

**BEFORE THE HON'BLE NATIONAL GREEN TRIBUNAL
SOUTHERN ZONE, CHENNAI.**

Original Application No. 162 of 2021(SZ)

Tribunal on its own motion Suo Motu based
on the News item published in The Times of India Newspaper,
Chennai Edition Dt.01.07.2021, "under caption"
Another Pipeline leak at Ennore Power Plant".

Vs

Union of India Rep. by its Secretary
Ministry of Environment and Forest and Climate Change,
Indira Paryavaran Bhawan,
Jorbagh Road, New Delhi – 110 003 & others.

...Respondents

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REPORT OF JOINT COMMITTEE IN COMPLIANCE TO
HON'BLE NATIONAL GREEN TRIBUNAL(SZ), CHENNAI
ORDER DATED 24/09/2021 IN O.A.NO.162 OF 2021

Submitted to
Hon'ble National Green Tribunal (SZ)
Chennai

October 2021

REPORT OF JOINT COMMITTEE IN COMPLIANCE TO
HON. BETHUNGAJI GREEN TRIBUNAL (S2), CHEMICAL
ORDER DATED MARCH 21 IN O.A. NO. 182 OF 2021

Submitted to
Hon. B. J. National Green Tribunal (S2)
Chemical
October 2021

1. Preamble

It is respectfully submitted that a case, O.A.No.162 of 2021, has been Suo-Motu registered by the Hon'ble National Green Tribunal(SZ), Chennai on the basis of the newspaper report published in the "Times of India" Chennai Edition dated 01.07.2021, under the caption "**ANOTHER PIPELINE LEAK AT ENNORE POWER PLANT**" Residents suffering from Air Pollution, Water Contamination and also another newspaper report published in the "New Indian Express" Chennai edition, dated 13.07.2021 and 15.07.2021 under the caption "**TANGEDCO VIOLATING RULES IN Ennore**" and "**TANGEDCO's Ennore SEZ Project deviating from approved alignment**" respectively.

In all these newspaper report, the allegation was that the Tamil Nadu Generation and Distribution Corporation Limited (TANGEDCO) has deviated the pipeline alignment in violation of the rules and carrying out the project against the conditions imposed in the clearances granted. Also, TANGEDCO constructing the bridge for supporting coal conveyor and sea water pipeline for proposed Ennore SEZ and for conveying bottom ash slurry from Stage III project to existing ash pond by dumping construction debris along the river course without getting CRZ clearance. Further, it has been alleged that there was leaks in the bottom ash slurry conveyance lines from NCTPS I which resulted large scale spillage into water bodies causing air pollution and water contamination. Also stated that the Controller and Auditor General's report had mentioned about the ash dumping is contaminating the ground water in those areas.

It is respectfully submitted that the Hon'ble Tribunal in the order dated.30.07.2021 directed vide,

Para 9 - In order to ascertain the genuineness of the allegations made in the newspaper report and also the alleged violations, the Hon'ble Tribunal appointed a joint committee comprising of (1) The District Collector, Tiruvallur District (2) a Senior Officer from Ministry of Environment, Forests and Climate Change (MoEF & CC), Integrated Regional Office, Chennai, (3) a Senior Office/Scientist from Central Pollution Control Board (CPCB), Integrated Regional Office, Chennai, (4) The Superintending Engineer from Public Works Department (PWD) and Water Resources Organisation (WRO), Chennai, (5) a Senior Officer from Tamil Nadu Coastal Zone Management Authority (TNCZMA), Chennai and (6) a Senior Officer from Tamil Nadu Pollution Control Board as designated by its Chairman to inspect the area in question and submit a factual as well as action taken report if there is any violation found.

Para 10 - The Committee is directed to ascertain as to whether i) there are any violations of conditions imposed in the clearances and permissions granted for Tamil Nadu Generation and Distribution Corporation Limited (TANGEDCO), ii) whether there was any deviation from the proposed alignment of the pipe as permitted under the clearances granted without obtaining any approvals of modification of the same from the appropriate authorities, iii) whether there was any leakage of ash pipe resulting in spillage of fly ash in the neighbouring areas and if so, what is the nature of damage caused on account of the same, iv) whether there was any air pollution or water contamination caused on account of the spillage of fly ash due to leakage of pipe lines, v) whether any unlawful dumping of fly ash is being done in the nearby water bodies and if so, what is the nature of damage caused to the water bodies on account of the same and the remedial measures to be taken for restoring the damage caused to the water bodies.

Para 11 - The committee is also directed to assess the environmental compensation, if there is any damage caused to the environment on account of the alleged act of the Tamil Nadu Generation and Distribution Corporation Limited (TANGEDCO) to be recovered from them including the expenses required for carrying out the remediation measures and restore the damage caused to the environment including the rectifying the contamination, if any, caused to the water body and water quality in that area.

It is submitted that in due compliance of the order of the Hon'ble Tribunal, the Joint Committee inspected the area in question and submitted a report to the Hon'ble Tribunal, during September 2021.

2. Orders of the Hon'ble Tribunal

It is respectfully submitted that the Hon'ble Tribunal, Chennai in the subsequent order dated.24.09.2021 directed vide,

Para 5 - In the mean time, the committee is directed "to inspect the area again and ascertain as to whether the recommendations have been made by the committee have been complied with by the respondents 9 and 10. If not, what is the stage of the remediation suggested by them to be carried out by the respondents 9 and 10 and they are directed to submit a further report as directed to this Tribunal on or before **27.10.2021**".

The copy of the order is enclosed as Annexure-I.

3. Submissions made the by NCTPS Stage I,II, III and IV(Ennore SEZ) to the Committee

In due compliance of the order of the Hon'ble Tribunal, the joint committee inspected the area in question and convened a meeting with NCTPS Power Plants officials on 20.10.2021 and in response to Hon'ble NGT order dated.24.09.2021, the NCTPS Stage I, II, III and IV (Ennore SEZ) have furnished the following information to the committee.

Table 1: Submissions made by M/s NCTPS and Ennore SEZ to the committee

Sl. No	Recommendations of the Committee vide report submitted to Hon'ble NGT during September, 2021	Submissions by NCTPS
1.	The TANGEDCO shall resume the activities pertaining to the NCTPS Stage III and Ennore SEZ Power Plants within the CRZ area in Kosasthalaiyar River/ Buckingham Canal/Backwaters only after obtaining amendment to the existing CRZ Clearance from MoEF&CC.	<p>NCTPS –III</p> <p>During the meeting, it was submitted that the Ash slurry pipeline work for NCTPS Stage III Project has very well been depicted in the CRZ map coming in CRZ IV, and the same had been submitted to the MOEF on 27/10/2015 itself and that the nature of work is not involving waterfront or foreshore facility and it is a permitted activity as per CRZ Rules 2011 and that as per para 4(i)-(b) of above CRZ 2011, for those projects listed under this notification and also attract EIA notification 2006, for such projects clearance under EIA notification only shall be required subject to being recommended by the concerned State CZMA. Project Presentation was made by TNEB(TANGEDCO) in the State Level CZMA on 19/5/2015 wherein it had been informed that 100 % dry fly ash collection in silos of one day (24 hours) generation capacity and also that bottom ash would be disposed through dry bottom ash handling system and in case of emergency, bottom ash will be disposed in the Ash Dyke of NCTPS.</p> <p>Further, it was submitted that ash pipeline is an incidental/ancillary activity necessary</p>

	<p>for the operation of the thermal power plant and the same is permissible under the CRZ areas as per the notification of MOEF &CC and CRZ rules. Hence amendment to the existing CRZ clearance is not required.</p> <p>However, since the Committee has recommended to resume the activity only after obtaining amendment to the existing CRZ clearance from MOEF&CC, necessary action/ clarification in this regard will be arranged to be obtained by NCTPS Stage III (Respondent 10) through TANGEDCO HQ (Project & Environment wing), if necessary and that TANGEDCO will extend full cooperation to the Committee.</p> <p>NCTPS –IV (Ennore SEZ)</p> <p>It was reported that the construction works within the CRZ area has been stopped and the same will be resumed after getting necessary amendment from MoEF&CC as directed by the committee.</p>
2.	<p>The TANGEDCO shall expedite removal of debris and dredged material from Kosathalaiyar river and restore natural flow within October 31, 2021.</p>
	<p>NCTPS III</p> <p>Removal of the brickbat construction debris used to facilitate commencing piling for 8 nos. in the waterway area on both east and west side of the existing RCC bridge at the Kosasthalaiyar river back waters was started on 11/7/2021 itself and carried out during 8/2021 and about 15 m³ cleared and stacked at a distance of about 100m and the same was shown to the Committee on 20/10/2021.</p> <p>Removal of balance brickbat construction debris of about 150 m³ dumped in the land area was also requested to be cleared away from the site.</p> <p>The Committee informed to clear away the brickbat construction materials away from that area and utilized somewhere else for filling. It was submitted that the same will be cleared early and utilized for filling in low lying areas in the project plant premises. It was also informed to the Committee that there was no obstruction caused so far for the movement of fishing boats and during inspection also, fishermen boats were found ferrying through the back waters under the existing bridge without any obstructions.</p> <p>NCTPS –IV (Ennore SEZ)</p> <p>The ECHS works in the water body area has been temporarily stopped on 27.7.21.</p>

As requested by the Revenue Officials, removal of filling sand has been started on 4.8.21 and removal completed from Pier No.19 (19500/25000 cum) and removal of the filling sand in the balance area are under progress. Also, action is being taken to cut the already cast piles located in the water body up to the riverbed level including removal of dumped sand within October 31st 2021.

The Filling Sand Removal Status in Backwater Area as on 20.10.2021.

Sl. No	Qty of Filling sand dumped in the water body(Cum)	Qty of Filling sand removed from in the water body(Cum)	Start date of Removal	Date of Completion	Present Point of disposal of Filling sand
1	25000	19500	04.08.2021	Still in progress	Nearby Stack Re claimer SR 1B & 1D

Ultimate mode of utilization /disposal of Filling sand :- For Enabling Works of Ennore SEZ Project work inside Plant Area.

Total Length of Sand filled = 230.30 m (PR-09 to PR-19)

Total Length of Filling Sand Removed = 172.50 m (PR-12 to PR-19)

3.	The TANGEDCO shall strictly fulfill and comply with the conditions imposed in the Environmental Clearance under the EIA Notification as amended and CRZ Clearance under the CRZ Notification as amended without violations and deviations for NCTPS Stage III and Ennore SEZ Power Plants unlike the environmental damage already caused by the operation of NCTPS Stage-I & II Thermal Plants due to ash deposit in the water bodies and the air-borne fly ash in the nearby villages causing nuisance and air pollution.	Assured by NCTPS Stage III and Ennore SEZ Power Plants to comply with the conditions imposed in the Environmental Clearance under the EIA Notification as amended and CRZ Clearance under the CRZ Notification as amended without violations and deviations.
4.	The TANGEDCO shall procure and replace the existing ash slurry pipe lines 1, 2, 3, 4 & 5 pertaining to the NCTPS Stage I with new cast basalt pipe before December 2021 as already committed to the Hon'ble National Green Tribunal in Applications No.8 of 2016, 152 of 2016 & 198 of 2016.	Ash Slurry Disposal Line (ASDL) No.1 - (5129 mtrs) – Administrative approval for procurement of New cast basalt pipe has been submitted to HQ and it is under process and will be completed by June 2022. ASDL No.2 - (5511 mtrs) - 1160 meters of new cast basalt pipe lines have been replaced with available 3498 metres pipes and work is being carried out on emergency basis and will be completed by December 2021.

		<p>ASDL No.3 – (4942 mtrs) - New cast basalt pipe has been replaced successfully from ash dyke to NCTPS gate and there are no leaks developed in this pipeline.</p> <p>7390 meters of pipes have been supplied and being replaced out of 10452 meters of ordered quantity for Line 2 & 3 for a value of Rs.8.36 Crores .Supply of pipes has been delayed due to Covid-19& lock down.</p> <p>ASDL No.4 – (4942 mtrs) - Tender for procurement of 4942m of new cast basalt pipes for a value of Rs. 4.32 Crores has been lodged due to non-acceptance of validity by the bidders, exorbitant steel price hike and non acceptance of LD terms of TANGEDCO dated 06.01.2021. Fresh administrative approval has been accorded by TANGEDCO Head quarters for Rs.7.3 crores. Procurement action is under process with Board Level Tender Committee at HQ and will be completed by May 2022.</p> <p>ASDL No.5 – (5511 mtrs) - Administrative approval for procurement of New cast basalt pipe has been submitted to HQ and it is under process and will by completed on June 2022.</p> <p>Due to Covid pandemic, Nation wide lock down has been imposed from March 2020 to September 2020 as per the guidelines of Government of India. Afterwards partial lockdown was continued. At that time all the manufacturer have stopped/restricted their manufacturing activities.</p> <p>Hence procurement process got delayed and consequently works have also been delayed.</p>
5.	The TANGEDCO shall also procure and replace the retrieved pipes from ETPS utilized for ash slurry pipe lines 1 & 5 pertaining to the NCTPS Stage I with new cast basalt pipe to permanently resolve the slurry ash disposal into water bodies.	Administrative approval for procurement of New cast basalt pipe has been submitted to HQ and it will be completed by June 2022.

