

MINUTES OF THE 66TH MEETING OF RE-CONSTITUTED EXPERT APPRAISAL COMMITTEE ON ENVIRONMENTAL IMPACT ASSESSMENT OF THERMAL POWER AND COAL MINE PROJECTS

The 66th Meeting of the reconstituted Expert Appraisal Committee (Thermal) was held on **February 5-6, 2013** at Scope Convention Centre, SCOPE Complex, Lodhi Road, New Delhi. The members present were:

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| 1. | Shri V.P. Raja | - | Chairman |
| 2. | Dr. C.R. Babu | - | Vice-Chairman |
| 3. | Shri T.K. Dhar | - | Member |
| 4. | Shri J.L. Mehta | - | Member |
| 5. | Dr. G.S. Roonwal | - | Member |
| 6. | Shri M.S. Puri | - | Member |
| 7. | Dr. S.D. Attri | - | Member |
| 8. | Dr. Saroj | - | Member Secretary |

Member Secretary, CPCB; Dr. CBS Dutt, Dr. K.K.S. Bhatia and Shri V.B. Mathur were absent.

In attendance: Sh. W. Bharat Singh, Deputy Director, MoEF.

The deliberations held and the decisions taken are as under:

ITEM No.1 CONFIRMATION OF THE MINUTES OF THE LAST MEETING.

The minutes of the 64th Meeting held during January 7-8, 2013 were confirmed with some minor changes noticed/suggested.

05.02.2013

2.1 Expansion by addition of 500 MW (Stage-IV) Coal Based Thermal Power Plant at Feroz Gandhi Unchahar Thermal Power Station of M/s NTPC Ltd. at Raebareli District, in Uttar Pradesh - reg. Environmental Clearance reconsideration.

The proposal was earlier considered in the 64th Meeting held during January 7-8, 2013, wherein the project proponent gave a presentation and provided the following information:

The proposal is for expansion by addition of 500 MW (Stage-IV) Coal Based Thermal Power Plant at Feroz Gandhi Unchahar Thermal Power Station at Raebareli District, in Uttar Pradesh. The total existing capacity of the power

plant is 1050 MW, consisting of Stage-I (2x210 MW); Stage-II (2x210 MW) & Stage-III (1x210 MW). No additional land is required for the expansion by addition of Stage-IV (1x500 MW). The same will be accommodated within available land, which is about 2203 acres. The co-ordinates of the site are located within Latitude 25°53'55" N to 25°54'56" N and Longitude 81°18'50"E to 81°20'25"E. Coal requirement for the expansion will be 2.14 MPTA and will be obtained from: (a) Talaipalli Coal Block (1.0 MPTA; (b) 0.5 MPTA from Pakri Barwadih Coal Block; and (c) 0.64 MPTA will be imported coal. Ash and sulphur content of blended coal will be 29-31% and 0.62%. Average Calorific value of the blended coal will be 4190-4470 kcal/kg. About 1428 T/day of fly ash and 357 T/day of bottom ash will be generated. Water requirement of 1980 cum/hr will be sourced from Sharda Sahayak Canal (normally)/ Dalmau Pumped Canal (during the closer of Sharda Shayak Canal) through a pipeline which is adjacent to the plant boundary. Irrigation Department had allocated 125 cusecs of water for Unchahar TPP. The water requirement for Stage-IV shall be accommodate within the existing water allocation. No additional land is required for ash dyke for Stage-IV and the unutilized ash shall be disposed off in the existing ash dykes of Stage-I & Stage-II. The co-ordinates of the existing two ash dykes are as follows: Stage-I ash dyke are located within Latitude 25°50'13" N to 25°51'29" N and Longitude 81°17'39"E to 81°18'54"E and Stage-II ash dyke are located within Latitude 25°57'07" N to 25°57'50" N and Longitude 81°21'19"E to 81°21'58"E. Nearest town is Mustafabad located at about 3 kms in the west. Samaspur Bird Sanctuary located at 7.9 Km from the project site. Application for clearance from wildlife angle has already submitted to Chief wildlife Warden and conservation plan has been drawn in consultation with Chief wildlife Warden. There are no National Parks, Wildlife Sanctuaries, Heritage Sites, Tiger/Biosphere Reserves etc. within 10 km of the project site. Public Hearing was held on 26.04.2012. Cost of the project will be Rs2848.52 Crores.

M/s NTPC also informed that the power plant was taken over from the State Electricity Board, U.P and the PLF before take over was only 31%. After take over, the PLF increased to 69 % within first six months and is now operating above national average PLF of 73.29% at 93.28% and was ranked amongst the top 10 power plants.

The Committee discussed the issues raised in the public hearing and the response made by M/s NTPC Ltd. The major issues raised were regarding why study area of only 10 kms has been considered; afforestation and maintenance thereafter; access to medical treatment for local people; contribution of NTPC at local district level; pending issues in High Court and non-compliance of court orders; repair for roads from Unchahar to Salon; development of Joint Committee for local development; depletion of ground water level; local not getting electricity; acute problem of mosquitoes; disposal of ash generated from power plant; benefits to local people after NTPC came improved drastically;

seepage due to ash dyke making land barren; regularly testing / monitoring of pollution within 10 kms etc.

With regard to afforestation, M/s NTPC Ltd. clarified that besides plantations done in their plant premises, afforestation in forests area has been carried out in the last three years with the help of Forests Dept. and they have no control over the forests area. It was stated that CSR activities for Stage-IV will be undertaken for a separate budget beginning from the development of the project itself. It was also informed that in view of the circular by the Ministry of Power for provision of electricity within 5 kms from the power project, they have undertaken feasibility study for providing infrastructural facilities for power supply within 5 kms radius of the project and the distribution will be done by the State Govt.

With regard to issue raised on pending High Court cases, M/s NTPC clarified that there is no case pending in the High Court as far as NTPC is concerned.

On the issue of repair/construction of road from Unchahar to Salon, it was stated that required amount of capital involved has already been paid to State PWD and repair/construction has been completed. It was also stated that community development and social welfare are undertaken based on need and requirement of local people and in consultation with the State Govt. and local people. That village development advisory committee (VDAC) consisting of Gram Pradhan, BDO and NTPC representative is already in existence and schemes in areas of health, education and vocational training have been undertaken in consultation with it.

Regarding issue of ground water it was clarified that no ground water is extracted for the power project or any of its activity.

The issue of seepage from canals and salinization of land in reported to be prevalent in the area. It was stated that NTPC has already undertaken a survey through IIT, Kanpur for problem of seepage around Umran Ash pond and report is awaited and action will be taken base on the recommendations made in the report. That as interim measure a drain has been constructed around the ash dyke. It was also stated that ash utilization of NTPC Unchahar TPP is very high and only unused ash is being disposed off in ash dykes.

M/s NTPC also made a presentation on TOR point wise compliance and the status of compliance with the conditions stipulated in the environmental clearances accorded for earlier stages.

M/s NTPC informed that within 15 kms there are no industrial activities including TPP and no new industrial project (including TPP) is known to be being proposed. That accordingly cumulative impact assessment taking into consideration of other activities has not been carried out. That however while

assessment of impact due to addition of Stage-IV, the baseline AAQ has taken the existing units in the power station and other existing activities in the study area.

The Committee noted that conservation action plan for birds and the marshes if not already done need to be submitted for its perusal. It was also pointed out that tripping due to bird hits on transmission line are a serious matter and the project proponent need to look into this in their own interest. The Committee felt that the green belt development needs to be shown with photographs along with layout of proposed green belt development.

It was also observed that the impact (if any) due to the project on the Ganga Action Plan may be furnished / clarified.

The Committee also observed that the fly ash management need to be revisited and a report submitted to this effect. It was also observed that monitoring report of ground water quality around ash pond shall be carried out and shall form a part of the condition in the environmental clearance for the Stage-IV.

In view of the shortcomings as pointed above, the proposal was deferred for re-consideration at a later stage. It was also decided that in case the information can be furnished timely, the matter can be placed in the next month for re-consideration.

On submission of clarifications on report on ash dykes; conservation plan for Marsh Lands and Birds; and documents on National Ganga River Basin Authority the matter was again taken up.

On the issue of conservation action plan for Marshes and Birds, M/s NTPC informed that the conservation plan has been prepared based on the following studies:

- a) Monitoring of Biological Quality of water quality of Samaspur Lake and Sai River by Central Pollution Control Board in the year 2002;
- b) Bird hits on transmission lines of Feroz Gandhi Unchahar TPP by the Dept. of Wildlife Sciences, Aligarh Muslim University (2010), which was sponsored by M/s NTPC Ltd.;
- c) Ecological sustainability of Samaspur Bird Sanctuary by The Energy Research Institute (TERI) in 2010 sponsored by the Ministry of Environment & Forests; and
- d) EIA study of FG Unchahar TPP (Stage-IV) 2011 undertaken by M/s Vimta Labs Ltd., Hyderabad.

The Committee was also informed by M/s NTPC that an annual budget of Rs 0.5 Crores is earmarked for conservation of the bird sanctuary and the marshes.

