

Item No. 1

**BEFORE THE NATIONAL GREEN TRIBUNAL
CENTRAL ZONE BENCH, BHOPAL**
(Through Video Conferencing)

Original Application No. 35/2022 (CZ)

Budhsen Rathore

Applicant(s)

Versus

Union of India & Ors

Respondent(s)

Date of completion of hearing and reserving of order: 17.03.2023

Date of uploading of order on website: 21.03.2023

**CORAM: HON'BLE MR. JUSTICE SHEO KUMAR SINGH, JUDICIAL MEMBER
HON'BLE DR. ARUN KUMAR VERMA, EXPERT MEMBER**

For Applicant(s):

Mr. Saurabh Sharma, Adv

For Respondent(s):

Mr. Sachin K Verma, Adv

Mr. Yadvendra Yadav, Adv

Mr. Deepesh Shukla, Adv

ORDER

1. Disposal of fly ash is of grave concern to the environment as well as public health. There are numerous scientific publications that have highlighted the serious concern. In a physicochemical study of Kanhan river water receiving fly ash disposal waste water of Khaperkheda Thermal Power Station, India, published in International Research Journal of Environment Sciences, Vol. 2(9), 10-15, September (2013), ill effects when fly ash disposal off into river water has been described. Fly ash resulting from coal based thermal power plants is one of the alarming and continuously increasing sources of pollution leading to degradation of soil, water and air. Fly ash generated from thermal power plant and industrial waste discharged into the streams or dumped into surrounding land causes serious water and soil pollution problems. As

per Kanhan Study, values of conductivity, total dissolved solids, turbidity, chemical oxygen demand, alkalinity, hardness, and chlorides were very high in side stream water than the desirable values for drinking water. Concentration of copper, cadmium, zinc, lead, mercury and arsenic metals were observed within normal range posing no threats of pollution of heavy metals in water due to ash bund.

2. The present Original Application relates to an Ash Dyke breach of the Chachai Ash Pond of Amarkantak Thermal Power Station in District Anuppur, Madhya Pradesh which is operated by MPPGCL. The Ash Dyke breach took place on the early morning of 11th February 2022, which impacted and contaminated about 10 acres of fertile agricultural land with fly ash. This spillage has led to spoiling of the fertile agricultural fields of farmers who are living in the vicinity of the said Ash Dyke. The Ash Dyke breach also contaminated the Son river as the fly ash and water which has spilled from the Ash pond has reached the Son river which is about 1.5 km away from the Ash Dyke.

3. The Additional Condition No.7 for Water Pollution Control of the Consent to Operate specifically and categorically provided :

“7. The industry shall operate & maintain Ash Water Recirculation System (AWRS) to ensure 100% recirculation of overflow of the ash dyke. Industry shall make arrangement for transportation of fly ash to ash pond in the form of medium slurry mode system having 38% ash and 62% water as per MoEF directives”

4. Man has the fundamental right to freedom, equality and adequate conditions of life, in an environment of a quality that permits a life of dignity and well-being, and he also bears a solemn responsibility to protect and improve the environment for present and future generation.

5. Contention of the Applicant is that resultant air water and land pollution happened due to not installing requisite air pollution control and monitoring devices (FGD's and CAAQMS) to mitigate air pollution during operation of TPPs, unscientific handling and storage of fly ash beyond capacity of flyash dykes/ponds leading to devastating accidents due to their breach. Such breaches have resulted in contamination of water sources, damage to crops, loss of human lives and flora and fauna. Accumulated fly ash has been found a source of continuing damage to public health and environment. Several industrial areas are categorized as polluted industrial clusters on the basis of Comprehensive Environment Pollution Index (CEPI) prepared by CPCB. Stone crushers, coal mining and transportation in the area are also associated issues causing pollution.
6. The grievance in this application is use of fly ash and throwing & dumping it here and there by the Thermal Power Project in violation of environmental rules and regulation and causing adverse effect on human health and agriculture field. It is alleged by the Applicant that due to continuous dumping of fly ash in drains, around small potholes and ponds, along the road, fly ash keeps flying with the wind all around. Due to this it mixes with the breathing air in the environment and normal human being has problems of breathing.
7. The matter was taken up by this Tribunal on 09.05.2022 and the Respondents were directed to submit the reply. Reply has been filed. We have heard the learned counsel for the parties and perused the record.
8. The contention of the learned counsel for the Respondent No. 6, CPCB is that to address the environmental concerns of fly ash and to improve its utilization, the MoEF & CC has issued a Notification on 14.09.1999 with subsequent amendments dated 27.08.2003, 03.11.2009 and 25.01.2016. These notifications have been superseded by notification dated 31.12.2021. Both the notifications as well as the guidelines are mandatory in nature and must be

strictly adhered to by the Project Proponents as well as the Statutory authorities.

9. The contention of the learned counsel for the applicant is that Amarkantak Thermal Power Station of MPGCL is situated in Chachai, Anuppur District, Madhya Pradesh. The Plant comprised of three units. Unit No. 1 of 1x120 MW was commissioned in November, 1977 and decommissioned on 13.01.2015. Unit No.2 of 1x120 MW was commissioned in May 1978 and decommissioned on 01.05.2014. Unit 3 of 1x210 MW was commissioned in June 2008 which is still being operated and which was granted an Environmental Clearance by the Ministry of Environment & Forests on 29.04.2004. It is stated that as per the condition no. (vii) of Environmental Clearance dated 29th April, 2004 (EC) which is as under:-

“Ash generation would be 258 TPD in dry form and 819 TPD in wet form. Ash generated should be used in a phased manner as per provisions of the notification on Fly Ash Utilisation issued by the Ministry in September, 1999 and its amendments. By the end of 9th year full fly ash utilisation should be ensured. Only ash pond disposal of fly ash, and no dry storage is permitted. However, steps may be taken to dispose of the fly ash to other parties for use as raw material.”

As per the report on fly ash generation at coal / lignite based thermal power stations and its utilization in the country for the year 2020-21 published by Central Electricity Authority in August 2021 the Amarkantak Thermal Power Plant is utilizing only 64.29% of fly ash. It is important to mention here that the EC was granted in 2004 and the plant got commissioned in June, 2008. As per the MoEF Notification dated 03.11.2009 on Fly Ash utilization for Thermal Power Plants in operation before 03.11.2009, 100% fly ash utilization should take place within five years from the date of issue of the said fly ash Notification dated 03.11.2009 i.e by 2014. But the Amarkantak Thermal Power Station is non-compliant with the said fly ash notification till date. As there is

no 100% fly ash utilization the thermal power station has no option but to stack the fly ash in the ash ponds. It is stated that the two ash ponds of the Plant are completely filled up on 07.06.2016 and 30.04.2013 respectively and the Plant has no option but to keep on depositing the ash in either of the ash ponds. In this case, even after the Ash dyke no.2 being completely filled up on 30.04.2013 the ash slurry has been deposited in this pond since 08.06.2016 in this pond and every year 84000 MT ash is being deposited in this ash dyke. The details of Ash utilization submitted by the Project Proponent to MPPCB as on 30.09.2019 is given in the following table:-

Details of ash dyke capacity as on 30.09.2019 for 1*210 MW at ATPS,

Chachai

Sr no	No pf ash dyke	Capacity of ash dyke	Area of ash dyke	Remarks
1	Ash Dyke Phase-III ASH pond No.1	987000.00 m3	<u>13.16</u> <u>Hect.</u>	<u>Completely filled up as of</u> <u>07.06.2016</u>
2	Ash Dyke Phase-III ash pond No.2	1175000.00 m3	<u>14.235</u> <u>Hect.</u>	<u>Completely filled up as of</u> <u>30.04.2013</u>
3	Capacity Created by 1st stage raising of ash pond No. 2	557808.00 m3	<u>Within the</u> <u>area of</u> <u>Ash pond</u> <u>No. (2)</u>	<u>The ash slurry is being</u> <u>disposed off Since</u> <u>08.06.2016 in this pond.</u> <u>The balance capacity as</u> <u>of 31.05.2019 is</u> <u>1,13,389.00 m3 or</u> <u>158000 MT whereas</u> <u>about 84000 MT ash is</u> <u>being deposited per year.</u>

10. It is further submitted that there are violation of the condition of the consent to operate under the provisions of the Water (Prevention & Control of Pollution) Act, 1974 and the Air (Prevention & Control of Pollution) Act, 1981, –any industry, operation or process or an extension and addition there to, which is likely to discharge sewerage or trade effluent into the environment or likely to emit any air pollution into the atmosphere will have to obtain the

Consent. According to Section 2(k) Trade effluent includes any liquid, gaseous or solid substance which is discharged from any premise used for carrying on any (industry, operation or process or treatment and disposal system) other than domestic sewage . It is stated that the State Pollution Control Board grants one time Consent to Establish to a Project. Once the Project is established according to mandatory pollution control measures , the unit is required to obtain Consent to Operate by following certain mandatory conditions both under the Water (Prevention and Control of Pollution) act, 1974 and the Air (Prevention and Control of Pollution) Act, 1981. The Consent to Operate for the Amarkantak Thermal Power Plant was also based on certain Conditions which the Plant needed to follow mandatorily. Plant has discharged more than 62% water into the Ash Dyke leading to violation of the Consent Condition No.7. This mixing of excess of water into the Ash Dyke would in all likelihood led to the breach of Ash Dyke and spillage of Ash and Water into the fertile agricultural fields adjacent to the Ash Dyke.

11. The breach of Chachai Ash Dyke occurred on early morning of 11.02.2022, which was widely reported by media. On 12.02.2022 i.e a day after the breach occurred, in a news item published in Shadol Bhaskar dated 12.02.2022 titled 'Kheto me Jami Rakhar ki Parat, Son Nadi pahuncha dushit pani ', it has been reported to the effect that, – Ash pond wall of District's Amarkantak Thermal Power Station collapsed due to which water and ash of the seventy thousand meter capacity dam spilled over to nearby agricultural fields and reached upto Son river. Due to the collapse of the wall of Ash pond the administration negligence has been exposed”.

12. Effect of Fly Ash Disposal on Ground Water Quality near Parichha Thermal Power Plant, Jhansi: A Case Study' published in Current World Environment Vol. 10(2), 572-580 (2015) states that:

“Thermal power plant generates a huge amount of fly ash on combustion of coal which is becoming a major environmental issue. Thermal power plants are greatly facing a fly ash management

problem. Open dumping of fly ash can deteriorate the groundwater quality by runoff. In the present investigation, the ground water samples were collected from nearby areas of Parichha Thermal Power Plant at six locations during the period of Jan 2014 to May 2014. The samples were taken to the laboratory and analyzed for physico-chemical properties and heavy metal content. The physico-chemical analysis was done for the parameters like pH, Turbidity, Temperature, Electrical Conductivity, Alkalinity, Total Dissolved Solids, Total Hardness, Calcium Hardness and Magnesium Hardness. The concentration of Turbidity, EC and Alkalinity was exceeding the standard at all locations and shows that the groundwater of the area is not fit for drinking ...”

13. In yet another research paper titled *“The Impact of Coal Fly Ash Power Station on Distribution and Biodiversity of Freshwater Fishes in Rupnarayan River, West Bengal, India published in International Journal of Current Research, Volume 7, Issue 12, pp 23954-23961, December, 2015 on the issue of pollution by Fly Ash and its adverse effect on riverine ecology says that:*

“Most of the thermal power plants use bituminous coal as a fuel, which contains high amount of ash (up to 40%), sulphur (0.206%) and heavy metals (Hg, Mn, Cu, Pb, Ni, Fe, Cr and Cd) in varying proportion. But fly ash generally consists of nearly 50% silica which together with oxides of Al, Fe, and Ca makes up 95.99% of its contents. Mg, Na, K, Ti, S and C account for 0.53.5%. Trace elements make up the rest of the ash (Davison et al., 1974). The power plant disposed ash mixed hot wastewater on the river Rupnarayan and accordingly it has an adverse impact on the said river. So the physico-chemical characteristics of the river have been changed. A number of studies have showed that a large amount of heavy metal, like lead, copper, nickel, silicon etc and sometimes radionuclide (uranium & thorium) enrichment have been found in the disposal water.

Moreover, due to continuous deposition of fly ash on the river depth have been abridged. This change has prohibited Hilsa fish (Tenualosa ilisha) migration and laying eggs (Hilsa fish of river Rupnarayan is famous for its taste and smell). Finally, the amount of Hilsa fish wedged in the Rupnarayan river has reduced an alarming way. In India impact of thermal power fly ash effluents in the fisheries diversity in rivers was also done by several workers (Naik et al., 2013; Sukla and Sing, 2013; Pitchaikani et al., 2010; Wallia and Mehra, 1997 and 1998). Rupnarayan river is one of the significant rivers in west Bengal that need Serious concentration in its management and conservation of fishery resources. Detailed studies on this river are still lacking except Dinda (2014). Here we focused the fish diversity of Rupnarayan river of Purba Medinipur district at Kolaghat are decreases due to spontaneously discharges of coal fly ash in this river. It is clear from this study the river water parameters like temperature, pH, BOD, DO, alkalinity and suspended solid are directly affect the fish diversity. The study area also includes 04 kms upstream and 04 kms downstream from the point where K.T.P.S disposed waste water in the form of – ash mixed (from ash ponds) and oil, etc. mixed hot water in the river Rupnarayan (as a tidal river).”

14. As per submission by R-5, MPPCB the Ash Dyke breach took place on the early morning of 11th February 2022, which allegedly impacted and contaminated about 10 acres of fertile agricultural land with fly ash. The Ash Dyke breach allegedly also contaminated the Son river as the fly ash and water which has spilled from the Ash pond has reached the Son river which is about 1.5 km away from the Ash Dyke. Amarkantak Thermal Power Station, M.P. Power Generation Company Ltd., Chachai, Distt.-Anuppur (M.P) has obtained Consent to Operate—Renewal from the Answering Respondent for generation of 210 MWh of electricity vide letter dated 11.01.2022. The aforementioned Thermal Power Plant is a public sector unit of Madhya Pradesh Government for

production of electricity (MPGCL), which comes under essential services for the citizens of Madhya Pradesh. Respondent has issued directions under Section 33A of Water (Prevention & Control of Pollution) Act 1974, vide letter dated 22.02.2022 against Respondent no. 2, to conduct remediation and restoration of the polluted area due to the breach in Ash Dyke. It is stated that the Answering Respondent has been regularly monitoring the remediation and restoration work carried out by Respondent no. 2 of the contaminated area. It is also stated that the Answering Respondent has submitted a criminal complaint for registration under Section 43 & 44 of the Water (Prevention & Control of Pollution) Act 1974, in the Court of Chief Judicial Magistrate, District Anuppur (M.P.) for violation of Consent Conditions, with regard to for contaminating the tanki, nalla, and adjoining agricultural fields on 21.04.2022. Respondent No. 2 has constructed two silos (Ash Dyke) for storage of fly ash and bottom ash. That the Respondent no. 2 has also installed Ash Water Circulation System to recycle water to prepare ash slurry. That in compliance of directions issued by the Regulatory Authorities, Respondent No. 2 has conducted structural stability studies in year 2019 by premier national level institute Indian Institute of Technology, Indore (IIT, Indore). After detailed study of the analysis drawing, critical section, structural details and geotechnical data, it has been concluded on 26.11.2019 that the ash dyke is properly and scientifically designed and the present status is good for technical soundness, structural strength, stability, safety. IIT, Indore declared ash dyke structurally sustainable and safe for use. After the breach, an Expert Committee from IIT Indore visited the Chachai Ash Pond of Amarkantak Thermal Power Station in District Anuppur, Madhya Pradesh on 20.20.2022, and have recorded following observations:

(A) Failure is localised. No further distress is observed along the ash dyke.

