



JHARKHAND STATE POLLUTION CONTROL BOARD

T.A. DIVISION BUILDING (GROUND FLOOR), H.E.C., DHURWA, RANCHI - 834004
Phone.: 2400851, 2400852, 2400979 Fax: 0651- 2400850, Web Site - www.jspcb.nic.in

A FACTUAL AND ACTION TAKEN REPORT BY THE COMMITTEE CONSTITUTED IN COMPLIANCE OF THE HON'BLE NGT ORDER DATED 08.05.2020 IN O.A. NO. 25/2020/EZ PRAVEEN KUMAR SINGH VERSUS DAMODAR VALLEY CORPORATION.

1. The Hon'ble NGT, Principal Bench, New Delhi vide its order dated 08/05/2020 has constituted a committee comprising of (i) CPCB, Regional Office, Kolkata, (ii) The District Magistrate, Bokaro District and (iii) The Jharkhand State Pollution Control Board. The Jharkhand State Pollution Control Board shall be the Nodal Agency.
2. The Hon'ble Tribunal directed the Committee to inspect the area in question, verify on the factual position obtaining there. The CPCB shall collect the samples of soil in the area and water from the water bodies located there including that of the Damodar River and analysed to verify the extent of contamination.
3. The abovementioned Committee has inspected the site on 26/06/2020 and the soil and water samples were collected by CPCB for further analysis of the same. The committee has submitted its report and the observations and recommendations of the committee are as follows:-

OBSERVATIONS:-

- i. *The Ash Pond 1 is currently not in operation and repairing works of breached sections of Bund is under process. Boulder pitching is currently being done on the outside portion of repaired Bund at some places which should be done on both sides of Bund to increase the strength of that section of Bund and to avoid such incident in future.*
- ii. *It seems that the Ash Pond had breached/collapsed as a result of hydraulic pressure developed by excessive rain in a short duration on the day of collapse as the Bund has not been designed taking into account the rainfall. It has been found that the Bund has been designed taking into steady state seepage water and earthquake only and therefore such breach of ash pond cannot be ruled out in future unless the bund is repaired properly to protect against such natural calamities.*
- iii. *Clariflocculator near recirculation pump house was found incomplete.*
- iv. *Settled water is recirculated inside the plant as informed by the Unit's representative.*
- v. *The industry is not complying to the 100 % fly ash utilization. Only part of the presently generated fly ash is being utilized.*
- vi. *No action plan has been submitted by the industry to utilize the fly ash accumulated in the ash ponds.*

- vii. *Surplus Fly Ash is a matter of concern, where Unit is not having abundant Mines to dispose of the Ash generated. CCL is not providing any abundant mines because of future possibility of mining in the same. District Administration is trying to resolve the issue and also exploring more options.*
- viii. *Water and soil samples were collected from surface water, ground water, River water (upstream and downstream of the Konar River) and agriculture land. Konar River is a tributary of Damodar River and meets Damodar River about 5km downstream at Jarangdih.*
- ix. *Based on the analysis of water and soil samples (enclosed as Annexure I) it is found that chemical analysis of the collected water samples from different sources reflects that pH and heavy metals are well within the stipulated standard of drinking water quality (IS : 10500:2012). As far as agricultural soil is concerned the pH of the soil is well within the stipulated standard of neutral soil. Toxicity of the metals in the soil are far below the stipulated standard of the agricultural soil. The concentration of the metals quantified has no effect in the root zone soil of the agricultural field/land.*

RECOMMENDATIONS:-

- i. *The industry should get the Ash Pond design reviewed by some reputed institutes like IITs, NITs etc.*
 - ii. *The Ash Pond be designed taking into account all the possible factors affecting its stability (Highest flood level, Heavy rainfall, Earthquake etc.)*
 - iii. *No ash slurry be accumulated in these ponds till the bund is designed and repaired accordingly.*
 - iv. *The Industry should submit a time bound action plan to evacuate the ash already accumulated in the Ash Ponds as well as the generated ash separately in compliance to Fly Ash Notifications for 100% fly ash utilization and conditions of Environmental Clearance.*
 - v. *The power generation capacity of the plant may also be regulated based on the capacity of the Fly Ash utilization submitted by the industry.*
4. However, the information of breach of ash pond of BTPS was received on 12/09/2019 by the Board and taking the cognizance of the breach a committee was constituted to enquire about the incident and submit the inspection report to the Board. The Bund of Ash pond - 1 was found collapsed. The width of the Bund is about 50ft. at bottom and the breached length was about 40 ft. long based on preliminary investigation on site and non compliance of various CTO Conditions was found.
 5. On the receipt of findings of the committee, a five member high level committee was constituted vide Office Order No. - 181, Ranchi, dated 18/09/2019 for calculation / assessment for environmental compensation to be levied on BTPS w.r.t. the environmental damage due to the breach of ash pond and a show cause notice for non compliance of various CTO conditions was issued to the Unit. Moreover, the Unit was also directed to deposit an interim Environmental compensation of INR One Crore. (The photocopy of Office Order No. - 181, Ranchi, dated 18/09/2019 is attached as Annexure - I).

