



**J-13012/21/2015-IA.I (T)**  
**Government of India**  
**Ministry of Environment, Forest and Climate Change**

3<sup>rd</sup> Floor, Vayu Block,  
Indira Paryavaran Bhawan, Jor Bagh Road,  
Aliganj, New Delhi-110003

Dated: 07.11.2017

To

The Chief Executive Officer  
M/s Patratu Vidyut Utpadan Nigam Ltd,  
(A JV of NTPC Ltd. and JBVNL)  
NTPC Bhawan, Core-7, Scope Complex,  
7, Institutional Area, Lodhi Road,  
New Delhi-110003.

Tel No.011-24360071;

**Sub: 3x800 MW (Phase-I) Patratu Super Thermal Power Project at Patratu, District Ramgarh, Jharkhand by M/s Patratu Vidyut Utpadan Nigam Ltd. (PVUNL)- reg. EC**

Sir,

This has reference to your online application no. IA/JH/THE/32025/2015 dated 9.6.2017 and the documents submitted vide your letters dated 20.9.2017 and 23.9.2017 on the above mentioned subject regarding grant of Environmental Clearance.

2. It has been noted that ToR for the above mentioned project has been issued vide Ministry's letter dated 7.6.2016. The proposed project is for establishing 3x800 MW Patratu Super Thermal Power Project (Phase-I) at Patratu, Dist. Ramgarh, Jharkhand within the existing premises of Patratu Thermal Power Station by M/s Patratu Vidyut Utpadan Nigam Ltd. which is a joint venture of M/s NTPC and M/s Jharkhand Bidyut Vitaran Nigam Ltd. Existing Patratu Thermal Power Station (PTPS) consists of 10 units having configurations as given below:

Units	Configuration
Unit:1-6	4x50MW & 2x100 MW
Unit:7-10	4x110 MW

These units are 30-50 years old with estimated heat rate ranging from 3500 - 4700 kCal/KWh leading to higher generation cost. Some of these units were shut down for last 13 years. The power station has been completely shut down since 24.1.2017. Units-1, 3, 5 & 8 have been deleted from installed capacity. CEA has been approached for phasing out of Units-4, 6, 7, 9 & 10.

3. Patratu STPP, Phase-I is located within Patratu Thermal Power Station (PTPS) near villages Hesla, Jaynagar, Koto, Katia and Balkudra in Ramgarh district of Jharkhand. The nearest Patratu railway station is (on Gomoh-Barkakana-Garwa Road Section of ECR) towards NE direction at about 2.8 Km. The site is located on the left bank of Nalkari River (150 m plant boundary), which is a tributary of the Damodar River. HFL of Nalkari River is 367.5 m near Patratu TPS in the year 1958 prior to construction of the Nalkari dam. The proposed site is located at Latitude of 23°37'53" N to 23°39'07" N and Longitude of 85°16'57" E, to 85°17'59" E near Patratu town at about 4km distance in Ramgarh district of Jharkhand. The site is approximately 35 km from district headquarter Ramgarh and about 45 km from Ranchi. National Highway Nos. 33 & 23 are located at approx. 21 km and NH-75 at about 27 km from Plant boundary. The nearest Railway Station is Patratu which is towards NE direction at a distance of about 2.8 km on Barkakhana - Barwadih

Railway line. Nearest commercial airport is Ranchi at a distance of about 45 km by road.

4. Koto Protect Forest (PF), Tokisud PF, Sankul PF, Aswa PF, Ghaghra PF, Jarad PF, Haiharpur PF, Lem PF, Bicha PF, Rarha PF are within 10 km radius of the proposed projects. There are no wildlife sanctuaries, national parks and other protected areas within 10 km radius of the proposed project.

5. Coal-fired supercritical power plants operate at very high temperature and pressure (580°C with a pressure of 23 MPa) resulting much higher heat efficiencies (46%), as compare to sub-critical coal-fired plants which operates at 455°C and efficiency of about 40%.

