

**BEFORE NATIONAL GREEN TRIBUNAL
SOUTHERN BENCH, CHENNAI
ORIGINAL APPLICATION No. 105 of 2021**

**REPORT OF THE JOINT COMMITTEE IN THE MATTER OF O.A.NO.105 of 2021
SUBMITTED TO HON'BLE NATIONAL GREEN TRIBUNAL, SOUTH BENCH,
CHENNAI IN COMPLIANCE TO HON'BLE NATIONAL GREEN TRIBUNAL ORDER
DATED 16th SEPTEMBER, 2021.**

INDEX

Sl.No.	Description	Page nos
1	Joint Committee report	1-36
2.	Annexure-I- Hon'ble NGT order copy dated 16.09.2021	37-44
3.	Annexure-II- Hon'ble NGT order copy dated 19.11.2021	45-46
4.	Annexure- III- Inspection report of M/s Sri Damodaram Sanjeevaiah Thermal Power Station	47-57
5.	Annexure- IV- Compliance report of the conditions stipulated in the EC & CRZ clearances of M/s Sri Damodaram Sanjeevaiah Thermal Power Station	58-106
6.	Annexure- V- Compliance report of the APPCB CFO order issued to the M/s Sri Damodaram Sanjeevaiah Thermal Power Station	107-115
7.	Annexure- VI- Inspection report of M/s Sembcorp Energy India Limited (Project-1)	116-130
8.	Annexure-VII- Compliance report of the conditions stipulated in the EC & CRZ clearances of M/s Sembcorp Energy India Limited (Project-1)	131-181
9.	Annexure- VIII- Compliance report of the APPCB CFO order issued to the M/s Sembcorp Energy India Limited (Project-1)	182-187

C. Raju Sekhar
22/3/2022

Andhra Pradesh Pollution Control Board,

Regional Office Nellore

**ENVIRONMENTAL ENGINEER
A.P. POLLUTION CONTROL BOARD
Regional Office
NELLORE.**

Date: 22.03.2022

Place: Nellore.

**REPORT OF THE JOINT COMMITTEE IN THE MATTER OF
O.A.NO.105 of 2021 SUBMITTED TO HON'BLE NATIONAL GREEN
TRIBUNAL, SOUTH BENCH, CHENNAI IN COMPLIANCE TO HON'BLE
NATIONAL GREEN TRIBUNAL ORDER DATED 16th SEPTEMBER, 2021.**



Submitted to

**HON'BLE NATIONAL GREEN TRIBUNAL
SOUTH BENCH, CHENNAI**

I.Preamble:

Sri Y. Srinivasulu Reddy & Sri Y. Sasidhar Reddy of Nelatur village, Muthukur (M), SPSR Nellore district filed O.A.105 of 2021 before the Hon'ble National Green Tribunal on the pollution problems arising from the thermal power plants. In the Original application no.105 of 2021, M/s. Sri Damodaram Sanjeevaiah Thermal Power Station, Nelatur & Pinampuram Villages, Muthukur Mandal, SPSR Nellore District and M/s. Thermal Powertech India Pvt. Ltd, presently operating in the name & style of M/s. Sembcorp Energy India Limited (Project-1), Pinampuram (V), Muthukur (M), SPSR Nellore District are the respondents. The Hon'ble NGT has sought a report from the Committee on the above industries.

II. Orders of the Hon'ble Tribunal dated 16.09.2021

The Hon'ble Tribunal in O.A. No. 105 of 2021, vide Order dated 16.09.2021 constituted, a joint committee and directed as follows:

“12. In order to ascertain the genuineness of the allegations made in the application and also the alleged violations and pollutions if any caused, which said to have been resulted in the alleged economic loss for the applicants, we feel it appropriate to appoint a joint committee consisting of (1) The District Collector, Nellore District, (2) a Senior Officer from Ministry of Environment, Forests and Climate Change (MoEF& CC), Integrated Regional Office, Vijayawada, (3) a Senior Officer from the Central Pollution Control Board (CPCB), Regional Office, Chennai (3) a Senior Officer/Scientist from the Acharya N.G. Ranga Agricultural University (ANGRAU), Andhra Pradesh, (4) a Senior Officer from Andhra Pradesh Pollution Control Board (APPCB) as deputed by its Chairman to inspect the units in question and submit a factual as well as taken report if there is any violation found.

13. The Committee is directed to ascertain:

- i) Whether respondents 8 and 9 have requisites permissions/clearance are having for running their units,*
- ii) Whether any violations were committed by the respondents 8 and 9 against the conditions imposed in the consents/ Clearance granted.*
- iii) Whether there was any pollution caused on account of the operation of the respondents 8 and 9 units.*
- iv) Whether any environmental damage including soil as well as the water has been caused on account of the operation of the respondents 8 and 9 units, if so what is the nature of damage caused and the remedial measures to be taken for restoring the damage caused to the environment,*
- v) Whether any loss of soil fertility resulting in reduction of the agricultural income has been caused to the applicants on account of the any alleged pollution said to have been caused by the respondents 8 and 9 units and if so, what is the quantum of compensation to which they are entitled for,*

4

- vi) *Suggest the ways and means if there is any pollution found, to avoid the same in future to be carried out by the respondents 8 and 9.*
- vii) *Whether there is any deficiency in the pollution control mechanism provided by the respondents 8 and 9 and if so, what is the nature of modification or up-gradation required for mitigating the alleged pollution if any caused, on account of their operation*

14. The Andhra Pradesh Pollution Control Board (APPCB) will be the nodal agency for co-ordination and for providing necessary logistics for this purpose.”

A copy of the Hon’ble NGT order is enclosed as **Annexure-I**.

In compliance to Hon’ble NGT order, APPCB as Nodal agency constituted a committee comprising of following members:

1. Smt. H D Varalaxmi, Sc E &Regional Director, Regional Directorate - Chennai, Central Pollution Control Board.
2. Dr. Suresh Babu Pasupuleti, Scientist –D, Integrated Regional Office (IRO), Ministry of Environment, Forest and Climate Change, Vijayawada
3. Sri D Hussain Sahib, Revenue Divisional Officer & Divisional Magistrate, Nellore
4. Dr. V. Sailaja, Principle Scientist (Soil Science & Agril. Chemistry), ANGRAU, RARS, LAM, Guntur.
5. Sri Ch. Rajasekhar, Environmental Engineer, Regional Officer, Nellore, Andhra Pradesh Pollution Control Board.

The Committee submitted an interim report to the Hon'ble NGT during November, 2021. The Hon'ble NGT directed the respondents to complete the pleadings on or before 16.12.2021. A copy of the Hon'ble NGT order dated. 09.11.2021 is herewith enclosed as **Annexure- II**.

III. Scope of Committee

The Committee has been vested with the mandate to visit and inspect the site in - question and vested with following scope as per the Order dated 16.09.2021:

1. To verify whether the respondent units are having requisites permissions/clearances.
2. To verify whether any violations were committed by the units against the conditions imposed in the consents/ Clearance granted.
3. To verify whether there was any pollution caused on account of the operation of the respondent units.
4. To verify whether any environmental damage including soil as well as the water has been caused on account of the operation of the respondent units, if so what is the nature of damage caused and the remedial measures to be taken for restoring the damage caused to the environment,


22/3/2022
ENVIRONMENTAL ENGINEER
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5. To verify whether any loss of soil fertility resulting in reduction of the agricultural income has been caused to the applicants on account of the any alleged pollution said to have been caused by the respondent units and if so, what is the quantum of compensation to which they are entitled for,
6. To suggest the ways and means if there is any pollution found, to avoid the same in future to be carried out by the respondent's units.
7. To verify whether there is any deficiency in the pollution control mechanism provided by the respondent's units and if so, what is the nature of modification or up-gradation required for mitigating the alleged pollution if any caused, on account of their operation.

IV. Meeting and Inspection by the Committee

The Regional officer, APPCB convened a committee meeting on 04.10.2021 through video conference and briefed about the mandate of the Committee as well as introduction about respondent units i.e. M/s. Sri Damodaram Sanjeevaiah Thermal Power Station, and M/s. Sembcorp Energy India Limited – Project 1 (Formerly M/s. Thermal Powertech India Pvt. Ltd). The Committee discussed in detail and concluded to visit two units during October 21-22, 2021 and also decided to monitor Source emissions, sources of effluents generated/treated & discharged, Ambient Air Quality in 3 locations and soil & groundwater monitoring in surrounding villages.

Subsequently, the Committee inspected M/s. Sri Damodaram Sanjeevaiah Thermal Power Station on 21.10.2021 and M/s. Sembcorp Energy India Limited (Project-1) on 22.10.2021 and interacted with its management.

During inspection, stack emissions of the 3 boilers were monitored, Ambient air quality monitoring was conducted in the nearby villages (3 locations), water samples were collected at various sources of the units and water bodies, collected samples of coal, bottom ash, fly ash soil samples from agricultural land and ground water to ascertain the compliance status of the units and pollution problems to the surroundings.

V. M/s. Sri Damodaram Sanjeevaiah Thermal Power Station

V(a). General Information:

M/s. Sri Damodaram Sanjeevaiah Thermal Power Station (AP Genco) is located in Painampuram & Nelaturu Villages, Muthukur Mandal, SPSR Nellore District. The unit is spread in an area of 1250 acres. The unit was established as M/s APGENCO. At present, the unit is operating at 2x550 MW against the consented capacity of 2 x 800 MW by using Indian washed coal. Fly ash generated from the unit is being disposed to the cement and brick units from the silo; bottom ash is being disposed to the ash-pond in the form of slurry. The

6

detailed inspection report of M/s Sri Damodaram Sanjeevaiah Thermal Power Station is enclosed at **Annexure-III**.

V (b). Status of Permissions/clearances obtained by the unit:

The unit has obtained permission from AP Boiler Inspection Department, Dy. Chief Controller of Explosives, MOEF&CC, APPCB, Dy. Chief Inspector of Factories and Panchayath raj Department, Andhra Pradesh Pollution Control Board, Department of Fire, PESO,. The details of permissions granted and their validity are as below:

Table no. 1: Details of Permissions/ Clearances obtained

S. No.	Permissions obtained by the unit	Document/ license no.	Issue date	Valid up to	Name of the Department
1	Boiler License	Unit-1 : AP-5481 (Fee paid, License yet to be received)	16.12.2020	01.12.2021	AP Boiler Inspection Department, Amaravathi
		Unit-2 : AP-6074 (Enclosed)	02.10.2021	01.10.2022	AP Boiler Inspection Department, Amaravathi
2	Fire NOC	Yet to be obtained			
3	PESO License	Licence No: P/HQ/AP/15/3981(P31 6331)	03.07.2013	31.12.2024	Dy. Chief Controller of Explosives Hyderabad.
4	EC Letter	EC Stage-1: J-13011/20/2007-1A.II (T), Dt: 17.07.2007.	17.07.2007		MOEF&CC
		EC Extension order: J-13011/20/2012-1A.II (T), Dt: 02.06.2013.	10.06.2013		MOEF&CC
		EC Stage-II: J-13012/25/2012-1A.II (T), Dt:02.07.2014.	02.07.2014		MOEF&CC
5	CTE	159/PCB/CFE/RO-NLR/HO/2007-1477	01.10.2007	01.10.2012	APPCB
6	CTO	APPCB/VJA/NLR/159 /HO/CFO/2017	18.12.2017	31.03.2022	APPCB
7	Hazardous Waste Approval	CFO Order No: APPDCL/VIJ/NLR/15 9/ Ho/CFO /2017, Dt:18.02.2017	18.02.2018	31.03.2022	APPCB
8	Factory License	A/MAH/124/2014	25.09.2021		Dy. Chief Inspector of Factories, Nellore
9	Panchayath Running License	Nelatur Gram Panchayath resolution Dt:20.09.2009	20.09.2009		Panchayath Surpunch, Nelatur

Except for NOC from A.P. State Disaster Response & Fire services department, other permissions are found valid on the day of the Joint committee visit.

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V(c).Status of compliance / violations against conditions imposed in the consents / clearances:

i. Conditions imposed in clearances of MoEF&CC and CRZ:

The detailed status of compliance/violations against conditions imposed in the EC and CRZ clearances are annexed at **Annexure-IV**.

Non-compliance / Violations of EC and CRZ clearance conditions are as follows:

1. It has been observed that the Ministry vide EC dated 17.07.2007 has granted Environmental Clearance for establishment of 2 X 800 MW Thermal Power Project at Krishnapatnam, Nellore, Andhra Pradesh in an total area of 1250 acres. Subsequently, vide EC amendment dated 03.05.2012, permission granted for shifting of ash pond from the plant premises to outside the plant boundary and only 100 acres of ash pond was permitted as per Stage-I EC. Further, the validity of EC dated 17.07.2007 has been extended for a period of five years, i.e., till 16.07.2017 vide Ministry's letter dated 10.06.2013. Subsequently, Ministry granted EC for establishment of 1x800 MW (Stage-II) Supercritical Thermal Power Plant within the premises of Stage-I Power Project vide EC Letter no. J-13012/25/2012-IA.II(T) dated 02.07.2015. As per EIA/EMP submitted for the Stage-II Power Project, no additional land and ash pond was required for the Stage-II Power Plant (1x800 MW) and the ash and of 100 acres for Stage-I is to be used for Stage-II project also. The remaining area of 199.4 acres adjacent to the ash pond was to be developed as greenbelt. Ministry vide EC amendment no. J-13011/20/2007-IA-II (T) pt. dated 03.09.2019 permitted for carving out 30 acres of ash pond by creating a diversion bund in 149 acres area as an exigency and may use for dumping of flyash till the height of existing ash pond is increased from 5 m to 10 m, after obtaining NOC from APPCB. Subsequently, PAs vide application no. IA/AP/THE/114419/2007 dated 13.08.2019 requested for permission to use additional ash pond of 70 acres for disposing of unutilized ash. However, Ministry vide EC amendment letter no. J-13012/25/2012-IA.II(T) dated 27.02.2020 permitted to use of additional area of 30 acres for disposal of ash. However, it has been observed that the PAs have developed ash pond in an area of 100 acres instead of 60 acres without obtaining approval from Ministry.
2. It has been observed that the PAs are construction colony with more than 20,000 sq.mts. of built-up area for the employees outside the project premises without obtaining prior Environmental Clearance from competent authority.
EC No. J-13011/20/2007-IA-II (T) dated 17.07.2007
3. It is required to restore the continuous monitoring equipment's of Unit-I at the earliest. It requires immediate action.
4. It has been observed that the stormwater drains near the coal handling area is filled with ash and some portion with floating oil. This stormwater drain passes outside the compound wall and joins into the Rentamallaiah drain, which finally confluence in Buckingham canal. It is required to treat all the effluents generated from the project and

the treated effluents conforming to the prescribed standards should be re-circulated and reused within the plant. No effluents should be discharged outside the plant boundary except during monsoon season. It requires immediate action.

5. It is required to collect the fly ash in Silos in dry form and bottom ash in hydro bins and its 100% utilization shall be ensured from the day of the commissioning of the plant. In emergency, the unutilized fly ash / bottom ash shall be disposed off at the proposed ash disposal site through HCSD system. Borrow earth shall not be taken from ash pond area for construction of ash dyke etc. It requires immediate action.
6. It is required to monitor heavy metal analysis in ground water quality in and around ash dyke and the project area to ascertain the change, if any, in the water quality due to leaching of contaminants from ash disposal area.
7. It has been observed that the leachate from ash pond is being discharged to Buckingham canal. It is required to take adequate measures for collection and recycle of ash pond leachate. It requires immediate action.
8. It is required to develop greenbelt of 100 m width all around the plant boundary and ash dyke covering an area of at least 170 ha. It requires immediate action.
9. It has been observed that the few sensors are not in working conditions at CAAQM Stations. It is required to take adequate measures to restore the working condition of all the sensors at CAAQM Stations. It requires immediate action.
10. It has been observed that some of the parameters of AAQ are being exceeded at all CAAQM Stations. It is required to take adequate measures to control the AAQ in around the project area. It requires immediate action.
11. It is required to increase the no. of water sprinklers for controlling fugitive dust, regular sprinkling of water in the coal handling area and other vulnerable areas of the plant. It is also required to improve the house keeping in around the plant area. It requires immediate action.
12. During Inspection, it has been informed that the Ministry of Environment, Forest and Climate Change vide Gazette of India Notification No. 1-5/2013-ROHQ dated 13.08.2020 has established 09 new Integrated Regional Offices (IROs) including IRO, Vijayawada. The IRO, Vijayawada is functioning with the jurisdiction of State Andhra Pradesh. Henceforth, six monthly compliance reports will all monitored data including required enclosures should be submitted to IRO, Vijayawada in soft copy (PDF format) only on regularly basis to ecompliance-ap@gov.in (only).
13. It is required to allocate separate funds for implementation of environmental protection measures along with item-wise break-up. These cost should be included as part of the project cost. The funds earmarked for the environment protection measures should not be diverted for other purposes and year-wise expenditure should be reported to the Ministry's IRO, Vijayawada.

9

EC No. J-13011/20/2007-IA-II (T) dated 03.05.2012

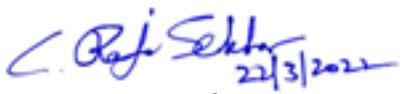
14. It is required to upload the copies of EC, Environmental Statement in Form-V and six monthly compliance reports along with all monitored data in website of the company. It requires immediate action.
15. It is required to develop a three tier thick green belts on either side of the colony and Ash Pond to prevent fugitive emissions and status of implementation should be reported to Ministry's IRO, Vijayawada along with six monthly compliance reports on regular basis.

EC No. J-13011/20/2007-IA-II (T) pt. dated 03.09.2019

16. It is required to develop greenbelt in 420 acres as per the commitment made in the Environment Management Plan in the Phase-II EIA. The green belt should be clearly demarcated and developed within a period of two years. The action plan shall clearly demarcate the area & land survey numbers, number of saplings to be planted, budget earmarked, number of persons engaged, maintenance work such as providing water and manure and time bound action plan, which is to be submitted to the Ministry's IRO, Vijayawada at the earliest.
17. It is required to deposit a bank guarantee of Rs. 10 Crores with the Andhra Pradesh Pollution Control Board for developing green belt in an area of 420 acres within two years, failing which the amount will be forfeited to the APPCB. The APPCB shall conduct a site visit and submit the report on greenbelt development in 420 acres in this regard. The APPCB after submission of site visit report may directly forfeit the amount, in case the greenbelt is not satisfactorily developed.
18. It is required to constitute a committee comprising of members from State Forest Department, State Biodiversity Board, State Wildlife Department and AP Pollution Control Board (Nodal Officer) to plan, guide the selection of species & plan of development and to oversee the progress of the greenbelt. Expenditure towards quarterly meetings and functioning of the committee is to be borne by M/s APPDCL (Proponent). The Committee has to submit the six monthly report on progress of the greenbelt to the Ministry's IRO, Vijayawada.
19. It is required to make efforts to export the unutilized ash in the domestic market as the Krishnapatnam port is located at 5 km from the power plant.
20. It is required to conduct study on effect of fly ash on surrounding agriculture fields shall be conducted by Acharya N.G. Ranga Agricultural University. Findings of the study along with report shall be submitted to the Ministry's IRO, Vijayawada.

CRZ No: 11-12/2008-IA.III dated 29.05.2008, 11-43/2012-IA-III dated 03.11.2013 and 11-20/2019-IA-III dated 07.01.2020

21. It is required take measures for continuous and comprehensive post-project marine quality monitoring programme and should include monitoring of water quality, sediment quality and biological characteristics covered in the EIA studies. It requires immediate action.


22/3/2022
ENVIRONMENTAL ENGINEER
A.P. POLLUTION CONTROL BOARD
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NELLORE.

22. It is required to provide the copy of latest Disaster Management Plan of the project.
23. It required to maintain a separate account for the funds earmarked for environment protection measures and there should be no diversion of these funds for any other purpose. A year-wise expenditure on environmental safeguards should be reported to this Ministry's IRO, Vijayawada along with six monthly compliance report on regular basis.

CRZ No: 11-20/2019-IA-III dated 07.01.2020

24. It is required to install web camera with night vision capability and flow meters in the channel/ drain carrying sea water/ effluent within the premises for continuous online monitoring of intake and outfall pipeline.
25. It is required strictly follow all conditions / recommendations stipulated by the Andhra Pradesh Coastal Zone Management Authority (APCZMA) vide their letter no. 130/APCZMA/CRZ/ IND/2018-89 dated 03.04.2019.

ii. Conditions imposed in Consents under Air & Water and Authorisation under H&OW Rules:

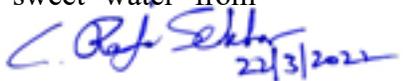
The detailed status of compliance/violations against conditions imposed in the CFO & HWA clearances are annexed at Annexure – V.

- It is observed that the unit has taken steps to comply with 27 out of 41 conditions imposed in the integrated CTO& Authorisation under HW Rules issued by the APPCB. Fifteen conditions viz. (i) compliance w.r.t Ambient Air Quality in the outside of the premises (ii) submission of an action plan for disposal of bottom ash (iii) compliance w.r.t fly ash Notification dated 03.11.2009 and its amendments thereof (iv) operation and maintain continuous online stack monitoring system & 4 CAAQM stations (v) 100 % utilisation of fly ash (vi) Not meeting the effluent standards stipulated (vii) Three tier thick green belt on either side of the colony (viii) compliance with EC conditions (ix) compliance to conditions of CFE (x) housekeeping at coal stockyard (xi) regular calibration of online monitoring system (xii) providing water sprinkling system to control fugitive dust emissions in the ash pond (xiii) install the online monitoring system and connect monitoring to APPCB/CPCB and (xiv) Compliance with Taskforce directions were found not complying/ partially complying..

V(d).Status of Pollution Control measures taken to prevent the pollution

i. Water & Waste Water:

- The unit uses **335.5 MLD** of Seawater for all purposes. The unit is generating **240 MLD** of cooling water blowdown, **11.5 MLD** of reject water from desalination and RO plants and **400 KLD** of domestic wastewater. The industry provided a desalination plant of **13 MLD** to generate sweet water from


 22/3/2022
ENVIRONMENTAL ENGINEER
A.P. POLLUTION CONTROL BOARD
Regional Office
NELLORE.

seawater. The sweet water is being used for boiler feed, ash slurry, domestic and other purposes. However, the unit is not able to provide a detailed water balance.

- The industry provided ETP of 75 KLD capacity. The industry is getting effluent @ 5 - 45 KLD only to the ETP. During the inspection, it was observed that the storm water drains near the coal handling area is filled with ash and some portion with floating oil. This storm water drain passes outside the compound wall and joins into the Rentamallaiah drain, which finally confluence in Buckingham canal.
- The unit provided an online turbidity meter and pH meter at the outlet of the central monitoring basin. These online monitors are not connected to the APPCB / CPCB servers.
- The unit is discharging cooling water into the Sea through the marine outfall. But they have not provided online monitors for the temperature to ensure the adequacy of temperature reduction of cooling water before discharging into Sea.

ii. Source emission and Ambient Air:

- The unit has a Supercritical boiler and 275 mts stack, and the flue gas boiler is connected Electro Static Precipitator with 64 fields. The unit has installed the online emission monitoring system to monitor PM, NO_x, SO₂ and CO in the stack and the same is connected to the APPCB server and CPCB server. But, these online monitors are not functioning properly, which are required to be revamped.
- The industry receives coal from the Krishnapatnam Port through a closed pipe conveyor. They provided a dust extraction system at the transfer points. Present coal is being stored openly, and coal storage shed construction is under progress. Truss was provided, and sheets are yet to be erected.

During inspection team monitored the stacks attached to the boiler, the source emissions monitored during the inspection are given below:

Table No. 2 : Results of analysis (RoA) of source emission monitoring

Parameters	Stack attached to 2600 TPH Supercritical boiler(unit-1)	Stack attached to 2600 TPH Supercritical boiler(unit-2)	Prescribed standards of APPCB
Date of monitoring	21.10.2021	21.10.2021	
Particulate Matter in mg/Nm ³	45.2 mg/Nm ³	47.4 mg/Nm ³	50 mg/Nm ³
Mercury mg/Nm ³	0.0016 mg/Nm ³	0.0007 mg/Nm ³	

The unit is meeting the emission standard with respect to Particulate Matter. The unit is required to install an FGD system to meet the standards of SO₂, Hg by 31.12. 2024.

iii. Fly ash and Ash ponds

Earlier, the unit developed an ash pond in an area of 125 acres with a bund height of 5mtrs. Ash was disposed into 125 acres ash pond up to brim level, and subsequently, the unit is enhanced the bund height to 10 meters with permission of MoEF&CC, GoI. In addition, the unit has developed an ash pond in an area of about 100 acres by naming it as a diversion pond adjacent to the existing ash pond. The unit has obtained permission from the MoEF&CC, GoI and APPCB for the formation of an ash pond (Temporary ash pond) for an area of 60 acres (30 Ac+30 Ac) only. Now, the ash pond is almost full, and a huge quantity of seepage is being discharged outside the premises. The analysis of the seepage water is as below:

Table No. 3: Results of Analysis of ash pond seepage water

Parameter	Units	Analysis value
pH		6.66
TSS	mg/l	16
TDS	mg/l	11652
COD	mg/l	28
BOD	mg/l	5.6
Oil & Grease	mg/l	6.4
Copper	mg/l	ND
Iron	mg/l	1.16
Chromium	mg/L	0.00175
Manganese	mg/L	0.00051
Iron	mg/L	0.01927
Nickel	mg/L	0.00060
Copper	mg/L	0.00062
Zinc	mg/L	0.00141
Arsenic	mg/L	0.00081
Cadmium	mg/L	0.00001
Lead	mg/L	0.00002
Mercury	mg/L	BDL

The unit has not provided piezo wells to monitor the groundwater quality around the ash pond. The seepage water from the ash pond is discharged outside and joined into nearby streams. Aquaculture farmers are using this water.

V(e). Other observations made during field visit:

- The unit is not supposed to discharge any wastewater through storm water drains outside during non-rainy days. And there shall not be any ash in the storm water drains.

- During the committee visit, it was observed that the storm water drains near the coal handling area was filled with ash and some portion with floating oil. This storm water drain passes outside the compound wall and joins into the Rentamallaiah drain, which finally confluence in Buckingham canal. Analysis of the samples collected is as below:

Table No. 4: Results of Analysis of samples taken from the storm water drain

Sl.No	Parameters	Units	Storm water drain at coal mill	Storm water drain before confluence to Rentamallaiah canal
1	pH		6.67	6.64
2	TSS	mg/l	78	65
3	TDS	mg/l	2250	2136
4	COD	mg/l	176	108
5	BOD	mg/l	38	24
6	Oil & grease	mg/l	5.2	5.7
7	Copper	mg/l	ND	ND
8	Iron	mg/l	BDL	0.61
9	Chromium	mg/L	0.00030	0.00009
10	Manganese	mg/L	0.00827	0.00658
11	Iron	mg/L	0.02076	0.02571
12	Nickel	mg/L	0.00055	0.00048
13	Copper	mg/L	0.00043	0.00042
14	Zinc	mg/L	0.01567	0.02095
15	Arsenic	mg/L	0.01650	0.00897
16	Cadmium	mg/L	0.00001	0.000004
17	Lead	mg/L	BDL	0.00064
18	Mercury	mg/L	BDL	BDL

The above analysis indicates that the unit is discharging contaminated wastewater into the nearby water bodies, which finally confluence into the Buckingham canal.

- The industry is using seawater for cooling purposes. The industry is drawing seawater through the pipeline. After usage, the cooling water is being subjected to the cooling towers and finally discharging into the Sea through the marine outfall. The industry has not provided temperature sensors to the cooling waste water, which is discharged into the Sea.
- The industry is operating 2 x 2600 TPH supercritical coal-fired boilers by using Indian coal. The Continuous Emission Monitoring System (CEMS) provided by the industry are not functioning. The CEMS provided to unit-1 is not functioning properly and need to be calibrated. The CEMS provided to unit 2 is not yet all working and need to be replaced. The industry representative informed that they had placed a purchase order for a new system.
- The unit has provided Electro Static Precipitators as air pollution control equipment to the coal-fired boilers of 2600 TPH. The unit representatives claim that the performance of the ESPs is 99.97%, but have not produced any efficiency test report of the ESP efficiency.

- The unit has provided 4 nos. of CAAQM stations to monitor the live data of the ambient air. But the most of the sensors of the CAAQM stations are not functioning, and the remaining also show erratic values. The status of the functioning of the sensors is as below:

Table No. 5: Operational status of CAAQM stations at AP GENCO

Sl.No	Location of the CAAQM station	Parameters				
		PM10	PM2.5	SO2	NOx	CO
1	Coal Gate	Working	Working	Working	Working	Not Working
2	Ash Pond	Not Working	Working	Working	Not Working	Not Working
3	Hostel	Not Working	Working	Working	Working	Working
4	Switchyard	Working	Not Working	Not Working	Not Working	Not Working

- The unit has not yet achieved 100 % fly ash utilization. So far (Since 2015) the unit generated about **75.33 Lakh Tons of Ash but utilized only 43.71 Lakhs Tons (58 %)** of Ash. The remaining quantity of ash was accumulated in the ash pond.
- The unit is supposed to develop a green belt in an area of 420 acres. But, the unit planted saplings in an area of 395 acres only. The green belt around the ash pond is very poor. Particularly, towards Dibbamida Harizanawada (SC) colony, Pinampuram village, Muthukur Mandal.

VI. M/s. Sembcorp Energy India Ltd., Project- 1

VI (a). General Information:

M/s Sembcorp Energy India Limited (Project-1) [Formerly Thermal Powertech Corporation India Limited-TPCIL] is located in Painampuram & Nelaturu Villages, Muthukur Mandal, SPSR Nellore District. The unit is spread in an area of 1367 acres. The unit was established as Thermal Powertech Corporation India Limited-TPCIL. At present, the unit is operating 1x660 MW against the consented capacity of 2 x 660 MW by using blended coal (i.e. 70% Indian coal & 30 % imported coal) Fly ash generated from the unit is being disposed to the cement and brick units from the silo; bottom ash is being disposed to the ash-pond in the form of slurry. The detailed inspection report of M/s Sembcorp Energy India Limited (Project-1) is enclosed at **Annexure –VI.**

VI (b). Status of Permissions/clearances obtained by the unit

The details of the clearances obtained by the unit pertaining to the environment are submitted below.

Table No. 6: Status of Permissions/ Clearances obtained

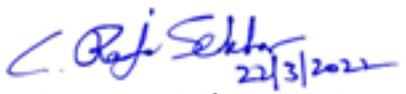
S. No.	Permissions obtained by unit	Document/ license no.	Issue date	Valid upto	Name of the Department
1	Boiler License	Unit#1: AP-6119	02.07.2021	01.07.2022	Factories Dept. Govt. of Andhra Pradesh
		Unit#2: AP-6146	03.08.2021	01.08.2022	
2	Fire NOC	Rc. No 17760/ NLR/ MSB/ 2021, Dt: 03.06.2021	03.06.2021	02.05.2022	AP State Disaster Response and Fire Services Department
3	PESO License	P/HQ/AP/15/40 44 (P326181)	19.09.2014	31.12.2023	PESO
4	CTE	Order No. 177/PCB/CFE/ RO-NLR/ HO/2009	15.05.2010	-	APPCB
5	CTO	Order No. APPCB/ VJA/ NLR/ 930/ HO/CFO/2016	16.11.2021	30.11.2026	APPCB
6	Hazardous Waste Approval	Order No. APPCB/ VJA/ NLR/ 930/ HO/CFO/2016	16.11.2021	30.11.2026	APPCB
7	Factory License	R. No. 114074 /DYCIFN- ADMN0LICN/ 08/2020- SUVR(A)- DYCIF-NLR	20.02.2015	31.12.2022	Factories Dept. Govt. of Andhra Pradesh
			19.08.2017		
			26.02.2018		
			26.06.2020		
8	EC Letter	J 13012/02/ 2009-IA.II (T)	04.11.2009	03.11.2014	MoEF&CC
		J 13012/02 /2009-IA.I (T)	02.03.2015	03.11.2015	MoEF&CC
9	Panchayath Running License	NOC Available	09.09.2009	-	Nelatur Panchayath

The unit has obtained all requisite clearances permissions from all respective departments and operating 2x2016 TPH supercritical coal-fired boilers.

VI(c). Status of compliance/violations against conditions imposed in the EC, CRZ clearance and consents.

i. Conditions imposed in clearances of MoEF& CRZ

The detailed status of **compliance/violations against conditions imposed in the EC and CRZ clearances** are annexed at **Annexure-VII**


 22/3/2022
ENVIRONMENTAL ENGINEER
A.P. POLLUTION CONTROL BOARD
Regional Office
NELLORE.

Non-compliance / Violations of EC and CRZ clearance conditions are as follows:

EC No. J-13012/02/2009-IA.II (T) dated 04.11.2009:

1. It is required to monitor Mercury and other heavy metals (As, Hg, Cr, Pb etc.) in the effluents emanating from the existing ash pond.
2. It is required to implement the recommendations made in the Hydrogeological study report.
3. It is required to conduct hydrogeological study of the area annually and results submitted to the Ministry and concerned agency in the State Government.
4. It is required to earmark an amount of Rs 32.0 crores as one time capital cost for CSR programme. Subsequently a recurring expenditure of Rs. 6.4 Crores per annum should be earmarked as recurring expenditure for CSR activities. Details of the activities to be undertaken should be submitted within along with road map for implementation.
5. It is required to implement CSR activities as per need based assessment for the nearby villages to study economic measures with action plan which can help in upliftment of poor section of society. Income generating projects consistent with the traditional skills of the people besides development of fodder farm, fruit bearing orchards, vocational training etc., can form a part of such programme. Company shall provide separate budget for community development activities and income generating programmes. This will be in addition to vocational training for individuals imparted to take up self employment and jobs.
6. During Inspection, it has been informed that the Ministry of Environment, Forest and Climate Change vide Gazette of India Notification No. 1-5/2013-ROHQ dated 13.08.2020 has established 09 new Integrated Regional Offices (IROs) including IRO, Vijayawada. The IRO, Vijayawada is functioning with the jurisdiction of State Andhra Pradesh. Henceforth, six monthly compliance reports will all monitored data including required enclosures should be submitted to IRO, Vijayawada in soft copy (PDF format) only on regularly basis to ecompliance-ap@gov.in (only).
7. It is required to submit the Environment Statement for each financial year ending 31st March in Form V IRO, Vijayawada in soft copy (PDF format) only on regularly basis to ecompliance-ap@gov.in (only).
8. It is required to update the Environmental Statement in company's website on regular basis.
9. It is required to submit the detailed report regarding the expenditure incurred for implementation of environmental protection measures along with six monthly compliance to Ministry's Integrated Regional Office on regular basis.
10. It is required to submit the details regarding the date of financial closure and final approval of the Project by the concerned authorities and the dates of start of land development work and commission of the plant.

J-13011/02/2009-IA.II(T) dated 02.03.2015 (Extension of EC validity)

11. It is required to conduct long term study of radioactivity and heavy metals contents on coal to be used through a reputed institute and results thereof analysed every two year and reported along with monitoring reports. Thereafter mechanism for an in-built continuous monitoring for radio activity and heavy metals in coal and fly ash (including bottom ash) shall be put in place.