6. The Interim Environmental Compensation of INR One Crore has been submitted to the Board. In the mean while, the high level committee has submitted its interim report on Environmental Compensation fixation for BTPS Ash spill to the Board. Total Environmental Compensation has been assessed as INR 2,89,39,769.00/- (Two Crores eighty Nine Lakhs Thirty Nine Thousand and seven Hundred Sixty Nine rupees only) and it can be modified later depending on exact lab results.
7. As per the report of the high level committee it was evident that fly ash pond was not constructed or maintained as per approved plan.
8. In pursuance to the above situation JSPCB has directed the Unit to submit a time limit for fixing the responsibility as envisaged by the high level committee; to submit cost of evaluation of breach of fly ash pond and to submit the balance amount of Environmental Compensation of INR 1,89,39,769.00/- (One Crores eighty Nine Lakhs Thirty Nine Thousand and seven Hundred Sixty Nine rupees only) to Jharkhand State Pollution Control Board.

Rajeev
(Rajeev Lochan Bakshi)
Member Secretary
10/08/2022



झारखण्ड राज्य प्रदूषण नियंत्रण पर्वद
JHARKHAND STATE POLLUTION CONTROL BOARD
 T.A. DIVISION BUILDING (GROUND FLOOR), H.E.C., DHURWA, RANCHI - 834004
 Phone: 0651-2400852/2400851/2400850(Fax), Web site: www.jspcb.org

Office order No. B-181

Ranchi, Dated: 18/9/19

Office Order

With reference to the subject noted above it is to inform you that a breach of one of the fly ash pond of BTPS has taken place. The inspection report of the C4 members committee has been submitted to the Board vide their letter No.- 1055 dated 13.09.2019 (Photo copy enclosed). The inspection report shows that many CTO conditions compliance is found to be non-complied apart from breach of ash pond. The management of BTPS has a responsibility to communicate the incident of breach to JSPCB, which they have not done, which indicates their wrong doing and hiding of facts. Hence a high level committee is hereby constituted for calculation/assessment for environmental compensation to be levied on BTPS, as follows :-

- | | | |
|-------|---|-------------|
| (i) | Dr. H.S. Gupta,
IFS-PCCF (R & T),
Renowned Ecologist and ex-faculty, IIFM, Bhopal,
Van Bhawan, Doranda, Ranchi | Chairperson |
| (ii) | Dr. I.P. Gupta
Head of Dept. of Botany,
Dr. Shyama Prasad Mukherjee University,
Morabadi, Ranchi. | Member |
| (iii) | Dr. Nitesh Kulkarni,
Scientist -G,
Director, Institute of Forest Productivity,
Ranchi,
No. 23, Lalgutwa, Ranchi | Member |
| (iv) | Representative of MECON
(GM & above),
Doranda, Ranchi | Member |
| (v) | Regional Officer,
Regional Office,
JSPCB, Dhanbad. | Member |

The above committee will calculate/assess an environmental compensation to be levied on BTPS within 07 days and report to the Board at the earliest.

Encl: A/A

Sd/-

(Rajeev Lochan Bakshi)
Member Secretary

Memo No: PC/HO/RNC/SC/26/2019/B-1096

Ranchi, Dated: 18/9/19

Copy to: All above for information and necessary action.

(Rajeev Lochan Bakshi)
Member Secretary

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Inspection Report regarding breach of ash pond of the M/s Bokaro Thermal Power Station (BTPS) operated by Damodar Valley Corporation (DVC)

The Ash Pond area of M/s. Bokaro Thermal Power Station, Bokaro Thermal, Dist- Bokaro was inspected by the Committee consisting of Sri Mukesh Kumar, District Magistrate, Bokaro District, Sri Gyan Prakash Singh, Scientist- D, CPCB, Eastern Regional Directorate, Kolkata and Sri Ram Narayan Choudhary, Regional Officer, JSPCB Regional Office, Dhanbad as per the directions issued by Hon'ble NGT in the matter of O.A. No. 25/2020/EZ Praveen Kumar Singh Vs. Damodar Valley Corporation on 26/06/2020 in the presence of Md. T. Akbar, Chief Engineer (O & M), Sri Sunil Prasad, Deputy Chief Engineer and Sri Arun Kumar, Deputy Chief Engineer(civil) of BTPS.

