

Half Yearly Compliance Report of Environmental Clearance Conditions for Barh STPP Stage-II (2x660 MW)

No. J-13011/29/2007-IA-II(T)
(October 2022 – March, 2023)

A. Compliance with the Conditions Stipulated in Environmental Clearance for Stage-II (2x660 MW)

S. No.	Stipulation	Status of Implementation (As on 31.03.2023)
(i)	The Land requirement for Phase-I & Phase- II put together shall be restricted to 3200 acres. No additional land shall be acquired for the project or any utilities/facilities relating to the project.	Total land requirement for the project is restricted to 3200 acres.
(ii)	Coal with ash content not exceeding 42% and sulphur content not exceeding 0.5% shall be used.	Condition is being complied. Coal analysis report is attached as Annexure-1
(iii)	Space provision shall be made for installation of FGD of requisite efficiency of removal of SO ₂ , if required at a later stage.	Space provision was kept for FGD plant. The contract for installation of FGD has already been awarded on 18.09.2018. work is in progress.
(iv)	A bi-flue stack of 275 m height with exit velocity of at least 23 m/s shall be provided with continuous online monitoring system.	A bi flue stack of 275 m has been constructed and the online continuous stack monitoring system has been commissioned. The Flue Gas Velocity monitoring data of (October'22 to March'23) is enclosed at Annexure-2
(v)	High efficiency Electrostatic Precipitator (ESPs) shall be installed so as to ensure that particulate emissions do not exceed 100mg/Nm ³ .	ESP with 99.9% efficiency is being operative and particulate emissions limits are being complied. The stack emission monitoring report is attached as Annexure- 2.
(vi)	Closed Cycle Cooling system with cooling towers shall be provided. COC of at least 4 shall be adopted.	Closed Cycle Cooling system has been commissioned as stipulated & presently being maintained above 4.

(vii)	Treated effluents conforming to the prescribed standards shall only be discharged in to the Ganga river.	No treated effluent is discharged outside. Report of treated effluent which is reused in plant activities is attached as Annexure-3
(viii)	Rainwater harvesting should be adopted. Central Ground Water Authority/ Board shall be consulted for finalization of appropriate rainwater harvesting technology within a period of three months from the date of clearance.	The matter has been taken up with Central Ground Water Board. A pilot project on service building has been recommended by Central Ground Water Authority. Pilot Rain water harvesting structure for ground water recharging has been constructed. A Study has been done by IIT Guwahti, as per the report, the ground water level is very high, so ground water recharging structures are not recommended although the surface storage of rain water is recommended. The Study Report attached as Annexure 4
(ix)	100% Fly ash shall be collected in dry form and its full utilization shall be achieved within 9 years in accordance with the notification on fly ash utilization SO 763 (E) dated 14 th September, 1999 and the amendments made therein from time to time.	100% ash utilization as per notification of MoEF&CC is being ensured. (For F.Y 22-23, 161.13% ash utilized against target of 100% and for FY 2022-23,
(x)	The ash dyke shall be so designed and constructed so as to ensure that breaching of ash dyke does not take place.	The aspect has been taken care in design aspect of ash dyke.
(xi)	A disaster management plan shall be prepared to meet any eventuality of ash dyke getting breached. A copy of the same shall be submitted to the Ministry and its Regional Office at Bhubaneswar.	Disaster management plan of NTPC, Barh (including ash dyke breach management) has already been submitted to the regional office, MoEF&CC, Ranchi dated 02.03.2019. The Copy of revised Disaster Management Plan is attached as Annexure 5

(xii)	Regular monitoring of groundwater around the ash pond shall be carried out. The location of the monitoring network and size of piezometer shall be decided in consultation with Central Ground Water Authority / State Ground Water Board.	Regular monitoring of groundwater at three locations around the ash pond is being carried out. Piezometers have been installed and in operation. The ground water quality around the ash dyke is attached as Annexure -6.
(xiii)	Noise levels shall be limited to 75 dB (A). For people working in the high noise area, protective devices such as earplugs etc. shall be provided.	Ambient Noise level of 75 dB (A) has been maintained at plant boundary through regular maintenance of equipment. People working in high noise areas have been provided with personal protective equipment. The Noise monitoring is attached as Annexure-7.
(xiv)	A green belt of at least 100 m width all around the periphery of the project shall be developed. Besides this, the green belt in the north-east side of the plant area, around the coal stock yard, shall be at least 180 m in width so as to contain the fugitive emission from reaching the neighboring villages.	Green belt as stipulated is being developed around the project. (As on 31 st March 2023 2,19,300 trees have been planted)
(xv)	Regular monitoring of the air quality shall be carried out in and around the power plant and records shall be maintained. The location of the monitoring stations and frequency of monitoring shall be decided in consultation with State Pollution Control Board. Six monthly reports shall be submitted to this Ministry.	Regular monitoring of air pollutants at 04 locations (after consultation with SPCB, Bihar) in and around the plant is being carried out, and the same being submitted to Ministry. The monitoring data Report of the current period (Oct'22 to March'23) is enclosed at Annexure-8.
(xvi)	For controlling fugitive dust, regular sprinkling of water in vulnerable areas on the plant shall be ensured.	Regular sprinkling is being done through water tanker to control fugitive dust generation due to construction activities. Dust Suppression & Extraction System has been provisioned in coal handling area for controlling Fugitive emission.