(B) There is no evidence of overtopping, the level of ash was below the maximum slurry level during the breach.

(C) Numerous animal burrows were observed on the dam body, which indicated that the possible reason for the failure is the internal seepage through the burrows.

15. As per the Report submitted by IIT Indore in April, 2022, it is clear that the reasons for the failure of Ash Dyke is shortened seepage paths and increased seepage volume through the burrow pits have resulted in internal piping. The small animal burrows observed in the dam body have significant effect on altering the hydraulic control of the dam and the failure has happened due piping through the dam body. Thus it is apparent on the face of the facts that the breach in Ash Dyke was not due to the mismanagement of fly ash, details of instructions issued to Respondent No. 2 time to time for the compliance of rules, guidelines and consent conditions are as follows:

Sr. No	Letter no and date	Instructions issued
1	6190 01.07.2010	Efforts to augment the ash utilization to meet the target percentage as per the fly ash notification 2009
2	2215 18.03.2013	Follow up for the various efforts taken by the unit in compliance of fly ash notification 1999, 2009
3	3361 14.05.2015	Follow up for the various efforts taken by the unit in compliance of fly ash notification 1999, 2009
4	1514 20.10.2015	Regarding disposal of fly ash as per notification 2009
5	5236 31.08.2016	Regarding 100% utilization of fly ash.
6	1198 05.10.2016	Regarding effective action taken under compliance of fly ash notification
7	10 11.04.2017	Regarding 100% utilization of fly ash.
8	581 06.03.2019	In compliance of fly ash notification, state level monitoring committee meeting was organised on 25/02/2019, in which bullet points are:- 1. Regarding filling of ash in closed mines and low-lying areas. 2. Regarding maximum use of fly ash in construction work and manufacture of ash based products. 3. Regarding amendment in schedule of rates/departmental rules for fly ash utilization. 4. Regarding issuing of order from district collector's for use of fly ash in construction work and to stop manufacturing of earthen bricks, where fly ash is available.
9	5067 11.02.2022	Regarding restoration work to be done to counter pollution due to ash dyke breach.
10	5109 17.02.2022	Regarding measures to be taken to control pollution caused by breach of ash dyke
11	1641	Directions issued U/s 33-A of Water Act 1974

	10.03.2022	in compliance of directions issued by Hon'ble NGT in OA 164/2018
12	483 06.05.2022	Regarding restoration work to be done to control pollution due to ash dyke breach.
13	851 05.06.2022	To complete the remaining remediation & restoration work.

16. During COVID-19 Nationwide Lockdown, movement/ transportation of vehicles and bulkers carrying fly ash for disposal purposes were restricted/hampered, although generation of power was categorized under emergency services. Due to this there was a backlog regarding disposal of fly ash. That letters dated 28.04.2020 and 01.05.2020 were issued to the District Collector Anuppur (M.P.) to allow the transportation of vehicles carrying fly ash so that the same can be disposed off as per the procedure laid down by MoEF&CC and CPCB. Later when the situations were normalised, after approximately 2 years, but during the Nationwide Lockdown, sluggishness in economic activities and restrictions in movements, the use of fly ash in mixing with clinkers for manufacturing cement had gone down drastically. Respondent has issued Consent to Operate in favour of Respondent No. 2, wherein the underlying conditions stipulates the industry to maintain Zero Discharge of Effluents and the utilization of Fly Ash in correspondence to the Fly Ash Notification issued MoEF&CC so that the same does not affect the environment and human health.

17. On the day of the breach, water samples were collected by the Madhya Pradesh Pollution control Board, Regional Office, Shahdol, and on analysis of the same it was concluded that the water quality of Son River was found normal and thus was not affected by the breach in ash dyke, however the water samples collected from the adjoining nalla was affected by the breach, and the water quality of the tanki was mainly affected due to increase in suspended solid an unacceptable colour and appearance was found and thus the Respondent issued direction under Section 33A of the Water (Prevention and Control of pollution) Act, 1974 vide letter dated 22.02.2022 against Respondent No. 2, to initiate restoration and remediation work. That as per Tehsildar,

Anuppur vide letter dated 20.06.2022 it is stated that no loss of human or animal life was recorded due to the breach.

18. The Joint Committee inspected the site on 4th and 5th June, 2022 and the Report of the same was filed before the Hon'ble Tribunal on dated 27.06.2022, wherein it was observed that:

a. No loss of animal or human life.

b. At the time of breach in ash dyke, no crop was standing on adjacent agricultural field.

c. No adverse effect on the water quality of Son River.

d. Ash deposited along bed of tanki, nalla and from affected agricultural field is removed.

e. Joint committee has concluded breach in ash dyke as one spot localised failure and quoted IIT Indore study report.

19. Respondent issued direction under Section 33A of the Water (Prevention and Control of pollution) Act, 1974 vide letter dated 22.02.2022 against Respondent No. 2, to initiate restoration and remediation work, the progress of which is continuously supervised and monitored by Regional Office, MPPCB, Shahdol and the report of the same is submitted with the Respondent. That as per the Factual and Action Taken Report filed by the Joint Committee before Tribunal it was observed that restoration and remediation work of affected portion of tanki, nalla and adjacent agricultural field is almost complete and, the water quality of Sone River is not affected by the breach and fly ash is removed from affected portion of agricultural field and tanki, nalla. approximately Rs. 14,46,267/- (Fourteen lakhs, forty-six thousand and two hundred and sixty-seven), is incurred by Respondent No. 2 for the restoration and remediation of tanki, nalla and the adjacent agricultural field.

20. As per the OrderSheet of Tehsildar, Anuppur regarding details of compensation sanctioned, name of owner of affected agricultural field along with Rakba & Khasra, and the details of compensation paid to the affected farmers i.e., Rs. 5000/- each through their bank account. there are no listed

contaminated sites falling under District Anuppur, however industries are time to time instructed by the Answering Respondent to establish, maintain, operate and upgrade proper and effective pollution control equipment's, major units have also installed OCEMS & CAAQMS having connectivity to Environmental Surveillance Centre, Bhopal. Respondent have taken all necessary steps for safeguard of environment with regards to the Ash dyke breach.

21. Learned counsel for the R-2, MPPGCL ATPS has submitted that on 11.02.2022 at 01.00 AM an incident of the sinking of spillway and accumulated water flowing downstream was reported. Immediately necessary activist for restoration and stoppage of leaking water were initiated, and first-hand work was accomplished as of 1:00 PM. It is important to submit that there was no crop in the field that was affected, and also that there was no loss of crop, animal or human life that was recorded. In addition, the water samples were also collected and tested from the Sone River and nearby areas. There was no pollution of the water in the report.

22. The answering respondent has regularly monitored the restoration work progress and completed the following works:

- (i) Cleaning of Tanki Nallah.
- (ii) Cleaning of agricultural land on the left side of Tanki Nallah.
- (iii) Cleaning of agricultural land on the right side of Tanki Nallah.
- (iv) Construction of coffer band for construction of new Spillway.
- (v) The remedial measures m suggested by IIT, Indore.
- (vi) Making farmers agriculture fields as original.
- (vii) Construction of check bad in Tanki Nallah.
- (viii) Fly Ash Management.

That after the incident, proper measures and precautions were suggested by the CE (Civil Engineering), MPPGCL, Jabalpur in a letter dated 03.06.2022 to maintain the ash bund and to avoid any misfortunes in the future.

23. The affected agricultural land of about 1 acre on the left side of the Tanki Nallah and about 3 acres on the right side of the Tanki Nallah has been cleaned. Thus, about 4 acres of field of farmers were cleaned and made as

original by dumping of earth & ploughing satisfactory suitable for agriculture and is no violation of the conditions mentioned in Environmental Clearance and Consent to Operate. As per the details of fly ash utilization since 2017 in the ATPS plant, there has been regular utilization of fly ash and in 2019-20 it named up to 100.55% utilization. Moreover, up to May 2022 the total utilization is 41.48. In compliance with the MoEF & CC notification and policy, the answering Respondent also invites Expression of Interest (EOI) from interested Ash User for utilization of pond ash on free of cost basis to eligible projects like Road Project / Mine Backfilling / Agriculture, etc. This invitation for free of cost distribution of 2.3 LMT fly ash is annually released to end-users.

24. It pertinent to mention that presently 47 nos of bricks manufacturers are already registered with the answering respondent for the utilization of fly ash. All possibilities are further being explored for appropriate use of fly ash stacked in the pond ash dam by other agencies in the ambit of MOEF notification with the open-hearted cooperation and co-ordination without considering any financial obligations.

25. The incident took place due to latent and unforeseeable conditions despite regular inspections by the experts. It is submitted that the safety and stability of the aforesaid ash dyke have been checked earlier on 21.11.2019 by IIT, Indore. However, when the unfortunate incident occurred, an immediate inspection was carried out by IIT Indore and the reason for the breach of ash dyke analyzed in their report dated 07/04/2022. The following reasons for failure were observed by the experts in their report:

- (i) The small animal burrows in the dam body
- (ii) the failure happened due to piping through the dam body
- (iii) Shortened seepage paths and increased seepage volume through the burrow pits have resulted in internal piping.

26. In the research paper "Fly ash utilisation and its potential benefits in agriculture, A review" published in Indian Journal of Soil Conservation, Vol 47 No1, pp 87-95, 2019 It is stated that:

"Fly ash contains almost all macronutrients (except nitrogen) and micronutrients, but has low organic carbon. It also contains heavy metals in trace quantity. Due to fine texture of fly ash, it mimics the water holding capacity of light textured soils and reduces the compaction of clay soils. These improvements in physical and chemical nature coupled with positive effect on soil microorganisms' activity in problem soils produce yields of various crops at specific recommendation rates which differ from crop to crop. The concentration of nutrients was found more in plants grown on fly ash amended soil than compared to control soil crop. Fly ash can be used as liming material on acid soils, acid mine soils or alkali soils for improving the pH of the soil depending on the nature of soil and fly ash. With growing threat of environmental degradation due to massive use of chemical fertilizers for pest control and nutrient management, fly ash based bio pesticides and bio fertilizers have emerged as safe and effective alternatives. (Mind to its full ideal potential for improvement of soil properties fly ash can be recommended for use in the field of agriculture but its judicious and balanced use is mandatory to avoid any adversity."

In another research article "Use of Fly ash in Agriculture: A Way to Improve Soil Fertility and its Productivity- published in Asian Journal of Agricultural Research, ISSN 18191894. Year 2010, Volume: 4, Issue: I. Page No.: 1-14 it is stated Several research have suggested that Fly ash may be utilised as a soil amendment that may enhance the physical, chemical, and biological aspects of damaged soils and is a source of easily accessible micro and macronutrients for plants. Due to its effectiveness in modifying

soil health and crop yield, fly ash has considerable agricultural potential. The high concentration of elements (K, Na, Zn, Ca, Mg, and Fe) in fly-ash enhances the productivity of a variety of agricultural crops.

27. In view of the report of the expert the District Collector Anuppur directed the Project Proponent to complete the work and in compliance of the report submitted to the Collector it was reported that

- (i) The remedial measures as suggested by IIT, Indore has been taken. Construction of coffer bond work is completed.*
- (ii) The details of compensation to be paid to farmers by the answering respondent has been asked by revalue authority vide office letter. 501.2100'447 dated 07.03.2022 letter no. 756 dated 29.03.2022 and letter no. 84 dated 27.05.2022. Thereafter, revenue authority is preparing compensation and the answering respondent is ready and willing to pay as per guidelines of revenue department.*
- (iii) NOC from farmers has been received from cleaning their fields and making them suitable for agriculture.*

28. The answering Respondent completed all the restoration work. The work orders of Rs.12,33,897/- were for the following works:

- (i) Dumping of earth for plugging of damaged spillway of pond no.1 at ATPS, Chachai.*
- (ii) Transportation of marshy soil/ash from nearby agricultural land & Tanki Nallah in ash bard area*
- (iii) Construction of coffer bond at upstream side on the damaged spillway of ash pond no. 01 of ash dyke phase- III.*
- (iv) Hiring of 'CB for collection of ash from Tanki Nallah and agricultural land*
- (v) Hiring of tractor for earth topping in damaged agricultural land and ploughing for making of field as original land near ash Fund.*

29. It is further argued that the Thermal Power Project was always vigilant and carried out regular inspections by the experts prior to the incident also to monitor the stability and safety of the ash dyke at ATPS Chachai. However, as observed and mentioned in the Expert Report by IIT, Indore dated 07.04.2022, the incident took place due to latent failure which was unintentional and unforeseeable.
30. The Fly ash utilization is a constant and symbiotic process since the ash gets accumulated post generation of power; the utilization is to be undertaken as per the provisions of the EC, CTE and CTO. The utilization therein has to be conducted strictly in accordance with the terms of the Fly Ash Notification - a condition which is compulsorily incorporated in the approvals granted by the authorities which in the present case have also been done in the NOCs for undertaking ash dumping in low lying areas.
31. The Fly Ash Guidelines, 2019 inter alia mandate use of fly ash in mines filling as well as reclamation of Low-Lying Areas. Para 4 of the Fly Ash Guidelines provide the steps to be undertaken for Loading/unloading, storage and transportation of fly ash. Para 5 then provide for reclamation of Low-Lying area using Ash. Clause 5.1 (Precondition) under sub-clause 5.1.2. states that the "Power plant/land owner/agency shall obtain statutory permission from regulatory authorities such as SPCB as per the requirement." Para 6 spells the mechanism for carrying out disposal of fly ash in voids of abandoned mines – these ash fillings are required to be regularly monitored not only during the period of disposal of ash into the mine void but also after the reclamation of mine void is done. The detailed monitoring programme is given under Clause 6.3.1. In the event of deterioration of environmental quality, the same shall be reported to the CECB immediately and suitable preventive/corrective action will be undertaken.

32. Pertinently, with respect to processing the application for consideration of grant of permission for reclamation of Low-Lying Areas/Abandoned Quarries, the Fly Ash Guidelines stipulate the following under Para 8:

“8.1 The activity of reclamation of Low-Lying Areas / Abandoned Quarries will be regulated under the provisions of Water (Prevention and Control of Pollution) Act, 1974 and Air Water (Prevention and Control of Pollution) Act, 1981. The stipulations specified in this guideline is consistent with the provisions of Fly Ash Notification, 1999 and amended thereafter which should be a special condition mentioned in consent order issued under the Water (Water (Prevention and Control of Pollution) Act, 1974 and the Air Water (Prevention and Control of Pollution) Act, 1981. Thereafter any deviations from the guidelines shall be treated as violation of both Water (Prevention and Control of Pollution) Act, 1974 and Air (Prevention and Control of Pollution) Act, 1981 and action as deemed proper shall be taken under Consent Administration by the Board.