M/s NTPC also made a presentation on the recommendations of the Ganga Action Plan and stated the following:

That the Central Government vide notification dated 20.2.2009, has set up 'National Ganga River Basin Authority' (NGRBA) to ensure effective abatement of pollution and conservation of the river Ganga by adopting a holistic approach with the river basin as the unit of planning. That the Prime Minister is ex-officio Chairperson of the Authority, which has as its members, the Union Ministers concerned and the Chief Ministers of States through which Ganga flows, viz., Uttarakhand, Uttar Pradesh, Bihar, Jharkhand and West Bengal, among others. That the functions of the Authority include all measures necessary for planning and execution of programmes for abatement of pollution in the Ganga keeping with sustainable development needs.

It was also informed that under NGRBA, two Committees have been constituted viz. Standing Committee of NGRBA under the Chairmanship of Union Finance Minister of India. This Committee functions on behalf of NGRBA to periodically review and assess implementation of schemes. The second is the Empowered Steering Committee of NGRBA under the Chairmanship of Secretary (MoEF) constituted for sanction of projects and release of funds. The following information was also provided:

- That under the Mission Clean Ganga 2020, it will be ensured that by 2020 no untreated municipal sewage or industrial effluents flow into Ganga.
- Whereas a comprehensive Ganga River Basin Management Plan is being prepared by IIT Consortium, urgent action was required to treat the domestic sewage and industrial effluents to maintain ecological flow in river.
- Need for conserving and reviving wetlands in Ganga Basin, which will ensure greater flow in the river along its flood plain.
- The problem of solid waste need to be tackled in addition to untreated sewage.
- The treated final effluent, instead of being discharged into the river, may be used for irrigation, horticulture and industrial applications to the extent possible.
- Reuse of treated effluent is necessary to ensure flow of better quality water in river.
- A major component in the NGRBA programme framework pertains to dealing with CETPs to control industrial pollution. The states were advised to facilitate formation of Societies/ SPVs for creating proper common infrastructure and CETPs to treat effluents. The critical industries

mentioned are sugar, pulp and paper, tanneries and petrochemical industries.

M/s NTPC informed that old ash dykes viz. Arkha Ash Dyke is located in the south west direction at about 4.2 Km from the project site and Umran Ash Dyke is located in the north east direction at about 4.6 kms from the site. That ash is transported in slurry form and ash pond water is being recycled. That the same ash dyke is proposed to be used for Stage-IV also.

The Committee noted that the present ash pond location reportedly on the bank of Ganga need to be carefully studied to avoid any future calamity such as ash dyke breach. That any breach in the ash dyke will adversely affect drinking water from the river Ganga downstream and the seriousness of an accidental mishap maybe due to natural disaster cannot be ignored. The Committee therefore desired to know the possibility for location of ash pond elsewhere, away from the banks of River Ganga, to which M/s NTPC informed that availability of land in the area is a great difficulty.

The Committee therefore decided that a sub-group chaired by Dr. C.R. Babu and comprising of Sh. M.S. Puri; Sh. T.K. Dhar may undertake a site visit soon and submit a report.

In the view of the above the proposal was deferred for reconsideration at a later stage. It was also decided that a special meeting can be convened once the sub-group's report is submitted and the proposal can be taken up considering that the project is of National importance entailing additional 500 MW of power addition to the national grid.

2.2 2x800 MW (Stage-I) Gadwarwara Super Thermal Power Project of M/s NTPC Ltd. near villages Gangai, Umaraiya, Mehrakheda, Chorbarheta, Dongergaon and Kudari, in Gadarwara Tehsil, Narsinghpur District, in Madhya Pradesh - reg. Environmental Clearance.

The proposal is for consideration for environmental clearance. The project proponent made a presentation along with its consultant M/s Vimta Labs Ltd., Hyderabad and provided following information:

The proposal is for setting up of 2x800 MW (Stage-I) Gadwarwara Super Thermal Power Project near villages Gangai, Umaraiya, Mehrakheda, Chorbarheta, Dongergaon and Kudari, in Gadarwara Tehsil, Narsinghpur District, in Madhya Pradesh. Earlier TOR was prescribed for 4x660 MW on 13.01.2011, which was subsequently requested for configuration change to 2x800 MW. The total land required for ultimate capacity will be 1990 acres, out of which 1350 acres will be required for Phase-I (2x800MW). Ultimate land

requirement will be 1990 acres for 4x800 MW. About 318 acres is barren Govt. Land transferred to M/s NTPC by the Govt. of Madhya Pradesh. About 45 acres of govt. agricultural land is under transfer to M/s NTPC by the Govt. of M.P. Further 1580 acres is private agriculture land. The balance 47 acres is govt. barren land. The co-ordinates of the site are located within Latitude 22°51'06" N to 22°52'30" N and Longitude 78°51'24" E to 78°52'42" E. Coal requirement will be 8 MTPA at 90% PLF. The break-up of land for Stage –I (2x800 MW) will be 410 acres for main plant, CHP, water system, switchyard, BOP facilities etc; 50 acres for water reservoir; 150 acres for green belt; 400 acres for ash pond; 100 acres for township; and 240 acres for miscellaneous corridors. Coal will be obtained from Talaipalli coal block for which environmental clearance was accorded on 02.01.2013. Forest clearance for Talaipalli coal block has been obtained on 05.11.2012. Ash and sulphur contents in coal will be 40% and 0.5% respectively. Gross Calorific value of the coal will be 3900 kcal/kg. High Concentration Slurry disposal system for unutilized fly ash will be proposed. Conventional wet slurry disposal with Ash Water re-circulation system (AWRS) for disposal of bottom ash. Ash pond will be located 950 m away from Shakkar River. About 6400 TPD of fly ash and 1600 TPD of bottom ash will be generated. Ash will be supplied to Cement sector, RMC sector, Fly ash bricks manufacturers, roads and Highway embankment etc. Ash pond area will be 400 acres and co-ordinates of the ash pond site is located within Latitude 22°51'22" N to 22°52'30" N and Longitude 78°50'33" E to 78°51'24" E. Bi-flue Stack of 275m will be provided. Water requirement of 4675m³/hr will be sourced from the Narmada river through a pipeline at a distance of about 30 km from the project site. Madhya Pradesh Govt. has accorded the water commitment for 125 Cusecs vide letter dated 19.05.2008. CWC vide letter dated 27.07.2012 also concurred the water availability confirmation accorded by State Govt. There are no National Parks, Wildlife Sanctuaries, Heritage Sites, Tiger/Biosphere reserves etc. within ten km of the project site. Public Hearing was held on 20.06.2012. Cost of the project will be Rs.11404.62 Crores.

M/s NTPC also informed that the change in configuration from 2x660 MW to 2x800 MW recommended by the Committee in its 62nd Meeting held on December 4, 2012 is yet to be executed by the Ministry.

The Committee observed that the change in configuration was deliberated twice in the 58th Meeting held during October 8-9, 2012 and in the 62nd Meeting held on December 4, 2012. That the same was also a demand in the public hearing held for the power project and the change in configuration would generate more power per megawatt but the additional incremental adverse environmental impacts (due to 2x800 MW) in deviation from the earlier 2x660 MW as provided in the EIA/EMP report was also declared for information of all the stake holders by M/s NTPC Ltd. Throuh public advertisements calling for objections. That M/s NPTC had thereafter submitted details of public advertisements and informed the Committee that no objections were received. The Committee had also perused

through the contents of the advertisements published and decided that the same is acceptable and had accordingly recommended that the change in configuration be made by the Ministry as needful.

The Committee further observed that the change in configuration is now only a technical requirement and the same could be carried out at the time of according environmental clearance.

M/s NTPC also made point-wise TOR compliance.

The Committee while deliberating the point-wise TOR compliance observed that some of the TOR prescribed seems to have been inadequately addressed.

As an example it was noted that at TOR point no. (xv) on the issue of hydro-geological study to be conducted by an institute of repute to assess the impact on ground and surface water regime, it was stated that a detailed hydro-geological study of the area will be conducted from an institute of repute and action plan for mitigation of impacts will be provided. M/s NTPC however clarified that hydro-geological study was done in-house and an area drainage study has been done by IIT, Roorkee and will be submitted. In addition it was stated that geotechnical study was carried out by M/s Arki Techno, Bhubaneswar, which will also be submitted.

In another TOR point no. (xvi), regarding study on impact on river ecology due to proposed withdrawal of water, the Committee noted that no such study seem to have been carried out either done in-house by M/s NTPC nor done through an institute. The Committee decided that a study done in-house through secondary data on the impact of river ecology and on impact of downstream recipients of the water from the river needs to be submitted.

On the issue of cumulative impact assessment, M/s NTPC stated that within 10 kms there are no industrial activities (including TPPs) and no new industrial project is being proposed. That accordingly cumulative impact assessment for AAQ may be irrelevant. It was however stated that while assessment of impact due to proposed 2x800 MW (Stage-I) was carried out, the baseline AAQ has taken the existing data of all activities in the study area.

