

MINUTES OF THE 4th MEETING OF THE RE-CONSTITUTED EXPERT APPRAISAL COMMITTEE (EAC) ON ENVIRONMENTAL IMPACT ASSESSMENT (EIA) OF THERMAL POWER PROJECTS

The 4th Meeting of the re-constituted EAC (Thermal Power) was held on 16th March, 2017 in the Ministry of Environment, Forest & Climate Change at Teesta Meeting Hall, Vayu Wing, First Floor, Indira Paryavaran Bhawan, Jorbagh Road, New Delhi under the Chairmanship of Dr. Navin Chandra. The following members were present:

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| 1. | Dr. Navin Chandra | - | Chairman |
| 2. | Dr. Narmada Prasad Shukla | - | Member |
| 3. | Shri N. Mohan Karnat | - | Member |
| 4. | Dr. Sharachchandra Lele | - | Member |
| 5. | Shri P. D. Siwal | - | Member (Representative of CEA) |
| 6. | Dr. R. K. Giri | - | Member (Representative of IMD) |
| 7. | Dr. S. Kerketta | - | Member Secretary |

Dr. Rajesh P. Gunaga, Dr. S. K. Paliwal (Representative of CPCB) and Professor D. C. Panigrahi (Representative of ISM Dhanbad) could not be present.

Item No. 4.0: CONFIRMATION OF THE MINUTES OF THE 3rd EAC MEETING.

The Minutes of the 3rd EAC (Thermal Power) Meeting held on 14th February, 2017 were confirmed.

Item No. 4: CONSIDERATION OF PROJECTS

4.1 Expansion of 2x363.3 MW Gas based Power Project at Palatana, Tehsil Kakraban, Dist. Gomati, Tripura by M/s ONGC Tripura Power Company Limited- reg. consideration for ToR.

(4.1.1) PP submitted online application for grant of ToR on 13.2.2017. Project Proponent along with Environment Consultant M/s ERM India Pvt. Ltd. made presentation and inter-alia submitted the following:

- i. Proposed expansion of Combined Cycle Gas Turbine Power Project with a capacity of 2x363.3 MW (Unit-3&4) will be set up at Village Palatana, Tehsil Kakraban, Tripura in the premises of existing power plant 2x363.3 MW (Unit-1&2) which is under operation.
- ii. Additional land requirement of approximately 33 acres is required for the proposed expansion project. The total land of 197.15 acres is available at the project site which is inclusive of 33 acres. Thus, no additional land acquisition is involved for the proposed project. Out of 197.15 acres, 193.66 acres is forest land for which diversion approval has already been obtained.
- iii. The project site is surrounded by Reserved Forests. Trishna Wildlife Sanctuary is at 20 km South and Sepahijhala Wildlife Sanctuary is at 18 km from the proposed site. The site falls in Seismic Zone V. Design of the proposed structures shall be earthquake resistant.
- iv. Water requirement for the proposed project is 18,650 m³/day which will be sourced from River Ghumti located at 2 km from project site. Government of Tripura allocated for drawl of 125 MLD vide letter dated 12.5.2005.

- v. 2.70-2.90 MMSCD natural gas at 85% PLF with calorific value of 8,250 kcal/Sm³ shall be required for the proposed unit. For Unit-3, Natural gas will be supplied by ONGC from their gas wells at Agartala/Dome, Baramura, Konaban, Sonamura, Tichana, and Gojalia. For Unit-4, Fuel gas may be sourced from either Jubilant fields in Tripura or ONGC's fields in Tripura. Estimated Project Cost is Rs. 4210.74 Crores. Estimated manpower for proposed project is 110 (both permanent and contractual).

(4.1.1) Committee after detailed deliberations, **recommended for the following additional ToR** in addition to the standard TORs (as applicable) at **Annexure-A1** for undertaking detailed EIA study and preparation of EMP.

- i. *Authenticated map showing project site vis-a-vis location of Trishna Wildlife Sanctuary and Sepahijhala Wildlife Sanctuary along with distance of proposed project from the boundaries of Wildlife Sanctuaries and their associated ESZ by Wildlife Department.*
- ii. *Bio-diversity and ecology impact assessment study for six months shall be conducted with the involvement of experts specifically familiar with the biota of Tripura/north-east India.*
- iii. *Details of composition of gas and quantification of emission details shall be submitted.*
- iv. *Eco-hydrology study assessing the impact of proposed water withdrawal from River Ghumti on downstream biota, agriculture and domestic users shall be carried out by an Institute of National Repute.*
- v. *Need based assessment study shall be conducted by an Institute of National Repute for implementing CSR activities.*

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4.2 Expansion by addition of 2x660 MW (Stage-II) Unit-5 & 6 Coal based Thermal Power Plant at village Chowki- Motipara, in Chhabra, in Baran Dist., Rajasthan by M/s Rajasthan Rajya Vidyut Utpadan Nigam Ltd.- reg. amendment in EC.

(4.2.1) PP could not attend the meeting. Member Secretary briefed the Committee that PP applied vide their online application dated 6.2.2017 for amendment in condition No.4A(v) of EC dated 23.5.2012. The condition No.4A(v) of the said EC is "Stack of 275 m height shall be installed and provided with continuous online monitoring equipments for SO_x, NO_x and PM_{2.5}& PM₁₀. Exit velocity of flue gases shall not be less than 22 m/sec. Mercury emissions from stack may also monitored on periodic basis." PP in their application submitted they have approached various vendors such as M/s L&T Ltd., M/s Forbes Marshall, M/s Durag India and M/s Chemtrols Industries Ltd. for continuous online monitoring of PM_{2.5} and PM₁₀ from the stack emissions. All the vendors have expressed the technical constraint in monitoring PM_{2.5} and PM₁₀ in the stack emissions.

(4.2.2) EAC decided to appraise the proposal. After deliberations, **EAC recommended** for amendment of the said EC condition for monitoring PM emissions as below:

- i. Stack of 275 m height shall be installed and provided with continuous online monitoring equipments for SO_x, NO_x and PM. Exit velocity of flue gases shall not be less than 22 m/sec. Mercury emissions from stack may also be monitored on periodic basis. Emission monitoring shall be carried out preferably during winter (December to February) and pre-monsoon (March to May) period where impacts will be more prominent and effective.

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4.3 2x800 MW Udangudi Super Critical Imported Coal Based TPP at village Udangudi, in Thiruchendur Taluk, in Thoothukudi district, in Tamil Nadu by M/s. Udangudi Power Corporation Ltd- reg. amendment in EC.