6.	<p>The TANGEDCO is stopping the pumps soon after identifying leaks, followed by flushing with water and replacing the damaged portion of the pipe. However, the TANGEDCO is not taking any measures to clean up the area, where leak has taken place. The committee suggests that in addition to stopping the pumps, repairing the pipes, the TANGEDCO shall also take measures to clean up the area, where ash slurry has leaked, and transfer the ash it into ash dyke.</p>	<p>Work has been awarded for cleaning the area where ash leak occurs and to transport the ash to ash dyke.</p>
7.	<p>From the log books, the committee observed that, pipeline leaks due to pipe burst/rupture of joints due to ageing of pipes are very common and frequently (average frequency of one leak/week) taking place in old pipelines. Apart from the leaks due to pipeline bursts/rupture, pinhole leakage is taking place in all three old pipelines. The TANGEDCO is not taking measures to rectify pinhole leakages. If timely action is not taken to rectify these pinhole leakages, it may lead to a major leakage. The committee submits that the TANGEDCO shall immediately rectify the pinhole leakages in the pipelines that are noticed by the patrolling team.</p>	<p>Whenever pinhole leakage occurs, timely action is being taken to stop the pump immediately as and when noticed and pinhole leakages are attended by providing patch plates.</p>
8.	<p>The TANGEDCO is replacing the portion of the old damaged pipeline with pipes retrieved from Ennore Thermal Power Plant to arrest leakage. After replacement, the damaged pipelines are laying at the place of leak itself. The committee submits that TANGEDCO shall take measures to remove all the old damaged pipelines laying in the ground and keep it in stores and subsequently dispose it.</p>	<p>The old damaged pipe after replacement are being devoluted to NCTPS Store and in addition steps have been taken to devolute all the old damaged scattered pipe to NCTPS stores. More than 95% of the retrieved pipes have been devoluted to stores. Balance 5% will be devoluted within two days.</p>

9. The TANGEDCO shall carry out patrolling of ash slurry disposal pipe lines round the clock to notice and avert the leakages of pipe lines, so as to prevent the disposal of ash into Kosasthalaiyar River, Buckingham Canal etc. till the replacement of existing pipe lines.

Separate gang (consisting of 12 Nos.) with Jeep for Patrolling of Ash slurry disposal line to a stretch of 5.5 KM is being carried out round the clock to avert leakage of pipe lines, so as to prevent the leakage of ash slurry to the Kosasthalaiyar River and Buckingham Canal.

10 During inspection, the committee observed that the ash previously removed from Kosasthalaiyar River and Buckingham canal was stored near the point of excavation. During rainfall, the ash will get into river & canal again. The committee submits that the TANGEDCO & PWD shall ensure that the removed ash shall be transferred to ash dyke.

Kosasthalaiyar river: The PWD had de silted 4.35 lakhs m³ of ash from the Kosasthalaiyar river and dumped the silt on the banks and this work was completed during the end of Dec'20. Out of which 2.5 lakhs m³ have already been removed by M/s.TPIPL. The removal of balance 1.85 lakhs m³ is under progress. The above removal work will be arranged to be completed before March 2022.

Buckingham Canal: The PWD has de silted the Buckingham canal and dumped the silt on the banks and this work was completed during the end of March 21. The total quantity de silted in Buckingham canal is about 89,600 m³. Out of which 70,000 m³ have already been removed by M/s.TPIPL. The removal of balance 19,600 m³ is under progress. The above removal work will be arranged to be completed before Mar'22.

Kosasthalaiyar river [NCTPS-I main gate (Ch.20.00) to KPL main gate(Ch.22.40)]							
Quantity of ash present in the river as assessed by the previous committee in OA 8/2016	Quantity of ash due to leakage post committee inspection	Total ash present in river	Quantity of ash desilted/dredged	Storage of dredged material	Start & Stop date of desiltation	Balance quantity to be removed from Banks of Kosasthalaiyar river	Ultimate utilization of desilted materials
3.25 lakhs m ³	1.10 lakhs m ³ (assessed by PWD)	4.35 lakhs m ³ (assessed by PWD)	4.35 lakhs m ³	4.35 lakhs m ³	15.06.2020 to Dec'20	Out of 4.35 lakhs m ³ ash 2.50 lakhs m ³ ash lifted by M/s.TPIPL. Balance 1.85 lakhs m ³ ash lifting work is under progress.	Used for land filling by TPIPL near NCTPS-I ash dyke

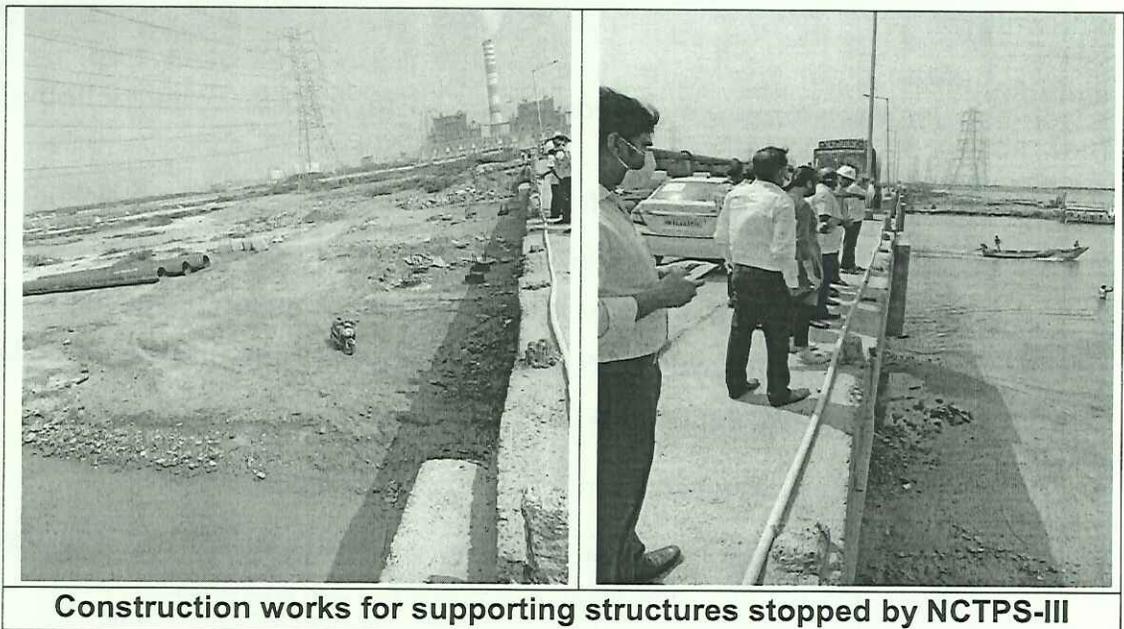
Buckingham canal [NCTPS-I main gate (Ch.20.00) to KPL main gate(Ch.22.40)]							
Quantity of ash present in the river as assessed by the previous committee in OA 8/2016	Quantity of ash due to leakage post committee inspection	Total ash present in river	Quantity of ash desilted/dredged	Storage of desilted material	Start & Stop date of desiltation	Balance quantity to be removed/ desilted from Banks	Ultimate utilization of desilted materials
77,331 m ³ (from Ch.20.00 to 22.40 Km)	56,669 m ³ (assessed by PWD) (From Ch.20.00 to 22.40 Km)	1,34,000 m ³ (assessed by PWD) (From Ch.20.00 to 22.40 Km)	89,600 m ³ (From Ch.20.80 to 22.40 Km)	89,600 m ³	Nov'20 to Mar'21	Out of 89,600 m ³ ash 70,000 m ³ ash lifted by M/s.TPIPL. Balance 19,600 m ³ ash lifting work is under progress.	Used for land filling by TPIPL near NCTPS-I ash dyke
Further an estimate has been evolved to remove 200 m length in 'B' Canal at pipeline crossing by NCTPS-II based on the letter received from the collector, Thiruvallur.							
11	The NCTPS Stage-I shall remit the environmental compensation of Rs.4,12,20,000/- (Rupees Four crore twelve lakhs & twenty thousand only) assessed by the Committee for continuing the disposal of ash slurry in water bodies.			The leakages through Ash slurry disposal lines have been minimized now and the leakages of ash slurry in water bodies have been averted to the maximum extent. It is submitted that as all we know, TANGEDCO is a service oriented organisation which provides free power supply to agriculture services, weavers, huts, and also provides power supply to domestic consumers at subsidiary rates. Moreover TANGEDCO is now facing severe financial crunch. Hence, it is prayed and submitted that the assessment by the committee to remit the environmental compensation of Rs. 4,12,20,000/-(Rupees four crore twelve lakhs & twenty thousand only) is very huge and a burden to TANGEDCO. Hence it is requested that NGT committee may please reconsider and recommend to waive off the Environmental compensation. It is also submitted that already TANGEDCO have remitted an environmental compensation of Rs.16.461 Crores for NGT OA No. 8 of 2016 for the same cause.			

12	The unit shall provide dust nets/mesh towards Seppakkam village to minimize the impacts of fly ash dust and stack emissions.	The work was awarded for providing dust net/mesh of size 2mm X 2mm near Seppakkam Village to a length of 324 m and height of 3 m is issued to the contractor and the work will be commenced shortly and completed before Nov-2021.
13	The unit shall augment the air pollution control devices installed in Stage-I & II and ensure that stack emissions are complying with notified standards. The units shall ensure that OCEMS installed in Stage-I & II are working properly and real time actual data is transmitted to CPCB and TNPCB servers.	For NCTPS-1, Maximum number of ESP fields is kept in service in all the three units so as to maintain the emission within the standard norms by close monitoring of ESP fields. Every year the ESP internals have been overhauled and Renewal/rectification works are carried out if any damaged /worn out spares during AOH and available shutdown period. Hence the stack emissions are being maintained with notified new standards most of the time. It is ensured that, the online continuous emission monitoring system (OCEMS) installed in stage I & II are working properly. Since, it has been reported by the TNPCB/CPCB whenever the exceedance of emission norms. For NCTPS-2, Renewal of field internals of 42 Nos. (Unit 1&2) is under progress and will be completed by May 2022. Tender for FGD is under process.
14	The unit shall strengthen the earthen bund laid towards Seppakkam village and ensure that runoff from ash dyke or ash depositions are not carried to villages. The unit shall provide a drain before the bund so that runoff water is collected in drains and can be lifted back to ash dyke.	A temporary bund has been formed adjacent to Seppakkam Village to prevent the entry of water into the Village. For strengthening the earthen bund and forming toe drain, IIT Chennai have been appointed as Consultant. The report is received and the work will be commenced by Ennore SEZ Project/TANGEDCO.

4. Observations of the Committee:

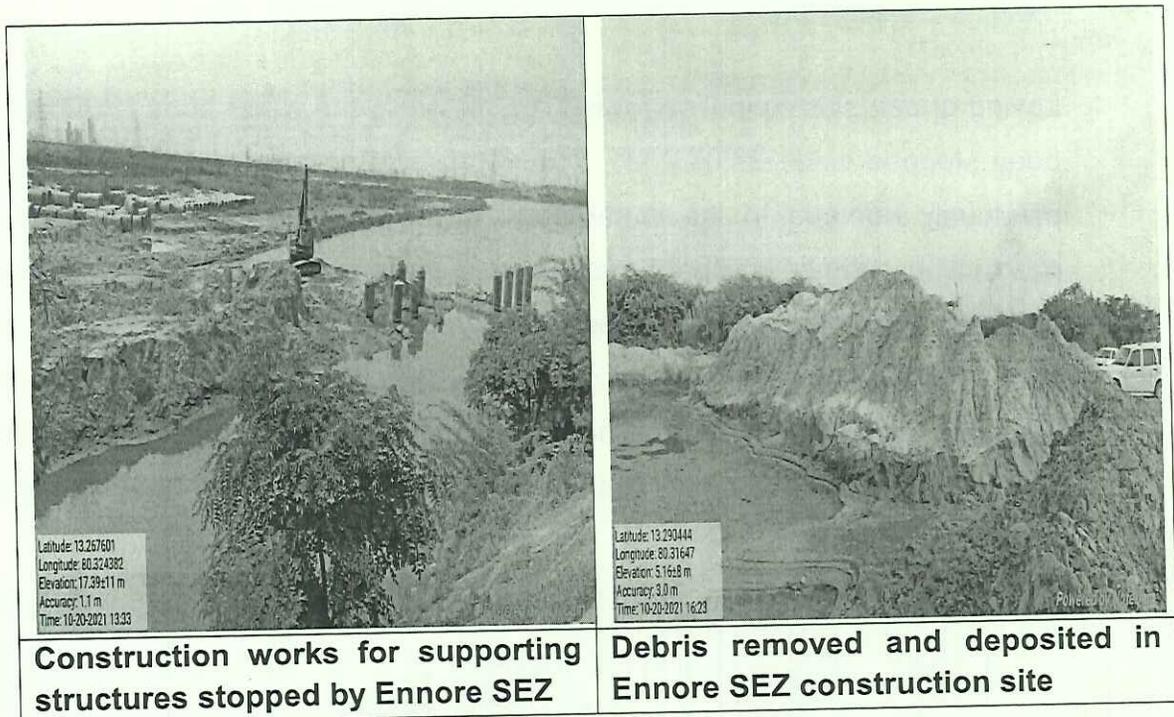
The Joint committee inspected the area in question on 20.10.2021 and the following are submitted:

1. Laying of ash slurry pipeline for NCTPS III within the water body (CRZ area) has been stopped since 27.07.2021. The debris and construction material that were previously dumped in the water body is removed and presently there is no obstruction and fishing boats are sailing in the water body. The debris that were removed from the water body are deposited around 100m away from the river bank. Though the debris are not obstructing flow of water but during rainy season it may be washed into the river, hence committee suggests that the debris may be utilized or disposed safely in M/s NCTPS own land away from the water body by November 30, 2021.



Construction works for supporting structures stopped by NCTPS-III

2. Construction work of piles for the supporting structure for laying of coal conveyor / pipelines of NCTPS IV (Ennore SEZ) in the water body has been stopped. It was reported that during construction activity about 25,000 m³ of silt / debris / dredged sand from M/s.KPL was dumped in the water body. In compliance to Hon'ble NGT orders M/s NCTPS stage-IV have started removal of silt / debris/ sand inside the water body since 04.08.2021. As on 20.10.2021 about 19,500 m³ of quantity is removed from the water body and about 5500 m³ of debris is yet to be removed. Removal of debris was in progress and by October 31, 2021 the unit shall completely remove the debris from water body as committed. The debris removed from the water body is stored in the premises of NCTPS IV (Ennore SEZ) construction site and it was reported that it would be used for leveling and land filling within the construction site.