The Committee discussed the issues raised in the public hearing and the responses made by M/s NTPC Ltd. It was noted that the major issues raised were compensation for farmers be paid at the earliest; construction for roads and bridges; civic amenities such as schools, hospitals; employment for land losers; depletion of ground water; plantations (green belt); dust (fly ash) generation and likely impact; demand for compensation in lump sum and not in installments; compensation to farmers in case of damages to crops due to ash; to set up 800 MW units instead of 660 MW units like in other projects of NTPC etc.

The Committee noted that M/s NTPC has not indicated the actual responses made in the public hearing held on 20.06.2012. The Committee therefore observed that M/s NTPC shall make a detailed presentation again indicating the issues raised, the response made by them and the action plan for implementation of the issues agreed/valid for implementation.

The Committee also noted that Fly Ash management for such a large power project is an issue requiring appropriate attention and desired that details fly ash utilization with documents to substantiate action plan (if any) shall be submitted.

The Committee also noted that ash pond will be located 950 m away from Shakkar River and the location indicated seems to be in the flood plain of the river. The Committee therefore decided the location of the ash pond need to be reviewed.

The Committee further observed that the water requirement mentioned seem to be very high and details of water availability study carried out by the State Water Resources Department, Govt. of Madhya Pradesh shall be submitted. It was also observed that water requirement need to be revised keeping the CEA norms and COC at 5.0 and a comparative statement therefore shall be submitted.

In view of the observation above, the Committee decided that the proposal be deferred for re-consideration only after the submission of requisite clarifications / documents / study reports.

2.3 4x135 MW Coal Washery Rejects based Thermal Power Project of M/s Surguja Power Pvt. Ltd. at village Parsa, Tehsil Udaypur, District Surguja in Chhattisgarh- reg. TOR reconsideration.

The proposal was earlier considered for determination of terms of reference for undertaking EIA/EMP study as per provisions of EIA Notification, 2006, in the 38th and 42nd Meeting of the Committee held during December 12-13, 2011 and February 6-7, 2012 respectively, but was deferred as there were many missing gaps of information.

The project proponent along with its consultant M/s GIS enabled Environment & Neo-Graphic Centre; Ghaziabad in the 38th meeting made a presentation and provided the following information:

The proposal is for setting up of 4x150 MW Coal and Washery Based Surguja Thermal Power Plant at village Parsa, in Udaypur Taluk, in Sarguja Distt., in Chhattisgarh. Coal will be 22% and washery rejects will be 78%. Land

requirement will be 75.514 ha, out of which, 34.180 ha is forest land and 41.334 is single crop agricultural land. The co-ordinates of the site are located in between Latitude 22°50'11"N to 22°50'24"N and Longitude 82°48'46" E to 82°49'22" E. Coal requirement will be 0.88 MTPA and washery rejects requirement will be 3.12 MTPA. Washery rejects and coal in the ratio 78:22 will be used as fuel. CFBC Boilers will be installed. Water requirement will be 15.8 MCM/annum and will be sourced from the Rehar River. There are no National Parks, Wildlife Sanctuaries, Heritage sites, tiger/Biosphere reserves etc. within 10 km of the site. Hasdeo Arand Reserve Forests is located at 2.0 km from the project site. About 50 Land oustees will be involved due to the project site.

The Committee in the said 38th Meeting noted that M/s Adani Mining Pvt. Ltd. is a joint venture company of M/s Rajasthan Rajya Vidyut Urja Nigam Ltd. (M/s RRVUNL) and M/s Adani Enterprises Ltd. The Committee therefore desired to know the check and balances of the joint venture partner i.e. M/s RRVUNL so that any potential conflicts of interest which may surface at a later stage are addressed. It was also noted that in the absence of check and balance by the joint partner the possibility of diverting coal as rejects may arise,

In view of the above, the Committee had agreed that details of joint venture w.r.t handling / implementation of the present proposal shall be submitted keeping the above in view. The Committee also decided that appropriate Board Resolutions to this effect shall be submitted.

It was also decided that authorization for use of coal and washery rejects need to be furnished from concerned partner i.e. M/s RRVUNL.

The Committee also had noted that the region being a coal bearing area, it is also pertinent that the proposed project site shall be first assessed for coal deposit (if any) through a competent agency.

On the issue of environment sensitivity the Committee observed that the area not only has dense forests but may also not be far off from Elephant Corridor. The Committee therefore decided that primary survey of flora and fauna and implementation of wildlife conservation plan need be carry out in case the present proposal seem to demand merit for recommendation of TOR.

In view of the observations as noted in preceding paras above, the Committee in the 38th Meeting decided that the project proponent shall furnish the details sought before their case is considered for recommendation of TOR. Accordingly the proposal was deferred for reconsideration at a later stage.

The matter was placed again for re-consideration on 42nd meeting of EAC on the request of the project proponent after clarifications submitted.

The project proponent in the 42nd meeting had provided further the following information:

The Board of Directors of RRVUNL, during its 125th Meeting on 21st July 2007, passed the Resolution of the Board approval of the following:

- Formation of Joint Venture Company with M/s Adani Enterprises Ltd for an effective arrangement for mining of coal from the Parsa East and Kanta Basan Coal Blocks, its transportation and delivery at RVUN's Power Stations. Approval of Draft Joint Venture Agreement.
- Chairman & MD, RVUN or his nominated officer is authorized to sign and execute the JV Agreement.
- The Board of Directors of RRVUNL, during its 141st Meeting on 4th July 2008, approved the final Draft of Coal Mining & Delivery Agreement (CMDA) to be executed between RRVUNL and Parsa Kente Collieries LTD (PKCL), the JV Company.
- The approval CMDA has following clauses on Coal Washery Rejects and Coal Security

That the Clause 3.2.3 of the Board's approval read as under:

“The Company shall:

- a) Establish a Coal washery and deliver Coal of the required specifications in accordance with the terms and conditions of this Agreement. The Reject remaining after washing shall be the property of the JV Company and shall be disposed off by the Company as decided by its Board of Directors keeping the right of RVUN reserved as contained in clause No. 4.8 (Coal security) of this agreement. However the company shall observe all rules and regulations of Govt. of India/State Govt./Local Authorities for timely disposal of rejects and its removal and will be responsible for any consequences for non-adherence of any rules & regulations. Further, if sales tax is imposed on rejects the same shall be borne by JV Company and not by RVUN. RVUN reserves the right to arrange for sampling and analysis of coal before washing/before direct dispatch to RVUN TPS. RVUNL also reserves the right to sample rejects after washing, by engaging third party or by establishing won laboratory for analysis of samples at mines. In case of any dispute, CMD (RVUN) will have the power to take appropriate decision.
- b) Coal Security: To ensure proper security of coal mined from the coal blocks through the Company and to ensure that the same is supplied to RVUNL's Thermal Power Stations only, RVUNL shall have the right to depute its officials and /or appoint a third party agency at the mining area and /or the railways loadings points. RVUNL officer's shall also have the right to observe the beneficiation process, handling of Coal and disposal of the Rejects. RVUNL shall have right to witness at the time of

determination of grade(s) of coal during exploration & also the rejects generated.

- c) The Board of Directors of PKCL, during its Meeting on 30 the March, 2009 resolved that the contract be awarded to Adani Mining Pvt. Ltd.
- d) The Board also resolved that copy of the final subcontract/agreement finalised and signed with Adani Mining Pvt. Ltd. Shall be placed before the board.
- e) The subcontract was signed on 29th July, 2009.
- f) The Board in its Meeting on 28th Aug, 2009, approved the Coal mining services agreement signed between PKCL and AMPL
- g) The Coal Mining Services agreement, signed on 29th July 2009 between PKCL and AMPL has following clauses on Coal Washery Rejects and Coal Security:

Clause 1.1 Definitions

“Rejects” The waste remaining after washing of coal mined from the Coal Mines shall be the rejects.

Clause 3.2.3 Establishment of Coal washery

- a) Establish a Coal washery and deliver Coal of the required specifications in accordance with the terms and conditions of this agreement. The Rejects remaining after washing shall be the property of the Contractor. The Contractor shall observe all rules and regulations of Govt. of India/State Govt./ Local Authorities for timely disposal of rejects and its removal and will be responsible for any consequences for non-adherence of any rules & regulations. Further, if sales tax is imposed on rejects the same shall be borne by the Contractor.
- b) The Board of AMPL on 1stFeb, 2012, resolved to transfer the washery rejects to be generated during washing of coal mined in Parsa East and Kente Basan Coal Block to Surguja Power Pvt. Ltd. For utilisation in reject based Power Plant.
- c) As per the Coal Mining and Delivery Agreement (CMDA), approved by the Board of Directors of RRVUNL and signed between RRVUNL and PKCL, the washery rejects are the property of PKCL, with safeguards such as Coal Security.
- d) Further as per the Coal Mining Services Agreement, Approved by the Board of Directors of PKCL and signed between PKCL and Adani Mining Pvt. Ltd., the washery rejects are the property of Adani Mining Pvt. Ltd.
- e) Surguja Power Pvt. Ltd is a 100% subsidiary of Adani Mining Pvt. Ltd. Formed as an SPV for implementing and operating the Thermal Power Projects.
- f) Adani Mining pvt. Ltd. Has transferred the washery rejects to Surguja Power Pvt. Ltd. For utilisation in Thermal Power Plant.