6. The land requirement for the proposed power project is approx. 1,234 acres. However, there is no acquisition of land involved as the existing land of Patratu Power Station will be utilised for the proposed power project. The plant facilities for proposed project (Phase-I:3x800 MW) such as main plant, ash disposal area, township and railway track would be accommodated within the 1,234 acres out of 1,859 acres of land agreed to be transferred to PVUNL for PSTPP, Phase-I & II. Out of 1,234 acres, that is required for Phase-I, 1175.437 acre land is allotted for transfer to PVUNL vide SANKALP letter No. 782 dated 16.03.2016 of Department of Energy, Government of Jharkhand and 58.563 acre shall be transferred later. The land requirement has been duly optimized to meet the CEA guidelines. Break-up of land is main plant + greenbelt + township: 453.667 acres, ash dyke -1+ corridor: 339.190 acres, ash dyke-2+ corridor: 347.8 acres, Rail track corridor: 34.78 acres, area to be transferred later: 58.563 acres.

7. Annual coal requirement for the proposed project is 13 MTPA. Ministry of Coal, GOI re-allocated Banhardih captive coal block to JUUNL for end use of Patratu expansion, Phase-I vide order dated 5.4.2016 and later accorded "in-principle" approval to assign Banhardih coal block to PVUNL vide letter dated 11.09.2015. A Deed of Adherence for allocation of Banhardih coal block from JUUNL to PVUNL has been entered on 02.06.2017. Coal characteristics of Banhardih coal block are as follows: Ash content: 10-51%, Sulphur: 0.6-0.9%, Moisture: 6-11%, GCV-3113-4324 kcal/kg.

8. EC and FC for the Banhardih coal block is yet to be obtained. It is anticipated that, obtaining the statutory clearances and commencement of production from the Banhardih coal block shall be achieved before the commercial operation date (COD)of the first unit (1x800 MW) of Patratu STPP, Phase-I. However, to meet the coal requirement of the project in the intervening period, if any, PVUNL has applied to MoC vide letter No. PVUNL/CEO/002 dated 07.06.2017 for grant of "Bridge Linkage" for the end use in Patratu STPP, Phase-I (3x800 MW).

9. The envisaged mode of coal transportation from the coal mine to the power plant is by captive Merry-go-round (MGR) system if it is available as envisaged from nearby mines at Banhardih, alternatively Indian Railways System shall be utilized for delivery of coal through BOBR/ BOX- N wagons. For coal transportation, merry-go-round (MGR) system has been proposed. Utilities such as power lines, pipelines, rail lines, MGR system shall be constructed.

10. Existing PTPS has a 33 kV Switchyard adjacent to the 132 kV switchyard and connected to it through 2x50 MVA Auto transformer. The requirements of the construction power supply for the project can be met by 2 no. 6.6 kV feeders from existing 6.6 kV system. Necessary construction power with 6.6 kV ring main/ LT sub-stations shall be provided in the required power plant area.

11. Water requirement for construction purposes shall be met from the water network of existing Patratu Thermal Power Station. The water requirement for the operation period is estimated to about 16 Cusecs (38,640 m<sup>3</sup>/day) for 3x800 MW Patratu STPP, Phase-I, based on Air Cooled Condenser (ACC) Technology. The water requirement for the proposed project shall be sourced from the Patratu



(Nalkari) Reservoir on Nalkari river which is at 2.4 km from the project location. Permission from JUUNL for withdrawal of 27 Cusecs of water for Phase-I from Patratu Reservoir has been obtained on 15.01.2016.

12. Baseline Data collected has been collected for the Post-Monsoon Season i.e. from October 2016 to December 2016. However, the monitoring carried out till September, 2017. Pre-dominant wind direction in the study area is towards NW. Ambient Air Quality monitoring has been carried out from 8 locations. Results indicated that the values of different air quality parameters such as PM<sub>10</sub>: 51.7-72.4 µg/m<sup>3</sup>, PM<sub>2.5</sub>: 26.8-47.2 µg/m<sup>3</sup>, SO<sub>2</sub>: 20.2-31.8 µg/m<sup>3</sup>, NOx: 18.7-28.2 µg/m<sup>3</sup>, CO: < 2 mg/m<sup>3</sup>, Hg and O<sub>3</sub>: BDL. Noise levels have been monitored at ten locations during post-monsoon. Noise levels are in the range of 42.16-64.26 dB(A) during daytime and 38.74-45.20 dB(A) during night time. Noise levels during day time and night time are well within the standards prescribed vide MoEF&CC notification.