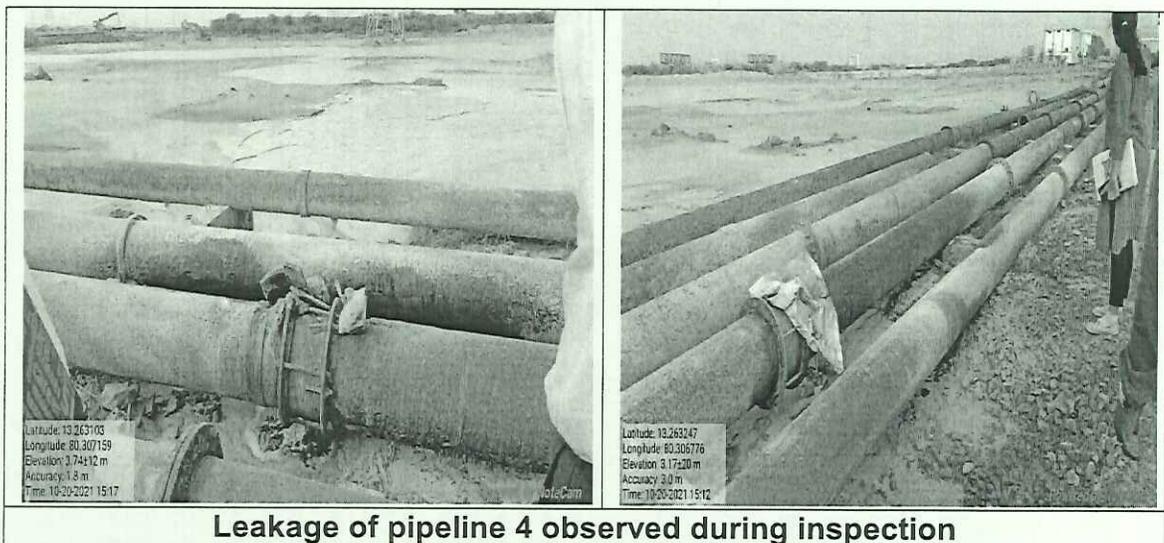
3. The ash slurry pipelines from NCTPS Stage-I cross Buckingham Canal, Backwaters and Kosasthalaiyar River and reach the Ash Pond. On the day of inspection, line -1 & 3 were in service, line -2 under replacement, line-4 was under maintenance and line-5 was standby. The current status of replacement of ash pipelines is given in table 2:

Table 2: Status of replacement of ash pipelines as on 20.10.2021

Sl. No.	Description of pipeline	Outer diameter	Pipe thickness	Length of pipeline	Present status
1	Ash slurry disposal line-1	406mm	6mm	5129m	Replaced with second hand pipes retrieved from ETPS.
2	Ash slurry disposal line-2	406mm	6mm	5511 m	Replacing with new pipe and reported to be completed before December 31, 2021.
3	Ash slurry disposal line-3	406mm	6mm	4942 m	Replacing with new pipe and reported to be completed before December 31, 2021.
4	Ash slurry disposal line-4	406mm	6mm	4942 m	Old pipeline. Tender invited for procuring new pipes.
5	Ash slurry disposal line-5	356 mm	6 mm	5511 m	Replaced with second hand pipes retrieved from ETPS.

4. Although minor leakages of ash slurry pipeline -4, at two places, were noticed at the time of inspection, no other major leakages were noticed. The unit is taking steps to arrest the leakages immediately so that the surrounding area is not contaminated. Measures taken by M/s NCTPS for early detection of leakages are as follows:

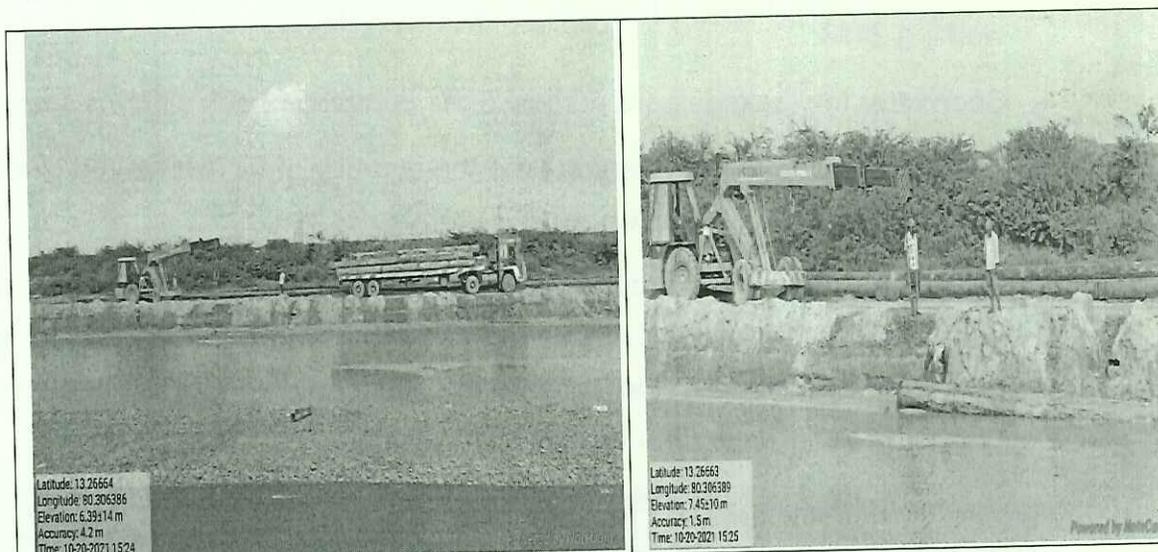
- A dedicated patrol team of 12 members (two vehicles) is appointed by M/s NCTPS to inspect/ watch the pipelines for any leakages. The patrol team is working 24x7.
- Soon after the leakages are detected, the pumping of ash slurry is stopped.
- The surrounding area is cleaned and the quantity of fly ash leaked is removed and transferred to ash dyke.
- During the meeting, the committee learnt that the top Management starting from Chief Engineer who is heading M/s NCTPS stage-I and senior officers are closely checking the records for leakages and to immediately take measures for arresting the leakages in the pipes



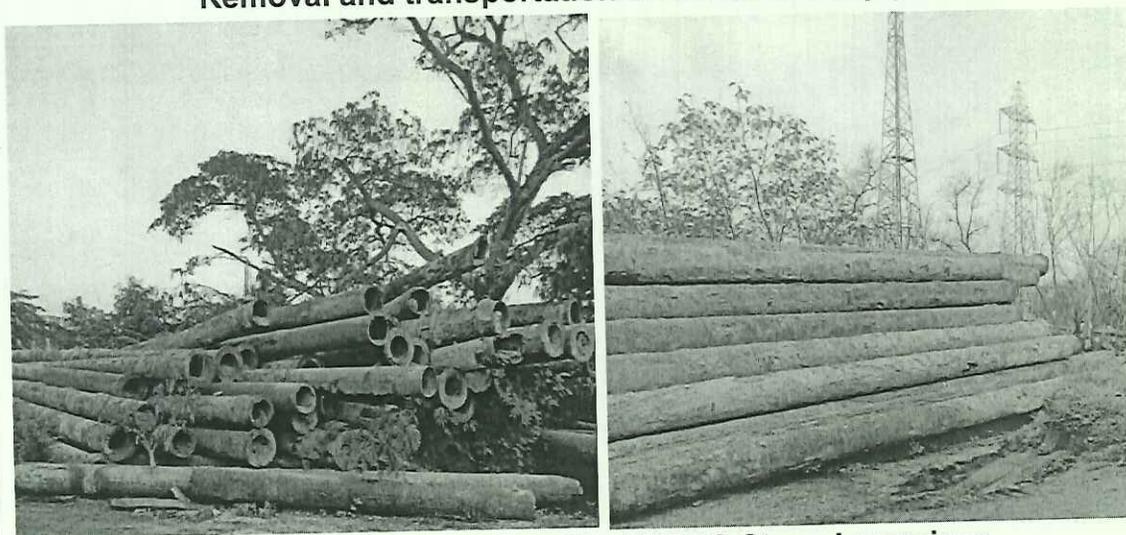
5. Removal of earlier deposition of ash from the leaky pipeline areas and transportation of the same to ash pond was going on.
6. Previously when the leaking portion of the pipes were replaced with new ones, the old pipes were left near point of replacement itself. Due to these, many old rusted pipelines were found laying along the pipeline route. In compliance to Hon'ble NGT orders, M/s NCTPS Stage-I started removing of old pipes and same were being collected and transported to the storage yard inside the NCTPS Stage I

Table 3: Details of removed pipes from ash handling area

Sl.No	Month	Length of old ash pipelines removed (in metres)	Remarks
1	August, 2021	951	-
2	September, 2021	-	
3	October, 2021	2877	As on 26.10.2021
Total		3828	



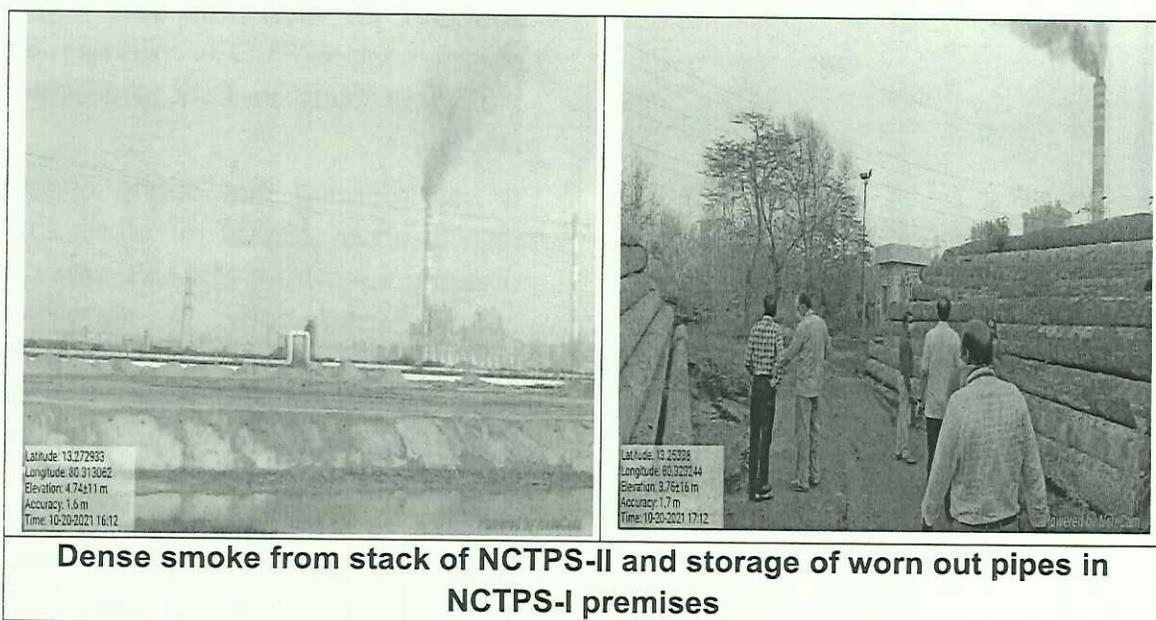
Removal and transportation of old worn out pipes



Removed pipes stored in M/s NCTPS Stage I premises

- Dense flue gas emission was noticed from the boiler stack of NCTPS Stage II at the time of inspection. Though the unit has installed Online Continuous Emission monitoring system to monitor PM, SO_x and NO_x emitted from the flue gas, it was observed that as per OCEMS readings, real time data is not transmitted to CPCB/ TNPCB and there is time delay. The committee observed that SMS alerts are

generated whenever exceedances are observed however the unit is yet to take corrective actions.