- g) The Divisional Forest Officer, South Surguja Division, has certified that there are no wildlife Sanctuaries and Elephant Corridor within 10 km of the proposed site at Parsa Village, Forest Range- Udaypur, Tehsil Udaypur, District- Surguja.
- h) Primary Survey of flora and fauna and preparation of wildlife conservation plan will be undertaken along with EIA study.
- i) Primary study of Flora and Fauna for Thermal Power plant is under progress.
- j) Wildlife Conservation Plan already prepared for the linked coal mine and approved by Chief wildlife warden Chhattisgarh.
- k) The budget for wildlife Conservation plan is INR 22.00 Crores.
- l) Additional Conservation plan will be prepared accordingly additional budget will be allocated for proposed power plant.

The Committee observed that the Board's Resolution of RRVNL and papers submitted appeared to be vague and the potential conflict of interest as earlier cited by the Committee remain still unaddressed with the information now provided.

The Committee therefore decided that Board member of RRVNL be invited to attend or approval from RRVNL be obtained to remove the apprehensions felt by the Committee. The Committee also decided that final agreement between joint venture company with the approval of RRVNL shall be submitted first before re-consideration of the proposal. A certificate from the GSI should be obtained as the testimony to the fact that the site is not a coal bearing area. Accordingly the proposal was deferred for re-consideration at a later stage.

The project proponent have now decided to change unit configuration from 4x150 MW to 4x135 MW FBC Based to be located at village Parsa, in Udaypur Taluk, in Surguja Distt., in Chhattisgarh. The land requirement will be now be 47.479 ha (instead of 75.514 ha earlier proposed), out of which 29.844 ha will be forest land, 17.606 ha private land (Tenancy Land) and 0.029 will be Govt. Revenue land. The co-ordinates of the site are located in between Latitude 22°49'52"N to 22°50'24"N and Longitude 82°49'21" E to 82°49'56" E. Coal requirement will be 0.88 MTPA and washery rejects requirement will be 3.12 MTPA. Washery rejects and coal in the ratio 78:22 will be used as fuel. CFBC Boilers will be installed. Water requirement will be 14.14 MCM/annum and will be sourced from the Rehar River. There are no National Parks, Wildlife Sanctuaries, Heritage sites, tiger/Biosphere reserves etc. within 10 km of the site. Hasdeo Arand Reserve Forests is located at 2.0 km from the project site. About 50 Land oustees will be affected due to the project site. Cost of the project will be Rs. 3500 crores.

The Committee noted that the forest clearance stated is for coal mine and coal washery and does not indicate location of a Thermal Power plant. *The*

Committee therefore observed that the forestry clearance shall be suitably amended indicating land use for thermal power plant.

The Committee observed that the project proponent shall list out coal fired power plants located in and around dense forests and ecologically sensitive areas in foreign countries and to collect the data over 20 years period as may be available and carry out an analysis of the impact on the ecologically sensitive areas and mitigation measures adopted thereof.

The Committee recommended the project proponent shall submit base line data in the form of satellite imagery from NRSA and preferably enter into a contract with such agencies to get satellite imagery for every 3-4 months which will help in studying the changes occurred due to the impact of power plant on forest area.

On perusal of the agreement entered into with RRVUNL, the Committee noted that the agreement clearly states that coal cannot be used and the power plant will be based on washery rejects only. The Committee therefore decided that no coal from outside will also be used for the TPP and the power plant shall be purely based on washery rejects. The Committee however agreed that if in case it is felt that certain percentage of coal is required to maintain the GVC required for FBC based Boilers, then coal shall be used only from the mine for which washery is being set up.

Based on the information provided and presentation made, the Committee recommended TOR and prescribed the following additional specific TOR over and above the standard TORs (as applicable) at **Annexure-A1** for undertaking detailed EIA study and preparation of EMP.

- i) Revised Form-I shall be submitted indicating changes made in the project profile.
- ii) Amendment of forest clearance shall be made to include Thermal Power Plant in the same area earmarked for coal mining and setting up of coal washery.
- iii) There should not be any colony settlement in the area and no ribbon development should occur in this area. Accordingly mechanism for ensuring the same shall be explicitly spelt out.
- iv) The project proponent shall list out coal fired power plants located in and around dense forests and ecologically sensitive areas in foreign countries and to collect the data over 20 years period as may be available and carry out an analysis of the impact on the ecologically sensitive areas and mitigation measures adopted thereof.
- v) Detailed geological study shall be done for back filling the mine void. The study shall include ground water, surface water and tendency of leaching.

- vi) Detailed study on rain water chemistry which includes acid rain, fluctuation in the pH range, impact on forest due to acid rain etc.
- vii) Base line data in the form of satellite imagery from NRSA of the forest area in the study area for period of every 3-4 months shall be maintained and mechanism for undertaking the same provided.
- viii) The primary survey of flora and fauna shall be carried out and wildlife conservation plan shall be prepared in consultation with the concerned Chief Wildlife Warden.
- ix) No coal from outside will also be used for the TPP and the power plant shall be purely based on washery rejects. In case it is felt that certain percentage of coal is required to maintain the GVC required for FBC based Boilers, then coal shall be used only from the mine for which washery is being set up and details shall be provided.

DATED: 06.02.2013

2.4 4000 MW Imported Coal Based UMPP of M/s Coastal Tamil Nadu Power Ltd. at villages Cheyyur Block B, Chitharkadu, Gangadevankupam, Panaiyur, Vedal, and Vilangadu, Taluk Cheyyur, District Kancheepuram, in Tamil Nadu- reg. Environmental Clearance.

The proposal was earlier considered in the 62nd Meeting held during December 4, 2012, wherein the project proponent gave a presentation and provided the following information:

The proposal is for setting up of 4000 MW Imported Coal Based Ultra Mega Power Project at villages Cheyyur Block B, Chitharkadu, Gangadevankupam, Panaiyur, Vedal, and Vilangadu, Taluk Cheyyur, District Kancheepuram, in Tamil Nadu. Land requirement will be 416.45 ha, out of which 342.62 ha is agriculture land, 9.83 ha is forest land and 64 ha is Poromboke and barren govt. land. Stage-I forestry clearance has been obtained. The co-ordinates of the site are located within Latitude 12°18'15.70" N to 12°19'15.38" N and Longitude 79°57'58.33"E to 79°59'17.91" E. Imported Coal requirement will be 12-14 MPTA at 90 %PLF. Ash and Sulphur contents in coal will be 10-12% and 0.8%. The GCV of coal will be within 5000-6000 Kcal/Kg. Water requirement of 30,575 cum/hr will be sourced from Bay of Bengal through a pipeline at a distance of about 4to 5 km from project site. Ash dyke area will be 90.36 ha and the co-ordinates of the ash dyke are located within Latitude 12°18'15.70" N to 12°19'15.38" N and Longitude 79°57'58.33"E to 79°59'17.91" E. There are no National Parks, Wildlife Sanctuaries, Heritage Sites, Tiger/Biosphere Reserves etc. within 10 km of the project site. Public Hearing was held on 30.07.2010. Cost of the project will be Rs 20,000.00 Crores.

It was also informed that 40% of the power produced will be given to Tamil Nadu. That unit configuration may be between 660 MW to 800 MW Super-Critical. That Expression of Interest for fly ash utilization has been floated in newspaper in May, 2011 and major cement producers have been approached.

The Committee in the said 62nd Meeting noted that AAQ data was collected during the period January – March to May, 2009; August to November, 2009; and December 2009 to February, 2010. That TOR was issued on 19.03.2009.

The Committee informed the project proponent that while technical appraisal has been the primary the focus of the Committee, sometimes there are cases of oversight with regard to procedural compliance due to paucity of time. The Committee therefore decided that the project proponent should examine some of the judgments of the National Green Tribunal such as the judgment delivered on 30.05.2012 in the matter of Appeal No. 12 of 2011 viz, Ossie Fernandes & Ors Vs MoEF & Ors, and with due diligence submit point-wise compliance with its observations with regard to the present project as applicable in their case.

The Committee also noted that not only has the marine EIA been submitted, but the project proponent was also not prepared for a presentation on the same, which is essential for assessment of impact on the biological fauna and the social impact on the fishing community, particularly traditional fishing families. The Committee therefore decided that the project proponent shall submit the marine EIA to the Ministry and the members of the EAC for their perusal. It was also decided that the project proponent shall submit detailed survey report of fishermen families in the study area and measures undertaken for their sustainable welfare.

The Committee further noted that about 193 land losers may be impacted due to the power project for which detailed R&R action plan need to have been provided which include details of population indirectly impacted due to loss of land not owned by them but were indirectly dependent on the land for sustenance.

The Committee also desired that the project proponent shall give response in writing to various issues raised in the Public Hearing and formulate Action Plan for implementation of the issues relevant along with responses made (including response to written objections received against the project).