13. Soil samples have been collected from ten locations in and around the proposed plant. pH of the soil ranged from 7.96 to 8.42 indicating that the soils are slightly alkaline to moderately alkaline in nature. The soil in the study area is sandy ranging from 74.6 to 91.2%. The electrical conductivity was observed to be in the range of 0.11 to 0.58µS/cm. The nitrogen concentrations are in the range of 145.1 to 282.46 kg/ha indicating that soils have better quantities of nitrogen. The phosphorous concentrations are in the range of 28.11 to 51.24 kg/ha indicating that soils have from less to average sufficient quantities of phosphorus. The potassium concentrations range between 76.4 to 104.26 kg/ha, which indicate that the soils have very less to less quantity of potassium.

14. During pre-monsoon season, ground water levels range from 2.25 mbgl at Barwatola to 11.19 mbgl at Bhurkunda. During post-monsoon, groundwater varied from 1.6 to 5.9 mbgl in Ramgarh district. Eight surface and ground water samples each were analyzed for physicochemical, heavy metals and bacteriological parameters as per the procedures mentioned in Standards as per IS-2296 Class – 'C' and IS: 10500 respectively. Surface water quality: The pH values of Surface water was in the range of 6.4-7.52 with total dissolved solids in the range of 96-196.2 mg/l. BOD was in the range of 0.6-2.4 mg/l; Total Hardness: 24.6-68.7 mg/l; Chlorides: 4.6-36.4 mg/l; Calcium: 8.6-18.2 mg/l; Sulphate: 0.52-14.2 mg/l; Nitrate: 1.38- 2.6 mg/l. Overall, the surface water samples were found within the prescribed limits. Ground water quality: The pH values observed were in the range of 6.18-7.42, with total dissolved solid ranging from 94-458 mg/l. Total Hardness was in the range of 72.4-788.4 mg/l, exceeding at two location during one month. The fluoride ranged from 0.08-1.52 mg/l, (1.52 mg/l being exceeding at one location in a month). The concentration of alkalinity, sulphates and nitrates in all the samples were less than prescribed limits. The total coliforms were found to be less than <1.8 mg/l. Heavy metal concentrations were found to be within the limit for the all three months except Iron (Fe) ranging from 1.18 to 2.1 mg/l in ground water and 0.18 to 2.2 mg/l in surface water samples. The high values of iron may be due to geogenic reasons.

15. The dominant tree species in the study area is Simuli (*Bombax cieba*), Mahua (*Madhuca longifolia*), Kendu (*Diospyros melanoxylon*) and Palas (*Butea monosperma*) etc. No taxa were found threatened in the study area. No National Park, Wildlife Sanctuary, Biosphere Reserve is present within 10 km area of the proposed Patratu STPP, Phase-I. Patches of Protected Forests are present in northeast, south and south east direction of the plant site. The fauna is restricted to commonly found mammals, reptiles and amphibians. No endangered animal species are found in the study area.

16. Study area (Buffer Zone) covers about 71 villages of Ramgarh and Hazaribagh districts. At the time of survey, it was found about 15 villages of Ramgarh district come under 5 Km radius (core zone) of the proposed project site. Total population of the study area is 4,43,418, of which Scheduled Caste (SC) and



Scheduled Tribe (ST) population is 61,899 and 1,09,232, respectively. It is also revealed that ST population constitutes about 25 per cent of the total population while for SC it is about 14 per cent. The Survey on 10 km radius of study area revealed a literacy rate at 75.41%.

17. There are several industries available within 10 km radius of the proposed project viz. Jindal Steel Power Limited (2.3 km), Burnpur Cements Ltd. (2.8 km), Sarbashree Vekatesh Iron and Alloys India Ltd. (8.2 km), Urimuri Coal Mines (5.2 km), Giddi Coal Mines (7 km), Raligara Coal Mines (8.9 km), Indo-Asahi Glass Co. Ltd (8.15 km), Pali Hills Brewries Pvt. Ltd. (2.8 km), HR Food Processing Pvt. Ltd (2.8 km).