(xvii)	<p>The project proponent should advertise at least in two local newspapers widely circulated in the region around the project, one of which should be in the vernacular language of the locality concerned within seven days of issue of this letter, informing that the project has been accorded environmental clearance and copies of clearance letters are available with the State Pollution Control Board/Committee and may also be seen in the website of the ministry of Environment and Forests in the http://envfor.nic.in.</p>	<p>Complied: Hindustan Times and Dainik Bhaskar (dated:-02.11.2007)</p>
(xviii)	<p>A separate environment monitoring cell with suitable qualified staff should be set up for implementation of the stipulated environmental safeguards.</p>	<p>An Environmental Cell has been established at the site titled Environment Management Group (EMG). Ref Annexure -9.</p>
(xix)	<p>Half yearly report on the status of implementation of the conditions and environmental safeguards should be submitted stipulated to this Ministry, the Regional Office, CPCB and SPCB,</p>	<p>Half yearly report on the status of implementation of the conditions and environmental safeguards is being submitted regularly to the Ministry, the Regional Office of MoEF&CC.</p>
(xx)	<p>Regional Office of the Ministry of Environment & Forests located at Bhubaneswar will monitor the implementation of the stipulated conditions. A complete set of documents including Environmental Impact Assessment Report, Environment Management Plan and the additional information/clarifications submitted subsequently of the Ministry shall be forwarded to the Regional Office for their use during monitoring.</p>	<p>A complete set of Stipulated document have been submitted to the regional office MoEF&CC, Ranchi vide letter dated 02.03.2019.</p>
(xxi)	<p>Separate funds should be allocated for implementation of environmental protection measures along with item-wise break-up. These cost should be included as part of the project cost. The funds earmarked for the environment protection measures should not be diverted for other purposes and year-wise expenditure should be reported to the Ministry.</p>	<p>It has been done and the details have been submitted to the Regional office MoEF&CC, Ranchi vide letter dated 02.03.2019.</p>

(xxii)	Full cooperation should be extended to the scientists/officers from the ministry and its regional office at Bhubaneswar e CPCB/ the SPCB during monitoring of the project.	Shall be complied with
(xxiii)	The Ministry reserves the right to revoke the clearance if conditions stipulated are not implemented to the satisfaction of the Ministry.	
(xxiv)	The environmental clearance accorded shall be valid for a period of 5 years to the start of production operations by the power plant.	
(xxv)	In case of any deviation or alteration in the project proposed from those submitted to this Ministry for clearance, a fresh 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.	Shall be complied with
(xxvi)	The above stipulations would be enforce 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 and rules there under, Hazardous Wastes (Management and Handling) Rules, 1989 and its amendments, the Public Liability Insurance Act, 1991 and its amendments.	
(xxvii)	Compliance with the condition stipulated in amendment of Environmental clearance of Stage-II (2x660MW) vide letter dated 08.04.2013	
(xxviii)	Fly ash shall not be used for the agricultural purpose. No mine void filling will be undertaken as an option for ash utilization without adequate lining of mine with suitable media such that no leachate shall take place at any point of time. In case the option of mine void filling is to be adopted prior detailed study of soil characteristics of the mine area shall be undertaken from an institute of repute and adequate clay lining shall be ascertained by the State Control Board and Implementation done in close coordination with the State Pollution Control Board.	As stipulated, the fly ash generated from the plant is being utilized by cement manufacturing & Brick manufacturing Industries it is also being utilized in Road Construction works. Further, Fly ash is not being used in agriculture and for mine void filling.
(xxix)	Utilization of 100% fly ash generated shall be made from 4 th year of operation. Status of implementation shall be reported to the regional office of the ministry of time to time.	For F.Y 22-23, 161.13% ash utilized against target of 100%.

(xxx)	A long term of study of Radio activity and heavy metal contents on coal to be used shall be carried out through a reputed institute. There after mechanism for (an in built continuous monitoring) a regular periodic monitoring for radio activity and heavy metals in coal and fly ash (Including bottom ash) shall be put in place.	The radioactivity study in coal and ash was carried out by Board of Radiation & Isotope Technology (BRIT) in April 2021. All the parameters are within the specified range. Report Attached as Annexure – 10. The heavy metal analysis done in coal, fly ash and bottom ash and all parameters are within the range. Report Attached as Annexure – 11.
(xxxii)	Continuous Monitoring for heavy metals in and around the existing ash pond area shall be immediately carried out by reputed institute like IIT.	Periodic Monitoring for heavy metals (such as As, Cu,Cr, Cd, Pb, Zn etc) in and around ash pond area is being carried out at 3 locations, with a periodicity of 3 months. The ground water quality around the ash dyke is attached as Annexure -6.
(xxxiii)	Fugitive emission of fly ash (Dry or Wet) shall be strictly controlled so that nonagricultural land is affected. Damage to any land, if any shall be mitigated and suitable compensation provided in consultation with the local panchayat.	Regular sprinkling is being done to control fugitive emissions of fly ash. No such damage of agriculture/non agriculture area has been reported.
Additional condition on EC amendment	24X7 online continuous monitoring system for ambient air quality parameters SO _x , NO _x and PM shall be established with connected server to CPCB and SPCB	Three nos. of Continuous Ambient Air Quality Stations has been installed for monitoring of PM ₁₀ , PM _{2.5} , SO _x and NO _x . The data is being connected to CPCB & SPCB server.