(4.3.1) Project Proponent (PP) submitted online application on 10.2.2017 for granting amendments in the EC dated 14.10.2013. PP made the presentation inter-alia submitted following information:

- i. Environmental Clearance for establishing 2x800 MW Udangudi Super Critical Imported Coal based TPP at Village Udangudi, in Thiruchendur Taluk, in Thoothukudi District, Tamil Nadu was issued in favour of Joint venture company M/s Udangudi Power Corporation Ltd. (M/s UPCL) by the Ministry on 14.10.2013.
- ii. Govt. of Tamil Nadu decided to execute the project under state sector and to terminate the joint venture. M/s Tamil Nadu Generation and Distribution Corporation (TANGEDCO) has now decided to execute the project. M/s TANGEDCO paid the compensation amount of Rs. 64 Crores and purchases all the BHEL shares in M/s UPCL. Now the M/s TANGEDCO is the sole owner of the company and continuing project activities. In view of this, EC may be transferred to M/s TANGEDCO. Certificate of incorporation dated 1.12.2009 for M/s TANGEDCO has been obtained.
- iii. In order to have uniformity in sizes and to have ease of managing spares, M/s TANGEDCO also proposed to have 2x660MW instead of 2x800 MW. Accordingly, the pollution load as projected before will be reduced to certain extent. There is no change in total land requirement (939 acres). Imported Coal requirement will be reduced from 4.39 MTPA to 3.83 MTPA. Proposed ash generation will be reduced from 0.35 MTPA (Ash content: 8%) to 0.25 MTPA (Ash content: 6.62%). There is no change in water requirement as originally proposed as 13,790 m³/hr.

(4.3.2) Committee also suggested that PP may apply separately for transferring the EC in the name of M/s TANGEDCO as the amalgamation of the company is still under process.

(4.3.3) Committee, after detailed deliberations **recommended for amending the EC for downsizing the units from 2x800 MW to 2x660 MW.**

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4.4 4x150 MW Coal washery rejects based Thermal Power Project at Village Parsa, & Kete, Tehsil Udaypur, Dist. Surguja by M/s Surguja Power Private Limited – reg. consideration for ToR.

(4.4.1) Project Proponent (PP) submitted online application on 6.2.2017. PP along with Environment consultant M/s Grencindia Consulting Private Ltd. made the presentation inter-alia submitted the following:

- i. The proposal is for setting up of 4x150 MW Coal washery rejects based Thermal Power Project with Circulating Fluidised Bed Combustion (CFBC) Technology at Parsa and Kete Villages, Udaypur Tehsil, Surguja District, Chhattisgarh. The project is proposed within the mine lease area of Parsa East and Kanta Basan Coal blocks which belongs to M/s Rajasthan Rajya Vidyut Utpadan Nigam Limited (M/s RRUVUNL).
- ii. ToR for setting up of 4x135/150 MW has already been issued on 1.4.2013. The validity of the ToR has been extended for one year i.e. till 31.3.2017. PP further requested for extension of one more year. Ministry could not consider their application for extending the validity of ToR beyond outer limit of 4 years. Draft EIA report has been submitted to Chhattisgarh Environment Conservation Board on 17.10.2014 for conducting Public Hearing. District Collector

postponed the Public Hearing and sought NOC from Govt. of Chhattisgarh for sub-leasing the land.

- iii. Total land requirement for the proposed project is 42.57 ha which includes Main plant, water reservoir, switchyard, green belt, etc. Department of Mines has also issued their no objection to M/s RRUVNL for sub-leasing 47.5 ha of mine lease area to M/s Surguja Power Private Ltd for setting up of power project vide their letter dated 18.1.2016.
- iv. Presently 13.48 ha is the Private Tenancy Land and has been acquired for the mining project by M/s RRUVNL. The land use at the time of acquisition was rain fed single crop agriculture land. 19.64 ha is the protected forest and 9.45 ha is the Revenue forest.
- v. Total forest land of 1898.328 ha has been diverted for opencast Mining and the Stage-I FC has been issued in favour of M/s RRUVNL for diversion of 1898.328 ha forest land vide Ministry's letter dated 6.7.2011. M/s RRUVNL requested Nodal Officer (FC Act), Chhattisgarh to change in land use of 29.09 ha out of 1898.328 ha forest land from mining to setting up of power project vide their letter dated 4.10.2016. M/s Surguja Power Projects Limited is yet to apply for re-diversion of the 29.09 ha of forest land for setting up of power project. Re-diversion application will be made after M/s RRUVNL gets the land use change approved by the MoEF&CC.
- vi. There are no national parks, wildlife sanctuaries or any other protected areas within 10 km radius of the project. However, protected and reserve forests are located within 10 km radius of the project. Hasdeo Arand reserved forests are located at 2 km from the project.
- vii. Coal washery rejects of 4.5 MTPA shall be required for the proposed power project at 75% PLF with average Gross Calorific Value of 2,000 kcal/kg. The washery rejects shall be supplied by the washery set up at Parsa East Coal Mine block. Washery rejects will be transported through conveyor belt from the washery reject storage bin located within mine area adjacent to the power plant boundary on the western side of the project site. Intermediate storage of washery reject is envisaged within the power plant boundary.
- viii. Total water requirement of 13.14 million cubic metres per annum will required and proposed to be drawn from Atem/Rehar River located approximately at 4 km. Abstraction of 1,000 KLD groundwater is proposed during construction phase.
- ix. About 68 million tons of ash will be generated over the period of 25 years. Ash generated from the proposed power project will be utilised in mine back filling by mixing with Over Burden (OB) of the mine.
- x. Baseline data collection from March to May, 2017 is proposed for AAQ-10 locations, Water (Surface and Water)- 10 locations, Soil quality- 6 locations, Noise level – 10 locations, micro meteorology- one season, etc.
- xi. Estimate Project is Rs.4997.93 Crores.

(4.4.2) Committee noted that the baseline monitoring locations have not been shown on map. Committee also noted that PP is yet to apply for re-diversion of 29.09 ha forest land in PP's name.

(4.4.3) Committee after detailed deliberations, **recommended for the following additional ToR** in addition to the standard TOR (as applicable) at **Annexure-A1** and the ToR already issued vide Ministry's letter dated 1.4.2013 for undertaking detailed EIA study and preparation of EMP.

- i. Downstream impacts on agriculture, aquatic ecology and other needs shall be assessed due to water withdrawal from Atem/Rehar Rivers.

- ii. Cumulative impact assessment shall be carried out considering the washery and coal mines in the surrounding areas, including those at proposal stage.
- iii. Location map showing baseline monitoring stations along with villages, water bodies, road network, forests, and other sensitive receptors shall be submitted. Water quality sampling shall be done at 10 locations each for ground water and surface water. Traffic density study shall be carried out for atleast 2 locations.
- iv. Cumulative aerosols burden study especially downstream side to make surrounding more safe.

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4.5 Disposal of fly ash generated from 460 MW TPP into mine void of South Balanda OPC of Mahanadi Coalfields Limited, Talcher, Dist. Angul, Odisha by M/s NTPC Limited- reg. extension of existing permission.