5. Remarks & Findings of the Committee :

Sl. No	Recommendation of the Committee during September 2021	Remarks of the Committee based on inspection on 20.10.21
1.	The TANGEDCO shall resume the activities pertaining to the NCTPS Stage III and Ennore SEZ Power Plants within the CRZ area in Kosathalaiyar River/ Buckingham Canal/Backwaters only after obtaining amendment to the existing CRZ Clearance from MoEF&CC.	During inspection, no construction activities were carried out inside the water bodies in CRZ area by NCTPS Stage III and Stage IV (Ennore SEZ).
2.	The TANGEDCO shall expedite removal of debris and dredged material from Kosathalaiyar river and restore natural flow within October 31, 2021.	Supporting structures for laying of pipeline for NCTPS III inside the water body in CRZ area have been stopped. The debris and construction material that were previously dumped in the water body is removed and presently there is no obstruction and fishing boats are sailing in the water body. The debris that were removed from the water body are deposited around 100m away from the river bank. Though the debris are not obstructing flow of water but during rainy season it may be washed into the river, hence committee suggests that the debris

		<p>may be utilized or disposed safely in M/s NCTPS own land away from the water body by November 30, 2021.</p> <p>Construction work for the supporting structure for laying of coal conveyor / pipelines of NCTPS IV (Ennore SEZ) in the water body in CRZ area has been stopped.</p> <p>It was reported that during construction activity about 25,000 m³ of silt / debris / dredged sand from M/s.KPL was dumped in the water body. In compliance to Hon'ble NGT orders M/s NCTPS stage-IV have started removal of silt / debris/ sand inside the water body since 04.08.2021. As on 20.10.2021 about 19,500 m³ of quantity is removed from the water body and about 5500 m³ of debris is yet to be removed. Removal of debris was in progress and by October 31, 2021 the unit shall completely remove the debris from water body as committed. The debris removed from the water body is stored in the premises of NCTPS IV (Ennore SEZ) construction site and it was reported that it would be used for leveling and land filling within the construction site.</p>
3.	<p>The TANGEDCO shall strictly fulfill and comply with the conditions imposed in the Environmental Clearance under the EIA Notification as amended and CRZ Clearance under the CRZ Notification as amended without violations and deviations for NCTPS Stage III and Ennore SEZ Power Plants unlike the environmental damage already caused by the operation of NCTPS Stage-I & II Thermal Plants due to ash deposit in the water bodies and the air-borne fly ash in the nearby villages causing nuisance and air pollution.</p>	<p>Assured by NCTPS Stage III and Ennore SEZ Power Plants to comply further with the conditions imposed in the Environmental Clearance under the EIA Notification as amended and CRZ Clearance under the CRZ Notification as amended without violations and deviations.</p>

4.	<p>The TANGEDCO shall procure and replace the existing ash slurry pipe lines 1, 2, 3, 4 & 5 pertaining to the NCTPS Stage I with new cast basalt pipe before December 2021 as already committed to the Hon'ble National Green Tribunal in Applications No.8 of 2016, 152 of 2016 & 198 of 2016.</p>	<p>Pipelines 1 and 5 were earlier replaced with the second hand pipes retrieved from Ennore Thermal plant (ETPS) in August 2020.</p> <p>It was reported by the NCTPS Stage- I officials that for pipeline 1 (5129 mtrs) and pipeline 5 (5511 mtrs) administrative approval for procurement of New cast basalt pipe has been submitted to Head Office and it is under process and will be completed by June 2022.</p> <p>For pipeline 2 (5511 mtrs), 1160 meters of new cast basalt pipe lines have been replaced with the available 3498 metres pipes and the remaining work is being carried out and reported to be completed by December 2021.</p> <p>For pipeline 3 (4942 mtrs), new cast basalt pipe has been replaced from ash dyke to NCTPS gate. Balance pipes of length of 1050 metres inside NCTPS premises to be replaced.</p> <p>It was reported by the NCTPS Stage-I officials that supply of pipes has been delayed due to Covid-19 & lock down. Afterwards partial lockdown was continued. At that time all the manufacturer have stopped/restricted their manufacturing activities. Hence procurement process got delayed and consequently works have also been delayed. The balance pipes of length of 1050 metres inside NCTPS premises will be replaced on receipt of balance materials.</p> <p>For pipeline 4 (4942 mtrs) no replacement works have been started.</p> <p>It was reported by the NCTPS Stage-I officials that tender for procurement of 4942m of new cast basalt pipes for a value of Rs.4.32 Crores has been lodged due to non-acceptance of validity by the bidders, exorbitant steel price hike and non acceptance of LD terms of TANGEDCO dated 06.01.2021. Fresh</p>
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		administrative approval has been accorded by TANGEDCO Head office for Rs.7.3 Crores. Also, reported that procurement action is under process with Board Level Tender Committee at Head office and will be completed by May 2022.
5.	The TANGEDCO shall also procure and replace the retrieved pipes from ETPS utilized for ash slurry pipe lines 1 & 5 pertaining to the NCTPS Stage I with new cast basalt pipe to permanently resolve the slurry ash disposal into water bodies.	It was reported by the NCTPS Stage-I officials that for pipeline 1 (5129 mtrs) and pipeline 5 (5511 mtrs) administrative approval for procurement of New cast basalt pipe has been submitted to Head Office and it is under process and will be completed by June 2022.
6.	The TANGEDCO is stopping the pumps soon after identifying leaks, followed by flushing with water and replacing the damaged portion of the pipe. However, the TANGEDCO is not taking any measures to clean up the area, where leak has taken place. The committee suggests that in addition to stopping the pumps, repairing the pipes, the TANGEDCO shall also take measures to clean up the area, where ash slurry has leaked, and transfer the ash it into ash dyke.	Removal of earlier deposition of ash from the leaky pipeline areas and transportation of the same to ash pond was under progress.
7.	From the log books, the committee observed that, pipeline leaks due to pipe burst/rupture of joints due to ageing of pipes are very common and frequently (average frequency of one leak/week) taking place in old pipelines. Apart from the leaks due to pipeline bursts/rupture, pinhole leakage is taking place in all three old pipelines. The TANGEDCO is not taking measures to rectify pinhole leakages. If timely action is not taken to rectify these pinhole leakages, it may lead to a major leakage. The committee submits that the TANGEDCO shall immediately rectify the pinhole	The TANGEDCO has engaged a separate patrol team to identify the pipeline leaks for taking measures to arrest the leakages immediately. It was reported that measures to rectify pinhole leakages to avoid major leakage are also undertaken.

	leakages in the pipelines that are noticed by the patrolling team.	
8.	The TANGEDCO is replacing the portion of the old damaged pipeline with pipes retrieved from Ennore Thermal Power Plant to arrest leakage. After replacement, the damaged pipelines are laying at the place of leak itself. The committee submits that TANGEDCO shall take measures to remove all the old damaged pipelines laying in the ground and keep it in stores and subsequently dispose it.	Old removed worn out pipes were being collected and transported to the storage yard inside the NCTPS Stage-I.
9.	The TANGEDCO shall carry out patrolling of ash slurry disposal pipe lines round the clock to notice and avert the leakages of pipe lines, so as to prevent the disposal of ash into Kosasthalaiyar River, Buckingham Canal etc. till the replacement of existing pipe lines.	The TANGEDCO has engaged a separate patrol team to identify the pipeline leaks for taking measures to arrest the leakages immediately.
10.	During inspection, the committee observed that the ash previously removed from Kosasthalaiyar River and Buckingham canal was stored near the point of excavation. During rainfall, the ash will get into river & canal again. The committee submits that the TANGEDCO& PWD shall ensure that the removed ash shall be transferred to ash dyke.	Still, a part of excavated ash from Kosasthalaiyar River and Buckingham Canal is found to be stored near the point of excavation.
11.	The NCTPS Stage-I shall remit the environmental compensation of Rs.4,12,20,000/- (Rupees Four crore twelve lakhs & twenty thousand only) assessed by the Committee for continuing the disposal of ash slurry in water bodies.	Not yet remitted by NCTPS Stage-I.
12.	The unit shall provide dust nets/mesh towards Seppakkam village to minimize the impacts of fly	Not yet provided and it was reported that for providing dust nets/mesh, work was awarded and the same will be completed

	ash dust and stack emissions.	before November 2021. M/s NCTPS has finalized the specifications for the mesh. The pore size of the mesh is 2mm x 2mm. The mesh will be provided to a length of 400m and height of 10m thereby covering the Village.
13.	The unit shall augment the air pollution control devices installed in Stage-I & II and ensure that stack emissions are complying with notified standards. The units shall ensure that OCEMS installed in Stage-I & II are working properly and real time actual data is transmitted to CPCB and TNPCB servers.	It was reported that for NCTPS-I, every year, the ESP internals have been overhauled and renewal/rectification works are carried out if any damaged / worn out spares during Annual Overhaul (AOH) and available shutdown period. For NCTPS-II, Renewal of field internals of 42 Nos. (Unit 1&2) is under progress and will be completed by May 2022. Tender for FGD to control sulphur emission is under process. The Online Continuous Emission Monitoring System (OCEMS) for the parameters PM, SO _x & NO _x installed in Stage I (All three boilers) & II (All two boilers) are connected to TNPCB/CPCB server.
14.	The unit shall strengthen the earthen bund laid towards Seppakkam village and ensure that runoff from ash dyke or ash depositions are not carried to villages. The unit shall provide a drain before the bund so that runoff water is collected in drains and can be lifted back to ash dyke.	It was reported that for strengthening the ash pond earthen bund and forming toe drain, IIT Chennai has been appointed as Consultant. Also, reported that the report from IIT, Chennai has been received and the work will be commenced by TANGEDCO. Committee suggests that the height of the earthen bund shall be increased to 2m

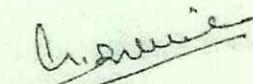
6. Recommendations of the Committee

1. The TANGEDCO shall complete the recommendations of the committee constituted by the Hon'ble NGT in O.A.No.08 of 2016, 152 of 2016 & 198 of 2016, within the time line committed.
2. The TANGEDCO shall also complete the recommendations of the committee constituted by the Hon'ble NGT in O.A.No.162 of 2021.
3. The NCTPS Stage-I shall remit the Environmental Compensation of **Rs.4,12,20,000/- (Rupees Four crore twelve lakhs & twenty thousand only)** as

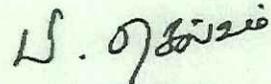
assessed by the committee constituted by the Hon'ble NGT in O.A.No.162 of 2021 and submitted to the Tribunal in September 2021.

4. The unit M/s NCTPS Stage-II shall augment the air pollution control devices installed and ensure that stack emissions are complying with the stipulated standards at all times.
5. The unit M/s NCTPS Stage-I shall increase the height of the bund near Seppakkam Village to 2m.
6. The construction debris removed from the water body by M/S NCTPS Stage-III shall be utilized or disposed safely in M/s NCTPS own land away from the water body by November 30, 2021

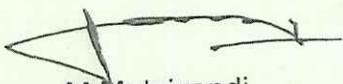
It is, therefore, prayed that this Hon'ble Tribunal may take on record the above status report based on the observations made by the Joint Committee and pass appropriate and further orders as this Hon'ble Tribunal may deem fit and necessary in the circumstances of the case and thus render justice.



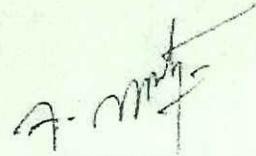
G. Subbiah,
Forest range Officer,
Directorate of Environment, Chennai
representing
Tamilnadu Coastal Zone Management
Authority.



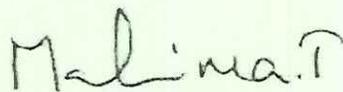
P. Selvam,
Revenue Divisional Officer,
Ponneri, Thiruvallur District.
representing
District Collector,
Thiruvallur District.



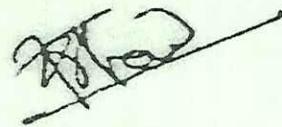
M. Malaiyandi
Joint Chief Environmental Engineer(M),
Tamil Nadu Pollution Control Board,
Chennai Zone.



A. Muthaiya,
Superintending Engineer,
Water Resources Department / PWD,
Chennai.



Mahima T
Scientist 'D'
CPCB,
Regional Directorate, Chennai.



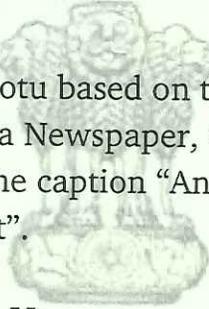
R. Sridhar,
Scientist 'D'
MoEF & CC,
Integrated Regional Office, Chennai.

ANNEXURE-I

Item No.07:BEFORE THE NATIONAL GREEN TRIBUNAL
SOUTHERN ZONE, CHENNAIOriginal Application No. 162 of 2021 (SZ)*(Through Video Conference)*

IN THE MATTER OF

Tribunal on its own motion- Suo-Motu based on the news Item published in the Times of India Newspaper, Chennai Edition, dated 01.07.2021, under the caption "Another Pipeline leak at Ennore Power Plant".



Versus

...Applicant(s)

Union of India, Rep. by its Secretary,
Ministry of Environment and Forests and Climate Change,
Indira Paryavaran Bhawan,
Jorbagh Road, New Delhi – 110 003.

...Respondent(s)

Date of hearing: 24.09.2021.

CORAM:

HON'BLE MR. JUSTICE K. RAMAKRISHNAN, JUDICIAL MEMBER

HON'BLE MR. DR. K. SATYAGOPAL, EXPERT MEMBER

For Applicant(s): By Court

For Respondent(s): Ms. Ojas Siva Kumar represented
Mr. M.R. Gokul Krishnan for R1
Dr. D. Shanmuganathan for R2 to R6, R11 & R12
Mr. Shanmuga Sundaram represented
Mrs. Revathi Manivannan for R7
Mr. S. Sai Sathya Jith for R8
Mr. Vijay Mehanath for R9 & R10

ORDER

1. The above case has been Suo-Motu registered by this Tribunal on the basis of the newspaper report and as per order dated 30.07.2021, this

Tribunal had appointed a joint committee to go in the question and submit a report. The case was originally posted to 31.08.2021 for appearance of parties and also for filing their independent reports and apart from the committee report. On 31.08.2021, the matter was adjourned from today by notification.

2. The joint committee has filed a report dated nil, e-filed on 23.09.2021 and received today (24.09.2021) which reads as follows:-

1. Preamble

It is respectfully submitted that a case, O.A.No.162 of 2021, has been Suo-Motu registered by the Hon'ble National Green Tribunal(SZ), Chennai on the basis of the newspaper report published in the "Times of India" Chennai Edition dated 01.07.2021, under the caption "ANOTHER PIPELINE LEAK AT ENNORE POWER PLANT" Residents suffering from Air Pollution, Water Contamination and also another newspaper reports published in the "New Indian Express" Chennai edition, dated 13.07.2021 and 15.07.2021 under the caption "TANGEDCO VIOLATING RULES IN Ennore" and "TANGEDCO's Ennore SEZ Project deviating from approved alignment" respectively.

In all these newspaper report, the allegation was that the Tamil Nadu Generation and Distribution Corporation Limited (TANGEDCO) has deviated the pipeline alignment in violation of the rules and carrying out the project against the conditions imposed in the clearances granted. Also, TANGEDCO constructing the bridge for supporting coal conveyor and sea water pipeline for proposed Ennore SEZ and for conveying bottom ash slurry from Stage III project to existing ash pond by dumping construction debris along the river course and without getting CRZ clearance. Further, it has been alleged that there was leaks in the bottom ash slurry conveyance lines from NCTPS I which resulted large scale spillage into water bodies causing air pollution and water contamination. Also stated that the Controller and Auditor General's report had mentioned about the ash dumping is contaminating the ground water in those areas.