8.2 Necessary clearances shall be obtained from the concerned agencies such as DGMS, SPCB, IBM, MoC, etc.”

33. The Fly Ash Notification 2021 states under Para A (5) the following:

“The un-utilised accumulated ash i.e. legacy ash, which is stored before the publication of this notification, shall be utilised progressively by the thermal power plants in such a manner that the utilization of legacy ash shall be completed fully within ten years from the date of publication of this notification and this will be over and above the utilisation targets prescribed for ash generation through current operations of that particular year: Provided that the minimum quantity of legacy ash in percentages as mentioned below shall be utilised during the corresponding year and the minimum quantity of legacy ash is to be calculated based on the annual ash generation as per installed capacity of thermal power plant.

YEAR AND DATE OF PUBLICATION	1ST	2ND	3RD – 10TH
Utilisation of legacy ash (in percentage of Annual ash)	At least 20 percent	At least 35 percent	At least 50 percent

Provided further that the legacy ash utilisation shall not be required where ash pond or dyke has stabilised and the reclamation has taken place with greenbelt or plantation and the concerned State Pollution Control Board shall certify in this regard. Stabilisation and reclamation of an ash pond or dyke including certification by the Central Pollution Control Board (CPCB) or State Pollution Control Board (SPCB) or Pollution Control Committee (PCC) shall be carried out within a year from the date of publication of this notification. The ash remaining in all other ash ponds or dykes shall be utilised in progressive manner as per the above-mentioned timelines.

Note: The obligations under sub-paragraph (4) and (5) above for achieving the ash utilisation targets shall be applicable from 1st April, 2022.

34. The Fly Ash Notification 2021 entails various other compliances apart from utilisation which have been provided under Para A (2) viz. ways of utilisation of the fly ash so generated, formation of committee, installation of silos, compliance under Para B, etc. The validity of these compliances and ensuing obligations have crystallized and come into force from the date of publication i.e., 31.12.2021. It is only with respect to targets for utilisation of fly-ash which have been made applicable w.e.f. 01.04.2022. Thus, for all other compliances the date of 31.12.2021 is to be reckoned as the date of the notification being in force.

35. Solely for the purpose of targets of utilisation, the author of the Notification has given a window of three months of deferment as a transition

period – with an umbrella deadline of 10 years to comply from the date of publication. It is provided for the thermal power plants to put their house in order so that they are able to comply with the minimum requirements of disposal. This would be necessary since there are penal consequences for non-compliance.

36. Under Para B(6), the Central Government has stipulated that “Filling of low-lying areas with ash shall be carried out with prior permission of the State Pollution Control Board or Pollution Control Committee (PCC) **for approved projects, and in accordance with guidelines laid down by Central Pollution Control Board (PCB) and the SPCB or the PCC shall publish approved sites, location, area and permitted quantity annually on its websites.**” Thus, any activity of fly ash disposal qua filling of low-lying areas is always carried out under the overall supervision and strict scrutiny of the State Pollution Control Board/Chhattisgarh Environment Conservation Board (CECB) (the Respondent Nos. 3 and 4). Part C of the Fly Ash Notification 2021 entails the Environmental compensation for noncompliance – the answering Respondent therefore shall be liable in case of breach of the provisions of the notification and if the utilisation is not undertaken as per the terms thereof.

37. The law in respect of the Fly Ash Notification 2021 and the compliance thereto has been laid down by the Hon’ble Supreme Court in the Aravali Power Case, which is being reproduced hereunder –

*“12. In view of the above background, it would be necessary for the MoEF&CC to revisit whether the parameters which have been prescribed by the notification dated 31 December 2021 must be modified taking into account the provisions of the Rules of 2016, to the extent to which the applicability of the Rules is attracted to the utilization, transportation and disposal of fly ash. **Besides conducting this exercise, MoEF&CC shall ensure that the enforcement, monitoring, audit and***

reporting mechanism which is envisaged in paragraphs E(3) and E(5) of the notification dated 31 December 2021 is duly put into place and enforced scrupulously. Unless steps have already been taken to enforce the precautionary steps envisaged in the notification, MoEF&CC shall do so within a period of three months from the date of this judgment. In doing so the precautionary principle shall be followed. The MoEF&CC shall also determine upon due analysis whether any further modification of the notification is necessary to comply with the provisions of the Rules of 2016 noticed above and other cognate legislation, including subordinate legislation bearing on the utilization, transport and disposal of fly ash in an environmentally sustainable manner.

...

15 We clarify that this judgment shall not be construed as a decision on merits upholding the validity of the notification dated 31 December 2021. Any party aggrieved by the terms of the notification would be at liberty to pursue the remedies which are available in law before the appropriate forum.

38. Ash generation in coal and lignite based TPPs in various forms such as dry ash, bottom ash, pond ash and mound ash are required to be managed in such a manner that it does not affect the environment. Utilisation of ash for reclamation of low-lying areas and abandoned quarries is recognised as an alternate option and therefore, the MoEF & CC has issued the aforementioned notifications, time and again, to address the utilisation of ash for various purposes.

39. The matter of fly ash generation and disposal to mitigate air pollution during operation of TPP's was considered in **O.A. No. 164 of 2018 (Ashwani**

Kumar Dubey vs. Union of India & Ors) and the Principal Bench of this Tribunal found following facts which are enumerated as follows:

The Tribunal also considered the subject of parameters for determining environmental compensation. Apart from the said issues, there was specific consideration with regard to the breach of fly ash dyke of ESSAR Thermal Power Plant and NTPC, Vindhya Nagar at Singrauli, M.P. In O.A. No. 164/2019, with reference to breach of fly ash dyke of ESSAR Thermal Power Plant and NTPC, Vindhya Nagar at Singrauli, M.P., the Committee appointed by this Tribunal headed by Justice Rajes Kumar, former Judge of Allahabad High Court, in its report dated 03.11.2019 observed:-

“(2) By persuasion and monitoring, the Fly Ash disposal by the Thermal Power Plants has been increased but 100% disposal could not be achieved. Disposal of stocked Fly Ash has not yet been started. An exclusive meeting of the Thermal Power Plants has been held on 22nd October, 2019. The meeting was very successful. Some positive suggestions have come out to deal with the Fly Ash. Copy of the Minutes has already been sent by email. It is stated that the Fly Ash is the main cause of the air pollution in the Singrauli-Sonbhadra area. Since the installation of the Thermal Power Plant(s) from the year 1981 onwards, no sincere effort was made by the Thermal Power Plants for the disposal of Fly Ash. It is only because of the sincere effort made by the Committee and regular monitoring, the Thermal Power Plants have started taking steps for disposal of Fly Ash.

(3) Construction of the Fly Ash Dyke and its maintenance was not found technically sound and proper. Recently, two Fly Ash Dykes – one of ESSAR Thermal Power Plant and another of NTPC, Vindhyanagar were breached, causing heavy environmental damages. The Committee has taken serious note about this happening and has given direction to all Thermal Power Plants to get the certificate of the third party expert about the construction and stability of the Fly Ash Dyke. The Committee is seriously monitoring.

(4) Since long, the industrial effluents have been drained in the Rihand Reservoir. The Fly the Fly Ash has also been drained by some of the Thermal Power Plants, Ash travelled to the

Rihand Reservoir, polluting the water of the Rihand Reservoir, which is only source of water. The committee has taken a very serious note of this issue and directed the U.P. Pollution Control Board to prepare a DPR for de-silting of sludge in order to purify the water and to increase the capacity of the Rihand Reservoir which has been substantially reduced due to drainage of affluents and fly ash.

(8) Shri Ashwani Kumar Dubey has filed one Application seeking the various reliefs on account of the environmental damages being cause by the breach of Fly Ash Dyke of ESSAR Thermal Power Plant. The enquiry in pursuance thereof is going on. Shri Ashwani Kumar Dubey has also filed a second Application seeking various reliefs on account of the breach of the Fly Ash Dyke of NTPC Vindhyanagar causing environmental damages. The enquiry in this regard is going on and is pending.”

18. Finally, the Tribunal passed following operative order:-

“30. We have considered the written submissions filed by the individual TPPs. In view of earlier orders dealing with the contentions of the TPPs, there is no merit in the stand that the said plants are not liable for 100% fly ash disposal. Difficulties pointed out are of no relevance as the same are to be resolved by the administration and not by the victims of pollution whose rights are being affected. Environment cannot be violated against statutory norms. Violation of statutory notifications needs to be visited sternly in terms of enforcing the same, recovering compensation and prosecuting the violators. Whatever be the individual circumstances, it cannot be a ground to disobey law and to commit criminal offence under the Water Act, Air Act and EP Act. There is no discretion available with this Tribunal to dispense with the mandate of law. Statutory provisions are binding on every TPP without any exception. It is, thus, not necessary to go into the justification or otherwise of such impermissible defence of the TPPs.

31. In view of above, all TPPs must take prompt measures for disposal of both current and accumulated fly ash. In respect of non-compliant TPPs, Polluter Pays principle has to be applied

from the cut-off date of 31.12.2017, apart from other statutory consequences for continued violations.

32. *Thus, our directions are as follows:-*

- a. The TPPs may take prompt steps for scientific disposal of fly ash in accordance with the statutory notification issued by the MoEF&CC under the provisions of EP Act requiring 100% utilization and disposal of fly ash.*
- b. For the non-compliant TPPs, environmental compensation needs to be determined w.e.f. the cut-off date of 31.12.2017 as stipulated in the Notification dated 27.01.2016.*
- c. CPCB may accordingly compute and levy Environmental Compensation in accordance with the formula referred to above w.r.t. individual TPPs in accordance with law and submit compliance report to this Tribunal before the next date.*
- d. CPCB Guidelines of May 2019 for Utilization/Disposal of Fly ash for Reclamation of Low Lying Areas and in Stowing/Back filling of Abandoned Mines/Quarries may be complied.*
- e. Task Force of Ministry of Power and Ministry of Coal may recommend list of abandoned mines/quarries for mine back filling purposes to the CPCB. CPCB may notify the same accordingly for use by the TPPs as per applicable guidelines and permission from State PCBs/PCCs.*
- f. A Committee comprising of CPCB and IIT Roorkee may assess the environmental damage with regard to the breach sites at Vidhyanchal TPP an Essar TPP in Singrauli area and submit its recommendation within three months. CPCB shall be at liberty to engage any other technical expert for this purpose.*
- g. The Committee comprising of Collector, CPCB and Member Secretary of MP State Pollution Control Board may assess the damage with regard to the breach sites at Vidhyanchal TPP and Essar TPP in Singrauli area to the crop and agricultural productivity and ensure effective*

restoration/remediation of affective sites within three months.

- h. CPCB may ensure implementation of action plans approved by it in accordance with timeline as provided in the statute.*
- i. A joint Committee comprising of MoEF&CC, CPCB, IIT Roorkee and any other member considered necessary may submit quarterly progress report on recommendations of Expert Committee of Niti Aayog for enhanced utilization of fly ash in various sectors: mines, roads, cement, industries and bricks etc., along with its implementation status.*
- j. The present order is subject to proceedings pending before the Hon'ble Supreme Court and where stay is operative, this order will not operate till stay continues and thereafter abide by orders of Hon'ble Supreme Court.”*

.....

The recommendations in the report are as follows:-

“i. Industrial units have engaged professional institute NEERI, Nagpur to assess the damage; the institute needs to assess the site specific long term direct or indirect impact on the flora fauna, human health and consumptive cost.

ii. Industrial units need to comply for 100 % fly ash utilization to avoid such incidence in future.

iii. To install monitoring stations on the affected sites, to continuously monitor the movement of plume underground or the leaching of toxic heavy metals from the sediment

iv. Industrial units need to take care for the health of worker s employed for spill clean-up working.”

40. We also note that the Tribunal has been considering the issue of compliance of Notification dated 31.12.2018 issued by the MoEF&CC requiring 100% utilization of fly ash vide order dated 12.02.2020 in **Original**

the said order, following directions were issued:-

“32. Thus, our directions are as follows:-

- a. The TPPs may take prompt steps for scientific disposal of fly ash in accordance with the statutory notification issued by the MoEF&CC under the provisions of EP Act requiring 100% utilization and disposal of fly ash.***
- b. For the non-compliant TPPs, environmental compensation needs to be determined w.e.f. the cut-off date of 31.12.2017 as stipulated in the Notification dated 27.01.2016.*
- c. CPCB may accordingly compute and levy Environmental Compensation in accordance with the formula referred to above w.r.t. individual TPPs in accordance with law and submit compliance report to this Tribunal before the next date.***
- d. CPCB Guidelines of May 2019 for Utilization/Disposal of Fly ash for Reclamation of Low Lying Areas and in Stowing/Back filling of Abandoned Mines/Quarries may be complied.***
- e. Task Force of Ministry of Power and Ministry of Coal may recommend list of abandoned mines/quarries for mine back filling purposes to the CPCB. CPCB may notify the same accordingly for use by the TPPs as per applicable guidelines and permission from State PCBs/PCCs.*
- f. A Committee comprising of CPCB and IIT Roorkee may assess the environmental damage with regard to the breach sites at Vidhyanchal TPP an Essar TPP in Singrauli area and submit its recommendation within three months. CPCB shall be at liberty to engage any other technical expert for this purpose.***
- g. The Committee comprising of Collector, CPCB and Member Secretary of MP State Pollution Control Board may assess the damage with regard to the breach sites at Vidhyanchal TPP and Essar TPP in Singrauli area to the crop and agricultural productivity and ensure effective restoration/remediation of affective sites within three months.*
- h. CPCB may ensure implementation of action plans approved by it in accordance with timeline as provided in the statute.*
- i. A joint Committee comprising of MoEF&CC, CPCB, IIT Roorkee and any other member considered necessary may submit quarterly progress report on recommendations of Expert Committee of Niti Aayog for enhanced utilization of fly*

ash in various sectors: mines, roads, cement, industries and bricks etc., along with its implementation status.

- j. The present order is subject to proceedings pending before the Hon'ble Supreme Court and where stay is operative, this order will not operate till stay continues and thereafter abide by orders of Hon'ble Supreme Court.*

Copy of this order may be conveyed to MoEF&CC, Ministry of Power, Ministry of Coal, CPCB, IIT Roorkee and MP State Pollution Control Board. CPCB may put the order on its website and communicate the same to all concerned TPPs."