18. The predicted 24 hourly maximum incremental ground level concentrations in the study area are PM<sub>10</sub>: 1.8 µg/m<sup>3</sup>, PM<sub>2.5</sub>: 1.16 µg/m<sup>3</sup>, SO<sub>2</sub>: 10 µg/m<sup>3</sup>, NO<sub>x</sub>: 10 µg/m<sup>3</sup> at a distance of 5.2 km. Total resultant ground level concentrations are within the NAAQ standards.

19. Total ash generation is 4.8 MTPA considering the average ash content of 37%. Fly ash is 3.84 MTPA and Bottom ash is 0.96 MTPA. Extraction of dry fly ash along with suitable storage facilities shall be installed. Provision shall also be kept for segregation of coarse and fine ash, loading this ash to closed/ covered trucks and also for loading fly ash into rail wagons. This will ensure availability of dry fly ash required for manufacture of Fly Ash based Portland Pozzolana Cement (FAPPC) for cement plants and Ready Mix Concrete plants located in the vicinity of proposed project. The un-used fly ash will be stored in dedicated Ash Mound in dry form and will be supplied to the users as per the demand. PVUNL shall also set up fly ash brick manufacturing plant at proposed power plant, fly ash brick thus produced shall be utilized for in-house construction works. The excavation of old ash dykes are in progress and about 3 lakh cum of ash is being used in development/ improvement of balance work of Ranchi Ring Road, Section-VII.

20. Risk Assessment has been carried out for credible scenarios for LDO (2x500 KL) and HFO (2x3100 KL) storage tanks. Coal dust explosion hazard has been identified at Crusher house and conveyor systems are most susceptible to this hazard. Risk mitigation and control measures have been proposed. Disaster management plan has been prepared for implementation in case of emergency.

21. Public Hearing for the proposed project has been conducted on 31.5.2017 at Rajya Samposhit, +2 Vidyalaya, Patratu, Ramgarh, Jharkhand by Jharkhand State Pollution Control Board. PH has been presided by ADM cum Director, DRDA, Ramgarh. Public Hearing proceedings have been submitted in Hindi. River and nalla pollution, CSR activities and infrastructure development, livelihood and employment opportunities, land acquisition and displaced villages, compensation and livelihood to displaced and affected villages are the major concerns of the public.

22. Dry fog dust suppression system at coal transfer points, ESP with 99.99% efficiency, 275 m height stack, low NO<sub>x</sub> burners with SCR system, FGD system for Sulphur reductions, Air cooled condenser system, periodic environmental monitoring, greenbelt development are major environmental protection measures.

23. The project will benefit the local population by creating employment opportunities through ancillary and associated industries and improved infrastructure - better roads, education facilities, medical facilities and communication facilities. The total manpower of power plant during construction phase will be about 1500. During operation period it is estimated that about 486 regular manpower which shall be fulfilled from within NTPC projects and about 600 contract labours shall be required. Greenbelt development will be carried out in 50 acres. Estimated Project cost is Rs.14,896.28 Crores. Cost of Environment Protection measures is Rs. 3045.32 crores.

24. Sub-committee visited the project site on 8.9.2017 and made certain recommendations to control the existing ash pond breach into the adjacent water body. Sub-committee also recommended to excavate the flyash deposits along the water body/Nalkari river.

25. The proposal was appraised by Re-constituted EAC (Thermal) in its 7<sup>th</sup> and 10<sup>th</sup> meetings held on 28.6.2017 and 25.9.2017. In acceptance of the recommendations of the Re-constituted EAC (Thermal Power) in its 10<sup>th</sup> meeting held on 25.9.2017, recommendations of Sub-committee during its site visit held on 8.9.2017 and in view of the information, clarifications, documents submitted by you, **the Ministry hereby accords the Environmental Clearance** to the above project under the provisions of EIA Notification dated September 14, 2006 and subsequent amendments therein subject to compliance of the following Specific and General conditions.