(4.5.1) Project Proponent (PP) submitted online application on 23.11.2016 for permission for filling of ash in mine voids for life time of the South Balanda mine void. Project Proponent (PP) along with M/s NEERI and BARC has made the presentation inter-alia submitted the following information:

- i. A temporary permission for flyash filling in South Balanda opencast mine of M/s Mahanadi Coalfields Limited in Talcher Coalfields, Dist. Angul, Odisha vide Ministry's letter dated 5.9.2013. The said temporary permission has been extended for one year on 2.3.2015 subject to compliance of interim orders and final judgement of Hon'ble NGT. The said permission has been further extended for one year i.e till 10.4.2016 vide Ministry's letter dated 11.4.2016.
- ii. Ministry's vide letter dated 11.4.2016 stipulated certain conditions regarding regular monitoring of ground water wells and leachate analysis, particle size distribution of flyash, analysis of heavy metals, mine pit water analysis for trace metals, data from piezometric wells, periodic analysis of underground aquifers for heavy metals, impact assessment study by NEERI, Radio tracer study, etc.
- iii. Capacity of allotted min voids quarry no.2, 3A & 3B of South Balanda is 16.73 million cubic metres. Ash filled in mines till January, 2017 is 12.88 million cubic metres. Available void in South Balanda is 3.85 million cubic metres which can cater to discharge of ash slurry from TTPS till 2021.
- iv. Integrated Hydro-geological, Geophysical, Hydro-chemical and groundwater flow and solute transport modelling studies around the ash filled south Balanda Mine voids have been undertaken during 2012-2016 by NEERI.
- v. Assessment of Bioaccumulation of Trace Metals in flora and fauna due to backfilling of ash from Talcher Thermal Power Station has been conducted by NEERI.
- vi. Isotope Hydro-chemical investigation on the impact of flyash disposal in opencast coal mine quarries on groundwater quality has been conducted by BARC.
- vii. Market Survey for ash utilisation potential in various application areas of flyash usage in the vicinity of Talcher Super Thermal Power Station, Kaniha has been conducted.
- viii. Ground water level (above mean sea level) contours indicate that the groundwater flow direction is towards Brahmani River. All the parameters (major cations and anions) were well within the permissible limits of BIS standards except for Fluoride and Nitrate which showed elevated concentrations in 3 samples. Petrographic studies carried out by NEERI in 2014 established the presence of fluoride and aluminium bearing minerals in the study area. The remote sensing and land use land classification study had established the

elevated concentration of nitrate to the proximity of the samples to the built up areas and agricultural fields.

- ix. Ash characterisation results indicate that the ash samples comes under the class F with percentage of SiO₂ (42.81-72.51%), Al₂O₃ (18.77-30.92%), Fe₂O₃ (1.04-6.16%), TiO₂(0.61-1.69%).
- x. The water extraction tests and water elution tests (leachate tests) show that the leaching of metals may occur only under extremely acidic conditions in laboratory. Under normal environmental conditions, the leaching of heavy metals and trace elements is insignificant. Hydraulic conductivity measurements found to be 10⁻⁹cm/sec which indicates that the ash column at the mine void has very poor permeability.
- xi. The drilling at the ash void indicates that the top unconfined aquifer at the site is now occupied by poor permeable ash column. The modelling of solute transport of the supernatant (with TDS 210 mg/l) indicate that high concentrated plume (210 mg/l) will move 280 m, 568 m, 852 m and 1140 m distance in 5 years, 10 years, 15 years and 20 years.
- xii. The comprehensive analysis of the water chemistry of sources in the vicinity of the mine void, piezometer and the supernatant indicate that no systematic increase in the concentration of trace elements like As, Pb and Hg is observed in the sampling campaign carried out since 2012. The results of all the studies indicate that the disposal of ash from Talcher TPS in the voids of South Balanda Mine has no adverse impact on ground water quality. The poor permeability of the ash deposits in the mine void prevents movement of ash water into the adjoining aquifers and prevents ground water contamination. Besides, the drilling data at the mine voids support the presence of clay and coal seam below the ash column. The presence of underlying impermeable clay along with the poor permeable ash column retards the movement of the toxic trace elements to the underlying aquifers.
- xiii. Studies suggest that the ash can be effectively used in backfilling and reclamation of mine voids, without any risk of ground water contamination and without any need of lining.

(4.5.2) Committee after detailed deliberations, **recommended for grant of temporary permission for a period of five years** for disposal of flyash subject to following conditions:

- i. A pilot project shall be explored for implementation for Cenosphere extraction from flyash and manufacturing of by-products in consultation with organizations like CSIR, ISM (IIT) Dhanbad.
- ii. As recommended by NEERI, Ash characterisation, hydro-geological studies, leachability of trace metals, monitoring of trace elements in the supernatant, pH of the water and the piezometers on a quarterly basis and reports shall be submitted to the Ministry and it's regional office annually.
- iii. Radio tracer studies shall be continued once in six months and the findings of the study shall be submitted to the Ministry and its Regional office annually.
- iv. Bioaccumulation and bio-magnification tests shall be conducted on surrounding flora and fauna (tree leaves, vegetation, crop yields and cattle population etc)during pre-monsoon and post monsoon to find out any trace metals escaped through groundwater or runoff.
- v. Surface water and runoff from the mine void/flyash shall not be let out into the nearby stream/drainage and shall be reused for the ashfilling and power plant activities.Surface and ground water quality along with existing piezometric wells shall be monitored quarterly and the reports shall be submitted to the Ministry annually.

- vi. Current state of flyash utilisation shall be in compliance with Flyash Notification and its amendments issued time to time.

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4.6 Disposal of Fly ash (1.65 MTPA) generated from 883 MW Captive Thermal Power Plants into mine void of Jagannath OPC of Mahanadi Coalfields Limited in Talcher, Dist. Angul, Odisha by M/s Bhushan Steel Limited – reg. extension of existing permission

(4.6.1) Project Proponent (PP) submitted online application on 17.10.2016. PP along with NEERI made the presentation inter-alia submitted the following:

- i. Temporary permission Flyash disposal into Jagannath Open cast mine of M/s Mahanadi Coalfields Ltd. has been issued vide Ministry's letter dated 5.9.2013 for a period of one year. The permission has been further extended for 11 months i.e. till 14.2.2016 subject to certain conditions. The said permission has been further extended for one more year vide Ministry's letter dated 19.4.2016. Certain studies have been sought in the Ministry's letter dated 19.4.2016 such as alternate plan for flyash utilisation, regular monitoring ground water and mine pit water for trace metals, periodic analysis of underground aquifers for heavy metals, data from piezometric wells, etc.
- ii. Total capacity of the mine void is 17 million tons. Only 0.446 million tons of ash has been filled into the mine. The total generation of ash from the 883 MW (142 MW+300 MW+256 MW+185 MW) is 1.65 MTPA. Total water consumption till February, 2016 in slurry making is 5,35,841.7 m³/annum.
- iii. Radio tracer study of flyash disposal into mine void has been carried by Isotope Application Services, Board of Radiation & Isotope Technology, Department of Atomic Energy.
- iv. Double well tracer study has shown that radio tracer did not reach to the monitoring well indicating very low permeability of the underground soil matrix in the mine void region of Quarry No. 4 of Jagannath OCP.
- v. Scandium-46 leached out from labelled flyash could not be detected in the bore wells surrounding the Quarry No.4 of Jagannath OCP indicating no leachates are reaching the groundwater aquifers from the time of injection.
- vi. Further dumping of flyash could be continued into the mine void to push particulate matter towards the boundaries of the void forcing the labelled fly ash toward the bore wells and to ascertain the impact of leachates in future. Sampling of the water in the designated bore wells should be continued for about five half-lives of the radiotracer. While regular dumping, subsequent radiotracer study can be repeated after every two years.
- vii. NEERI has conducted impact assessment studies of flyash disposal into mine voids of Jagannath OCP of M/s MCL, Talcher. An integrated approach has been adopted in this study by utilizing various tools like hydrogeology, groundwater chemistry, flyash characterization, soil, groundwater flow and solute transport modelling studies. A network of observation wells has been set up and monitoring of the wells has been carried out in the post-monsoon and pre-monsoon seasons for the major cations, anions and trace elements. The analysis has also been carried out for mine pit water and groundwater samples at various depths in the study area. Soil sampling has been carried out at representative locations around the mine area and analysis for major physical and chemical properties. Bio-assay test, bio-magnification and bio-accumulation tests have also been carried out for the study area. Leachability studies of flyash have been carried out using the TCLP, SPLP and Water Elution test. Petrographic study has been carried out for rock samples collected in the study area.

- viii. The possible impact of the mine pit on the groundwater sources was also studied by attempting the solute transport simulation using the Mass Transport Modelling (MT3D).
- ix. Some samples show higher values of fluoride. The presence of high fluoride concentration gives the reasons whether it is due to geogenic nature or anthropogenic stresses. Petrographic study indicated the presence of fluoride bearing minerals in the study area. Petrographic study also indicated the presence of minerals having aluminium. Fluoride content in the ground water within 2.5 km of the ash dumping area is <1.0 mg/l which is well within norms.
- x. Concentration of TDS in all samples is within BIS limits. Higher concentrations of iron are observed in some of the groundwater samples which may be due to the presence of laterite geological nature. Other physico-chemical parameters were within the permissible limits of BIS standards. The TCLP test for flyash and bottom ash samples reveal that the ash is non-hazardous in nature as per RCRA guidelines. The water extraction test indicated that the leaching of trace elements from the flyash and bottom ash is very less. It is less than 1% for the different trace elements. The water elution test also indicates that the leaching of trace elements from the ash matrix decreases with time. As the pH in the Jagannath Mine pit is approximately 7, leaching at concentration likely to affect the ground water is not expected.
- xi. The modelling of the solute transport for the Jagannath mine pit indicate that the plumes will move to a maximum distance of 700 m over a 30 year period starting from March, 2014.
- xii. The radio activity analysis of the radio nuclides indicates that the activity is below the limits set by the AERB guidelines.
- xiii. The trace element concentration in the plant species has been found to be within limits. The Bio-assay tests also indicated that mortalities were not observed in the test samples.
- xiv. Based on the comprehensive study starting from May, 2014 and sampling spread over the last 2 years, it is concluded that the trace element in the mine pit has not increased with time and the concentrations in the wells close to the mine pit is also not increasing. The leaching tests also confirm the insignificant leaching and the radioactive activity is also within the limits. As there is no adverse impact on the environment, the ash disposal may be continued further.

(4.6.1) Committee after detailed deliberations, **recommended for grant of temporary permission for a period of five years** for disposal of flyash subject to the following conditions:

- i. A pilot project shall be explored for implementation for Cenosphere extraction from flyash and manufacturing of by-products in consultation with organizations like CSIR, ISM (IIT) Dhanbad.
- ii. As recommended by NEERI, Ash characterisation, hydro-geological studies, leachability of trace metals, monitoring of trace elements in the supernatant, pH of the water and the piezometers on a quarterly basis and reports shall be submitted to the Ministry and its regional office annually.
- iii. Radio tracer studies shall be continued once in six months and the findings of the study shall be submitted to the Ministry and its Regional office annually.
- iv. Bioaccumulation and bio-magnification tests shall be conducted on surrounding flora and fauna (tree leaves, vegetation, crop yields and cattle population etc) during pre-monsoon and post monsoon to find out any trace metals escaped through groundwater or runoff.
- v. Surface water and runoff from the mine void/flyash shall not be let out into the nearby stream/drainage and shall be reused for the ash filling and power plant

activities. Surface and ground water quality along with existing piezometric wells shall be monitored quarterly and the reports shall be submitted to the Ministry annually.

- vi. Current state of flyash utilisation shall be in compliance with Flyash Notification and its amendments issued time to time.

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4.7 Disposal of fly ash generated from Talcher Super Thermal Power Station (Stage-I: 2x500 MW & Stage-II: 4x500 MW) into abandoned mine voids of Jagannath OPC of Mahanadi Coalfields Limited in Talcher, Dist. Angul, Odisha by M/s NTPC Limited- reg. re-consideration for permission.

(4.7.1) Project Proponent (PP) submitted the online application on 2.1.2017. The proposal for ash filling in Jagannath Opencast Mines generated from Talcher Super Thermal Power Station. M/s Bhushan Steel Ltd. has already been disposing flyash in the same mines for last three years. The proposal was earlier considered by the EAC on 29.4.2015 and deferred as the studies conducted by M/s Bhushan Steel Ltd. regarding leachate tests, radio tracer studies were still under completion. Also, the existing ash pond of M/s NTPC could accommodate flyash for four years at that time. Accordingly, EAC suggested to submit the scientific and engineering plan for backfilling of the mines after consulting National and International Experts for exploring various geo-technical and engineering solutions. Simultaneously, alternate avenues for flyash utilisation shall be explored by the PP.