10. *In view of the above, we direct:*

- i. Fly ash disposal may be undertaken as per the directions in the order of this Tribunal dated 12.02.2020 referred to above.*
- ii. Fly ash disposal in mounds and backfilling of ash in abandoned mines may be undertaken as per the CPCB guidelines. If necessary, Indian Bureau of Mines, Dhanbad may also be consulted so that latest technology is utilized and all necessary safeguards are adopted.*
- iii. Report of the CPCB regarding Cost apportionment for de-silting/restoration of Rihand Reservoir is accepted and further steps, including further study be undertaken as recommended by the CPCB. The U.P Irrigation Department may coordinate such study.*
- iv. Anpara TPS and Lanco-Anpara power plants may stop ash pond overflow discharge into Rihand Reservoir to the extent the work remains unexecuted.*
- v. The NTPC, Vidhyachal may deposit amount of Rs. 10 Crores as recommended by the Oversight Committee with the State PCB towards interim compensation, deducting the amount already deposited. The plant may also develop RCC wall around the plant in the manner recommended.*
- vi. The liability for environmental compensation in respect of UPVUN, Anpara and NTPC Vidhyachal may be assessed by joint Committee of CPCB and the State PCB within two months. The nodal agency will be the State PCB for coordination and compliance.*
- vii. The transportation measures may be adopted as per suggestions of the Committee and directions of the Hon'ble Supreme Court.*

41. In O.A No. 164/2018 the Principal Bench of this Tribunal considered the compliance of the recommendations of the Committee and the road map for future guidance and held as follows:

18. *In the light of alarming situation found on verification of the ground situation, it is clear that serious violations are continuing in failure to*

prevent air and water pollution by the TPPs. Requisite air pollution control devices (FGD) are not being installed, CAQMS are not being installed at proper locations and connected to CPCB server, huge accumulated flyash is not being utilised nor scientifically stored, the ponds/dykes are not properly maintained resulting in polluting water sources, air and land, apart from adverse health effects and damage to the flora and fauna. Singrauli and Sonebhadra industrial areas prominently figure in the CEPI index prepared by CPCB in respect of polluted industrial areas. This Tribunal has already issued directions to take remedial measures in respect of such areas to achieve the laid down norms for air, water and soil in OA No. 1038/2018, News item published in "The Asian Age" Authored by Sanjay Kaw Titled "CPCB to rank industrial units on pollution levels". Though the appeals are pending before the Hon'ble Supreme Court against some of the directions, consistent with the interim orders of the Hon'ble Supreme Court, steps need to be taken to enforce environmental norms in the said areas. The said directions be complied and the statutory regulators may maintain constant vigil against any violations. Further, as responsible corporate organizations, the PPs need to discharge corporate social responsibility to honour dignity of human life and the environment. Bottlenecks in remedying the situation of not utilising accumulated flyash need to be tackled on war footing. Concerted and coordinated joint efforts by the PPs and the statutory regulators at highest levels are required. The process in which fly ash can be utilized include backfilling of mines, construction of roads, brick kilns and cement companies. It is stated during the hearing that the TPP may be prepared to provide fly ash to the brick kilns but the unresolved issue is of transportation. Such issue is not unsurmountable and can be resolved by coordination with brick kiln owners association and other stake holders. Suggested to permit brick making at or close to

the site of storage of fly ash may need consideration. There is need to lay down siting, design and engineering standards for the location, disposal, maintenance and regulation of Ash Ponds as breach of a fly ash ponds result in great disaster. There is also need to undertake public health and risk impact assessment in the areas of operation of TPPs and generators of fly ash. Another obstacle pointed out is advisory issued by the Ministry of Power dated 22.9.2021 that instead of being given free, flyash should be sold which is not viable as there are no buyers perpetuating storage to the detriment of environment and public health and cost. Not only such advisory is unmindful of disastrous consequences, it is also against recent statutory notification of MoEF&CC dated 31.12.2021. We find it to be so and direct that being detrimental to environment, the same will not be enforced. In compelling circumstances, to protect environment, we find it necessary to constitute a high-level Coordination Committee in exercise of our powers under section 15 of the NGT Act to be called the 'Flyash Management and Utilization Mission'. Details follow in later part of the order.

Notification dated 31.12.2021 issued by the MoEF&CC extending time for utilisation of fly ash:

19.The TPPs have referred to notification dated 31.12.2021 extending timeline for utilization of legacy fly ash for 10 years, subject to scientific management and subject to 100% utilization on average of three years and not less than 80% in any given year. We are not called upon to express any opinion about the validity of Notification dated 31.12.2021. It may appear to be a retrograde step in the face of quantity of fly ash noted earlier and continuing damage to the environment and public health unless the notification is properly understood and interpreted so as to remedy the situation. The object of the notification is not to nullify the mandate of the Air Act or standards of air quality or other norms but to provide further

opportunity beyond the earlier timelines, consistent with the mandate of complying with laid down environmental norms which are part of right to life. Violation of laid down air quality and other norms cannot and is not sought to be condoned. Nor there is any bar against remedying deteriorated environment of polluted industrial areas, in the light of recommendations based on ground verification. Thus, issue of violation of norms due to unscientific management and handling of fly ash remains including action against persons responsible for pollution and accidents, apart from issue of compliance of specific conditions of notification dated 31.12.2021 remains.

20. *As noted earlier, situation caused by failure of the TPPs to manage fly ash scientifically and to utilize the same within reasonable time is highly detrimental to public health and emergency measures in Mission Mode are required. Even the Notification dated 31.12.2021 recognizes the alarming situations which is clear from the text of the Notification itself quoted below:*

“S.O. 5481(E).—Whereas by notification of the Government of India in the erstwhile Ministry of Environment and Forests vide S.O.763 (E), dated the 14th September, 1999, as amended from time to time, the Central Government, issued directions for restricting the excavation of top soil for manufacturing of bricks and promoting the utilisation of fly ash in the manufacturing of building materials and in construction activity within a specified radius of three hundred kilometres from the coal or lignite based thermal power plants;

*And whereas, **to implement the aforesaid notification more effectively based on the polluter pays principle (PPP) thereby ensuring 100 per cent utilisation of fly ash by the coal or lignite based thermal power plants and for the sustainability of the fly ash management system, the Central Government reviewed the existing notification; and whereas environmental compensation needs to be introduced based on the polluter pays principle;***

*And whereas, there is a **need to conserve top soil by promoting manufacture and mandating use of ash based products and building materials in the construction sector;***

*And whereas, there is a **need to conserve top soil and natural resources by promoting utilisation of ash in road laying, road and flyover embankments, shoreline protection measures, low lying areas of approved projects, backfilling of mines, as an alternative for filling of earthen materials;***

*And whereas, it is necessary **to protect the environment and prevent the dumping and disposal of fly ash discharged from coal or lignite based thermal power plants on land;***

*And whereas, in the said notification the **phrase 'ash', has been used which includes both fly ash as well as bottom ash generated from the Coal or Lignite based thermal power plants;***

And whereas, the Central Government intends to bring out a comprehensive framework for ash utilisation including system of environmental compensation based on polluter pays principle;

And whereas, a draft notification on ash utilisation by coal or lignite thermal power plants in supersession of the notification of the Government of India, Ministry of Environment and Forests published in the Gazette of India, Extra Ordinary part II, section 3, sub-section (i) vide S.O.763 (E), dated the 14th September, 1999, by notification in exercise of the powers conferred under sub-section (1) and clause (v) of sub-section (2) of section 3 of the Environment (Protection) Act, 1986 (29 of 1986) read with clause (d) of sub-rule (3) of rule (5) of the Environment (Protection) Rules, 1986, was published in the Gazette of India, Extraordinary, Part II, section 3, sub-section (i), vide G.S.R. 285(E), dated the 22nd April, 2021 inviting objections and suggestions from all persons likely to be affected thereby before the expiry of sixty days from the date on which copies of the Gazette containing the said draft provisions were made available to the public;

And, whereas all the objections and suggestions received from all persons likely to be affected thereby in respect of the said draft notification have been duly considered by the Central Government;

Now, therefore, in exercise of the powers conferred by sub-section (1) and clause (v) of sub-section (2) of section 3 of the Environment (Protection) Act, 1986 (29 of 1986) read with clause (d) of sub-rule (3) of rule (5) of the Environment (Protection) Rules, 1986, and in supersession of the Notification S.O.763 (E), dated the 14th September, 1999 except as respect things done or omitted to be done before such supersession, the Central Government hereby issues the following notification on ash utilisation from coal or lignite thermal power plants which shall come into force on the date of the publication of this notification, namely:-

A. Responsibilities of thermal power plants to dispose fly ash and bottom ash.-

(1) Every coal or lignite based thermal power plant (including captive or co-generating stations or both) shall be primarily responsible to ensure 100 per cent utilisation of ash (fly ash, and bottom ash) generated by it in an eco-friendly manner as given in sub-paragraph (2);

(2) The ash generated from coal or lignite based thermal power plants shall be utilised only for the following eco-friendly purposes, namely:-

- (i) Fly ash based products viz. bricks, blocks, tiles, fibre cement sheets, pipes, boards, panels;*
- (ii) Cement manufacturing, ready mix concrete;*
- (iii) Construction of road and fly over embankment, Ash and Geo-polymer based construction material;*
- (iv) Construction of dam;*
- (v) Filling up of low lying area;*
- (vi) Filling of mine voids;*
- (vii) Manufacturing of sintered or cold bonded ash aggregate;*
- (viii) Agriculture in a controlled manner based on soil testing;*

(ix) Construction of shoreline protection structures in coastal districts;

(x) Export of ash to other countries;

(xi) Any other eco-friendly purpose as notified from time to time.

(3) A committee shall be constituted under the chairmanship of Chairman, Central Pollution Control Board (CPCB) and having representatives from Ministry of Environment, Forest and Climate Change (MoEFCC), Ministry of Power, Ministry of Mines, Ministry of Coal, Ministry of Road Transport and Highways, Department of Agricultural Research and Education, Institute of Road Congress, National Council for Cement and Building Materials, to examine and review and recommend the eco-friendly ways of utilisation of ash and make inclusion or exclusion or modification in the list of such ways as mentioned in Subparagraph (2) based on technological developments and requests received from stakeholders. The committee may invite State Pollution Control Board or Pollution Control Committee, operators of thermal power plants and mines, cement plants and other stakeholders as and when required for this purpose. Based on the recommendations of the Committee, Ministry of Environment, Forest and Climate Change (MoEFCC) may publish such eco-friendly purpose.

(4) Every coal or lignite based thermal power plant shall be responsible to utilise 100 per cent ash (fly ash and bottom ash) generated during that year, however, in no case shall utilisation fall below 80 per cent in any year, and the thermal power plant shall achieve average ash utilisation of 100 per cent in a three years cycle:

<i>Utilisation percentages of thermal power plants</i>	<i>First compliance Cycle to meet 100 per cent utilisation</i>	<i>Second compliance cycle onwards, to meet 100 per cent utilisation</i>
<i>>80 per cent</i>	<i>3 years</i>	<i>3 years</i>
<i>60-80 per cent</i>	<i>4 years</i>	<i>3 years</i>
<i><60 per cent</i>	<i>5 years</i>	<i>3 years</i>

Provided that the three years cycle applicable for the first time is extendable by one year for the thermal power plants where ash utilisation is in the range of 60-80 per cent, and two years where ash utilisation is below 60 per cent and for the purpose of calculation of percentage of ash utilisation, the percentage quantity of utilisation in the year 2021- 2022 shall be taken into account as per the table below:

Provided further that the minimum utilisation percentage of 80 per cent shall not be applicable to the first year and first two years of the first compliance cycle for the thermal power plants under the utilisation category of 60-80 per cent and

Provided also that 20per cent of ash generated in the final year of compliance cycle may be carried forward to the next cycle which shall be utilised in the next three years cycle along with the ash generated during that cycle.

(5) The unutilised accumulated ash i.e. legacy ash, which is stored before the publication of this notification, shall be utilised progressively by the thermal power plants in such a manner that the utilization of legacy ash shall be completed fully within ten years from the date of publication of this notification and this will be over and above the utilisation targets prescribed for ash generation through current operations of that particular year:

Provided that the minimum quantity of legacy ash in percentages as mentioned below shall be utilised during the corresponding year and the minimum quantity of legacy ash is to be calculated based on the annual ash generation as per installed capacity of thermal power plant.

Year from date of publication	1 st	2 nd	3 rd - 10 th
Utilisation of legacy ash	At least 20 per cent	At least 35 per cent	At least 50 per cent

Provided further that the legacy ash utilisation shall not be required where ash pond or dyke has stabilised and the reclamation has taken place with greenbelt or plantation and the concerned State Pollution Control Board shall certify in

this regard. Stabilisation and reclamation of an ash pond or dyke including certification by the Central Pollution Control Board (CPCB) or State Pollution Control Board (SPCB) or Pollution Control Committee (PCC) shall be carried out within a year from the date of publication of this notification. The ash remaining in all other ash ponds or dykes shall be utilised in progressive manner as per the above mentioned timelines.

Note: The obligations under sub-paragraph (4) and (5) above for achieving the ash utilisation targets shall be applicable from 1st April, 2022.

(6) Any new as well as operational thermal power plant may be permitted an emergency or temporary ash pond with an area of 0.1 hectare per Mega Watt (MW). Technical specifications of ash ponds or dykes shall be as per the guidelines of Central Pollution Control Board (CPCB) made in consultation with Central Electricity Authority (CEA) and these guidelines shall also lay down a procedure for annual certification of the ash pond or dyke on its safety, environmental pollution, available volume, mode of disposal, water consumption or conservation in disposal, ash water recycling and greenbelt, etc., and shall be put in place within three months from the date of publication of this notification.

(7) Every coal or lignite based thermal power plant shall ensure that loading, unloading, transport, storage and disposal of ash is done in an environmentally sound manner and that all precautions to prevent air and water pollution are taken and status in this regard shall be reported to the concerned State Pollution Control Board (SPCB) or Pollution Control Committee (PCC) in Annexure attached to this notification.

(8) Every coal or lignite based thermal power plant shall install dedicated silos for storage of dry fly ash silos for at least sixteen hours of ash based on installed capacity and it shall be reported upon to the concerned State Pollution Control Board (SPCB) or Pollution Control Committee (PCC) in the Annexure and shall be inspected by Central Pollution

Control Board (CPCB) or State Pollution Control Board (SPCB) or Pollution Control Committee (PCC) from time to time.

(9) Every coal or lignite based thermal power plant (including captive or co-generating stations or both) shall provide real time data on daily basis of availability of ash with Thermal Power Plant (TPP), by providing link to Central Pollution Control Board's web portal or mobile phone App for the benefit of actual user(s).

(10) Statutory obligation of 100 per cent utilisation of ash shall be treated as a change in law, wherever applicable.

B. For the purpose of utilisation of ash, the subsequent sub-paras shall apply.—

(1) All agencies (Government, Semi-government and Private) engaged in construction activities such as road laying, road and flyover embankments, shoreline protection structures in coastal districts and dams within 300 kms from the lignite or coal based thermal power plants shall mandatorily utilise ash in these activities:

Provided that it is delivered at the project site free of cost and transportation cost is borne by such coal or lignite based thermal power plants.

Provided further that thermal power plant may charge for ash cost and transportation as per mutually agreed terms, in case thermal power plant is able to dispose the ash through other means and those agencies makes a request for it and the provisions of ash free of cost and free transportation shall be applicable, if thermal power plant serves a notice on the construction agency for the same.

(2) The utilisation of ash in the said activities shall be carried out in accordance with specifications and guidelines laid down by the Bureau of Indian Standards, Indian Road Congress, Central Building Research Institute, Roorkee, Central Road Research Institute, Delhi, Central Public

Works Department, State Public Works Departments and other Central and State Government Agencies.