On the issue to cumulative impact assessment, the Committee observed that on perusal of the documents available, neither in the presentation, nor in the EIA Report, the predicted cumulative impact on ambient air, water regime (marine and surface and ground) and soil seem to have been not carried out. It was therefore decided that cumulative impact assessment of these parameters due to proposed UMPP and other activities in the study area shall be submitted as an addendum to the EIA.

On the issue whether ISC3 1993 Dispersion Model reportedly used for prediction of ambient AAQ is appropriate or not - while some members felt that as pointed out in the previous day while deliberating the item no.1 i.e. 1320 MW Coal based thermal power plant of M/s Sindya Power Generating Company Pvt. Ltd. at villages Perunthottam & Agaraperunthottam, Sirkazhi Taluk, District Nagapattinum in Tamil Nadu, the Model adopted by the Project Proponent may not be the appropriate Model for a coastal project of such a nature. The Committee therefore decided that the project proponent shall submit documents to establish that the Model used for prediction of AAQ is appropriate or otherwise rework the AAQ impact assessment and submit it as an addendum to the EIA.

The Committee was also of the opinion that the project proponent does not seem to have fully complied with the requirements of information / study to be carried out as given in the TOR prescribed for the project. The Committee therefore decided that the project proponent shall fulfill the requirements of TOR point-wise and presentation shall be made TOR point-wise during deliberations / appraisal of the project. Accordingly the proposal was deferred for consideration at a later date.

On submission of clarifications the matter was again placed for re-consideration of the Committee.

The Committee observed that the discussions made in the last meeting seem to be still unaddressed and the project proponent seem to be in a hurry to push through without having complied with what has been sought in the last deliberation.

The EIA report seem oblivious of the impact due to the setting up of the UMPP on a large lagoon which is located close by the UMPP site, which is also home to large no. of migratory birds. That while considering the likely impact on water regime in the area, the project proponent seem to have not taken into consideration the impact due to activities associated with the UMPP to the lagoon. It was therefore observed that the project proponent while assessing the impact on the lagoon shall study impact i.e. biological flora and fauna of the lagoon due to setting up of the UMPP and on the social impact of habitations dependent on the lagoon either by fishing or any other activity.

In addition it was agreed that the project proponent shall prepare submit primary data of migratory birds and also prepare a conservation plan (with in-built mechanism of monitoring for appropriate implementation) for migratory birds.

On the issue whether grazing land is proposed to be acquired for the UMPP site, the project proponent could not submit detailed land use of the UMPP site. The Committee therefore decided that land use breakup of the UMPP site as per existing Revenue Records shall be placed before the Committee for its perusal. It was also decided that in case grazing land is being acquired the project

proponent shall first identify and develop alternative grazing land for handing over to the community in the area.

The Committee observed that fishermen are traditionally present in the coastal areas and the documents submitted by the project proponent in its present form seem to have missed out on the issue. The Committee therefore decided that the project proponent shall list out villages with fishing community in the study area and shall make an assessment of the impact due to setting up of the UMPP on the livelihood of the fishing community. That while doing so the project proponent shall provide details on traditional fishing and commercial fishing as the case may be and the number of families likely to be affected.

On the issue whether appropriate model has been used for assessment of AAQ, the Committee decided that the project proponent shall also submit AAQ predictions based on coastal fumigation model in addition to the model presently adopted. While doing so, it was observed that, the project proponent shall submit comparative assessments of the predictions using different models shall be also submitted.

While deliberating the issues regarding brine generation in huge volume and the management action plan, the Committee noted that the project proponent needs to also explore possibility of salt manufacturing as some salt pans seem to be located in the area. It was also observed that the desalination shall be so designed such that it caters to supplying drinking water needs of the nearby villages in 3-5 kms of the UMPP site. It was further noted that the inlet velocity of sea water shall be so designed such that it does not exceed 0.06 m/s and the inlet is located at depth not less than preferably 10 m.

Deliberating the issues raised in the public hearing the Committee noted that a large number of issues seem to be valid which has been inadequately addressed. The Committee also noted that various representations from NGOs such as Coastal Action Network and Fishermen Groups need to be spelt out and the response and action plan for implementation with details of activities to be carried out shall be submitted. The Committee therefore decided that the project proponent shall list out issues raised, the responses made and the action plan for implementation with committed financial allocation activity wise submitted.

In view of the shortcoming noted above, the Committee decided that the proposal in its present form is pre-mature for consideration of environmental clearance. The proposal was accordingly deferred for reconsideration on submission of issues noted above.

2.5 Dumping of Flyash generated from 410 MW TPP of M/s Bhushan Steel Ltd. into mine void of Jagannath OPC of M/s Mahanadi Coalfields Ltd., in Talcher Coalfields, Distt. Angul, Orissa - reg.

Dumping of Flyash generated from 460MW Talcher TPS of M/s NTPC Ltd. into mine voids of South Balonda OPC of M/s Mahanadi Coalfields Ltd., in Talcher Coalfields, Distt. Angul, Orissa.

Modernisation of ash disposal system in 1200MW CPP of M/s NALCO by adopting lean slurry disposal method in abandoned coal mines void of M/s Mahanadi Coalfields Ltd., Bharatpur (South), Talcher Coal Field, in Distt. Angul, Orissa.

The above items are considered in sequel as the issues are same and the area where proposed fly ash stowing is also in the same coalfields.

The issues were an outcome of the discussions held in the 47th Meeting of the EAC (Coal), wherein it was decided that these would be further deliberated by the EAC (Thermal Power) as the environmental clearance was granted by MOEF on the basis of the recommendation by EAC (Thermal Power) for Thermal Power Project of M/s Bhushan Steel Ltd. It was hence decided that the matter of generation and dumping of flyash from the Thermal Power Projects required further consideration by the same Committee. The EAC (Coal) had also decided that similar cases of M/s NTPC and M/s NALCO would also be considered by EAC (Thermal Power) in the context of ECs recommended by that EAC (Thermal Power) for their power projects generating the flyash. Similar cases of flyash dumping received henceforth of power projects granted EC would also be taken up by EAC (Thermal Power).

The extracts of the aforementioned 47th meeting of EAC (Coal Mining) is extracted as under:

“The proposal is for dumping flyash generated from their 410 MW TPP of M/s Bhushan Steel Ltd in the decoaled abandoned coal mine voids of Jagannath OCP of M/s Mahanadi Coalfields Ltd. Both M/s Bhushan Steel Ltd and M/s Mahanadi Coalfields Ltd. made a joint presentation. It was informed that the proposal is for utilisation of fly ash generated from 410 MW TPP (2x150 + 1x33 MW + 1x77 MW) of M/s Bhushan Steel Ltd. into abandoned coal mine void of Jagannath OCP of M/s Mahanadi Coalfields Ltd., in Talcher Coalfields, Dist. Angul, in Orissa. The ash generation is about 3234T/month. The ash is proposed to be filled in quarry No. IV of Jagannath OCP of MCL. The proposal was considered in EAC (T&C) meetings held during January 3-4, 2012 and February 21-22, 2012 respectively. It was recalled that in the meetings, M/s Bhushan Steel Ltd. had informed that it has carried out physical analysis, chemical analysis and leaching studies, Hydrogeological studies of Jagannath OCP by using remote sensing and GIS techniques. M/s Bhushan Steel informed that the flyash is alkaline in nature and not acidic. It was informed that the Institute of Minerals and Materials Technology, Bhubaneswar also carried out leachability analysis and submitted its report

on 14.10.2011. It was informed that the ground water level varies from 3.89-8.56m bgl during pre-monsoon and 1.85 to 5.26m bgl post monsoon. The aquifers depth ranges from 100m to 120m bgl. It was informed that the levels of heavy/toxic metal content in the leachates of ash proposed to be dumped in quarry No. IV of Jagannath OCP of MCL, Talcher are well within limits of potable water standards. It was informed that the underneath geological strata is impervious due to alternate beds of sands and shale with intercalation of clay. It was informed that the reports of these detailed studies have been submitted to SPCB, Orissa. It was further informed that BARC has been given work for determining long-term heavy metal toxicity studies on aquifer life system. The proponent had also informed that TPP operations are being curtailed due to paucity of land for dumping of flyash.

The matter had been brought before the EAC (T&C) for further consideration in view of reported studies carried out by M/s Bhushan Steel Ltd. as presented to the EAC in the meetings earlier.

The EAC (T&C) discussed the matter with reference to the MOEF Notification dated 03.11.2009 on Flyash Utilisation, the relevant extracts of which are reproduced below:

(7) "No agency, person or organisation shall within a radius of hundred kilometres of a coal or lignite based thermal power plant undertake or approve or allow reclamation and compaction of low lying areas with soil, only flyash shall be used for compaction and reclamation and they shall also ensure that such reclamation and compaction is done in accordance with the specifications and guidelines laid down by the authorities mentioned in sub-para (1) of para (3).

(8) (i) No person or agency shall within fifty kilometres (by road) from coal or lignite based thermal power plants, undertake or approve stowing of mine using at least 25% of flyash on weight to weight basis, of the total stowing materials used and this shall be done under the guidance of the Director General of Mines safety (DGMS);

Provided that such thermal power stations shall facilitate the availability of required quality and quantity of flyash as may be decided by the expert committee referred in sub-paragraph (10) for this purpose.

