

**BEFORE THE NATIONAL GREEN TRIBUNAL
EASTERN ZONE BENCH, KOLKATA**

.....

ORIGINAL APPLICATION No. 24/2014/EZ

IN THE MATTER OF:

1. Subhas Datta,
25/1, Guitendal Lane,
Post Office, Police Station & District-Howrah
PIN-711101, West Bengal

.....Applicant

V e r s u s

1. The State of West Bengal,
Notice through the Addl. Chief Secretary,
Department of Power and Non-Conventional Energy,
Govt. of West Bengal,
New Secretariat Building, 7th Floor,
1, Kiran Shankar Roy Road, Calcutta-700 001.
2. Ministry of Environment
Govt. of West Bengal,
Notice through the Addl. Chief Secretary,
Department of Environment, Govt. of West Bengal,
'Poura Bhawan', Salt Lake City,
Kolkata-700 106
3. West Bengal Power Development Corporation Ltd,
Notice through the Chairman and Managing Director,
Biddut Bhawan (Ground Floor), DJ Block,
Sector-II, Salt Lake, Calcutta-700 091.
4. West Bengal Pollution Control Board,
Paribesh Bhawan, 10A, Block L-A, Sector-III,
Salt Lake City, Kolkata-700098.
5. Central Pollution Control Board, Regional Office,
Kolkata.
6. National Environmental Engineering Research Institute,(NEERI)
Eastern Zone Office,
I-8, Sector-C, Kolkata Area Development Project,
PO : East Kolkata Township,
Kolkata-700107

.....Respondents

COUNSEL FOR APPLICANT:

Mr. Subhas Datta, in person.

COUNSEL FOR RESPONDENTS:

Mr. Bikas Kargupta, Advocate, Respondents No.2 & 6

Mr. N.C. Bihani, Advocate and
Ms. Papiya Banerjee Bihani, Respondent No.3

Ms. Arpita Chowdhury, Advocate, Respondent No.4

Mr. Surendra Kumar, Advocate, Respondent No.5

JUDGMENT**PRESENT:**

Hon'ble Mr. Justice S.P. Wangdi, Judicial Member

Hon'ble Prof. (Dr.) P. C. Mishra, Expert Member

Reserved on : 12th July, 2016

Pronounced on : 2nd August, 2016

1. Whether the Judgment is allowed to be published on the net?

Yes

2. Whether the Judgment is allowed to be published in the NGT Reporter?

Yes

HON'BLE PROF. (Dr.) P.C.MISHRA, E.M.:

Bakreshwar Thermal Power Station (BKTPS in short) under the West Bengal Power Development Corporation Ltd. is a coal-fired power Plant with five units located in the Birbhum District of West Bengal with a power generating capacity of 1050 MW i.e, each unit of 210 MW commissioned at different stages commencing from 1999. The Environmental Clearance (EC in short) was granted by the Ministry of Environment and Forest, Govt. of India on 23.12.1992 to the

Project Stage-II for two units (unit 4 & 5) with 420 MW of power generation subject to compliance of conditions stipulated in the EC letter. The West Bengal State Pollution Control Board (PCB in short) granted consent to establish and consent to operate and the consent to operate was renewed in different time. Units 4 & 5 of the Plant started generating power from 2008 onwards phase-wise.

The PCB also renewed the consent to operate for the five units with a generation capacity of 1050 MW on 20.03.2014 with validity upto 31.12.2014 stipulating following conditions for compliance:-

- “1. This Consent for operate is valid for power generating units 1, 2, 3, 4 and 5 each of capacity 210 MW.
2. The unit should efficiently operates its air pollution control device in order to maintain the permissible limit of the State Board in case of PM(Particulate matter) in stack gas emission.
3. The unit must careful in maintaining proper setting of ash-water slur in ash-pond and efforts should be given to re-use or re-cycle ash pond overflow as much as possible.
4. All special condition in EC must be complied.
5. The validity of the consent may be extended further after satisfactory performance of the unit.”

The source of water for the BKTPS is Tilpara barrage (on river Mayurakshi) and Bakreswar Dam (on river Bakreswar). The industry is using coal with ash content of 40-53% and ash generation would be around 7000 ton per day (TPD). Out of this 3000 TPD ash is collected in dry form from the Electrostatic Precipitators (ESPs) hopper and remaining sent to ash pond in slurry form through pipelines. The ash pond is located at Panuria village 7-8 km away from BKTPS spreading over 257 acres of land near river Chandrabhaga. The Ash-pond Supernatant water, generated after settlement of ash from the slurry, is transferred to two decantation ponds for final settlement of ash before finally being discharged into Chandrabhaga. The Bakreswar river joins river

Chandrabhaga at Parbatipur about 11 km downstream of BKTPP ash pond. The ash pond was constructed with ash holding capacity of 110 lakh m³ approximately. Subsequently, the capacity has been augmented to 126 lakh m³ during the year 2014-2015.

2. Mr. Subhas Datta, an environmental activist and public spirited person filed this application on dated 27.10.2014 alleging pollution of water of river Chandrabhaga due to discharge of fly ash laden water from the ash pond to the river thereby affecting the aquatic life, agriculture and health of the people in the area. A large number of photographs were filed by him in support of his allegation that the river water had lost its natural character due to discharge of fly ash water and dumping of fly ash in the river banks in violation of the Air Act 1981, the Water Act 1974 and the Environment (Protection) Act, 1986 and also non-implementation of MoEF guidelines issued from time to time on utilization of fly ash. The applicant sought the intervention of the Tribunal with the following prayers:-

- (i) To direct the respondent concerned to take immediate steps, actions and measures not to allow any fouling of river Chandrabhaga by discharging fly ash from the Bakreshwar Thermal Power Plant;
- (ii) To direct the respondent to take steps to stop all discharge of fly ash slurry into the river, which are affecting the agriculture, aquatic life and human lives of a vast area;
- (iii) To direct the concerned respondents to appropriately manage the existing fly ash pond and also to enhance the capacity of fly ash ponds so as to arrest of overflowing the same into the river;

(iv) To direct the concerned respondent to take appropriate steps/measures/actions as envisaged under the Water (Prevention and Control of Pollution) Act, 1974;

(v) To direct the respondents concerned to take all immediate steps under The Air (Prevention and Control of Pollution) Act, 1981;

(vi) To direct the concerned respondents to take adequate measure for keeping the said area free from air, water and other environmental hazards;

(vii) To direct the concerned respondents to stop all illegal mining of sand from the river bed of Chandrabhaga;

(viii) Any other or further relief as the Hon'ble Tribunal may deem fit and proper in the facts and circumstances of the case."