**A. Specific Conditions:**

- i. **Forest land of 431.522 ha is involved in the proposed project. The FC is in the name of M/s Jharkhand Bijili Vitaran Limited. Now, the present PP viz. M/s PVUNL must get this diversion changed in its name before carrying out any work in the diverted forest land under the provisions of Forest (Conservation) Act, 1980.**
- ii. Flyash deposits along the water body shall be excavated immediately. The removal of flyash deposits in the water bodies shall be completed before the onset of next monsoon.
- iii. If ash in the existing pond is not evacuated as per the recommendations given by previous sub-committee, embankment shall be constructed around the periphery of ash pond. A retaining wall shall also be constructed alongside of the stream to prevent wash off.
- iv. The ash pond shall be covered with sweet soil of sufficient width so that surface runoff can be controlled and also can act as slope stabilisation.
- v. Reclamation and stabilisation of the existing ash pond shall be carried out in scientific manner (both biological and engineering measures).
- vi. All other measures such as constructing gabian wall, spillways & filters, drains on the toe, slope protection, etc. shall be implemented. Regional Office of the Ministry shall inspect the progress atleast once in three months. The status of the ash pond and dredging of ash deposits shall be submitted along with the six monthly compliance report to Regional Office as well as MoEF&CC, New Delhi.
- vii. If the breach of ash pond is reported in future, PP shall have to evacuate the total ash from the pond.
- viii. Construction and demolition waste from dismantling the existing power plant shall be disposed of in accordance with the Construction and Demolition Waste Management Rules, 2016.
- ix. Minimum distance of 500 m from the HFL of Nalkari river shall be maintained. Ash mound shall be developed in 340 acres and the height of the ash mound shall be restricted to 35 m (in two benches of 20 m and 15 m height each).
- x. Ash mound shall be used only in case of emergency. Fly ash utilisation shall be done as per the flyash notification and its subsequent amendments issued from time to time.
- xi. Garland drains along with stone pitching and gabian wall around the ash mound/existing ash pond shall be constructed so that no wash off is let out into the Nalkari river.
- xii. Action plan for dredging and de-silting of ash deposited along the streams, rivers and reservoirs including Damodar and Nalkari as recommended by



- Sub-group in their site visit on 28.1.2013 shall be submitted within three months.
- xiii. Volume of ash pond and quantity of flyash shall be assessed. Time bound action plan for evacuating and using flyash before starting the operations of proposed project.
- xiv. Authenticated as well as primary baseline data for flora, fauna and bio-diversity shall be submitted within one month.
- xv. Time bound action plan along with financial break-up for implementing CSR activities and public hearing commitments shall be submitted within three months.
- xvi. Action plan (area, species, density, financial allocation) for achieving 33% greenbelt development of the total project area shall be submitted within three months.
- xvii. As per the Revised Tariff Policy notified by Ministry of Power vide dated 28.01.2016, project proponent shall explore the use of treated sewage water from the Sewage Treatment Plant of Municipality/ local bodies/ similar organization located within 50 km radius of the proposed power project to minimize the water drawl from surface water bodies.
- xviii. Compliance of EC conditions, E(P) Act, 1986, Rules and MoEF&CC Notifications issued time to time shall be achieved by a qualified environment officer to be nominated by the Project Head of the Company who shall be responsible for implementation and necessary compliance.
- xix. MoEF&CC Notification S.O. 3305(E) dated 7.12.2015 and subsequent notifications issued time to time shall be implemented with respect to specific water consumption, zero liquid discharge and revised emission standards. The PM, SO<sub>2</sub>, NO<sub>x</sub> and Hg emissions shall not exceed 30 mg/Nm<sup>3</sup>, 100 mg/Nm<sup>3</sup>, 100 mg/Nm<sup>3</sup> and 0.03mg/Nm<sup>3</sup> respectively. The specific water consumption shall not exceed 2.5 m<sup>3</sup>/MWh and zero wastewater discharge shall be achieved.
- xx. MoEF&CC Notifications on flyash utilization S.O. 763(E) dated 14.09.1999, S.O. 979(E) dated 27.08.2003, S.O. 2804(E) dated 3.11.2009, S.O. 254(E) dated 25.01.2016 and subsequent amendments shall be complied with.
- xxi. Separate Environmental Clearance may be obtained for the proposed Township as applicable under EIA Notification 2006.
- xxii. Solar rooftops shall be installed in the surrounding villages as part of CSR activities.
- xxiii. Skill mapping of the Project Affected People (PAF) be carried out on a long-term basis for their livelihood generation. A report is to be submitted within 3 months to the Ministry from the date of issuance of environmental clearance.
- xxiv. Modern methods of agriculture organic forming, compost/vermiculture making and utilization, drip/direct to root irrigation) to be promoted in and around the Project area.
- xxv. While implementing CSR,
- Women empowerment is important. Therefore, proper skill based training/long term livelihood revenue generation be created for all them.
  - Computer facilities may be provided in the school along with a trained computer teacher to inculcate computer skill among the youths.
  - Water supply provisions shall be made for all the bio-toilets under Swachh Bharat Abhiyan.
  - Preventive health programme may be preferred than the curative health programme such as nutrition development of small children in and around the project.