(ii) No person or agency shall within fifty kilometres (by road) from coal or lignite based thermal power plants, undertake or approve without using at least 25% of flyash on volume to volume basis of the total materials used for external dump of overburden and same percentage in upper benches of backfilling of opencast mines and this

shall be done under the guidance of the Director General of Mine Safety (DGMS).

Provided that such thermal power stations shall facilitate the availability of required quality and quantity of flyash as may be decided by the expert committee referred in sub-paragraph (10) for this purpose.”

The EAC observed that the stowing of flyash into mine voids vide the aforesaid provisions appears to be for operating mines only and the approval of DGMS is from safety angle alone to ensure that the dumps do not collapse due to problems of instability. The matter of environmental hazards of leaching and long-term impacts of flyash dumping on environment which are very important have not been brought out through Guidelines or Technical Guidance Manual on the use of flyash under the MoEF Notification dated 03.11.2009. The Committee further observed that insofar as dumping of flyash of M/s Bhushan Steel Ltd is concerned, it is planned to dump 100% of flyash slurry (without mixing with OB) into abandoned decoaled mine voids of Jagannath Opencast Coalmine, which are not operational. The Committee also noted that long-term studies on the impacts of this large-scale dumping of flyash have not been carried out. The Committee's attention was drawn to a news item of Indian Express dated 24.04.2012 of a study conducted by Department of Geology, University of Delhi, which has observed high levels of heavy metal Arsenic (5 times beyond WHO safety limits) in the groundwater due to dumping of flyash generated from Thermal Power Stations of Delhi in the flood plains of River Yamuna in Delhi, during their operation. The Committee reiterated that M/s Bhushan Steel Ltd has not explored other options of utilisation of flyash, such as use of flyash for clinker production in cement plants. The Committee stated that flyash is also being exported to other countries and this option has also not been explored by the company. The Committee observed that the proponent has opted for the easiest method of disposal without fully examining the negative externalities and the likely long-term health hazards.

The Committee after discussions had decided the following:

- (i) The studies got carried out by M/s Bhushan Steel Ltd should be forwarded to ITRC, Lucknow for their detailed analysis and comments.
- (ii) The concerns of EAC on the long-terms impacts of flyash dumping into mine voids should also be referred to the Expert Committee under Ministry of Coal vide para (10) of the Flyash Notification dated 03.11.2009 seeking their response on the overall environmental issues of dumping of flyash in mine voids”.

The matter was again placed before the EAC (Thermal) in its 56th Meeting held during September 3-4, 2012, wherein, the Committee noted that the

recommendations made in the 47th Meeting of EAC (Coal) has not been fulfill addressed by the project proponents and hence does not have merits for consideration in its present form. The Committee also decided that the project proponents may be provided copies of the sub-group's visit report to M/s NALCO site at Angul and seek para-wise comments. It was also decided that the study sponsored by M/s NTPC and undertaken by BARC need to be further deliberated.

On submission of documents on TCLP report from IIMT, Bhubaneswar; comments on M/s Nalco site visit report by the sub-group of the Committee, the matter was again placed before the Committee on February 6, 2013.

M/s NALCO made a presentation and provided the following information:

The EAC while deliberating the issues earlier had advised NALCO:

- To establish the true porosity and permeability of the formation surrounding the mine void by more studies preferably from agencies like NGRI.
- To establish the impact of ageing on the ash with reference to concentration of heavy metals and radionuclide.
- To seek the views of Principal Scientific Advisor to Hon'ble Prime Minister of India on 2 above.

That M/s NALCO had accordingly contacted Dr. R. Chidambaram, Principal Scientific Adviser to Hon'ble Prime Minister, Govt. of India for advice and opinion. Based on his guidance, collected ash samples from the ash core dykes built using ash of different periods. 5 samples during the years of generation in 1991, 1994, 1998, 2004 and 2010 were collected and sent to BARC for analysis. The Principal Scientific Adviser to Hon'ble Prime Minister also advised Dr. RM Tripathy, Head Environmental Assessment Division, BARC to study the results along with other data made available by NALCO for views on the analysis w.r.t. heavy metal concentration and radio nuclides. That thereafter M/s Nalco contacted NGRI for measurement of true porosity and permeability. The institute citing pre occupation, equipment problems, etc. declined the request. Thereafter MECL Nagpur (a PSU under MoM, GoI) was contacted and had agreed to get the true porosity and permeability measurement to be carried out at University of Petroleum & Energy Studies (UPES), Dehradun. A sample analysis submitted by MARC is placed below:

**GOVERNMENT OF INDIA
BHABHA ATOMIC RESEARCH CENTRE
FUEL CHEMISTRY DIVISION**

TXRF Sample Analysis Report

No. FCD/TXRF/2012/

14-02-2012

TXRF Elemental analysis report of coal fly ash samples received from NALCO, Nayapalli, Bhubaneswar, through Shri KS Sreedhara, Executive Director (Production), NALCO, Bhubaneswar is given below:

Elements	Sample-1991	Sample-1994	Sample-1998	Sample-2004	Sample-2010	Range
Al	E	B	A	C	D	1.2-12%
K	E	A	B	D	C	0.1-1.4%
Ca	E	A	B	D	C	0.1-1.4%
Ti	E	B	A	D	C	0.4-3.6%
Cr	E	A	B	D	C	44-553 ppm
Mn	E	B	A	C	D	120-3365 ppm
Fe	E	A	B	D	C	0.8-6.8%
Ni	E	B	A	C	D	15-118 ppm
Cu	E	A	B	D	C	24-280 ppm
Zn	E	A	B	D	C	27-240 ppm
Ga	E	B	A	D	C	13-113 ppm
As	E	B	A	D	C	2-27 ppm
Rb	E	A	B	D	C	24-200 ppm
Sr	E	B	A	D	C	48-483 ppm
Y	E	B	A	C	D	54-418 ppm
Pb	E	B	A	D	C	22-191 ppm
Th	E	B	A	D	C	6-60 ppm
U	E	B	A	C	D	2-24 ppm

*: The elemental concentration decreases while moving from code-A to E (A: denotes maximum and E denotes minimum concentration)

Mand (S. Misra)
(Dr. N.L. Misra) 14-2-2012
Group Leader


(Dr. S. Kannan)
Head, X-ray and Structural Studies Section

S.K. Aggarwal
(Dr. S.K. Aggarwal) 14/2/2012
Associate Director (R) Radiochemistry and Isotope Group
&
Head, Fuel Chemistry Division

Note: In the five samples for the years 1991, 1994, 1998, 2004, 2010 there is no fixed trend in terms of decrease in concentration with age of the samples.

M/s Nalco also submitted its conclusion based on the above report of ash analysis by BARC as under:

- Heavy metal content depends upon the type of coal used.
- Heavy metal concentration doesnot decrease during storage, unless weathering/ leaching of Ash takes place.
- In the five samples collected during the years 1991, 1994, 1998, 2004, and 2010, there is no fixed trend in terms of decrease in concentration with age of the samples.
- For radiological issues, the major radionuclides of concern are uranium, thorium and 40K.
- There is no mention of naturally occurring radionuclide's in the leaching study carried out by CMPDI.

- CMPDI report summarizes that there is no impact on ambient air quality, surface & ground water with the prescribed operating conditions during fly ash back filling of the mines (Rapid EIA volume-I, Page 114 to 116)
- The Toxicity Characteristic Leachate Procedure(TCLP) study carried out by CMPDI for mine sump water simulates the actual condition of de-coaled pits to be filled up with fly ash.
- The study indicated that the presence of trace metals in the leachate is within and much below the permissible & desired limits.
- The radionuclides are having very long Radiological half lives in the order of billions years. Hence, their decay in a short span of 20 to 30 years is ruled out.
- Hence, decrease in concentration of the above radionuclides is not expected due to radiological decay.

M/s NALCO also stated that from the mine void floor RL is at 62 MRL. That all 4 bore holes drilled and permeability tests conducted show a result of “very low” to “low” and occasionally “medium” range of permeability results. Ash is very fine to medium coarse material and by nature fly ash is pozzolonic having binding /sealing property. That long experience in fly ash handling has indicated that ash itself plugs the pore space thus reducing or minimizing porosity and permeability. Thus back filling of coal mine void by ash is preferred as a natural pore plug material compared to any other sealing material. That moreover the void is filled with over burden from the operating mine partially and by large volume of water and it is impractical to decant this large volume for sealing of the mine void. That in the light of studies advised, and undertaken by NALCO and conclusions drawn thereof, it is evident that filling ash in the mine void will not have any adverse impact on the quality of ground water. That ash filling will help blocking the porosity and permeability of the exposed mine face and back filled area. That ash filling is an approved process for mine void filling for land reclamation and restoration as per MoEF notification -1999 under EP Act 1986.