3. On 3.11.2014, which was the first day when the application was listed for admission, Mr. Saptansu Basu, Sr. Advocate appearing for the Respondent No.3, the West Bengal Power Development Corporation very frankly admitted that the contaminated water from fly ash pond is being discharged into the said river due to overflow of ash pond. He would further submit that a second ash pond is required to be constructed on emergency basis but the proposal had not yet been finalised owing to certain problems faced by the Corporation.

In view of the allegations made in the application and the admitted position that ash pond overflow water was being discharged into river Chandrabhaga thereby causing severe pollution of the river, we directed the Member Secretary of the West Bengal PCB to submit a status report in respect of the Thermal Power Plant on the followings:-

"i) Violation of general and specific conditions of Environmental clearance & consent to operate including Air, Water and Environment Protection Act;

- ii) Violation of MoEF Notifications of 1999 and amendments of 2003 & 2009 on Fly ash disposal & management.
- iii) About water quality of river Chandrabhaga in upstream and downstream and discharge point of fly ash contaminated water and extent of contribution of the power plant relating to pollution of river water quality and also the sediment load of river.”

The Chief Secretary, Govt. of West Bengal was also directed to file a status report with reference to the disposal of the fly ash by the Project Proponent.

4. From the status report filed by the Member Secretary, PCB it became quite clear that a huge quantity of fly ash was accumulated in the river bed due to discharge of fly ash laden water and the river water in downstream was also highly polluted. Having regard to the accumulation of a huge quantity of fly ash in the riverbed as well as on the river bank, the General Manager of Respondent No.3 was directed to take all efforts urgently to remove the entire deposit of fly ash from river bed and its bank in order to protect the river and its environment. As the Respondent No.3 on affidavit would state that they had already started removing fly ash from the river bed and its bank, we, vide our order dt. 27.11.2014, directed the Central Pollution Control Board, Regional Office at Kolkata, to send a technical expert after two weeks to observe the condition of the river bed and river bank and file a report. The Member Secretary, PCB was further directed to make further inspection and file a status report on the following points:-

- “i) Extent of removal of fly ash sediment in 1.5 km downstream stretch of river bed;
- ii) Removal of fly ash dumped at river bank;
- iii) Status of ash pond water whether circulated or discharged to river;
- iv) Water quality in the discharge point and downstream in respect to TDS, TSS.”

5. On 19th December, 2014, Mr. Datta, the applicant filed some photographs taken one day before that date to show that fly ash excavated from the river bed was still getting dumped on the river bank. The project proponent, which on its part, had also filed a report on the manpower and machineries engaged for the work of ash lifting, was directed by us to complete the process of removal of fly ash from the river bed and its bank by 20.01.2015. In order to get a clear picture on the extent of pollution of the river and ecological damage of the river ecosystem, we requested Dr. Kalyan Rudra, the Chairman of PCB, who is an expert in river water resource management, to assist the Tribunal to make a field visit of the area for an assessment of the present status of the rivers Chandrabhaga and Bakreshwar and to suggest a scheme to clear the river bed of the fly ash and on restoration of its ecology. In the meantime, in terms of our order dated 27th November, 2014, the Central Pollution Control Board filed their report on the basis of their inspection dated 24.12.2014. The observation of CPCB as submitted at page 88 is as follows:-

“ During inspection it was observed that the unit M/s Bakreswar Thermal Power Plant, Dist. Birbhum-731104 (West Bengal) was not discharging ash pond overflow into River Chandrabhaga (except seepage from ash pond and pump gland leakages). The water quality of River Chandrabhaga (from confluence point to village Mallikpur) was found to be complying the norms (TSS, TDS etc.). The ash pond overflow was found in recirculation for ash slurry preparation by the industry.

The removal of fly ash sediment from River Chandrabhaga was found in progress. Removed fly ash was found dumped at either side of river bank for drying purpose. After drying, this ash is being used for Ash dyke raising work for the ash pond to enhance the ash storage capacity.”

It was, however, recommended that, as there was a problem associated with the wet disposal of ash, the industry may be directed to collect the entire ash in dry form.

6. In terms of our earlier direction dated 22.01.2015, an elaborate scientific report was filed by Dr. Kalyan Rudra. It would be relevant to reproduce the

important aspects of the report on the impact of ash water discharge to the river

Chandrabhaga & recommendations which are as follows:-

“Impact 1. Ash deposition in the river bed.

Deposition of huge quantity of ash on the river bed changed the hydro-geomorphic character of the river. The undersigned, during inspection moved from the point of ash discharge to the point of confluence of river Chandrabhaga and river Bakreswar, and found the depths of the deposited ash layer to vary from a depth of 1200 Cm to 46 Cm on an average. The BKTPP authority deployed heavy earth moving instruments to remove the ash from the river bed. In their attempt they could create a deeper channel down the mid-stream for the water flow, dumping the ash-sand mixture on both sides of this channel on the riverbed itself. The act has been simplistically represented in Figure-3. Dumping of this ash-sand mixture on the sides of the water channel changed the ecology of the entire stretch of the river during which the action was performed. This is true not only for the region through which the water flows, but for the regions on the bank as well, which is why no sign of aquatic life could be identified for the stretch travelled during the inspection.

