 99.9% should be installed and it should be ensured that particulate emissions do not exceed the prescribed limit of 150 mg/m³.

The ESPs are designed to keep the particulate emissions within 100 mg / NM³. The average PM value monitored from ESP outlet for the last six months (October - 2011 to March - 2012) was 66.61 mg/NM³, which is well within the limit of 100 mg/NM³. The values are enclosed.

Condition No: 2 (iv)

Closed Circuit Cooling Device with induced draft should be provided and it should be ensured that only minimum water is drawn for makeup purposes from Hirakud reservoir as permitted by the State Irrigation Department.

Closed circuit cooling tower with induced draft has been provided. It operates more than 5.0 Cycle of Concentration (COC) in order to ensure the use of minimum water for make-up purposes.

Condition No: 2 (v)

Noise level should be limited to 85 dBA and regular maintenance of equipment be undertaken for people working in the area of generator halls and other high noise areas, ear plug should be provided.

Noise quality is being monitored regularly. The noise quality data monitored at various places is enclosed.

Operator cabins and workstations are provided with noise abatement measures such as glass shields. People working in the high noise areas are provided with ear muffs and PPE.

Condition No: 2 (vi)

For controlling fugitive dust, regular sprinkling of water in coal handling and other vulnerable areas of the plant should be ensured

Sprinkling of water on the coal heaps is done regularly to control the fugitive dust emissions. Fixed water sprinklers are also provided around the coal handling area.

Condition No: 2(vii)

Afforestation should be undertaken covering an area of about 10 acres for Unit-II and intensification of the existing green belt should be ensured. As committed, the Company should aim to plant 30,000-40,000 saplings every year in vulnerable areas such as coal handling plant, ash dump areas should be given preference for plantation work

Afforestation and plantation is being taken on the Ash transport road, in and around Plant and ash Mound area etc. About 5.64 lakh trees have been planted since 1993-94 with an average survival rate of more than 75%. About 25,200 plants have been planted during the year 2011-12. The details plantation is enclosed.

Condition No: 2 (viii)

Coal should be used @ 57.59 tonnes/h with GCV of around 3610 KCal/kg and Sulphur content not exceeding 0.49%. The fuel should be transported only in covered tippers/trucks from Ib Valley Coalfields.

Coal is being used with GCV of about 3500 k.cal/kg and sulphur content of around 0.475%. The coal is sourced from own captive mines and is being transported in 45-T volvo-trucks covered with tarpaulin. The Sulphur content of Coal for the last six months (April, 2011 to September, 2011) is enclosed.

Condition No: 2(ix)

Since movement of about 100-120 Tippers/trucks will be involved for Unit-II in addition to the existing movement of similar number of trips for Unit-I, a proper traffic scheduling should be evolved and each vehicle should be checked for adequacy of cover before despatch. The possibility of rail transport by extending the existing rail line from the present rail at Lapanga head to the mine site and from Sambalpur to the plant should also be examined.

The traffic load has been reduced to one third due to the usage of 45 T Volvo trucks replacing 10 T trucks.

The rail transport is under consideration in a phased manner.

Condition No: 2 (x)

As per the proposal submitted for Ash Utilisation, it should be ensured that fly ash is used in cement industry. Brick making and in raising the ash dyke etc. Efforts should also be made in the area of mine filling, land development and agriculture etc. Acquisition of additional land to the tune of 50 acres for ash disposal should be avoided as far as possible by ensuring 100% utilization

At present, Ash is being supplied to cement industries, brick making units and low lying area filling. Balance ash is being transported to Ash mound.

About 3, 69,253 MT of ash (from all the units) was used in different applications (Cement industries, Bricks manufacturing industries and low-lying area filling) during the period April 11 to March 12. The detailed ash utilization is enclosed.

To ensure 100 % ash utilization, a detailed ash utilization program is in place.

HINDALCO's own captive Mines will be available for back filling by 2014-15.

Condition No: 2 (xi)

All effluents generated in various plant activities should be collected in the Central Effluent Treatment plant and treated effluents to the tune of 160m³/hr from CPP unit-1 and unit II .only should be discharged after ensuring adherence to specified standards before its release in Kharjorenallah tributary of Mahanadi river. The concept of zero discharge should be adapted to a maximum possible extent.

All the wastewater generated from Unit-1 & Unit-2 is being re-used in in-house activities such as ash moisturisation, coal-yard spraying, road cleaning, water spraying at ash

disposal area, gardening and in project work. The effluent meets the prescribed standard.