2. Orders of the Hon'ble Tribunal

It is respectfully submitted that the Hon'ble Tribunal, Chennai in the order dated,30.07.2021 in O.A.No.162 of 2021 directed vide,

Para 9- In order to ascertain the genuineness of the allegations made in the newspaper report and also the alleged violations, the Hon'ble Tribunal appointed a joint committee comprising of (1) The District Collector, Tiruvallur District (2) a Senior Officer from Ministry of Environment, Forests and Climate Change (MoEF & CC), Integrated Regional Office, Chennai, (3) a Senior Officer/Scientist from Central Pollution Control Board (CPCB), Integrated Regional Office, Chennai, (4) The Superintending Engineer from Public Works Department (PWD) and Water Resources Organisation (WRO), Chennai, (5) a Senior Officer from Tamil Nadu Coastal Zone Management Authority (TNCZMA), Chennai and (6) a Senior Officer from Tamil Nadu Pollution Control Board

as designated by its Chairman to inspect the area in question and submit a factual as well as action taken report if there is any violation found.

Para 10-The Committee is directed to ascertain as to whether i) there are any violations of conditions imposed in the clearances and permissions granted for Tamil Nadu Generation and Distribution Corporation Limited (TANGEDCO), ii) whether there was any deviation from the proposed alignment of the pipe as permitted under the clearances granted without obtaining any approvals of modification of the same from the appropriate authorities, iii) whether there was any leakage of ash pipe resulting in spillage of fly ash in the neighbouring areas and if so, what is the nature of damage caused on account of the same, iv) whether there was any air pollution or water contamination caused on account of the spillage of fly ash due to leakage of pipe lines, v) whether any unlawful dumping of fly ash is being done in the nearby water bodies and if so, what is the nature of damage caused to the water bodies on account of the same and the remedial measures to be taken for restoring the damage caused to the water bodies.

Para 11-The committee is also directed to assess the environmental compensation, if there is any damage caused to the environment on account of the alleged act of the Tamil Nadu Generation and Distribution Corporation Limited (TANGEDCO) to be recovered from them including the expenses required for carrying out the remediation measures and restore the damage caused to the environment including the rectifying the contamination, if any, caused to the water body and water quality in that area.

The copy of the order is enclosed as Annexure-I.

3. Composition of the Committee:

Sl. No	Name	Designation
1.	Thiru.R.R.Sridhar	Scientist 'D', MoEF & CC, Integrated Regional Office, Chennai.
2.	Tmt.T.Mahima	Scientist 'D', CPCB, Regional Directorate, Chennai.
3.	Thiru.S.Vijayarajan,	Environmental Engineer, TNPC Board, O/o.Joint Chief Environmental Engineer (M) Chennai Zone, Chennai.
4.	Thiru.P.Selvam,	Revenue Divisional Officer, Ponneri, Tiruvallur District. Representative of District Collector Tiruvallur

5.	Thiru.I.Vetrivelan,	Assistant Engineer, PWD (WRD), O/o Executive Engineer, Araniyar Basin Division. Representative of Public Works Department (Water Resource Department).
6.	Thiru.R.Sathish Kumar,	Assistant Engineer, PWD (WRD), O/o Executive Engineer, Kosasthalaiyar Basin Division. Representative of Public Works Department (Water Resource Department).
7.	Thiru M. Vinod Kumar,	Programme Officer, GIS Cell, Directorate of Environment, Chennai. Representing TNCZMA.

4. Submissions made the by TANGEDCO and M/s NCTPS to the Committee

The Joint Committee convened a meeting with TANGEDCO & NCTPS Power Plants official on 23.08.2021 and in response to Hon'ble NGT case OA 162/2021, the units furnished following factual information to committee:

- i) Water is being used for pumping out the ash slurry, generated by burning of coal in Stage I and Stage II of North Chennai Thermal Power Plants, into the ash pond, which is filtered and put into reuse. Everyday about 48,000 Tons of wet ash slurry is being pumped into ash pond which contributes 3,300 Tons of Fly ash.
- ii) The ash pond is located about 5kms from the Thermal Plant sprawling at an area of about 115 Hectares.
- iii) The total height of the earthen bund of the ash pond is 7 metre of which 3 metre free board is available now.
- iv) The total quantity of ash deposited was 65 Lakh cu.m, out of which 22 Lakh cu.m has been already removed and disposed. Hence left out with 43 Lakh cu.m of ash at present.
- v) Both the Stage-I&II Thermal Power Plants have been designed for 40% Wet bottom and hence generation of ash slurry is inevitable. Only the Stage- III Thermal Power Plant is designed for a dry bottom ash and hence ash will be disposed to the ash pond as a contingency plan in case of emergency only. In Stage-IV (Ennore SEZ) plant, bottom ash is proposed to be disposed into ash dyke located adjacent to the unit.
- vi) The pipelines of Stage-I were commissioned during 1994-95 and hence more than 25 years old. They have become rustic, corroded and brittle with numerous

cracks. There are total 8 Nos. of series of pipelines of which 5 Nos. carry ash slurry and 3 Nos. being used for recycling the filtered water.

- vii) In the matter of Hon'ble NGT case in OA.No.08/2016, 152/2016 & 198/2016 TANGEDCO has committed a timeline for replacement of all the 5 Nos. of pipelines by December 2021. Currently, out of 5 Nos. of ash slurry pipelines, Line 1 & 5 were replaced with old used Cast Basalt-lined pipelines (having an outer diameter of 406 mm and Inner diameter of 356mm) brought from Ennore Thermal Power Station (ETPS) during August 2020. Replacement of Line 2 & 3 is in progress with new Cast Basalt pipes, but for Line 4, the unit is yet to procure new pipes. Both the series of ash pipelines of Stage-I&II comprising 13 Nos(8+5) starts near the Stage-2 Entrance Gate outside, cross the adjoining Buckingham Canal, Backwaters and Kosasthalaiyar river by supporting bridges.
- viii) TANGEDCO is operating a patrol team round the clock to check for pipeline leakages. Soon after leakages are noticed, pumps are stopped immediately, the left over ash slurry in the pipeline is flushed outside, fresh water is transported through pipelines, leaks are repaired and pipes are put back into operation.
- ix) Further, TANGEDCO had proposed to establish 1x800 MW, NCTPP Stage III Super Critical Thermal Power Plant which is only an expansion unit in the vacant land available within the existing North Chennai Thermal Power Station Complex at Ennore and Puzhuthivakkam Villages of Ponneri Taluk, Tiruvallur District.
- x) The on-going NCTPS Stage III project was conceived in 1989 itself as a Stage III project as the land had already been acquired for accommodating all the three stages of NCTPS and is developed to generate power using the existing features of NCTPS Stage I and Stage II within the industrial land of NCTPS complex, which is enclosed in a pucca compound wall constructed during 1990. The CMDA also declared the subject complex as "industrial land".
- xi) Based on the power demand and financial status of TNEB, these power plants are executed in a phased manner utilizing the public exchequer. The Stage I power plant of installed capacity of 3x210 MW is being operated from 1995 onwards and Stage II power plant of installed capacity of 2 X 600MW is generating power from 2014 onwards inside the NCTPS Complex.

- xii) NCTPS Stage III Project is now being established to offset the power demand of Tamil Nadu using the existing facilities of NCTPS complex without acquisition of any other land from the public and the progress of work is in a good phase.
- xiii) The TANGEDCO & CE/NCTPP III Project had applied for the grant of Environmental Clearance as mandated under Environmental Impact Assessment (EIA) Notification 2006 to the Ministry of Environment, Forest and Climate Change.
- xiv) Project presentation was made by TNEB (TANGEDCO) in the State level CZMA on 19/5/2015, wherein under the heading of Fly Ash Management, it had been informed that no ash disposal in sea/river and 100% dry fly ash collection in silos of one day (24 Hours) ash generation capacity of the proposed plant and also that bottom ash would be disposed through dry bottom ash handling system and in case of emergency, bottom ash will be disposed of in the Ash Dyke of NCTPS.
- xv) The Director of Environment, Chennai, has sent the copy of the proposal with the reports, details, HTL map and Minutes of the 83rd meeting of TNSCZMA held on 19/5/2015 to the Department of Environment & Forests, Govt. of Tamilnadu. In line with the recommendations of TNSCZMA, Government of Tamil Nadu recommended the proposal of TANGEDCO to the Chairman/National CZMA and MOEF &CC. In the Lr. No. 10173/EC.3/2015-1 dated 16/6/2015 of the Principal Secretary to Government also, it has been mentioned that TANGEDCO has informed that the proposed project would be taken within the existing NCTPS complex as an expansion unit.
- xvi) Project presentation and additional Information was made by TNEB (TANGEDCO) before the EAC of GOI on 27/11/2015. Under sl. no. II - Revised Layout of NCTPS complex prepared by the Institute of Remote Sensing, Anna University, Chennai various units viz., Stage I (3x210 MW), Stage II (2x600 MW) and facilities viz., Coal conveyor, Cooling water inlet/outlet and Bottom Ash disposal line to the Ash Dyke of NCTPS along with the Demarcation of HTL/LTL and CRZ Delineation for NCTPS Stage III (1x800 MW) at Ennore Village, Ponneri Taluk, Tiruvallur District are depicted and under sl. No. X - Explore various avenues for utilisation of bottom ash, wherein it has been mentioned that the bottom ash of the proposed plant would be collected through dry bottom handling system and used for brick manufacturing and road laying purposes and

excess, if any, disposed in to the existing ash dyke of NCTPS. From the presentations submitted, the ash pipe line for the project using the ash dyke of NCTPS has been furnished to MOEF & CC.

- xvii) Considering all the above including the Environment Impact Assessment report, MOEF had issued combined Environmental Clearance under EIA Notification 2006 as amended and CRZ Clearance under CRZ Notification 2011 as amended for the above said project on 20.01.2016 with various conditions.
- xviii) Further, TANGEDCO is executing one more Thermal Power Project namely Ennore Special Economic Zone Supercritical Thermal Power Project(2x660MW) at Vayalur village, Ponneri Taluk, Thiruvallur District to augment the growing Electric Power Demand of the state of Tamil Nadu.
- xix) The above project includes erection of external coal handling system for carrying coal from Ennore Port(M/s. Kamarajar Port Ltd- KPL) to project site 5 KM crossing NCTPS-II Land, Buckingham Canal, Kosasthalaiyar River (Pulicot Back water), KPL Land, TIDCO Land, TANGEDCO Ennore SEZ Supercritical Thermal Power Project site for which necessary clearance from Energy Department, PWD, MOEF (EC & CRZ), KPL RoW (Right of Way), TIDCO RoW, TNPCB (CTE) has been obtained.
- xx) Coal Corridor Alignment Consists of Belt Conveyor stretch from Ennore Port Ltd to TH-1 (Transfer House - 1) near KPL Road Y junction and Pipe conveyor stretch from TH-1 to Project site. The conveyor system is designed for the transportation of coal capacity of 4000TPH.
- xxi) Seawater intake system starts from Existing NCTPS-II sea water intake Forebay to Sea water intake pump house situated in Stage-II via open channel and water pumped from Pump house and then supported by concrete pedestals and crosses Stage-II Land, Buckingham Canal, KPL Road, Railway track and joins with coal conveyor at Y junction of KPL (TH-1). The total system (Coal Conveyor + Sea water pipe lines(2 Intake pipes and 1 Blowdown pipe)) travels in a single corridor from TH-1 to project site.
- xxii) After detailed surveys and geo-technical conditions of the site, the Coal Conveyor route was finalized by proposing to cross the water bodies and land portions encountered in the alignment in the shortest route crossing the water bodies.

While so, there was a development took place whereby M/s.Chettinad Coal Yard and connected infrastructure facilities were being developed by the said private body which was falling in the vicinity of the Ennore SEZ project's Coal Conveyor site route of the TANGEDCO. Hence, the TANGEDCO was constrained to act accordingly. Earlier, TANGEDCO proposed to erect closed type belt Coal Conveyor. However, the Pipe Conveyor System is subsequently preferred to avoid spillage of coal.

The closed pipe conveyor system has to be erected in a smooth curved line and as such the routing of pipe conveyor was designed suitably in a curvilinear manner as per the technical requirement to erect Pipe conveyor to avoid spillage of coal dust for environmental friendly approach.

The total length of conveyor from Ennore Port Limited to Project site is 4500 meters; the length of conveyor under execution is only 4328 meters.

xxiii) In this condition, the general public from Kattukuppam Village agitated and conducted dharna on 19.07.2021. After the talks with the people and to avoid law and order problem, the Thasildar, Ponneri after discussions with the Revenue Divisional Officer/Ponneri, requested TANGEDCO to suspend the works temporarily until the peace meeting which was proposed to be held on 23.07.2021. After the Peace meeting, work was resumed on 24.07.2021.

Now based on the request made by Revenue officials, the work has been temporarily stopped on 27.07.2021 and the removal of filling sand has been commenced on 04.08.2021 and completed from Pier No.13 to Pier No.19 (144 meters removed out of total 230.3 meters). The removal of the filling sand in the balance area (about 86.3 meters) is under progress.

5. Observations of the Committee:

The Joint committee inspected the area in question on 23.08.2021 and the following are submitted:

5.a. To ascertain as to whether there are any violations of conditions imposed in the clearances and permissions granted for Tamil Nadu Generation and Distribution Corporation Limited (TANGEDCO).