Impact 2. Deterioration of water quality.

Quality of water is the softest target in such cases and the water quality of the river Chandrabhaga suffered huge challenge form the ash pond overflow. That the quality of water was not fit for any aquatic life, has been described above already. In addition, the dumping of this ash-sand mixture on the sides of the water channel changed the ecology of the entire stretch of the river during which the action was performed. This is true not only for the region through which the water flows in lean months but also the wider stretch through which flood water flows. The river water was being used by the local people directly for drinking till Sept 2013 and is not even fit for bathing now, as it creates etching sensation. This was corroborated from the feelings of the locals, Sri Dukhaharan Bagdi (60Y), Sri Bhundo Hansda (60Y) and Smt. Sumi Hansda (65Y) of the Parbatipur village where the two rivers unite to form a wider channel.

Impact 3. Loss of biodiversity.

Biodiversity is an extremely sensitive attribute of any ecosystem, and “first to disappear under challenge, and last to reappear after restoration”. The ash pond overflow has completely eliminated the Biodiversity of the river and its’ flood plane. Nature is only the entity to set it back after all restoration works are completed. It is not even possible to foretell anything on the time-scale on reappearance of the lost Biodiversity. We all can only hope that the completion of the intervention led by Hon’ble Court on the polluting activity would be visible within our life span with sparkles of reappearing Biodiversity with very signs and symptoms after the remedial action is over.

Impact 4. Threatened Livelihood.

Livelihood in the villages surrounding the river Chandrabhaga has been utterly threatened by the accident of ash overflow form the BKTPP ash pond. Because they depend heavily on the natural deliverables of the pristine stream and related resources for their survival. The people have been particularly impacted in respect of their livelihood. Principal use of the water resource –DRINKING/BATHING-have been stopped and whatever little fish were there in that stretch of river, disappeared due to the environmental mammoth challenge. Expressions of the local people clearly meant more serious impact on livelihood issues which could be delineated with an in-depth study on the matter.

Recommendations:

1. No further discharge from the ash pond should reach the river Chandrabhaga and Zero Liquid Discharge(ZLD) should be implemented with immediate effect. The construction of appropriate ETP and treated water re-distribution may take time, but ad-hoc measures should be adopted to ensure ZLD into the river Chandrabhaga.
2. De-silting of the river Chandrabhaga, from the Ash-Pond downstream upto Parbatipur, the confluence point of th two rivers is to be done on war footing and should be completed before the forthcoming monsoon of 2015.
3. The BKTPP should construct and commission the new ash-pond(s) immediately.
4. The floodplain of either river should not be used as the dumping ground of the spoil.
5. Disposal of removable materials may be done to abandoned mine(s) or supplied to brick fields, highway authority and organisations legally permitted to use such ash.
6. The removal of ash-sand mix and ash from the river bed should not be done deploying JCB machines, as it creates alteration of the riverbed and exposes the substratum layers which may turn harmful for the life of the river and related ecology. Manual intervention is recommended which may boost up the local economy as well, at least for a brief period of time.
7. Ecological restoration of the region under consideration may take years, and a strong monitoring on this is to be instituted and recorded. A long term scheme is to be prepared and submitted to the court by the BKTPP to institute such action/
8. Livelihood support is to be provided to the local people. One tube well for drinking water is to be established and one pond of area around 10 cottah is to be dug up in each village surrounding the affected river stretch.
9. A monitoring committee is to be formed consisting the District Magistrate, BKTPP representative, Irrigation Department and the Panchayet Department for long term monitoring of the river clean up and ecological restoration programme.”

7. While calling upon the respondents to file responses to the report of Dr. Rudra, we directed the project proponent to file an affidavit disclosing the details of methodology, procedures and mechanism for lifting the fly ash from the river beds of Chandrabhaga and Bakreswar as the progress of lifting and disposal was not satisfactory. The CPCB also was directed to cause further inspection and to file status report on fly ash deposit. The project proponent was further directed to file a scheme relating to plantation, providing drinking water to villagers, etc., as recommended in the report of Dr. Rudra and to complete the work of ash lifting and its removal before monsoon.

8. The Project Proponent, the Respondent No.3 represented by Ld. Advocate Mr. N.C. Bihani, would submit on 13th July, 2015 that the construction of the 2nd

Ash Pond had already started but some local villagers, whose land was falling in the area of the proposed 2nd Ash Pond, had filed writ petitions before the Hon'ble High Court seeking injunction. It appears from the affidavit filed by Respondent No.3 that initially there were three units of 210 MW capacity each and only one ash pond had been constructed to deposit ash with a life of 15 years but subsequently, two more units of 210 MW started operation from 2008-2009. The conditions stipulated in the Environmental Clearance granted by MoEF dated 23.12.1992 relating to fly ash disposal and effluent treatment were as follows:-

Xxx

xxx

xxx

xxx

IX. Provision for dry fly ash collection and storage should be made. A workable plan for full utilization of fly ash should be prepared as given below:-

- 20% of the fly ash should be put into use within one year of commission.
- Thereafter 10% progressively for next 8 years and 100% within 9 years.

Xxx

xxx

xxx

xxx

XIII Liquid effluents should be treated to meet the standards. Efforts should be made to recycle/re-use the treated effluents to the extent possible. Ash pond effluents should meet the stipulated standards."

In view of the violation of EC conditions and extensive pollution caused in the river by the Project Proponent, notice was issued by us to the Respondent No.3, directing them to show cause as to why they should not pay penalty/environmental compensation of Rs.5.00 crore on the "Polluter Pay" principle for them having caused environmental degradation of rivers Chandrabhaga and Bakreswar by putting fly ash and for causing severe injury to the environment, the entire locality and its inhabitants including animals who are dependent on the river.