- xxvi. Vision document specifying prospective plan for the site shall be formulated and submitted to the Regional Office of the Ministry within **six months**.
- xxvii. Harnessing solar power within the premises of the plant particularly at available roof tops shall be carried out and status of implementation including actual generation of solar power shall be submitted along with half yearly monitoring report.
- xxviii. A long term study of radio activity and heavy metals contents on coal to be used shall be carried out through a reputed institute and results thereof analyzed every two year and reported along with monitoring reports. Thereafter mechanism for an in-built continuous monitoring for radio activity and heavy metals in coal and fly ash (including bottom ash) shall be put in place.
- xxix. Online continuous monitoring system for stack emission, ambient air and effluent shall be installed.
- xxx. High Efficiency Electrostatic Precipitators (ESPs) shall be installed to ensure that particulate emission does not exceed 30 mg/Nm<sup>3</sup> or as would be notified by the Ministry, whichever is stringent. Adequate dust extraction system such as cyclones/bag filters and water spray system in dusty areas such as in coal handling and ash handling points, transfer areas and other vulnerable dusty areas shall be provided along with an environment friendly sludge disposal system.
- xxxi. Adequate dust extraction system such as cyclones/ bag filters and water spray system in dusty areas such as in coal handling and ash handling points, transfer areas and other vulnerable dusty areas shall be provided.
- xxxii. Monitoring of surface water quantity and quality shall also be regularly conducted and records maintained. The monitored data shall be submitted to the Ministry regularly. Further, monitoring points shall be located between the plant and drainage in the direction of flow of ground water and records maintained. Monitoring for heavy metals in ground water shall also be undertaken and results/findings submitted along with half yearly monitoring report.
- xxxiii. A well designed rain water harvesting system shall be put in place within six months, which shall comprise of rain water collection from the built up and open area in the plant premises and detailed record kept of the quantity of water harvested every year and its use.
- xxxiv. No water bodies including natural drainage system in the area shall be disturbed due to activities associated with the setting up/operation of the power plant.
- xxxv. Additional soil for leveling of the proposed site shall be generated within the sites (to the extent possible) so that natural drainage system of the area is protected and improved.
- xxxvi. Fly ash shall be collected in dry form and storage facility (silos) shall be provided. Mercury and other heavy metals (As, Hg, Cr, Pb etc.) shall be monitored in the bottom ash. No ash shall be disposed off in low lying area.
- xxxvii. 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 Pollution Control Board and implementation done in close co-ordination with the State Pollution Control Board.
- xxxviii. Fugitive emission of fly ash (dry or wet) shall be controlled such that no agricultural or non-agricultural land is affected. Damage to any land shall be mitigated and suitable compensation provided in consultation with the local Panchayat.





- xxxix. Green Belt consisting of three tiers of plantations of native species all around plant and at least 50 m width shall be raised. Wherever 50 m width is not feasible a 20 m width shall be raised and adequate justification shall be submitted to the Ministry. Tree density shall not be less than 2500 per ha with survival rate not less than 80 %.
- xl. Green belt shall also be developed around the Ash Pond over and above the Green Belt around the plant boundary.
- xli. The project proponent shall formulate a well laid Corporate Environment Policy and identify and designate responsible officers at all levels of its hierarchy for ensuring adherence to the policy and compliance with the conditions stipulated in this clearance letter and other applicable environmental laws and regulations.
- xlii. CSR schemes identified based on need based assessment shall be implemented in consultation with the village Panchayat and the District Administration starting from the development of project itself. As part of CSR prior identification of local employable youth and eventual employment in the project after imparting relevant training shall be also undertaken. Company shall provide separate budget for community development activities and income generating programmes.
- xliii. For proper and periodic monitoring of CSR activities, a CSR committee or a Social Audit committee or a suitable credible external agency shall be appointed. CSR activities shall also be evaluated by an independent external agency. This evaluation shall be both concurrent and final.