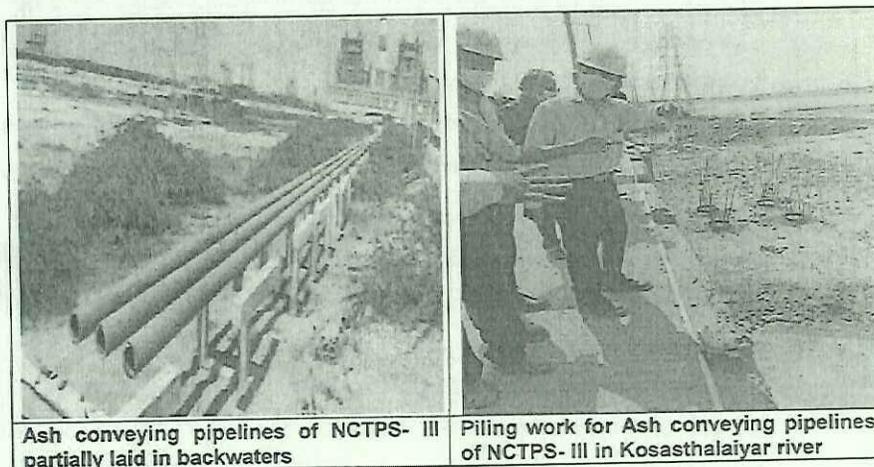
1. Though TANGEDCO had conceived NCTPS Stage-III project in 1989, TANGEDCO obtained combined Environmental Clearance and CRZ clearance

from MoEF&CC on 20.01.2016. Establishment of 1x800 MW, NCTPP Stage-III Super Critical Thermal Power Plant an expansion unit in the vacant land available within the existing North Chennai Thermal Power Station Complex at Ennore started during 2017.

2. It is submitted that combined Environmental Clearance under EIA Notification 2006 as amended and CRZ Clearance under CRZ Notification 2011 as amended for expansion of 1 x 800MW North Chennai Thermal Power Plant (Stage-III) and for the following foreshore facilities at villages of Ennore & Puzhuvakkam in Ponneri Taluk of Thiruvallur District has been granted by the MoEF&CC on 20.01.2016 with certain conditions. The validity of EC is up to 7 years from the date of issue i.e up to 19.01.2023. In the CRZ clearance, only the following activities have been mentioned in CRZ area.
 - i) Coal conveyor having length of 3.5 km and elevation of 6 m for coal transportation from Ennore Port to NCTPS Stage-III TPP.
 - ii) Supporting trestles (Steel frames) for coal conveyor at about 6 m/8 m from ground level.
 - iii) Sea water intake from fore bay of NCTPS Stage -II intake & outlet pipe to pre cooling channel of NCTPS for discharge with intake pipe length of 3 km and outlet pipe length of 1.5 km
 - iv) GRP (Glass reinforced Plastic) pipes on the ground level for cooling water inlet and coolant water outlet.
3. It is further submitted that vide para 6 of EC issued, it is mentioned that the fly ash and bottom ash would be collected and stored in the silos and supplied to cement/brick industries for manufacturing cement and bricks. 100% dry fly ash collection will be done by providing pressurized dry fly ash collection system. It is further submitted that under para-viii of General conditions, In the combined EC and CRZ clearance, NCTPS Stage-III is directed for Utilization of 100% fly ash generated from 4th year of operation.
4. It is further submitted that on scrutiny of the Environmental Clearance and CRZ Clearance, it is noticed that there is no specific mentioning about the laying of pipelines in CRZ area for conveying the bottom ash to the ash dyke or bring back the ash pond water from the ash dyke to the plant for reuse except the

mentioning of "Ash pond water will be collected, treated and reused for slurry making".

5. Ash pipelines for Stage-III (reported as 2 lines for ash slurry, and third one for recovery of water from Ash pond) was laid parallel to the existing pipelines of Stage-I & II on the other side of the ash pond road, not in the same pipeline corridor of Stage-I & II. It crosses the Buckingham Canal and the adjoining Backwaters by RCC supporting Bridges in CRZ area. TANGEDCO has categorically not obtained CRZ clearance for laying new ash pipeline corridor.
6. TANGEDCO submitted to the committee that laying of new ash pipeline corridor was informed during public hearing and during presentations made to MoEF&CC but records for the same were not made available.
7. TANGEDCO has stopped the piling work and pipeline laying on 27.07.2021, due to the cases filed before Hon'ble Tribunal. During committee inspection, it was observed that laying of pipeline has been stopped. As on date of 23.08.2021, the following works were completed in connection with laying of pipeline:
 - a. Three cast basalt lined new pipelines were laid to a length of 3km from Stage-II gate towards ash dyke.
 - b. The new ash pipelines are passing through CRZ area for a length of 1KM.



5.b To ascertain whether there was any deviation from the proposed alignment of the pipe as permitted under the clearances granted without obtaining any approvals of modification of the same from the appropriate authorities.

1. For establishment of Ennore SEZ super critical thermal power plant (Stage-IV), EC clearance was obtained vide order dated 07.01.2014. Ennore SEZ has categorically obtained CRZ clearance dated 01.01.2014 for laying coal conveyor pipelines to transport coal from M/s Kamarajar Port Ltd to Stage-IV and cooling water system (2 for intake and 1 for rejects).
2. It is submitted that the CRZ clearance under CRZ Notification 2011 as amended for M/s Ennore SEZ Supercritical Thermal Power Station (2x800 MW) for the following foreshore facilities, as read in para 2, has been granted by MoEF, Gol on 01.01.2014 with certain conditions.
 - i) Coal conveyor having length of 4.5 km long closed conduit for coal transportation from Ennore Port to Ennore SEZ Supercritical Thermal power station.
 - ii) Sea water intake from fore bay of NCTPS Stage-II intake & outlet to cooling water canal located at NCTPS. The intake and outfall pipeline length will be 4 km.
 - iii) The pipelines and the coal conveyor cross Buckingham Canal through CRZ. The validity of CRZ clearance granted above was extended up to 31.03.2023 vide MoEF&CC letter dated 09.04.2021.



3. As per approved CRZ clearance, the delineation of the conveyor system was indicated and 130m of pipeline was crossing the water body.
4. Though CRZ clearance was obtained during 2014 but actual laying work was started in 2019, and several developments had happened in the area and coal conveyor pipelines could not be laid as per approved delineation of pipelines. Hence the unit without seeking amendment in the CRZ clearance has undertaken laying of coal conveyor system by deviating the delineation. Currently, as per latest proposed delineation, coal conveyor system is crossing the water body for 450m.
5. Ennore SEZ Supercritical Thermal power station (Stage-IV), Coal conveyor pipelines from M/s Kamarajar Port Ltd and Sea water pipelines from Sea water intake pump house situated in NCTPS Stage-II will join at Y junction of road leading to M/s Kamarajar Port Ltd after crossing the Buckingham canal. After that, it will traverse through a single corridor crossing Kosasthalaiar river to reach M/s Ennore SEZ Supercritical Thermal power station (TANGEDCO).
6. No work has been taken up in Buckingham canal area whereas construction of supporting structure for coal conveyor, sea water intake and outfall pipeline works were carried out by M/s. Ennore SEZ Supercritical Thermal power station (TANGEDCO) inside the Kosasthalaiar River by filling the water course with dredged sea sand from M/s Kamarajar Port Ltd. After the local people and the fisherman agitation, construction work has been temporarily stopped and the dumped material is being removed from that place. At present, the dumped material has been partly removed and the removal work for the remaining portion is under progress.
7. It is further submitted that the Ennore SEZ TPP has earlier proposed pipeline corridor alignment of 4500 metres by crossing the Kosasthalaiar river for a distance of about 130 metre and crossing the present Chettinad Coal Terminal site. However, it was reported that at the time of execution, the alignment has been changed for a distance of about 4328 metre by crossing the Kosasthalaiar river for a distance of 450 metre.
8. It is further submitted that on scrutiny of the Environmental clearance and CRZ Clearance granted to M/s Ennore SEZ Supercritical Thermal Power Station, it is noticed that there is no specific mentioning about the laying of pipelines in

5.c. Whether there was any leakage of ash pipe resulting in spillage of fly ash in the neighbouring areas and if so, what is the nature of damage caused on account of the same.

1. The pipelines from NCTPS Stage-I and NCTPS Stage-II cross Buckingham Canal, Backwaters and Kosasthalaiyar River and reach the Ash Pond. On the day of inspection, line -2, 3 & 4 was in service, line-1 was under maintenance, line-5 was standby. Although leakage of fly ash from pipelines were not noticed at the time of inspection, accumulation of fly ash in Backwaters and Buckingham Canal, due to the leakage of ash slurry from the ageing pipes of NCTPS Stage -I is noticed. Fly ash is deposited in ash pond up to a depth of 4m. Excavation and transportation of ash from the ash pond was in progress which requires removal



on large scale. The earthen bund is about 7 metre height surrounding the ash pond and the height of the bund is further increased by 3m (totally 10m) in a portion of bund. Raising the height of the bund is in progress. There are no mechanisms for spraying / trickling of water to control spreading of ash in the air causing air pollution.

The present status of replacement of pipelines is as follows:

Sl. No.	Description of pipeline	Outer diameter	Pipe thickness	Length of pipeline	Present status
1	Ash slurry disposal line-1	406mm	6mm	5129m	Replaced with second hand pipes retrieved from ETPS.
2	Ash slurry disposal line-2	406mm	6mm	5405 m	Replacing with new pipe and reported to be completed before December 31, 2021.
3	Ash slurry disposal line-3	406mm	6mm	4942 m	Replacing with new pipe and reported to be completed before December 31, 2021.
4	Ash slurry disposal line-4	406mm	6mm	4942 m	Old pipeline. Tender invited for procuring new pipes.
5	Ash slurry disposal line-5	356 mm	6 mm	5577 m	Replaced with second hand pipes retrieved from ETPS.

2. Though the unit has taken measures to detect leakages and to repair the leaking pipe, the unit has not taken measures to clean up the fly ash dumped into surrounding area during leakage. Hence the fly ash is still found deposited in Buckingham canal and surrounding area.
3. The committee observed that, as reported in newspaper, leakage has occurred in ash pipeline-2 on 29.06.2021 at 7:20 AM and the pump was stopped at 7:25 AM, the portion of the pipeline damage was repaired and pipeline was put into service by 12:30 PM on the same day.
4. During rainy season, the fly ash may be carried to the nearby villages due to runoff. The unit has constructed an earthen bund of height 1 feet during 2020 to prevent storm water runoff from entering the village.

Further to assess ground water contamination if any due to the spillage of ash from the leakage of pipelines and seepage from Ash pond, sub surface water samples have been collected from the Borewell nearby to ash pond (about 400m away from Seppakkam Village) and the piezometric wells provided near the ash ponds. The results of the sub surface water samples are submitted as follows:

Sl. No	Parameters	Unit	Tolerance limits for inland surface waters, Class C as per IS:2296-1982	Bore well@ nearby Seppakkam Village	Piezometric well@ south side of the Ash Pond near M/s.Zuari Cement	Piezometric well@west side of the Ash Pond near Seppakkam Village	Piezometric well@west side of the Ash Pond to the northern side of point-2 near Seppakkam Village
				1	2	3	4
1	Zinc (as Zn)	mg/L	15	0.58	0.73	0.82	0.78
2	Copper (as Cu)	mg/L	1.5	<0.033	<0.033	<0.033	<0.033
3	Cadmium	mg/L	0.01	<0.013	<0.013	<0.013	<0.013
4	Lead (asPb)	mg/L	0.1	<0.07	<0.07	<0.07	<0.07
5	Nickel	mg/L	-	<0.05	<0.05	<0.05	<0.05
6	Total Chromium	mg/L	-	<0.05	<0.05	<0.05	<0.05
7	Manganese	mg/L	-	0.18	0.26	0.44	0.38
8	Calcium	mg/L	-	152	1403	2004	1002
9	Magnesium	mg/L	-	131	913	819	585
10	Sodium	mg/L	-	975	10210	13600	12520
11	Potassium	mg/L	-	215	320	420	260

12	Total Iron	mg/L	-	0.41	0.68	0.84	0.77
13	Cyanide (as CN)	mg/L	0.05	<0.05	<0.05	<0.05	<0.05
14	Alluminium	mg/L	-	0.005	0.895	BLQ[LOQ: 0.002]	0.091
15	Mercury	mg/L	-	0.0016	0.0097	0.0010	BLQ[LOQ:0.0005]
16	Arsenic	mg/L	0.2	0.004	0.006	BLQ[LOQ: 0.002]	BLQ[LOQ:0.002]

The above results are compared with the tolerance limits for inland surface waters, Class C (Drinking water source with conventional treatment followed by disinfection) as per IS:2296-1982 and found that the parameters are within the above said standards.

5.d. Whether there was any air pollution or water contamination caused on account of the spillage of fly ash due to leakage of pipe lines, whether any unlawful dumping of fly ash is being done in the nearby water bodies.

1. To assess the air pollution caused if any due to the carryover of ash, ambient air quality monitoring survey was conducted at Seppakkam Village (24 hours sampling on 31.08.2021) and Atthipattu Village (24 hours sampling on 26.08.2021) and at NCTPS, Near Sub Station (24 hours sampling on 02.09.2021). The results are tabulated below:

Parameters	Standards (24hrs Average) (All values are in micro gram/m ³)	Atthipattu Village near NCTPS	Seppakkam Village near NCTPS	NCTPS near Sub Station
PM10	100	152	80	76
PM2.5	60	14	22	19
SO ₂	80	4.9	4	3.1
NO ₂	80	25.8	19.1	16.6
CO	-	0.33	0.28	0.42
NH ₃	400	37	41.6	27.9
Ozone	-	13.7	26.4	13.4

The results revealed that the parameter PM10 value (152 micro g/m³) at Atthipattu Village alone exceeded the Ambient Air Quality (AAQ) standards (100 micro g/m³) prescribed.

2. Further, to assess ground water contamination if any due to the spillage of ash from the leakage of pipelines and seepage from Ash pond, sub surface water samples have been collected from the Bore well nearby to ash pond (about 400m

away from Seppakkam Village) and the piezometric wells provided near the ash ponds. The results of the sub surface water samples are compared with the tolerance limits for inland surface waters, Class C (Drinking water source with conventional treatment followed by disinfection) as per IS:2296-1982, and found that the parameters are within the above said standards.