(4.7.2) PP along with NEERI and CMPDI made presentation inter-alia submitted the following:

- i. NTPC Talcher Super Thermal Power Station (TSTPS), Kaniha, Dist. Angul, Odisha has a total power generation installed capacity of 3010 MW. Coal to TSTPS is being supplied by Talcher coalfields (Lingaraj block) of Mahanadi Coalfields Ltd and source of water is Samal Barrage Reservoir on river Brahmani. Coal is transported to NTPC-TSTPS from Lingaraj coal mines of MCL through a 39 km MGR railway transportation system. The station generates approximately 6.5 MTPA of total ash (flyash and bottom ash) and could utilise only 38-43%.
- ii. Unutilised ash is being disposed into two ash disposal areas (Stage-I: 750 acres and Stage-II: 840 acres) located at about 7 km N-W of the plant. Stage-I ash pond is nearly full in capacity and Stage-II ash pond is at critical capacity and will last up to 2020.
- iii. MCL has allotted Quarry no.8 of Jagannath OCP to NTPC for backfilling ash from TSTPS.
- iv. NTPC conducted Hydro-geological studies, characterisation and leachate studies conducted by NEERI.
- v. As suggested by EAC, market survey to assess ash utilisation potential for various uses in the vicinity of power plant has been conducted. Analysis of scientific and engineering alternatives for disposal of ash from Talcher STPP has been conducted by CMPDI.
- vi. Transportation modes of flyash from the power plant to Jagannath mines have been analysed. Slurry pumping through pipeline is recommended for the distance of approximately 20 km.
- vii. Ground water levels have been monitored. The results show that during pre-monsoon season, maximum depth of groundwater is observed at 12.95 metres below ground level (bgl) at Village Ekdal to minimum depth at 2.10 mbgl at village Jagannathpur. During post monsoon season, maximum depth of groundwater is found at 5.98 m bgl and minimum depth found at 1.21 m bgl at village Deulbara.

(4.7.3) Committee noted that the proposal of NTPC for flyash filling in Quarry no.8 of Jagannath Opencast mine is adjacent to the Quarry no.4 of Jaggannath opencast mine in which M/s Bhushan Steel Ltd has already been disposing flyash for the last three years. The studies conducted by NEERI are conclusive and recommend for flyash disposal in these quarries.

(4.7.4) Committee after detailed deliberations, **recommended for grant of temporary permission for a period of five years** for disposal of flyash subject to the following conditions:

- i. A pilot project shall be explored for implementation for Cenosphere extraction from flyash and manufacturing of by-products in consultation with organizations like CSIR, ISM (IIT) Dhanbad.
- ii. As recommended by NEERI, Ash characterisation, hydro-geological studies, leachability of trace metals, monitoring of trace elements in the supernatant, pH of the water and the piezometers on a quarterly basis and reports shall be submitted to the Ministry and it's regional office annually.
- iii. Radio tracer studies shall be continued once in six months and the findings of the study shall be submitted to the Ministry and its Regional office annually.
- iv. Bioaccumulation and bio-magnification tests shall be conducted on surrounding flora and fauna (tree leaves, vegetation, crop yields and cattle population etc) during pre-monsoon and post monsoon to find out any trace metals escaped through groundwater or runoff.
- v. Surface water and runoff from the mine void/flyash shall not be let out into the nearby stream/drainage and shall be reused for the ash filling and power plant activities. Surface and ground water quality along with existing piezometric wells shall be monitored quarterly and the reports shall be submitted to the Ministry annually.
- vi. Current state of flyash utilisation shall be in compliance with Flyash Notification and its amendments issued time to time.

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4.8 ANY OTHER ITEM WITH THE PERMISSION OF THE CHAIR.

(4.8.1) 2x800 MW Coal based Lara Super Thermal Power Project at villages Armuda, Chhapora, Bodajharia, Devalpura, Mahloi, Riyapalli, Lara, Jhilgitar and Kandagarh in TalukPussore, in District Raigarh, in Chhattisgarh by M/s NTPC Ltd. – reg amendment of EC.

(4.8.1.1) Project Proponent (PP) submitted online application on 16.2.2017 for transportation of 7777 MT/day coal through road till November, 2019. The proposal was earlier considered in 2nd Re-constituted EAC meeting held on 20.1.2017 and was rejected as 15,554 MT of coal per day will be transported by 2074 truck trips per day through road network of 115 km. The present proposal is for one unit and the quantity of coal to be transported will be reduced to half.

(4.8.1.2) Project Proponent (PP) along with M/s Min Mec Consultancy Pvt. Ltd made the presentation and, *inter-alia* submitted the following:

- i. As per the Hon'ble Supreme Court's order, the coal block was de-allocated on 24.9.2014 and later it was re-allocated on 8.9.2015 which has delayed its production plan of Talaipalli Coal Mine. Coal production is expected to commence by November, 2019.
- ii. As the Unit-1:1x800 MW is expected to be commissioned by April, 2017 and the Talaipalli Coal block is expected to start its production by November, 2019, Coal India Limited (CIL) vide their letter dated 2.6.2016, granted Bridge Coal Linkage for the said project and the coal will be sourced from two places i.e.

Lakhanpur Coal block of M/s MCL (5.67 MTPA) and Korea Rewa Field of M/s SECL (0.832 MTPA).

- iii. It is proposed to transport coal from the Lakhanpur Coal Block of M/s Mahanadi Coalfields Limited to the power plant on road which involves approximate to and fro distance of 115 km for temporary period till November, 2019.
- iv. As the present request is only for one unit, the total quantity of coal to be transported is 7,777 MT/day and approximately 1037 truck trips per day (Truck capacity: 15 MT) are required to bring the coal from mine to power plant.
- v. Alternate routes have been examined for transportation of coal. NH-49/200 is the only road link between Lakhanpur Mines and Lara STPP. The other alternate route could be transport of coal through railways up to Kotaralia (40 km) and transport by road from Kotaralia to Lara STPP (60 km through outer periphery of town or 32 km through the town). However, this will necessitate an intermediate unloading and loading station. Therefore, the impacts of transport shall be much more than the transport through NH-49/200.
- vi. Coal transportation through road has been proposed due to delay in operation of coal mine resulting from the orders of Hon'ble Supreme Court for no fault of NTPC, which may be considered as a Force Majeure situation. Keeping in view of the concerns of MoEF&CC, NTPC now proposes to transport the coal for one unit (1x800 MW) at present which will reduce the traffic load by half.
- vii. There are total 18 villages within 100 m of either side of the proposed route out of which only one village has population of 1500. Eight villages have population in the range of 500-1000 while nine villages have population in the range of 500-1000.
- viii. Out of 55.9 km (onward)/59.3 km (return) of route length, 53 km is National Highway NH-49/200. The report on traffic analysis and future projections establishes that the current traffic and additional traffic volume due to proposed project at all census points will be between 19.9-40.4% of the maximum capacity. Thus, the entire route is capable of supporting the present as well as additional traffic.

(4.8.1.2) Committee suggested that CSR activities for community development and peripheral development shall be implemented by the PP.