CRZ Clearance No. 11-129/2010-IA.III dated 05.12.2011

12. It has been observed the the CRZ clearance issued by the Ministry vide Clearance No. 11-129/2010-IA.III dated 05.12.2011 for the construction of pump house, Sea water Intake and Outfall facilities at Pianapuram Village, Near Nellore, Andhra Pradesh has granted to M/s Thermal Power Tech Corporation India Ltd. The transfer of CRZ clearance in favor of M/s Sembcorp Energy India Limited has not provided.
13. It is required to submit the copy of “Consent For Establishment” granted for construction of pump house, Sea water Intake and Outfall facilities obtained from APPCB under Air and Water Act.
14. It is required to provide the details implementation status of all the measures as committed to the Ministry vide their letter dated 01.08.2011, as a part of the clarifications submitted by the PP.
15. It is required to submit the compliance status of all mitigation measures submitted in the EIA report which are to be prepared in a matrix format to Ministry’s IRO, Vijayawada.
16. It is required to provide the details regarding the date of financial closure and final approval of the project by the concerned authorities and the date of start of land development work.
17. It is required to submit the copies of newspaper advertisement to Ministry’s IRO, Vijayawada for records.
18. It is required to upload the status of compliance of the stipulated CRZ clearance conditions, including results of monitored data on their website.

ii. Conditions imposed in Consents under Air & Water and Authorisation under H&OW Rule

The detailed status of compliance/violations against conditions imposed in the CFO & HWA clearances are annexed at **Annexure – VIII**

It is observed that the unit has taken steps to comply with 25 out of 31 conditions imposed in the integrated CTO & Authorisation under HW issued by the APPCB. Two conditions viz. (i) Closed shed for storage of coal and wind barrier/wind-breaking walls to the coal yard (ii) compliance w.r.t utilisation of 100 % fly ash and bottom ash were found not complying. Four conditions viz. (i) providing water sprinkler around the ash pond (ii) development of thick green belt in an area of 395 acres (iii) compliance with Board

directions issued from time to time and (iv) Compliance with standards and directions issued by CPCB/MoEF& CC w.r.t disposal of fly ash were found partially complied.

VI(d). Status of Pollution Control measures taken to prevent the pollution.

i. Water & Waste Water:

- The unit is consented for using 233 MLD of Seawater for all purposes. The unit is consented to generate 116 MLD of cooling water blowdown, 22.22 MLD of RO reject water, 6.66 MLD of ash pond water, 1.116 MLD of clarifier blow down, 112 KLD of DM plant regeneration, 80 KLD of boiler blowdown, 80 KLD of floor wash and 40 KLD of domestic wastewater.
- The industry provided a desalination plant of 13.08 MLD to generate sweet water from seawater. The sweet water is being used for boiler feed, domestic and other purposes.
- The industry provided ETP of 1732 KLD capacity. But the industry is generating floor wash of 30 KLD only, and the same is taken for treatment in the ETP.
- The unit provided an online monitor to measure TSS, pH and temperature at the outlet of the central monitoring basin. These online monitors are connected to the APPCB / CPCB servers.

ii. Source emission and Ambient Air

The unit has a Supercritical boiler and 275 mts stack, and the flue gas boiler is connected Electro Static Precipitator with 75 fields. The unit has installed the online emission monitoring system to monitor PM, NO_x, SO₂ in the stack and the same is connected to APPCB server and CPCB server. During the inspection team monitored the stacks attached to the boiler, the source emissions monitored during the inspection are given below:

Table No. 7: Results of Analysis of Stack emissions

Parameters	Stack attached to 2016 TPH Supercritical boiler (unit-1)	Prescribed standards of APPCB
Date of monitoring	22.10.2021	
Particulate Matter in mg/Nm ³	40.8 mg/Nm ³	50 mg/Nm ³
Mercury mg/Nm ³	0.001 mg/Nm ³	

The unit is meeting the emission standard with respect to Particulate Matter. The unit is required to install FGD system to meet the standards of SO₂, Hg by 31.12. 2024.

The unit has provided 4nos of CAAQM stations and monitoring PM₁₀, PM_{2.5}, SO₂ and NO_x. During committee visit, all the CAAQM stations are found in operation.


 22/3/2022
ENVIRONMENTAL ENGINEER
A.P. POLLUTION CONTROL BOARD
Regional Office
NELLORE.

iii. Fly ash and Ash ponds

The unit has provided 3 nos. of silos of each 2000 Ton capacity for flyash. Bottom ash and un-utilised flyash is being disposed to the ashpond in slurry form. The unit is using saltwater for ash slurry purpose. The industry partially provided water sprinklers in the ash pond to control dust emission from ashpond. The industry is maintaining the water level in the ashpond over 70% of the total area & provided water sprinklers over 20% of the area. About 10% of the ash-pond area is in dry condition.

Initially, the unit developed ash pond of 19.6 lakh m³ in Dyke-A in 100 acres and 24 lakh m³ in Dyke-B in 120 acres. So for the unit disposed 28.32 Lakh m³ of ash into ash ponds. The unit added additional volume of 15 Lakh m³ in Dyke-A, during 2021-22 by rising the bund height upto 10m in an area of 86 acres. The analysis of the ash recovery clarifier water, Storm water drain near ash pond and Stagnated water towards East side of Ash pond are as below:

Table No. 8: Results of Analysis of samples taken from storm water drain, stagnated water near ash pond

Parameter	Units	Ash recovery clarifier water	Storm water drain near ash pond	Stagnated water towards East side of Ash pond
pH		7.24	7.08	7.03
TSS	mg/l	24	20	23
TDS	mg/l	30960	18540	25440
COD	mg/l	36	40	44
BOD	mg/l	7.3	8.0	9.2
Oil & Grease	mg/l	6.2	4.0	7.0
Copper	mg/l	ND	ND	ND
Iron	mg/l	BDL	0.06	BDL
Chromium	mg/l	0.00007	0.00004	0.00004
Manganese	mg/l	0.00195	0.00315	0.00179
Iron	mg/l	0.03580	0.08356	0.10050
Nickel	mg/l	BDL	BDL	BDL
Copper	mg/l	0.00002	0.00006	0.00004
Zinc	mg/l	0.00053	0.01790	0.00235
Arsenic	mg/l	0.00309	0.00175	0.00120
Cadmium	mg/l	BDL	BDL	0.000002
Lead	mg/l	BDL	0.000007	BDL
Mercury	mg/l	BDL	BDL	BDL

VI (e) other observations made during field visit:

- Since 2015, the unit generated 63,41,834 Tons of fly ash, but able to utilise only 41,56,751 Tons of flyash. The unit disposed 21,85,083 Tons of fly ash to the ash pond. Similarly, the unit generated 10,38,447 Tons of bottom ash but utilised only 3,91,097 Tons of bottom ash. The unit disposed 6,47,350 Tons of bottom ash into the ash pond.
- The unit is supposed to develop green belt in an area of 395 acres. But, the unit developed green belt in an area of 330 acres only.

VII. Assessment of Environmental damage on account of operation of respondent units**VII (a) Status of Ambient Air Quality in the surrounding area of Respondent Units :**

The Committee also monitored the ambient air quality in 3 locations to assess the impact of operation respondent units, the Results of Analysis of Ambient air Quality monitored are depicted below:

During inspection, AAQ monitoring was conducted at the following 3 locations. Analysis values are summarized in Table No. 9:

Table No. 9: Results of Analysis of Ambient Air Quality Monitored

S.No	Location	Monitoring Period	PM(10) ($\mu\text{g}/\text{m}^3$)	SO ₂ ($\mu\text{g}/\text{m}^3$)	NO _x ($\mu\text{g}/\text{m}^3$)
1	S. Vijay Kumar Reddy building, Nelaturu(V), Muthukuru(M), SPSR Nellore District	21.10.2021	106.5	4.2	16.0
2	MPP Primary School, Dibbameda Harijanawada Colony, Pynapuram (V), Muthukuru (M), SPSR Nellore District	21.10.2021	168.5	4.8	18.0
3	Amarnath Hatcheries, Kotepalli(V), T.P. Gudur(M), SPSR Nellore District	21.10.2021	102.0	4.6	17.2

From the above table it is observed that PM₁₀ was found exceeding the standards of National Ambient air quality standards for 24 hr average i.e 100 $\mu\text{g}/\text{m}^3$ which indicates the poor control mechanism for control of fugitive emissions from coal yard and ash ponds .

VII(b).Status surface water quality and Ground water Quality:

The Committee has surveyed the surface water bodies around the respondent units and samples have been taken for assessing the quality, the analysis report of water samples taken are depicted below:

Table No. 10: Results of Analysis of samples taken surface water around the respondent units

Sl.No	Parameters	Units	Rentamallaiah Canal	Chinna Cheruvu
1	pH		7.01	7.17
2	TSS	mg/l	18	74
3	TDS	mg/l	18900	3220
4	COD	mg/l	32	124
5	BOD	mg/l	5.8	28
6	Oil and Grease	mg/l	5.2	4.6
7	Copper	mg/l	ND	ND
8	Iron	mg/l	BDL	0.23
9	Chromium	mg/l	0.00004	0.00037
10	Manganese	mg/l	0.00158	0.00769
11	Iron	mg/l	0.02596	0.04488
12	Nickel	mg/l	BDL	0.00069
13	Copper	mg/l	0.00006	0.00063
14	Zinc	mg/l	0.00101	0.00379
15	Arsenic	mg/l	0.00139	0.00821
16	Cadmium	mg/l	BDL	BDL
17	Lead	mg/l	BDL	0.00008
18	Mercury	mg/l	BDL	BDL

The concentration of COD in Rentamallaiah Canal confirming that discharge of effluent through storm water drain passing through the premises. Further, high TDs values in Rentamallaiah canal would be due to joining of Sea water from Buckingham Canal/ Aquaculture ponds.

VII(c).Assessment of Soil Quality around the respondent units:

The Committee has collected the soil samples in agricultural land located around the respondent units and samples have been taken for assessing the quality, the analysis report of soil samples taken are depicted below.

The Committee also visited the agricultural fields of Sri. Yanati Srinivasulu Reddy garu on 21.10.2021 by which time, the field was found to be fallow since the season has not yet started. Nursery sowing also was not taken up. There was also no green manure crop on the field.



C. Raj Sekhar
22/3/2022
ENVIRONMENTAL ENGINEER
A.P. POLLUTION CONTROL BOARD
Regional Office
NELLORE.

Dr. V. Sailaja, Principal Scientist (Soil Science), ANGRAU collected the soil samples from the Agricultural Fields at different radial distances from the thermal power units in question including the applicants' fields.

Table no. 11: Results of Analysis of soils samples taken from Agricultural field

Soil Test Report Of Agricultural Fields In The Vicinity Of Thermal Power Stations, Nelaturu, SPSR Nellore District								
Location No.	Name of the farmer	Village	pH	EC (dS m⁻¹)	OC (%)	Avail . N	Avail . P	Avail. K
						kg ha⁻¹		
1	Rama Murthy G	Nelaturu	8.20	1.04	0.55	189	33.2	235
2	Pokapudi Srinivas, S/o Dasaiah	Nelaturu	8.43	1.02	0.24	176	44.8	146
3	Venu Kumar Reddy V	Nelaturu	5.54	0.68	0.49	126	40.3	291
4	Ch. Narasimham	Nelaturu	5.99	0.71	0.42	202	25.1	146
5	EpuruRajeswar amma	Nelaturu	6.67	0.68	0.62	214	46.6	157
6	Nagarjuna Reddy	Nelaturu	6.22	0.50	0.42	164	49.3	78
7	Sri. Y. Srinivasula Reddy	Nelaturu	7.53	0.35	0.45	139	36.7	190
8	Sri. Y. Srinivasula Reddy	Nelaturu	7.17	0.21	0.42	176	34.7	392
9	Sri. Y. Srinivasula Reddy	Nelaturu	6.87	0.53	0.50	214	31.4	280
10	-	Amudal padu	6.22	0.21	0.51	202	28.7	123
11	Y. Subrahmanya Reddy S/o Seshu Reddy	Mamidip udi	8.07	1.80	0.23	265	31.4	190
12	Y. Subrahmanya Reddy S/o Seshu Reddy	Mamidip udi	7.54	0.32	0.80	227	28.7	45
13	Pratapa Reddy	Mamidip udi	8.15	1.45	0.75	214	34.9	123
14	SkBabulu	Mamidip udi	7.81	1.60	0.62	239	21.5	358
15	Kaki Sundaraiah	Mamidip udi	8.21	2.40	1.04	202	25.5	336
16	SunkaraVenka mma	Mamidip udi	7.54	1.52	0.96	189	44.8	650

17	DeemaraSubbamma	Mamidipudi	7.15	0.62	0.67	252	51.1	694
18	Chinnaiah K	Mamidipudi	8.24	0.53	1.08	239	49.3	1131
19	Duvvuru Manohar Reddy	Mamidipudi	8.22	0.33	0.70	189	54.7	112
20	Duvvuru Manohar Reddy	Mamidipudi	7.14	0.47	0.59	214	44.8	493
21	NakkaBalaramaiah	Mamidipudi	8.24	0.92	0.78	252	31.4	202
22	Kondala Rao	Mamidipudi	8.29	1.01	0.52	227	36.5	224
23	K. Adinarayana	Mamidipudi	6.76	1.27	0.36	239	30.2	202
24	Kaki Kondaiah	Mamidipudi	7.42	0.59	0.46	252	33.6	134
25	AlapakaChinnai ah	Musunuri Palem	6.31	0.12	0.59	151	22.4	67
26	Ch. Ramesh Reddy	Musunuri Palem	5.78	0.37	0.60	139	24.6	291
27	Siva Kumar Kudumala	Musunuri Palem	6.58	0.34	0.68	214	36.7	224
28	Munukur Sai Kumar Reddy	Musunuri Palem	6.56	0.33	0.47	101	26.0	134
29	ShaikKhadarBh asha		6.53	0.09	0.36	176	29.6	56
30	MusunuruNikhila	M.V. Palem	5.86	0.14	0.10	202	21.5	56
31	M. Nikhila	M.V. Palem	7.11	0.09	0.20	189	46.6	45
32	M. Nikhila	M.V. Palem	7.34	0.15	0.46	176	25.1	56
33	M. Nikhila	M.V. Palem	7.45	0.15	0.20	202	22.4	45
34	ChadalavadaBh askar	M.V. Palem	8.32	0.68	0.80	239	26.0	179
35	ChadalavadaBh askar	M.V. Palem	8.72	0.54	0.64	227	40.3	190
36	V. Seenai ah	Pynapuram	6.35	0.09	0.64	227	32.3	202
37	PattapuVenkata Ratnam	Pynapuram	7.34	0.21	0.47	139	18.8	67
38	Linga Reddy	Pidathap oluru	5.91	0.73	0.11	151	28.7	101
39	-	Pidathap oluru	8.06	0.13	0.15	227	25.5	134

40	BellamkondaVenkataiah	Pidathapoluru	6.25	0.21	0.73	252	24.9	392
41	Puli Ramaiah	LingaPallem	8.00	1.37	0.57	164	51.5	235
42	-	Ananthavaram	6.83	0.06	0.38	189	68.5	112
43	-	Amudalapadu	7.86	0.28	0.52	139	45.7	370
	Mean		7.23	0.62	0.53	198	35.03	230.00
	Range		5.54-8.72	0.06 - 2.40	0.10-1.08	101-265	18.8-68.5	45-1131
Ash Pond I			8.64	0.07	0.05	50	26.9	22
Ash Pond II			8.60	0.24	0.03	63	24.9	22
Ash Pond III			7.99	0.07	0.07	63	28.2	22

Ratings	Critical limit
pH	6.5-7.5
EC	< 4 dS m ⁻¹
	< 2 dS m ⁻¹
OC %	<0.5
	0.5 - 0.75
	>0.75
Avail.N (kg/ha)	<280
	280-560
	>560
Avail. P	<10
	26-Oct
	>26
Avail. K	<108
	108-220
	>220
DTPA-Zn (mg/kg)	>0.6-0.7
DTPA-Fe (mg/kg)	>5
DTPA-Mn (mg/kg)	>5.7
DTPA-Cu (mg/kg)	>0.2

In addition to the above parameters presence of heavy metals in the soil also analysed.

The analysis values are given below:

Table No.13 : Heavy Metals Results of analysis of soil samples taken from Agricultural land

Sl. No.	Name of the farmer	Village	Cr	Co	Ni	Cd	Pb	Zn	Fe	Cu	Mn
			mg kg ⁻¹								
1	Rama Murthy G	Nelaturu	0.44	0.39	0.73	0.038	1.82	1.032	7.155	1.266	3.78
2	Pokapudi Srinivas, S/o Dasaiah	Nelaturu	0.416	0.36	0.682	0.048	1.7	1.173	7.105	1.09	2.84

C. Raj Sekhar
22/3/2022
ENVIRONMENTAL ENGINEER
A.P. POLLUTION CONTROL BOARD
Regional Office
NELLORE.

3	Venu Kumar Reddy V	Nelaturu	0.448	0.35	0.54 2	0.04 4	1.94	1.25 7	7.95	1.32 8	2.294
4	Ch. Narasimham	Nelaturu	0.436	0.37 4	0.46 2	0.05 6	1.82	1.21 8	7.793	1.22	1.808
5	EpuruRajeswaramma	Nelaturu	0.496	0.34 2	0.55 8	0.05 2	1.66	1.3	7.71	1.35 4	2.54
6	Nagarjuna Reddy	Nelaturu	0.392	0.32 6	0.47 4	0.03 6	1.24	1.51	7.204	0.87 6	0.962
7	Sri. Y. Srinivasula Reddy	Nelaturu	0.5	0.36	0.63	0.05	1.9	0.63 3	7.349	1.02 8	2.964
8	Sri. Y. Srinivasula Reddy	Nelaturu	0.46	0.41 6	0.81 8	0.06 2	2.2	1.24 6	7.761	1.56 2	2.784
9	Sri. Y. Srinivasula Reddy	Nelaturu	0.46	0.45 2	0.87 6	0.06 4	2.24	1.22 4	8.114	1.51 2	4.07
10	-	Amudalapuradu	0.484	0.40 4	0.84 8	0.04	2.22	0.93 9	7.708	1.54 6	3.18
11	Y. Subrahmanya Reddy S/o Seshu Reddy	Mamidipudi	0.444	0.54 8	0.72 2	0.06 4	1.8	1.16 4	6.591	1.6	3.834
12	Y. Subrahmanya Reddy S/o Seshu Reddy	Mamidipudi	0.456	0.56 2	0.80 8	0.06	1.84	1.03 7	7.836	1.56 8	2.406
13	Pratapa Reddy	Mamidipudi	0.468	0.44	0.65 8	0.06 6	1.82	1.03 5	6.548	1.65 2	4.78
14	SkBabulu	Mamidipudi	0.48	0.54	0.72 8	0.06 6	2.02	0.92 9	7.51	1.52 4	5.934
15	Kaki Sundaraiah	Mamidipudi	0.472	0.60 2	0.79 6	0.08 2	2.5	1.26	7.446	2.10 8	7.246
16	SunkaraVenkamma	Mamidipudi	0.444	0.71 6	1.21 2	0.08 6	2.88	0.82 2	7.765	3.63 2	8.634
17	DeemaraSubbamma	Mamidipudi	0.388	0.53	0.90 8	0.06 4	1.86	0.55 9	7.235	1.71 2	3.432
18	Chinnaiah K	Mamidipudi	0.484	0.70 8	0.93 2	0.10 4	2.9	1.37 1	7.603	2.84 6	15.68 2
19	Duvvuru Manohar Reddy	Mamidipudi	0.492	0.48 2	0.64	0.05 4	2.06	1.04 1	5.431	1.28 4	12.39 8
20	Duvvuru Manohar Reddy	Mamidipudi	0.476	0.51	0.69 4	0.06 2	1.54	0.82 8	9.106	1.19 4	14.25 2
21	NakkaBalaramaiah	Mamidipudi	0.484	0.20 4	0.61 8	0.04 8	2.36	1.32 7	7.435	2.09	3.74

22	Kondala Rao	Mami dipudi	0.46	0.194	0.59	0.048	2.54	1.418	7.782	2.13	5.014
23	K. Adinarayana	Mami dipudi	0.472	0.374	0.714	0.042	1.98	1.07	8.037	1.778	8.1
24	Kaki Kondaiah	Mami dipudi	0.476	0.272	0.594	0.034	1.74	0.789	7.71	1.494	13.316
25	AlapakaChinnaiah	MusunuriPalem	0.336	0.348	0.838	0.046	1.82	0.778	7.921	1.742	3.336
26	Ch. Ramesh Reddy	MusunuriPalem	0.344	0.274	1.13	0.048	2.04	1.321	8.176	2.472	5.97
27	Siva Kumar Kudumala	MusunuriPalem	0.364	0.534	1.194	0.05	2	0.856	7.483	2.394	14.138
28	Munukur Sai Kumar Reddy	MusunuriPalem	0.372	0.338	0.754	0.046	1.5	0.939	7.783	1.446	2.602
29	ShaikKhadarBhasha		0.384	0.332	0.678	0.034	1.16	0.529	7.384	0.904	17.116
30	MusunuruNikhila	M.V. Palem	0.368	0.342	0.44	0.028	0.86	0.389	6.352	0.878	14.794
31	M. Nikhila	M.V. Palem	0.392	0.358	0.39	0.03	0.84	0.384	6.662	0.642	8.856
32	M. Nikhila	M.V. Palem	0.4	0.394	0.594	0.038	1.3	0.478	14.562	0.79	12.79
33	M. Nikhila	M.V. Palem	0.384	0.518	0.612	0.046	1.3	2.1	13.105	0.872	17.116
34	Chadalavada Bhaskar	M.V. Palem	0.424	0.372	0.648	0.068	1.72	1.072	6.46	2.226	4.42
35	Chadalavada Bhaskar	M.V. Palem	0.432	0.372	0.652	0.054	1.84	1.16	6.633	1.792	4.462
36	V. Seenaiiah	Pynapuram	0.448	0.264	0.5	0.046	1.84	1.118	7.988	0.95	1.932
37	PattapuVenkataRatnam	Pynapuram	0.392	0.342	0.666	0.038	1.2	0.834	7.491	1.148	2.774
38	Linga Reddy	Pidat hapoluru	0.476	0.292	0.436	0.042	2	1.332	7.819	1.108	1.544
39	-	Pidat hapoluru	0.472	0.238	0.43	0.036	1.54	0.628	11.306	0.856	4.434
40	BellamkondaVenkataiah	Pidat hapoluru	0.508	0.614	1.526	0.062	2.76	0.472	8.318	2.408	6.44
41	Puli Ramaiah	Linga Palem	0.476	0.464	0.77	0.07	2.6	1.365	8.269	1.92	5.334

42	-	Anant havar am	0.456	0.41 2	0.40 4	0.03 4	1.5	0.41 4	7.896	0.47	16.46 8
43	-	Amu dalap adu	0.448	0.29 6	0.75 4	0.06	2.34	0.9	6.974	1.96 2	4.79
	Mean		0.44	0.41	0.71	0.05	1.88	1.01	7.87	1.54	6.64
	Range		0.34- 0.51	0.19 - 0.72	0.39 - 1.53	0.03- 0.10	0.84- 2.90	0.38- 2.10	5.43- 14.56	0.47 - 3.63	0.96- 17.12
As h Pon d I			0.4	0.30 8	0.40 4	0.05 8	1.32	0.19 1	9.254	0.51 2	0.388
As h Pon d II			0.436	0.42 8	0.64 2	0.08 4	1.6	0.79 5	5.862	0.68 2	0.756
As h Pon d III			0.44	0.39	0.5	0.06 8	1.4	0.29 2	9.405	0.42 2	0.336

Table No. 14: Threshold limits of Heavy metals in Soil

Trace metal	Threshold limits mg/kg
Cd	3 to 6
Co	40
Cr	100
Cu	30
Fe	5
Mn	1
Ni	75-150
Pb	250-500
Zn	300-600

The soils of the study area were slightly acidic to slightly alkaline in reaction, normal in electrical conductivity (non-saline) with a mean organic carbon content of 0.53 per cent. The soils contained low available N, medium to high available P, and low to high available K. Majority of the soils were sufficient in micronutrient content with corresponding mean Zn, Fe, Cu and Mn contents of 1.01, 7.87, 1.54 and 6.64 mg kg⁻¹. The heavy metal contents (DTPA extractable trace metals) of all the soils were below permissible limits. Similarly, the samples collected from ash pond also did not show any DTPA extractable trace metals above permissible limits.

The soil samples collected from the fields of Sri. Yanati Srinivasulu Reddy, S/o Sri. Ramachandra Reddy were neutral in soil reaction (pH 6.87 – 7.53); non saline in nature (EC of 0.21 – 0.53 dS m⁻¹); low to medium in organic carbon content (0.42 – 0.50%), low in available N (139 – 214 kg ha⁻¹), high in available P (31.4 – 36.7 kg ha⁻¹); medium to high in available K (190 – 392 kg ha⁻¹). The soils were tested sufficient in micronutrient status viz., Zn (0.633 – 1.246 mg kg⁻¹), Fe (7.35 – 8.11 mg kg⁻¹), Cu (1.03 – 1.56 mg kg⁻¹) and Mn (2.78 – 4.07 mg kg⁻¹).

Heavy metal contents were below permissible limits, in the soil samples collected, indicating that the thermal power units did not cause soil pollution.

Table 15: Temporal Variation in Soil fertility in Agricultural Fields of Sri. Yanati Srinivasulu Reddy, S/o Sri. Ramachandra Reddy

Soil Parameter	Units	2016	2017	2018		2021		
				I	II	I	II	III
pH		6.30	8.10	8.30	7.40	7.53	7.17	6.87
EC	(dS m ⁻¹)	0.45	0.30	2.80	1.50	0.35	0.21	0.53
Org. C	%	1.15	0.44	0.74	0.41	0.45	0.42	0.50
Avail.N	kg ha ⁻¹	241	241	178	140	139	176	214
Avail.P		17	43	13.44	21.12	36.7	34.7	31.4
Avail.K		22	70	140	73	190	392	280
DTPA - Zn	mg kg ⁻¹	0.42	0.26	1.5	0.81	0.63	1.25	1.22
DTPA – Fe		34.8	2.84	14.32	4.84	7.35	7.76	8.11
DTPA – Mn		1.94	4.21	6.64	0.81	2.96	2.78	4.07
DTPA - Cu		2.24	0.11	0.24	0.09	1.03	1.56	1.51

The pH of the soil has improved when compared to the previous years and recorded neutral soil reaction (6.5-7.5) which is optimum for crop growth. Electrical Conductivity, which is an indicator for soil salinity was also normal (< 2 dS m⁻¹). Soil organic carbon is low to medium, which can be improved through regular green manuring and additions of organic manure. Available N throughout is low, available P is high, available K is medium to high, and the micronutrients viz., DTPA extractable Zn, Fe, Mn and Cu were sufficient for plant growth. This comparison across the years says that **there is no decline in soil fertility**; rather an improvement was observed in several parameters.

IX. Assessment of Soil Fertility and agricultural income of the area

The Committee has obtained Agriculture yield data of Pinampuram village and Nelaturu Village was obtained from the Agriculture department for the period from 2008 to 2020 pertaining to Kharif & Rabi seasons Paddy crop. The data of two villages are depicted below:

Table No. 16: Kharif season Crop yield data before and after establishment of Respondent units

Year	Painampuram	Nelaturu
	Kharif (Kg/Acre)	Kharif (Kg/Acre)
2008-09	2176	2210
2009-10	1969	2010
2010-11	2407	2425
2011-12	2465	2322
2012-13	2410	2415
2013-14	2385	2285
2014-15	2397	2410
2015-16	2571	2635
2016-17	2416	2516
2017-18	2716	2612
2018-19	2242	2125
2019-20	2488	2560

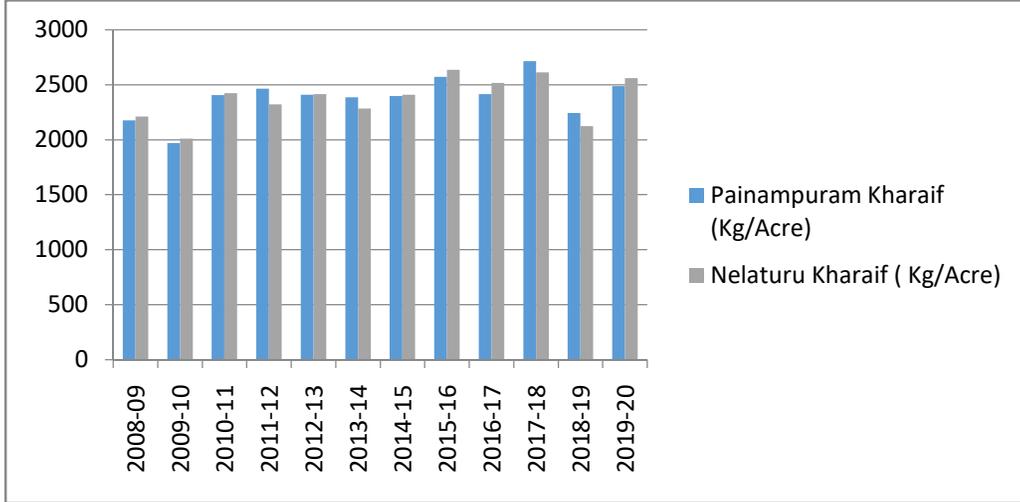
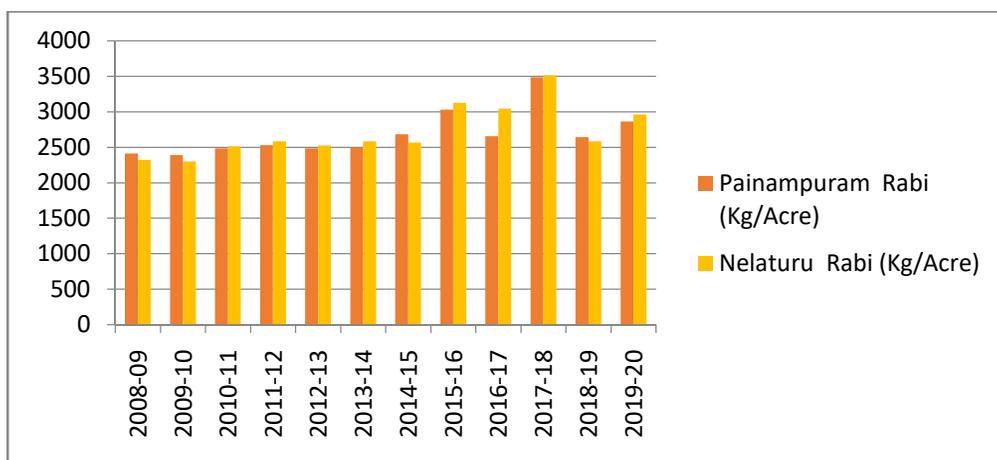


Table No. 17: Rabi season Crop yield data before and after establishment of Respondent units

Year	Painampuram	Nelaturu
	Rabi (Kg/Acre)	Rabi (Kg/Acre)
2008-09	2414	2322
2009-10	2391	2298
2010-11	2483	2510
2011-12	2529	2585
2012-13	2486	2525
2013-14	2494	2585
2014-15	2681	2565
2015-16	3030	3125
2016-17	2655	3045
2017-18	3485	3515
2018-19	2643	2585
2019-20	2864	2965



As per the Agriculture yield data of Pinapuram and Nelaturu village (near by villages of respondent unit), no crop yield loss observed (in the years 2015-16, 2016-17, 2017-18 and 2019 -20 with reference to the year of establishment of respondent units i.e 2014 -2015. But in the year 2018-19, crop yield in the Kharif season was observed 6 to 11 % less due to drought in the area.

X. Overall Observation of the Committee based on field observations and Monitoring results:

A. M/s Sri Damodaram Sanjeevaiah Thermal Power Station

- i. The respondent unit M/s Sri Damodaram Sanjeevaiah Thermal Power Station unit was in operation at 2x550 MW against the consented capacity of 2x800MW. The unit is using 100% Indian coal with ash content of about 30 % and Sulphur content of about 0.3%. As per the EC condition, the unit is required to use blended coal of Indian washed and Imported coal in the ratio of 70 & 30 % .
- ii. The unit is having requisite permissions /clearances from AP Boiler Inspection Department, Dy.Chief Controller of Explosives, MOEF&CC, Dy. Chief Inspector of Factories and Panchayath raj Department, Andhra Pradesh Pollution Control Board, PESO except Department of Fire, which is tabulated in **Table No. 1**
- iii. The unit has valid integrated consent under Water & Air and Authorisation under H&OW Rule 2016, however 26 out 41 conditions imposed were found complying and remaining 15 conditions were found non compliance. The major non compliance observed are non-utilisation of 100% fly ash & bottom ash, inadequate measures taken for controlling fugitive emissions from coal storage yard and Ash pond, poor operation ,maintenance & calibration of CAAQM stations and on line monitoring system installed to monitor the effluent & emissions and in adequate green development around the plant.
- iv. As per the source emissions monitoring conducted during committee visit was found meeting with prescribed standards of APPCB (Table No 2). But Online monitoring system installed found not in operation since one year.
- v. As per the analysis results of samples taken from ash pond Seepage water (**Table No. 3**) confirms the accumulation of TDS due to using sea water for making ash slurry till March, 2021. In spite of using sweet water for making ash slurry accumulated TDS contributing to ash pond seepage water.
- vi. The unit has ETP of capacity 75 KLD but operating at 5 to 45 KLD only which confirms that failure of tapping of all effluent and discharging untreated effluent through storm drain which is passing inside the premises. The analysis results of samples taken from storm water drains (ROA presented in **Table no. 4**) indicates that confirms the discharging of untreated effluent into drain.
- vii. As per the conditions of CTO the unit is required to operate 4 CAAQM stations to monitor Ambient Air Quality, out 4 stations two stations were found not working and two stations found partially working (**Table No. 5**).
- viii. The unit is required to utilise 100 % fly ash but unit is utilising only 58 % of generated fly ash and remaining ash is found accumulated in ash pond.
- ix. The unit is required to re-circulate 100 % ash pond water for slurry making but huge quantity of discharge of seepage water was observed into the storm water

drain. From the storm water drain it is joining the nearby canal which is being used for aqua culture farming.

B. M/s Sembcorp Energy India Ltd., Project -1

- i. **The** respondent unit M/s Sembcorp Energy India Ltd., was in operation at 1x660MW against the consented capacity of 2x660 MW. The unit is using blended Indian coal and imported coal in the ratio of 70% & 30 %.
- ii. The unit is having all requisite permissions /clearances from AP Boiler Inspection Department, Dy. Chief Controller of Explosives, MOEF&CC, Dy. Chief Inspector of Factories and Panchayath raj Department, Andhra Pradesh Pollution Control Board, PESO and Department of Fire which is tabulated in **Table No. 6.**
- iii. The unit has valid integrated consent under Water & Air and Authorisation under H&OW Rule 2016, however 25 out of 31 conditions imposed were found complying and remaining 6 conditions were found non compliance. The major non compliance observed are non installation of closed shed, wind barrier/wind breaking wall coal storage yard, inadequate measures taken for controlling fugitive emissions from coal storage yard and non utilisation of 100% fly ash & bottom ash.
- iv. As per the source emissions monitoring conducted during committee visit was found meeting with prescribed standards of APPCB (**Table No. 7**) and the online monitoring system installed found in operation. As per the OCEMS data, the average concentration of PM was 39.98 mg/Nm³ on 22.10.2021. The manual monitoring result 40.8 mg/Nm³ and OCEMS result are found almost in the same range, which confirms the proper operation & calibration of OCEMS system.
- v. The industry provided ETP of 1732 KLD capacity. But the industry is generating floor wash of 30 KLD only and the same is taken for treatment in the ETP.
- vi. The unit is required to utilise 100 % flyash but the unit failed to utilise till 2018, as per the record the unit is achieving 100 % utilisation of flyash and bottom ash since 2020-21 only.
- vii. The unit is required to do 100 % recirculation of ash pond water for slurry making. The unit has provided ash pond seepage water collection tank and recirculating back to ash slurry making. In spite of these arrangements the committee observed stagnation of water near to ash pond and storm water drain confirms joining of the seepage water from the ash pond is getting leaked. **Table no. 8**

C. Environmental Damage including Air, Water & soil has been caused on account of the operation of respondent units:

- ✓ As per the ambient air quality conducted in nearby villages (**Table No. 9**), the particulate Matter in Ambient Air was found exceeding (102.0 – 168.5 µg/m³) the limit of National Ambient Air Quality standards of 24 hr average i.e. 100 µg/m³.