**B) General Conditions:**

- (i) The treated effluents conforming to the prescribed standards only shall be re-circulated and reused within the plant. Arrangements shall be made that effluents and storm water do not get mixed.
- (ii) A sewage treatment plant shall be provided (as applicable) and the treated sewage shall be used for raising greenbelt/plantation.
- (iii) Adequate safety measures shall be provided in the plant area to check/minimize spontaneous fires in coal yard, especially during summer season. Copy of these measures with full details along with location plant layout shall be submitted to the Ministry as well as to the Regional Office of the Ministry.
- (iv) Storage facilities for auxiliary liquid fuel such as LDO/ HFO/LSHS shall be made in the plant area in consultation with Department of Explosives, Nagpur. Sulphur content in the liquid fuel will not exceed 0.5%. Disaster Management Plan shall be prepared to meet any eventuality in case of an accident taking place due to storage of oil.
- (v) First Aid and sanitation arrangements shall be made for the drivers and other contract workers during construction phase.
- (vi) Noise levels emanating from turbines shall be so controlled such that the noise in the work zone shall be limited to 85 dB(A) from source. For people working in the high noise area, requisite personal protective equipment like earplugs/ear muffs etc. shall be provided. Workers engaged in noisy areas such as turbine area, air compressors etc shall be periodically examined to maintain audiometric record and for treatment for any hearing loss including shifting to non noisy/less noisy areas.
- (vii) Regular monitoring of ambient air ground level concentration of SO<sub>2</sub>, NO<sub>x</sub>, PM<sub>2.5</sub> & PM<sub>10</sub> and Hg shall be carried out in the impact zone and records maintained. If at any stage these levels are found to exceed the prescribed limits, necessary control measures shall be provided immediately. The location of the monitoring stations and frequency of monitoring shall be decided in consultation with SPCB. Periodic reports shall be submitted to the Regional Office of this Ministry. The data shall also be put on the website of the company.



- (viii) Utilization of 100% Fly Ash generated shall be made from 4<sup>th</sup> year of operation. Status of implementation shall be reported to the Regional Office of the Ministry from time to time.
- (ix) Provision shall be made for the housing of construction labour (as applicable) within the site with all necessary infrastructure and facilities such as fuel for cooking, mobile toilets, mobile STP, safe drinking water, medical health care, crèche etc. The housing may be in the form of temporary structures to be removed after the completion of the project.
- (x) The project proponent shall advertise in at least two local newspapers widely circulated in the region around the project, one of which shall be in the vernacular language of the locality concerned within seven days from the date of this clearance letter, informing that the project has been accorded environmental clearance and copies of clearance letter are available with the State Pollution Control Board/Committee and may also be seen at the Website of MoEF&CC at <http://envfor.nic.in>.
- (xi) A copy of the clearance letter shall be sent by the proponent to concerned Panchayat, Zila Parisad / Municipal Corporation, urban local Body and the Local NGO, if any, from whom suggestions/representations, if any, were received while processing the proposal. The clearance letter shall also be put on the website of the Company by the proponent.
- (xii) The proponent shall upload the status of compliance of the stipulated environmental clearance conditions, including results of monitored data on their website and shall update the same periodically. It shall simultaneously be sent to the Regional Office of MOEF, the respective Zonal Office of CPCB and the SPCB. The criteria pollutant levels namely; SPM, RSPM (PM<sub>2.5</sub> & PM<sub>10</sub>), SO<sub>2</sub>, NO<sub>x</sub> (ambient levels as well as stack emissions) shall be displayed at a convenient location near the main gate of the company in the public domain.
- (xiii) The environment statement for each financial year ending 31<sup>st</sup> March in Form-V as is mandated to be submitted by the project proponent to the concerned State Pollution Control Board as prescribed under the Environment (Protection) Rules, 1986, as amended subsequently, shall also be put on the website of the company along with the status of compliance of environmental clearance conditions and shall also be sent to the respective Regional Offices of the Ministry by e-mail.
- (xiv) **The project proponent shall submit six monthly reports on the status of the implementation of the stipulated environmental safeguards to MoEF&CC, its Regional Office, Central Pollution Control Board and State Pollution Control Board. The project proponent shall upload the status of compliance of the environmental clearance conditions on their website and update the same periodically and simultaneously send the same by e-mail to the Regional Office, MoEF&CC.**
- (xv) The progress of the project shall be submitted to CEA on six monthly basis.
- (xvi) Regional Office of the MoEF&CC will monitor the implementation of the stipulated conditions. A complete set of documents including Environmental Impact Assessment Report and Environment Management Plan along with the additional information submitted from time to time shall be forwarded to the Regional Office for their use during monitoring. Project proponent will up-load the compliance status in their website and up-date the same from time to time at least six monthly basis. **Criteria pollutants levels including NO<sub>x</sub> (from stack & ambient air) shall be displayed at the main gate of the power plant.**
- (xvii) Separate funds shall be allocated for implementation of environmental protection measures along with item-wise break-up. These cost shall be included as part of the project cost. The funds earmarked for the environment protection measures shall not be diverted for other purposes and year-wise expenditure should be reported to the Ministry.