9. To our query, the Project Proponent would state on affidavit that the existing ash pond was sufficient to store ash being generated from all the five units. We failed to understand as to how one ash pond with a life of 15 years,

which had already been used from the year 2000 in catering to three units, could accommodate the additional load from two more units and the reason for the overflow of ash water contaminating the river. On examination of the last consent to operate certificate granted by the PCB issued on 20.03.2014, we found that it was valid from 01.01.2014 to 31.12.2014 for running the five units which indisputably established that the units were being run without valid consent beyond 31.12.2014. We, therefore, directed the PCB to file an affidavit on the step it had taken against the project proponent for having run the unit when the consent had obviously expired since 7 months before. The Project Proponent was also directed to explain as to why appropriate order of closure of the unit should not be passed for operating it without consent.

Subsequent examination of records revealed that the Environmental Engineer, Durgapur had issued a letter dated 30.06.2015 during pendency of this application, by which the validity of the consent was extended till 31.12.2015 after considering the application of the project proponent. Thus, it is an admitted fact that the Project Proponent did not have consent to operate from 1.1.2015 to 29.06.2015 and that unit was being operated illegally. Under such circumstances, both the Member Secretary and Environmental Engineer were directed to clarify on the point. There was also no response from the Project Proponent to the show cause notice issued to them as well as on the requirement of the 2nd ash pond.

10. When the matter came up for hearing on 15th September, 2015, Mr. Datta, the applicant by referring to some photographs taken on 5.09.2015 submitted that fly ash water continued to be discharged into river Chandrabhaga and there was no 'zero discharge' in terms of the suggestion of Dr. Kalyan Rudra,

a fact which was denied by Mr. Laxmi Kumar Gupta, Ld. Additional Advocate General, Govt. of West Bengal. In view of the rival contentions we directed NEERI, Regional Office, Kolkata to make an 'on the spot' study and file a report answering to the following points:-

1. Whether the quality of the ash pond water discharged to river Chandrabhaga conforms to the stipulated National standard ?
2. Whether there exists any treatment facility near ash pond to treat the ash pond water before it is discharged to the river ?
3. What are the quality of inlet and outlet water in terms of suspended solids in case there is treatment facility?
4. Whether it is possible to adopt "Zero Discharge Norm" by the industry through circulation and re-circulation?
5. Whether there is any violation of consent conditions granted by State Pollution Control Board for management of fly ash generated from the Industry?

11. On the issue of extending the validity of consent by the PCB to the Project Proponent retrospectively, both Member Secretary and the Environmental Engineer would frankly admit that the law is silent on the point but, as per them, it was the usual practice to give retrospective effect to 'consents to operate' while disposing applications therefor. On consideration of the affidavits, we passed the following order on 14.10.2015:-

" Under the environmental jurisprudence compliance of environmental norms is required strictly for the protection of the environment from the pollutants. The State Pollution Control Board being a statutory body is entrusted with the duty to supervise the issue so that industries do not breach the pollution norms relating to discharge of the pollutants in the air and water. It is a great responsibility to check every industrial unit prior to grant of consent to operate certificate. It is crystal clear that retrospective order was passed granting consent to operate without following the statutory provisions as stipulated in the said two Acts. The consent to operate must be with prospective effect,. Sub section 1 of the Section 21 of the **Air (Prevention and Control of Pollution) Act, 1981** reads as such:-

"Restrictions on use of certain industrial plants-(1) Subject to the provisions of this section, no person shall, without the previous consent of the State Board, establish or operate any industrial plant in an air pollution control area:

Provided that a person operating any industrial plant in any air pollution control area immediately before the commencement of section 9 of the Air (Prevention and Control of Pollution) Amendment Act, 1987 (47 of 1987), for which no consent was necessary prior to such commencement, may continue to do so for a period of three months from such commencement or, if he has made an application for such consent within the said period of three months, till the disposal of such application."

Section 22 of the said Act reads as such:-

“Persons carrying on industry, etc., not to allow emission of air pollutants in excess of the standards laid down by State Board.- No person operating any industrial plant, in any air pollution control area shall discharge or cause or permit to be discharged the emission of any air pollutant in excess of the standards laid down by the State Board under clause (g) of sub-section(1) of section 17.”

On bare perusal of those two sections, it is clear that under sub section 1 of Section 21 of the said Act an emphasis has been laid on the word ‘shall’, a mandatory provision, which stipulates embargo of operation of any unit without consent to operate. From the language as used indicates that consent to operate decision must be prospective and it cannot be retrospective. Section 22 further mandates that no person operating any industrial unit, in any air pollution control area shall discharge or cause or permit to be discharged the emission of any air pollutant in excess of the standards laid down by the State Board. Section 22A deals with the power of the State Board to approach the court restraining persons from causing air pollution. There are other provisions about the inspection in the said Air Act. Similarly Section 25 onwards of the **Water(Prevention and Control of Pollution) Act** read with **Environment (Protection) Act, 1986** there is statutory provision and power of the State Board. Hence there is no scope to contend that consent to operate decision could be retrospective.