In conclusion thereof, M.s NALCO stated that they may be permitted to undertake mine void filling in the instant mine void at Bharatpur under review / consideration, as it is also established that leachate would not have any adverse effect on the quality of water in saturated and unsaturated rocks in Bharatpur OCP area.

M/s Bhusan Steel Ltd. and M/s NTPC Ltd. also substantiated the report/ finding of M/s NALCO and also submitted the study report/result carried out by Institute of Minerals & Materials Technology, a CSIR Institute on heavy metals contents of fly ash samples.

While a member of the Committee noted that there seem to be some discrepancy in the sampling procedures in the BARC test result above indicated as the variation seem quite large in many parameters. The members

also mentioned about the water in the mine void at Bharatpur OCP whether it is acidic or not. It was also stated that there are human habitations in 5 kms radius and the villagers had indicated to the members of the sub-group during the visit, their desire to use the mine void water for various purposes.

The Committee noted the observation made by the esteemed member and was of the opinion that the report/result submitted by the Principle Scientific Advisor to the Hon'ble Prime Minister needs to be taken on Board and that certainly while making the observations as indicated in the documents of test results from different institutes, the pH of the mine void water must have been taken into account.

The Committee therefore decided that the following additional information need to be submitted:

- i) Population village-wise around 5 kms, 10 kms, 15 kms and 20 kms shall be detailed out using 2011 Census data;
- ii) Identify source of drinking water in these areas and carry out testing of water samples for chemical toxicity and heavy metals through a reputed laboratory preferably CSIR Lab;
- iii) Identify agricultural activities in these regions and test agriculture produce / samples for chemical toxicity and heavy metals through a reputed laboratory preferably CSIR Lab;
- iv) Identify cattle population in these regions and examine possibility of food chain contamination by heavy metals from fly ash;
- v) Explore other options of 100% Fly Ash utilization as well.

The Committee also decided that on submission of the above the matter can be further deliberated and a recommendation made. The matter was accordingly deferred for re-consideration at a later stage.

2.6 2x250 MW Margherita Coal Based Thermal Power Plant of M/s Assam Power Generation Corporation Ltd. at village Saleki NC & Lekhapani, Tehsil Makum Mouza, Margheriata Revenue Circle, District Tinsukla, Assam- reg. TOR.

The proposal was considered for determination of Terms of Reference (TOR) for undertaking EIA/EMP study as per the provisions of EIA Notification, 2006. The project proponent gave a presentation along with its consultant M/s Ramky Enviro Engineers Ltd., Hyderabad and provided the following information:

The proposal is for setting up of 2x250 MW Margherita Coal Based Thermal Power Plant at village Saleki NC & Lekhapani, Tehsil Makum Mouza, Margheriata Revenue Circle, District Tinsukla, Assam. Land requirement will

be about 370 acres which Waste/ Barren land. The co-ordinates of the site are Latitude 27°18'38.2" N and Longitude 95°48'49.41" E. Coal requirement will be 1.57MTPA. Coal will be sourced from the coal fields of Margherita Revenue Circle under North Eastern Coalfields, Coal India Ltd. Sulphur contents in coal will be 2.5 to 4%. Ash content will be maximum 20%. Water requirement of 2200 m³/ hr will be sourced from Burhi-Dihing river through a pipeline at a distance of 6.5 km from the project site. There are no National Parks, Wildlife Sanctuaries, and Tiger/Biosphere Reserves etc. within 10 km of the site.

The project proponent also informed that as sulphur content in coal is high FGD will be installed.

Based on the information provided and presentation made, the Committee recommended TOR and prescribed the following additional specific TOR over and above the standard TORs (as applicable) at **Annexure-A1** for undertaking detailed EIA study and preparation of EMP.

- i) Detailed cumulative impact assessment on air, water and soil due to the proposed TPP and other industrial activity in existence or proposed in the area of 10 Kms radius of the proposed site shall be prepared and submitted.
- ii) A comprehensive Social Impact Assessment by an Institute of repute shall be carried out and report submitted.

2.7 Expansion by addition of 18 MW rice husk based Co-generation Power Plant of M/s Usher Eco Power Ltd.(UEPL) at District Mathura, in Uttar Pradesh- Reg. TOR

The Committee noted that neither the project proponent nor its representative were present in the meeting. The matter was accordingly deferred for re-consideration at a later stage.

2.8 2X600 MW Udipi Power Project of M/s Udipi Power Corporation Ltd. at Yelluru village , District Udipi in Karnataka -reg. Extension of time period for installation of Grinding Unit.

M/s Udipi Power Corpn Ltd. was issued a comprehensive environmental clearance on 01.09.2011, wherein Specific Condition no. (ix) prescribes as under:

“The transportation of dry fly ash to the ash disposal area through closed bulkers shall be allowed till 30.03.2012 till the Cement Grinding Unit of M/s ACC Ltd. is set up”.

Lateran amendment was issued dated 19.06.2012 wherein the Specific Condition no. (ix) has been amended as under based on the recommendation of the Committee:

“The transportation of dry fly ash to the ash disposal area through closed bulkers shall be allowed till 30.03.2013 till the Cement Grinding/Blending unit of M/s ACC Ltd. is set up and /or cater to any contingency condition. Monitoring of particulate emissions along the route of transportation shall be carried out”.

M/s Udupi Power Corpn. Ltd. had earlier sought time for setting up the grinding unit till March, 2013 and the matter was deliberated in the 44th Meeting held during March 5-6, 2012.

In the said 44th meeting M/s Udupi Power Corpn. Ltd. had informed that M/s ACC/Ashtech's blending unit is likely to come up by March, 2013 and parallelly acquire land for second phase of setting up a grinding unit. That M/s ACC Ltd. had applied to Govt. of Karnataka for allocation of land. The Govt. of Karnataka had accordingly sanctioned allocation of 120.54 acres on 03.04.2010. Payment of land was also made to KIADB, Mangalore by M/s ACC Ltd. and land earlier allotted to M/s NTPC had been identified. However possession of land got delayed and M/s ACC has therefore now communicated its inability to meet the targeted date of March, 2012. That M/s UPCL have now agreed to provide 2.5 acres of land to M/s ACC Ltd. for the blending unit and the blending unit is expected to be commissioned by first quarter of 2013.

In the meantime M/s ACC Ltd. will continue to lift fly ash to their other plants through bulkers beyond March, 2012 till the commissioning of the blending unit. M/s UPCL had therefore have requested that the Ministry may permit transportation of dry fly ash to ash disposal area by closed bulkers till M/s ACC plant is commissioned i.e. March, 2013.

Prior to the 44th Meeting held during March 5-6, 2012, the matter was taken up in the 42nd Meeting held during February 6-7, 2012. In the said 42nd Meeting, the Committee noted the information provided by M/s UPCL and observed that since a case pertaining to the project was in the National Green Tribunal (NGT) and also in the Karnataka High Court, a running summary of facts of the case and critical issues flagged be first prepared by the Power Proponent before the matter is further deliberated on merit. Accordingly the matter was deferred. On receipt of details as sought by the Committee, the proposal was placed for its reconsideration in the 44th Meeting.

The Committee in the 44th meeting had noted that M/s UPCL has provided 2.5 acres of land within the TPP premises for setting up the Grinding Unit to M/s ACC Ltd. and the grinding unit is now expected to come up by March, 2013. M/s ACC Ltd. will continue to lift fly ash to their other cement plants through

bulkiers beyond 2012. In view of the reasons cited thereof the *Committee after detailed deliberations recommended the proposal for extension of time sought till March, 2013 and subsequently an amendment was issued on 19.06.2012.*

M/s Udipi Power Corpn. Ltd. has now again sought further time for setting up the grinding unit till March 2014. It was also stated that the grinding unit will come up by September, 2013 but as a precaution they desire to seek time till March, 2014. It was also stated that there has been a delay in civil works due to prolonged heavy rain in the region and that the company is now confident that the grinding unit can be completed and commercially operated by September, 2013.

The Committee deliberated the request and observed that the company in the 44th meeting had stated that they will not seek further time for setting up the grinding unit as the same is now being proposed in their premises.

The Committee seeing the progress of work carried out now however agreed that since substantial progress has been made, a further time till September 30, 2013 can a best be agreed. The Committee accordingly recommended that the Ministry may carry out the needful amendment.

2.9 1x660 MW (Unit-3) Coal Based TPP of M/s Amarkantak Power Ltd. at village Pathadi, Korba District, in Chhattisgarh- reg. Extension of Validity of EC

M/s Amarkantak Power Ltd. is operating 2x300 MW (Unit-1 & 2) at Pathadi village, in Korba District, in Chhattisgarh. The Unit-3 of capacity 1x660 MW was accorded environmental clearance on 31.12.2007 (amendment issued on 04.09.2008) and validity is till 31.12.2012. The construction of Unit-3 (1x660 MW) is in progress but commissioning may be possible only in June 2014. That the delay has been caused due to change over from sub-critical (600 MW Unit) to Super-critical (660 MW Unit), delay in land acquisition and tie up with Financial institutes. M/s Amarkantak Power Ltd. has therefore requested for extension of validity period of the EC.

The request was placed before the Committee for its views.