(xviii) The project authorities shall inform the Regional Office as well as the Ministry regarding the date of financial closure and final approval of the project by the concerned authorities and the dates of start of land development work and commissioning of plant.

(xix) Full cooperation shall be extended to the Scientists/Officers from the Ministry / Regional Office of the Ministry / CPCB/ SPCB who would be monitoring the compliance of environmental status.

**C)** An as built or as completed report on EMP to be submitted stating the scope/extent of work envisaged in the EIA along with estimated cost vis-à-vis the actual completed works and cost incurred. A certificate/completion certificate accordingly, shall have to be submitted before commissioning of the TPP.

26. The Ministry reserves the right to revoke the clearance if conditions stipulated are not implemented to the satisfaction. The Ministry may also impose additional environmental conditions or modify the existing ones, if necessary.

27. The environmental clearance accorded **shall be valid for a period of 7 years** from the date of issue of this letter to start operations by the power plant.

28. Concealing factual data or submission of false/fabricated data and failure to comply with any of the conditions mentioned above may result in withdrawal of this clearance and attract action under the provisions of Environment (Protection) Act, 1986.

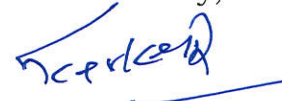
29. In case of any deviation or alteration in the project proposed including coal transportation system from those submitted to this Ministry for clearance, a fresh reference should be made to the Ministry to assess the adequacy of the condition(s) imposed and to add additional environmental protection measures required, if any.

30. 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 and rules there under, Hazardous Wastes (Management, Handling & Transboundary Movement) Rules, 2008 and its amendments, the Public Liability Insurance Act, 1991 and its amendments.

31. Any appeal against this environmental clearance shall lie with the National Green Tribunal, if preferred, within 30 days as prescribed under Section 16 of the National Green Tribunal Act, 2010.

This issues with the approval of the Competent Authority.

Yours faithfully,



(Dr. S. Kerketta)  
Director

*Copy to:-*

1. The Secretary, Ministry of Power, Shram Shakti Bhawan, Rafi Marg, New Delhi 110001.
2. The Chairman, Central Electricity Authority, Sewa Bhawan, R.K. Puram, New Delhi-110066.
3. The Chairman, Central Pollution Control Board, Parivesh Bhawan, CBD-cum-Office Complex, East Arjun Nagar, Delhi-110032.
4. The Additional Principal Chief Conservator of Forests (C), Ministry of Environment, Forests and Climate Change, Regional Office (ECZ), Bungalow No. A-2, Shyamali Colony, Ranchi – 834002.
5. The Special Secretary, Environment, Forest and Climate Change Department, Govt. of Jharkhand, Ranchi.



6. The Chairman, Jharkhand State Pollution Control Board, T.A. Division Building (Ground Floor), H.E.C. Dhurwa, Ranchi-834004.
7. The District Collector, Ramgarh District, Govt. of Jharkhand, Collectorate Office, Ramgarh, Jharkhand-829119.
8. Guard file/Monitoring file.
9. Website of MoEF&CC.

  
(Dr. S. Kerketta)  
Director