- ✓ As per the surface water monitoring conducted (Table no. 10), the analysis results of samples collected from Canal and pond confirms the inception of effluent through storm water passing through the premises of M/s **Sri Damodaram Sanjeevaiah Thermal Power Station.**
- ✓ The Committee has conducted detailed survey of soil samples around respondent units, as per the analysis report (Table No. 11) The soils of the study area were slightly acidic to slightly alkaline in reaction; normal in electrical conductivity (non-saline) with a mean organic carbon content of 0.53 per cent. The soils contained low available N, medium to high available P and low to high available K.
- ✓ Majority of the soils were sufficient in micronutrient content with corresponding mean Zn, Fe, Cu and Mn contents of 1.01, 7.87, 1.54 and 6.64 mg kg-1.
- ✓ As per the analysis reports Heavy metals in Soil samples (Table No. 13), the heavy metal contents (DTPA extractable trace metals) of all the soils were below permissible limits. Similarly, the samples collected from ash pond also did not show any DTPA extractable trace metals above permissible limits.
- ✓ The soil samples collected from the fields of Sri. Yanati Srinivasulu Reddy, S/o Sri. Ramachandra Reddy were neutral in soil reaction (pH 6.87 – 7.53); non saline in nature (EC of 0.21 – 0.53 dS m-1); low to medium in organic carbon content (0.42 – 0.50%), low in available N (139 – 214 kg ha-1), high in available P (31.4 – 36.7 kg ha-1); medium to high in available K (190 – 392 kg ha-1). The soils were tested sufficient in micronutrient status viz., Zn (0.633 – 1.246 mg kg-1), Fe (7.35 – 8.11 mg kg-1), Cu (1.03 – 1.56 mg kg-1) and Mn (2.78 – 4.07 mg kg-1).

D. Loss of soil fertility resulting in reduction of the agricultural income:

- ✓ As per the Agriculture yield data of Pinampuram and Nelaturu village (nearby villages of respondent unit), no crop yield loss observed (in the years 2015-16, 2016-17, 2017-18 and 2019 -20) with reference to the year of establishment of respondent units i.e. 2014 -2015. But in the year 2018-19, crop yield in the Kharif season was observed 6 to 11 % less due to drought in the area.

XI. Conclusion of Committee:

After detail monitoring, field observations and analysis reports of samples taken, the Committee concluding as below:

i. Damage to the Air Quality:

As per the monitoring conducted w.r.t air, water and soil, the Committee noticed exceedance of Particulate Matter (PM₁₀) in ambient air due to inadequate fugitive emission control system in ash pond. Hence it attracts the compensation for inadequate control measures and causing pollution to nearby habitans.

33

Calculation for Load of PM₁₀ emissions (Load PM₁₀):

Geo-geographical location of the AAQMS	Distance in meters	PM ₁₀ in µg/m ³
S. Vijay Kumar Reddy Building, Nelaturu, SPSR Nellore	1.7 km	106.5
MPP Primary School, Dibbameda colony, Pynapuram village	0.14 km	168.5
Amamath Hatcheries, Kotepalli	1.84 km	102.0
Average concentration		125.666 µg/m³

Permissible limit of PM ₁₀ :	100 µg/m ³
Concentration of PM ₁₀ emissions in excess of prescribed limit (C) :	25.66 µg/m ³
Concentration of PM ₁₀ emissions in excess of prescribed limit in Kg/m ³ (D) :	25.66 x 10 ⁻⁹ Kg/m ³ .
Mixing height of air in the affected site (E) :	453 m
Area of the affected site (F) :	1,69,968m ²
Volume of Ambient Air in affected area (G) : E x F	7,69,95,482 m ³
Total Load of PM ₁₀ in excess of the prescribed limit in the affected site (H) = D x G	1.98 Kg.
Average wind speed:	10.6 km/h (As per the weather forecast of Nellore)
Let Radius covered by ambient air monitoring:	1.7 Km
Air replacement factor (I)	150 (10.6 x 24 /1.7)
Total Load of PM ₁₀ in excess of the prescribed limit in the affected site (Load PM ₁₀): J = H x I	296.36 Kg/day
Environmental Price for average emission PM 10 (EPM10)	Rs 2519.34 /Kg emission
Damage to Air Quality/day (Damage_{AQ}) in Monetary terms:	
Damage _{AQ} (Rs /day) = (Load _{PM10} x EPM ₁₀)	296.36 x 2519.34 = Rs.7,46,631/-
Assuming that the contribution of PM from Power plant in Air Quality in the affected site as calculated from the source apportionment study is 20 %. So the damage to air quality recoverable from Power plant in monetary terms :	Rs.7,46,631 X 20/ 100 =Rs.1,49,326/day
Let us assume the period of damage caused/ non-compliance is 154 days (period between 21.05.2021 and 21.10.2021. So, the total damage recoverable from the above power plants will be Rs.1,49,326/- x 154 =	Rs.2,29,96,253/-

Apportionment of damage recoverable from the Power plants.

Sl.No	Name of the unit	Consented capacity	Contribution %	Damage recoverable
1	M/s Sri Damodaram Sanjeevaiah Thermal Power Station	1600 MW (2x800 MW)	54.8 %	Rs.1,26,01,947/-
2.	M/s. Sembcorp Energy India Limited (Plant -1)	1320 MW (2x660 MW)	45.2 %	Rs.1,03,94,306/-
	Total	2920 MW		Rs.2,29,96,253/-

ii. Damage Assessment of Health Issues:

The major health issues associated with the pollution caused by thermal power plants are respiratory infections such as aggravation of asthma, respiratory symptoms and increase in hospital admissions. PM₁₀ and PM_{2.5} emissions have high risk of mortality and morbidity impacts on the human population in the vicinity of thermal power plants. Accordingly, the Committee obtained information of Health Statistics report from Medical Officer, PHC, Muthukur Mandal, SPSR Nellore district for the affected villages i.e. Muthukur Mandal (enclosed as **Annexure- IX**). And also referred the Report of National Health Profile 2018 13th Issue published by Central Bureau of Health Intelligence, Directorate General of Health Services.

Number of respiratory illness cases reported as per information on Health statistics provided by Medical Officer, PHC, Muthukur Mandal and published report Health report below:

Sl.no	Particulars	No. of cases of respiratory illness	Cases per 100 Individuals
1	National Health Profile 2018 13 th Issue published by Central Bureau of Health Intelligence, Directorate General of Health Services	3049810 reported respiratory illness cases in Andhra Pradesh (89035000 population based on projected census 2017)	3.42
2	As per the Health Statistics report of Medical officer, PHC, Muthukur Mandal, SPSR Nellore district (Since 2016 to 2019)	78 cases of respiratory illness cases in 58003	0.13

- ❖ Considering the Census of 2011 of affected villages i.e. Muthukur Mandal is 58003, Calculating the number of respiratory illness cases/100 individuals taking average value of 2016 to 2019
i.e. $(3.42+0.13)/02= 1.775$ cases/ 100 individuals
- ❖ Total number of respiratory illness in affected area i.e. Nelatur & Pinampuram Villages of Muthukur Mandal (census 2011)
 $=5707 *(1.775/100) =101.299$ (say 101)
- ❖ No. of cases of respiratory illness/diseases reported calculated: **101**
- ❖ Cost of illness per person in Mumbai (COI_{Mumbai}) in Rs. **54202** as of 2018
- ❖ COI_{Mumbai} value of Rs. 14378 as on 1997 was inflated to 2018 with Average annual inflation rate (1997-2018): **6.52%**
- ❖ Per capita income of the affected area for the year 2009-10 is **Rs.52,481/-**
(As reported by the District Census Handbook, SPSR Nellore district)
- ❖ Per capita income of Mumbai (Inc_{Mumbai}) for the year 2017-18 in **Rs. 1,76,102/-**
(As reported in the Economic Survey of Maharashtra 2018-19, published by Directorate of Economics and Statistics, Govt. of Maharashtra, Mumbai)

❖ Cost of Illness per person in the affected area (COI Affected area) in Rs.

$$\{COT_{\text{Affected area}} = (COI_{\text{Mumbai}} \times InC_{\text{Affected area}}) / InC_{\text{Mumbai}}\}$$

$$COT_{\text{Affected area}} = (54202 \times 52481) / (176102) = \text{Rs.}16153/- \text{ (say Rs.}16150/-)$$

❖ Damage to Health due to Respiratory diseases (Damage H) in Rupees: Damage H

$$\begin{aligned} (\text{Rs.}) &= \text{No. of cases reported (X)} \times \text{COI Affected area} = 101 \times 16150 \\ &= \text{Rs. } 16,31,150/- \end{aligned}$$

Apportionment of damage recoverable from the Power plants.

Sl.No	Name of the unit	Consented capacity	Contribution %	Damage recoverable
1	M/s Sri Damodaram Sanjeevaiah Thermal Power Station	1600 MW (2x800 MW)	54.8 %	Rs.8,93,870/-
2.	M/s. Sembcorp Energy India Limited (Plant -1)	1320 MW (2x660 MW)	45.2 %	Rs.7,37,280/-
	Total	2920		

iii. Damage to crop yield in the surrounding areas:

As per the Agriculture yield data of Pinampuram and Nelaturu village (nearby villages of respondent unit), no crop yield loss observed with reference to the year of establishment of respondent units i.e. 2014 -2015. But in the year 2018-19, crop yield in the Kharif season was observed 6 to 11 % less due to drought in the area. **Hence, no Monetary loss attracts w.r.t crop yield.**

iv. Environmental Compensation on account of non- compliances:

The Committee observed major violations of **M/s .Sri Damodaram Sanjeevaiah Thermal Power Station and the same is recorded in the section V.** From the records, it is found that the online monitoring system not functioning and APPCB vide Order dated.21.05.2021 issued directions to the industry in this regard. Since the unit has not taken steps for rectification and operation of OCEMS, the Committee opines to calculate EC as per CPCB formula:

$$EC = PI \times N \times R \times S \times LF$$

Where,

EC = Environmental Compensation in INR

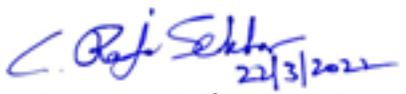
PI = Pollution Index of Industrial sector (Red – 85)

N = Number of days of violation took Place (date on which OCEMS found non operation to till date of rectification)

R = A factor in Rupees for EC (Rs. 250/- may be assumed)

S = Factor for scale of operation (Large – 1.5)

LF = Location factor (the unit is located in Nelatur village, Nellore district and population is less than 10 lakh = 1)


 22/3/2022
ENVIRONMENTAL ENGINEER
A.P. POLLUTION CONTROL BOARD
Regional Office
NELLORE.

a. Pollution Index of Industrial sector (PI):

APPCB has categorised this industry into red- large category, average pollution index is **85**.

b. Number of days of violation (N): 154

The number of days for which violation took place is considered as the period between the day of violation observed and day of compliance verified by the APPCB/CPCB. As per the records of the unit, 154 days is considered of period of violation for estimating EC.

c. Scale of operation (S):

The industry is considered as large, thus scale of operation (S) for EC estimation is considered as 1.5

d. Location factor (LF):

The industry is located in Nelatur village, Nellore District and the total population within municipal boundary and up to 10 km distance from the municipal boundary of the city is less than 1 million. Thus location factor (LF) is considered as 1 for EC estimation.

e. Factor in rupees(R):

As per the environmental compensation estimation guidelines factor of rupees may be minimum of Rs 100/- and maximum of Rs. 500/-. The factor of rupees is considered as Rs. 250/- for estimating environmental compensation for this industry, considering its pollution potential.

Period of non-compliance	PI	S	LF	R(Rs)	N (days)	Environmental Compensation (Rs)
21.05.2021 to 21.10.2021	85	1.5	1	250/-	154	Rs.49,08,750/-

v.Total EC recoverable on account of damage to Air quality, health and Non compliances from respondent units:

Sl. No	Name of the Unit	Monetary terms for causing damage to air quality (A)	Monetary terms for causing illness to people health (B)	Environmenta l compensation for Non-Compliances (C)	Total amount to be recovered D = A+B+C
1	M/s.Sri Damodaram Sanjeevaiah Thermal Power Station	Rs.1,26,01,947 /-	Rs.8,93,870/-	Rs.49,08,750/-	Rs. 1,84,04,567/-
2	M/s. Sembcorp Energy India Limited (Plant -1)	Rs.1,03,94,306 /-	Rs.7,37,280/-	-Nil-	Rs.1,11,31,586/-

XI. Mitigations/suggestions to prevent the pollution caused:

- a. As per the conditions of EC and CTO, respondent units are required to ensure use of blended coal of Indian wash coal of 70% and imported coal of 30% so that to reduce particulate matter emissions.
- b. Both units may asked to provide closed shed and wind barriers/ wind breaking wall to Coal storage yard to reduce the fugitive emissions.
- c. Both units required to Explore possibilities of utilisation of 100% flyash and Bottom Ash to curtail fugitive emissions and water pollution due to seepage of ash ponds.
- d. To ensure installation of Flue Gas Desulphurisation (FGD) plant to achieve SO₂ norms as per time line given by CPCB.
- e. To ensure 100% recirculation of ash pond seepage to make slurry and dust suppression to prevent water pollution if any in surrounding areas of respondent units.
- f. To switch over to use sweet water for ash slurry purpose instead of sea water to prevent increase of TDS in the ground water.
- g. To switch over to use treated sewage from the Municipal corporation, Nellore instead of treating the sea water in the desalination plant and discharging the High TDS containing desalination plant rejects into Sea.
- h. To ensure proper operation of Online Continuous Effluent Monitoring System, Online Continuous Emission Monitoring System and Continuous Ambient Air Quality Monitoring Stations and transmit the live data to the APPCB and CPCB server.

Signature of Committee Members:


H D Varalaxmi
Regional Director- Chennai,
Central Pollution Control Board



Dr. Suresh Babu Pasupuleti, Sc. D
Integrated Regional Office (IRO),
Ministry of Environment, Forest and
Climate Change, Vijayawada



D Hussain Sahib
Revenue Divisional Officer &
Divisional Magistrate, Nellore



Dr. V. Sailaja, Principle Scientist
(Soil Science & Agril. Chemistry),
ANGRAU, RARS, LAM, Guntur.



Sri Ch. Rajasekhar,
Environmental Engineer,
Regional Officer, Nellore,
Andhra Pradesh Pollution Control Board

Item No.03:

BEFORE THE NATIONAL GREEN TRIBUNAL

SOUTHERN ZONE, CHENNAI

Original Application No. 105 of 2021 (SZ) &

I.A. No. 77 of 2021 (SZ)

(Through Video Conference)

IN THE MATTER OF:

Yanathi Srinivasulu Reddy,
Muthukur Mandal,
Nellore and another



Versus जयते

...Applicant(s)

The Chief Secretary,
Govt. of Andhra Pradesh,
Amaravathi and others.

....Respondent(s)

Date of hearing: 16.09.2021.

CORAM:

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

HON'BLE DR. K. SATYAGOPAL, EXPERT MEMBER

For Applicant(s): M/s. Rayasam N. Suneetha

For Respondent(s): Smt. Maduri Donti Reddy for R1, R5 to R8
Mrs. Sumathi for R2
Ms. N. Nathami for R3
Mr. A. R. Sakthivel for R4
Mr. J.S. Bindra for R9

ORDER

1. The above application has been posted to today for consideration of I.A. No. 77 of 2021 (SZ) after getting the reply statement filed by the

39

District Collector, Nellore District regarding the income of the applicant and their capacity to pay the Court fee.

2. *I.A. No. 77 of 2021 (SZ)* was filed by the applicants under Rule 12, National Green Tribunal (Practice and Procedure) Rules, 2011 seeking exemption of Court fee for the compensation amount claimed. They stated that they are agriculturists and they are not able to raise the fund and pay the requisite Court fee. They have produced the Agricultural Income Certificate issued by the Revenue Department showing that they are having the annual income of Rs. 85,000/- (Rupees Eighty Five Thousand Only) and Rs. 95,000/- (Rupees Ninety Five Thousand Only) respectively. We have asked for a report from the District Collector, Nellore District regarding their actual income and the District Collector had filed a report in the form of a counter affidavit stating that the 1st applicant is having a land Ac. 21.98 cents of Agricultural Land in Nelaturu, Pynampuram and Pidathapoluru Village including a house at Nelaturu and getting an annual income of Rs. 7,34,000/- (Rupees Seven Lakhs Thirty Four Thousand Only) and 2nd applicant is having Ac. 9.70 cents and getting a total income of Rs. 2,00,000/- (Two Lakhs Only) per month and will not come under the Below Poverty Line (BPL) category.

3. It may be mentioned here, that considering the amount claimed, the Court fee will be payable much more than Rs. 2,00,000 (Rupees Two

Lakhs) and Rs. 3,00,000/- (Rupees Three Lakhs) respectively and even assuming that the Income Certificate produced by the applicant is not correct, the income mentioned by the District Collector also cannot be sufficient for raising the necessary amount for paying the Court fee as they will have to meet their both ends with their income that they are getting from the property. Even though they are not falling under the Below Poverty Line category, if they are not able to raise the necessary funds for payment of the Court fee, then they are entitled to get the benefit under Rule, 12 as this Tribunal can apply the principles laid down for granting permission to the persons to sue as indigent persons as contemplated under order 33, Rule 1 of, Civil Procedure Code. Though the Code of Civil Procedure is not as such applicable, a reading of the rule will go to show that the principles therein will apply for this purpose. Further under Rule 12, National Green Tribunal (Practice and Procedure) Rules, 2011 it only postponement of the amount of the Court fee, and not granting any permanent exemption from the payment of the Court fee. Ultimately if the applicants are entitled for any compensation, the amount of Court fee payable can be deducted from the same and that can be adjusted.

4. There is no allegations made in the application or in the counter statement that they are funded by somebody else for the purpose of conducting litigation as well. So under such circumstances we are

41

satisfied that the applicants are entitled for the relief as provided under Rule 12, National Green Tribunal (Practice and Procedure) Rules, 2011 of getting postponement of the payment of Court fee till the disposal of the application. So the application is allowed and the applicants are permitted to file the application without paying the requisite Court fee for the compensation amount claimed. But the same will be deducted from the amount of compensation if any awarded later, if they are found eligible, as provided under Rule 12, National Green Tribunal (Practice and Procedure) Rules, 2011 and submit to further orders to be passed at the time of disposal of this case at that time.

5. With the above observations and directions, ***I.A. No. 77 of 2021 (SZ)*** is allowed and disposed of.
6. Since I.A. No. 77 of 2021 (SZ) were allowed, and the applicants were permitted to file the application without payment of necessary Court fee at present, the Original Application No. 105 of 2021 (SZ) has to be considered as indigent application, with liberty to realise the necessary Court fee later, if the applicants were entitled to get any compensation and that amount will have to be deducted from the compensation awarded and adjusted towards the requisite Court fee to be payable and other further orders to be passed by this Tribunal later.

7. The grievance in this application is regarding the pollution caused on account of the operation of respondents 8 and 9 units resulting in large scale damage caused to the agricultural lands, thereby causing loss of income.

8. On going through the allegations made in the application, we are satisfied that there arises a substantial question of environment which requires the interference of this Tribunal for resolving the same. So, the application is admitted.

9. Since the counsels who entered appearance in I.A. No. 77 of 2021 (SZ) proposed to appear in the Original Application as well, further notice in the original application is dispensed with. Service complete in the original application.

10. The counsel for the 9th respondent submitted that they have not received the copy of the application. The counsel for the applicant is directed to serve a copy of the Original Application for the counsel appearing for the 9th respondent by e-mail immediately within 3 days at any rate.

11. The respondents are directed to file their counter statement before the next hearing date.

12. In order to ascertain the genuineness of the allegations made in the application and also the alleged violations and pollutions if any caused, which said to have been resulted in the alleged economic loss for the

43

applicants, we feel it appropriate to appoint a joint committee consisting of (1) The District Collector, Nellore District, (2) a Senior Officer from Ministry of Environment, Forests and Climate Change (MoEF & CC), Integrated Regional Office, Vijayawada, (3) a Senior Officer from the Central Pollution Control Board (CPCB), Regional Office, Chennai (3) a Senior Officer/Scientist from the Acharya N.G. Ranga Agricultural University (ANGRAU), Andhra Pradesh, (4) a Senior Officer from Andhra Pradesh Pollution Control Board (APPCB) as deputed by its Chairman to inspect the units in question and submit a factual as well as taken report if there is any violation found.

13. The committee is directed to ascertain:-

- i) Whether the respondents 8 and 9 are having requisite permissions/clearance are having for running their units,
- ii) Whether any violations were committed by the respondents 8 and 9 against the conditions imposed in the consent/clearance granted,
- iii) Whether there was any pollution caused on account of the operation of the respondents 8 and 9 units.
- iv) Whether any environmental damage including soil as well as the water has been caused on account of the operation of the respondents 8 and 9 units, if so what is the nature of damage

caused and the remedial measures to be taken for restoring the damage caused to the environment,

- v) Whether any loss of soil fertility resulting in reduction of the agricultural income has been caused to the applicants on account of the any alleged pollution said to have been caused by the respondents 8 and 9 units and if so, what is the quantum of compensation to which they are entitled for,
- vi) Suggest the ways and means if there is any pollution found, to avoid the same in future to be carried out by the respondents 8 and 9,
- vii) Whether there is any deficiency in the pollution control mechanism provided by the respondents 8 and 9 and if so, what is the nature of modification or up gradation required for mitigating the alleged pollution if any caused, on account of their operation.

14. The Andhra Pradesh Pollution Control Board (APPCB) will be the nodal agency for co-ordination and for providing necessary logistics for this purpose.

15. The applicant is also directed to submit a set of papers to the members of the committee within a week, so as to avoid delay in submitting the report.

16. The committee is directed to submit the report to this Tribunal on or before **09.11.2021**, by e-filing in the form of searchable PDF/OCR Support PDF and not in the form of Image PDF along with necessary hard copies to be produced as per rules.
17. The Registry is directed to communicate this order to the members of the committee as well as the official respondents along with the copy of the application immediately through e-mail, so as to enable them to comply with the direction.
18. For appearance of parties, for completion of pleadings and also for consideration of report, post on **09.11.2021**.

Sd/--

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

Sd/--

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

O. A. No.105/2021, (SZ) &
I.A. No. 77/2021 (SZ)
16.09.2021 Sr.

46

Item No.02:

BEFORE THE NATIONAL GREEN TRIBUNAL

SOUTHERN ZONE, CHENNAI

Original Application No. 105 of 2021 (SZ)

(Through Video Conference)

IN THE MATTER OF:

Yanathi Srinivasulu Reddy,
Muthukur Mandal,
Nellore and another



Versus

...Applicant(s)

The Chief Secretary,
Govt. of Andhra Pradesh,
Amaravathi and others.

सत्यमेव जयते

....Respondent(s)

Date of hearing: 09.11.2021.

CORAM:

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

HON'BLE DR. K. SATYAGOPAL, EXPERT MEMBER

For Applicant(s): M/s. Rayasam, N. Suneetha (Party- in -person)

For Respondent(s): Smt. Maduri Donti Reddy for R1, R5 to R8
Mrs. Sumathi for R2
Mr. Mohammed Irfan Ali represented
M/s. N. Nathami for R3
Mr. R. sugumar represented
Mr. A. R. Sakthivel for R4
Mr. J.S. Bindra for R9

ORDER

1. The above case has been posted to today for appearance of parties, completion of pleadings and also for consideration of report.

2. The Joint Committee has filed an interim report and they wanted eight weeks (8) time to file their final report. The party respondents also wanted some time to file their independent statement regarding the allegations made in the application.
3. Considering the circumstances, we feel that some more time can be granted to the committee as well as the respondents to file their report and to complete the pleadings. The respondents are directed to complete the pleadings before this Tribunal on or before **16.12.2021** by e-filing in the form of searchable PDF/OCR Supportable PDF and not in the form of Image PDF along with necessary hard copies to be produced as per rules.
4. The Registry is directed to communicate this order to the members of the committee as well as the official respondents immediately through e-mail, so as to enable them to comply with the direction.
5. For completion of pleadings and also for consideration of report, post on **16.12.2021**.

Sd/--

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

Sd/--

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

O. A. No.105/2021, (SZ)
09.11.2021 Sr.

Committee Inspection report of M/s Sri DamodaramSanjeevaiah Thermal Power Station**A: General Information**

1	Name of the industry & Address	M/s Sri DamodaramSanjeevaiah Thermal Power Station SDSTPS-APPDCL-2x800mw, Nelatur, Muthukur(M), SPSR Nellore-524347.		
2	Name of Contact person	Sri. T. Nagaraju Chief Engineer/O&M/SDSTPS.		
3	Sector of industry	Coal based Thermal Power Plant		
4	Year of commissioning and expansion	Unit-I Commissioned on 04.02.2015 Unit-II Commissioned on 23.08.2015 Unit-III is under erection.		
5	Category of Industry	Large ScaleRed Category		
6	Installed Capacity, MWA (Annual and Daily)			
	Sl. No	Product	Installed Capacity (MW/hr)	Present production capacity (MW/hr)
	1	Electricity Generated (MW)	1600 (800 x 2)	1100 (550 x 2)
7	Electricity Generated & raw material requirement			
	Year	Electricity Generated (MW)	Raw material requirement	
			Coal / Coke(Kg)	Oil (KL)/Gas
			Water (KL)	
	2021-22	3331470	2169606000	1637.83
	2020 -21	7228285	4027515000	3700.44
	2019-20	7127523	4573768000	3644.00
	2018-19	6931910	4436022000	4125.00
	Average consumption / MW		618	0.532
8	Brief Description about the production process with flow diagram: The schematic diagram of process is as below.			



9. **Status of Permissions/clearances obtained by the unit**

<p>17.07.2007 EC Order No: J-13011/20/2007-IA-II (T)</p>	<p>Ministry of Environment & forests, GOI has issued Environmental Clearance to the Thermal Power plant for setting up of a 1600 MW (2x800 MW)</p>
<p>01.10.2007 CFE Order No:159/PCB/CFE/RO-NLR/HO/2007 – 1477</p>	<p>APPCB issued CFE to the Thermal Power plant for establishment of 2x800 MW Thermal power plant.</p>
<p>29.05.2008 CRZ clearance no: 11-12/2008-IA-III</p>	<p>MOEF, GOI issued CRZ clearance for construction of sea water intake facilities and discharge of waste water facilities into Bay of Bengal.</p>
<p>03.05.2012 MOE&F, GOI, New Delhi order No.J-13011/20/2007-IA.II(T)</p>	<p>MOE&F, GOI, New Delhi issued obtained permission for change of Ash Pond Location to the New site at coordinates from N - 14° 21' 06'' to N - 14° 21' 29'' & E - 80° 07' 58'' to & E - 80° 07' 45''</p>

B: Water Pollution and its Control	
19.12.2012 order No.159/APPCB/CFE/RO- NLR/HO/2012-	APPCB issued CFE amendment for change of Ash Pond Location to the New site at co-ordinates from N - 14° 21' 06'' to N - 14° 21' 29'' & E - 80° 07' 58'' to & E - 80° 07' 45''
10.06.2013 EC extension order no: J-13011/20/2007-IA.II (T)	MoEF issued Extension of EC validity to the industry for the period up to 16.07.2017
03.09.2013 Amendment of CRZ clearance vide order No. F.No.11-43/2012-IA-III	MoEF issued amendment to CRZ clearance dated 30.03.2012 regarding change in configuration of intake and outfall facilities.
08.05.2014 order No. APPCB/VJA/NLR/ 159/ HO/CFO/ 2014-494	APPCB issued CFO for operation of 2x800 MW power generation unit valid upto 31.03.2015.
16.04.2015 Order No. APPCB/VJA/NLR/ 159/ HO/CFO/ 2015-354	APPCB issued renewal of CFO for operation of 2x800 MW power generation unit valid upto 31.03.2017.
18.02.2017 Order No. APPCB/VJA/NLR/ 159/ HO/CFO/ 2017	APPCB issued renewal of CFO for operation of 2x800 MW power generation unit valid upto 31.03.2022.
25.04.2019 NOC order No. 159 /APPCB/ CFE/ RO- NLR/HO/2007	APPCB issued NOC to the unit for formation of diversion bund (temporary ash pond) for temporary ash disposal during raising of existing ash pond bund
03.09.2019 EC amendment order No. J-13011/ 20/ 2007-IA.II (T) pt	MOEF&CC issued amendment of EC order for formation of diversion bund (temporary ash pond).
27.02.2020 Lr.No.J-13012/25/ 2012- IA.II (T)	MOEF&CC, GOI issued amendment of EC for ash pond permitting to use additional area of 30 acres for disposal of ash.

1	Sources of water and Permitted quantity: The industry is drawing 3,35,480 KLD of water from sea trough pipeline.																																																																																																	
2	<p>Water Consumption: The unit is using 335.5 MLD of Sea water for all purposes. The unit is generating 240 MLD of cooling water blow down, 11.5 MLD of reject water from de-salination and RO plants and 400 KLD of domestic waste water. The industry provided de-salination plant of 13 MLD to generate sweet water from sea water. The sweet water is being used for the boiler feed, ash slurry, domestic and other purposes. However, the unit is not able to provide the detailed water balance.</p>																																																																																																	
4	<p>Wastewater Treatment and its disposal : (ETP flow diagram and details)</p> <p>The industry provided ETP of 75 KLD capacity. The industry is getting effluent @ 5 - 45 KLD only to the ETP. During inspection, it was observed that the storm water drains near the coal handling area is filled with ash and some portion with floating oil. This storm water drain in passing outside the compound wall and joining into the Rentamallaiah drain, which finally confluence in Buckingham canal. The analysis results are given below:</p> <table border="1" style="width: 100%; border-collapse: collapse; margin: 10px 0;"> <thead> <tr> <th style="width: 10%;">Sl.No</th> <th style="width: 30%;">Parameters</th> <th style="width: 15%;">Units</th> <th style="width: 20%;">Rentamallaiah Canal</th> <th style="width: 25%;">ChinnaCheruvu</th> </tr> </thead> <tbody> <tr><td>1</td><td>pH</td><td></td><td style="text-align: center;">7.01</td><td style="text-align: center;">7.17</td></tr> <tr><td>2</td><td>TSS</td><td style="text-align: center;">mg/l</td><td style="text-align: center;">18</td><td style="text-align: center;">74</td></tr> <tr><td>3</td><td>TDS</td><td style="text-align: center;">mg/l</td><td style="text-align: center;">18900</td><td style="text-align: center;">3220</td></tr> <tr><td>4</td><td>COD</td><td style="text-align: center;">mg/l</td><td style="text-align: center;">32</td><td style="text-align: center;">124</td></tr> <tr><td>5</td><td>BOD</td><td style="text-align: center;">mg/l</td><td style="text-align: center;">5.8</td><td style="text-align: center;">28</td></tr> <tr><td>6</td><td>Oil and Grease</td><td style="text-align: center;">mg/l</td><td style="text-align: center;">5.2</td><td style="text-align: center;">4.6</td></tr> <tr><td>7</td><td>Copper</td><td style="text-align: center;">mg/l</td><td style="text-align: center;">ND</td><td style="text-align: center;">ND</td></tr> <tr><td>8</td><td>Iron</td><td style="text-align: center;">mg/l</td><td style="text-align: center;">BDL</td><td style="text-align: center;">0.23</td></tr> <tr><td>9</td><td>Chromium</td><td style="text-align: center;">mg/l</td><td style="text-align: center;">0.00004</td><td style="text-align: center;">0.00037</td></tr> <tr><td>10</td><td>Manganese</td><td style="text-align: center;">mg/l</td><td style="text-align: center;">0.00158</td><td style="text-align: center;">0.00769</td></tr> <tr><td>11</td><td>Iron</td><td style="text-align: center;">mg/l</td><td style="text-align: center;">0.02596</td><td style="text-align: center;">0.04488</td></tr> <tr><td>12</td><td>Nickel</td><td style="text-align: center;">mg/l</td><td style="text-align: center;">BDL</td><td style="text-align: center;">0.00069</td></tr> <tr><td>13</td><td>Copper</td><td style="text-align: center;">mg/l</td><td style="text-align: center;">0.00006</td><td style="text-align: center;">0.00063</td></tr> <tr><td>14</td><td>Zinc</td><td style="text-align: center;">mg/l</td><td style="text-align: center;">0.00101</td><td style="text-align: center;">0.00379</td></tr> <tr><td>15</td><td>Arsenic</td><td style="text-align: center;">mg/l</td><td style="text-align: center;">0.00139</td><td style="text-align: center;">0.00821</td></tr> <tr><td>16</td><td>Cadmium</td><td style="text-align: center;">mg/l</td><td style="text-align: center;">BDL</td><td style="text-align: center;">BDL</td></tr> <tr><td>17</td><td>Lead</td><td style="text-align: center;">mg/l</td><td style="text-align: center;">BDL</td><td style="text-align: center;">0.00008</td></tr> <tr><td>18</td><td>Mercury</td><td style="text-align: center;">mg/l</td><td style="text-align: center;">BDL</td><td style="text-align: center;">BDL</td></tr> </tbody> </table> <p>The concentration of COD in Rentamallaiah Canal confirming that discharge of effluent through storm water drain passing through the premises. Further, high TDs values in Rentamallaiah canal would be due to joining of Sea water from Buckingham Canal/ Aquaculture ponds.</p>			Sl.No	Parameters	Units	Rentamallaiah Canal	ChinnaCheruvu	1	pH		7.01	7.17	2	TSS	mg/l	18	74	3	TDS	mg/l	18900	3220	4	COD	mg/l	32	124	5	BOD	mg/l	5.8	28	6	Oil and Grease	mg/l	5.2	4.6	7	Copper	mg/l	ND	ND	8	Iron	mg/l	BDL	0.23	9	Chromium	mg/l	0.00004	0.00037	10	Manganese	mg/l	0.00158	0.00769	11	Iron	mg/l	0.02596	0.04488	12	Nickel	mg/l	BDL	0.00069	13	Copper	mg/l	0.00006	0.00063	14	Zinc	mg/l	0.00101	0.00379	15	Arsenic	mg/l	0.00139	0.00821	16	Cadmium	mg/l	BDL	BDL	17	Lead	mg/l	BDL	0.00008	18	Mercury	mg/l	BDL	BDL
Sl.No	Parameters	Units	Rentamallaiah Canal	ChinnaCheruvu																																																																																														
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5	Status of Operation of the ETP	:																																																																																																
	➤ Operational Status	:	In operation.																																																																																															
	➤ Installed Capacity	:	75 KLD																																																																																															
	➤ Actual Operation	:	5 KLD to 45 KLD depending on Units running conditions .																																																																																															

	➤ Treatment Technology	:	Clarifier followed by Tube settler.
	➤ Mode of Disposal (effluent)	:	Reusing in the process.
	➤ Status of flow meters installed	:	Provided at inlet and outlet
6.	Effluent Monitoring	:	
	➤ Status of installation of online monitors at ETP	:	The unit provided online turbidity meter and pH meter at the outlet of the central monitoring basin. These online monitors are not connected to the APPCB / CPCB servers.
	➤ Status of installation of online monitors at cooling water discharge into sea through marine outfall	:	Not provided online monitors any parameter including temperature.
	➤ Flow meter installation / connectivity	:	Installed. But not connected to the APPCB /CPCB servers.
	➤ Discharge parameters monitored by online	:	pH & Turbidity
7	<p>Calibration protocol adopted:</p> <p>The unit not able to show the calibration schedule and calibration certificate of the online monitors provided.</p>		
8	<p>Issues related to data connectivity:</p> <p>The unit not connected the data to the APPCB & CPCB servers.</p>		
9	<p>Online data corresponding to last one month/ day of inspection: pH & Turbidity meters are working but not connected to the server to get the previous data.</p>		

C: Source Emission (Air Pollution)& its Control								
1	Type of fuel used and quantity (TPA)							
	<i>Sl.</i>	<i>Type of Fuel</i>	<i>Fuel Consumption</i>					
			<i>2021-22 (till October)</i>		<i>2020-21</i>			
	1	Coal	21,72,341		40,27,516			
	2	LSHS OIL	-		-			
	3	Diesel	-		-			
Composition of coal and calorific value								
	<i>Year</i>	<i>Coal Consumption In Tons</i>	<i>Grade of coal</i>	<i>% Ash</i>	<i>% Sulphur</i>	<i>Calorific Value</i>		
	2021-22	21,72,341	G11	37.17	0.51	4075		
	2020-21	40,27,516	G10	33.29	0.49	4465		
2	<i>S. No</i>	<i>Stack Attached To</i>	<i>Stack</i>		<i>Parameters Monitored</i>	<i>SPCB Standard mg /Nm3</i>	<i>Online limit fixed</i>	<i>Number of SMS Received</i>
			<i>Ht (m)</i>	<i>Dia. (m)</i>				
	1.	Boiler – 1 2600 TPH supercritical coal fired boiler	275	7.7	Not working	PM- 50	Not working	NA
2.	Boiler – 2 2600 TPH supercritical coal fired boiler	275	7.7	PM, SO2 & NOx	PM- 50	PM: 50mg/Nm3	SMS being received at times of deviation	
3	Calibration protocol adopted: The unit need to revamp the online monitors attached to the boilers and connect the same to the APPCB & CPCB servers.							
4	Issues related to data connectivity: Transmitting data to the APPCB & CPCB servers.							