Having regard to such plea of usual practice as has been taken by the Member Secretary viz. Shri Subrat Mukherjee and the Engineer Shri Anjan Fouzdar of the State Pollution Control Board is not legally sustainable. We are surprised to note that State Board used to give permission while disposing of the applications with regard to consent to operate in respect of the industrial unit even if it falls in the red category which has been identified as dangerous industry which requires surveillance of the emission and discharge of the pollutants. Mr. Anjan Fouzdar the concerned Engineer has annexed a document viz. inspection report dated 12.06.2015 which is in no manner connected to the issuance of consent to operate decision. It was only an inspection report in terms of our direction to identify fly ash discharge to the rivers by the Power Plant and also the extent of removal of the fly ash from the river beds and the river banks. Inspection for grant of consent to operate involves all activities of the plant in question. It appears from the said two affidavits of the said two officers concerned that they have breached the law of granting consent to operate in favour of Bakreswar Thermal Power Plant with retrospective effect. Admittedly said plant had no consent to operate for the period 1.1.2015 to 29.06.2015 and during this period even though the Thermal Plant has not complied to the pollution norm it has been protected by the order of the PCB in the nature of consent to operate. It further appears from the affidavit of the Member Secretary that subsequent direction has been passed on 08.10.2015 (Annexure-R/1) directing that “retrospective effect shall not be given while granting issuing the consent to operate.” This decision was passed in view of our caustic remark about the performance of the State PCB. Having regard to the affidavit it is proved that the concerned Member Secretary and the concerned Engineer committed breach of the legal provision under the law. They are required to protect the environment under the law. Both the concerned officers are aware of the legal position and besides such, ignorance of the law cannot be an excuse which could be applicable in the instant case since both the officers are highly educated.

Having regard to the conduct of the aforesaid two officers and following the concept of environmental jurisprudence and our solemn duty as per the constitutional provision and statutory provision under the aforesaid two Acts read with NGT Act, we are of the view that for ends of justice they should be penalized by imposing a fine of Rs.25,000/- each for causing breach of the environmental law and for violating the statutory provision while discharging their duty. They are directed to show cause as to why this Tribunal will not impose fine accordingly payable from their salary by three weeks.

This order is also to be communicated to all the Member Secretaries of the respective State PCB which are under the jurisdiction of the Eastern Zonal Bench, Kolkata viz. West Bengal, Assam, Bihar, Odisha, Jharkhand, Tripura, Meghalaya,

Mizoram, Nagaland, Arunachal Pradesh, Manipur, Andaman and Nicobar Islands and Sikkim by the Registry for their implementation forthwith., The aforesaid Member Secretaries of the respective States are directed not to issue any consent to operate decision retrospectively. The report of the NEERI as submitted and served upon the respective parties will be considered on the next date of hearing. All the respective parties are at liberty to file their objection/suggestion, if any, in the meantime. “

12. In terms of our direction, NEERI filed its final report answering the five points formulated by us. It is relevant to put on record the answers to the specific questions raised by us as well as their conclusion which are as follows:-

Answer to specific questions raised by NGT EZB

1. Whether the quality of the ash pond water discharged to river Chandrabhaga conforms to the stipulated National standard?

Yes, the quality of ash pond water discharged to river Chandrabhaga conforms to the stipulated National standard earmarked for thermal power plants as per The Environment Protection Rules (1986).

The ash pond discharge/final effluent discharged to river Chandrabhaga originates from the ash pond slurry that is collected in a pump house sump located at the edge of ash pond. In this pump house, outflows from two decantation ponds and ash=pond backwater overflow mix. This mixed common effluent is discharged via a cascading drain that emerges from the pump house and joins the drain going to river Chandrabhaga.

The Environment Protection Rules (1986) has specified pH, oil and grease and total suspended solid (TSS) standards that any thermal power plant ash pond overflow has to comply. To study the compliance of the final discharge, water samples were collected from a few relevant points. The final effluent from ash pond sampled on 3.2.2016 and 4.2.2016 have met the above standards.

2. Whether there exists any treatment facility near Ash pond to treat the ash pond water before it is discharged to the river?

As a treatment facility, there are two settling ponds to allow the sediment/ash load to settle before the final effluent (ash pond water) is discharged via drain to Chandrabhaga River.

The supernatant water generated from the dumped fly ash slurry in the ash pond is driven to the decantation ponds (2 nos.) situated side by side and separated by an embankment. The decantation ponds are actually gravity settling ponds(135 m x 90 m x 6.5 m) without any additional engineering structure like baffles. They receive water from the ash pond via pipelines. Whatever residence time the ash pond overflow water gets here, it drops the sediment load by **gravity**. Therefore, ash pond water is treated in the decantation ponds that are actually gravity settling water treatment ponds. The supernatant water from these two decantation ponds are diverted to basins via pipes to a pump house where they get mixed. Further, overflow water from the fly ash pond that exists beyond the boundary of the decantation ponds is also diverted via pipelines lying over the abovementioned embankment to the same basin bypassing the decantation ponds, to the pump house where it get mixed with decantation pond water. Therefore, pump house receives water that comes via decantation pond plus water from ash pond overflow that bypasses the decantation ponds. It implies that a part of ash pond water is not treated in any of the decantation ponds.

3. What are the qualities of inlet and outlet water in terms of suspended solids in case there is treatment facility?

The inlet water to right decantation/settling pond had 770 and 684 mg/1 TSS in two different samples taken on 3.2.2016 and 4.2.2016 while the inlet to left decantation/settling pond had 66.7 and 75.3 mg/1 TSS on the dates mentioned above. The common outlet water or the final discharge had 88.7 and 82.7 mg/1 TSS on the dates mentioned above.

The inlet water line in the two decantation ponds are different and hence were sampled separately while the outlet water of the decantation ponds are mixed and combined in the pump house sump and it is this mixed water that is discharged into river Chandrabhaga as the common effluent of ash pond. However, it must be also noted that the outlet water from the decantation ponds are mixed with ash pond backwater overflow in the pump house sump that together makes the final discharge. Therefore, precise outflow water quality from individual decantation ponds could not be studied. The decantation pond inlets and mixed outlet water quality in terms of TSS and other parameters like pH and oil and grease are presented in Table 2. It was observed that TSS load in final effluent was much lower than inlets to individual decantation ponds.

4. Whether it is possible to adopt “Zero Discharge Norm” by the industry through circulation and re-circulation?

It is possible for the plant to adopt zero discharge of ash pond by recirculation and recycling after meticulous planning and management. For the entire plant to adopt zero discharge, thorough overhauling of facilities in the entire plant will be needed, that includes the establishment of a proper water treatment plant. As the time of this study, zero discharge was not found to be adopted either in the ash pond or in the entire plant.