(4.8.1.3) Committee, after detailed deliberations **recommended for grant of permission for transport of 7,777 MT/day of coal through road from Lakhanpur Coal Block to NTPC Lara Power Plant for a period of one year subject to following conditions:**

- i. Coal transportation shall be done by covered trucks only.
- ii. Explore possibility of using higher capacity truck (25-30 T) for transportation of coal.
- iii. Ambient Air Quality and Traffic Density shall be monitored along the route once in a quarter, preferably during non-monsoon months.
- iv. Community development and peripheral development shall be done by implement CSR activities in 18 villages and villages within 100 m on either side of the road through which road transportation of coal is proposed.
- v. Wherever the road has width less than 2 lane (7 m), M/s NTPC shall expand the road to accommodate the existing and incremental traffic or lay an alternate de-tour by acquiring new land. An action plan in this regard shall be submitted to the Ministry in one month positively.

- vi. At the areas of road congestion and highly populated areas of crossing, a new de-tour shall be laid by M/s NTPC by acquiring land. An action plan in this regard shall be submitted to the Ministry in one month positively.

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As, there being no agenda item left, the meeting ended with a vote of thanks to the Chair.

Terms of Reference (TOR):

- i) The proposed project shall be given a unique name in consonance with the name submitted to other Government Departments etc. for its better identification and reference.
- ii) Vision document specifying prospective long term plan of the project shall be formulated and submitted.
- iii) Latest compliance report duly certified by the Regional Office of MoEF& CC for the conditions stipulated in the environmental and CRZ clearances of the previous phase(s) for the expansion projects shall be submitted.
- iv) The project proponent needs to identify minimum three potential sites based on environmental, ecological and economic considerations, and choose one appropriate site having minimum impacts on ecology and environment. A detailed comparison of the sites in this regard shall be submitted.
- v) Executive summary of the project indicating relevant details along with recent photographs of the proposed site (s) shall be provided. Response to the issues raised during Public Hearing and the written representations (if any), along with a time bound Action Plan and budgetary allocations to address the same, shall be provided in a tabular form, against each action proposed.
- vi) Harnessing solar power within the premises of the plant particularly at available roof tops and other available areas shall be formulated and for expansion projects, status of implementation shall also be submitted.
- vii) The geographical coordinates (WGS 84) of the proposed site (plant boundary), including location of ash pond along with topo sheet (1:50,000 scale) and IRS satellite map of the area, shall be submitted. Elevation of plant site and ash pond with respect to HFL of water body/nallah/River and high tide level from the sea shall be specified, if the site is located in proximity to them.
- viii) Layout plan indicating break-up of plant area, ash pond, green belt, infrastructure, roads etc. shall be provided.
- ix) Land requirement for the project shall be optimized and in any case not more than what has been specified by CEA from time to time. Item wise break up of land requirement shall be provided.
- x) Present land use (including land class/kism) as per the revenue records and State Govt. records of the proposed site shall be furnished. Information on land to be acquired including coal transportation system, laying of pipeline, ROW, transmission lines etc. shall be specifically submitted. Status of land acquisition and litigation, if any, should be provided.
- xi) If the project involves forest land, details of application, including date of application, area applied for, and application registration number, for diversion under FCA and its status should be provided along with copies of relevant documents.
- xii) The land acquisition and R&R scheme with a time bound Action Plan should be formulated and addressed in the EIA report.
- xiii) Satellite imagery and authenticated topo sheet indicating drainage, cropping pattern, water bodies (wetland, river system, stream, nallahs, ponds etc.), location of nearest habitations (villages), creeks, mangroves, rivers, reservoirs etc. in the study area shall be provided.
- xiv) Location of any National Park, Sanctuary, Elephant/Tiger Reserve (existing as well as proposed), migratory routes / wildlife corridor, if any, within 10 km of the project site shall be specified and marked on the map duly authenticated by the Chief Wildlife Warden of the State or an officer authorized by him.

- xv) Topography of the study area supported by toposheet on 1:50,000 scale of Survey of India, along with a large scale map preferably of 1:25,000 scale and the specific information whether the site requires any filling shall be provided. In that case, details of filling, quantity of required fill material; its source, transportation etc. shall be submitted.
- xvi) A detailed study on land use pattern in the study area shall be carried out including identification of common property resources (such as grazing and community land, water resources etc.) available and Action Plan for its protection and management shall be formulated. If acquisition of grazing land is involved, it shall be ensured that an equal area of grazing land be acquired and developed and detailed plan submitted.
- xvii) A mineralogical map of the proposed site (including soil type) and information (if available) that the site is not located on potentially mineable mineral deposit shall be submitted.
- xviii) Details of fly ash utilization plan as per the latest fly ash Utilization Notification of GOI along with firm agreements / MoU with contracting parties including other usages etc. shall be submitted. The plan shall also include disposal method / mechanism of bottom ash.
- xix) The water requirement shall be optimized (by adopting measures such as dry fly ash and dry bottom ash disposal system, air cooled condenser, concept of zero discharge) and in any case not more than that stipulated by CEA from time to time, to be submitted along with details of source of water and water balance diagram. Details of water balance calculated shall take into account reuse and re-circulation of effluents.
- xx) Water body/Nallah (if any) passing across the site should not be disturbed as far as possible. In case any Nallah / drain is proposed to be diverted, it shall be ensured that the diversion does not disturb the natural drainage pattern of the area. Details of proposed diversion shall be furnished duly approved by the concerned Department of the State.
- xxi) It shall also be ensured that a minimum of 500 m distance of plant boundary is kept from the HFL of river system / streams etc. and the boundary of site should also be located 500 m away from railway track and National Highways.
- xxii) Hydro-geological study of the area shall be carried out through an institute/ organization of repute to assess the impact on ground and surface water regimes. Specific mitigation measures shall be spelt out and time bound Action Plan for its implementation shall be submitted.
- xxiii) Detailed Studies on the impacts of the ecology including fisheries of the River/Estuary/Sea due to the proposed withdrawal of water / discharge of treated wastewater into the River/Sea etc shall be carried out and submitted along with the EIA Report. In case of requirement of marine impact assessment study, the location of intake and outfall shall be clearly specified along with depth of water drawl and discharge into open sea.
- xxiv) Source of water and its sustainability even in lean season shall be provided along with details of ecological impacts arising out of withdrawal of water and taking into account inter-state shares (if any). Information on other competing sources downstream of the proposed project and commitment regarding availability of requisite quantity of water from the Competent Authority shall be provided along with letter / document stating firm allocation of water.
- xxv) Detailed plan for rainwater harvesting and its proposed utilization in the plant shall be furnished.
- xxvi) Feasibility of near zero discharge concept shall be critically examined and its details submitted.
- xxvii) Optimization of Cycles of Concentration (COC) along with other water conservation measures in the project shall be specified.