(3) It shall be obligatory on all mines located within 300 kilometres radius of thermal power plant, to undertake backfilling of ash in mine voids or mixing of ash with external Overburden dumps, under Extended Producer Responsibility (EPR). All mine owners or operators (Government, Public and Private Sector) within three hundred kilometres (by road) from coal or lignite based thermal power plants, shall undertake measures to mix at least 25 per cent of ash on weight to weight basis of the materials used for external dump of overburden, backfilling or stowing of mine (running or abandoned as the case may be) as per the guidelines of the Director General of Mines Safety (DGMS):

Provided that such thermal power stations shall facilitate the availability of required quantity of ash by delivering ash free of cost and bearing the cost of transportation or cost or transportation arrangement decided on mutually agreed terms and mixing of ash with overburden in mine voids and dumps shall be applicable for the overburden generated from the date of publication of this notification and the utilisation of ash in the said activities shall be carried out in accordance with guidelines laid down by the Central Pollution Control Board, Director General of Mines Safety and Indian Bureau of Mines.

Explanation.- For the purpose of this sub-paragraph, it is also clarified that the provisions of ash free of cost and free transportation shall be applicable, if thermal power plants serve a notice on the mine owner for the same and the mandate of using 25 per cent of ash for mixing with overburden dump and filling up of mine voids shall not be applicable unless a notice is served on the mine owner by thermal power plant.

(4) (i) All mine owners shall get mine closure plans (progressive and final) to accommodate ash in the mine voids and the concerned authority shall approve mine plans

for disposal of ash in mine voids and mixing of ash with overburden dumps. The Ministry of Environment, Forest and Climate Change (MoEFCC) has issued guidelines on 28th August, 2019 regarding exemption of requirement of Environmental Clearance of thermal power plants and coal mines along with the guidelines to be followed for such disposal.

(ii) The Ministry in consultation with Central Pollution Control Board (CPCB), Director General of Mine Safety (DGMS) and Indian Bureau of Mines (IBM) may issue further guidelines time to time to facilitate ash disposal in mine voids and mixing with overburden dumps and it shall be the responsibility of mine owners to get the necessary amendments or modifications in the permissions issued by various regulatory authorities within one year from the date of identification of such mines.

(5) (i) There shall be a committee headed by Chairperson, Central Pollution Control Board (CPCB) with representatives from Ministry of Environment, Forest and Climate Change, Ministry of Power, Ministry of Mines, Ministry of Coal, Director General of Mine Safety and Indian Bureau of Mines for identification of mines for backfilling of mine voids with ash or mixing of ash with overburden dump including examination of safety, feasibility (not economic feasibility) and aspects of environmental contamination and the committee shall get updated quarterly reports prepared regarding identified mines (both underground and opencast) for the stakeholder Ministries or Departments and the committee shall start identifying the suitable mines immediately after the publication of this notification.

(ii) Thermal power plants or mines shall not wait for disposal of ash till the identification is done by the above mentioned committee, to meet the utilisation targets mandated as above.

(6) Filling of low lying areas with ash shall be carried out with prior permission of the State Pollution Control Board or Pollution Control Committee for approved projects, and in

accordance with guidelines laid down by Central Pollution Control Board (CPCB) and the State Pollution Control Board or Pollution Control Committee (PCC) shall publish approved sites, location, area and permitted quantity annually on its website.

(7) Central Pollution Control Board after engaging relevant stakeholders, shall put in place the guidelines within one year for all types of activities envisaged under this notification including putting in place time bound online application process for the grant permission by State Pollution Control Boards (SPCBs) or Pollution Control Committees (PCCs).

(8) All building construction projects (Central, State and Local authorities, Govt. undertakings, other Govt. agencies and all private agencies) located within a radius of three hundred kilometres from a coal or lignite based thermal power plant shall use ash bricks, tiles, sintered ash aggregate or other ash based products, provided these are made available at prices not higher than the price of alternative products.

(9) Manufacturing of ash based products and use of ash in such products shall be in accordance with specifications and guidelines laid down by the Bureau of Indian Standards, Indian Road Congress, and Central Pollution Control Board.

C. Environmental compensation for non-compliance-

(1) In the first two years of a three years cycle, if the coal or lignite based thermal power plant (including captive or co-generating stations or both) has not achieved at least 80 per cent ash (fly ash and bottom ash) utilisation, then such non-compliant thermal power plants shall be imposed with an environmental compensation of Rs. 1000 per ton on unutilised ash during the end of financial year based on the annual reports submitted and if it is unable to utilise 100 per cent of ash in the third year of the three years cycle, it shall be liable to pay an environmental compensation of Rs.

1000 per ton on the unutilised quantity on which environmental compensation has not been imposed earlier:

Provided that the environmental compensation shall be estimated and imposed at the end of last year of the first compliance cycle as per the various utilisation categories as mentioned in sub-paragraph (4) of Para A.

(2) Environmental compensation collected by the authorities shall be deposited in the designated account of Central Pollution Control Board.

(3) In case of legacy ash, if the coal or lignite based thermal power plant (including captive or co-generating stations or both) has not achieved utilisation equivalent to at least 20 per cent (for the first year), 35 per cent (for the second year), 50 per cent (for third to tenth year) of ash generated based on installed capacity, an environmental compensation of Rs. 1000 per ton of unutilised legacy ash during that financial year shall be imposed and if the utilization of legacy ash is not completed at the end of 10 years, an environmental compensation of Rs.1000 per ton shall be imposed on the remaining unutilised quantity which has not been imposed earlier.

(4) It shall be the responsibility of the transporters or vehicle owner to deliver ash to authorised purchaser or user agency and if it is not complied, then an environmental compensation of Rs. 1500 per ton on such quantity as mis-delivered to unauthorised users or non- delivered to authorised users will be imposed besides prosecution of such non-compliant transporters by State Pollution Control Board (SPCB) or Pollution Control Committee (PCC).

(5) It is the responsibility of the purchasers or user agencies to utilise ash in an eco-friendly manner as laid down at para B of this notification and if it is not complied, then an environmental compensation of Rs. 1500 or per ton shall be imposed by State Pollution Control Board (SPCB) or Pollution Control Committee (PCC).

(6) If the user agencies do not utilise ash to the extent obligated under para B or the extent to which they have been intimated through Notice(s) served under subparagraph (1) of para D, whichever is lower, they shall be liable to pay Rs. 1500 per ton of ash for the quantity they fall short off:

Provided that the environmental compensation on building constructions shall be levied at Rs.75/- per square feet of built up area of construction.

(7) (i) The environmental compensation collected by Central Pollution Control Board from the thermal power plants and other defaulters shall be used towards the safe disposal of the unutilised ash and the fund may also be utilised for advancing research on use of ash including ash based products.

(ii) The liability of ash utilisation shall be with thermal power plants even after imposition of environmental compensation on unutilised quantities and in case thermal power plant achieves the ash utilisation of any particular cycle after imposition of environmental compensation in subsequent cycles, the said amount shall be returned to thermal power plant after deducting 10 per cent of the environmental compensation collected on the unutilised quantity during the next cycle and deduction of 20 per cent, 30 per cent, and so on, of the environmental compensation collected is to be made in case of utilisation of ash in subsequent cycles.

D. Procedure for supply of ash or ash based products.—

(1) The owner of thermal power plants or manufacturers of ash bricks or tiles or sintered ash aggregate shall serve written notice to persons or agencies who are liable to utilise ash or ash based products, offering for sale, or transport or both.

(2) Persons or user agencies who have been served notices by owner of thermal power plants or manufacturers of ash bricks or tiles or sintered ash aggregate, if they have already tied up with other agencies for the purpose of utilisation of ash or ash products, shall inform the thermal power plant accordingly, if they cannot use any ash or ash products or use reduced quantity.

E. Enforcement, Monitoring, Audit and Reporting.—

(1) The Central Pollution Control Board (CPCB) and the concerned State Pollution Control Board (SPCB) or Pollution Control Committee (PCC) shall be the enforcing and monitoring authority for ensuring compliance of the provisions and shall monitor the utilisation of ash on quarterly basis. Central Pollution Control Board shall develop a portal for the purpose within six months of date of publication of the notification. The concerned District Magistrate shall have concurrent jurisdiction for enforcement and monitoring of the provisions of this notification.

(2) (i) Thermal power plants shall upload monthly information regarding ash generation and utilisation by 5th of the next month on the web portal. Annual implementation report (for the period 1st April to 31st March) providing information about the compliance of provisions in this notification shall be submitted by the 30th day of April, every year to the Central Pollution Control Board, concerned State Pollution Control Board or Pollution Control Committee (PCC), Central Electricity Authority (CEA), and concerned Integrated Regional Office of Ministry of Environment, Forest and Climate Change by the coal or lignite based thermal power plants. Central Pollution Control Board and Central Electricity Authority shall compile the annual reports submitted by all the thermal power plants and submit to Ministry of Environment, Forest and Climate Change by 31st May.

(ii) All other user agencies shall submit consumption or utilisation or disposal of ash and use of ash based products

as mandated in this notification in the compliance report of Environmental Clearance (EC) issued by Ministry of Environment, Forest and Climate Change or State Level Environment Impact Assessment Authority (SEIAA) or Consent to Operate (CTO) issued by State Pollution Control Board (SPCB) or Pollution Control Committee (PCC), whichever is applicable. The Central Pollution Control Board (CPCB) or State Pollution Control Board (SPCB) or Pollution Control Committee (PCC) shall publish annual report of ash utilisation of all other agencies except thermal power plants to review the effective implementation of the provisions of the notification.

(3) For the purpose of monitoring the implementation of the provisions of this notification, a committee shall be constituted under the Chairperson, Central Pollution Control Board (CPCB), with members from Ministry of Power, Ministry of Coal, Ministry of Mines, Ministry of Environment, Forest and Climate Change, Ministry Road Transportation and Highways, Department of Heavy Industry as well as any concerned stakeholder(s), to be nominated by the Chairman of the committee. The committee may make recommendations for effective and efficient implementation of the provisions of the notification. The committee shall meet at least once in six months and review annual implementation reports and the committee shall also hold stakeholder consultations for monitoring of ash utilisation as mandated by this notification by inviting relevant stakeholder(s) at least once in six months. The committee shall submit the six monthly report to Ministry of Environment, Forest and Climate Change (MoEFCC).

(4) For the purpose of resolving disputes between thermal power plants and users of ash or manufacturer of ash based products, the State Governments or Union territory administration constitute a Committee within three months from the date of publication of this notification under the Chairman, State Pollution Control Board (SPCB) or Pollution Control Committee (PCC) with representatives from

Department of Power, and one representative from the Department which deals with the subject of concerned agency with which dispute is made.

(5) The compliance audit for ash disposal by the thermal power plants and the user agency shall be conducted by auditors, authorised by Central Pollution Control Board (CPCB) and audit report shall be submitted to Central Pollution Control Board (CPCB) and concerned State Pollution Control Board (SPCB) or Pollution Control Committee (PCC) by 30th November every year. Central Pollution Control Board (CPCB) and concerned State Pollution Control Board (SPCB) or Pollution Control Committee (PCC) shall initiate action against non-compliant thermal power plants within fifteen days of receipt of audit report.”

42. The Tribunal directed as follows:

- (i) *We direct constitution of a fly ash management and utilization Mission to be jointly headed by the Secretaries, MoEF&CC, Coal and Power, GoI and Chief Secretaries of UP and MP. The Secretary, MoEF&CC will be the nodal agency for coordination and compliance. The Mission will coordinate and monitor issues relating to handling and disposal of flyash as well as all associated issues in the light of above discussion. It may hold its first meeting within one month to take stock of the situation and to prepare action plan in the light of recommendations of Joint Committees quoted earlier in para 15 above in respect of individual plants as well as road map generally. Thereafter, it may meet atleast once in a month for one year to review the progress. The resolutions of the Mission and quarterly progress may be placed on the website of MoEF&CC for information of the stake holders and inhabitants in the area. The Mission will be free to interact with the concerned Government Departments/ Expert institutions/ individuals/other stakeholders.*

The Mission may in its first meeting require voluntary financial contribution by all the projects in proportion of the financial capacity of the projects out of CSR funds or otherwise. The contribution, alongwith compensation which may be collected may be credited to a separate environment restoration account for restoration of environment and relief to the victims of damage to the environment in such manner as may be found necessary by the Mission. Any victim or aggrieved party will be free to approach the Mission for providing such relief. The Mission may also consider the safeguards laid down in the Notification dated 31.12.2021, particularly for safety audits of the ash dykes which should be conducted particularly for structural stability, as far as possible within six months. Advisory issued by the Ministry of Power dated 22.9.2021 will not be enforced being against the spirit of notification dated 31.12.2021 and obstructing much needed speedy utilisation/disposal of legacy fly ash. The Mission may evolve mechanism for interaction with stake holders, including associations of brick kiln owners. Guidelines be also issued for siting, design and engineering standards for the location, disposal, maintenance and regulation of Ash Ponds as breach of a fly ash ponds result in great disaster. Public health and risk impact assessment in the areas of operation of TPPs and generators of fly ash may be got conducted. The Mission may also monitor scientific management and utilization of fly ash by power projects outside Singrauli and Sonebhadra, in coordination with Chief Secretaries of concerned States and adopting safety measures for ash dykes, installing devices to control air pollution, (including FGDs, OCEMS) in a time bound manner and restoration of environment and public health. The Mission may also consider use of beneficiated coal. It may in particular consider on-site and off-site crisis management plans with regard to fly ash ponds and dykes. As noted earlier,

legacy fly ash is 1670.602 Million Tonnes as on 31.12.2021 and data of ash generation and utilization of legacy fly ash is as follows:

“Summary of Ash Generation and Utilization during year 2020-21”

No. of Thermal Power Stations	: 191
Capacity (MW)	: 2,13,030 MW
Coal consumed	: 672.130 Million Tonnes
Fly Ash Generation	: 222.789 Million Tonnes
Fly Ash Utilization	: 205.098 Million Tonnes
Percentage Utilization	: 92.06%
Legacy flyash	:1670.602 Million Tonnes

The Committee of Secretaries, in coordination with PPs and statutory regulators, may draw a roadmap for utilization and disposal of entire legacy fly ash for Sonebhadra and Singrauli areas as well as for all the Power Plants located in clusters or standalone with tagging the sources to utilize fly ash on voluntary and compulsion mode for which required mechanism be laid down.

i. With regard to past violations, the PPs remain liable and the Joint Committee of CPCB, State PCB and jurisdictional District Magistrates may determine compensation following due process, on the principles laid down inter alia in M.C. Mehta, (1987) 1 SCC 395, Sterlite (2013) 4 SCC 575 and Goel Ganga (2018) 18 SCC 257, having regard to the period of violation and financial capacity of the unit. The PPs may take remedial measures as per recommendations of the Committee and as per law, failing which coercive measures for continuing or future violations be taken by concerned authorities.

ii. Statutory regulators may take action in terms of need for compliances in the light of recommendations with regard to individual Plants as well as generally so as to require the concerned PPs to comply, failing which coercive measures be taken by the statutory regulators in accordance with law.