BKTPS has provided water balance diagram for the ash pond (Annexure-I), which reflects the existence of ash pond overflow i.e. ash pond discharge or effluent, implying that there is no zero discharge. As per BKTPS inputs, the plant is trying to re-circulate ash pond final effluent into the industry through treatment given in a clariflocculator. The clariflocculator overflow water is reused for making ash slurry for pumping into the ash pond. The plant has constructed 2 pipelines to divert ash pond effluent to the plant.

On day 1 of visit by NEERI team (i.e. 3.2.2016), the final effluent flow from ash pond to river Chandrabhaga was found to be very negligible and it was learnt that the final effluent was recirculated from pump house to the industry in an attempt to achieve zero discharge. However, on day 2 of NEERI's visit (i.e. 4.2.2016), the effluent discharge outlet to river Chandrabhaga was found to be significant, indicating breach of zero discharge from the ash pond. It was evident that the plant was still not in position to create a fully operational zero discharge facility from ash pond.

Also, it is technically not possible for the entire plant to achieve zero discharge with the present set-up, as the plant does not have any effluent treatment plant and hence cannot treat the effluents generated by different units to make them suitable for complete recycle and reuse within the plant. Further, it is releasing effluents generated from various units directly into river Chandrabhaga which itself is far away from zero discharge concept. BKTPS is yet to formulate a plan to tackle the likely overflow water from the ash pond in emergency situations like continuous heavy rainfall or flash floods. It is recommended that the plant must install water meters in every water and waste water lines to streamline water balance and authenticate zero discharge claims. The plant has to come up with sound policies on water treatment, water recycle and reuse and planning for future zero discharge. Water treatment plant must be immediately commissioned to observe zero discharge over the entire plant. **The plant need to prepare a road map for achieving the zero discharge with a proper time line.**

5. Whether there is any violation of consent conditions granted by State Pollution Control Board for management of fly ash generated from the Industry?

Yes, there is a violation of consent conditions in terms of fly ash utilization, as even after 9 years of operation, the plant has not been able to utilize 100% fly ash generated by itself.

In the Environmental Clearance (EC) issued to BKTPS by MoEF for Phase II (Unit 4 and 5), dated 23.12.1992 (Annexure II a, b,c) . BKTPS was directed to utilize 100% fly ash within 9 years of commissioning. As per present scenario, 100% ash utilisation has not been possible for the plant within 9 years of commissioning. Ash utilization details for the entire plant in 2015, as provided by BKTPS is attached (Annexure III), which **self – explanatory and indicates that BKTPS has not been able to utilise fly ash till date as stipulated in EC.** Unit wise ash utilization data is not available with BKTPS, for more precise evaluation by CSIR-NEERI, as communicated by BKTPS to CSIR-NEERI Team by e-mail.

Conclusions

Based on the rapid assessment by the CSIR- NEERI team, the following conclusions are arrived. The issues need to be enforced by the regulatory authorities.

1. The quality of ash pond water discharged to river Chandrabhaga conforms to the stipulated National Standard earmarked for thermal power plants as per the Environment Protection Rules (1986).
2. The ash pond treatment facility is only meant for controlling ash load in water and at the time of study, the settling ponds could control TSS within stipulated limit.
3. Zero discharge is still not adopted by the plant. They will need to take meticulous and thorough measures in future to adopt zero discharge in the plant.
4. Fly ash utilisation has still not reached 100% of generation as was made mandatory in consent.
5. It is necessary that the BKTPS addresses the issues of zero discharge and the ash utilisation (100%) with care and impeccable planning in a time-bound manner.
6. Third-party audit of the water utilization and reuse and fly ash utilization need to be carried out by a suitable agency every six months and such reports may be submitted to WBPCB.”

The report thus reveals that although the ash pond water met the prescribed disposal standard, the plant was still required to reach zero discharge and 100% fly ash utilization.

Mr. N.C. Bihani, Ld. Advocate, appearing for the Respondent No.3, would submit that all the remedial measures in terms of the report filed by Dr. Kalyan Rudra had been taken by the Respondent. In view of his submission we requested Dr. Rudra to carry out another inspection and to give his assessment of the present state of affairs of river Chandrabhaga based on his earlier recommendations.

13. Dr. Rudra accordingly visited the BKTPP and the maximally affected stretch of the river on the 3rd and 4th February, 2016, interacted with the officers

of BKTPP and some of the affected people living along the bank of river. The status of compliance of the recommendations submitted by him were as follows:-

“Recommendation 1

No further discharge from the ash pond should reach the Chandrabhaga and Zero Liquid Discharge (ZLD) should be ensured with immediate effect. The construction of appropriate ETP and treated water re-circulation may take time, but ad-hoc measures should be adopted to ensure ZLD into the river Chandrabhaga.

Present status

The BKTPP authority has made operational one old clariflocculator at the plant premise to treat a portion of the ash-pond overflow, thus reducing the amount overflow that reaches the river. Further, the undersigned has advised to intercept the channel draining the ash pond to river Chandrabhaga and to construct two numbers settling tanks. It is found in the lab scale study in the WBPCB Central Laboratory that Poly Aluminium Chloride dosing for settling of the ash-fines suspended in the water accelerates the process. These two fine-ash settling chambers are of capacities 1000 M³ and 600 M³ and will act in tandem. This work and the flocculation exercise will be completed shortly. Finally, the BKTPP authority are in process of establishing a new clariflocculator with target date of 31 March 2016 after which the plant will be able to re-circulate entire ash-pond overflow establishing total zero liquid discharge. Over and above, the construction of the second ash pond in between the first and the plant was found to proceed at satisfactory pace with target date of March 2017. This will ensure complete ash management protocol with no further event of ash pond overflow like the one happened during September 2014.