5	<p>Online data corresponding to last one month/ day of inspection</p> <table border="1"> <tr> <td colspan="3">PM concentration in Stack during past month :</td> </tr> <tr> <td>Average (mg/Nm³)</td> <td>:</td> <td>26-27</td> </tr> <tr> <td>Maximum (mg/Nm³)</td> <td>:</td> <td>29.16</td> </tr> <tr> <td>Minimum (mg/Nm³)</td> <td>:</td> <td>26.32</td> </tr> <tr> <td>Exceedance</td> <td>:</td> <td>NIL</td> </tr> <tr> <td>Number of Alerts received</td> <td>:</td> <td>NIL</td> </tr> <tr> <td>Raw data</td> <td>:</td> <td>-</td> </tr> </table>	PM concentration in Stack during past month :			Average (mg/Nm ³)	:	26-27	Maximum (mg/Nm ³)	:	29.16	Minimum (mg/Nm ³)	:	26.32	Exceedance	:	NIL	Number of Alerts received	:	NIL	Raw data	:	-																			
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Raw data	:	-																																							
6	<p>Exceedance/ alerts and response of the industry :Exceedance/Alerts are being received from PCB both from APPCB & CPCB Mail correspondence to APPCB and CPCB : NIL</p>																																								
7	<p>Online data corresponding to the period of inspection: Average Online data in the month of Oct'2021 The online emission monitoring monitors provided to the boilers are required to be revamped and calibrated properly to get the accurate data.</p>																																								
D: Ambient Air Quality monitoring																																									
1	<p>Pollution Control Measures adopted for fugitive emission control and status:</p> <p>The unit provided a closed pipe conveyor from the port to the industry for transportation of coal and provided bag filters at the junction points. The industry installed bag filters at the coal crushing plant and controlling the emissions. The unit has provided mechanical dust suppression system at the coal stock yards. The industry is in the process of constructing sheds for storage of coal. However the housekeeping of the industry need to be improved. The industry not provided water sprinklers in the ashpond to control dust emission from ash pond.</p>																																								
2	<p>Ambient Air Quality Status: The unit provided 4 nos. of CAAQM stations and connected to the APPCB server to transmit real time data. But most of the sensors provided in the CAAQM stations are not in working condition since one year. The status of the functioning of the sensors is as below:</p> <table border="1"> <thead> <tr> <th rowspan="2">Sl. No.</th> <th rowspan="2">Location of the CAAQM station</th> <th colspan="5">Parameters</th> </tr> <tr> <th>PM10</th> <th>PM2.5</th> <th>SO2</th> <th>NOx</th> <th>CO</th> </tr> </thead> <tbody> <tr> <td>1.</td> <td>Coal Gate</td> <td>Working</td> <td>Working</td> <td>Working</td> <td>Working</td> <td>Not Working</td> </tr> <tr> <td>2.</td> <td>Ash Pond</td> <td>Not Working</td> <td>Working</td> <td>Working</td> <td>Not Working</td> <td>Not Working</td> </tr> <tr> <td>3.</td> <td>Hostel</td> <td>Not Working</td> <td>Working</td> <td>Working</td> <td>Working</td> <td>Working</td> </tr> <tr> <td>4.</td> <td>Switch yard</td> <td>Working</td> <td>Not Working</td> <td>Not Working</td> <td>Not Working</td> <td>Not Working</td> </tr> </tbody> </table>	Sl. No.	Location of the CAAQM station	Parameters					PM10	PM2.5	SO2	NOx	CO	1.	Coal Gate	Working	Working	Working	Working	Not Working	2.	Ash Pond	Not Working	Working	Working	Not Working	Not Working	3.	Hostel	Not Working	Working	Working	Working	Working	4.	Switch yard	Working	Not Working	Not Working	Not Working	Not Working
Sl. No.	Location of the CAAQM station			Parameters																																					
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4.	Switch yard	Working	Not Working	Not Working	Not Working	Not Working																																			

E: Hazardous waste management

Details of hazardous waste disposal 2020-21

HW Generated	Authorised Quantity	Quantity Generated	HW storage & Disposal facility
Used Oil	15KL	13 KL	Being disposed to authorised agencies.
Spent acid from batteries	15	15	Returned to the supplier on buy back process.

F: Solid Waste Management

1 Management of Solid/ hazardous Wastes:

a) Fly Ash Disposal:

Since 2015, the unit generated 57,32,668 Tons of flyash, but able to utilise only 36,86,018 Tons of flyash. The unit disposed 20,46,650 Tons of flyash to the ash pond.

b) Bottom ash generation/disposal practiced:

Since 2015, the unit generated 18,00,803 Tons of bottom ash but utilised only 6,85,757 Tons of bottom ash. The unit disposed 11,15,046 Tons of bottom ash into the ash pond.

c) Measures taken for ash handling /collection/disposal: HSDC System (Fly ash collected in to silos and bottom ash send to ash pond.)

The unit has provided 2 nos. of silos of each 2000T capacity for flyash. Bottom ash and un-utilised flyash is being disposed to the ashpond in slurry form. Previously, the unit used to use sea water for slurry purpose and now the unit switch over to the sweet water for slurry purpose.

Earlier, the unit developed ash pond in an area of 125 acres with bund height of 5 mtrs. Ash was disposed into 125 acres ash pond upto brim level and subsequently , the unit is enhanced the bund height to 10 mtrs with permission of MoEF&CC, GoI. In addition, the unit has developed an ash pond in an area of about 100 acres by naming as diversion pond adjacent to the existing ash pond. The unit has obtained permission from the MoEF&CC ,GoI and APPCB for formation of ash pond (Temporary ash pond) for an area of 60 acres (30 Ac+30 Ac) only. Now, the ash pond is almost full and huge quantity of seepage is being discharged outside the premises. The analysis of the seepage water is as below:

Parameter	Units	Analysis value
pH		6.66
TSS	mg/l	16
TDS	mg/l	11652
COD	mg/l	28
BOD	mg/l	5.6
Oil & Grease	mg/l	6.4
Copper	mg/l	ND
Iron	mg/l	1.16

The unit not provided piezo wells to monitor the ground water quality around the ash-pond.

d) Details of Silos-Number & capacity:
2no's of silos each silo capacity of 2000Tonnes capacity.

2. Fly Ash Utilisation / Disposal 2020-21

Sr No	Utilisation for	Quantity(MT)	Observations/Remarks
1	Brick manufacturing	1,23,476	The unit generated 11,95,286T of ash during 2020-21 and utilised 10,96,089 T (91.7%) during 2020-21. Utilization of bottom-ash during 2021-22 is very poor. The unit generated 1,27,918T of bottom-ash, but able to utilise only 19,980 T (15.6%). Similarly, the unit generated 4,67,028T of flyash during 2021-22, but able to utilise only 3,92,924T (84.13%) only.
2	Cement Industries	7,10,609	
3	Road Construction & Land filling	97,089	
4	Ash Dyke Raising	1,64,916	

3. ❖ Heavy Metal Analysis in fly ash:

Ash samples were collected from the ash silos, ash slurry pump house and ash pond. The analysis results are summarised below:

Parameter	Units	Unit -1 Flyash silo	Unit -2 Flyash silo	Unit -1 ash slurry pump house	Unit -2 ash slurry pump house	Ash pond
Sulphur	%	0.036	0.072	0.027	0.012	0.005
Cr	mg/kg	1.735	1.6185	1.7245	2.824	6.6655
Mn	mg/kg	16.281	23.3865	32.0105	70.7085	66.176
Fe	mg/kg	1242.7505	1790.63	2389.358	4987.2095	4146.1543
Ni	mg/kg	3.224	4.686	3.319	3.7845	3.698
Cu	mg/kg	4.962	8.9825	2.728	6.3085	4.6195
Zn	mg/kg	9.573	13.7025	17.8535	5.265	5.2075
As	mg/kg	3.5835	7.274	0.578	0.74	1.4445
Cd	mg/kg	0.0305	0.075	0.008	0.011	0.0085
Hg	mg/kg	0.091	0.1165	0.1185	0.0755	0.114
Pb	mg/kg	2.5805	6.2025	2.3625	1.009	0.823

No significant concentration of heavy metals observed in the fly ash as well as in bottom ash.

G. **Compliance under Water Act (monitoring part): During the month of October-2021.**

S. No.	Parameters	APPCB Standards	ETP outlet
1.	pH	5.5-9.0	8.47
2.	TSS, mg/L	100	32
3.	TDS, mg/L at 180°C	---	608
4.	BOD, mg/L 3 days, 27°C	100	112
5.	COD, mg/L	---	27
6.	O & G, mg/L	10	5.4
7.	Copper mg/L	1.00	ND
8.	Iron mg/L	1.00	0.22

As per the analysis report of samples taken during NGT committee visit , it was observed that non-compliance with respect to BOD standards prescribed by APPCB.

Compliance under Air Act:

- The Unit has Super critical boiler and 275 mts stack, the flue gas boiler is connected Electro Static Precipitator with 64 fields. The unit has installed the online emission monitoring system to monitor PM, NO_x, SO₂ and CO in the stack and the same being connected to APPCB server and CPCB server. But, these online monitors are not functioning properly, which are required to be revamped.
- During inspection team monitored the stacks attached to boiler, the source emissions monitored during inspection are given below;

Parameters	Stack attached to 2600 TPH Super critical boiler(unit-1)	Stack attached to 2600 TPH Super critical boiler(unit-2)	Prescribed standards of APPCB
Date of monitoring	21.10.2021	21.10.2021	
Particulate Matter in mg/Nm ³	45.2 mg/Nm ³	47.4 mg/Nm ³	50 mg/Nm ³
Mercury mg/Nm ³	0.0016 mg/Nm ³	0.0007 mg/Nm ³	

Photographs of M/s.SriDamodaramSanjeevaiah Thermal Power Station, Nellore.

	
<p>Ash containing effluent discharge through storm water drain</p>	
	
<p>Coal storage sheds under construction</p>	<p>Seepage water from Ash pond</p>
	
<p>Damaged Plantation near ash pond</p>	<p>Seepage water from Ash pond</p>



File No. IRO/VIJ/EPA/MISC/111-01/2021
 भारत सरकार / Government of India
 पर्यावरण, वन एवं जलवायु परिवर्तन मंत्रालय

Ministry of Environment, Forest and Climate Change
 एकीकृत क्षेत्रीय कार्यालय / Integrated Regional Office
 ग्रीन हाउस, गोपालारेड्डी रोड, विजयवाड़ा, आंध्र प्रदेश - 520010
 Green House, Gopalareddy Road,
 Vijayawada, Andhra Pradesh-520010.



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 अनुश्रवण आख्या / Monitoring Report

SN	Item	Details
1.	परियोजना का प्रकार Type of Project	Thermal Power Plant
2.	परियोजना का नाम Name of Project	2 X 800 MW Thermal Power Project at Krishnapatnam, Nellore, Andhra Pradesh by M/s Andhra Pradesh Power Development Company Ltd. 1 x 800 MW (Phase-II) Sri Damodaram Sanjeevaiah Thermal Power Project at Nelaturr village, Muthukur Mandal, SPSR Nellore District, Andhra Pradesh by M/s Andhra Pradesh Power Development Corporation Ltd.
3.	परियोजना प्राधिकरण का पता Address of project authorities	The Plant Head, Sri Damodaram Sanjeevaiah Thermal Power Project (SDSTPS), M/s Andhra Pradesh Power Development Corporation Ltd. (APPDCL) Nelatur (V), Muthukur (M), SPSR Nellore District -524342
4.	पर्यावरणीय स्वीकृति पत्र सं० एवं तिथि Env. Clearance Letter No. & Date	J-13011/20/2007-IA-II (T) dated 17.07.2007 J-13012/25/2012-IA.II (T) dated 21.01.2020
5.	क्षेत्रीय कार्यालयपत्र सं० Regional Office File No.	IRO/VIJ/EPA/MISC/111-01/2021
6.	स्थल दौरा तिथि Date of Site Visit	21.10.2021
7.	परियोजना की स्थिति Status of Project	Operational

8. परियोजना की वर्तमान स्थिति / Present status of the Project:

The Hon'ble NGT in O.A. No. 105 of 2021 (SZ), vide Order dated 16.09.2021 constituted a Joint Committee and monitored the project on 21.10.2021. As per the discussions held with Project Authorities (PAs), it has been observed that the Ministry granted Environmental Clearances (ECs) and CRZ clearances to the project at various stages. The details of EC and CRZ clearances granted to the project are as follows:

I/7790/2022

60

S N	Project	Clearance No. and date
Environmental Clearance		
1	2 X 800 MW Thermal Power Project at Krishnapatnam, Nellore, Andhra Pradesh by M/s Andhra Pradesh Power Development Company Ltd.	J-13011/20/2007-IA-II (T) dated 17.07.2007
2	Change in ash pond location to the new site at co-ordinates 14°21'06"N to 14°21'29"N Longitudes and 80°06'58"E to 80°07'45"E Latitude.	J-13011/20/2007-IA-II (T) dated 03.05.2012
3	Extension of EC validity and Correction in the ash pond coordinates. 14°21'27"N to 14°21'06"N Longitudes	J-13011/20/2007-IA-II (T) dated 10.06.2013
4	Expansion by addition of 1x800 MW capacity (Stage II) to 2x800 MW (Stage-I) for imported coal based Sri Damodaram Sanjeevaiah Thermal Power Station at Village Nelaturu, Tehsil Muttukuru, Sri Potti Sriramulu Nellore District in Andhra Pradesh by M/s. Andhra Pradesh Power Development Company Limited (APPDCL).	J-13012/25/2012-IA.II (T) dated 02.07.2015
5	Amendment in EC: Carving out 30 acres of ash pond creating a diversion bund in 149 acres area as an exigency and may use for dumping of fly ash till the height of existing ash pond is increased from 5 m to 10 m.	J-13011/20/2007-IA-II (T) pt. dated 03.09.2019
6	Amendment in EC (Stage-II) for change in coal source.	J-13012/25/2012-IA.II (T) dated 21.01.2020
7	Amendment in EC for ash pond usage of 30 acres of ash pond.	J-13012/25/2012-IA.II (T) dated 27.02.2020
CRZ Clearance		
8	Construction of seawater intake facilities and discharge of wastewater facilities into Bay of Bengal by M/s A.P. Power Generation Corporation Limited (APPDCL), Hyderabad.	11-12/2008-IA.III dated 29.05.2008
9	Amendment in the CRZ clearance dated 29.05.2008 regarding change in configuration of intake and outfall facilities by M/s Andhra Pradesh Power Development Company Limited.	11-43/2012-IA-III dated 03.11.2013
10	CRZ Clearance for laying of Seawater Intake and Outfall System for Stage- II (1x800 MW/) at Village Nelatur, Mandal Muthukur, District. SPSR Nellore, Andhra Pradesh	11-20/2019-IA-III dated 07.01.2020

I/7790/2022

61

Consent For Establishment (CFE) vide order no. 159/PCB/CFE/RO-NLR/HO/2007-1477 dated 01.10.2007 for establishment of following project:

SN	Product	Capacity
1	Electricity using blended coal as fuel (Indian washed coal 70% + Imported coal 30%) with max. sulphur content – 0.62% and max. ash content – 28.3%	2 x 800 MW

CFE vide order no. 159/PC/CFE/RO-NLR/HO/2012-4231 dated 19.12.2012 extension of validity of CFE period and change in location of ash pond.

CFE vide Order no. 159/APPC/CFE/RO-NLR/HO/2015 dated 10.11.2015 for Stage-II (1x800 MW) establishment.

Consent For Operation (CFO) and Hazardous Authorization vide order no. APPCB/VJA/NLR/159/HO/CFO/2017 dated 18.02.2017 for following activity:

SN	Product	Capacity
1	Electric power Generation using blended coal as fuel (Indian washed coal 70% + Imported coal 30%) with max. sulphur content – 0.62% and max. ash content – 28.3%	1600 MW (2 x 800 MW)

CFO is valid till 31.03.2022.

Govt. of Andhra Pradesh, Forest Department issued NOC for establishment of 2 X 800 MW Coal fired Supercritical Thermal Power Station /Mega Power Project away from the Ipuru Reserve Forest vide letter no. 44277/2006-F1 dated 04.04.2007.

Infrastructure & Investment (PORTS-I) Department, Govt. of Andhra Pradesh vide memo no. 41./P.I/2012 dated 26.12.2012 allocation of seawater of 14000 cum/hr for Stage-I i.e., 2X800 MW and 7000 cum/hr for Stage-II (1X800MW).

Inland Waterways Authority of India, Ministry of Shipping, Govt. of India vide letter no. IWAI/PL-13(2)/2001/GEN/NW-4 Vol-II dated 19.02.2013 and 09.10.2013 granted no objection for constructing a bridge across Buckingham Canal near Krishnapatnam Nellore Dist. for laying pipe line.

Other approvals granted to the Project are as follows

SN	Permissions obtained by the unit	Document/ license no.	Issue date	Valid up to	Name of the Department
1	Boiler	Unit-1 : AP-	16.12.20	01.12.20	AP Boiler

I/7790/2022

62

	License	5481 (Fee paid, License yet to be received)	20	21	Inspection Department , Amaravathi
		Unit-2 : AP-6074	02.10.2021	01.10.2022	AP Boiler Inspection Department , Amaravathi
2	Fire NOC	Yet to be obtained			
3	PESO License	Licence No:P/HQ/AP/15/3981(P316331)	03.07.2013	31.12.2024	Dy.Chief Controller of Explosives Hyderabad.
4	Factory License	A/MAH/124/2014	25.09.2021		Dy.Chief Inspector of Factories, Nellore
5	Panchayath Running License	Nelatur Gramapanchayathi resolution Dt:20.09.2009	20.09.2009		Panchayat Surpunch , Nelatur
6	Public Liability Insurance (PLI)	Policy No. 431200/48/2021/6912 dated 31.02.2021	31.02.2021		The Oriental Insurance Company, Govt. of India

The photographs of the project area during the inspection are as follows:



63





I/7790/2022

65



The satellite image of the project location by google maps is as follows:



Details regarding the current status of units of the Project are as follows:

SN	Unit	Capacity	Date of Commission
1	Unit-I	800 MW	05.02.2015
2	Unit-II	800 MW	24.08.2015
3	Unit-III	800 MW	Under Construction

It has been observed that the Ministry vide EC dated 17.07.2007 has granted Environmental Clearance for establishment of 2 X 800 MW Thermal Power Project at Krishnapatnam, Nellore, Andhra Pradesh in an total area of 1250 acres. Subsequently, vide EC amendment dated

I/7790/2022

66

03.05.2012, permission granted for shifting of ash pond from the plant premises to outside the plant boundary and only 100 acres of ash pond was permitted as per Stage-I EC. Further, the validity of EC dated 17.07.2007 has been extended for a period of five years, i.e., till 16.07.2017 vide Ministry's letter dated 10.06.2013.

Subsequently, Ministry granted EC for establishment of 1x800 MW (Stage-II) Supercritical Thermal Power Plant within the premises of Stage-I Power Project vide EC Letter no. J-13012/25/2012-IA.II(T) dated 02.07.2015. As per EIA/EMP submitted for the Stage-II Power Project, no additional land and ash pond was required for the Stage-II Power Plant (1x800 MW) and the ash and of 100 acres for Stage-I is to be used for Stage-II project also. The remaining area of 199.4 acres adjacent to the ash pond was to be developed as greenbelt.

Ministry vide letter no. J-13011/20/2007-IA-II (T) pt. dated 24.04.2019 issued Show-Cause Notice to the project for construction of second ash pond in an area of 149 acres without obtaining prior permission from Ministry.

Ministry vide EC amendment no. J-13011/20/2007-IA-II (T) pt. dated 03.09.2019 permitted for carving out 30 acres of ash pond by creating a diversion bund in 149 acres area as an exigency and may use for dumping of flyash till the height of existing ash pond is increased from 5 m to 10 m, after obtaining NOC from APPCB.

Subsequently, PAs vide application no. IA/AP/THE/114419/2007 dated 13.08.2019 requested for permission to use additional ash pond of 70 acres for disposing of unutilized ash. However, Ministry vide EC amendment letter no. J-13012/25/2012-IA.II(T) dated 27.02.2020 permitted to use of additional area of 30 acres for disposal of ash.

However, it has been observed that the PAs have developed ash pond in an area of 100 acres instead of 60 acres without obtaining approval from Ministry.

In addition to above, it has been observed that the PAs are construction colony with more than 20,000 sq.mts. of built-up area for the employees outside the project premises without obtaining prior Environmental Clearance from competent authority. The photographs of the present status of construction are as follows:



It has been observed that the Project Authorities (PAs) have complied or are in process of complying the conditions stipulated in EC. The detailed observations are as follows:

9. Stipulated Conditions:

EC No. J-13011/20/2007-IA-II (T) dated 17.07.2007 granted for Stage-I

- i. **No activities in CRZ area shall be taken up without obtaining requisite prior clearance under the provisions of the CRZ Notification, 1991.**

Status: Being complied

It has been observed that no activities in CRZ area have been taken up without obtaining requisite prior clearance under the provisions of the CRZ Notification, 1991 and subsequent amendments. As per the records, it has been observed that the PAs have obtained following CRZ clearances:

SN	CRZ Clearance No. and date	Activity
1	11-12/2008-IA.III dated 29.05.2008	Construction of seawater intake facilities and discharge of wastewater facilities into Bay of Bengal
2	11-43/2012-IA-III dated 03.11.2013	Amendment in the CRZ clearance dated 29.05.2008 regarding change in configuration of intake and outfall facilities
3	11-20/2019-IA-III dated 07.01.2020	laying of Seawater Intake and Outfall System for Stage- II (1x800 MW)

ii. Supercritical technology shall be adopted.**Status: Complied**

As per the discussions held, it has been observed that the PAs have adopted supercritical technology.

iii. The Indian washed coal and imported coal shall be blended in the ratio of 70% and 30%. The blended coal to be used as fuel shall have sulphur content not exceeding 0.62% and ash content not exceeding 28.3%.**Status: Being complied**

As per the discussions held, it has been informed that the equipment is designed for use of 70% Indian washed Coal and 30% imported Coal to meet the requirement (with Sulphur content not exceeding 0.62%, the ash content not exceeding 28.3%). The average ash content observed during period October, 2020 to March, 2021 was 29.945% for coal and 0.45% Sulphur. As per the information provided, the ash and Sulphur content of the coal procured for the period October, 2020 to March, 2021 is as follows:

Month	Washed Coal Analysis			Imported Coal Analysis		
	% of Ash	GCV K.Cal./ Kg	Sulphur %	% of Ash	GCV K.Cal./ Kg	Sulphur %
October, 2020	30.38	3984	0.40	No receipts of imported coal during this period		
November, 2020	29.53	4017	0.52			
December, 2020	29.67	4021	0.24			
January, 2021	29.49	4187	0.58			
February, 2021	28.90	4328	0.48			
March, 2021	31.70	4050	0.46			
Average	29.945	4097.83	0.45			

iv. Space provision shall be made for installation of FGD of requisite efficiency of removal of SO₂, if required at later stage.**Status: Being complied**

As per the discussions held, it has been observed that the PAs have provided space for installation of FGD of requisite efficiency of removal of SO₂.

- v. **A bi-flue stack of 275 m height with exit velocity of not less than 29.2 m/s shall -be provided with continuous online monitoring system.**

Status: Partially complied

It has been observed that the PAs have provided a bi-flue stack of 275 m of height a provided with continuous online monitoring system. During the day of monitoring, the stack emission levels are as follows:

SN	Parameter	Unit-I	Unit-II
1	Particulate Matter (mg/Nm ³)	Online monitoring equipment is not working	42.21
2	SOx (mg/Nm ³)		183.88
3	NOx (mg/Nm ³)		82.91
4	CO (ppm)		Not working
5	CO ₂ (mg/Nm ³)		
6	Total Mercury (µg/Nm ³)		

In addition to above, APPCB also collected the sample for monitoring, as per the information provided, the stack emission levels are as follows:

Parameters	Stack attached to 2600 TPH Supercritical boiler(unit-1)	Stack attached to 2600 TPH Supercritical boiler(unit-2)	Prescribed standards of APPCB
Date of monitoring	21.10.2021	21.10.2021	
Particulate Matter in mg/Nm ³	45.2 mg/Nm ³	47.4 mg/Nm ³	50 mg/Nm ³
Mercury mg/Nm ³	0.0016 mg/Nm ³	0.0007 mg/Nm ³	

The unit is meeting the emission standard with respect to Particulate Matter. The unit is required to install an FGD system to meet the standards of SO₂, Hg by 31.12. 2024.

It is required to restore the continuous monitoring equipment's of Unit-I at the earliest. It requires immediate action.

- vi. **High efficiency Electrostatic Precipitator (ESPs) having efficiency of 99.9% shall be installed so as to ensure that particulate emissions do not exceed 100 mg/Nm³.**

Status: Being complied

It has been observed that the PAs have provided high efficiency Electrostatic Precipitator (ESPs) having efficiency of 99.9% so as to ensure that particulate emissions do not exceed 100 mg/Nm³.

During the day of monitoring, the stack emission levels are as follows:

SN	Parameter	Unit-I	Unit-II
1	Particulate Matter (mg/Nm ³)	Online monitoring equipment is not working	42.21
2	SO _x (mg/Nm ³)		183.88
3	NO _x (mg/Nm ³)		82.91
4	CO (ppm)		Not working
5	CO ₂ (mg/Nm ³)		
6	Total Mercury (µg/Nm ³)		

In addition to above, APPCB also collected the sample for monitoring, as per the information provided, the stack emission levels are as follows:

Parameters	Stack attached to 2600 TPH Supercritical boiler(unit-1)	Stack attached to 2600 TPH Supercritical boiler(unit-2)	Prescribed standards of APPCB
Date of monitoring	21.10.2021	21.10.2021	
Particulate Matter in mg/Nm ³	45.2 mg/Nm ³	47.4 mg/Nm ³	50 mg/Nm ³
Mercury mg/Nm ³	0.0016 mg/Nm ³	0.0007 mg/Nm ³	

The unit is meeting the emission standard with respect to Particulate Matter. The unit is required to install an FGD system to meet the standards of SO₂, Hg by 31.12. 2024.

vii. Low NO_x burners shall be provided.

Status: Complied

As per the discussions held, it has been observed that the PAs have provided low NO_x burners to the boilers.

viii. Desalination plant shall be installed for meeting the. sweet water requirement of the project.

Status: Being complied

It has been observed that the PAs have provided desalination plant of 6 MLD and commissioned.

- ix. Closed Cycle Cooling system with natural draft cooling towers shall be provided.**

Status: Being complied

It has been observed that the PAs have provided closed cycle cooling system with natural draft cooling towers.

- x. Treated effluents conforming to the prescribed standards shall be re-circulated and reused with in the plant. No effluents shall be discharged outside the plant boundary except during monsoon season.**

Status: Not complied

As per the discussions held with APPCB and PAs, it has been observed that the industry provided ETP of 75 KLD capacity. The industry is getting effluent at 5 - 45 KLD only to the ETP. During the inspection, it has been observed that the stormwater drains near the coal handling area is filled with ash and some portion with floating oil. This stormwater drain passes outside the compound wall and joins into the Rentamallaiah drain, which finally confluence in Buckingham canal.

The results of analysis of samples taken from the stormwater drain by APPCB are as follows:

Sl.No	Parameters	Units	Stormwater drain at coal mill	Stormwater drain before confluence to Rentamallaiah canal
1	pH		6.67	6.64
2	TSS	mg/l	78	65
3	TDS	mg/l	2250	2136
4	COD	mg/l	176	108
5	BOD	mg/l	38	24
6	Oil & grease	mg/l	5.2	5.7
7	Copper	mg/l	ND	ND
8	Iron	mg/l	BDL	0.61
9	Chromium	mg/L	0.00030	0.00009
10	Manganese	mg/L	0.00827	0.00658
11	Iron	mg/L	0.02076	0.02571
12	Nickel	mg/L	0.00055	0.00048
13	Copper	mg/L	0.00043	0.00042
14	Zinc	mg/L	0.01567	0.02095
15	Arsenic	mg/L	0.01650	0.00897
16	Cadmium	mg/L	0.00001	0.000004
17	Lead	mg/L	BDL	0.00064
18	Mercury	mg/L	BDL	BDL

72

The above analysis indicates that the unit is discharging contaminated wastewater into the nearby water bodies, which finally confluence into the Buckingham canal.

The photographs of ETP and effluent discharge are as follows:





It is required to treat all the effluents generated from the project and the treated effluents conforming to the prescribed standards should be re-circulated and reused within the plant. No effluents should be discharged outside the plant boundary except during monsoon season. It requires immediate action.

- xi. The condenser water blow down to be discharged into the sea shall be at ambient temperature from the cold water side.**

Status: Being complied

As per the discussions held, it has been informed that the equipment is designed such a way that the condenser water blow down to be discharged into the sea will be at ambient temperature.

- xii. Rain water harvesting should be adopted. Central Groundwater Authority / Board shall be consulted for finalization of appropriate rain water harvesting technology within a period of three months from the date of clearance.**

Status: Being complied

It has been informed by the PAs that the State Ground Water department informed that the Rain water harvesting is not feasible in project area as the existing water table is high in the area and might lead to water logging.

- xiii. **Fly ash shall be collected in Silos in dry form and bottom ash in hydro bins and its 100% utilization shall be ensured from the day of the commissioning of the plant. In emergency, the unutilized fly ash/ bottom ash shall be disposed off at the proposed ash disposal site through HCSD system. Borrow earth shall not be taken from ash pond area for construction of ash dyke etc.**

Status: Not complied

It has been observed that the PAs are in process of 100% utilization of fly ash and bottom ash. The fly ash and bottom ash is being collected in ash pond. As per the information provided, the ash generation and utilization details are as follows:

Year	Total Ash Generation (MT)	Ash Utilized (MT)	Ash Pond Storage Qty (cumulative) (MT)	Fly Ash Utilization (%)
2015-16	8,51,467	2,24,045	6,27,422	26.31
2016-17	14,55,944	5,06,250	15,77,116	34.77
2017-18	8,27,296	6,02,402	18,02,010	72.82
2018-19	12,13,635	7,86,853	22,28,792	64.83
2019-20	13,94,897	7,43,232	28,80,457	53.28
2020-21	11,95,286	10,96,089	29,79,654	91.70
2021-22	5,94,946	4,12,904	31,61,696	69.40
Total	75,33,471	43,71,775	31,61,696	58.03

It is required to collect the fly ash in Silos in dry form and bottom ash in hydro bins and its 100% utilization shall be ensured from the day of the commissioning of the plant. In emergency, the unutilized fly ash / bottom ash shall be disposed off at the proposed ash disposal site through HCSD system. Borrow earth shall not be taken from ash pond area for construction of ash dyke etc. It requires immediate action.

- xiv. **Regular monitoring of ground water quality including heavy metals shall be undertaken around ash dyke and the project area to ascertain the change, if any, in the water quality due to leaching of contaminants from ash disposal area.**

Status: Not complied

As per the discussions held, it has been observed that the PAs are conducting ground water quality in around the ash pond area viz., Ash Pond, Nellur Village, M. V. Palem, Devaradibba and Sivalayam. However, the water quality is being monitored for parameters like pH, Conductivity, TDS, Turbidity, Total Hardness, CaH, MgH and

75

Chlorides. However, heavy metals are not being monitored.

In addition, it has been observed that the leachate from ash pond is being discharged to Buckingham canal. The photographs are as follows:



It is required to monitor heavy metal analysis in ground water quality in and around ash dyke and the project area to ascertain the change, if any, in the water quality due to leaching of contaminants from ash disposal area.

It has been observed that the leachate from ash pond is being discharged to Buckingham canal. It is required to take adequate measures for collection and recycle of ash pond leachate. It requires immediate action.

- xv. Noise levels shall be limited to 75 dBA. For people working in the high noise area, protective devices such as earplugs etc. shall be provided.**

Status: Being complied

It has been observed that the PAs are monitoring noise levels at various levels. As per the monitoring reports submitted, the noise levels are within the prescribed limits.

- xvi. A greenbelt of 100 m width shall be developed all around the plant boundary and ash dyke covering an area of at least 170 ha.**

Status: Partially complied

It has been observed that the PAs are in process of developing green belt in and around the project area. The green belt developed till date is as follows:

Extent/ Coverage area in Acres	365
No. of plants	195000
1 Big shade giving trees (no.s)	113299
2 Ornamental/decorative plants (no.s)	60816
3 Land scaping plant (no.s)	20885
4 Grass/turfing	52355.75

It is required to develop greenbelt of 100 m width all around the plant boundary and ash dyke covering an area of at least 170 ha. It requires immediate action.