43. The contentions of the learned counsel for the applicant are that Project Proponent is not complying the guidelines issued by the CPCB and there are

violations of conditions in disposal of fly ash. In reply thereof, the Respondent has contended that:

- (i) *That project proponent has been undertaking disposal of Fly Ash strictly in accordance with the law. All the directives of the Central and State Authorities are being diligently followed by the answering Respondent – there is not an iota of discrepancy in the functioning of project proponent which adheres to all the laws and endeavours to make sure that environment is protected and safeguarded. That reference in this regard be made to the locus classicus case of **Narmada Bachao Andolan v. Union of India (UoI) and Ors.** (2000) 10 SCC 664, it was held by the Hon'ble Apex Court that where effect on ecology or environment on account of setting up of an industry is known, what has to be seen is whether environment is likely to suffer and if so what mitigative steps have to be taken to efface the same. Pertinently, it was held that merely because there will be a change in the environment is no reason to presume that there will be ecological disaster. Once effect of project is known, then principle of sustainable development would come into play and that will ensure that mitigative steps are taken to preserve ecological balance. Sustainable development means what type or extent of development can take place which can be sustained by nature/ecology with or without mitigation and that certain principles were enunciated in the Stockholm Declaration giving broad parameters and guidelines for the purposes of sustaining humanity and its environment. Of these parameters, a few principles are extracted which are of relevance to the present issue. The need for economic development has been dealt with in Principle where it is said that "economic and social development is essential for ensuring a favourable living and working environment for man and for creating conditions on earth that are necessary for improvement of the quality of life". The importance of maintaining a balance between economic development on the one hand and environment protection on*

the other is again emphasized in Principle which says "The environmental policies of all States should enhance and not adversely affect the present or future development potential of developing countries nor should they hamper the attainment of better living conditions for all;"

This, therefore, is the aim - namely to balance economic and social needs on the one hand with environmental considerations on the other.

But in a sense all development is an environmental threat.

In Essar Oil Ltd. vs. Halar Utkarsh Samiti and Ors. (2004) 2 SCC 392, the Hon'ble Supreme Court has held the following at Para 37:

"Once the State Government has taken all precautions to ensure that the impact on the environment is transient and minimal, a court will not substitute its own assessment in place of the opinion of persons who are specialists and who may have decided the question with objectivity and ability. [See: Shri Sachidanand Pandey v. The State of West Bengal and Ors. [1987]2SCR223]. Courts cannot be asked to assess the environmental impact of the pipelines on the wild life but can at least oversee that those with established credentials and who have the requisite expertise have been consulted and that their recommendations have been abided by, by the State Government. If it is found that the recommendations have not been so abided by, the mere fact that large economic costs are involved should not deter the Courts from barring and if necessary undoing the development."

44. In ***Bombay Dyeing & Mfg. Co. Ltd. vs. Bombay Environmental Action Group & Others***, (2006) 3 SCC 434, the apex court examined whether development or redevelopment of lands of sick and/or closed cotton textile mills is valid and permissible or should not be allowed on the ground of damage to environment. Upholding statutory regulations, i.e., Development Control Regulation 58, as amended from time to time, made under Maharashtra Regional and Town Planning Act, 1966, Court said that a balanced view has to be taken. Doctrine of 'sustainable development' indeed is

a welcome feature but while emphasizing the need of ecological impact, a delicate balance between it and the necessity for development must be struck. The statute nowhere, per se, envisaged any degradation of environment. Before raising construction, if impact on ecology is examined by an expert Committee and it clears construction, unless there is anything ex-facie arbitrary, the view of experts has to be respected.

45. In the guidelines for disposal / utilization of fly ash for reclamation of low lying areas and in stowing of abandoned mines / quarries issued by the CPCB in 2019, Guideline no. 4.1 provides as follows for current practice for handling and disposal of fly ash and bottom ash (within the power plant):

4.1 Current Practice for Handling & Disposal of Flyash & Bottomash (within the power plant)

Flyash is collected in dry form from ESP hopper and disposed either in dry form or through wet slurry form. While, bottom ash collected at the bottom of boiler and is disposed in wet slurry form into the ash ponds.

Following technologies are conventionally used for handling & disposal of flyash and bottom ash collected from ESPs hoppers and boiler bottom respectively within the plant or upto the ash pond area:

- I. Dry Pneumatic conveying*
- II. Dry (moist) Conveying system through belt conveyor/tube belt conveyor*
- III. High concentration slurry disposal system*
- IV. Medium concentration slurry disposal system*
- V. Lean concentration slurry disposal system*

Amongst the above technologies, Dry Pneumatic conveying, Medium concentration slurry disposal system, High concentration slurry disposal system, and Dry (moist) Conveying system through belt conveyor/tube belt conveyor are preferable as compared to Lean concentration slurry disposal system.

The dry ash is typically conveyed pneumatically from the ESP or filter fabric hoppers to storage silos where it is kept dry, pending utilization or further processing, or to a system where the dry ash is mixed with water and conveyed (sluiced) to an on-site storage pond. Fly ash is stored in silos, domes and other bulk storage facilities. Fly ash can be transferred using air slides, bucket

conveyors and screw conveyors, or it can be pneumatically conveyed through pipelines under positive or negative pressure conditions.

Dry fly ash collected is also be suitably moistened with water and wetting agents, as applicable, using specialized equipment (conditioned) and hauled in covered dump trucks for special applications such as structural fills. Water conditioned fly ash can also be suitably stockpiled at jobsites. Exposed stockpiled material must be kept moist or suitably covered to prevent fugitive emission.

The dry bottom ash removal and its transportation is certainly more environment friendly, compared to that of wet ash removal and transport system.

46. In **Civil No. 1692-1693 of 2020** vide order dated 10.05.2022, the matter of notification dated 31.12.2021 was discussed by the Hon'ble Supreme Court of India and it was held as follows:

5. During the pendency of the proceedings before this Court, a notification was issued by the MoEF&CC on 31 December 2021 in exercise of powers conferred by Section 3 of the Environment (Protection) Act 1986. This notification was issued in supersession of Notification No 763(E) dated 14 September 1999. By the notification, the Union Government has formulated parameters for ash utilization from coal or lignite thermal power plants. Paragraph A(5) of the said notification provides a timeline for the utilization of 'legacy ash', that is unutilized accumulated ash which was stored before the publication of the notification:

"The unutilized accumulated ash i.e. legacy ash, which is stored before the publication of this notification, shall be utilized progressively by the thermal power plants in such manner that the utilization of legacy ash shall be completed fully within ten years from the date of publication of this notification and this will be over and above the utilization targets prescribed for ash generation through current operations of that particular year:

Provided that the minimum quantity of legacy ash in percentages as mentioned below shall be utilized during the corresponding year and the minimum quantity of legacy ash is to be calculated based on the annual ash generation as per installed capacity of thermal power plant.

Provided further that the legacy ash utilisation shall not be required where ash pond or dyke has stabilised and the reclamation has taken place with greenbelt or plantation and the concerned State Pollution Control Board shall certify in this regard. Stabilisation and reclamation of an ash pond or dyke including certification by the Central Pollution Control Board (CPCB) or State Pollution Control Board (SPCB) or Pollution Control Committee (PCC) shall be carried out within a year from the date of publication of this notification. The ash remaining in all other ash ponds or dykes shall be utilised in progressive manner as per the above mentioned timelines.

Note: The obligations under sub-paragraph (4) and (5) above for achieving the ash utilisation targets shall be applicable from 1st April, 2022.

[...]”

6. The consequence of the notification dated 31 December 2021 is that the earlier notifications would get subsumed by the terms of the notification. The NGT in the impugned orders had found fault with the TPPs due to their failure to comply with the notification dated 25 January 2016 and the extended deadline which was fixed for the utilization of fly ash. In view of the subsequent development which has taken place, the basis of the order of the NGT would be fundamentally altered by the modalities and time-lines which are prescribed by the notification dated 31 December 2021. In view of the latest notification, the orders of the NGT would have to be set aside together with the imposition of the measure of compensation as directed in the impugned orders.

7. During the course of the hearing, counsel appearing on behalf of some of the contesting parties have fairly alluded to certain deficiencies in the notification dated 31 December 2021, particularly in the context of the loading, unloading, transport, storage and disposal of fly ash in an environmentally sound manner to ensure that it does not cause air and water pollution. Mr Tapesk Kumar Singh, learned AAG who appears for the State of Jharkand submitted a note of submissions to assist the court, in his personal capacity as an officer of the court. In this context, reliance has been placed on an order dated 24 September 2013 of a two-Judge Bench of this Court in SLP(C) No 30381 of 2011 when the Court was seized of a tender dispute relating to transportation of fly ash. While dealing

with the dispute, the following directions were issued by the Court:

“Allotment of the contract and transportation work shall, however, be subject to the following further conditions:

- 1. The contractor shall abide by the directions issued by the Government of India, if any, under Section 5 of the Act, or the requirement of any Rules that may be framed by the Government of India under Section 6 of the Act, or instructions/circulars, if any, issued by the Central Pollution Control Board as to nuisance free transportation of ash, including Pond Ash from the Thermal Power Stations to abandoned mines and to other destinations, as the case may be;*
- 2. Pending issue of any directions or framing of any Rules by the Government of India or issuance of any instructions/circulars by the Central Pollution Control Board, the transportation work shall be undertaken by the contractors who emerge successful only by using mechanized steel covered container trucks which would ensure that after the Pond Ash is loaded into the truck, it has no opportunity to fly out of the container to cause any kind of environmental hazard. We leave the details of specifications, if any, of such trucks to the Corporation and its Engineers to be specified in the course of negotiations to be conducted with the bidders.”*

9. Apart from the above proceedings, during the course of the hearing, this Court has been apprised of the regulatory provisions contained in the Hazardous and Other Wastes (Management and Transboundary Movement) Rules 2016 including rules 3(17), 3(23), 3(33) and 3(34) of the Rules. In this context, it has been submitted that the Union Government is duty bound to formulate rules to guarantee that the loading, unloading, utilization and transportation of fly ash takes place in a manner to prevent environmental hazards.

10. At this stage, it would be material to note the provisions of paragraph A(7) of the notification dated 31 December 2021 which reads as follows:

“(7) Every coal or lignite based thermal power plant shall ensure that loading, unloading, transport, storage and disposal of ash is done in an environmentally sound manner and that all precautions to prevent air and water pollution are taken and status in this regard shall be reported to the concerned State

Pollution Control Board (SPCB) or Pollution Control Committee (PCC) in Annexure attached to this notification.”

11. Paragraph E of the notification deals with enforcement, monitoring, audit and reporting. Paragraphs (3) and (5) of paragraph E are extracted below:

“(3) For the purpose of monitoring the implementation of the provisions of this notification, a committee shall be constituted under the Chairperson, Central Pollution Control Board (CPCB) with members from Ministry of Power, Ministry of Coal, Ministry of Mines, Ministry of Environment, Forest and Climate Change, Ministry of Road Transportation and Highways, Department of Heavy Industry as well as any concerned stakeholder(s), to be nominated by the Chairman of the committee. The committee may make recommendations for effective and efficient implementation of the provisions of the notification. The committee shall meet at least once in six months and review annual implementation reports and the committee shall also hold stakeholder consultations for monitoring of ash utilisation as mandated by this notification by inviting relevant stakeholder(s) at least once in six months. The committee shall submit the six monthly report to Ministry of Environment, Forest and Climate Change (MoEFCC).

(5) The compliance audit for ash disposal by the thermal power plants and the user agency shall be conducted by auditors, authorised by Central Pollution Control Board (CPCB) and audit report shall be submitted to Central Pollution Control Board (CBCB) and concerned State Pollution Control Board (SPCB) or Pollution Control Committee (PCC) by 30th November every year. Central Pollution Control Board (CPCB) and concerned State Pollution Control Board (SPCB) or

Pollution Control Committee (PCC) shall initiate action against non-compliant thermal power plants within fifteen days of receipt of audit report.”

12. In view of the above background, it would be necessary for the MoEF&CC to revisit whether the parameters which have been prescribed by the notification dated 31 December 2021 must be modified taking into account the provisions of the Rules of 2016, to the extent to which the applicability of the Rules is attracted to the utilization, transportation and disposal of fly ash. Besides conducting this exercise, MoEF&CC shall ensure that the enforcement, monitoring, audit and reporting mechanism which is envisaged in paragraphs E(3) and E(5) of the notification dated 31 December 2021 is duly put into place and enforced scrupulously. Unless steps have already been taken to enforce the precautionary steps envisaged in the notification, MoEF&CC shall do so within a period of three months from the date of this judgment. In doing so the precautionary principle shall be followed. The MoEF&CC shall also determine upon due analysis whether any further modification of the notification is necessary to comply with the provisions of the Rules of 2016 noticed above and other cognate legislation, including subordinate legislation bearing on the utilization, transport and disposal of fly ash in an environmentally sustainable manner.

47. After taking cognizance of the matter, the Tribunal constituted a Committee consisting the Collector, representative of the Central Pollution Control Board and the Madhya Pradesh Pollution Control Board with the direction to submit the factual and action taken report. The Members of the Committee visited the site, inspected the site and submitted the report as follows:

“The committee has inspected the site during 5th and 6th June 2022 and visited the ash dyke pond 1 where breach took place, tank) nalla from

origin to confluence point with some river, affected agricultural fields, some river, ash water recycling system (AWRS), plant dry collection system etc. during visit the following observations are made:

A. Air & Water Consents and HW Authorization Validity:

The consents under water and air acts issued by MPPCB are valid up to 28.02.2023. copy enclosed at Annexure-III and HW authorisation issued by MPPCB is also valid up to 31.05.2025. Copy of the same is enclosed at Annexure-IV.

B. Power Plant Details :-

Madhya Pradesh Power Generating Company Limited (MPPGCL), a wholly owned company of MP Government engaged in generation of electricity in the state of Madhya Pradesh (MP). It is a successor entity of erstwhile Madhya Pradesh State Electricity Board (MPSEB). MPPGCL is operating 4 Thermal Power Stations (TPS) with installed capacity of 5400 MW & 10 Hydro Power Stations (HPS) with installed capacity of 915 MW within the state.

M/s Amarkantak Thermal Power Stations is one of the four TPPs which is in operation from year 2009 with a capacity of 1x210 MW. The Plant is located near Chachai village, Anuppur district, Madhya Pradesh. The plant is located between latitude 23°9'22.1"N to 23°10'08.5"N & longitude 81°37'53.7"E to 81°38'45.8"E. Distance of the plant by road to Amlai town - 7 km NW (aerial distance 5.5 km), Amlai Railway Station - 8 km NW (aerial distance 3.6 km), NH43 — 10 km N (aerial distance 4.3 km), Jabalpur Airport - 250 km W (aerial distance 160 km), Chachai lake (Suthna reservoir) — adjacent (E) and Sone River- 1.8 km (N).