Recommendation 2

De-silting of the stretch of the river Chandrabhaga, from the Ash-Pond downstream up to Parbatipur, the confluence point of the two rivers is to be done on war footing and should be completed before the forthcoming monsoon of 2015.

Present Status

BKTPP authority has removed ash from the river bed amounting 1,41,587 M³ against estimated amount of 1,45,200 M³ submitted by the undersigned vide the previous report. As a result the river bed was found to have taken natural texture and colour and the river bio-diversity has been found restoring slowly. It appears that there exists no further requirement of removal of ash from the river bed.

Recommendation 3

The BKTPP should construct and commission the new ash-pond(s) immediately.

Present Status

The phase of construction of the new ash pond was found satisfactory and is deemed to be completed by March 2017. Figure 4 describes the present status of construction of the ash pond.

Recommendation 4

The floodplain of either river should not be used as the dumping ground of spoil.

Present Status

The spoils, i.e., the ash removed from the river beds as mentioned in the discourse of Recommendation 2 above, were removed to a location not belong to the catchment area of river Chandrabhaga or river Bakreswar.

Recommendation 5

Disposal of removable materials may be done to abandoned mine(s) or supplied to brick fields, highway authority and organizations legally permitted to use such ash.

Present Status

Disposal of the ash removed from the river bed has been made in an abandoned mine on a barren land near Jipdharpur railway station.

Recommendation 6

No further discharge from the ash pond should reach the river Chandrabhaga and Zero Liquid Discharge (ZLD) should be implemented with immediate effect. The construction of appropriate ETP and treated water re-distribution may take time, but ad-hoc measures should be adopted to ensure ZLD into the river Chandrabhaga.

Present Status

Although the BKTPP authority initially employed POCLAIN machine through expert agencies for removal of ash dumps from river beds, later on the mode of removal of ash dumps were changed and most of the ash dumps were removed with the help of Gram Panchayets who engaged locals for the job. Proportionately 13% of ash was removed through agencies and 87% through Gram Panchayets.

Recommendation 7

Ecological restoration of the region under consideration may take years, and a strong monitoring on this is to be instituted and recorded. A long term scheme is to be prepared and submitted to the court by the BKTPP to institute such action.

Present Status

WBPDCI ensured in July 2015 that a team of environmental engineers and chemists will be engaged to monitor the ecological restoration programme with support from universities/institutions. They observe presently that the ecological system in the river has gradually been rejuvenated after cleaning of the river bed, and Flora and Fauna have also been developed in the river. The undersigned agrees with the claim of the BKTPP authority.

Recommendation 8

Livelihood support is to be provided to the local people. One tube well for drinking water is to be established and one pond of area around 10 cottah is to be dug up in each village surrounding the affected river stretch.

Present Status

The BKTPP authority had installed wells 1 in Mullickpur, 6 in Palsara, 14 in Bhurkuna and 3 in Chakdaha Sandsad Mallickpur G.P.

The district authority took the initiative of excavation of ponds and created 170 numbers of new water bodies (Annexurfe-1) in the affected Gram Panchayets in Suri Block-1 and Suri Block-II through which river Chandrabhaga is flowing.

170 ponds are located as follows:-

Suri-1 Block:- Bhurkuna Gram Panchayat –water bodies 33 nos. and Mallickpur Gram Panchayat-66 nos.

Suri-ii Block:- Koma Gram Panchayat-water bodies 27 nos. and Abinashpur Gram Panchayat :- 44 nos.

Recommendation 9

A monitoring committee is to be formed consisting the District Magistrate, BKTPP representative, Irrigation Department and Panchayet Department for long term monitoring of the river clean up and ecological restoration programme...

Present Status

The said committee was formed and they performed the monitoring job satisfactorily as could be seen from the health of the restoring river and its' process of ecological rejuvenation.

The BKTPP requires 90,000m³ of water/day and this is supplied from Tilpara barrage through a pipe line. The reservoir plays a supplementary role and supplies water to the plant during 2-3 lean months when supply from the Tilpara is interrupted due to maintenance or any other reason. The water balance of the BKTPP ash pond is provided in Fig.6, and the water-ash movement and management diagram in Fig.7.

The event of ash-pond over flow happened during September to November 2014 and the two rivers. Chandrabhaga primarily and Bakreswar after it's confluence with Chandrabhaga received huge amounts of ash dumping on their beds. The Hon'ble National Green Tribunal stepped in and following their order(s) the massive and historical river clean up activity started. The undersigned, in his earlier report mentioned four types of impacts on the river system due to ash-pond overflow. After cleaning up activity performed during entire 2015, the situations in respect of the four identified impacts are described below with due diligence.

Impact 1. Ash deposition in the river bed.

Removal of the deposited ash has been performed with satisfaction requiring no further activity in this respect.

Impact 2. Deterioration of Water quality

Water quality of the river Chandrabhaga has drastically improved and the locals are feely using the water for all sorts of purposes excepting direct drinking. It appears that after one more monsoon season the quality of water in Chandrabhaga will turn out to be as before.

Impact 3. Loss of Biodiversity

Biodiversity is an extremely sensitive attribute of any ecosystem and is 'first to disappear under challenge, and last to reappear after restoration". As the best of the environmental experts the Nature has been seen to take up the i8ssue of restoration of the river biodiversity which could be visibly confirmed through appearance of algae and other aquatic plants including various fish species moving merrily in the river water. All these are clear evidence of the restoring biodiversity of the river system.

Impact 4. Threatened Livelihood

With intervention by the BKTPP and the District authority to support the livelihood issues of the river side villagers, the condition improved much. Of the principal uses of the water resource, direct DRINKING of the river water may take some more time to be established. To substantiate, sufficient arrangements has been made in form of tube wells dug in close proximities of the habitations on both sides of the river Chandrabhaga. All other livelihood issues like BATHING, CLOTH WASHING, etc., including drinking by the domesticated animals hae been restored. The undersigned meet the following villagers living just on the bank of the river Chandrabhaga.