- xvii. Regular monitoring of the air quality shall be carried out in and around the power plant and records shall be maintained. The location of monitoring stations and frequency of monitoring shall be decided in consultation with SPCB. Six monthly reports shall be submitted to this Ministry.**

Status: Partially complied

It has been observed that the PAs have established Continuous Ambient Air Quality Monitoring Stations at four locations viz., Coal Gate, Ash Pond, Hostel and Switch yard. During the day of monitoring, the operational status of CAAQMS are as follows:

SN	Location	Parameters				
		PM ₁₀	PM _{2.5}	SO ₂	NO _x	CO

1	Coal Gate	Working	Working	Working	Working	Not Working
2	Ash Pond	Not Working	Working	Working	Not Working	Not Working
3	Hostel	Not Working	Working	Working	Working	Working
4	Switchyard	Working	Not Working	Not Working	Not Working	Not Working

The AAQ levels at CAAQMS during the day of monitoring are as follows:

SN	Parameter	21.10.21	Location			
			Coal Gate	Ash Pond	Hostel	Switchyard
1	PM ₁₀ (µg/m ³)	Min.	18.2	Not working	Not working	53.4
		Max.	173.3			149.1
		Avg.	64			97.4
2	PM _{2.5} (µg/m ³)	Min.	18.3	0	0	Not working
		Max.	84.2	93.6	96.1	
		Avg.	51.6	33.5	55.4	
3	SO ₂ (ppb)	Min.	38	16	17	Not working
		Max.	44	18	20	
		Avg.	41	17	19	
4	NO ₂ (ppb)	Min.	19	Not working	6	6.6
		Max.	19		13	9.4
		Avg.	19		8	7.9
5	NO (ppb)	Min.	160	2	4	195.4
		Max.	193	97	6	222.6
		Avg.	173	5	4	208.8
6	NO _x (ppb)	Min.	179	Not working	10	Not working
		Max.	212		19	
		Avg.	192		12	
7	CO ₂ (ppb)	Min.	345.5	192.7	429.4	558.7
		Max.	401.1	787.2	525.7	743.2
		Avg.	375.3	296.5	477.9	659.9
8	CO (ppm)	Min.	Not working	Not working	2.1	Not working
		Max.			2.4	
		Avg.			2.2	

It has been observed that the few sensors are not in working conditions at CAAQM Stations. It is required to take adequate measures to restore the working condition of all the sensors at CAAQM Stations. It requires immediate action.

It has been observed that some of the parameters of AAQ are being exceeded at all CAAQM Stations. It is required to take

adequate measures to control the AAQ in around the project area. It requires immediate action.

- xviii. For controlling fugitive dust, regular sprinkling of water in the coal handling area and other vulnerable areas of the plant shall be ensured.**

Status: Partially complied

It has been observed that the PAs are in process of controlling fugitive dust emissions in the coal handling area and other vulnerable areas of the plant. It has been observed that the PAs have provided few water sprinklers at coal handling area. It has also been observed that thick layer of coal dust has been observed. Photographs are as follows:



It is required to increase the no. of water sprinklers for controlling fugitive dust, regular sprinkling of water in the coal handling area and other vulnerable areas of the plant. It is also required to improve the house keeping in around the plant area. It is requires immediate action.

- xix. The project affected people shall be suitably rehabilitated and compensation paid in accordance with the R&R policy of the State Government.**

Status: Complied

As per the records, it has been observed that the condition has been complied with.

- xx. The project proponent should advertise in at least two local newspapers widely circulated in the region around the project, one of which should be in the vernacular language of the locality concerned, informing that the project has been accorded environmental clearance and copies of clearance letters are available with the State Pollution Control Board / Committee and may also be seen in the Website of the Ministry of Environment and Forests in the <http://envfor.nic.in>.**

Status: Complied

As per the records, it has been observed that the PAs have advertised the details regarding the grant of EC in two newspapers viz., "Indian Express" (English) on 22.08.2007 and "Vartha" (Telugu) on 21.08.2007.

- xxi. A separate environment monitoring cell with suitable qualified staff should be set up for implementation of the stipulated environmental safeguards.**

Status: Being complied

It has been observed that the PAs have a separate environment monitoring cell with suitable qualified staff for implementation of the stipulated environmental safeguards.

- xxii. Half yearly report on the status of implementation of the conditions and environments including environmental safeguards should be submitted to this Ministry, the Regional Office CPCB and SPCB.**

Status: Being complied

It has been observed that the PAs are regularly submitting the six monthly compliance reports along with monitored data to Ministry's Regional Office. As per the records, the latest six monthly compliance report for the period October, 2020 to March, 2021 has submitted vide letter no. CE/O&M/CC-II/SDSTPS/Nellore/Env/Env/FNo. EC Compliance/DNo;68/2021 dated 05.05.2021. It has been observed that the PAs have not submitted six monthly compliance report along with all monitored data for the period April-September, 2021 to Ministry's Integrated Regional Office, Vijayawada.

During Inspection, it has been informed that the Ministry of Environment, Forest and Climate Change vide Gazette of India

Notification No. 1-5/2013-ROHQ dated 13.08.2020 has established 09 new Integrated Regional Offices (IROs) including IRO, Vijayawada. The IRO, Vijayawada is functioning with the jurisdiction of State Andhra Pradesh. Henceforth, six monthly compliance reports will all monitored data including required enclosures should be submitted to IRO, Vijayawada in soft copy (PDF format) only on regularly basis to ecompliance-ap@gov.in (only).

- xxiii. Regional Office of the Ministry of Environment & Forests located at Bangalore will monitor the implementation of the stipulated conditions. A complete set of documents including Environmental Impact Assessment Report, Environment Management Plan and the additional information / clarifications submitted subsequently should be forwarded to the Regional Office for their use during monitoring.**

Status: Complied

As per the records, it has been observed that the condition has been complied with.

- xxiv. Separate funds should be allocated for implementation of environmental protection measures along with item-wise break-up. These cost should be included as part of the project cost. The funds earmarked for the environment protection measures should not be diverted for other purposes and year-wise expenditure should be reported to the Ministry.**

Status: Not complied

As per the discussions held it has been informed that the condition shall be implemented.

It is required to allocate separate funds for implementation of environmental protection measures along with item-wise break-up. These cost should be included as part of the project cost. The funds earmarked for the environment protection measures should not be diverted for other purposes and year-wise expenditure should be reported to the Ministry's IRO, Vijayawada.

- xxv. Full cooperation should be extended to the Scientists/Officers from the Ministry and its Regional Office at Bangalore / the CPCB / the SPCB during monitoring of the project.**

Status: Being complied

It has been observed that the PAs are extending full cooperation to the Officers from the Ministry during monitoring of the project.

4. **The Ministry reserves the right to revoke the clearance if conditions stipulated are not implemented to the satisfaction of the Ministry.**

Status: Being complied

It has been observed that the condition is being complied with.

5. **The Environment clearance accorded shall be valid for a period of 5 years to the start of, production operations by the power plant.**

Status: Complied

As per the records, it has been observed that the validity of EC extended up to 16.07.2017 vide letter no. J-13011/20/2007-IA.II (T) dated 10.06.2013. Details regarding the current status of units of the Project are as follows:

SN	Unit	Capacity	Date of Commission
1	Unit-I	800 MW	05.02.2015
2	Unit-II	800 MW	24.08.2015
3	Unit-III	800 MW	Under Construction

6. **In case of any deviation or alternation in the project proposed from those submitted to Ministry for clearance, afresh reference should be made to the Ministry for clearance, a fresh reference should be made to the Ministry to assess the adequacy of the condition(s) imposed and to incorporate additional environmental protection measures required, if any.**

Status: Partially complied

It has been observed that the Ministry vide EC dated 17.07.2007 has granted Environmental Clearance for establishment of 2 X 800 MW Thermal Power Project at Krishnapatnam, Nellore, Andhra Pradesh in an total area of 1250 acres. Subsequently, vide EC amendment dated 03.05.2012, permission granted for shifting of ash pond from the plant premises to outside the plant boundary and only 100 acres of ash pond was permitted as per Stage-I EC. Further, the validity of EC dated 17.07.2007 has been extended for a period of five years, i.e., till 16.07.2017 vide Ministry's letter dated 10.06.2013.

Subsequently, Ministry granted EC for establishment of 1x800 MW (Stage-II) Supercritical Thermal Power Plant within the premises of Stage-I Power Project vide EC Letter no. J-13012/25/2012-IA.II(T) dated 02.07.2015. As per EIA/EMP submitted for the Stage-II Power Project, no additional land and ash pond was required for the Stage-II Power Plant (1x800 MW) and the ash and of 100 acres for Stage-I is to be used for Stage-II project also. The remaining area of 199.4

acres adjacent to the ash pond was to be developed as greenbelt.

Ministry vide letter no. J-13011/20/2007-IA-II (T) pt. dated 24.04.2019 issued Show-Cause Notice to the project for construction of second ash pond in an area of 149 acres without obtaining prior permission from Ministry.

Ministry vide EC amendment no. J-13011/20/2007-IA-II (T) pt. dated 03.09.2019 permitted for carving out 30 acres of ash pond by creating a diversion bund in 149 acres area as an exigency and may use for dumping of flyash till the height of existing ash pond is increased from 5 m to 10 m, after obtaining NOC from APPCB.

Subsequently, PAs vide application no. IA/AP/THE/114419/2007 dated 13.08.2019 requested for permission to use additional ash pond of 70 acres for disposing of unutilized ash. However, Ministry vide EC amendment letter no. J-13012/25/2012-IA.II(T) dated 27.02.2020 permitted to use of additional area of 30 acres for disposal of ash.

However, it has been observed that the PAs have developed ash pond in an area of 100 acres instead of 60 acres without obtaining approval from Ministry.

In addition to above, it has been observed that the PAs are construction colony with more than 20,000 sq.mts. of built-up area for the employees outside the project premises without obtaining prior Environmental Clearance from competent authority. The photographs of the present status of construction are as follows:



7. **The, above stipulations would be enforced among others under the water (Prevention and Control of Pollution) Act, 1974, the Air (Prevention and Control of Pollution) Act,1981, the Environmental and (protection) Act, 1986 and rules there under, Hazardous wastes (Management and Handling) Rules, 1989 and its amendments, the Public Liability Insurance Act,1991 and its amendments.**

Status: Being complied

The details of EC and CRZ clearances granted to the project are as follows:

S N	Project	Clearance No. and date
Environmental Clearance		
1	2 X 800 MW Thermal Power Project at Krishnapatnam, Nellore, Andhra Pradesh by M/s Andhra Pradesh Power Development Company Ltd.	J-13011/20/2007-IA-II (T) dated 17.07.2007
2	Change in ash pond location to the new site at co-ordinates 14°21'06"N to 14°21'29"N Longitudes and 80°06'58"E to 80°07'45"E Latitude.	J-13011/20/2007-IA-II (T) dated 03.05.2012
3	Extension of EC validity and Correction in the ash pond coordinates. 14°21'27"N to 14°21'06"N Longitudes	J-13011/20/2007-IA-II (T) dated 10.06.2013
4	Expansion by addition of 1x800 MW capacity (Stage II) to 2x800 MW (Stage-I) for imported coal based Sri Damodaram Sanjeevaiah Thermal Power Station at Village Nelaturu, Tehsil Muttukuru, Sri Potti Sriramulu Nellore District in Andhra Pradesh by M/s. Andhra Pradesh Power Development Company Limited (APPDCL).	J-13012/25/2012-IA.II (T) dated 02.07.2015
5	Amendment in EC: Carving out 30 acres of ash pond creating a diversion bund in 149 acres area as an exigency and may use for dumping of fly ash till the height of existing ash pond is increased from 5 m to 10 m.	J-13011/20/2007-IA-II (T) pt. dated 03.09.2019
6	Amendment in EC (Stage-II) for change in coal source.	J-13012/25/2012-IA.II (T) dated 21.01.2020
7	Amendment in EC for ash pond usage of 30 acres of ash pond.	J-13012/25/2012-IA.II (T) dated 27.02.2020
CRZ Clearance		
8	Construction of seawater intake facilities and discharge of wastewater facilities into Bay of Bengal by M/s A.P. Power Generation Corporation Limited (APPDCL), Hyderabad.	11-12/2008-IA.III dated 29.05.2008
9	Amendment in the CRZ clearance dated 29.05.2008 regarding change in	11-43/2012-IA-III dated 03.11.2013

I/7790/2022

84

	configuration of intake and outfall facilities by M/s Andhra Pradesh Power Development Company Limited.	
10	CRZ Clearance for laying of Seawater Intake and Outfall System for Stage- II (1x800 MW/) at Village Nelatur, Mandal Muthukur, District. SPSR Nellore, Andhra Pradesh	11-20/2019-IA-III dated 07.01.2020

Consent For Establishment (CFE) vide order no. 159/PCB/CFE/RO-NLR/HO/2007-1477 dated 01.10.2007 for establishment of following project:

SN	Product	Capacity
1	Electricity using blended coal as fuel (Indian washed coal 70% + Imported coal 30%) with max. sulphur content – 0.62% and max. ash content – 28.3%	2 x 800 MW

CFE vide order no. 159/PC/CFE/RO-NLR/HO/2012-4231 dated 19.12.2012 extension of validity of CFE period and change in location of ash pond.

CFE vide Order no. 159/APPC/CFE/RO-NLR/HO/2015 dated 10.11.2015 for Stage-II (1x800 MW) establishment.

Consent For Operation (CFO) and Hazardous Authorization vide order no. APPCB/VJA/NLR/159/HO/CFO/2017 dated 18.02.2017 for following activity:

SN	Product	Capacity
1	Electric power Generation using blended coal as fuel (Indian washed coal 70% + Imported coal 30%) with max. sulphur content – 0.62% and max. ash content – 28.3%	1600 MW (2 x 800 MW)

CFO is valid till 31.03.2022.

Govt. of Andhra Pradesh, Forest Department issued NOC for establishment of 2 X 800 MW Coal fired Supercritical Thermal Power Station /Mega Power Project away from the Ipuru Reserve Forest vide letter no. 44277/2006-F1 dated 04.04.2007.

Infrastructure & Investment (PORTS-I) Department, Govt. of Andhra Pradesh vide memo no. 41./P.I/2012 dated 26.12.2012 allocation of seawater of 14000 cum/hr for Stage-I i.e., 2X800 MW and 7000 cum/hr for Stage-II (1X800MW).

Inland Waterways Authority of India, Ministry of Shipping, Govt. of

I/7790/2022

85

India vide letter no. IWAI/PL-13(2)/2001/GEN/NW-4 Vol-II dated 19.02.2013 and 09.10.2013 granted no objection for constructing a bridge across Buckingham Canal near Krishnapatnam Nellore Dist. for laying pipe line.

Other approvals granted to the Project are as follows

S N	Permissions obtained by the unit	Document/ license no.	Issue date	Valid up to	Name of the Department
1	Boiler License	Unit-1 : AP-5481 (Fee paid, License yet to be received)	16.12.2020	01.12.2021	AP Boiler Inspection Department, Amaravathi
		Unit-2 : AP-6074	02.10.2021	01.10.2022	AP Boiler Inspection Department, Amaravathi
2	Fire NOC	Yet to be obtained			
3	PESO License	Licence No:P/HQ/AP/15/3981(P316331)	03.07.2013	31.12.2024	Dy.Chief Controller of Explosives Hyderabad.
4	Factory License	A/MAH/124/2014	25.09.2021		Dy.Chief Inspector of Factories, Nellore
5	Panchayath Running License	Nelatur Gramapanchayathi resolution Dt:20.09.2009	20.09.2009		Panchayat Surpunch, Nelatur
6	Public Liability Insurance (PLI)	Policy No. 431200/48/2021/6912 dated 31.02.2021	31.02.2021		The Oriental Insurance

					Compa ny, Govt. of India
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EC No. J-13011/20/2007-IA-II (T) dated 03.05.2012 Extension of EC validity and shifting of Ash Pond.

- xxvi. The project proponent shall upload the status of compliance of the conditions stipulated in the environmental clearance issued vide this Ministry's letter of even no. Dated 17.07.2007 in its website and updated periodically and also simultaneously send the same by e-mail to the Regional Office of the Ministry of Environment and Forests.**

Status: Partially complied

It has been observed that the PAs are regularly submitting the six monthly compliance reports along with monitored data to Ministry's Regional Office. As per the records, the latest six monthly compliance report for the period October, 2020 to March, 2021 has submitted vide letter no. CE/O&M/CC-II/SDSTPS/Nellore/Env/Env/FNo. EC Compliance/DNo;68/2021 dated 05.05.2021. It has been observed that the PAs have not submitted six monthly compliance report along with all monitored data for the period April-September, 2021 to Ministry's Integrated Regional Office, Vijayawada.

During Inspection, it has been informed that the Ministry of Environment, Forest and Climate Change vide Gazette of India Notification No. 1-5/2013-ROHQ dated 13.08.2020 has established 09 new Integrated Regional Offices (IROs) including IRO, Vijayawada. The IRO, Vijayawada is functioning with the jurisdiction of State Andhra Pradesh. Henceforth, six monthly compliance reports will all monitored data including required enclosures should be submitted to IRO, Vijayawada in soft copy (PDF format) only on regularly basis to ecompliance-ap@gov.in (only).

It has been observed that the PAs are not uploading the copies of EC, Environmental Statement in Form-V and six monthly compliance reports along with all monitored data in website of the company.

It is required to upload the copies of EC, Environmental Statement in Form-V and six monthly compliance reports along with all monitored data in website of the company. It requires immediate action.

- xxvii. Criteria pollutants levels including NO_x, RSPM (PM₁₀ & PM_{2.5}), SO_x (from stack & Ambient air) shall be regularly monitored and results displayed in your website and also at the main gate of the power plant.**

I/7790/2022

87

Status: Partially complied

It has been observed that the PAs are displaying the criteria pollutants levels including NO_x, RSPM (PM₁₀ & PM_{2.5}), SO_x (from stack & Ambient air) displayed at the main gate of the power plant. Photograph of the same is as follows:



It has been observed that the PAs are not uploading the copies of EC, Environmental Statement in Form-V and six monthly compliance reports along with all monitored data in website of the company.

It is required to upload the copies of EC, Environmental Statement in Form-V and six monthly compliance reports along with all monitored data in website of the company. It requires immediate action.

- xxviii. A three tier thick green belts on either side of the colony and Ash Pond shall be developed to prevent fugitive emissions and status of implementation shall be reported to the Regional Office of the Ministry regularly.**

Status: Partially complied

It has been observed that the PAs are in process of developing thick green belt on either side of the colony and Ash pond. The photographs are as follows:



It is required to develop a three tier thick green belts on either side of the colony and Ash Pond to prevent fugitive emissions and status of implementation should be reported to Ministry's IRO, Vijayawada along with six monthly compliance reports on regular basis.

4. **All other conditions mentioned in this Ministry's aforesaid letter of even no.17.07.2007 shall remain the same as stipulated in the earlier clearance shall remain unchanged and shall be strictly adhered by the proponent.**

Status: Being complied

It has been observed that the condition is being complied with.

EC No. J-13011/20/2007-IA-II (T) pt. dated 03.09.2019 Amendment in EC

- i. **The greenbelt to be development in 420 acres as per the commitment made in the Environment Management Plan in the Phase-II EIA shall be clearly demarcated and developed within a period of two years. The action plan shall clearly demarcate the area & land survey numbers, number of saplings to be planted, budget earmarked, number of persons engaged, maintenance work such as providing water and manure and time bound action plan, which is to be submitted to the Ministry, its regional office and APPCB within 3 months.**

Status: Partially complied

It has been observed that the PAs are in process of developing green belt in and around the project area. The green belt developed till date is as follows:

Extent/ Coverage area in Acres	365
No. of plants	195000
1 Big shade giving trees (no.s)	113299
2 Ornamental/decorative plants (no.s)	60816

3 Land scaping plant (no.s)	20885
4 Grass/turfing	52355.75

It is required to develop greenbelt in 420 acres as per the commitment made in the Environment Management Plan in the Phase-II EIA. The green belt should be clearly demarcated and developed within a period of two years. The action plan shall clearly demarcate the area & land survey numbers, number of saplings to be planted, budget earmarked, number of persons engaged, maintenance work such as providing water and manure and time bound action plan, which is to be submitted to the Ministry's IRO, Vijayawada at the earliest.

- ii. A bank guarantee of Rs. 10 Crores is to be deposited with the Andhra Pradesh Pollution Control Board for developing green belt in an area of 420 acres within two years, failing which the amount will be forfeited to the APPCB. The APPCB shall conduct a site visit and submit the report on greenbelt development in 420 acres in this regard. The APPCB after submission of site visit report may directly forfeit the amount, in case the greenbelt is not satisfactorily developed.

Status: Not complied

As per the discussions held, it has been informed that, so far green belt has been developed in 365 acres in various locations of SDSTPS plant. Agency has been already fixed for taking up the plantation of 20000 saplings in vacant 55 acres lands of township. The work will be taken up during upcoming monsoon.

It has been informed that a letter was addressed to The Member Secretary, APPCB, Vijayawada vide letter no. CGM/APPDCL/EE/C/EC54/D.No.507 dated 01.04.2020 requesting to waive the submission of bank guarantee for Rs. 10.00 Cr and to accord permission to complete the total green belt by the end of March, 2022.

It is required to deposit a bank guarantee of Rs. 10 Crores with the Andhra Pradesh Pollution Control Board for developing green belt in an area of 420 acres within two years, failing which the amount will be forfeited to the APPCB. The APPCB shall conduct a site visit and submit the report on greenbelt development in 420 acres in this regard. The APPCB after submission of site visit report may directly forfeit the amount, in case the greenbelt is not satisfactorily developed.

- iii. A committee comprising of members from State Forest Department, State Biodiversity Board, State Wildlife Department and AP Pollution Control Board (Nodal Officer) shall be formed to plan, guide the selection of species & plan of development and to oversee the progress of the greenbelt. Expenditure towards

quarterly meetings and functioning of the committee is to be borne by M/s APPDCL (Proponent). The Committee has to submit the six monthly report on progress of the greenbelt to the Ministry and its Regional Office.

Status: Not complied

As per the discussions held, it has been informed that the committee comprising of members from State Forest Department, State Biodiversity Board, State Wildlife Department and AP Pollution Control Board (Nodal Officer) scheduled to meet on 20.04.2021 but due to covid-19 pandemic it was postponed. Will be met whenever conditions improved.

It is required to constitute a committee comprising of members from State Forest Department, State Biodiversity Board, State Wildlife Department and AP Pollution Control Board (Nodal Officer) to plan, guide the selection of species & plan of development and to oversee the progress of the greenbelt. Expenditure towards quarterly meetings and functioning of the committee is to be borne by M/s APPDCL (Proponent). The Committee has to submit the six monthly report on progress of the greenbelt to the Ministry's IRO, Vijayawada.

- iv. The temporary diversion bund with an area of 30 acres is to be carved out from second as pond which was already constructed.**

Status: Partially complied

It has been observed that the Ministry vide EC dated 17.07.2007 has granted Environmental Clearance for establishment of 2 X 800 MW Thermal Power Project at Krishnapatnam, Nellore, Andhra Pradesh in an total area of 1250 acres. Subsequently, vide EC amendment dated 03.05.2012, permission granted for shifting of ash pond from the plant premises to outside the plant boundary and only 100 acres of ash pond was permitted as per Stage-I EC. Further, the validity of EC dated 17.07.2007 has been extended for a period of five years, i.e., till 16.07.2017 vide Ministry's letter dated 10.06.2013.

Subsequently, Ministry granted EC for establishment of 1x800 MW (Stage-II) Supercritical Thermal Power Plant within the premises of Stage-I Power Project vide EC Letter no. J-13012/25/2012-IA.II(T) dated 02.07.2015. As per EIA/EMP submitted for the Stage-II Power Project, no additional land and ash pond was required for the Stage-II Power Plant (1x800 MW) and the ash and of 100 acres for Stage-I is to be used for Stage-II project also. The remaining area of 199.4 acres adjacent to the ash pond was to be developed as greenbelt.

Ministry vide letter no. J-13011/20/2007-IA-II (T) pt. dated 24.04.2019 issued Show-Cause Notice to the project for construction

of second ash pond in an area of 149 acres without obtaining prior permission from Ministry.

Ministry vide EC amendment no. J-13011/20/2007-IA-II (T) pt. dated 03.09.2019 permitted for carving out 30 acres of ash pond by creating a diversion bund in 149 acres area as an exigency and may use for dumping of flyash till the height of existing ash pond is increased from 5 m to 10 m, after obtaining NOC from APPCB.

Subsequently, PAs vide application no. IA/AP/THE/114419/2007 dated 13.08.2019 requested for permission to use additional ash pond of 70 acres for disposing of unutilized ash. However, Ministry vide EC amendment letter no. J-13012/25/2012-IA.II(T) dated 27.02.2020 permitted to use of additional area of 30 acres for disposal of ash.

However, it has been observed that the PAs have developed ash pond in an area of 100 acres instead of 60 acres without obtaining approval from Ministry.

- v. The remaining area (119 acres) as part of second ash pond shall be restored and thick greenbelt shall be developed. Subsequently, temporary diversion bund of 30 acres shall be abandoned as committed by the Project Proponent.**

Status: Partially complied

It has been observed that the Ministry vide EC dated 17.07.2007 has granted Environmental Clearance for establishment of 2 X 800 MW Thermal Power Project at Krishnapatnam, Nellore, Andhra Pradesh in an total area of 1250 acres. Subsequently, vide EC amendment dated 03.05.2012, permission granted for shifting of ash pond from the plant premises to outside the plant boundary and only 100 acres of ash pond was permitted as per Stage-I EC. Further, the validity of EC dated 17.07.2007 has been extended for a period of five years, i.e., till 16.07.2017 vide Ministry's letter dated 10.06.2013.

Subsequently, Ministry granted EC for establishment of 1x800 MW (Stage-II) Supercritical Thermal Power Plant within the premises of Stage-I Power Project vide EC Letter no. J-13012/25/2012-IA.II(T) dated 02.07.2015. As per EIA/EMP submitted for the Stage-II Power Project, no additional land and ash pond was required for the Stage-II Power Plant (1x800 MW) and the ash and of 100 acres for Stage-I is to be used for Stage-II project also. The remaining area of 199.4 acres adjacent to the ash pond was to be developed as greenbelt.

Ministry vide letter no. J-13011/20/2007-IA-II (T) pt. dated 24.04.2019 issued Show-Cause Notice to the project for construction of second ash pond in an area of 149 acres without obtaining prior permission from Ministry.

Ministry vide EC amendment no. J-13011/20/2007-IA-II (T) pt. dated 03.09.2019 permitted for carving out 30 acres of ash pond by creating a diversion bund in 149 acres area as an exigency and may use for dumping of flyash till the height of existing ash pond is increased from 5 m to 10 m, after obtaining NOC from APPCB.

Subsequently, PAs vide application no. IA/AP/THE/114419/2007 dated 13.08.2019 requested for permission to use additional ash pond of 70 acres for disposing of unutilized ash. However, Ministry vide EC amendment letter no. J-13012/25/2012-IA.II(T) dated 27.02.2020 permitted to use of additional area of 30 acres for disposal of ash.

However, it has been observed that the PAs have developed ash pond in an area of 100 acres instead of 60 acres without obtaining approval from Ministry.

- vi. Increasing the dyke height of existing ash pond from 5 m to 10 m is permitted.**

Status: Being complied

It has been observed the increasing the dyke height of existing ash pond from 5 m to 10 m is in progress.

- vii. The greenbelt of 420 acres as part of the EIA/EMP is to be developed. In case, sufficient land is not available, it may acquired at suitable location for developing greenbelt. Funds in this regard shall be allocated and time bound action plan shall be submitted within 3 months.**

Status: Partially complied

It has been observed that the PAs are in process of developing green belt in and around the project area. The green belt developed till date is as follows:

Extent/ Coverage area in Acres	365
No. of plants	195000
1 Big shade giving trees (no.s)	113299
2 Ornamental/decorative plants (no.s)	60816
3 Land scaping plant (no.s)	20885
4 Grass/turfing	52355.75

It is required to develop the greenbelt of 420 acres as part of the EIA/EMP is to be developed. In case, sufficient land is not available, it may acquired at suitable location for developing greenbelt. Time bound action plan should be submitted within 3 months.

- viii. The unutilized ash in the domestic market shall be exported as the Krishnapatnam port is located at 5 km from the power plant.**

Status: Partially complied

As per the discussions held, it has been informed that all feasibilities will be explored.

It is required to make efforts to export the unutilized ash in the domestic market as the Krishnapatnam port is located at 5 km from the power plant.

- ix. A study on effect of fly ash on surrounding agriculture fields shall be conducted by Acharya N.G. Ranga Agricultural University. Findings of the study along with report shall be submitted to the Ministry and its Regional Office within 6 months.**

Status: Partially complied

As per the discussions held, it has been informed that the PAs have placed an Order in favour of M/s Acharya N.G. Ranga Agricultural University, Guntur for study of fly ash effect on surrounding fields of ash pond. Work has been delayed due to Covid-19 pandemic.

It is required to conduct study on effect of fly ash on surrounding agriculture fields shall be conducted by Acharya N.G. Ranga Agricultural University. Findings of the study along with report shall be submitted to the Ministry's IRO, Vijayawada.

- x. The desalination plant with capacity of 60 MLD under construction shall be operationalized within six months. Mixing of saline water with flyash for disposal into the ash pond shall not be permitted once desalination plant is commissioned to prevent saline water intrusion into the groundwater.**

Status: Being complied

It has been observed that the desalination plant has been commissioned and desalinated water is being used for mixing with fly ash for disposal into the ash pond with effect from 03.02.2021.

- xi. Any directions issued by the State Pollution Control Board w.r.t. submission of bank guarantee, etc shall be complied.**

Status: Assured to comply

It has been observed that the PAs have assured that the condition will be complied.

- xii. **The permission is subjected to the outcome of Civil Appeal No. 4699/2014 which is pending before Hon'ble Supreme Court.**

Status: Being complied

It has been observed that the condition is being complied with.

EC No. J-13012/25/2012-IA.II (T) dated 02.07.2015 for Stage-II (1x800 MW)

- i. **Expansion by addition of 1x800 MW capacity (Stage II) to 2x800 MW (Stage-I) for imported coal based Sri Damodaram Sanjeevaiah Thermal Power Station at Village Nelaturu, Tehsil Muttukuru, Sri Potti Sriramulu Nellore District in Andhra Pradesh by M/s. Andhra Pradesh Power Development Company Limited (APPDCL).**

Status: Under construction

It has been observed that the project is under constructional Phase. As the compliance of all operational related conditions are mentioned above, the conditions of Stage-II are not being reported.

CRZ No: 11-12/2008-IA.III dated 29.05.2008

- i. **No Objection Certificate from the Andhra Pradesh State Pollution Control Board shall be obtained before initiating the project.**

Status: Being complied

As per the records, it has been observed that the Consent for Establishment and Consent for Operation of the plant has been obtained from APPCB on 01.10.2007, 16.04.2015 and 18.02.2017, respectively where in the intake and outfall system of sea water is permitted.

- ii. **The project shall be implemented in such a manner that there is no damage whatsoever to the mangroves/other sensitive coastal ecosystems. If any damage to mangroves is anticipated / envisaged as a result of project activities then the clearance shall stand cancelled and the proponents shall seek fresh**

approval from the Ministry.

Status: Being complied

As per the discussions held, it has been informed that, no mangroves / other sensitive coastal ecosystem is present in the area.

- iii. The project proponent shall implement all the measures that have been proposed by them in the clarification letter dated 6.5.2008 provided to the Ministry**

Status: Being complied

It has been observed that the PAs are in process of implementing all the measures that have been proposed in the clarification letter dated 6.5.2008 provided to the Ministry. It has been informed that, as per letter no. ED(E)/APPDCL.D.No.201/08, dated 06.05.2008 addressed to the Ministry, APPDCL confirmed that the fly ash generated at 2X800 MW Thermal power station at Krishnapatnam shall not be dumped in the Sea and shall be utilized in the Ash pond designated.

- iv. The effluent to be disposed of shall meet the standards prescribed by Andhra Pradesh pollution Control Board**

Status: Being complied

It has been observed that the blowdown water standards disposed in the sea is within the standards prescribed by Andhra Pradesh Pollution Control Board.

- v. The pipelines both intake and outlet shall not cause any hindrance to the movement of the local communities including the fishermen.**

Status: Being complied

As per the discussions held, it has been observed that the pipelines both intake and outlet is not causing any hindrance to the movement of the local communities including the fishermen.

- vi. A continuous and comprehensive post-project marine quality monitoring programme shall be taken up. This shall include monitoring of water quality, sediment quality and biological characteristics covered in the EIA studies.**

Status: Not complied

As per the discussions held, it has been informed that the post-project marine quality monitoring including monitoring of water quality, sediment quality and

biological characteristics will be carried out through the Environment Monitoring Cell and if necessitated by engaging expert agencies like IIT, NIO etc.,

It is required take measures for continuous and comprehensive post-project marine quality monitoring programme and should include monitoring of water quality, sediment quality and biological characteristics covered in the EIA studies. It requires immediate action.

- vii. It shall be ensured that there is no displacement of people, houses or fishing activity as a result of the project.**

Status: Complied

It has been observed that the project is completed and stated that there is no displacement of people, houses or fishing activity.

- viii. It shall be ensured that due to the project, there is no adverse impact on the drainage or the area and recharge of groundwater. No groundwater shall be tapped in the project area falling in Coastal Regulation Zone.**

Status: Being complied

As per the discussions held, it has been ensured that due to the project, there is no adverse impact on the drainage or the area and recharge of groundwater. No groundwater is being tapped in the project area falling in Coastal Regulation Zone.

- ix. The camps of labour shall be kept outside the Coastal Regulation Zone area. Proper arrangements for cooking fuel shall be made for the labour during construction phase so as to ensure that mangroves are not cut/destroyed for this purpose.**

Status: Complied

It has been observed that the civil construction work has completed and project is in operational phase. It has been informed that the labour camp was kept outside CRZ area and no mangroves existed in the area.

- x. There shall be display boards at critical locations along the pipeline viz., road/rail/river crossings giving emergency instructions, This will ensure prompt information regarding location of accident during any emergency. Emergency Information board shall contain emergency instructions in addition to contact details. Proper lighting shall be provided' all along the road.**

Status: Being complied

97

It has been observed that the PAs have provided lighting all along the pipeline route and display boards are also provided.

- xi. The project activities shall not disturb the movement of fishing vessels or fishermen.**

Status: Being complied

It has been observed that the project activities is not disturbing the movement of fishing vessels or fishermen.

- xii. It shall be ensured that during construction and post construction of the proposed jetty the movement fishermen vessels of the local communities are not interfered with.**

Status: Being complied

As per the discussions held, it has been observed that, no jetty construction is under taken and hence no interference encountered. In place of jetty system open channel with groyens was approved vide F.No. 11-43/2072-1A-III, 03-09-2013 by the Ministry.

- xiii. Relocation of the fishermen community shall be done strictly in accordance with the norms prescribed by the State Government. The relocated fishermen community shall be provided with all facilities including health care, education, sanitation and livelihood.**

Status: Complied

As per the discussions held, it has been informed that no relocation of fishermen community is necessitated during the construction phase.

- xiv. Marine ecology monitoring shall be done regularly during construction of the jetty including the dredging operation.**

Status: Complied

As per the discussions held, it has been observed that, no jetty construction is under taken and hence no interference encountered. In place of jetty system open channel with groyens was approved vide F.No. 11-43/2072-1A-III, 03-09-2013 by the Ministry.

- xv. Regular monitoring of air quality shall be done in the settlement areas around the project site and appropriate safeguard measures shall be taken etc ensure that the population is not subjected to higher levels of air pollution.**

Status: Not applicable at present

As per the discussions held, it has been observed that the condition is not applicable at present as the project construction has completed.

- xvi. Sewage arising in the port area shall be disposed off after adequate treatment to conform to the standards stipulated by Andhra Pradesh Pollution Control Board and shall be utilized/re-cycled for gardening, plantation and irrigation.**

Status: Not applicable at present

As per the discussions held, it has been observed that the condition is not applicable at present as the project construction has completed and no sewage is being generated.

- xvii. Project proponent shall regularly update the Disaster Management Plan from time to time.**

Status: Partially complied

As per the discussions held, it has been informed that the PAs are regularly updating the Disaster Management Plan from time to time.

It is required to provide the copy of latest Disaster Management Plan of the project.

- xviii. There shall be no withdrawal of ground water in CRZ area, for this project. The proponent shall ensure that as a result of the proposed constructions, ingress of saline water into wound water does not take place, Piezometers shall be installed for regular monitoring for this purpose at appropriate locations on the project site.**

Status: Being complied

It has been observed that, no ground water in CRZ area is being withdrawn by PAs for the project.