- xxviii) Plan for recirculation of ash pond water and its implementation shall be submitted.
- xxix) Detailed plan for conducting monitoring of water quality regularly with proper maintenance of records shall be formulated. Detail of methodology and identification of monitoring points (between the plant and drainage in the direction of flow of surface / ground water) shall be submitted. It shall be ensured that parameter to be monitored also include heavy metals. A provision for long-term monitoring of ground water table using Piezometer shall be incorporated in EIA, particularly from the study area.
- xxx) Socio-economic study of the study area comprising of 10 km from the plant site shall be carried out through a reputed institute / agency which shall consist of detail assessment of the impact on livelihood of the local communities.
- xxxi) Action Plan for identification of local employable youth for training in skills, relevant to the project, for eventual employment in the project itself shall be formulated and numbers specified during construction & operation phases of the Project.
- xxxii) If the area has tribal population it shall be ensured that the rights of tribals are well protected. The project proponent shall accordingly identify tribal issues under various provisions of the law of the land.
- xxxiii) A detailed CSR plan along with activities wise break up of financial commitment shall be prepared. CSR component shall be identified considering need based assessment study and Public Hearing issues. Sustainable income generating measures which can help in upliftment of affected section of society, which is consistent with the traditional skills of the people shall be identified. Separate budget for community development activities and income generating programmes shall be specified.
- xxxiv) While formulating CSR schemes it shall be ensured that an in-built monitoring mechanism for the schemes identified are in place and mechanism for conducting annual social audit from the nearest government institute of repute in the region shall be prepared. The project proponent shall also provide Action Plan for the status of implementation of the scheme from time to time and dovetail the same with any Govt. scheme(s). CSR details done in the past should be clearly spelt out in case of expansion projects.
- xxxv) R&R plan, as applicable, shall be formulated wherein mechanism for protecting the rights and livelihood of the people in the region who are likely to be impacted, is taken into consideration. R&R plan shall be formulated after a detailed census of population based on socio economic surveys who were dependant on land falling in the project, as well as, population who were dependant on land not owned by them.
- xxxvi) Assessment of occupational health and endemic diseases of environmental origin in the study area shall be carried out and Action Plan to mitigate the same shall be prepared.
- xxxvii) Occupational health and safety measures for the workers including identification of work related health hazards shall be formulated. The company shall engage full time qualified doctors who are trained in occupational health. Health monitoring of the workers shall be conducted at periodic intervals and health records maintained. Awareness programme for workers due to likely adverse impact on their health due to working in non-conducive environment shall be carried out and precautionary measures like use of personal equipments etc. shall be provided. Review of impact of various health measures undertaken at intervals of two to three years shall be conducted with an excellent follow up plan of action wherever required.
- xxxviii) One complete season site specific meteorological and AAQ data (except monsoon season) as per latest MoEF Notification shall be collected and the dates of monitoring shall be recorded. The parameters to be covered for AAQ shall include PM₁₀, PM_{2.5}, SO₂, NO_x, CO and Hg. The location of the monitoring stations should be so decided so as to take into consideration of the upwind direction, pre-dominant downwind

direction, other dominant directions, habitation and sensitive receptors. There should be at least one monitoring station each in the upwind and in the pre-dominant downwind direction at a location where maximum ground level concentration is likely to occur.

- xxxix) In case of expansion project, air quality monitoring data of 104 observations a year for relevant parameters at air quality monitoring stations as identified/stipulated shall be submitted to assess for compliance of AAQ Standards (annual average as well as 24 hrs).
- xl) A list of industries existing and proposed in the study area shall be furnished.
- xli) Cumulative impacts of all sources of emissions including handling and transportation of existing and proposed projects on the environment of the area shall be assessed in detail. Details of the Model used and the input data used for modeling shall also be provided. The air quality contours should be plotted on a location map showing the location of project site, habitation nearby, sensitive receptors, if any. The windrose and isopleths should also be shown on the location map. The cumulative study should also include impacts on water, soil and socio-economics.
- xliv) Radio activity and heavy metal contents of coal to be sourced shall be examined and submitted along with laboratory reports.
- xlvi) Fuel analysis shall be provided. Details of auxiliary fuel, if any, including its quantity, quality, storage etc should also be furnished.
- xlviii) Quantity of fuel required, its source and characteristics and documentary evidence to substantiate confirmed fuel linkage shall be furnished. The Ministry's Notification dated 02.01.2014 regarding ash content in coal shall be complied. For the expansion projects, the compliance of the existing units to the said Notification shall also be submitted
- xl) Details of transportation of fuel from the source (including port handling) to the proposed plant and its impact on ambient AAQ shall be suitably assessed and submitted. If transportation entails a long distance it shall be ensured that rail transportation to the site shall be first assessed. Wagon loading at source shall preferably be through silo/conveyor belt.
- xlvi) For proposals based on imported coal, inland transportation and port handling and rail movement shall be examined and details furnished. The approval of the Port and Rail Authorities shall be submitted.
- xlvi) Details regarding infrastructure facilities such as sanitation, fuel, restrooms, medical facilities, safety during construction phase etc. to be provided to the labour force during construction as well as to the casual workers including truck drivers during operation phase should be adequately catered for and details furnished.
- xlvi) EMP to mitigate the adverse impacts due to the project along with item - wise cost of its implementation in a time bound manner shall be specified.
- xlix) A Disaster Management Plan (DMP) along with risk assessment study including fire and explosion issues due to storage and use of fuel should be carried out. It should take into account the maximum inventory of storage at site at any point of time. The risk contours should be plotted on the plant layout map clearly showing which of the proposed activities would be affected in case of an accident taking place. Based on the same, proposed safeguard measures should be provided. Measures to guard against fire hazards should also be invariably provided. Mock drills shall be suitably carried out from time to time to check the efficiency of the plans drawn.
- l) The DMP so formulated shall include measures against likely Fires/Tsunami/Cyclones/Storm Surges/Earthquakes etc, as applicable. It shall be ensured that DMP consists of both On-site and Off-site plans, complete with details of containing likely disaster and shall specifically mention personnel identified for the

task. Smaller version of the plan for different possible disasters shall be prepared both in English and local languages and circulated widely.