The Plant comprised of 5 units. Unit No.I of 1x30MW & Unit No.II of 1x20MW were commissioned in 1965 and decommissioned on 01.04.2009. Unit No.III of 1x120 MW was commissioned in 1978 and decommissioned on 13.01.2015. Unit No. IV of 1x120 MW was commissioned in 1978 and decommissioned on 01.05.2014. Unit No.V of 1x 210 MW was commissioned on 09.09.2009 and presently in

operational. M/s Amarkantak Thermal Power Station (ATPS) is located near Chachai village, Anuppur district of Madhya Pradesh, India. The installed capacity and current status of the power plants are presented below:

Phase	Units	Size (MW)	Commissioning Date	Current status
PH-I	Unit I	30	1965	Decommissioned on
	Unit II	20	1965	Decommissioned on
PH-II	Unit III	120	1977-78	Decommissioned on
	Unit IV	120	1977-78	Decommissioned on
PH-III	Unit V	210	09/09/2009	Operation

C. Fly Ash Generation Details

As per the fly ash compliance report for the year 2021-22 the industry has consumed an average of 2715MT coal per 210 MW power generation and produced 981MT fly ash per day. The generated fly ash from the ESP hoppers has been collected pneumatically in 2x200MT buffer hoppers and 2x600MT silos for giving to the cement industries, road construction agencies, brick manufacturing units etc. The bottom ash has been sent to ash dyke in the form of slurry. The decanted water from ash dyke has been recirculated in the plant through ash water recirculation system(AWRS) having 3x540m³/hr capacity slurry pumps and 3x600 m³/hr ash dyke decanted water pumps.

Presently the overall utilisation of fly ash is only 39% against 100% as per the MoEF&CC fly ash notification dated 31.03.2021. The legacy waste utilisation is only 9.42%. the details of ash generation and utilisation submitted by the industry is enclosed at Annexure-V. The industry has submitted the action plan to MPPCB for 100% utilisation of fly ash and legacy ash stored in ash dyke 1&2 are enclosed at Annexure-VI.

D. Ash Dyke/ Pond Details:-

M/s Amarkantak Thermal Power Station at Chachai is operating a coal-based thermal power plant of 1X 210 MW having 02 nos of Ash Dyke No. 01

& No. 02. Area of ash pond 01 is 13.16 ha. And area of ash pond 02 is 14.235 ha. The volume capacity of ash dykes are 1533932.14 Cubic meter & 1732807.86 Cubic meter respectively. Available volume in ash dyke 01 is approx. 794576 MT. In ash dyke 02 there are stationary water sprinklers in row manner are installed to control fugitive dust emission.

Presently, both bottom ash and fly ash are being disposed into lagoon 1. The ash pond no. 1 is approximately 50% filled up with ash and capacity for next 02 years is available. One decantation well & one spillway is constructed on each pond. Spillway is mainly for dissipating excess rain water and normal ash water is recycled through decantation well.

E. About the incident and observations made by the committee:

In Ash Pond No.01 breach (sinking of spillway occurred) took place around 4.00 AM on 11.02.2022. From the damage portion of ash dyke, Approz. 4000.00 W ash slurry was flowed in to the storm water nalllah (Tanki Nalla) which is passing near the ash pond recirculation system holding tank and into nearby agricultural land. During this incident there was no crop available in the agricultural land. The plant officials informed that the spillway failure was sudden without any warning prior to the failure and the failure occurred at the spillway location and the first stage rising has failed. The ash pond 1 was in use when the spillway sinking occurred. Immediately after the failure was spotted, the usage of pond 1 was stopped. The failure was localized and at the location of the spillway only. As informed by the industry, no casualties were reported. Immediately after getting the information, the plant officials took the following action stoppage of leakage water and the work was completed up to 2.00 PM.

- Ash water was totally stopped flowing towards Tanki Nalla immediately after sinking of spillway no. 01.
- Ash slurry was diverted in alternative pond No. 02 which is adjacent to pond no. 01.

- *Immediate restoration work of fields was under taken*
2. *Agricultural field restoration work has been begin on same day. Affected agricultural field and Tanki Nalla is now made almost cleaned. But the cleaned ash sludge was dumped on the banks of the drain. During visit it was informed that the same will be shifted in to the ash pond and rest of the drain will also be cleaned within 3 days.*
 3. *It is pertinent to mention that there was no loss of crop happened as there was no standing crop in the effected field, also no loss of life of animal & human was occurred, further there was no major change in water quality was observed during visit in Sone River at the confluence point of tanki Nalla with river.*
 4. *As per the plant officials request for compensation to be paid to the farmers was made by M/s ATPS to the district collector and further information is awaited for revenue department:*
 5. *As per Sh. Rai, SEE Civil from ATPS, Anuppur that the officials from Indian Institute of Technology Indore have visited the ash pond site on 20th February 2022 for investigating the reasons for ash dyke spillway sink and conducted the structural safety and root cause analysis study and found animal burrows were the reason for sinking of spillway. Copy of the report is enclosed as Annexure-VII.*
 6. *During the visit it was informed that the industry is doing Strict monitoring as suggested in the report by IIT Indore on daily basis and copy of maintenance log book is enclosed as Annexure-VIII. The tendering process for construction of permanent spillway in place of damaged spillway is under progress. The list of works carried out and amount spent for restoration of agricultural fields and cleaning of Tanki Nalla is enclosed at Annexure-IX. As directed periodical checking and structural safety of ash bund is also proposed and its frequency shall be at least quarterly and*

especially before and after monsoon and report will be submitted to MPPCB. Further the following works are being taken for captioned work.

** Construction of permanent check hund, across tanki Willa to arrest ash in case of future unwanted situation.*

** Construction of Pucca Nalla (tanki Nalla) towards Sone river.*

** Transportation of collected dumped ash to ash pond no. 01,*

7. As per the RO MPPCB that Immediately after getting information reached with his scientific and technical team to the site on morning 11,00 AM at the incident site and visited the affected area with ATPS officials. Around 2.00 PM the ash slurry was arrested completely by plugging of damaged portion of ash dyke spillway sink with soil and sand bags. MPPCB team from RO shadol has visited confluence point of Tanki Nalla & Son River, And found that water quality of sone has not affected. The Tanki nalla is originated from near the Ash Dyke. And it meets to Son River after approx. 03 KM from the origin point. Ash found deposited in some portion of agricultural field having total rakwa about 2.287 ha located on right side of tanki nalla. The ash flown in these areas majorly due to available openings in drain that were created by formers to receive water from nalla.

8. The Tanki nalla is originated from near the Ash Dyke of ATPS, Chachai and it meets to Son River after approx. 03 KM from the origin point. It is a seasonal nalla and during visit the joint team has observed lean flow prevailing in this nalla.

9. The team visited the incident site of the Ash Dyke-01 and found the damaged portion of the ash dyke is arrested with the help of soil/ sand bags and constructed coffer dam on that breach area.

10. The cleaning of the affected area of the Tanki Nalla and surrounding agricultural private lands have done by the ATPS, Chachai management however a small quantity of ash was still found laying on the side of nalla.

11. During visit team has also found 3 temporary bunds with the help of sand bag across Tanki Nalla at appropriate places to arrest ash In case of accidental breach If any In future.

12. The team has Inspected Tanki nalla at downstream of the breach point as well as along the 3.0 KM length periphery of the nalla up to sone river. During Inspection joint committee has not observed any discharge of water and ash from ash dyke to tank' nalla. There was no visual evidence found in sone river. During Inspection the nalla water physically appear clear. Water sample also collected by the inspecting team from RO MPPCB on 11.2.2022 and the analysis report is enclosed at Annexure-X.

Tanki nalla also known as khilori nalla because it passes through Khilori village. Analysis report submitted by state board analyst shows there is no adverse impact on water quality of Sone River. All relevant parameter including such as suspended particles, colour appearance and BOD found normal.

13. The photographs taken on the day of ash dyke incident occurred on 11.02.2022 and during the inspection of joint team on 5th & 6th June 2022 are enclosed at Annexure-XI.

F. Action Taken By MPPCB

1. Notice issued by Head Office, MPPCB, Bhopal to the Amarkantak Thermal Power Station, Chachai, Anuppur under section 33 "A" of Water (Prevention & Control of Pollution) act 1974 with Letter No.1489, Dated. 22/02/2022.
2. Regularly inspection was done by the RO, MPPCB, Shandol officials to the affected area and submitted the progress of remediation and restoration work to HO, MPPCB, Bhopal from time to time.
3. Court case is submitted in Local Judicial Court, Anuppur by the Regional Officer, MPPCB, Shandol against the concerned Amarkantak Thermal Power Station, Chachai, Anuppur officials regarding violation of condition of Water (Prevention & Control of Pollution) act 1974 and

violation of conditions of the consent issued by the MPPCB against following officer and registration process is under progress.

S.No.	Name	Post
1.	Shri A.H. Rizvi	Chief Engineer (Production)
2.	Shri R.K. Pahurkar	Chief Chemist
3.	Shri M.K. Namdev	Executive Engineer (Civil)
4.	Shri Akhtar Hausen Ansari	Assistant Engineer (Civil)
5.	Smt Shakuntala	Chemist

G. Environmental compensation

1. Compensation announced To Farmers:-

According to record of revenue Department, During breach in ash dyke, no agricultural crop was existing in affected agricultural field at the time of incident. Details of affected agricultural field along with Rakwa, Khasra, damage details, compensation amount announced by district collector is as below:-

S. No.	Land Owner Name	Village- Deorl		Village- Bargawan		Damage Details	Type Of Farmer	Sanctioned Compensation amount	
		Khasra	Affected Rakwa In Ha.	Khasra	I Affected ' Rakwa In Ha.				
	Shri Yaman Prasad, 5/0- Jodhram	34/0	0.081	254/2/6	0.109	Too much ash accumulated	Small/ Margin	5000.00	
2	Shri Premdas, 5/0- Dadnu	34/2	0.081	254/2/5 , 256/4	0.101 0.081	Too much ash accumulated	Small/ Marginal	5000.00	
3	Shri Dhanai, S/0- Dadnu	34/3	0.101	254/2/4	0.028	Too much ash accumulated	Small/ Marginal	5000.00	
4	Shri Dhanuva, S/0- Shivram	34/1 96/4/3	0.105 0.053	254/2/1 256/1	0.178 0.081	Too much ash accumulated	Small/ Marginal	5000.00	
1	Shri Shambhu Prasad, S/0-	36/4 /1	0.336	254/2/3	0.401	Too much ash accumulated	Small/ Marginal	5000.00	
6	I Shri Ramgopal, 1 5/0- 1 Jogeswar	58/1/1/1 /2	0.096	--	--	Due to Water/ Ash filled	Small/ Marginal	5000.00	
7	I Shri Ramdayal, S/0- Jogeswar	58/1/1 /1/1	0.048	--	--	Due to Water/ Ash filled	Small/ Marginal	5000.00	

8	Smt Bimla urf Munni bebo, Lallaram, Surendra, heeralal, Janaklali 0/0- Reva	58/1/1 /1/3	0.028	--	--	Due to Water/ Ash filled	Margin al	
9	Shri Ramgopal Ramdayal Gendlal 5/0			256/2	0.031	Due to Water/ Ash filled	Small/ Margin al	5000.00
10	Smt Siyabati Bebo Paltu	97/1 98/1	0.175 0.127	--	--	Due to Water/ Ash filled	Small/ Margin al	5000.00
11	Semkali Baiba Maniraj, Nanda, Chotelal, Sohan, Kamla, Rani, Dhanias S/0	97/2/2/2	0.051	--	Due to Water/ Ash filled	Small/ Margin al	5000.00
12	Belsiya Baiba subhe, bhulayiya	97/2/2/1	0.050	--	--	Due to Water/ Ash filled	Small/ Margin al	5000.00
	Father- Subhe							
13	KhhaJu 5/0 Rambishal Pansari	97/2/1	0.242			Dun to Water Ash filled	Large/ Margin al	Not Eligible Due to Farmer
14	Tirath 5/0 Rambshah Pansari	95/2/1	0.113			Due to Water/ Ash filled	Small/ Margin al	S000.00
15	Ramakant 5/0 Nanbabu Pansari	95/1	0.049			Due to Water/ Ash filled	Large/Margi nal	Not Eligible Due to Farmer
16	Ramswarath S/0 Sakhu Baiga	299	0.081			Too much ash accumulated	large/Margi nal	S000.00
	Total Affected Land Area		2.287 Ha.			Total Compensation		70000.00

2. Calculation of Environmental Compensation

A. Estimation of GHG Emission and Related Cost: Green House Gases (GHG) emission is expected from the clean-up operation for the ash using JCB, dumper, tractor, and other mechanical. The ash can be taken as loose soil. For collecting the ash spread in the drain and nearby fields, the vehicle used emitted GHG that can be avoided if this incident doesn't took place. Considering this the damage due to gas emission was assessed:

- Amount of ash flown after the incident dt. 11.2.2022 = 4000 M³
- Total kilometres travelled by ash collecting vehicle = 500 KMs(Considering average 2.5Kms travel from ash spread point to dyke in each trip)
- Average mileage of collecting vehicle of capacity 20m³ = 2.5km/litres
- Total fuel (Diesel) consumed = 200 Litres

- *Density of Diesel = 0.85 kg/L*
 - *Total weight of diesel used = 170 kg*
 - *Specific CO2 emission for diesel = 3.15 kg CO2/ kg of diesel (Based on Framework for Environmental Daitnage Cost Assessment, NEERI document, 2019, Table 3)*
 - *Total CO2 emission = 535.5 kg CO2 = 0.536T of CO2 (approximately)*
 - *Considering the social cost of carbon emission at a moderate impact scenario in 2020 = \$42 with exchange rate (year 2020 I.e. 74.1322) = Rs. 3113.55 Say Rs 3114/- ((Based on Framework for Environmental Damage Cost Assessment, NEERI document, 2019 — Page 13)*
- *So, The total cost for GHG emission = 0.536T X Rs 3114/ T = Rs. 1669/-*

B. Damage to crop & water quality:

- As reported, on the day of incidence i.e. 11.2.2022, no crop was on cultivation and the ash spread in fields were collected and compensation was provided to agri-field owners as per the revenue records.
- As the water quality was also not found polluted. The assessment for water pollution was also not assessed.

H. Conclusion and Recommendations :-

During the visit the committee has not found any ash In the agricultural fields and Tanki Nalla because the industry has cleaned the affected areas by spending Rs 14,46,267/- but in few places the cleaned ash from the drain was dumped on both sides of drain. It was Informed that even though there was no loss of crop, no loss of life of animals & humans and no major contamination of water In Sone River but the formers were announced Rs 5000/- each by the district collector. The following recommendations may be implemented;

1. The industry should take permission from MPPCB for further rising of ash dyke height and comply the conditions mentioned there in.

2. The industry should not discharge wastewater & seepage water from the ash pond in to the Tanki nalla.
3. The industry should construct permanent concreted check dam of large size capacity on the Tanki Nalla to prevent meeting of the seepage water from ash pond in to the river sone.
4. The industry should submit the action plan for ash utilization for 03 years cycles and comply as per the approved plan.
5. The industry should use vehicles having automatic covering system for fly ash transportation.
6. The industry should deposit the Green House Gas Emission and Related Cost with the district collector along with the other compensation assessed and announced by revenue department.

48. The Applicant has filed the objections against the report submitted by the Joint Committee on the ground that the reasons as narrated by the Joint Committee for the failure of the breach due to small animal but remark has been made that ash dyke was found to be marginally stable and was suffering from issues like animal Burroughs. It is further submitted that the Joint Committee failed to impose any environmental damage on the Amarkantak Thermal Power Plant for non-maintenance of the ash dyke and allowing the environmental accident to happen.