- xix. The project shall not be commissioned till the requisite water supply and electricity to the project are provided by the concerned competent Authority.**

Status: Complied

It has been observed that the project is under operational phase.

- xx. Specific arrangements for rain water harvesting shall be made in the project design and the rain water so harvested shall be optimally utilized, Details in this regard shall be furnished to this Ministry's Regional Office at Bangalore within 3 months.**

Status: Being complied

It has been informed by the PAs are that the State Ground Water department informed that the Rain water harvesting is not feasible in project.

- xxi. The facilities to be constructed in the CRZ area as part of this project shall be strictly in conformity with the provisions of the CRZ Notification, 1991 as amended subsequently**

Status: Being complied

It has been observed that the condition is being complied with.

- xxii. Land reclamation shall be carried out only to the extent that it is essential for this project**

Status: Complied

As per the discussions held, it has been informed that, no land reclamation was made.

- xxiii. Green buffer zone shall be provided all around the project area in consultation with local forest department and the report submitted to this Ministry's Regional Office at Bangalore.**

Status: Partially complied

It has been observed that the PAs are in process of developing green belt in and around the project area. It has been informed that the green buffer zones are being taken up in phased manner as per the guidance of AP state Bio Diversity Board. So far green belt developed about 365 acres of Vacant land in various locations of project.

- xxiv. No product other than those permissible in the Coastal Regulation Zone Notification, 1991 shall be stored in the Coastal Regulation Zone area.**

Status: Being complied

It has been observed that, no product other than those permissible in the Coastal Regulation Zone Notification, 1991 is being stored in the Coastal Regulation Zone area.

B. General Condition

- i. Construction of the proposed structures shall be undertaken**

meticulously confirming to the existing, Central/local rules and regulations. All the construction designs/drawings relating, to the proposed construction activities must have approvals of the concerned State Government Department/Agencies.

Status: Complied

As per the discussions held, it has been observed that the structures undertaken are confirming to central/local rules & regulations.

- ii. The project authorities shall take appropriate community development and welfare measures for the villagers in the vicinity of the project site, including drinking water facilities. A separate fund shall be allocated for this purpose.**

Status: Being complied

As per the discussion held, it has been informed that, during the construction phase of the project, community development and welfare measures for the villagers in the vicinity of the project site, including drinking water facilities are undertaken by the contractor. The activities will be continued under the CSR activities of the main project for which a separate fund is allocated for this purpose.

- iii. To meet any emergency fighting situation, appropriate fire-fighting system shall be installed. Appropriate arrangements for uninterrupted power supply to the environment protection equipment and continuous water supply for the firefighting system shall be made.**

Status: Being complied

It has been observed that the PAs have provided firefighting system.

- iv. A separate Environment Management Cell with suitably qualified staff to carry out various environment related functions shall be set up under the charge of a Senior Executive who will report directly to the Chief Executive of the Company.**

Status: Being complied

It has been observed that the PAs have a separate Environment Management Cell with suitably qualified staff to carry out various environment related functions under the charge of a Senior Executive who will report directly to the Chief Executive of the Company.

- v. The funds earmarked for environment protection measures shall be maintained in a separate account and there shall be no diversion of these funds for any other purpose. A year-wise expenditure on environmental safeguards shall be reported to**

this Ministry's Regional Office at Bangalore.

Status: Not complied

As per the discussions held, it has been stated that the condition will be complied

It required to maintain a separate account for the funds earmarked for environment protection measures and there should be no diversion of these funds for any other purpose. A year-wise expenditure on environmental safeguards should be reported to this Ministry's IRO, Vijayawada along with six monthly compliance report on regular basis.

- vi. Full support shall be extended to the officers of this Ministry's Regional Office at Bangalore and the officers of the Central and State Pollution Control Board by the project proponents during their inspection for monitoring purposes, by furnishing details and action plans including the action taken reports in respect of mitigative measures and other environmental protection activities.**

Status: Being complied

It has been observed that the condition is being complied with.

- vii. In case of deviation or alteration in the project including the implementing agency, a fresh reference shall be made to this Ministry's for modification in the clearance conditions of impositions of new one for ensuring environmental protection. The project proponent shall be responsible for implementing the suggested safeguard measures.**

Status: Being complied

It has been observed that the condition is being complied with.

- viii. This Ministry reserves the right to revoke this clearance, if any of the conditions stipulated are not complied with to satisfaction of this Ministry.**

Status: Being complied

It has been observed that the condition is being complied with.

- ix. This Ministry or any other competent authority may stipulate any other additional conditions subsequently, if deemed necessary, for environmental protection, which shall be complied with.**

Status: Being complied

I/7790/2022

102

It has been observed that the condition is being complied with.

- x. A copy of the clearance the letter shall be marked to concerned Panchayat/local NGO, if any, from whom any suggestion /representation has been received while processing the proposal.**

Status: Complied

It has been observed that the condition has complied with.

- xi. State pollution control Board/Committee shall display a copy of the clearance letter at the District Industries Centre and Collector's Office/Tahsildar's Office for 30 days.**

Status: Complied

It has been observed that the condition has complied with.

- xii. The project proponent shall advertise at least in two local newspapers widely circulated in the region around the project, one of which shall be in the vernacular language of the locality concerned informing that the project has been accorded environmental clearance and copies of clearance letters are available with Andhra Pradesh State Pollution Control Board and may also be seen at website of the Ministry of Environment & Forests at <http://www.envfor.nic.in>.**

Status: Complied

As per the records, it has been observed that the PAs have advertised details regarding grant of EC in two local newspapers viz., English (Deccan chronicle) and Telugu (Saakshi) languages on 28.06.2008.

- xiii. The project proponents shall inform Regional Office Bangalore as well as the Ministry the date of financial closure and final approval of the project by the concerned authorities and the date of, start of work.**

Status: Complied

It has been informed that the financial closure and Final approval of the project is inclusive in the Budget provision of main power Plant.

- xiv. The project proponent will obtain the Forest clearance for the land passing through the Reserved Forest area before commencement of the project activities in forest area.**

Status: Being complied

As per the discussions held, it has been observed that there is no reserved forest area in the project site.

- xv. So as to maintain ecological features an avoid damage to the ecosystem; movement of vehicles in the inter Tidal Zone shall be restricted to the minimum.**

Status: Being complied

As per the discussions held, it has been observed that there is no movement of vehicles in the inter tidal zone.

- xvi. Any appeal against this environmental clearance shall lie with the National Environment Appellate Authority, if preferred, within a period of 30 days as prescribed under section 11 of the National Environment Appellate Act, 1997.**

Status: Being complied

It has been observed that the condition is being complied with.

10. Observations:

The PAs have complied or are in process of complying the conditions stipulated by the Ministry. In this context, information/action plans have been sought on following points.

1. It has been observed that the Ministry vide EC dated 17.07.2007 has granted Environmental Clearance for establishment of 2 X 800 MW Thermal Power Project at Krishnapatnam, Nellore, Andhra Pradesh in an total area of 1250 acres. Subsequently, vide EC amendment dated 03.05.2012, permission granted for shifting of ash pond from the plant premises to outside the plant boundary and only 100 acres of ash pond was permitted as per Stage-I EC. Further, the validity of EC dated 17.07.2007 has been extended for a period of five years, i.e., till 16.07.2017 vide Ministry's letter dated 10.06.2013. Subsequently, Ministry granted EC for establishment of 1x800 MW (Stage-II) Supercritical Thermal Power Plant within the premises of Stage-I Power Project vide EC Letter no. J-13012/25/2012-IA.II(T) dated 02.07.2015. As per EIA/EMP submitted for the Stage-II Power Project, no additional land and ash pond was required for the Stage-II Power Plant (1x800 MW) and the ash and of 100 acres for Stage-I is to be used for Stage-II project also. The remaining area of 199.4 acres adjacent to the ash pond was to be developed as greenbelt. Ministry vide EC amendment no. J-13011/20/2007-IA-II (T) pt. dated 03.09.2019 permitted for carving out 30 acres of ash pond by creating a diversion bund in 149 acres area as an exigency and may use for dumping of flyash till the height of existing ash pond is increased from 5 m to 10 m, after obtaining NOC from APPCB. Subsequently, PAs vide application no.

IA/AP/THE/114419/2007 dated 13.08.2019 requested for permission to use additional ash pond of 70 acres for disposing of unutilized ash. However, Ministry vide EC amendment letter no. J-13012/25/2012-IA.II(T) dated 27.02.2020 permitted to use of additional area of 30 acres for disposal of ash. However, it has been observed that the PAs have developed ash pond in an area of 100 acres instead of 60 acres without obtaining approval from Ministry.

2. It has been observed that the PAs are construction colony with more than 20,000 sq.mts. of built-up area for the employees outside the project premises without obtaining prior Environmental Clearance from competent authority.

EC No. J-13011/20/2007-IA-II (T) dated 17.07.2007

3. It is required to restore the continuous monitoring equipment's of Unit-I at the earliest. It requires immediate action.
4. It has been observed that the stormwater drains near the coal handling area is filled with ash and some portion with floating oil. This stormwater drain passes outside the compound wall and joins into the Rentamallaiah drain, which finally confluence in Buckingham canal. It is required to treat all the effluents generated from the project and the treated effluents conforming to the prescribed standards should be re-circulated and reused with in the plant. No effluents should be discharged outside the plant boundary except during monsoon season. It requires immediate action.
5. It is required to collect the fly ash in Silos in dry form and bottom ash in hydro bins and its 100% utilization shall be ensured from the day of the commissioning of the plant. In emergency, the unutilized fly ash / bottom ash shall be disposed off at the proposed ash disposal site through HCSD system. Borrow earth shall not be taken from ash pond area for construction of ash dyke etc. It requires immediate action.
6. It is required to monitor heavy metal analysis in ground water quality in and around ash dyke and the project area to ascertain the change, if any, in the water quality due to leaching of contaminants from ash disposal area.
7. It has been observed that the leachate from ash pond is being discharged to Buckingham canal. It is required to take adequate measures for collection and recycle of ash pond leachate. It requires immediate action.
8. It is required to develop greenbelt of 100 m width all around the plant boundary and ash dyke covering an area of at least 170 ha. It requires immediate action.
9. It has been observed that the few sensors are not in working conditions at CAAQM Stations. It is required to take adequate measures to restore the working condition of all the sensors at CAAQM Stations. It requires immediate action.

- 10.** It has been observed that some of the parameters of AAQ are being exceeded at all CAAQM Stations. It is required to take adequate measures to control the AAQ in around the project area. It requires immediate action.
- 11.** It is required to increase the no. of water sprinklers for controlling fugitive dust, regular sprinkling of water in the coal handling area and other vulnerable areas of the plant. It is also required to improve the house keeping in around the plant area. It is requires immediate action.
- 12.** During Inspection, it has been informed that the Ministry of Environment, Forest and Climate Change vide Gazette of India Notification No. 1-5/2013-ROHQ dated 13.08.2020 has established 09 new Integrated Regional Offices (IROs) including IRO, Vijayawada. The IRO, Vijayawada is functioning with the jurisdiction of State Andhra Pradesh. Henceforth, six monthly compliance reports will all monitored data including required enclosures should be submitted to IRO, Vijayawada in soft copy (PDF format) only on regularly basis to ecompliance-ap@gov.in (only).
- 13.** It is required to allocate separate funds for implementation of environmental protection measures along with item-wise break-up. These cost should be included as part of the project cost. The funds earmarked for the environment protection measures should not be diverted for other purposes and year-wise expenditure should be reported to the Ministry's IRO, Vijayawada.

EC No. J-13011/20/2007-IA-II (T) dated 03.05.2012

- 14.** It is required to upload the copies of EC, Environmental Statement in Form-V and six monthly compliance reports along with all monitored data in website of the company. It requires immediate action.
- 15.** It is required to develop a three tier thick green belts on either side of the colony and Ash Pond to prevent fugitive emissions and status of implementation should be reported to Ministry's IRO, Vijayawada along with six monthly compliance reports on regular basis.

EC No. J-13011/20/2007-IA-II (T) pt. dated 03.09.2019

- 16.** It is required to develop greenbelt in 420 acres as per the commitment made in the Environment Management Plan in the Phase-II EIA. The green belt should be clearly demarcated and developed within a period of two years. The action plan shall clearly demarcate the area & land survey numbers, number of saplings to be planted, budget earmarked, number of persons engaged, maintenance work such as providing water and manure and time bound action plan, which is to be submitted to the Ministry's IRO, Vijayawada at the earliest.
- 17.** It is required to deposit a bank guarantee of Rs. 10 Crores with the Andhra Pradesh Pollution Control Board for developing green belt in an area of 420 acres within two years, failing which the amount will be forfeited to the APPCB. The APPCB shall conduct a site visit and

submit the report on greenbelt development in 420 acres in this regard. The APPCB after submission of site visit report may directly forfeit the amount, in case the greenbelt is not satisfactorily developed.

18. It is required to constitute a committee comprising of members from State Forest Department, State Biodiversity Board, State Wildlife Department and AP Pollution Control Board (Nodal Officer) to plan, guide the selection of species & plan of development and to oversee the progress of the greenbelt. Expenditure towards quarterly meetings and functioning of the committee is to be borne by M/s APPDCL (Proponent). The Committee has to submit the six monthly report on progress of the greenbelt to the Ministry's IRO, Vijayawada.
19. It is required to make efforts to export the unutilized ash in the domestic market as the Krishnapatnam port is located at 5 km from the power plant.
20. It is required to conduct study on effect of fly ash on surrounding agriculture fields shall be conducted by Acharya N.G. Ranga Agricultural University. Findings of the study along with report shall be submitted to the Ministry's IRO, Vijayawada.

CRZ No: 11-12/2008-IA.III dated 29.05.2008, 11-43/2012-IA-III dated 03.11.2013 and 11-20/2019-IA-III dated 07.01.2020

21. It is required take measures for continuous and comprehensive post-project marine quality monitoring programme and should include monitoring of water quality, sediment quality and biological characteristics covered in the EIA studies. It requires immediate action.
22. It is required to provide the copy of latest Disaster Management Plan of the project.
23. It required to maintain a separate account for the funds earmarked for environment protection measures and there should be no diversion of these funds for any other purpose. A year-wise expenditure on environmental safeguards should be reported to this Ministry's IRO, Vijayawada along with six monthly compliance report on regular basis.

CRZ No: 11-20/2019-IA-III dated 07.01.2020

24. It is required to install web camera with night vision capability and flow meters in the channel/ drain carrying sea water/ effluent within the premises for continuous online monitoring of intake and outfall pipeline.
25. It is required strictly follow all conditions / recommendations stipulated by the Andhra Pradesh Coastal Zone Management Authority (APCZMA) vide their letter no. 130/APCZMA/CRZ/IND/2018-89 dated 03.04.2019.

11. Recommendations:

This project can be put up in the following tick-marked category of

107

compliance status.

- Compliance status could not be judged as the project was shut down / not in operational during the site visit.
 - No non-compliances detected. No any further action is required.
 - Minor non-compliances detected (not of immediate danger to health & safety of the people). Letter issued to project authorities for taking corrective measures.
- ✓ ***Serious non-compliances detected. Recommended to issue a Show-Cause Notice to Project Authorities.***

Sd/-

(डॉ। सुरेश बाबु पसुपुलेटी)

(Dr. Suresh Babu Pasupuleti)

संयुक्त निदेशक (एस) / वैज्ञानिक 'डी'

Joint Director (S) / Scientist 'D'

Copy to: Project File

Digitally Signed by Suresh

Babu Pasupuleti

Date: 22-03-2022 14:41:08

Reason: Approved

Compliance status of the conditions stipulated in Schedule –B of Consent Order No: APPCB/VJA/NLR/159/HO/CFO/2017 Date:18.02.2017 issued to M/s. Sri Damodaram Sanjeevaiah Thermal Power Station, Nelatur & Pynampuram Villages, Muthukur Mandal, SPSR Nellore District

Sl.No	Condition	Compliance																																																																																	
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7	<p>The industry shall comply with ambient air quality standards of PM10 (Particulate Matter size less than 10µm) - 100 µg/ m³; PM2.5 (Particulate Matter size less than 2.5 µm) - 60 µg/m³; SO₂ - 80 µg/ m³; NO_x - 80 µg/m³, outside the factory premises at the periphery of the industry.</p> <p>Standards for other parameters as mentioned in the National Ambient Air Quality Standards CPCB Notification No.B-29016/20/90/PCI-I, dated 18.11.2009.</p> <p>Noise Levels: Day time (6 AM to 10 PM) - 75 dB (A) Night time (10 PM to 6 AM) - 70 dB (A)</p>	<p>Not complied.</p> <p>During inspection, Ambient Air Quality monitoring was conducted at MPP primary school, Pinampuram (V), Muthukur (M) and PM-10 value recorded as 168.5 µg/m³ against the standard of 100 µg/m³</p>														
8	<p>The industry shall comply with emission limits for DG sets of capacity upto 800 KW as per the Notification</p>															

	G.S.R.520(E), dated 01.07.2003 under the Environment (Protection) Amendment Rules,2003 and G.S.R.448(E), dated12.07.2004 under the Environment (Protection) Second Amendment Rules, 2004. In case of DG sets of capacity more than 800KW shall comply with emission limits as per the Notification G.S.R.489 (E), dated.09.07.2002 at serial no.96, under the Environment (Protection) Act, 1986.	Complied.																				
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9	The industry shall maintain flow meters preferably Electro Magnetic flow meters with totalisers for water and effluent quantity measurements for different streams of effluents and different categories of water usage stipulated in this order.	Complied.																				
10	The industry shall maintain the following records and the same shall be made available to the inspecting officers of the Board: <ul style="list-style-type: none"> a. Daily production details (ER-1Central Excise Returns). b. Quantity of Effluents generated, treated, recycled/reused and disposed to sea. c. Log Books for pollution control systems. d. Characteristics of ambient air, effluents and emissions. e. Hazardous/non hazardous solid waste generated and disposed. f. Inspection book. g. Manifest copies of hazardous waste. 	Complied.																				
11	The industry shall dispose solid waste (NONHAZARDOUS) as follows <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: center;">S. No</th> <th style="text-align: center;">Name of the Solid Waste</th> <th style="text-align: center;">Quantity</th> <th style="text-align: center;">Disposal</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">1.</td> <td>Fly Ash</td> <td style="text-align: center;">3886.0TPD</td> <td>Disposed to cement/ brick units, excess o Ash pond.</td> </tr> <tr> <td style="text-align: center;">2.</td> <td>Bottom Ash</td> <td style="text-align: center;">972.0TPD</td> <td>Disposed to ash pond</td> </tr> <tr> <td style="text-align: center;">3.</td> <td>Copper scrap</td> <td style="text-align: center;">1.0MT</td> <td>Disposed to authorized recyclers.</td> </tr> <tr> <td style="text-align: center;">4.</td> <td>Copper cables scrap</td> <td style="text-align: center;">0.20MT</td> <td>Disposed to authorized recyclers.</td> </tr> </tbody> </table>	S. No	Name of the Solid Waste	Quantity	Disposal	1.	Fly Ash	3886.0TPD	Disposed to cement/ brick units, excess o Ash pond.	2.	Bottom Ash	972.0TPD	Disposed to ash pond	3.	Copper scrap	1.0MT	Disposed to authorized recyclers.	4.	Copper cables scrap	0.20MT	Disposed to authorized recyclers.	Complied.
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3.	Copper scrap	1.0MT	Disposed to authorized recyclers.																			
4.	Copper cables scrap	0.20MT	Disposed to authorized recyclers.																			
12	The industry shall operate the STP and report the compliance to RO: Nellore regularly.	Complied.																				

13	A detailed action plan for disposal of bottom ash shall be submitted within one month indicating quantities and disposal areas.	Not complied. The unit is accumulating the bottom ash in the ash pond
14	The industry shall comply with Fly Ash Notification dated 03.11.2009 and its amendments thereof, issued by MoEF, GOI and submit monthly reports to the RO: Nellore.	Not complied. The unit is accumulating the bottom ash in the ash pond
15	The industry shall operate and maintain continuous online stack monitoring systems & 4 CAAQM stations and report the compliance to the Board.	Not complied. The unit has provided 4 nos. of CAAQM stations to monitor the live data of the ambient air. But the most of the sensors of the CAAQM stations are not functioning and the remaining also showing erratic values.
16	The industry shall not use any fuels other than those permitted in this order without prior consent from the Board. They shall maintain log registers on type of fuels & daily consumption etc., and shall furnish consolidated records to RO: Nellore for every three months.	Complied. The unit is using Coal as fuel in the boilers.
17	The industry shall provide & maintain interlocking facility between APC equipment (ESP) and fuel feeding system, so as that the feeding of the fuel will be stopped automatically in case of the ESP fails/trapping's are occurred.	Complied.
18	The industry shall operate sufficient water sprinklers at coal handling areas.	Complied.
19	Provisions shall be maintained for installation of flue gas Desulphurization of requisite efficiency for removal of SO ₂ .	Complied.
20	Dry collection and disposal system shall be provided for disposal of fly ash. 100% of fly ash shall be utilized from day one.	Not Complied. The unit not yet achieved 100 % disposal of fly ash
21	The industry shall store the fly ash in silos only and dispose the same from time to time without storing it openly. The industry shall under take loading the fly ash	Complied.

	directly into the trucks from ash silo.	
22	The industry shall ensure that regular mock drills shall be carried out for checking on-site emergency plan prepared and also to ensure changes/ improvements required in the plant	Complied.
23	A three tier thick green belt on either side of the colony as stipulated in the EC order dated 03.05.2012 and 50m width green belt all along the periphery of ash pond shall be developed to prevent fugitive emissions. Green belt of 50 to 100m around the plant boundary and 100m on eastern side shall be developed. A detailed action plan shall be submitted within 10 days to the RO: Nellore with specific time frames and extent/location of green belt development.	Not complied.
24	Action plan for development of green belt in an area of 270 acres shall be submitted within one month, so as to comply with condition stipulated in EC order dated 17.07.2007 (A green belt of 100m. width shall be developed all around the plant boundary and ash dyke covering an area of at least 420 acres).	Complied.
25	The industry shall provide Rain Water Harvesting (RWH) structures within the plant site.	Complied.
26	The industry shall comply with all the conditions stipulated in EC orders dated 17.07.2007 & 03.05.2012 and CRZ clearance order dated 03.09.2013.	Not complied.
27	The industry shall comply with all the conditions stipulated in the CFE orders dated 01.10.2007 and 19.12.2012.	Not complied.
28	This order is issued subject to any other order or further orders to be passed by the Board and Hon'ble High Court of A.P, Hyderabad in the writ petitions pending before the Hon'ble High court.	---
29	The conditions stipulated are without prejudice to the rights and contentions of this Board in any Hon'ble Court of Law.	---
30	The industry shall improve the house keeping at coal stack yard area	Not complied.
31	The industry shall obtain amendments of EC in respect of water consumption, waste water generation, as stipulated in	Complied.

	CFE order dated 20.10.2014.	
32	The industry shall regularly calibrate the online monitoring system.	Not complied.
33	The industry shall provide water sprinkling system to control fugitive dust emissions in the ash pond area and to wet the ash in the ash pond.	Not complied.
34	The Industry shall also comply with water consumption limits and time lines notified by the MoEF&CC, GOI in the G.S.R. 3305(E), dated 07.12.2015 as applicable.	Not applicable. As the MoEF&CC, GoI vide notification dated. 28.06.2018 issued amendment.
35	The Industry shall also comply with standards notified by the MoEF&CC, GOI in the G.S.R.3305 (E), dated 07.12.2015 and G.S.R. 682 (E), dated 07.03.2016as applicable.	Complied for Particulate matter. For remaining parameters the MoEF&CC, GoI vide Notification dated 31.03.2021 extended the compliance date upto 31.12.2024.
36	The industry shall install online monitoring systems and connect monitoring system to APPCB /CPCB websites as per CPCB directions dated 05.02.2014 & 02.03.2015 and guidelines issued regarding online monitoring systems from time to time.	Not complied. The unit has provided 4 nos. of CAAQM stations to monitor the live data of the ambient air. But the most of the sensors of the CAAQM stations are not functioning and the remaining also showing erratic values. The Continuous Emission Monitoring System (CEMS) provided by the industry are not functioning. The CEMS provided to the unit-1 is not functioning properly and need to be calibrated. The CEMS provided to

		the unit 2 is not yet all working and need to be replaced. The industry representative informed that they have placed purchase order for a new system
37	The industry shall submit a copy of policy of Public Liability Insurance (PLI) duly indicating the amount contributed towards Environmental Relief Fund (ERF) to the RO once in six months.	Complied.
38	The industry shall comply with the Task Force directions issued from time to time.	Not complied.
39	The industry shall comply with standards and directions issued by CPCB / MoEF& CC as and when notifications are issued.	Partially complied.
40	The industry shall submit action plan for use of ordinary water (non-saline) for ash handling within two months to the RO: Nellore.	Complied.
41	The industry shall submit compliance report on the conditions mentioned in the consent order every six months i.e., on 1 st of January and July of every year to the Regional Office/ Zonal Office.	Complied.

Committee Inspection report of M/s Sembcorp Energy India Limited (Project-1) [Formerly Thermal Powertech Corporation India Limited-TPCIL]

A: General Information

1	Name of the Industry & Address	M/s Sembcorp Energy India Limited (Project-1) [Formerly Thermal Powertech Corporation India Limited-TPCIL] Painampuram & Nelaturu Villages, Muthukur Mandal, SPSR Nellore District		
2	Name of Contact person	Sri Pavan Kumar Rao, Head- HSE		
3	Sector of industry	Coal based Thermal Power Plant		
4	Year of commissioning and expansion	Commissioned in Unit#1 (660 MW): 2 nd March 2015 Unit#2 (660 MW): 15 th September 2015		
5	Category of Industry	Large Scale Red Category		
6	Installed Capacity, MWA (Annual and Daily)			
	Sl. No	Product	Installed Capacity (MW/hr)	Present production capacity (MW/hr)
	1	Electricity Generated (MW)	1320 (2x660)	1320 (2x660)
7	Electricity Generated & raw material requirement			
	Year	Electricity Generated (MW)	Raw material requirement	
			Coal / Coke(Kg)	Oil (KL)/Gas
			Water (KL)	
	2021-22 (Apr-Nov)	6354529	3770521	445
	2020-21	8992828	5262925	1534
	2019-20	10302980	5865472	485
	2018-19	8369147	4897379	1561
	Average consumption / MW	0.583	0.00011	6.46 KL/MW
8	Brief Description about the production process with flow diagram: ---			

9. Status of Permissions/clearances obtained by the unit	
04.11.2009 EC Order No. J 13012/ 02/2009-1A.II(T)	Ministry of Environment & forests, GOI has issued Environmental Clearance to the Thermal Power plant o 1980 MW (Stage 1 - 2 x 660 MW & Stage 2 (1 x 660 MW))
05.12.2011 order No.F.No.11- 129/2010-IA.III	MoEF&CC issued CRZ clearance for pump house, out fall tank sea water intake and out fall pipelines, Coal conveyors ,Bridges over Buckingham canal, Power evacuation corridor, Diversion of Nelaturupalem road
15.05.2010 CFE Order No.177/PCB/CFE/RO- NLR/HO/2009-433	APPCB issued CFE for establishing 1980 MW Plant (Stage 1 - 2 x 660 MW & Stage 2 (1 x 660 MW))
02.03.2015 J-13012/2/2009-IA.I(T)	MOE&F, GOI, New Delhi extended the validity of the EC upto 03.11.2015.
17.06.2015 177/APPCB/ CFE/RO- NLR/HO/2009-1772	APPCB extended the validity of the CFE upto 03.11.2015.
21.11.2016 CFO Order No. APPCB/ VJA/ NLR/ 930/HO/CFO/2016	APPCB issued CFO for Power generation capacity – 1320 MW (2 x 660 MW)
23.03.2018	APPCB issued CFO amendment for name change from M/s.TPCILto M/s. Sembcorp Energy India Limited

B. Water Pollution and its control

1	Sources of water and Permitted quantity: Bay of Bengal	
2	Water Consumption & Wastewater Generation:	
	I	Source of water supply (River / Bore wells / Public supply) : Sea(Bay of Bengal)
	S.N	Purpose
	1.	For cooling tower make up (saline water)
		Quantity in (M³/day)
		1,98,256.0
	2.	Non-cooling water - RO First pass
		i) Ash handling sealing
		2240.0
		ii) Coal handling plant dust suppression
		4768.0

	iii) High Vacuum AC make up	1660.0
	iv) Misc. services (for fire fighting etc.)	512.0
	v) RO Reject	22224.0
	vi) Clarifier blow down	1056.0
	RO Second pass	
	i. DM Plant	2080.0
	ii. Domestic (Plant)	32.0
	Total	2,32,846.0
11. Waste Water Generation		
S.N	Effluents	Quantity in (M³/day)
1.	Cooling Water Blow down	116000.0
2.	Ash pond outlet	6666.0 (most of the water is recycled is using for ash slurry preparation.)
3.	Clarifier blow down	1116.0
4.	First pass RO reject	22224.0
5.	DM Plant regeneration	112.0
6.	Boiler blow down	80.0
7.	Domestic (Plant)	40.0
8.	Misc. Service water (floor wash)	80.0
	Total	1,46,358.0

5	Status of Operation of the ETP	:																							
	➤ Operational Status	:	In Operation																						
	➤ Installed Capacity	:	1732 KLD																						
	➤ Actual Operation	:	30 KLD																						
	➤ Treatment Technology	:	Clarifier, coagulated plate interceptor, separator.																						
	➤ Mode of Disposal (effluent)	:	Treated water is used for green belt and dust suppression																						
	➤ Status of flow meters installed	:	Working																						
6	Effluent Monitoring																								
	➤ Status of installation of online at ETP	:	Installed and in working																						
	➤ Flow meter installation / connectivity	:	Installed and in operation																						
	➤ Discharge parameters monitored by online	:	pH, TSS & Temperature																						
As per online protocol, the parameters to be monitored by the TPP and the status are:																									
<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 5%;">S. No.</th> <th style="width: 25%;">Parameters</th> <th style="width: 20%;">APPCB Standards</th> <th style="width: 15%;">Online Limit fixed in CPCB</th> <th style="width: 15%;">Compliance Status</th> <th style="width: 20%;">Number of SMS Received</th> </tr> </thead> <tbody> <tr> <td>1.</td> <td>pH</td> <td>5.5-9</td> <td>6.5-8.5</td> <td rowspan="3" style="text-align: center;">Complied</td> <td style="text-align: center;">-</td> </tr> <tr> <td>2.</td> <td>TSS, mg/L</td> <td>0-100</td> <td>100</td> <td style="text-align: center;">-</td> </tr> <tr> <td>3.</td> <td>Temperature</td> <td style="text-align: center;">-</td> <td style="text-align: center;">-</td> <td style="text-align: center;">-</td> </tr> </tbody> </table>				S. No.	Parameters	APPCB Standards	Online Limit fixed in CPCB	Compliance Status	Number of SMS Received	1.	pH	5.5-9	6.5-8.5	Complied	-	2.	TSS, mg/L	0-100	100	-	3.	Temperature	-	-	-
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3.	Temperature	-	-		-																				
7	Calibration protocol adopted: As per OEM manual, calibrations are being done																								
8	Issues related to data connectivity:																								
9	Online data corresponding to last one month/ day of inspection: October 2021 EQMS (ETP Outlet) data Provided																								

Sl No.	Time	ETP_OUTLET-pH_U	ETP_OUTLET-TSS_U	ETP_OUTLET-Temperature_U
1	2021-09-21	8	9.97	31.42
2	2021-09-22	7.7	16.69	29.94
3	2021-09-23	7.42	20.6	30.95
4	2021-09-24	7.4	26	31.4
5	2021-09-25	7.4	26	31.4
6	2021-09-26	7.4	26	31.4
7	2021-09-27	7.44	20.29	31.31
8	2021-09-28	7.66	10.82	31.2
9	2021-09-29	8.01	10.98	31.01
10	2021-09-30	8.31	17.12	30.33
11	2021-10-01	8.08	25.02	31.4

12	2021-10-02	7.8	16.37	31.46
13	2021-10-03	8.17	11.62	31.45
14	2021-10-04	8.1	15.36	32.14
15	2021-10-05	8.05	19.28	29.72
16	2021-10-06	7.94	20.93	30.62
17	2021-10-07	7.84	11.78	29.65
18	2021-10-08	7.59	38.19	30.4
19	2021-10-09	7.66	32.61	30.45
20	2021-10-10	7.83	14.2	29.9
21	2021-10-11	7.85	11.79	29.59
22	2021-10-12	8.16	9.3	29.98
23	2021-10-13	7.98	7.61	29.74
24	2021-10-14	7.74	6.05	31.36
25	2021-10-15	7.93	8.25	30.65
26	2021-10-16	8.12	9.42	30.15
27	2021-10-17	7.95	8.57	29.7
28	2021-10-18	7.91	9.23	29.25
29	2021-10-19	7.94	13.18	30.09
30	2021-10-20	7.78	13.22	30.34
31	2021-10-21	7.88	11.56	31.5
32	2021-10-22	7.75	11.29	31.54
33	Prescribed Standards	5.5 - 9	0 - 100	0 -
34	Maximum Value	8.31	38.19	32.14
35	Maximum Value At Time	2021-09-30	2021-10-08	2021-10-04
36	Minimum Value	7.4	6.05	29.25
37	Minimum Value At Time	2021-09-24	2021-10-14	2021-10-18
38	Geometric Mean	7.84	15.92	30.67
39	Median	7.86	13.2	30.64
40	Standard Deviation	0.25	7.72	0.77
41	Valid Data Points	32	32	32
42	Total Data Points	32	32	32
43	Data Availability %	100	100	100

C. Source Emission (Air Pollution) & its Control

Type of fuel used and quantity (TPA and tons/KWH)

<i>Sl.</i>	<i>Type of Fuel</i>	<i>Fuel Consumption</i>		
		<i>2021-22</i>	<i>2020-21</i>	<i>2019-20</i>
1	Coal	3770521	5262925	5865472
2	LSHS OIL	241	788	296
3	Diesel	200	746	189

Composition of coal and calorific value

<i>Year</i>	<i>Coal Consumption</i>	<i>Grade of coal</i>	<i>% Ash</i>	<i>% Sulphur</i>	<i>Calorific Value</i>
2021-22	3770521	Dom & IMP	3~38%	0.2~0.6%	3200~5200
2020-21	5262925	Dom & IMP	3~38%	0.2~0.6%	3200~5200

Details of stacks with APCDs (latitude and longitude of stacks)

S. No	Stack Attached To	Stack		Parameters Monitored	SPCB Standard mg /Nm3	Online limit fixed mg/Nm3	Number of SMS Received
		Ht (m)	Dia. (m)				
1.	Boiler – 1 2016 TPH supercritical coal fired boiler	275	6.5	1.PM - 2. SO2 – 3.NOX-	1.PM- 50 2. SO2- 3.NOx-450	PM-50 NOx-450	-
2	Boiler – 2 2016 TPH supercritical coal fired boiler	275	6.5	1.PM - 2. SO2 – 3.NOX-	1.PM- 50 2. SO2- 3.NOx-450	PM-50 NOx-450	--

3. Calibration protocol adopted: Calibration is being done quarterly by third party.

4. Issues related to data connectivity:

5. Online data corresponding to last one month/ day of inspection

Sl No.	Time	Stack_1-PM_U	Stack_1-SO2_U	Stack_1-NOx_U	Stack_2-PM_U	Stack_2-SO2_U	Stack_2-NOx_U
1	2021-09-21	36.89	1102.14	336.13	39.58	1387.89	387.51
2	2021-09-22	36.54	907.37	292.89	38.76	1447.05	388.42
3	2021-09-23	36.9	1072.59	330.66	38.57	1382.7	386.77
4	2021-09-24	37.71	1240.98	357.55	40.06	1373.11	393.1
5	2021-09-	37.55	1217.55	331.27	37.94	1385.45	391.29

123

	25						
6	2021-09-26	37.15	1139.22	336.9	38.25	1319.13	399.92
7	2021-09-27	37.96	1013.87	328.03	37.93	1227.72	399.29
8	2021-09-28	45.19	13.35	11.33	39.24	1359.89	420.86
9	2021-09-29	37.33	0	0	38.86	1376.22	453.48
10	2021-09-30	37.05	0	0	38.79	1384.7	431.05
11	2021-10-01	42.15	334.87	131.58	38.76	1398.64	390.33
12	2021-10-02	37.96	899.75	289.26	38.51	1375.99	414.57
13	2021-10-03	38.76	1027.66	304.8	37.77	1313.62	379.94
14	2021-10-04	39.06	1170.3	272.3	38.12	1253.19	360.39
15	2021-10-05	40.4	1234.8	357.2	38.86	1302.13	417.86
16	2021-10-06	40.18	1254.57	328.21	39.06	1344.23	381.45
17	2021-10-07	39.04	1280.7	367.12	39.27	1347.54	407.34
18	2021-10-08	39.18	1251.45	375.63	38.97	1290.08	417.46
19	2021-10-09	38.48	1234.32	332.86	39.39	1324.39	387.96
20	2021-10-10	38.2	1210.9	325.44	38.85	1332.96	379.58
21	2021-10-11	38.43	1214.48	330.2	37.73	1287.38	345.38
22	2021-10-12	38.58	1222.32	337	38.11	1288.66	362.26
23	2021-10-13	38.56	1214.53	324	36.53	1258.6	375.67
24	2021-10-14	38.71	1199.11	335.48	37.77	1292.79	400.76
25	2021-10-15	38.33	1164.36	353.56	36.42	1257.96	380.36
26	2021-10-16	38.2	1156.4	370.69	36.35	1257.61	382.05
27	2021-10-17	38.19	1182.25	350.61	35.59	1263.99	411.31
28	2021-10-18	38.2	1114.98	351.68	35.74	1264.51	405.16
29	2021-10-19	38.66	1238.38	344.88	41.4	398.98	157.94

30	2021-10-20	38.36	1296.85	373.32	35.87	0	1.89
31	2021-10-21	37.81	913.03	273.19	26.45	0	0
32	2021-10-22	40.06	932.35	278.75	7.37	0	0
33	Prescribed Standards	0 - 50	0 -	0 -	0 - 50	0 -	0 -
34	Maximum Value	45.19	1296.85	375.63	41.4	1447.05	453.48
35	Maximum Value At Time	2021-09-28	2021-10-20	2021-10-08	2021-10-19	2021-09-22	2021-09-29
36	Minimum Value	36.54	0	0	7.37	0	0
37	Minimum Value At Time	2021-09-22	2021-09-29	2021-09-29	2021-10-22	2021-10-20	2021-10-21
38	Geometric Mean	38.62	1014.23	294.77	36.9	1171.78	350.35
39	Median	38.34	1167.33	330.96	38.38	1307.88	388.19
40	Standard Deviation	1.66	376.57	105.07	5.92	419.63	123.5
41	Valid Data Points	32	32	32	32	32	32
42	Total Data Points	32	32	32	32	32	32
43	Data Availability %	100	100	100	100	100	100

6. Exceedance/alerts and response of the Ind:---

7. Online data corresponding to the period of inspection

PM- 41.53 mg/Nm³ ., SO₂- 944.66mg/Nm³ and NO_x- 271.95mg/Nm³

D: Ambient Air Quality monitoring

1. Pollution Control Measures adopted for fugitive emission control and status

The unit provided a closed pipe conveyor from the port to the industry for transportation of coal and provided bag filters at the junction points. The industry installed bag filters at the coal crushing plant and controlling the emissions. The unit has provided mechanical dust suppression system at the coal stock yards. The industry partially provided water sprinklers in the ash pond to control dust emission from ash pond. The industry is maintaining water level in the ashpond over 70% of the total area & provided water sprinklers over 20% of the area. About 10% of the ash-pond area is in dry condition.