Further, it is submitted that dense flue gas emission was noticed from the boiler stack of NCTPS Stage II at the time of inspection and the Online Continuous Emission Monitoring Sensors (OCEMS) such as PM, SO_x & NO_x was verified and found that PM sensor in unit-II was not properly working and no connectivity of sensors to CAC, TNPCB, Chennai was also found and it was reported that the connectivity has been suspended since 31.07.2021 due to server issue.

It is further submitted that a case OA.No.122 of 2021 has been filed by Thiru.R.Ravimaran of Ennore, Chennai against TANGEDCO alleged that though TANGEDCO has obtained environmental clearance under the EIA Notification & CRZ Notification for the proposed Stage-III project, there is no permission granted for laying a pipeline for discharging the disposal of ash slurry across the B' canal & Kosasthalaiyar River and requesting to direct the respondents to demolish the illegal structures constructed to carry pipelines to transport ash slurry through the backwaters and main channel of the Kosasthalaiyar river and to utilize the new pipelines procured by them to replace the leaking, ageing pipelines carrying ash slurry from the NCTPP Stage I, so as to prevent further contamination of the environment.



In this regard, the Hon'ble NGT(SZ) has constituted a Joint Committee comprising of (1) The District Collector, (2) a Senior Officer from the Integrated Regional Office, MoEF&CC, Chennai (3) a Senior Officer from Tamil Nadu Coastal Zone Management Authority, Chennai (4) a Senior Officer not below the rank of Superintending Engineer from Tamil Nadu Public Works Department and (5) Irrigation Department and (6) a Senior Officer from TNPCB. The committee was directed to consider

- i) The impact of construction of pipeline on riverine environment and also on environment in general.
- ii) Whether there is any violation of CRZ Notification, 2011 or 2019 whichever is applicable or EIA notification, 2006 as amended from time to time.
- iii) Whether the environmental clearance cum CRZ clearance granted for the unit has covered the work of laying pipeline for discharge of ash slurry in the Kosasthalaiyar river basin,
- iv) Whether on account of the laying down of the pipeline is there any damage caused to the environment and if so, what is the nature of damage caused and the remedial measures to be taken and also assess the environmental compensation for the damage caused to the environment.

The above Joint Committee has submitted the report to the Hon'ble NGT in the 1st week of September 2021.

The copy of the order dated 07.06.2021 in OA.No.122 of 2021 is enclosed as Annexure-II.

6. Environmental Compensation

It is submitted that the leakage of ash pipelines provided for NCTPS Stage-I and accumulation of fly ash in Buckingham Canal and Backwaters has become an everyday phenomena and these facts have been already dealt by the Hon'ble Tribunal (SZ) in Applications No.8 of 2016, 152 of 2016 & 198 of 2016. In this regard, the Hon'ble Tribunal (SZ) constituted an Expert Committee comprising Central Pollution Control Board (CPCB), IIT, Madras, TamilNadu Pollution Control Board (TNPCB) in its order dated 25.05.2019 to ascertain the status of fly ash / bottom ash disposal, damage caused to the environment, environmental compensation if so what is the nature of damage caused and remedial measures to be taken and also assess the environmental compensation for the damage caused to the environment. Also, Hon'ble Green Tribunal

(SZ) passed orders dated December 21, 2017 to deposit the required funds to PWD/WRD for removing the accumulated fly ash from Buckingham Canal & Backwaters and also ordered TANGEDCO to replace the ash slurry pipes as early.

Pursuance to the orders dated December 21, 2017 in Applications No.8 of 2016, 152 of 2016 & 198 of 2016 by the Hon'ble National Green Tribunal (SZ), TANGEDCO deposited a sum of Rs.28.50 Crores to PWD/ WRD for the work of dredging the Backwaters (Kosathalaiyar River) deposited with fly ash between NCTPS Main gate up to KPL (Kamarajar Port Limited) Main gate for a length of 2400 metres. In addition, they had also deposited Rs.66.23 Lakhs for removal of fly ash deposited in the adjoining Buckingham Canal between NCTPS Main gate up to KPL Main gate for a length of 2400metres. Though the works have been reported to be completed in all aspects by December 2020, accumulation of fly ash still persist in the completed stretch of Buckingham Canal.

Further, the NCTPS Stage-I has remitted an amount of Rs 16.461 Crores as Environmental Compensation for the period from 01.11.2004 to 12.11.2019 as assessed by the TNPC Board based on the findings of the violations noticed by the Joint committee constituted by the Hon'ble NGT in the above said cases.

It is further submitted that in pursuance to the Hon'ble NGT order dated 14.12.2020 in O.A. No.08 of 2016, 152 of 2016 & 198 of 2016, the Joint committee constituted in that case, has assessed further Environmental compensation of Rs. 41,40,000(for the period from 22.08.2020 to 06.01.2021) to be levied from NCTPS Stage-I for the breach of ash slurry conveying pipeline on 22.08.2020 leads to deposition of ash slurry in the Sembakkam hamlet and submitted to the Hon'ble Tribunal .

It is further submitted that the accumulation of fly ash still persists in the stretch of Buckingham Canal and back waters as noticed during the inspection of the Joint Committee constituted in this O.A.No.162 of 2021. Hence, the Environmental compensation for the above violations has been worked out by following the methodology specified in the CPCB document titled, "Report to CPCB in house Committee on Methodology for Assessing Environment Compensation &Action Plan to Utilize the fund" for the period from 07.01.2021 to 23.08.2021 (EC has been already assessed for the period from 22.08.2020 to 06.01.2021 by the Joint Committee constituted in O.A. No.08 of 2016, 152 of 2016 & 198 of 2016).

In the matter of O.A.No.162/2021 (SZ), the committee has calculated EC for the accumulation of fly ash in Buckingham canal and Kosathalaiyar river by NCTPS Stage-I as follows:

Environmental Compensation formulae- $PI \times N \times R \times S \times LF$

- PI - Pollution index for industry – 80 for Red Category units.
- N - Number of days for which violation took place = 229 days (from 07.01.2021 to 23.08.2021). As the unit has not cleaned up the area where ash slurry has leaked, date of committee inspection (23.08.2021) is taken for days of non compliance).
- R- Factor in Rupees – Rs.250/ for violation
- S- Scale of operation-1.5 for Large scale unit
- LF- Location factor based on population. This unit is within 10 KM from the boundary of Chennai City Corporation having population 6.1 Million. Hence location factor is taken as 1.5.

Due to repeated violation (third time) the committee has used exponential factor of 4.

Hence, Environmental Compensation to the unit M/s.NCTPS Stage-I

= $80 \times 229 \times 250 \times 1.5 \times 1.5 \times 4 =$ Rs.4,12,20,000/- (Rupees Four crore twelve lakhs & twenty thousand only).

7. Findings of the Committee as directed by the Hon'ble Green Tribunal (SZ) in its order dated 30.07.2021:

i) Direction of Hon'ble Tribunal Vide Para 10 (i):

To ascertain as to whether there are any violations of conditions imposed in the clearances and permissions granted for Tamil Nadu Generation and Distribution Corporation Limited (TANGEDCO).

Findings of the committee:

A) NCTPS Stage-III

1. Ministry of Environment Forest and Climate Change vide order dated 20.01.2016 has accorded combined Environmental Clearance under EIA Notification 2006, as amended for Expansion by addition of 1 x 800 MW (North Chennai Thermal Power Plant Stage-III) and CRZ Clearance under CRZ Notification 2011, as amended for foreshore facilities at Ennore & Puzhuvakkam Villages, Ponneri Taluk, Thiruvallur District to Tamil Nadu Generation & Distribution Corporation Ltd

(TANGEDCO). Copy of the combined EC and CRZ clearance is enclosed as Annexure-III.

2. As per the EC and CRZ clearance granted by MoEF&CC the following facilities will be in CRZ area:
 - a. Coal conveyor having length of 3.5Km and elevation of 6m for coal transportation from Ennore Port to NCTPS Stage-III TPP.
 - b. Supporting trestles (steel frames) for coal conveyor at about 6m/8m from ground level.
 - c. Sea water intake from forebay of NCTPS Stage-II intake & outlet pipe to pre and outlet pipe length of 1.5 Km.
 - d. GRP (Glass Reinforced Plastic) pipes on the ground level for cooling water inlet and coolant water outlet.
3. In para 6 of the clearance, it is mentioned that ash pond water will be collected, treated and reused for slurry making. Also, in sl.no. (viii) of general conditions of the Clearance, it is stated that "Utilization of 100% fly ash generated shall be made from 4th year of operation" which implies that during first three years of operation fly ash will be transported to dyke. However, in the CRZ clearance, categorically it is not specified as how the ash slurry from NCTPS Stage-III will be disposed to ash dyke.
4. From the above it is inferred that the NCTPS Stage-III has not obtained CRZ clearance for laying of ash slurry pipeline or for laying new ash pipeline corridor in the CRZ area.

B) Ennore SEZ (Stage-IV)

1. The CRZ clearance under CRZ Notification 2011 as amended for M/s Ennore SEZ Supercritical Thermal Power Station (2x800 MW) for the following foreshore facilities as read in para 2, has been granted by MoEF, GoI on 01.01.2014 with certain conditions.
 - i) Coal conveyor having length of 4.5 km long closed conduit for coal transportation from Ennore Port to Ennore SEZ Supercritical Thermal power station.
 - ii) Sea water intake from fore bay of NCTPS Stage-II intake & outlet to cooling water canal located at NCTPS. The intake and outfall pipeline length will be 4 km.

iii) The pipelines and the coal conveyor cross Buckingham Canal through CRZ.

The validity of CRZ clearance granted above was extended up to 31.03.2023 vide MoEF&CC letter dated 09.04.2021.

2. The Ennore SEZ TPP has earlier proposed pipeline corridor alignment of 4500 metres by crossing the Kosasthalaiyar river for a distance of about 130 metre and crossing the present Chettinad Coal Terminal site. However, it was reported that at the time of execution, the alignment has been changed for a distance of about 4328 metre by crossing the Kosasthalaiyar river/backwaters for a distance of about 505 metre.
3. Also, on scrutiny of the Environmental clearance and CRZ Clearance granted to M/s Ennore SEZ Supercritical Thermal Power Station, it is noticed that there is no specific mentioning about the laying of pipelines in backwater/Kosasthalaiyar river (CRZ area) for conveying the coal and Sea water to the power plant and reject water back to cooling water channel of NCTPS.
4. From the above, it is inferred that the Ennore CRZ (Stage-IV) has not obtained CRZ clearance for realignment of coal conveyor, sea water intake and outfall pipelines in the CRZ area.

ii) **Direction of Hon'ble NGT Vide Para 10(ii):**

Whether there is any deviation from the proposed alignment of the pipe as permitted under clearances granted without obtaining any approvals of modification of the same from the appropriate Authorities.

Findings of the committee:

1. MoEF&CC accorded Environmental Clearance to TANGEDCO on 07.01.2014 for establishment of 2 X 800MW Ennore SEZ thermal power plant. The public hearing for the same was conducted on 23.02.2012. Based on revised proposal submitted by Project Proponent, Environmental Clearance was amended vide MoEF&CC order dated 14.08.2018 for change in project capacity to 2 X 660 MW. The Project Proponent submitted a proposal for grant of extension of validity of Environmental Clearance and CRZ Clearance. MoEF&CC vide order dated 09.04.2021 granted extension of validity of Environmental Clearance and CRZ Clearance for further 3 years i.e up to 31.12.2023. **Copy of the combined EC and CRZ clearance is enclosed as Annexure-IV.**

2. As per combined Environmental Clearance and CRZ Clearance granted, the unit was permitted to lay closed conduit Coal conveyor system from Ennore Port to Ennore SEZ for a total length of 4.5 KM. The map indicating the proposed area where the coal conveyor conduit shall be laid was approved by MoEF&CC.
3. The committee observed that actual laying of coal conveyor and sea water intake & outfall pipeline corridor is deviating from the proposed layout for which approval was accorded by MoEF&CC. The total length of proposed coal conveyor and sea water intake & outfall pipeline corridor was 4.5 KM and it was crossing the water body for a distance of 130m while the actual length of present proposal of corridor is 4.328 km and is crossing the water body at Buckingham canal and Kosasthalaiyar river for a length of 450m. The unit has not obtained approval for the revised alignment.
4. Now, the work has been temporarily stopped on 27.07.2021 and the removal of filling sand has been commenced on 04.08.2021.

iii) Direction of Hon'ble Tribunal Vide Para 10(iii):

Whether there was any leakage of ash pipe resulting in spillage of fly ash in the neighbouring areas and if so, what is the nature of damage caused on account of the same.

Findings of the committee:

1. The pipelines of Stage-I were commissioned during 1994-95 and hence more than 25 years old. They have become rustic, corroded and brittle with numerous cracks. There are total 8 Nos. of series of pipelines of which 5 Nos. carry ash slurry and 3 Nos. being used for recycling the filtered water.
2. Out of the above 5 Nos. of pipelines, Line 1 & 5 were replaced and got completed during August 2020. These pipes are replaced with old used pipelines brought from Ennore Thermal Power Station (ETPS). They are Cast Basalt-lined having an outer diameter of 406 mm and Inner diameter of 356mm. Replacement of Line 2 & 3 is in progress with new Cast Basalt pipes, but for Line 4, the unit is yet to procure new pipes. The TANGEDCO has committed a timeline for replacement of all the 5 Nos. of pipelines by December 2021, to comply with the orders of the Hon'ble Tribunal in Applications No.8 of 2016, 152 of 2016 & 198 of 2016.
3. The NCTPS Stage-I is taking breakdown maintenance works in the ash pipelines whenever leaks are detected. The unit has patrol team which keeps patrolling the

pipeline area and the pumps are stopped soon after leaks are detected. By the time the unit has identified any leaks and repair it with high capacity pumps, considerable quantity of ash slurry would have been disposed into surroundings (Buckingham canal & back waters). The committee verified the log book and found that leaks are taking place almost every week.