The Committee noted the substantial progress seems to have been made and there could be no merit in now allowing the request for extension for time period. The Committee also noted that information furnished seem reasonable and decided that in accordance with the provisions of EIA Notification, 2006 a further extension of 5 years can be given under the circumstances stated by the project proponent. The Committee therefore recommended that the Ministry may issue extension of validity period for further period of 5 years.

2.10 20.5 MW Cogeneration Power Plant of M/s Rajshree Sugars and Chemicals Ltd. at Semmedu, District Villupuram, in Tamil Nadu- reg. Amendment of EC.

The Committee noted that neither the project proponent nor its representative were present in the meeting. The matter was accordingly deferred for re-consideration at a later stage.

2.11 3x840 MW Coal Based TPP of M/s Torrent Pipavav Generation Ltd. at village Rampara II and Ucchaiya, In Rajula Taluk, Amerli District, in Gujarat -reg. Extension of Validity of TOR.

M/s Torrent Pipavav Generation Ltd. was prescribed TOR for its 3x840 MW Coal Based Thermal Power Plant at village Rampara II and Ucchaiya, In Rajula Taluk, Amerli District, in Gujarat on 08.12.2010. M/s Torrent Pipavav Generation Ltd. has now informed that Draft EIA/EMP report is in advance stage and draft marine study by NIOT, Visakhapatnam is also in advance stage.

M/s Torrent Pipavav Generation Ltd. has requested for extension of validity period of the TOR for conducting public hearing.

The matter was placed before the Committee for its consideration and recommended that in accordance with the policy decision validity period of the TOR may be extended as per admissibility.

2.12 3x660 MW Dhopawe Coal Based TPP of M/s MAHAGENCO Ltd. at Dhopawe, in Ratnagiri District, in Maharashtra- reg. Extension of Validity of TOR.

M/s MAHAGENCO was prescribed TOR for its 4x800 MW Dhopawe Coal Based Thermal Power Plant in Ratnagiri District, in Maharashtra on 12.10.2010. Later it was decided to change the configuration from 4x800 MW to 3x660 MW and request was made to the Ministry on 22.06.2011.

M/s MAHAGENCO has now informed that even though huge progress has been made in required studies for the power project (including marine EIA) as a moratorium exists in Ratnagiri Distt., extension of validity period of TOR may be granted.

The Committee noted the request and recommended that in accordance with the policy decision validity period of the TOR may be extended as per admissibility.

2.13 Expansion by addition of 1x300 MW (Phase-II) Barge Mounted Gas Based Combined Cycle PP of M/s GMR Energy Ltd. at Kakinada Port Area, Kakinada, East Godavari District, Andhra Pradesh- reg. Extension of Validity of TOR.

The Committee noted that neither the project proponent nor its representative were present in the meeting. The matter was accordingly deferred for re-consideration at a later stage.

3.0 ANY OTHER ITEM WITH PERMISSION OF THE CHAIR

3.1 2x600 MW Mahan Super Thermal Power Project of M/s Essar Power (M.P.) Ltd at Singrauli Tehsil, District Sidhi in Madhya Pradesh- Change in source of Coal reg.

M/s Essar Power (M.P.) Ltd. was accorded environmental clearance for its 1800 MW (3x600 MW) Mahan Super Thermal Power Project, in Singrauli Tehsil, in District Sidhi, in Madhya Pradesh on 20.04.2007. The power project is linked to Mahan Coal Block.

M/s Essar Power (M.P) Ltd. had informed the Ministry that the coal production from the block could not be commenced as per the schedule for want of Stage-II forestry clearance. That under the circumstances, it has become a necessity for the power plant to source coal from alternative sources such as: i) Tapering Linkage for which M/s Essar Power (M.P.) Ltd. has already applied to MoC; ii) E-auction; and /or iii) Imported Coal. M/s Essar Power (MP) Ltd. has therefore requested for allowing use of imported coal for an interim period until the coal block becomes operational.

The matter was earlier placed in the 52nd meeting of EAC held during July 2-3, 2012, wherein, M/s Essar Power (M.P.) Ltd. informed that unit-I(600 MW) is under advanced stage of commissioning. That the unit-I and unit-II(600 MW) will be synchronized by August, 2012 and November,2012 respectively. That the Mahan Coal Block was allocated jointly between M/s Essar Power (M.P.) Ltd. and the M/s Hindalco Industries Ltd. and the block has been accorded environmental clearance. But the coal production from the block could not be commenced as per the schedule for want of Stage-II forestry clearance. That under the circumstances, it has become a necessity for the power plant to source coal from alternative sources such as: i) Tapering Linkage for which M/s Essar Power (M.P.) Ltd. has already applied to MoC; ii) E-auction; and/ or iii) Imported Coal.

The Committee in the said 52nd meeting noted that e-auction coal at best can be used for topping up and not as a means of base load requirement. The Committee also noted that since tapering linkage is yet to be allotted, the

project proponent can explore imported coal option for using in the power plant for limited period until Coal Block becomes operational. The Committee however observed that coal sourced from a trader for imported coal cannot be considered as imported coal option unless full proof mechanism is in place ensuring that actual imported coal of required quantity is brought to the country.

The Committee in view of the above observed that the project proponent may immediately submit MoU for imported coal for 5.5 MPTA as required for operation of the plant and along with following information to the Ministry:

- i) Assessment of impact due to transport of coal with changed sources;
- ii) Plan for development of avenue plantation along the route of transportation;
- iii) Commitment for using only mechanized covered trucks for coal transportation.

The Committee finally decided that the request for using imported coal with e-auction coal topping up can be agreed for a limited period of **three years only** and the Ministry may do the needful accordingly.

The Ministry however decided that the above documents to be submitted were technical in nature and the EAC need to give a comprehensive recommendation based on assessment of the impacts due to transportation of coal for imported coal.

The matter was accordingly referred back to the Committee on its 62nd Meeting held during December 4, 2012.

In the 62nd Meeting M/s Essar Power (M.P) Ltd. informed the Committee that MoU has been signed with PT KCC Mining Services, Indonesia for supply of 5.5 MTPA of Indonesian Coal. That the route of imported coal transportation will be Mahadiya-Gorbi-Bargwana-Parsona-Khutar-Rajmilan-Gadakhad-Bandhoura Plant, which comprises of 35 Km along NH and 12 Km laong PWD road and 16 Kms along MPRRDA road. That permission for strengthening and expansion of road has been obtained. That railway siding at Mahidiya from where coal will traverse by road to plant site is a full length siding and permission to handle coal at the railway siding has been obtained.

That existing PCU per day along Mahadiya to Parsona (NH) is 6041 and additional PCUs per day due to coal movement for the power project will be 4554 as against the capacity of the road calculated as 40,000 PCUs per day. That similarly PCU per day along Parsona to Rajmilan (PWD) is 3811 and additional PCUs per day due to coal movement for the power project will be 4554 as against the capacity of the road calculated as 15,000 PCUs per day; and PCU per day along Rajmilan to Bandhoura (MPRRDA) is 1661 and additional PCUs per day due to coal movement for the power project will be 4554 as against the capacity of the road calculated as 15,000 PCUs per day.

It was also informed that resultant concentration due to additional coal movements on road for PM will be 26.6 $\mu\text{g}/\text{m}^3$; NO_x 63 $\mu\text{g}/\text{m}^3$; and CO 191 $\mu\text{g}/\text{m}^3$. It was also stated that green belt will be developed all along the route (63 Kms) of coal transportation at a cost of Rs 1.5 Crores as capital investment and maintenance of green belt will also be carried out by the company at its own expense. It was further stated that mechanized covered 20 T capacity trucks will be used for coal transportation to reduce no. of trips.

One of the Member of the EAC pointed out that the power project was denied tapering linkage for 5.5 MTPA applied for, on the ground that the road along which coal is to be transported does not have the capacity to allow such large volumes for trucks for coal transportation. That recommendation was only made for 2 MTPA due to aforesaid issue.

The Committee deliberated the issue further and decided that full facts need to be submitted before the decision earlier taken in the 52nd meeting is upheld. Accordingly the matter was deferred and it was decided that the same can be taken up in the next meeting i.e. 64th Meeting of EAC (T).

The Committee observed that perusal of documents seem to suggest that the handling capacity by the railway siding where coal is reported to be brought to seem highly inadequate and there appears many loose ends, earlier not envisaged, in the request of change of source of fuel made. The Committee therefore decided that a competent organization like RITES or any other institute of similar standing and competence may study the adequacy of coal transportation handling capacity and authenticated by the Railways.

The Committee therefore expressed its inability to uphold its earlier recommendation and decided that the matter be deferred until convincing material evidence on the above and others issues such as proof that imported coal is an additional actual import coming to the country is placed before them.

On submission of report by CEA the feasibility of coal transportation from railway siding to Mahan TPP the matter was again taken up.

The Committee noted that the project seem now feasible with use of imported coal based on the documents made available and recommended that the change in source of coal can be agreed. The Committee however reiterated that as decided earlier the project proponent need to establish that imported coal is an additional coal coming to the country and documents to establish the same shall be submitted.

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