1. Sri Kripa Sindhu Bagdi
2. Sri Vondoï Kishu
3. Smt. Boodin
4. Sri Mukti Bagdi
5. Sri Buddhi Murmu.

Through discussion all of them stated that the quality of river water has improved substantially compared to earlier and to the satisfaction of them.”

Some important observations are as follows:-

- (i) Pollution load due to the ash pond overflow into the river Chandrabhaga during 2014 and before was largely found removed.
- (ii) No whitish grey tone in the flowing water could be detected in the stretch covered (approximately 11 Km) till the confluence of river Chandrabhaga and river Bakreswar.
- (iii) When there was no sign of aquatic life noticed last year, presently many forms of flora were observed including many fish species grown naturally.
- (iv) People were found to use the river water for all activities except direct drinking.
- (v) People used water from tube wells provided by BKTPP for drinking.

14. It would thus appear from the above that the mitigation measures and the efforts made by the Project Proponent with our intervention had resulted in substantial restoration of the environment for the area and of both Chandrabhaga and Bakreswar rivers. We were satisfied that if the measures are continued and maintained, the condition of restitution will improve further for which we intend to issue certain directions as we conclude.

15. On the issue of imposition of penalty/compensation of Rs.5.00 crores on the project proponent on the principle of ‘Polluter Pay’ for causing environmental degradation, it was submitted on behalf of the Respondent No.3 that they had made all out effort to clean the river-bed and had spent Rs.3,94,86,978/- for the purpose. In order to achieve zero discharge from the ash pond into the river Chandrabhaga, work order had already been placed with M/s Indure Private Ltd. for an amount of Rs.2,50,00,000/- to complete the unfinished work of *clariflocculator* Stage-II. Work order for construction of the 2nd Ash Poind valued at Rs. 155.00 crores had been issued to M/s L&T Ltd. which was expected to be completed by March 2017. The respondent No. 3 initially had also spent Rs.16,21,840/- for supply of drinking water to the surrounding village. 28 tube wells had been sunk subsequently with an approximate expenditure of Rs.20,54,641/- for providing drinking water. Mr. Bihani placed before us the

decision of the Apex Court reported in (2014) 6 SCC 776 in the matter of **G. Sunderjan –v- Union of India & Ors** in which a lenient view was taken when directions of the court were promptly addressed by the respondents and that there was no laxity on their part in carrying out such directions. Under these circumstances, it was urged that the Project Proponent, the Respondent No. 3, be not imposed with payment of compensation proposed by us.

We had indeed intended to impose penalty/compensation for restoration/reclamation of river Chandrabhaga which had undoubtedly been degraded due to discharge of ash pond water from the project but, as the project proponent has already carried out the mitigation measures by undertaking the necessary works and, as per the report of Dr. Kalyan Rudra, there has been significant improvement, we are persuaded to accept the prayer and to take a decision not to impose any penalty/compensation on the project proponent.

16. We had also proposed to impose penalty of Rs.25,000/- each upon the Member Secretary, Shri Subrata Mukherjee and, Environmental Engineer, Shri Anjan Fouzdar for granting consent with retrospective effect to M/s Bakreswar Thermal Power Station while extending validity period of consent to operate thereby committing serious breach of the environmental law and the statutory provisions while discharging their duty. While responding to the show cause notices issued to them, both the officers have tendered unconditional apologies and prayed that they may not be imposed with the fine. They would further submit that in compliance to the order of the Tribunal, the State Board has issued order dated 8.10.2015 not to give retrospective effect to orders granting consent to operate. Under such circumstances, we desist ourselves from imposing upon the officers the penalty proposed but with a warning that such infraction should

not be repeated and that the procedure prescribed by law shall be strictly followed and not digressed from while discharging their duties.

17. As observed earlier, before parting, we deem it essential to issue certain directions upon the project proponent to ensure that no such environmental degradation recurs in future by scrupulously avoiding unscientific management of ash pond effluents and improper disposal of fly ash. Keeping in view the recommendations of NEERI and Dr. Kalyan Rudra and the submissions made by the Project Proponent, we direct that :-

- (i) The project proponent shall ensure that the second ash pond under construction shall be made operational by March, 2017 positively failing which the project proponent shall mandatorily switch over to dry disposal of ash with 100% utilization, or shut down two of its units of the Plant.
- (ii) The new *clariflocculator* shall be made ready and operational within six months in order to achieve zero liquid discharge.
- (iii) Until the new *clariflocculator* is established, ash pond overflow shall be discharged by conforming to the disposal standards.
- (iv) The flood plain of both the rivers shall not be used for dumping fly-ash.
- (v) Apart from the above, the project proponent shall also meticulously implement the other recommendations of Dr. Kalyan Rudra.

We also direct the West Bengal State Pollution Control Board to monitor the activities of the project proponent to ensure that they comply to our directions, the MoEF guidelines on Fly ash utilization and directions of the Central Pollution Control Board.

We record our appreciation for the applicant, Mr. Subhas Datta, having filed this application bringing to our notice the large scale pollution of river caused by a Government funded industry and the assistance rendered to us by him in providing periodic useful inputs for our adjudication.

We direct the Project Proponent, the Respondent No. 3, to pay a litigation cost of Rs. 50,000/- to Mr. Subhas Datta within six weeks.

We also appreciate the co-operation unhesitatingly rendered by Dr. Kalyan Rudra, who is also the Chairman, State Pollution Control Board in providing his expertise which has been of immense help to us.

With the above observation and directions the O.A. is disposed of.

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Justice S.P. Wangdi, JM

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Prof. (Dr.) P.C. Mishra, EM

Kolkata

Dated 2nd August, 2016

NGT