2. Ambient Air Quality Status:

The unit has provided 4 nos of CAAQM stations and all are found in operation during committee visit. The unit is transmitting the data to the APPCB server. The data for a period of One month is given below:

SI No.	Date	Village_AAQMS-PM10_U	Village_AAQMS-PM2.5_U	Village_AAQMS-SO2_U	Village_AAQMS-NOx_U
1	2021-09-21	17.68	9.02	2.4	13.59
2	2021-09-22	17.47	6.47	2.5	8.31
3	2021-09-23	15.67	7.65	2.53	5.15
4	2021-09-24	16.18	7.22	2.41	3.79
5	2021-09-25	21.27	10.05	2.61	4.57
6	2021-09-26	13.39	7.12	2.53	4.08
7	2021-09-27	18.32	6.81	2.43	4.54
8	2021-09-28	16.85	6.72	2.64	5.64
9	2021-09-29	13.37	5.52	2.35	3.96
10	2021-09-30	20.88	9.42	2.47	2.5
11	2021-10-01	14.63	5.64	3.26	2.83
12	2021-10-02	9.07	2.65	2.55	5.55
13	2021-10-03	7.53	2.26	2.06	6.19
14	2021-10-04	8.93	3.89	6.66	6.9
15	2021-10-05	10.67	3.41	10.36	9.25
16	2021-10-06	6.1	2.56	10.06	11.6
17	2021-10-07	25.01	13.55	10.63	11.5
18	2021-10-08	19.22	9.24	10.59	10.88
19	2021-10-09	35.41	7.3	10.23	9.27
20	2021-10-10	55.42	5.35	10.81	7.7
21	2021-10-11	43.46	16.03	11.94	12.02
22	2021-10-12	42.01	14.57	11.02	15.54
23	2021-10-13	64.04	16.1	11.29	14.96
24	2021-10-14	41.69	14.88	16.7	15.8
25	2021-10-15	40.72	18.1	11.74	15.98
26	2021-10-16	28.28	11.83	11.26	16.42
27	2021-10-17	18.14	7.1	11.09	18.64
28	2021-10-18	36.73	15.28	10.45	15.87
29	2021-10-19	37.87	15.4	9.94	15.35
30	2021-10-20	31.37	14.81	9.66	17.47
31	2021-10-21	44.29	17.38	9.58	15.41
32	2021-10-22	30.92	15.43	9.86	13.2
33	Prescribed Standards	0 - 100	0 - 60	0 - 80	0 - 80
34	Maximum Value	64.04	18.1	16.7	18.64
35	Maximum Value At Time	2021-10-13	2021-10-15	2021-10-14	2021-10-17
36	Minimum Value	6.1	2.26	2.06	2.5

126

37	Minimum Value At Time	2021-10-06	2021-10-03	2021-10-03	2021-09-30
38	Geometric Mean	25.71	9.65	7.39	10.14
39	Median	20.05	8.34	9.76	10.07
40	Standard Deviation	14.72	4.9	4.33	5.06
41	Valid Data Points	32	32	32	32
42	Total Data Points	32	32	32	32
43	Data Availability %	100	100	100	100

SI No.	Time	Field_Hostel- PM10_U	Field_Hostel- PM2.5_U	Field_Hostel- SO2_U	Field_Hostel- NOx_U
1	2021-09-21	13.27	11.78	14.39	20.5
2	2021-09-22	11.39	4.61	9.57	12.14
3	2021-09-23	14.13	9.86	5.51	6.06
4	2021-09-24	11.88	3.14	5.42	6.98
5	2021-09-25	17	2.14	5.14	10.7
6	2021-09-26	13.55	0.11	5.63	12.42
7	2021-09-27	14.07	8.3	5.94	12.33
8	2021-09-28	14.26	8.04	4.96	15.76
9	2021-09-29	9.28	6.05	3.09	11.79
10	2021-09-30	15.85	9.89	3.14	12.08
11	2021-10-01	8.23	6.19	3.48	8.27
12	2021-10-02	8.06	5.74	5.87	5.79
13	2021-10-03	14.44	6.75	6.84	9.17
14	2021-10-04	9.07	5.5	6.6	13.06
15	2021-10-05	9.86	6.2	6.69	19.04
16	2021-10-06	13.89	3.01	6.94	51.42
17	2021-10-07	17.02	13.01	8.68	52.45
18	2021-10-08	18.16	9.08	7.18	11.55
19	2021-10-09	11.88	7.38	7.3	13.94
20	2021-10-10	4.92	7.47	7.08	15.42
21	2021-10-11	12.82	23.21	7.98	10.21
22	2021-10-12	13.58	23.31	7.48	10.72
23	2021-10-13	13.7	23.52	7.79	8.97
24	2021-10-14	14.87	24.43	7.66	11.58
25	2021-10-15	16.57	27.9	7.31	9.93
26	2021-10-16	11.58	19.09	7.37	3.27
27	2021-10-17	7.39	12.06	7.13	0.52
28	2021-10-18	14.47	22.69	7.21	0.52
29	2021-10-19	14.6	23.48	7.03	0.52
30	2021-10-20	15.59	12.03	7.41	4.43
31	2021-10-21	21.26	25.01	7.76	7.64
32	2021-10-22	24.73	21.97	7.84	8.39
33	Prescribed	0 - 100	0 - 60	0 - 80	0 - 80

	Standards				
34	Maximum Value	24.73	27.9	14.39	52.45
35	Maximum Value At Time	2021-10-22	2021-10-15	2021-09-21	2021-10-07
36	Minimum Value	4.92	0.11	3.09	0.52
37	Minimum Value At Time	2021-10-10	2021-09-26	2021-09-29	2021-10-17
38	Geometric Mean	13.48	12.28	6.86	12.42
39	Median	13.8	9.47	7.1	10.71
40	Standard Deviation	3.98	8.25	2.02	11.42
41	Valid Data Points	32	32	32	32
42	Total Data Points	32	32	32	32
43	Data Availability %	100	100	100	100

SI No.	Time	Main_Gate- PM10_U	Main_Gate- PM2.5_U	Main_Gate- SO2_U	Main_Gate- NOx_U
1	2021-09-21	23.87	9.56	4.43	6.48
2	2021-09-22	15.85	6.55	4.31	7.77
3	2021-09-23	19.42	7.96	4.15	7.65
4	2021-09-24	17.29	6.83	3.78	7.55
5	2021-09-25	25.61	11.47	4.06	8.58
6	2021-09-26	15.32	7.55	3.7	11.09
7	2021-09-27	18.87	7.13	3.67	10.27
8	2021-09-28	23.95	7.82	3.6	10.06
9	2021-09-29	13.81	7.15	3.14	10.88
10	2021-09-30	24.02	10.73	3.29	10.74
11	2021-10-01	21.52	5.97	3.07	10.12
12	2021-10-02	16.3	2.87	3.28	9.31
13	2021-10-03	17.77	6.55	3.66	8.51
14	2021-10-04	23.2	3.93	3.66	11.91
15	2021-10-05	19.39	3.66	4.12	1.53
16	2021-10-06	18.86	4	3.91	1.24
17	2021-10-07	43.92	19.69	4.13	8.9
18	2021-10-08	40.42	15.01	4.36	14.21
19	2021-10-09	21.72	7.92	4.38	12.95
20	2021-10-10	27.68	11.05	4.53	12.98
21	2021-10-11	52.15	28.72	5.16	12.89
22	2021-10-12	55.71	28.95	5.29	12.32
23	2021-10-13	51.53	29.66	5.22	12.38
24	2021-10-14	59.34	31.02	5.27	12.7
25	2021-10-15	57.03	35.55	5.35	13.18
26	2021-10-16	42.16	24.96	5.2	13.15
27	2021-10-17	25.74	14.81	5.07	13.42
28	2021-10-18	46.88	27.13	5.11	13.19

29	2021-10-19	58.88	29.96	5.62	13.05
30	2021-10-20	60.34	28.81	5.48	12.83
31	2021-10-21	64.88	32.5	5.52	11.71
32	2021-10-22	35.87	24.59	5.73	12.05
33	Prescribed Standards	0 - 100	0 - 60	0 - 80	0 - 80
34	Maximum Value	64.88	35.55	5.73	14.21
35	Maximum Value At Time	2021-10-21	2021-10-15	2021-10-22	2021-10-08
36	Minimum Value	13.81	2.87	3.07	1.24
37	Minimum Value At Time	2021-09-29	2021-10-02	2021-10-01	2021-10-06
38	Geometric Mean	33.1	15.63	4.41	10.49
39	Median	24.82	10.89	4.34	11.4
40	Standard Deviation	16.68	10.72	0.81	3.16
41	Valid Data Points	32	32	32	32
42	Total Data Points	32	32	32	32
43	Data Availability %	100	100	100	100

E: Hazardous waste management

Details of hazardous waste disposal 2020-21

HW Generated	Authorised Quantity	Quantity Generated	HW storage & Disposal facility
Used Oil	50 KL/ annum	45.48 T	Disposed to authorised agencies.
Used ion exchange residue	20 T/Annum	7.5 T	Disposed to authorised agencies.
Batteries	200 nos/annum	154nos	Disposed to authorised agencies.

F: Solid Waste Management

1 Management of Solid/ hazardous Wastes:

a) Fly Ash Disposal:

Since 2015, the unit generated 63,41,834 Tons of fly ash, but able to utilise only 41,56,751 Tons of fly ash. The unit disposed 21,85,083 Tons of fly ash to the ash pond.

b) Bottom ash generation/disposal practiced:

Since 2015, the unit generated 10,38,447 Tons of bottom ash but utilised only 3,91,097 Tons of bottom ash. The unit disposed 6,47,350 Tons of bottom ash into the ash pond.

c) Measures taken for ash handling /collection/disposal:

The unit has provided 3 nos. of silos of each 2000Ton capacity for flyash. Bottom ash and un-utilised flyash is being disposed to the ashpond in slurry form. The unit is using salt water for ash slurry purpose. The industry partially provided water sprinklers in the ash pond to control dust emission from ash pond. The industry is maintaining water level in the ashpond over 70% of the total area & provided water sprinklers over 20% of the area. About 10% of the ash-pond area is in dry condition.

d) Details of Silos-Number &capacity:

3 no's of silos each silo capacity of 2000Tonnes capacity.

Ash Utilisation / Disposal April 2021- June 2021

Sr No	Utilisation for	Quantity(MT)	Observations/Remarks
1	Ash Dyke Raising	58,899	The unit generated 8,99,593 Tons of flyash during 2021-22 (upto October), but able to utilise only 8,62,071 T only. The unit disposed 37,522 T of fly ash into the ash pond during the above period.
2	Cement Industries	2,94,182	
3.	Land filling	5914	
4	Brick manufacturing	35624	
5	Ready mix concrete	7453	
6	Exports	22,025	

Heavy Metal Analysis in fly ash:

Ash samples were collected from the ash silos, ash slurry pump house and ash pond. The analysis results are summarised below:

Parameter	Units	Unit -1 ESP Hopper	Unit -2 ESP Hopper	Ash Silo	Unit-1 Bottom ash hopper	Unit-2 Bottom ash hopper	Common Bottom ash tank
Sulphur	%	0.028	0.010	0.006	0.003	0.001	0.008
Cr	mg/l	12.41	8.8245	11.7225	2.377	0.962	0.763
Mn	mg/l	119.448	65.562	102.783	28.668	25.009	21.0815
Fe	mg/l	6088.983	4212.038	5571.67	2336.084	2408.825	1805.8295
Ni	mg/l	8.153	4.885	7.326	2.387	2.292	1.9075
Cu	mg/l	6.8725	5.8365	6.9485	2.329	3.197	2.621
Zn	mg/l	7.8765	6.5265	7.8255	4.225	9.9265	2.8595
As	mg/l	5.4455	4.8635	5.8325	0.364	0.4795	0.252
Cd	mg/l	0.0225	0.0205	0.0235	0.007	0.008	0.004
Hg	mg/l	0.018	0.018	0.01	0.1555	0.0385	0.025
Pb	mg/l	1.7835	1.2915	1.447	0.8005	0.586	0.32

❖ Details of Ash Dykes:

Initially, the unit developed ashpond of 19.6 lakh m³ in Dyke-A and 24 lakh m³ in Dyke-B. So for the unit disposed 28.32 Lakh m³ of ash into ash ponds. The unit added additional volume of 15 Lakh m³ during 2021-22. The analysis of the ash recovery clarifier water, Storm water drain near ash pond and Stagnated water towards East side of Ash pond are as below:

Parameter	Units	Ash recovery clarifier water	Pond located North side of Nursery	Storm water drain near Ash pond
pH		7.24	7.47	7.08
TSS	mg/l	24	60	20
TDS	mg/l	30960	3416	18540
COD	mg/l	36	204	40
BOD	mg/l	7.3	51	8
Oil & Grease	mg/l	6.2	5.6	4
Copper	mg/l	ND	ND	ND
Iron	mg/l	BDL	BDL	0.06

Parameter	Units	Stagnated water towards East side of Ash pond	Stagnated water towards East side near coal conveyor (outside)	Stagnated water near sea water intake (outside)
pH		7.03	7.03	7.13
TSS	mg/l	23	40	26
TDS	mg/l	25440	25430	20160
COD	mg/l	44	52	32
BOD	mg/l	9.2	10.2	6.8
Oil & Grease	mg/l	7.0	5.6	4.8
Copper	mg/l	ND	ND	ND
Iron	mg/l	BDL	BDL	BDL

G. Compliance under Water Act (monitoring part): During the month of October 2021.

S. No.	Parameters	APPCB Standards	ETP outlet
1.	pH	5.5-9.0	6.87
2.	TSS, mg/L	100	92
3.	TDS, mg/L at 180°C	---	758
4.	COD, mg/L	---	112
5.	BOD, mg/L 3 days, 27°C	100	31
6.	O & G, mg/L	10	8.2
7.	Copper mg/L	1.00	ND

S. No.	Parameters	APPCB Standards	ETP outlet
8	Iron mg/L	1.00	BDL

The unit has complied with the standards stipulated by the Board at outlet of ETP.

Compliance under Air Act:

- The Unit has 2nos of Super critical boiler of capacity 2016 TPH and stack height of 275 mts, the flue gas boiler is connected Electro Static Precipitator with 75 fields each. The unit has installed the online emission monitoring system to monitor PM, SO₂, NO_X parameters in the stack and the same being connected to APPCB server and CPCB server.

During inspection team monitored the stacks attached to boiler, the source emissions monitored during inspection are given below;

Parameters	Stack attached to 2016 TPH Super critical boiler (unit-1)	Prescribed standards of APPCB
Date of monitoring	22.10.2021	
Particulate Matter in mg/Nm ³	40.8 mg/Nm ³	50 mg/Nm ³
Mercury mg/Nm ³	0.001 mg/Nm ³	

The unit is meeting the emission standard with respect to Particulate matter. The unit required to install FGD system to meet the standards of SO₂, Hg by 31.12. 2024.



File No. IRO/VIJ/EPA/MISC/111-01/2021
 भारत सरकार / Government of India
 पर्यावरण, वन एवं जलवायु परिवर्तन मंत्रालय

Ministry of Environment, Forest and Climate Change
 एकीकृत क्षेत्रीय कार्यालय / Integrated Regional Office
 ग्रीन हाउस, गोपालारेड्डी रोड, विजयवाड़ा, आंध्र प्रदेश - 520010
 Green House, Gopalareddy Road,
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 अनुश्रवण आख्या / Monitoring Report

SN	Item	Details
1.	परियोजना का प्रकार Type of Project	Thermal Projects
2.	परियोजना का नाम Name of Project	3 X 660 MW (Stage-I: 2 X 660 MW; and Stage-II: 1 x 660 MW) Super Critical Coal Based Thermal Power Plant at village Painampuram, in Muthukur Mandal, in Nellore Distt., in Andhra Pradesh
3.	परियोजना प्राधिकरण का पता Address of project authorities	The Unit Head, Project - I, M/s Sembcorp Energy India Limited, Pyanampuram/Nelaturu Village, Mutukur Mandal, Nellore - 524344, Andhra Pradesh
4.	पर्यावरणीय स्वीकृति पत्र सं० एवं तिथि Env. Clearance Letter No. & Date	J-13011/02/2009-IA.II(T) dated 04.11.2009, 02.03.2015 (Extension of EC validity) and 09.10.2019 (Transfer of EC)
5.	क्षेत्रीय कार्यालयपत्र सं० Regional Office File No.	IRO/VIJ/EPA/MISC/111-01/2021
6.	स्थल दौरातिथि Date of Site Visit	22.10.2021
7.	परियोजना की स्थिति Status of Project	Operational

8. परियोजना की वर्तमान स्थिति / Present status of the Project:

The Hon'ble NGT in O.A. No. 105 of 2021 (SZ), vide Order dated 16.09.2021 constituted a Joint Committee and monitored the project on 22.10.2021. As per the discussions held with Project Authorities (PAs), it has been observed that the Ministry granted Environmental Clearances (ECs) and CRZ clearances to the project at various stages. The details of EC and CRZ clearances granted to the project are as follows:

S N	Project	Clearance No. and date
Environmental Clearance		
1	3 X 660 MW (Stage-I: 2 X 660 MW; and Stage-II: 1 x 660 MW) Super Critical Coal	J-13011/02/2009-IA.II(T) dated

I/7789/2022

133

	Based Thermal Power Plant at village Painampuram, in Muthukur Mandal, in Nellore Distt., in Andhra Pradesh	04.11.2009
2	3 X 660 MW (Stage-I: 2 X 660 MW; and Stage-II: 1 x 660 MW) Super Critical Coal Based Thermal Power Plant at village Painampuram, in Muthukur Mandal, in Nellore Distt., in Andhra Pradesh – Extention of EC validity	J-13011/02/2009-IA.II(T) dated 02.03.2015
3	2x660 MW (Stage-I) Super Critical Coal Based TPP at Village Painampuram & Nelaturu, in Muthukur Mandal, in SPSR Nellore Distt., in Andhra Pradesh by M/s Thermal Powertech Corporation (India) Ltd-reg Transfer of EC	J-13011/02/2009-IA.II(T) dated 09.10.2019
CRZ Clearance		
4	CRZ clearance for the construction of pump house, Sea water Intake and Outfall facilities at Pianapuram Village, Near Nellore, Andhra Pradesh by M/s Thermal Power Tech Corporation India Ltd.	11-129/2010-IA.III dated 05.12.2011.

It has been observed the the CRZ clearance issued by the Ministry vide Clearance No. 11-129/2010-IA.III dated 05.12.2011 for the construction of pump house, Sea water Intake and Outfall facilities at Pianapuram Village, Near Nellore, Andhra Pradesh has granted to M/s Thermal Power Tech Corporation India Ltd. The transfer of CRZ clearance in favor of M/s Sembcorp Energy India Limited has not provided.

Other permissions Clearances granted to the Project are as follows:

SN	Permissions obtained by unit	Document/ license no.	Issue date	Valid upto	Name of the Department
1	Boiler License	Unit#1: AP-6119	02.07.2021	01.07.2022	Factories Dept. Govt. of Andhra Pradesh
		Unit#2: AP-6146	03.08.2021	01.08.2022	
2	Fire NOC	Rc.No 17760/NLR/ MSB/ 2021, Dt: 03.06.2021	03.06.2021	02.05.2022	AP State Disaster Response and Fire Services Department
3	PESO	P/HQ/AP/	19.09.2014	31.12.202	PESO

I/7789/2022

134

	License	15/4044 (P326181)		3	
4	CTE	Order No. 177/PCB/CF E/RO-NLR/H O/2009	15.05.2010	-	APPCB
5	CTO	Order No. APPCB/ VJA/ NLR/ 930/HO/CFO /2016	16.11.2021	30.11.202 6	APPCB
6	Hazardous Waste Approval	Order No. APPCB/ VJA/ NLR/ 930/HO/CFO /2016	16.11.2021	30.11.202 6	APPCB
7	Factory License	R.No. 114074 /DYCIFN- ADMNOLICN/ 08/2020- SUVR(A)- DYCIF-NLR	20.02.2015	31.12.202 2	Factories Dept. Govt. of Andhra Pradesh
			19.08.2017		
			26.02.2018		
			26.06.2020		
8	EC Letter	J 13012/02/20 09-IA.II (T)	04.11.2009	03.11.201 4	MoEF&CC
		J 13012/02/20 09-IA.I (T)	02.03.2015	03.11.201 5	MoEF&CC
9	Panchayat h Running License	NOC Available	09.09.2009	-	Nelatur Panchayat
10	Public Liability Insurance Act	Policy Number: 0304005805 01 00	19/11/202 1	18/11/20 22	Tata AIG General Insurance Company Limited

The photographs taken during the project inspection are as follows:

135



A handwritten signature in blue ink, appearing to be 'Suresh'.



The satellite image of the project location by google maps is as follows:



It has been observed that the Project Authorities (PAs) have complied or are in process of complying the conditions stipulated in EC. The detailed observations are as follows:

9. Stipulated Conditions:

EC No. J-13012/02/2009-IA.II (T) dated 04.11.2009

- i. **Status of implementation of 100% utilisation of Fly Ash generated shall be submitted to the Ministry within six months of operation of the plant.**

Status: Partially complied

It has been observed that the PAs have achieved 100% fly ash utilization since September 2019. As per the information provided, details regarding the fly ash, bottom ash generation and its utilization for the year 2021 (till Oct, 2021) are as follows:

Month	Fly Ash Generation (MT)	Bottom Ash Generation (MT)	Total Ash Generation (MT)	Total Ash Utilization (MT)	Percentage Utilization (%)
Jan-2021	165402	17194	182596	182596	100%
Feb-2021	121656	10485	132141	132141	100%
Mar-2021	142067	12944	155011	155011	100%
April-2021	155620	13602	169222	169222	100%
May-2021	128036	11215	139251	139251	100%
June-2021	105958	9665	115623	115623	100%
July-2021	116627	11369	127996	127878	100%
Aug-2021	133091	13347	146438	146438	100%
Sept-2021	135158	10262	145420	145419	100%
Oct-2021	125103	11913	137016	137016	100%

- ii. **Stacks of 275 m height (Bi-Flue for Stage - 1 and Single Flue for Stage - II) shall be provided with continuous online monitoring equipment for SO_x, NO_x and PM. Exit Velocity of flue gases shall not be less than 25 m/sec. Mercury emissions from stack shall also be monitored on periodic basis.**

Status: Being complied

It has been observed that the PAs have provided one bi-flue gas stack of 275 m height for Stage-I (2 x 660 MW) along with continuous online emission monitoring equipment for measuring SO_x, NO_x and PM. Mercury is being monitored on quarterly basis by third party monitoring agency. Exit velocity of flue gas is being maintained with in prescribed norms.

During the day of monitoring, the stack emission levels monitored by continuous online monitoring system are as follows:

I/7789/2022

138

SN	Parameter	Unit -I	Unit - II
1	Power Generation	661.2 MW	Not in Operational (Under maintenance)
2	PM (mg/m ³)	42.04	
3	CO ₂ (mg/m ³)	11.15	
4	CO (ppm)	121.2	
5	SOx (mg/m ³)	949.5	
6	NOx (mg/m ³)	264.6	

As per the stack emissions monitored by APPCB, the emission levels are as follows:

Parameters	Stack attached to 2016 TPH Supercritical boiler (unit-1)	Prescribed standards of APPCB
Date of monitoring	22.10.2021	
Particulate Matter in mg/Nm ³	40.8 mg/Nm ³	50 mg/Nm ³
Mercury mg/Nm ³	0.001 mg/Nm ³	

As per the information provided, the online monitoring of stack emissions for the period May-November, 2021 is as follows:

Month	Parameter		Unit-I	Unit-II
May, 2021	PM (mg/m ³)	Min.	32.00	27.42
		Max.	38.69	41.96
		Avg.	36.22	39.16
	SO ₂ (mg/m ³)	Min.	738.59	730.95
		Max.	1444.32	1584.67
		Avg.	1020.97	1047.37
	NOx (mg/ m ³)	Min.	314.97	350.09
		Max.	466.18	489.73
		Avg.	360.74	409.96
June, 2021	PM (mg/m ³)	Min.	20.81	32.01
		Max.	40.87	46.68
		Avg.	35.90	36.43
	SO ₂ (mg/m ³)	Min.	0.00	0.00
		Max.	1121.24	1323.74
		Avg.	904.73	1072.27
	NOx (mg/ m ³)	Min.	0.00	0.00
		Max.	399.79	445.91
		Avg.	356.42	372.02
July, 2021	PM (mg/m ³)	Min.	32.23	35.27
		Max.	37.38	40.32
		Avg.	36.34	37.30
	SO ₂ (mg/m ³)	Min.	693.35	695.43
		Max.	1105.92	1341.21
		Avg.	974.52	1202.87

	NOx (mg/m ³)	Min.	323.45	358.87
		Max.	401.95	419.01
		Avg.	354.17	389.82
August, 2021	PM (mg/m ³)	Min.	32.01	35.12
		Max.	37.69	40.91
		Avg.	36.46	36.68
	SO ₂ (mg/m ³)	Min.	892.61	374.24
		Max.	1217.70	1495.88
		Avg.	1041.86	1414.49
	NOx (mg/m ³)	Min.	318.64	152.61
		Max.	383.89	418.90
		Avg.	348.64	382.38
September, 2021	PM (mg/m ³)	Min.	35.09	31.47
		Max.	45.19	47.83
		Avg.	37.02	38.83
	SO ₂ (mg/m ³)	Min.	0.00	0.00
		Max.	1312.16	1455.16
		Avg.	1136.99	1331.09
	NOx (mg/m ³)	Min.	0.00	0.00
		Max.	384.42	453.48
		Avg.	330.96	390.59
October, 2021	PM (mg/m ³)	Min.	37.81	7.33
		Max.	43.22	47.02
		Avg.	39.04	38.11
	SO ₂ (mg/m ³)	Min.	334.87	0.00
		Max.	1296.85	1398.64
		Avg.	1164.36	1263.99
	NOx (mg/m ³)	Min.	131.58	0.00
		Max.	375.63	417.86
		Avg.	331.07	380.36
November, 2021	PM (mg/m ³)	Min.	18.85	34.00
		Max.	44.76	40.31
		Avg.	42.55	37.94
	SO ₂ (mg/m ³)	Min.	0.00	594.87
		Max.	1167.99	1356.13
		Avg.	436.72	1180.34
	NOx (mg/m ³)	Min.	0.00	341.47
		Max.	395.94	427.35
		Avg.	173.03	396.04

In addition to above, PAs are conducting stack emission analysis by third party monitoring agency M/s Care Labs, Hyderabad which is accredited by Ministry and NABL. As per the monitoring conducted in the month of September, 2021, the stack emissions are as follows:

Month	Parameter	Unit-I	Unit-II
September,	PM (mg/m ³)	33.10	36.20

140

2021	SO ₂ (mg/m ³)	732.00	766.00
	NO _x (mg/m ³)	364.00	344.00
	CO (ppm)	1.8	1.9
	Mercury as Hg (mg/m ³)	<0.01	<0.01

- iii. **Possibility for installation of combined intake with neighbouring Power Plants shall be examined and in the event of non-feasibility adequate justification shall be submitted with a period of six months.**

Status: Being complied

As per the discussions held, it has been informed that the compliance of the same has submitted vide letter no. TPICL/MoEF/007 dated 07.03.2011.

- iv. **Stacks of 275 m height (Bi-Flue for Stage - 1 and Single Flue for Stage - II) shall be provided with continuous online monitoring equipment for SO_x, NO_x and PM. Exit Velocity of flue gases shall not be less than 25 m/sec. Mercury emissions from stack shall also be monitored on periodic basis.**

Status: Being complied

It has been observed that the PAs have provided one bi-flue gas stack of 275 m height for Stage-I (2 x 660 MW) along with continuous online emission monitoring equipment for measuring SO_x, NO_x and PM. Mercury is being monitored on quarterly basis by third party monitoring agency. Exit velocity of flue gas is being maintained within prescribed norms.

During the day of monitoring, the stack emission levels monitored by continuous online monitoring system are as follows:

SN	Parameter	Unit - I	Unit - II
1	Power Generation	661.2 MW	Not in Operational (Under maintenance)
2	PM (mg/m ³)	42.04	
3	CO ₂ (mg/m ³)	11.15	
4	CO (ppm)	121.2	
5	SO _x (mg/m ³)	949.5	
6	NO _x (mg/m ³)	264.6	

As per the stack emissions monitored by APPCB, the emission levels are as follows:

I/7789/2022

141

Parameters	Stack attached to 2016 TPH Supercritical boiler (unit-1)	Prescribed standards of APCCB
Date of monitoring	22.10.2021	
Particulate Matter in mg/Nm ³	40.8 mg/Nm ³	50 mg/Nm ³
Mercury mg/Nm ³	0.001 mg/Nm ³	

As per the information provided, the online monitoring of stack emissions for the period May-November, 2021 is as follows:

Month	Parameter		Unit-I	Unit-II
May, 2021	PM (mg/m ³)	Min.	32.00	27.42
		Max.	38.69	41.96
		Avg.	36.22	39.16
	SO ₂ (mg/m ³)	Min.	738.59	730.95
		Max.	1444.32	1584.67
		Avg.	1020.97	1047.37
	NO _x (mg/m ³)	Min.	314.97	350.09
		Max.	466.18	489.73
		Avg.	360.74	409.96
June, 2021	PM (mg/m ³)	Min.	20.81	32.01
		Max.	40.87	46.68
		Avg.	35.90	36.43
	SO ₂ (mg/m ³)	Min.	0.00	0.00
		Max.	1121.24	1323.74
		Avg.	904.73	1072.27
	NO _x (mg/m ³)	Min.	0.00	0.00
		Max.	399.79	445.91
		Avg.	356.42	372.02
July, 2021	PM (mg/m ³)	Min.	32.23	35.27
		Max.	37.38	40.32
		Avg.	36.34	37.30
	SO ₂ (mg/m ³)	Min.	693.35	695.43
		Max.	1105.92	1341.21
		Avg.	974.52	1202.87
	NO _x (mg/m ³)	Min.	323.45	358.87
		Max.	401.95	419.01
		Avg.	354.17	389.82
August, 2021	PM (mg/m ³)	Min.	32.01	35.12
		Max.	37.69	40.91
		Avg.	36.46	36.68
	SO ₂ (mg/m ³)	Min.	892.61	374.24
		Max.	1217.70	1495.88
		Avg.	1041.86	1414.49
	NO _x (mg/m ³)	Min.	318.64	152.61
		Max.	383.89	418.90

142

		Avg.	348.64	382.38
September, 2021	PM (mg/m ³)	Min.	35.09	31.47
		Max.	45.19	47.83
		Avg.	37.02	38.83
	SO ₂ (mg/m ³)	Min.	0.00	0.00
		Max.	1312.16	1455.16
		Avg.	1136.99	1331.09
	NOx (mg/m ³)	Min.	0.00	0.00
		Max.	384.42	453.48
		Avg.	330.96	390.59
October, 2021	PM (mg/m ³)	Min.	37.81	7.33
		Max.	43.22	47.02
		Avg.	39.04	38.11
	SO ₂ (mg/m ³)	Min.	334.87	0.00
		Max.	1296.85	1398.64
		Avg.	1164.36	1263.99
	NOx (mg/m ³)	Min.	131.58	0.00
		Max.	375.63	417.86
		Avg.	331.07	380.36
November, 2021	PM (mg/m ³)	Min.	18.85	34.00
		Max.	44.76	40.31
		Avg.	42.55	37.94
	SO ₂ (mg/m ³)	Min.	0.00	594.87
		Max.	1167.99	1356.13
		Avg.	436.72	1180.34
	NOx (mg/m ³)	Min.	0.00	341.47
		Max.	395.94	427.35
		Avg.	173.03	396.04

In addition to above, PAs are conducting stack emission analysis by third party monitoring agency M/s Care Labs, Hyderabad which is accredited by Ministry and NABL. As per the monitoring conducted in the month of September, 2021, the stack emissions are as follows:

Month	Parameter	Unit-I	Unit-II
September, 2021	PM (mg/m ³)	33.10	36.20
	SO ₂ (mg/m ³)	732.00	766.00
	NOx (mg/m ³)	364.00	344.00
	CO (ppm)	1.8	1.9
	Mercury as Hg (mg/m ³)	<0.01	<0.01

- v. **Adequate dust extraction system such as cyclones/ bag filters and water spray system in dusty areas such as in coal handling and ash handling points, transfer areas and other vulnerable dusty areas shall be provided.**

Status: Being complied

It has been observed that the PAs have provided bag filters for coal crusher, transfer points, ash silos and mill bunker etc. Dust extraction and dust suppression systems with auto mode are provided in coal crusher and coal stack yard. Dry Fog Dust Suppression System is being installed to further minimize fugitive dust. Additional water hydrant lines are provided to suppress fugitive emissions, whenever required. PAs have also provided wind barriers with 3-5 layers of thick Conocarpus trees (wind resistant plants) all around coal yard, which are designed to arrest spreading of fugitive dust emissions.