Condition No: 2 (xii)

The project authorities should interact with the concerned State Government Departments for facilitating implementation of the "Project Turtle" of the State Government. The proposal drawn in this regard including the proposed financial support by the Company should be submitted to the Ministry within three months.

Interactions have been made with the Chief Conservator of Forests-Wild Life and the principle Secretary, Forests and Environment Department, Government of Orissa for facilitating implementation fo the "Project Turtle" of the State Government by providing financial support. We are yet to receive the communication on the above issues.

Further, we have initiated an application to MOEF, New Delhi with a copy to your office requesting for modification/ updation/withdrawal of this conditions from our EC.

Condition No : 2. (xiii)

Regular monitoring for SPM. SO₂ and NO_x around the power plant may be carried out and records maintained.

The ambient air quality is being monitored at seven locations regularly. The ambient air quality data monitored for the last six months (October, 2011 to March, 2012) is enclosed.

Condition No: 2 (xiv)

Full cooperation should be extended to the Scientists/Officers from the Regional Office of the Ministry at Bhubanesliwar/the CPCB/the SPCB who would he iiionitoiinu the compliance of environmental status. Complete set of impact assessment report and the Management Plans sliould be forwarded to the Regional Office for their use during monitoring.

All sorts of cooperation is being provided to the statutory authorities during their visit to the plant.

Condition No: 2 (xv)

Adequate financial provision should be made for implementation of environmental protection measures indicating item-wise break-up and at least 1% of the cost of the project should be spent on improvement of ecology of the area. These costs should be included as a part of project cost. The funds earmarked for environmental protection measures should not be diverted for other purposes and year-wise expenditure should be reported to the Ministry.

Provisions are being made to allocate the funds for controlling the Pollution Control Equipment and abating the Pollution every year.

The actual environmental expenditure for the year 2011-12 (April, 2011 to March, 2012) was Rs. 1257.41 Lacs for all the four units (367.5 MW). The detailed break-up expenditure incurred on Environment Protection is enclosed.

Condition No : 2(xvi)

The Company should strengthen its Environmental Group to ensure continuous study of various environmental issues in the region.

A study on Reclamation vis-à-vis Restoration and Biological diversity on ash mound area due to various stages of plantation over ash at Hirakud was under taken by the department of Environmental Sciences, Sambalpur University during the year. The final report of the study has already been submitted to your kind office vide our letter of 21 October, 2010.

Further, we had undertaken a trial project on co-incineration of Spent Pot Lining (SPL) generated from our Smelter Plant in our boilers with due permission from State Pollution Control Board, Orissa to explore the possibility of utilization of SPL materials. The Project was taken in Boiler # 9 of Unit # 4 (100 MW Set) for using SPL of 0.5 % and 1 % as fuel-mix along with Coal as per the approved protocol during 14-22 January, 2010. The results are very encouraging. The copy of the Report has already submitted to your kind office vide our letter of 21 October, 2010.

Further, as advised by CPCB and SPCB, we have carried out one more trial run for co-incineration of Spent Pot Lining (SPL) in Boiler # 9 of Unit # 4 (100 MW Set) for using SPL of 1 % as fuel-mix along with Coal as per the approved protocol during 14-18 September, 2010 in presence of CPCB/SPCB/MOEF officials.

Condition No: 3.

The Ministry of Environment & Forests or any other Competent Authority may modify / alter any of the stipulated condition(s) or stipulate any additional condition(s) in the interest of environment, which shall be complied with by the proponent. The Ministry reserves the right to revoke the clearance if conditions stipulated are not implemented to the satisfaction of the Ministry.

Agreed

Condition No: 4.

The environmental clearance accorded shall be valid for a period of 5 years for commencement of construction / operation of the power plant. In case

the project authorities fail to do so within this stipulated period this environmental clearance shall stand lapsed automatically.

This is an existing operating unit.

Condition No: 5.

In case of any deviation or alternation in the project profile / scope of the project a frersh reference should be made to the Ministry to assess the adequacy of the condition(s) imposed and to add additional environmental protection measures required, if any.

Agreed

Condition No : 6.

The above stipulations would be enforced among others under the Water (Prevention and Control of Pollution) Act, 1974, the Air (Prevention and Control of Pollution) Act, 1981, the Environment (Protection) Act, 1986, Hazardous Wastes (Management & Handling) Rules, 1989 and its amendments, the Public Liability Insurance Act, 1991 and its amendments, the Environment Impact Assessment Notification of January, 1994 and its amendments.