49. It is further argued that no environmental compensation has been accounted for spilling of the ash in agricultural fields leading to land pollution and no test has been carried out to know with respect to pollution level in water. The Joint Committee failed to disclose that:

- (i) Total No. of days taken to remove the ash slurry?
- (ii) Total days of non-compliance and damage continued?
- (iii) Daily cost of pollution?
- (iv) Average Inflation rate?

50. It is further submitted that restoration of agricultural fields and cleaning nallah was inadequate and there was no proper inspection of Nallahs water quality and the compensation awarded on the basis of calculation made by the Collector Committee was inadequate. The Joint Committee has collected the data for the detail of the utilization of fly ash and action plan which has been attached as annexure which is reproduced below:

Detail Of Fly Ash utilization In Previous Year Of existing plant 210 MW ATPS Chachai

S.N.	FY	Coal consumption	Ash %	Fly Ash Gen.	Fly Ash Utilization	Utilization (%)	Remarks
1)	2017-18	958312.10	32.25	309086.4.6	175952.0	56.93	
2)	2018-19	680215.00	28.14	247702.24	164533.3	66.42	
3)	2019-20	966791.04	31.62	314659.95	316396.0	100.55	
4)	2020-21	998828.00	33.69	336514.588	218111.2	64.81	For FY 20-21. Short lifting due to Covid-19 (Lockdown)
5)	2021-22	991265.00	38.13	358164.543	140001.6	39.09	Due to non existing sale of fly ash tender & no dedicated agreements with cement manufacturers since Sff-2021

Action Plan for the Fly Ash utilization In next ten Year (estimated) as per notification dated 31.12.2021

S.N.	FY	Fly Ash Generation (LMT)	Legacy Ash as on end of March in every year (Previous + Current FY) (LMT)	Dry Fly Ash utilization (LMT)	Expected Legacy Ash utilization in FY (LMT)	Total Fly ash utilization (Dry Ash + Legacy Ash) (MT)	Fly ash utilization (%) w.r.t. total ash Generation
1	2022-23	3.5	35.31	2.5	2.23	4.73	135.14
2	2023-24	3.5	33.88	2.5	5.11	7.61	217.43
3	2024-25	3.5	29.77	2.5	5.11	7.61	217.43
4	2025-26	3.5	25.66	2.5	5.11	7.61	217.43
5	2026-27	3.5	21.55	2.5	5.11	7.61	217.43
6	2027-28	3.5	17.44	2.5	5.11	7.61	217.43
7	2028-29	3.5	13.33	2.5	5.11	7.61	217.43
8	2029-30	3.5	9.22	2.5	5.11	7.61	217.43
9	2030-31	3.5	5.11	2.5	5.11	7.61	217.43
10	2031-32	3.5		2.5	5.11	7.61	217.43
Total utilization				25.0	44.81	621	177.71
11	2032-33	3.5	1.0	2.5	1.0	3.5	100.00

Modes Of Average Annual Dry Fly Ash & Legacy Ash Utilization (estimated)-

S.N.	Particulars	Modes	utilization QTY (LMT/year)	Utilization (%) / YEAR
1	Avg. Fly Ash Generation = 3.5 LMT/year	Cement Manufacturers	1.9	30.55
2		Mine Filling*	3.32	53.38
3		Bricks & Tiles Manufacturers	0.6	9.65
4		Ash Dyke Raising	0.35	5.63
5		Roads & Flyovers	0.04	0.64
6		Concrete		

7	31/12/2021 = 34.81 LMT	Agriculture	0.01	0.16
8		Hydropower sector		—
		others/Miscellaneous		—
10		Unutilized Ash	0	0
		Total (Avg. of next 10 Yrs.)	6.22	177.71

List of proposed abandoned mine for back filling of fly ash, with capacity and distance from ATPS

S.N.	Name of Mines	Capacity	Distance from ATPS by Road
1)	Open Cast Sharda Mine (OPQR Patch)	12 L.Cu.M.	14 kms.
2)	Open Cast Sharda Mine (Bakehi Patch)	25 L.Cu.M.	14 kms.
3)	Open Cast Sharda Mine (Trench-T1)	65 L.Cu.M.	14 kms.
4)	Open Cast Amlai Mine	5 L.Cu.M.	13 kms.

Note : - The MOU between SECL & ATPS for back Mint of 215 LMT fly ash In Oxen [Art chards ulna mono Dmop1.1 I.-

51. The Project proponent engaged department of civil engineering, IIT, Indore and the Expert , the professor of IIT, Indore submitted the report after site visit and major observations and reasons for failure are enumerated as follows:

1.3 Major observations:

- (a) The stability analysis of the dyke under question was already, conducted in November 2019, using the properties provided by the client. The dyke was found to be marginally stable in all the conditions mentioned as per IS: 7894-1975 (2002).*
- (b) The pond 1 was in use when the failure occurred. Immediately after the failure was spotted, the usage of pond 1 was stopped.*
- (c) The depth of the ash near the site of failure was about 1.5 meters.*
- (d) Suddenly, the ash slurry spilled out from below the spillway area during the failure. Due to this, the spillway settled by nearly 1.8 meters.*
- (e) The failure was localised, at the location of the spillway only. No further distress is observed along the ash dyke. The failed spillway is shown in figure 1.2.*
- (f) There is no evidence of overtopping, the level of ash was below the maximum slurry level during the failure.*

- (g) *The concrete structure was intact during the failure, and the minor damages that happened to the spillway resulted from a sudden fall.*
- (h) *The sliding has only happened through the embankment body, not the foundation. The view of downstream slope during the field visit is shown in figure 1.3.*
- (i) *Many animal burrows are observed on the dam body, which indicates that the possible reason for failure is the internal seepage through these burrows. The images of few animal burrows observed during the visit is presented as figure 1.4.*

1.4 Reasons for failure

- *The small animal burrows observed in the dam body can have a significant effect on altering the hydraulic control of the dam and might have resulted in raising the phreatic line.*
- *The failure has happened due to piping through the dam body*
- *Shortened seepage paths and increased seepage volume through the burrow pits have resulted in internal piping.*

1.5 Recommendations for constructing the spillway

- *Earthen dams rely on a thick placement of compacted soils to withstand the water pressure of the pool contained behind the embankment. The degree of compaction and its maintenance should be ensured.*
- *A detailed investigation should be conducted to locate all the burrows, and these should be immediately covered to avoid further seepage.*
- *A temporary cofferdam should be constructed as an immediate measure, and the spillway should be reconstructed to ensure the safe functioning of the dyke.*

- *In general, it is recommended that the dyke should be monitored regularly to check the following:*

- *Cracks*
- *Leakages*
- *Animal burrows*
- *Saturated areas*
- *Sinkholes*
- *Evidence for piping*
- *Erosion*
- *Excessive vegetation growth*
- *Bulging or depression of slopes or berms*
- *Deterioration of slope protection works.*

Implementing a wildlife control strategy is necessary to maintain safe dam operation

52. After the collapse of ash dyke the outflow of the M/s Amarkantak Thermal Power Station, Chachai district Annupur was collected as sample by the scientist of state board and the report have been submitted on 14.02.2022 under rule 27.

53. Further contention of the learned counsel for the Applicant is that there is low rate of compensation offered to the small farmers impacted by the breach. A perusal of the Joint Committee report shows that 16 farmers with facing damage related to ash accumulation were considered and the amount of compensation was calculated by the Tehsildar on the direction of the Collector concerned and on the basis of the report by the Nayab Tehsildar the damage / compensation was calculated on the basis of the area of the land, fertility, production capacity and with regard to the rakba/area the amount of compensation was disbursed according to the parameter laid down by the district revenue authorities. The compensation was assessed on the basis of drone survey and the rules made there under by the State Government.

54. The contentions of the respondents are that the revenue authorities have calculated the amount of compensation which was awarded to the aggrieved and was received by the farmers without any objection to the revenue authorities. If there was any grievance to the farmers with regard to the amount of compensation, they were at liberty to file the application before the state authorities/collector. Once the amount of compensation was calculated on a

systematic manner on the ground of drone survey, area of the land and its fertility, no further calculation can be made without any basis. During the course of the hearing or in the petition, the applicant has never revealed any amount of compensation which was actual damage and on the basis of which this Tribunal can reach on any conclusion to the amount of compensation. For want of any reasonable proof, an evidence with regard to amount of compensation, the amount which has been calculated by the competent revenue authorities on the basis of the systematic rules and land survey it cannot be interfered with. Anyone aggrieved by the order of the collector may approach to the higher authorities of revenue department according to the rules. In view of the facts and discussion made above, we accept the conclusions and recommendations of the Joint Committee and direct as follows:

- (i) Recommendations and observations of the expert of IIT must be taken into account and must be complied with. The construction of spill as recommended by the expert of IIT in recommendation (1.5) must be strictly adhered to.
- (ii) Recommendation of the Joint Committee :
 1. The industry should take permission from MPPCB for further rising of ash dyke height and comply the conditions mentioned there in.
 2. The industry should not discharge wastewater & seepage water from the ash pond in to the Tanki nalla.
 3. The industry should construct permanent concreted check dam of large size capacity on the Tanki Nalla to prevent meeting of the seepage water from ash pond in to the river sone.
 4. The industry should submit the action plan for ash utilization for 03 years cycles and comply as per the approved plan.
 5. The industry should use vehicles having automatic covering system for fly ash transportation and the industry should deposit the Green House Gas Emission and Related Cost with the district collector along with the other compensation assessed and

announced by revenue department must be strictly complied with.

- (iii) The recommendation of the Principal Bench of this Tribunal in the matter of O A No. 164 of 2018 and directions quoted above, with regard to constitution of fly ash management and utilization mission must be complied. The relevant para is quoted below:

We direct constitution of a fly ash management and utilization Mission to be jointly headed by the Secretaries, MoEF&CC, Coal and Power, GoI and Chief Secretaries of UP and MP. The Secretary, MoEF&CC will be the nodal agency for coordination and compliance. The Mission will coordinate and monitor issues relating to handling and disposal of flyash as well as all associated issues in the light of above discussion. It may hold its first meeting within one month to take stock of the situation and to prepare action plan in the light of recommendations of Joint Committees quoted earlier in para 15 above in respect of individual plants as well as road map generally. Thereafter, it may meet atleast once in a month for one year to review the progress. The resolutions of the Mission and quarterly progress may be placed on the website of MoEF&CC for information of the stake holders and inhabitants in the area. The Mission will be free to interact with the concerned Government Departments/ Expert institutions/ individuals/other stakeholders. The Mission may in its first meeting require voluntary financial contribution by all the projects in proportion of the financial capacity of the projects out of CSR funds or otherwise. The contribution, alongwith compensation which may be collected may be credited to a separate environment restoration account for restoration of environment and relief to the victims of damage to the environment in such manner as may be found necessary by the Mission. Any victim or aggrieved party will be free to approach the

Mission for providing such relief. The Mission may also consider the safeguards laid down in the Notification dated 31.12.2021, particularly for safety audits of the ash dykes which should be conducted particularly for structural stability, as far as possible within six months. Advisory issued by the Ministry of Power dated 22.9.2021 will not be enforced being against the spirit of notification dated 31.12.2021 and obstructing much needed speedy utilisation/disposal of legacy fly ash. The Mission may evolve mechanism for interaction with stake holders, including associations of brick kiln owners. Guidelines be also issued for siting, design and engineering standards for the location, disposal, maintenance and regulation of Ash Ponds as breach of a fly ash ponds result in great disaster. Public health and risk impact assessment in the areas of operation of TPPs and generators of fly ash may be got conducted. The Mission may also monitor scientific management and utilization of fly ash by power projects outside Singrauli and Sonebhadra, in coordination with Chief Secretaries of concerned States and adopting safety measures for ash dykes, installing devices to control air pollution, (including FGDs, OCEMS) in a time bound manner and restoration of environment and public health. The Mission may also consider use of beneficiated coal. It may in particular consider on-site and off-site crisis management plans with regard to fly ash ponds and dykes.

- (iv) Awareness programme shall be organized for common peoples regarding utilization of fly ash for its own use and make easier the process for obtaining the permission/NOC from regulatory authority. Any complaint regarding illegal disposal received at authorities then strict action according to rules including penal action on transporters may be taken. The state authority may instruct to all transporters for compliance of the guidelines issued by Central government and State

government for safe transportation of fly ash and bottom ash. Every fly ash transporter must write on their vehicles 'If seen any illegal dumping of fly ash by this vehicle please inform to Collector'. The contact number of transporter should be visible clearly. In this regard official letter may be issued to all industries.

- (v) There is an urgent need to augment the utilization and disposal of fly ash in the State of Madhya Pradesh. The State Government must fix responsibility and may ask to all power plants of the area as to how they would address this issue. To promote off take of dry fly ash, the concerned Thermal Power Plants should address the problem of transportation of fly ash in bulk quantity to potential users in economical and environment friendly manner. It is also suggested that supply of pond ash for road construction projects and brick making should be promoted. All TPPs should take necessary action for supply of fly ash to brick manufacturers located within 300 kms radius from the TPP. Further, in order to establish a new avenue of ash utilization, there is need for transportation of wet fly ash in railway wagons.
- (vi) As per the Provisions of Notification of MoEF&CC regarding fly ash, all TPPs should take action for filling of low-lying areas on own land as well as private land using pond ash. Therefore, in order to enhance fly ash utilization levels, General Manager of TPPs and District Administration is directed to provide the list of wastelands available within 100 kms of the TPP. District Fly Ash Disposal Committee and representative of TPP should prepare list of abandoned mines/quarries for mine back filling purpose and the same for use by the TPPs as per applicable guidelines and permission from State Pollution Control Board. The District Fly Ash Management Committee may seek information from the user about the purpose of ash filling and what may be the probable use after ash filling.
- (vii) The district fly ash management committee may take action on reclamation/remediation of major orphanage sites of ash dumping

through CSR fund of all major units of the area and through public and institutional participation. There is need to develop infrastructure and establishment of cement grinding units in the region or any new cement grinding unit in that area. Initiation of road infrastructure projects such as ring road/ bypass road shall facilitate both connectivity of the region as well as it will create avenues for utilization of fly ash/ fly ash-based products. The TPPs may take prompt steps for scientific disposal of fly ash in accordance with the statutory notification issued by the MoEF & CC under the provisions of EP Act requiring 100% utilization and disposal of fly ash. In view of above, all TPPs must take prompt measures for disposal of both current and accumulated fly ash as per new fly ash notification issued by MoEF & CC vide notification dated 31.12.2021.

55. State Pollution Control Board is directed to periodically monitor the compliance of the recommendation submitted by the Joint Committee and in case of any non compliance, to ensure the compliance of the conditions and take necessary remedial measures and actions according to law.

56. Copy of the order also be sent to Principal Secretary, Environment as well as Principal Secretary, Energy of Madhya Pradesh for ensuring compliance.

With above observations and directions, the Original application stands disposed of.

Sheo Kumar Singh, JM

Dr. Arun Kumar Verma, EM

21st March, 2023
O. A .No. 35/2022
PU