- li) Detailed scheme for raising green belt of native species of appropriate width (50 to 100 m) and consisting of at least 3 tiers around plant boundary with tree density of 2000 to 2500 trees per ha with a good survival rate of around 80% shall be submitted. Photographic evidence must be created and submitted periodically including NRSA reports in case of expansion projects. A shrub layer beneath tree layer would serve as an effective sieve for dust and sink for CO₂ and other gaseous pollutants and hence a stratified green belt should be developed.
- lii) Over and above the green belt, as carbon sink, plan for additional plantation shall be drawn by identifying blocks of degraded forests, in close consultation with the District Forests Department. In pursuance to this the project proponent shall formulate time bound Action Plans along with financial allocation and shall submit status of implementation to the Ministry every six months.
- liii) Corporate Environment Policy
 - a. Does the company has a well laid down Environment Policy approved by its Board of Directors? If so, it may be detailed in the EIA report.
 - b. Does the Environment Policy prescribe for standard operating process / procedures to bring into focus any infringement / deviation / violation of the environmental or forest norms / conditions? If so, it may be detailed in the EIA.
 - c. What is the hierarchical system or Administrative order of the company to deal with the environmental issues and for ensuring compliance with the environmental clearance conditions. Details of this system may be given.
 - d. Does the company has compliance management system in place wherein compliance status along with compliances / violations of environmental norms are reported to the CMD and the Board of Directors of the company and / or shareholders or stakeholders at large? This reporting mechanism should be detailed in the EIA report.

All the above details should be adequately brought out in the EIA report and in the presentation to the Committee.

- liv) Details of litigation pending or otherwise with respect to project in any Court, Tribunal etc. shall invariably be furnished.





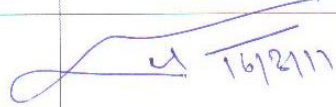
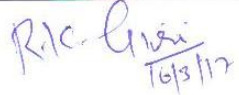
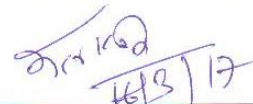
Attendance of the 4th EAC Meeting of the Re-constituted Expert Appraisal Committee (EAC) for Thermal Power Projects Meeting held on 16th March, 2017.

LIST OF MEMBERS (Attendance Sheet)

4th EXPERT APPRAISAL COMMITTEE MEETING (Thermal & Coal Mining Sector)

DATE & TIME : 16th March 2017

VENUE : TEESTA MEETING HALL, VAYU WING,
INDIRA PARYAVARAN BHAWAN.

| Sr.No. | Name of Member | Signature |
|--------|---|---|
| 1. | Dr. Navin Chandra Chairman |  |
| 2. | Dr. Narmada Prasad Shukla Member |  |
| 3. | Dr. Rajesh P. Gunaga Member | Absent |
| 4. | Sh. N. Mohan Karnat, IFS Member |  |
| 5. | Dr. Sharachandra Lele Member |  |
| 6. | Sh. P.D. Siwal/ Sh. N.S. Mondal Representative of Central Electricity Authority (CEA) |  |
| 7. | Dr. R.K. Giri, Scientist 'E' Representative of Indian Meteorological Department (IMD) |  |
| 8. | Dr. S.K. Paliwal, Scientist 'D' Representative of Central Pollution Control Board (CPCB) | Absent |
| 9. | Prof. D.C. Panigrahi/ Prof. S.K. Sinha/ Prof. OM PRAKASH Representative of IIT (ISM) Dhanbad | Absent |
| 10. | Dr. S. Kerketta Member Secretary MoEFCC |  |

Approval of Minutes of the 4th Meeting of the Re-constituted Expert Appraisal Committee (EAC) on Environmental Impact Assessment (EIA) of Thermal Power Projects by the Chairman.

3/26/2017

https://mail.govin/iwc_static/layout/shell.html?lang=en&3.0.1.2.0_15121607

Subject: Approval of Minutes of 4th meeting (Thermal)

To: "Dr S. Kerketta" <s.kerketta66@gov.in>,
"Dr. S. Kerketta" <suna1466@rediffmail.com>,
"N. Subrahmanyam" <n.subrahmanyam@gov.in>,
"N. Subrahmanyam" <n.subrahmanyam@nic.in>

Date: 03/26/17 11:55 AM

From: navin chandra <navinchandrarr1@yahoo.com>
Reply-To: navin chandra <navinchandrarr1@yahoo.com>

Approved 4th_MoM_EAC_16.3.2017.docx (364kB)

26/03/2017

Dear Dr. Kerketta,

Thank you for sending draft of 4th meeting of Thermal. There were a few very minor corrections. The corrected minutes are attached with this e-mail. The same are approved and may be processed for further necessary action.

regards,

Sincerely,

(NAVIN CHANDRA)

**AGENDA OF 4th MEETING OF THE RE-CONSTITUTED EXPERT APPRAISAL COMMITTEE
ON THERMAL POWER PROJECTS**

DATE : 16th MARCH, 2017
TIME : 10.30 A.M. ONWARDS
VENUE : TEESTA MEETING HALL, VAYU WING, FIRST FLOOR, INDIRA PARYAVARAN
 BHAWAN (NEW BUILDING), JORBAGH ROAD, NEW DELHI-110003.

AGENDA

| ITEM | |
|-------------------------|---|
| 16.03.2017 | |
| Item No. 4.0 | CONFIRMATION OF MINUTES OF 3RD EAC (Thermal) MEETING |
| Item No. | CONSIDERATION OF PROJECTS |
| 4.1 | Expansion of 2x363.3 MW Gas based Power Project at Palatana, Tehsil Kakraban, Dist. Gomati, Tripura by M/s ONGC Tripura Power Company Limited- reg. consideration for ToR. |
| 4.2 | Expansion by addition of 2x660 MW (Stage-II) Unit-5 & 6 Coal based Thermal Power Plant at village Chowki- Motipara, in Chhabra, in Baran Dist., Rajasthan by M/s Rajasthan RajyaVidyutUtpadan Nigam Ltd.- reg. amendment in EC. |
| 4.3 | 2x800 MW Udangadi Super Critical Imported Coal Based TPP at village Udangudi, in Thiruchendur Taluk, in Thoothukudi district, in Tamil Nadu by M/s. Udangudi Power Corporation Ltd- reg. amendment in EC. |
| 4.4 | 4x150 MW Coal washery rejects based Thermal Power Project at Village Parsa, & Kete, Tehsil Udaypur, Dist. Surguja by M/s Surguja Power Private Limited – reg. consideration for ToR. |
| 4.5 | Disposal of fly ash generated from 460 MW TPP into mine void of South Balonda OPC of Mahanadi Coalfields Limited, Talcher, Dist. Angul, Odisha by M/s NTPC Limited- reg. extension of existing permission. |
| 4.6 | Disposal of Fly ash (1.65 MTPA) generated from 883 MW Captive Thermal Power Plants into mine void of Jagannath OPC of Mahanadi Coalfields Limited in Talcher, Dist. Angul, Odisha by M/s Bhushan Steel Limited – reg. extension of existing permission |
| 4.7 | Disposal of fly ash generated from Talcher Super Thermal Power Station (Stage-I: 2x500 MW & Stage-II: 4x500 MW) into abandoned mine voids of Jagannath OPC of Mahanadi Coalfields Limited in Talcher, Dist. Angul, Odisha by M/s NTPC Limited- reg. re-consideration for permission. |
| 4.8 | ANY OTHER ITEM WITH THE PERMISSION OF THE CHAIR. |