4. The fly ash that is leaked into the surrounding environment are not cleaned or removed by the unit. The committee observed that as reported in newspaper on 01.07.2021 regarding the leakage occurred in ash pipeline, it was reported that on 29.06.2021 at 7:20 AM leakage in ash slurry pipeline no.5 near Seppakkam hamlet was noticed and the pump was immediately stopped at 7:25 AM, the portion of the damage was repaired and pipeline was put into service by 12:25 PM on the same day. The Joint Committee noticed that the old pipelines 1 & 5 replaced with retrieved pipes from ETPS is also even leaking and got damaged.
5. Hence the committee opined that the NCTPS Stage-I has to replace all the old pipelines only with new pipes to permanently resolve the slurry ash disposal into water bodies.

iv) Direction of Hon'ble NGT Vide Para 10(iv):

Whether there was any air pollution or water contamination caused on account of the spillage of fly ash due to leakage of pipelines.

Findings of the committee:

1. To assess ground water contamination if any due to the spillage of ash from the leakage of pipelines and seepage from Ash pond, sub surface water samples have been collected from the Bore well nearby the ash pond (about 400m away from Seppakkam Village) and the piezometric wells provided around the ash ponds.
2. The results are compared with the tolerance limits for inland surface waters, Class C (Drinking water source with conventional treatment followed by disinfection) as per IS:2296-1982, and found that the parameters are within the above said standards.
3. Also, to assess the air pollution caused if any due to the carryover of ash, ambient air quality monitoring survey was conducted at Seppakkam village (24 hours sampling on 31.08.2021) and Atthipattu Village (24 hours sampling on 26.08.2021) and at NCTPS, Near Sub Station (24 hours sampling on 02.09.2021) which revealed that the parameter PM10 value (152micro g/m³) at

Atthipattu Village exceeded the Ambient Air Quality (AAQ) standards (100 micro g/m³) prescribed.

4. The unit has constructed a bund to prevent runoff or leakages from entering Seppakkam Village. Reported that the unit has proposed to install wind net of length of 324 metres and height 3 meters over the existing protection bund (1.5m height) to prevent dust emissions if any reaches the Village.

v) Direction of Hon'ble NGT vide Para 10(v):

Whether any unlawful dumping of fly ash is being done in the nearby water bodies and if so, what is the nature of damage caused to the water bodies on account of the same and the remedial measures to be taken for restoring the damage caused to the water bodies.

Findings of the committee:

Flyash is observed in Buckingham canal, Kosathaliayar river and salt pan due to pipeline leakage. The unit has not deliberately discharged the flyash into these areas. The unit is involved in removing the flyash from Buckingham canal and Kosathaliayar river through PWD by dredging operations. The excavated flyash is taken to ash dyke. However flyash dumped in these areas has to be removed completely and transferred to ash dyke.

vi) Direction of Hon'ble NGT vide Para 11:

The committee is also directed to assess the environmental compensation, if there is any damage caused to the environment on account of the alleged act of the Tamil Nadu Generation and Distribution Corporation Limited (TANGEDCO) to be recovered from them including the expenses required for carrying out the remediation measures and restore the damage caused to the environment including the rectifying the contamination, if any, caused to the water body and water quality in that area.

Action taken by the Committee:

It is submitted that the environmental compensation has been assessed (vide para 6 above) for NCTPS Stage-I for continuing the discharge of ash slurry in Buckingham Canal and Backwaters.

Further, due to works carried out for laying of ash pipeline for Stage-III and coal conveyor & sea water intake and outfall pipeline corridor for Ennore SEZ, no physical

damage was observed. The committee suggests that TANGEDCO shall resume the above said activities only after obtaining amendment to the existing CRZ Clearance.

8. Recommendations of the Committee

1. The TANGEDCO shall resume the activities pertaining to the NCTPS Stage III and Ennore SEZ Power Plants within the CRZ area in Kosathalaiyar River/ Buckingham Canal/Backwaters only after obtaining amendment to the existing CRZ Clearance from MoEF&CC.
2. The TANGEDCO shall expedite removal of debris and dredged material from Kosathalaiyar river and restore natural flow within October 31, 2021.
3. The TANGEDCO shall strictly fulfill and comply with the conditions imposed in the Environmental Clearance under the EIA Notification as amended and CRZ Clearance under the CRZ Notification as amended without violations and deviations for NCTPS Stage III and Ennore SEZ Power Plants unlike the environmental damage already caused by the operation of NCTPS Stage-I & II Thermal Plants due to ash deposit in the water bodies and the air-borne fly ash in the nearby villages causing nuisance and air pollution.
4. The TANGEDCO shall procure and replace the existing ash slurry pipe lines 1, 2, 3, 4 & 5 pertaining to the NCTPS Stage I with new cast basalt pipe before December 2021 as already committed to the Hon'ble National Green Tribunal in Applications No.8 of 2016, 152 of 2016 & 198 of 2016.
5. The TANGEDCO shall also procure and replace the retrieved pipes from ETPS utilized for ash slurry pipe lines 1 & 5 pertaining to the NCTPS Stage I with new cast basalt pipe to permanently resolve the slurry ash disposal into water bodies.
6. The TANGEDCO is stopping the pumps soon after identifying leaks, followed by flushing with water and replacing the damaged portion of the pipe. However, the TANGEDCO is not taking any measures to clean up the area, where leak has taken place. The committee suggests that in addition to stopping the pumps, repairing the pipes, the TANGEDCO shall also take measures to clean up the area, where ash slurry has leaked, and transfer the ash it into ash dyke.
7. From the log books, the committee observed that, pipeline leaks due to pipe burst/rupture of joints due to ageing of pipes are very common and frequently (average frequency of one leak/week) taking place in old pipelines. Apart from the

leaks due to pipeline bursts/rupture, pinhole leakage is taking place in all three old pipelines. The TANGEDCO is not taking measures to rectify pinhole leakages. If timely action is not taken to rectify these pinhole leakages, it may lead to a major leakage. The committee submits that the TANGEDCO shall immediately rectify the pinhole leakages in the pipelines that are noticed by the patrolling team.

- 8. The TANGEDCO is replacing the portion of the old damaged pipeline with pipes retrieved from Ennore Thermal Power Plant to arrest leakage. After replacement, the damaged pipelines are laying at the place of leak itself. The committee submits that TANGEDCO shall take measures to remove all the old damaged pipelines laying in the ground and keep it in stores and subsequently dispose it.
- 9. The TANGEDCO shall carry out patrolling of ash slurry disposal pipe lines round the clock to notice and avert the leakages of pipe lines, so as to prevent the disposal of ash into Kosasthalaiyar River, Buckingham Canal etc. till the replacement of existing pipe lines.
- 10. During inspection, the committee observed that the ash previously removed from Kosasthalaiyar River and Buckingham canal was stored near the point of excavation. During rainfall, the ash will get into river & canal again. The committee submits that the TANGEDCO & PWD shall ensure that the removed ash shall be transferred to ash dyke.
- 11. The NCTPS Stage-I shall remit the environmental compensation of Rs. 4,12,20,000/- (Rupees Four crore twelve lakhs & twenty thousand only) assessed by the Committee for continuing the disposal of ash slurry in water bodies.
- 12. The unit shall provide dust nets/mesh towards Seppakkam village to minimize the impacts of flyash dust and stack emissions.
- 13. The unit shall augment the air pollution control devices installed in Stage-I & II and ensure that stack emissions are complying with notified standards. The units shall ensure that OCEMS installed in Stage-I & II are working properly and real time actual data is transmitted to CPCB and TNPCB servers.
- 14. The unit shall strengthen the earthen bund laid towards Seppakkam village and ensure that runoff from ash dyke or ash depositions are not carried to villages. The unit shall provide a drain before the bund so that runoff water is collected in drains and can be lifted back to ash dyke.

It is, therefore, prayed that this Hon'ble Tribunal may take on record the above status report based on the observations made by the Joint Committee and pass appropriate and further orders as this Hon'ble Tribunal may deem fit and necessary in the circumstances of the case and thus render justice.

3. The project proponent wanted to file their objection to the report submitted by the joint committee.
4. The 7th respondent has filed their counter statement and the other respondents wanted some time for filing their counter statement. The other respondents are directed to complete the pleading and also filed their objections, if any to the committee report.
5. In the mean time, the committee is directed to inspect the area again and ascertain as to whether the recommendations have been made by the committee have been complied with by the respondents 9 and 10. If not, what is the stage of the remediation suggested by them to be carried out by the respondents 9 and 10 and they are directed to submit a further report as directed to this Tribunal on or before **27.10.2021** by e-filing in the form of searchable PDF/OCR Supportable PDF and not in the form of Image PDF along with necessary hardcopies to be produced as per rules.
6. The Registry is directed to communicate this order to the members of the committee, official respondents immediately through e-mail so as to enable them to comply with the direction.

7. For completion of pleadings and also for consideration of report, post on 27.10.2021.

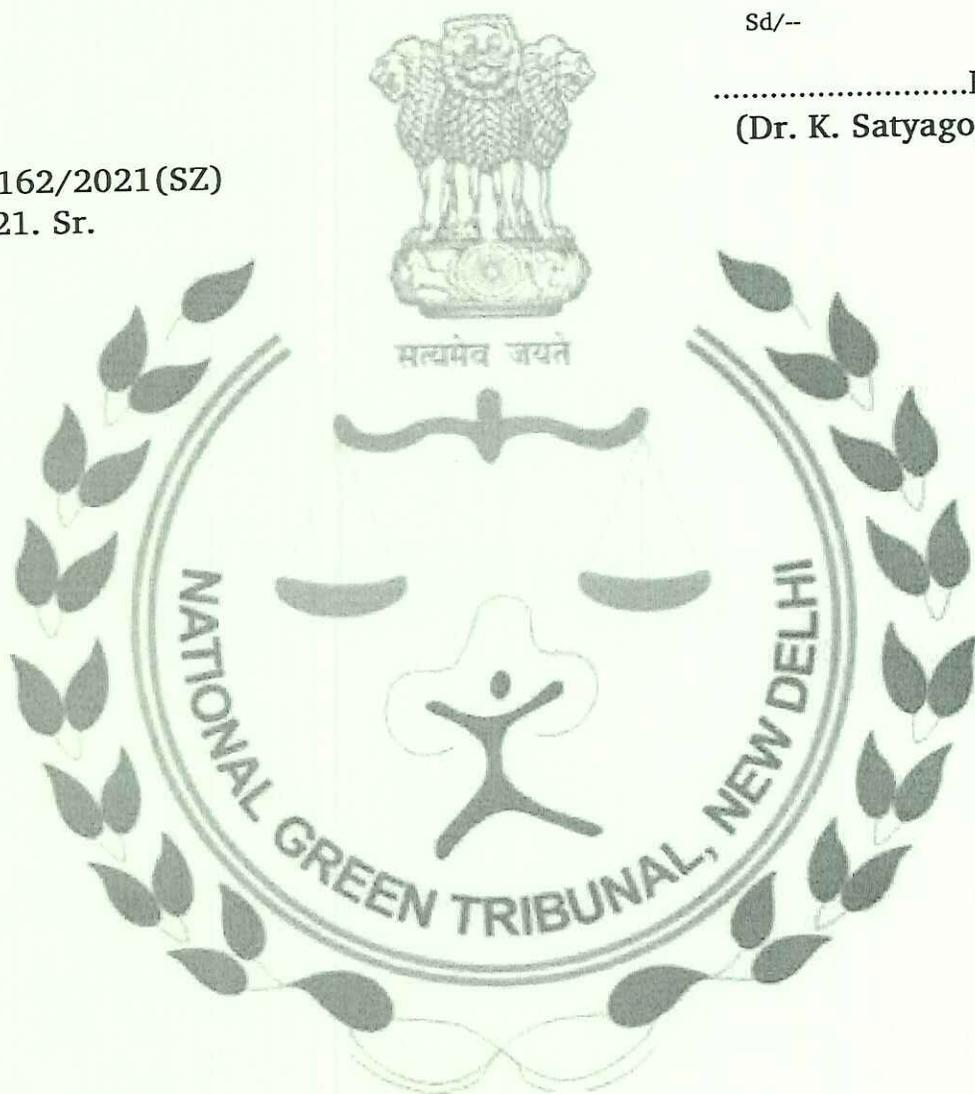
Sd/--

.....J.M.
(Justice K. Ramakrishnan)

Sd/--

.....E.M.
(Dr. K. Satyagopal)

O.A. No. 162/2021(SZ)
24.09.2021. Sr.



**BEFORE THE HON'BLE NATIONAL
GREEN TRIBUNAL SOUTHERN ZONE,
CHENNAI.**

Original Application No. 162 of 2021(SZ)

Tribunal on its own motion Suo Motu based on the News item published in The Times of India Newspaper, Chennai Edition Dt.01.07.2021, "under caption" Another Pipeline leak at Ennore Power Plant".

Vs

Union of India Rep. by its Secretary
Ministry of Environment and Forest and
Climate Change,
Indira Paryavaran Bhawan,
Jorbagh Road,
New Delhi – 110 003 & others.

...Respondents

**REPORT OF THE JOINT COMMITTEE IN
COMPLIANCE TO HON'BLE NATIONAL
GREEN TRIBUNAL (SZ) CHENNAI
ORDER DATED 24.09.2021 IN O.A.NO.162
OF 2021.**

**Advocate for Respondent: - TNPCB
Thiru.Sai Sathya Jith,
Advocate, Chennai.**

Date:26.10.2021.

Next date of hearing on: 27.10.2021