The Unit is engaged in production of electricity of capacity 500 MW x 1(no.) and 210 MW x1(no.). The Unit is having 2 nos. of Ash Ponds of capacity 10 Lac m³ each and 2 nos. of decantation pond each having capacity of 1.5 Lac m³ for each ash pond. Out of these two ponds Ash Pond 1 had breached on 12/09/2019 at around 2:50AM.

During the inspection on 26.6.2020 by the committee following observations were made:

- i. The Ash Pond 1 is currently not in operation and repairing works of breached sections of Bund is under process. Boulder pitching is currently being done on the outside portion of repaired Bund at some places which should be done on both sides of Bund to increase the strength of that section of Bund and to avoid such incident in future.
- ii. It seems that the Ash Pond had breached/collapsed as a result of hydraulic pressure developed by excessive rain in a short duration on the day of collapse as the Bund has not been designed taking into account the rainfall. It has been found that the Bund has been designed taking into steady state seepage water and earthquake only and therefore such breach of ash pond cannot be ruled out in future unless the bund is repaired properly to protect against such natural calamities.
- iii. Clariflocculator near recirculation pump house was found incomplete.
- iv. Settled water is recirculated inside the plant as informed by the Unit's representative.

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- v. The industry is not complying to the 100 % fly ash utilization. Only part of the presently generated fly ash is being utilized.
- vi. No action plan has been submitted by the industry to utilize the fly ash accumulated in the ash ponds.
- vii. Surplus Fly Ash is a matter of concern, where Unit is not having abundant Mines to dispose of the Ash generated. CCL is not providing any abundant mines because of future possibility of mining in the same. District Administration is trying to resolve the issue and also exploring more options.
- viii. Water and soil samples were collected from surface water, ground water, River water (upstream and downstream of the Konar River) and agriculture land. Konar River is a tributary of Damodar River and meets Damodar River about 5km downstream at Jarandih.
- ix. Based on the analysis of water and soil samples (enclosed as Annexure I) it is found that chemical analysis of the collected water samples from different sources reflects that pH and heavy metals are well within the stipulated standard of drinking water quality (IS : 10500:2012). As far as agricultural soil is concerned the pH of the soil is well within the stipulated standard of neural soil. Toxicity of the metals in the soil are far below the stipulated standard of the agricultural soil. The concentration of the metals quantified has no effect in the root zone soil of the agricultural field/land.

Recommendations:

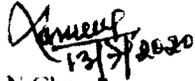
In view of the above it is recommended as follows:

- i. The industry should get the Ash Pond design reviewed by some reputed institutes like IITs, NITs etc.
- ii. The Ash Pond be designed taking into account all the possible factors affecting its stability (Highest flood level, Heavy rainfall, Earthquake etc.)
- iii. No ash slurry be accumulated in these ponds till the bund is designed and repaired accordingly.
- iv. The Industry should submit a time bound action plan to evacuate the ash already accumulated in the Ash Ponds as well as the generated ash separately

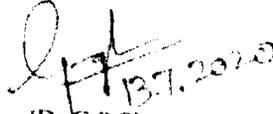
IR_OA25/2020/E2 dated June 2020

in compliance to Fly Ash Notifications for 100% fly ash utilization and conditions of Environmental Clearance.

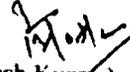
- v. The power generation capacity of the plant may also be regulated based on the capacity of the Fly Ash utilization submitted by the industry.



(R.N Choudhary)
Regional Officer, JSPCB
Regional Office, Dhanbad



(Dr G.P. Singh)
Scientist-D, CPCB, Eastern
Regional Directorate,
Kolkata



(Mukesh Kumar)
District Magistrate,
Bokaro District



Annexure -I

Water and soil sampling report

A. Water Sampling

Sl No.	Source	Location	Parameter	pH	TSS	TCr	Fe	As	Se	pb
			Stipulated norm		0.05mg/l	0.05mg/l	0.3mg/l	0.01mg/l	0.01mg/l	0.01mg/l
			Unit for analysed samples		mg/l	ppb	ppb	ppb	ppb	ppb
i.	GW	Hand pump near Durgamandir		7.154	-----	2.74	8273	0.34	NT	431
ii.	Surface water	Natural Drain		7.159	37	2.0	1897	0.66	33.43	1371
iii.		Well behind Swasthay kendra		6.789	5	1.47	212.67	0.39	15.17	470
iv.		River Koner Upstream		7.674	120	11.36	9365	1.93	NT	1645
v.		River Down stream		7.604	214	13.90	1239	2.37	NT	2037

B. Soil sampling

Sl no.	Source	Location		Parameters					
				pH	Pb	Se	Fe	TCr	As
			Permissible limit(all values in mg/kg except pH)		200	2.0	50000	200	50
i.	Agricultural soil	near ash pond	values in gm/kg	7.3	2.94	0.002	20.4	0.009	0.001