- vi. **Fly ash shall be collected in dry form and storage facility (silos) shall be provided (as applicable). 100% fly ash utilisation shall be ensured from 4th year onwards. Unutilized fly ash shall be disposed off in the ash pond in the form of slurry form. Mercury and other heavy metals (As, Hg, Cr, Pb etc.) will be monitored in the bottom ash as also in the effluents emanating from the existing ash pond. No ash shall be disposed off in low lying area.**

Status: Partially complied

It has been observed that the fly ash is being collected in dry form and stored in silos of 3 x 2000 m³ capacity for disposal to various users. Unutilised fly ash is being disposed to the ash pond in lean slurry form.

It has been observed that the PAs have achieved 100% fly ash utilization since September 2019. As per the information provided, details regarding the fly ash, bottom ash generation and its utilization for the year 2021 (till Oct, 2021) are as follows:

Month	Fly Ash Generation (MT)	Bottom Ash Generation (MT)	Total Ash Generation (MT)	Total Ash Utilization (MT)	Percentage Utilization (%)
Jan-2021	165402	17194	182596	182596	100%
Feb-2021	121656	10485	132141	132141	100%
Mar-2021	142067	12944	155011	155011	100%
April-2021	155620	13602	169222	169222	100%
May-2021	128036	11215	139251	139251	100%
June-2021	105958	9665	115623	115623	100%
July-2021	116627	11369	127996	127878	100%

Aug-2021	133091	13347	146438	146438	100%
Sept-2021	135158	10262	145420	145419	100%
Oct-2021	125103	11913	137016	137016	100%

It has been observed that the PAs are conducting heavy metal analysis present in the fly ash, bottom ash and coal by third party monitoring agency M/s Care Labs, Hyderabad which is accredited by Ministry and NABL. As per the monitoring conducted in the month of September, 2021, the heavy metal composition is as follows:

SN	Parameter	Fly ash	Bottom ash	Coal
1	Arsenic as As (ppm)	0.03	0.04	0.10
2	Mercury as Hg (ppm)	<0.02	<0.02	<0.02
3	Chromium as Cr (ppm)	0.62	0.84	1.08
4	Lead as Pb (ppm)	0.38	0.54	0.70

However, it has been observed that the PAs are not monitoring heavy heavy metals (As, Hg, Cr, Pb etc.) present in effluents emanating from the existing ash pond

It is required to monitor Mercury and other heavy metals (As, Hg, Cr, Pb etc.) in the effluents emanating from the existing ash pond.

- vii. Ash Pond shall be lined with HDP/LDP lining. Adequate safety measures shall also be implemented to protect the ash dyke from breached.**

Status: Being complied

As per the information provided, ash pond was lined with impervious HDPE liner. The photograph during the development of ash dyke is as follows:



The dyke is designed and incorporated adequate safety measures.

- viii. Closed cycle cooling system with natural draft cooling towers shall be provided. The Effluents shall be treated as per the prescribed norms.**

Status: Being complied

It has been observed that the natural draft Cooling Towers are installed at the site. ETP consists of Flash Mixer, Lamella Clarifier, Sludge Pit, Oily Water Separation Unit, Oily water collection tank and Central Monitoring Basin & Dosing system is used to treat the effluent to meet the prescribed norms.

- ix. No ground water shall be extracted for the project work at any stage.**

Status: Being complied

It has been observed that the PAs are not utilizing ground water for the project work. Entire water requirement of the plant is being met from seawater.

- x. Hydrogeological study of the area shall be reviewed annually and results submitted to the Ministry and concerned agency in the State Government. In case adverse impact on ground water quality and quantity is observed, immediate mitigating steps to contain any adverse impact on ground water shall be undertaken.**

Status: Partially complied

It has been observed that the PAs have conducted hydrogeological

studies in 10 km radius area of project area in the month of November, 2019 by M/s Multi-Tech Services, Hyderabad. It has been observed that the PAs are in process of implementing recommendations made in the report.

It is required to implement the recommendations made in the Hydrogeological study report.

It is required to conduct hydrogeological study of the area annually and results submitted to the Ministry and concerned agency in the State Government.

- xi. Minimum required environmental flow suggested by the Competent Authority of the State Government shall be maintained in the Channel/rivers even in lean season.**

Status: Not applicable at present

As per the discussion held, it has been observed that the condition is not applicable at present as PAs are not extracting any River/ canal water. Entire water requirement for plant operations is being met through seawater.

- xii. The treated effluents conforming to the prescribed standards should be only discharged. Arrangement shall be made that effluents and storm water do not get mixed.**

Status: Being complied

It has been observed that the PAs have provided ETP and STP which are in operation for treating waste water generated in the plant to meet the prescribed standards. Treated water is being used for Dust suppression and Green Belt.

Storm water system is designed to avoid mixing with effluents and has a separate disposal system.

- xiii. A sewage treatment plant shall be provided and the treated sewage shall be used for raising greenbelt / plantation.**

Status: Being complied

It has been observed that the PAs have installed Sewage Treatment Plant (STP) and operational for treating the domestic sewage generated. The treated domestic wastewater is being used for greenbelt development.

- xiv. **Rainwater harvesting should be adopted. Central Groundwater Authority/Board shall be consulted for finalization of appropriate rainwater harvesting technology within a period of three months from the date of clearance and details shall be furnished.**

Status: Being complied

As per the discussions held, it has been stated that the approved third party studies were carried out and rainwater harvesting pits are constructed and maintained along the storm water drains. The rainwater from storm water drains is collected in RWH ponds and is reused.

- xv. **Adequate safety measures shall be provided in the plant area to check/minimize spontaneous fires in coal yard, especially during summer season. Copy of these measures with full details along with location plant layout shall be submitted to the Ministry as well as to the Regional Office of the Ministry.**

Status: Being complied

It has been observed that the coal yard is provided with fire hydrant system and water sprinklers arrangement to control spontaneous combustion of coal.

- xvi. **Storage facilities for auxiliary liquid fuel such as LDO and HFO/LSHS shall be made in the plant areas in consultation with Department of Explosives, Nagpur. Sulphur content in the liquid fuel will not exceed 0.5%. Disaster Management plan shall be prepared to meet any eventuality in case of an accident taking place due to storage of oil.**

Status: Being complied

It has been observed that the PAs have provided storage facilities for LDO and HFO. These facilities are certified by the Chief Controller of Explosives, Nagpur. Adequate firefighting systems are provided. Onsite Emergency Management Plan is in place to meet any eventuality.

- xvii. **Regular monitoring of ground water in and around the ash pond area including heavy metals (Hg, Cr, As, Pb) shall be carried out, records maintained and six monthly reports shall be furnished to the Regional office of this Ministry. The data so obtained should be compared with the baseline data so as to ensure that**

the ground water quality is not adversely affected due to the Project.

Status: Being complied

It has been observed that the PAs are monitoring ground water quality including heavy metals at six locations viz., Pattapupalem Village (GW-1), Chandrashekarapuram Village (GW-2), Ananthavaram Village (GW-3), Nelaturu Village (GW-4), Varakapudi Village (GW-5), Painampuram Village (GW-6) and the monitoring reports are being submitted along with six monthly compliance reports. As per the reports submitted, the parameters are within the prescribed limits.

- xviii. Shelter Belt consisting of 3 tiers of plantation around the plant of 100 m width and adequate tree density shall be developed.**

Status: Being complied

It has been observed that the PAs have developed scientific designed greenbelt with adequate tree density. Native species have been chosen for plantation. An area of about 450 acres area is being brought under green cover in phased manner.

- xix. First Aid and sanitation arrangement shall be made for the drivers and other contract workers during construction phase.**

Status: Complied

It has been observed that the project is under operational phase. It has been informed that, necessary facilities have been provided during construction period. Currently, there are no constructional activities and the labour camp is not operational.

- xx. Noise levels emanating from turbines shall be so controlled such that the noise in the work zone shall be limited to 75 dBA. For people working in the high noise area requisite personal protective equipment like earplugs /ear muffs etc. shall be provided. Workers engaged in noisy areas such as turbine area, air compressors etc., shall be periodically examined to maintain audiometric record and for treatment for any hearing loss including shifting to non-noisy/less noisy areas.**

Status: Being complied

It has been observed that the PAs have ensured that the ambient noise level at the plant boundary shall comply with National ambient noise standards. Quarterly monitoring of noise level data is Complying the standards. Workers are provided with adequate

personal protective equipment. Necessary medical examinations are conducted and records are being maintained. As per the noise monitoring reports submitted, it has been observed that the noise levels are being monitored by third party monitoring agency M/s Care Labs, Hyderabad which is accredited by Ministry and NABL. As per the monitoring conducted in the month of September, 2021, the ambient noise levels are as follows:

Location	Noise level (dBA)		
	Min.	Max.	Avg.
Near Main Gate	47.5	66.4	57.3
Near BTG Area	61.3	69.8	65.8
Near Coal Handling Plant	59.2	67.4	64.4
Near Shivarampuram Village	37.5	49.6	44.4
Near Painampuram Village	35.1	49.8	43.2
Near Nelaturu Village	35.8	49.3	43.6

- xxi. Regular monitoring of ground level concentration of SO_x, NO_x, RSPM and Hg shall be carried out in the impact zone and records maintained. If at any stage these levels are found to exceed the prescribed limits, necessary control measures shall be provided immediately. The location of the monitoring stations and the frequency of monitoring shall be decided in consultation with SPCB. Periodic reports shall be submitted to the Regional office of this Ministry. The data shall also be put on the website of the company.**

Status: Being complied

It has been observed that the PAs have installed Continuous AAQM stations (with online analysers) at 4 locations viz., Main Gate, Field Hostel, Sea water intake side and Village. As per the data submitted for the period of May-November, 2021, the AAQ parameters are within the prescribed limits. The CAAQMS data is continuously being uploaded to CPCB & APPCB websites on real time basis.

In addition, AAQ is also being monitored at four locations viz., Near Fire Station (Plant Site), Pattapupalem Village, Shivarampuram Village and Chandrasekharapuram Village by third party monitoring agency M/s Care Labs, Hyderabad which is accredited by Ministry and NABL. As per the monitoring conducted in the month of September, 2021, the AAQ levels are as follows:

Pollutants		Near Fire station (Plant Site)	Pattapupalem Village	Shivarampuram Village	Chandrasekharapuram Village
PM ₁₀ (ug/)	Min.	38.3	38.6	34.6	36.5

150

m ³)	Max.	42.8	43.2	47.6	45.4
	Avg.	41.2	41.0	43.9	42.0
PM _{2.5} (ug/m ³)	Min.	25.2	27.6	27.9	24.8
	Max.	31.9	31.4	32.6	27.8
	Avg.	28.2	29.2	29.5	26.5
SO ₂ (ug/m ³)	Min.	9.9	7.4	8.6	7.6
	Max.	12.6	9.6	10.2	11.2
	Avg.	11.0	8.4	9.5	8.6
NO _x (ug/m ³)	Min.	11.8	10.2	10.9	9.6
	Max.	14.6	13.6	13.4	13.4
	Avg.	13.3	11.7	12.3	11.4

- xxii. A good action plan for R&R (if applicable) with package for the project affected persons be submitted and implemented as per prevalent R&R policy within three months from the date of issue of this letter.**

Status: Being complied

As per the discussions held, it has been informed that an amount of Rs. 25 crores paid as R&R package for shifting of fisher man of Nelaturupalem. Also, as per the directives by Dist. Administration, PAs have provided Rs. 2500 to 504 identified families of fisher man for 6 months which is a cost of Rs. 75,60,000. In addition, PAs have provided 30 Kg rice to 504 fishermen families at the rate of Rs.50 for 6 months which is cost of Rs.45,36,000.

- xxiii. An amount of Rs 32.0 crores shall be earmarked as one time capital cost for CSR programme. Subsequently a recurring expenditure of Rs. 6.4 Crores per annum shall be earmarked as recurring expenditure for CSR activities. Details of the activities to be undertaken shall be submitted within one month along with road map for implementation.**

Status: Partially complied

As per the discussions held, it has been informed that an amount of Rs. 20 crores deposited with District Administration in (Rs. 5.6 crores in the year 2014 and Rs. 14.4 crores in the year 2016) for shifting of Fishermen Village of Nelaturupalem. In addition, an amount of Rs. 22 crores spent in surrounding area during Project Period.

It is required to earmark an amount of Rs 32.0 crores as one time capital cost for CSR programme. Subsequently a recurring expenditure of Rs. 6.4 Crores per annum should be earmarked as recurring expenditure for CSR activities. Details of the activities

to be undertaken should be submitted within along with road map for implementation.

- xxiv. As part of CSR programme the company shall conduct need based assessment for the nearby villages to study economic measures with action plan which can help in upliftment of poor section of society. Income generating projects consistent with the traditional skills of the people besides development of fodder farm, fruit bearing orchards, vocational training etc., can form a part of such programme. Company shall provide separate budget for community development activities and income generating programmes. This will be in addition to vocational training for individuals imparted to take up self employment and jobs.**

Status: Partially complied

It has been observed that the PAs are in process of implementing CSR activities for the nearby villages. As per the information provide, details of CSR activities done by PAs for last three years are as follows:

April – September, 2021:

- 40 No's of Oxygen concentrators and 2600 Home Isolation Medical Kits for Covid patients donated to District Administration.
- 19 Community sanitation drives conducted in 25 villages benefitting 2589 families.
- Uninterrupted safe drinking water supply has been provided through 9 RO Plants.
- Conveyance facility is being provided to govt. schools for 240 children.
- Covid vaccination awareness competitions conducted in schools to 2000 school children.
- Covid vaccination awareness conducted through Red FM and Act Channel (Through Digital Media).

FY 2020-21

Education

- Poly Carbonate roofing sheets were provided to Muthukuru Girls Hostel open places.

- Conveyance of school children arranged with Covid protocols from SEIL P1.

Health

- Community Emergency Health Ambulance services by SEIL to community Villages of SEIL P1 shifting 36 needy to nearest hospitals.
- 14 Community Sanitization drives Conducted in SEIL P1 Community Villages.
- 9 numbers Hematology Analyzers were donated to Nellore District hospitals.
- Medical equipment's were provided to COVID Care Centre located at Krishnapatnam.
- Covid containment through testings.
- Maintenance of 3 RO Plants by providing safe drinking water to Community.
- Covid -19 health safety awareness in the Villages & Schools of SEIL P1.

Skill Development

- 10,000 masks stitching program by 20 SEDC trained women.
- Virtual Computer skills training program for 22 members.

2019-20

Education

- Providing conveyance to school children to prevent dropouts. Due to zero dropouts Govt. Schools retain students & achieved 98% pass in SSC with Good Grading. This initiative is being implemented with the support from SEIL Admin and CSR benefiting 120 students.
- Providing Education Kits to students on the Eve of Independence Day. SC&ST Students Benefited by this initiative and APPCB appreciated this CSR Gesture benefiting 60 School children.

153

- Providing Evening Snacks to students appearing for SSC Examinations in Five Mandal's covering 2387 Students. Students studying in the extra hours got refreshed and leading to Achieve Excellent pass percentages in Government Schools.
- Corona Awareness Preventive Measures Conducted in Schools by CSR Team of Project surrounding area. Pamphlets with Pictures and Description in Native Language Distributed with awareness to the school children benefiting 600 school children of SEIL P1 side.

Skill Development

- Tailoring-98
- Beautician-21
- AcandRefrigeration-20
- SanitaryNapkinmaking-22
- JuteBagmaking-30
- BangleMaking-80

CSR Activities Health Care 2019-20 SEIL P1Healthcare		
SN	CSR Activity	No. of Beneficiaries
1	Operation and Maintenance of 3 RO plants covering Communities of SEILP1	1040 families
2	4 Medical camps were conducted 9 Villages with the support from Our Occupational Health Center Doctor and Primary Health Center medical Officer	320 Patients.
3	100 Concrete dustbins were provided in 2 Villages as part of sanitation and hygiene drive and garbage removal program. Implemented And Village Hygiene Maintained for one Year in Two Panchayats Nelaturu and Pynapuram	1400 families.
4	Rendered Ambulance services during emergency needs of surrounding villagers of SEIL P1	32 Families
5	Corona Virus Awareness by Sticking Wall Posters, publicity with pamphlets and Door to Door communication of Precaution against virus and awareness in schools and Government offices at Village and Mandal Level	2400 Families of SEIL side
6	Community Sanitaization drives conducted in the SEIL P1 community villages	2400 Families

2018-19

Skill Development

- As part of Skill Development Programs in SEDC, 7 batches of women have completed their course. 200 Women in tailoring, 80 women in beautician and 18 Numbers In Basic Computers Course in Which 7 Boys and 11 Girls Completed the Course.

Education Highlights

- School toilet repairs done in SEIL P1 Schools to ensure 100% running water in Government school toilets.
- RO drinking water Supplied through Naandhi regularly to SEIL side Government schools.
- SEIL sponsored State Level Kabaddi Championship by Partnering with District Sports Authority benefitted around 400 state level Kabaddi Players at Muthukuru.
- Celebrated School annualdays, National fire safety Days, Republic Day and other national festivals in the schools benefitting around 650 School children.
- School beautification works done in ZPH School, MV Palem Benefiting 350 Students, infrastructure support and all school needs fulfilled.
- Sports kits were distributed to youth from Nelaturu Panchayat benefiting 120 Youth.
- Botany lab renovated in Muthukur Social welfare girls high school benefiting 320 Girls.
- Scholarships were Provided to the 13 Numbers students of Academic Year 2016-18 Sponsored by District Collector, Nellore.
- Project 'Parivartan' Conducted in 2 Schools and one college from Jan to March 2019. The Main objective of 'Parivartan' is bringing the behavioural change among the young students. Awareness sessions were conducted on Personality Development & Personal hygiene and women health by Eminent in the field of Education, Counsellors and Doctors benefiting 1150 students in which 700 Girl and 450 are boys.
- Awareness programme conducted for the children on importance of Hand washing and prevention of water borne diseases benefiting 120 School Children.

- Conveyance of school Bus Facility was provided to the students benefiting around 120 members of SEIL Side.

Healthcare

- Periodical medical camps conducted in the villages of SEIL P1 as part of Preventive health care benefitted around 800 villagers.
- Door to door Health awareness done and have reached about 450 households with behaviour change communication material. All Schools in the Vicinity of project operations were also covered in this project.
- Solid waste Management introduced in Pynapuram and Nelaturu Panchayats to prevent unhygienic conditions in the village benefitting 900 Families. Concrete dust Bins Provided in the panchayath and Daily waste Management Measures taken up by SEIL to keep the village clean and prevent health issues from seasonal fevers.
- Ensured uninterrupted protected drinking water to 1040 families through 3 RO plants of SEIL P1 side.
- New pipe lines laid for providing quality raw water to RO Plant Nelaturu Palem.

It is required to implement CSR activities as per need based assessment for the nearby villages to study economic measures with action plan which can help in upliftment of poor section of society. Income generating projects consistent with the traditional skills of the people besides development of fodder farm, fruit bearing orchards, vocational training etc., can form a part of such programme. Company shall provide separate budget for community development activities and income generating programmes. This will be in addition to vocational training for individuals imparted to take up self employment and jobs.

- xxv. Provision shall be made for the housing of construction labour within the site with all necessary infrastructure and facilities such as fuel for cooking, mobile toilets, mobile STP, safe drinking water, medical health care, creche etc. The housing may be in the form of temporary structures to be removed after the completion of the project.**

Status: Complied

It has been stated that the condition has been complied during the construction of project.

xxvi. The Project proponent shall advertise in at least two local newspapers widely circulated in the region around the project, one of which shall be in the vernacular language of the locality concerned within seven days from the date of this clearance letter, informing that the project has been accorded environmental clearance and copies of clearance letter are available with the State Pollution Control Board/Committee and may also be seen at the Website of the Ministry of Environment and Forests at <http://envfor.nic.in>.

Status: Complied

As per the records, it has been observed that the PAs have advertised details regarding grant of EC in Telugu newspaper on 04.07.2009 and in English newspaper on 03.07.2009.

xxvii. A copy of the clearance letter shall be sent by the proponent to concerned Panchayat, Zilla Parishad /Municipal corporation, urban local body and the local NGO, if any from whom suggestions/representations, if any, received while processing the proposal. The Clearance letter shall also be put on the website of the Company by the Proponent.

Status: Complied

As per the discussions held, it has been informed that the clearance letter was sent to concerned Panchayat, Zilla Parishad/ Municipal Corporation, urban local body. Clearance letters are also uploaded in Sembcorp website at <https://www.sembcorpenergyindia.com/AboutUs/Disclosure>

xxviii. A dedicated Environment Management Cell with suitable qualified personnel shall be set up under the control of a Senior executive who will report directly to the head of the organization.

Status: Being complied

It has been observed that the PAs have established an Environment Management Cell with suitable qualified personnel under the supervision of Head-HSE, who reports directly to the Station Head.

xxix. The proponent shall upload the status of compliance of the stipulated EC conditions, including results of monitored data on their website and shall update the same periodically. It shall simultaneously be sent to the Regional Office of MOEF, the respective Zonal Office of CPCB and the SPCB. The criteria pollutant levels namely: SPM, RSPM, SO_x, NO_x (ambient levels

as well as stack emissions) shall be displayed at a convenient location near the main gate of the company in the public domain.

Status: Being complied

As per the records, it has been observed that the PAs are submitting six monthly compliance reports on status of compliance and the monitored data to the Ministry's Regional Office, Chennai. The latest six monthly compliance report for the period April – September, 2021 has submitted vide letter no. SEIL P1/MoEF&CC/Chennai/2021/004 dated 25.11.2021 to Integrated Regional Office, Chennai. It has been observed that six monthly compliance reports are being uploaded on company's website (<https://www.sembcorpenergyindia.com/AboutUs/Disclosure>).

It has been observed that criteria pollutants levels including NOx (from Stack and ambient air) are being displayed at the main gate of the power plant. Photographs is as follows:



During Inspection, it has been informed that the Ministry of Environment, Forest and Climate Change vide Gazette of India Notification No. 1-5/2013-ROHQ dated 13.08.2020 has established 09 new Integrated Regional Offices (IROs) including IRO, Vijayawada. The IRO, Vijayawada is functioning with the jurisdiction of State Andhra Pradesh. Henceforth, six monthly compliance reports will all monitored data including required enclosures should be submitted to IRO, Vijayawada in soft copy (PDF format) only on regularly basis to ecompliance-ap@gov.in (only).

- xxx.** The project proponent shall also submit six monthly reports on the status of compliance of the stipulated EC conditions including results of monitored data to the respective Regional Office of MOEF, the respective Zonal office of CPCB and SPCB.

Status: Being complied

As per the records, it has been observed that the PAs are submitting six monthly compliance reports on status of compliance and the monitored data to the Ministry's Regional Office, Chennai. The latest six monthly compliance report for the period April – September, 2021 has submitted vide letter no. SEIL P1/MoEF&CC/Chennai/2021/004 dated 25.11.2021 to Integrated Regional Office, Chennai. It has been observed that six monthly compliance reports are being uploaded on company's website (<https://www.sembcorpenergyindia.com/AboutUs/Disclosure>).

During Inspection, it has been informed that the Ministry of Environment, Forest and Climate Change vide Gazette of India Notification No. 1-5/2013-ROHQ dated 13.08.2020 has established 09 new Integrated Regional Offices (IROs) including IRO, Vijayawada. The IRO, Vijayawada is functioning with the jurisdiction of State Andhra Pradesh. Henceforth, six monthly compliance reports will all monitored data including required enclosures should be submitted to IRO, Vijayawada in soft copy (PDF format) only on regularly basis to ecompliance-ap@gov.in (only).

xxxi. The Environment Statement for each financial year ending 31st March in

Form V as is mandated to be submitted by the project proponent to the concerned State Pollution Control Board as prescribed under the Environment (Protection) Rules, 1986, as amended subsequently, shall also be put on the website of the company along with the status of compliance of EC conditions and shall also be sent to the respective Regional Offices of the Ministry.

Status: Partially complied

As per the discussions held, it has been informed that the Environment Statement (Form V) for FY 2020-21 has been submitted to APPCB vide letter no. SEIL P1/APPCB/BZA/2021/006 dated 28.11.2021. However, the same is not being submitted to Ministry's IRO, Vijayawada.

It is required to submit the Environment Statement for each financial year ending 31st March in Form V IRO, Vijayawada in soft copy (PDF format) only on regularly basis to ecompliance-ap@gov.in (only).

It has been observed that the PAs have uploaded Environmental Statement for FY 2019-20 on company's website (<https://www.sembcorpenergyindia.com/AboutUs/Disclosure>).

It is required to update the Environmental Statement in company's website on regular basis.

- xxxii.** The project proponent shall submit six monthly reports on the status of the implementation of the stipulated environmental safeguards to the Ministry of Environment and Forests, its Regional Office, Central Pollution Control Board and State Pollution Control Board. The project proponent shall upload the status of compliance of the environmental clearance conditions on their website and update the same periodically and simultaneously send the same by email to the Regional Office, Ministry of Environment and Forests.

Status: Being complied

As per the records, it has been observed that the PAs are submitting six monthly compliance reports on status of compliance and the monitored data to the Ministry's Regional Office, Chennai. The latest six monthly compliance report for the period April – September, 2021 has submitted vide letter no. SEIL P1/MoEF&CC/Chennai/2021/004 dated 25.11.2021 to Integrated Regional Office, Chennai. It has been observed that six monthly compliance reports are being uploaded on company's website (<https://www.sembcorpenergyindia.com/AboutUs/Disclosure>).

During Inspection, it has been informed that the Ministry of Environment, Forest and Climate Change vide Gazette of India Notification No. 1-5/2013-ROHQ dated 13.08.2020 has established 09 new Integrated Regional Offices (IROs) including IRO, Vijayawada. The IRO, Vijayawada is functioning with the jurisdiction of State Andhra Pradesh. Henceforth, six monthly compliance reports will all monitored data including required enclosures should be submitted to IRO, Vijayawada in soft copy (PDF format) only on regularly basis to ecompliance-ap@gov.in (only).

- xxxiii.** Regional Office of the Ministry of Environment and Forests will monitor the implementation of the stipulated conditions. A complete set of documents including Environmental Impact Assessment Report and Environment Management Plan along with the additional information submitted from time to time shall be forwarded to the Regional Office for their use during monitoring. Project proponent will upload the compliance status in their website and update the same from time to time at least six monthly basis. Criteria pollutants levels including NOx (from Stack and ambient air) shall be displayed at the main gate of the power plant.

Status: Being complied

160

As per the records, it has been observed that the PAs are submitting six monthly compliance reports on status of compliance and the monitored data to the Ministry's Regional Office, Chennai. It has been observed that six monthly compliance reports are being uploaded on company's website (<https://www.sembcorpenergyindia.com/AboutUs/Disclosure>).

It has been observed that criteria pollutants levels including NOx (from Stack and ambient air) are being displayed at the main gate of the power plant. Photographs is as follows:



During Inspection, it has been informed that the Ministry of Environment, Forest and Climate Change vide Gazette of India Notification No. 1-5/2013-ROHQ dated 13.08.2020 has established 09 new Integrated Regional Offices (IROs) including IRO, Vijayawada. The IRO, Vijayawada is functioning with the jurisdiction of State Andhra Pradesh. Henceforth, six monthly compliance reports will all monitored data including required enclosures should be submitted to IRO, Vijayawada in soft copy (PDF format) only on regularly basis to ecompliance-ap@gov.in (only).

- xxxiv. Separate funds shall be allocated for implementation of environmental protection measures along with item wise break up. These costs shall be included as part of the project cost. The funds earmarked for the environment protection measures shall not be diverted for other purposes and year wise expenditure should be reported to the Ministry.**

Status: Partially complied

As per the discussion held, it has been stated that separate funds have been allocated for implementation of environmental protection

measures along with item wise break up. These costs are included as a part of the project cost. The funds earmarked for the environment protection measures are not be diverted for other purposes. However, the year wise expenditure is not being submitted to Ministry's Regional Office.

It is required to submit the detailed report regarding the expenditure incurred for implementation of environmental protection measures along with six monthly compliance to Ministry's Integrated Regional Office on regular basis.

- xxxv. The project authorities shall inform the Regional Office as well as the Ministry regarding the date of financial closure and final approval of the Project by the concerned authorities and the dates of start of land development work and commission of Plant.**

Status: Partially complied

As per the discussions held, it has been stated that the condition has been complied and communicated. However as per the records, no information is available.

It is required to submit the details regarding the date of financial closure and final approval of the Project by the concerned authorities and the dates of start of land development work and commission of the plant.

- xxxvi. Full cooperation shall be extended to the Scientists/Officers from the Ministry /Regional Office of the Ministry at Bangalore/ CPCB/SPCB.**

Status: Being complied

It has been observed that the condition is being complied.

- 4. The Ministry of Environment and Forests reserves the right to revoke the clearance if conditions stipulated are not implemented to the satisfaction of the Ministry. The Ministry may also impose additional environmental conditions or modify the existing ones, if necessary.**

Status: Being complied

It has been observed that the condition is being complied with.

- 5. The environmental clearance accorded shall be valid for a period of 5 years to start operations by the Power Plant.**

Status: Complied

It has been observed that the 2x660 MW project has already commenced operations since 2015. PAs have obtained extension of EC validity vide letter dated 02.03.2015.

6. **Concealing factual data or submission of false /fabricated data and failure to comply with any of the conditions mentioned above may result in withdrawal of this clearance and attract action under the provisions of Environment (Protection) Act 1986.**

Status: Being complied

It has been observed that the condition is being complied with.

7. **In case of any deviation or alteration in the project proposed including coal transportation system from those submitted to this Ministry for clearance, a fresh reference should be made to the Ministry to assess the adequacy of the condition(s) imposed to add additional environmental protection measures required, if any.**

Status: Being complied

It has been observed that the condition is being complied with. PAs are approaching Ministry for fresh clearance / approval for any deviation or alteration in the project, if any.

8. **The above stipulations would be enforced among others under the Water (Prevention and Control of Pollution) Act 1974, the Air (Prevention and Control of Pollution) Act, 1981, the Environment (Protection) Act, 1986, and rules there under, Hazardous Wastes (Management and Handling) Rules, 1989 and its amendments, the Public Liability Insurance Act, 1991 and its amendments.**

Status: Being complied

It has been observed that the Ministry granted Environmental Clearances (ECs) and CRZ clearances to the project at various stages. The details of EC and CRZ clearances granted to the project are as follows:

S N	Project	Clearance No. and date
Environmental Clearance		
1	3 X 660 MW (Stage-I: 2 X 660 MW; and Stage-II: 1 x 660 MW) Super Critical Coal Based Thermal Power	J-13011/02/2009-IA.II(T) dated 04.11.2009

I/7789/2022

163

	Plant at village Painampuram, in Muthukur Mandal, in Nellore Distt., in Andhra Pradesh	
2	3 X 660 MW (Stage-I: 2 X 660 MW; and Stage-II: 1 x 660 MW) Super Critical Coal Based Thermal Power Plant at village Painampuram, in Muthukur Mandal, in Nellore Distt., in Andhra Pradesh – Extention of EC validity	J-13011/02/2009-IA.II(T) dated 02.03.2015
3	2x660 MW (Stage-I) Super Critical Coal Based TPP at Village Painampuram & Nelaturu, in Muthukur Mandal, in SPSR Nellore Distt., in Andhra Pradesh by M/s Thermal Powertech Corporation (India) Ltd-reg Transfer of EC	J-13011/02/2009-IA.II(T) dated 09.10.2019
CRZ Clearance		
4	CRZ clearance for the construction of pump house, Sea water Intake and Outfall facilities at Pianapuram Village, Near Nellore, Andhra Pradesh by M/s Thermal Power Tech Corporation India Ltd.	11-129/2010-IA.III dated 05.12.2011.

It has been observed the the CRZ clearance issued by the Ministry vide Clearance No. 11-129/2010-IA.III dated 05.12.2011 for the construction of pump house, Sea water Intake and Outfall facilities at Pianapuram Village, Near Nellore, Andhra Pradesh has granted to M/s Thermal Power Tech Corporation India Ltd. The transfer of CRZ clearance in favor of M/s Sembcorp Energy India Limited has not provided.

Other permissions Clearances granted to the Project are as follows:

SN	Permissions obtained by unit	Document/ license no.	Issue date	Valid upto	Name of the Department
1	Boiler License	Unit#1: AP-6119	02.07.2021	01.07.2022	Factories Dept. Govt. of Andhra Pradesh
		Unit#2: AP-6146	03.08.2021	01.08.2022	
2	Fire NOC	Rc.No 17760/NLR/ MSB/	03.06.2021	02.05.2022	AP State Disaster Response

I/7789/2022

164

		2021, Dt: 03.06.2021			and Fire Services Departmen t
3	PESO License	P/HQ/AP/ 15/4044 (P326181)	19.09.2014	31.12.202 3	PESO
4	CTE	Order No. 177/PCB/C FE/RO- NLR/HO/2 009	15.05.2010	-	APPCB
5	CTO	Order No. APPCB/ VJA/ NLR/ 930/HO/C FO/2016	16.11.2021	30.11.202 6	APPCB
6	Hazardo us Waste Approva l	Order No. APPCB/ VJA/ NLR/ 930/HO/C FO/2016	16.11.2021	30.11.202 6	APPCB
7	Factory License	R.No. 114074 /DYCIFN- ADMNOLIC N/08/2020 -SUVR(A)- DYCIF-NLR	20.02.2015 19.08.2017 26.02.2018 26.06.2020	31.12.202 2	Factories Dept. Govt. of Andhra Pradesh
8	EC Letter	J 13012/02/ 2009-IA.II (T) J 13012/02/ 2009-IA.I (T)	04.11.2009 02.03.2015	03.11.201 4 03.11.201 5	MoEF&CC MoEF&CC
9	Panchay ath Running License	NOC Available	09.09.2009	-	Nelatur Panchayat
10	Public	Policy	19/11/202	18/11/20	Tata AIG

165

	Liability Insuran ce Act	Number: 030400580 5 01 00	1	22	General Insurance Company Limited
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9. **Any appeal against this environmental clearance shall lie with the National Environmental Appellate Authority, if preferred, within 30 days as prescribed under Section 11 of National Environmental Appellate Act, 1997.**

Status: Complied

The condition has been complied with.

J-13011/02/2009-IA.II(T) dated 02.03.2015 (Extension of EC validity)

- xxxvii. Harnessing Solar Power within the premises of the plant particularly at available roof tops shall be carried out and status of implementation including actual generation of solar power shall be submitted along with half yearly monitoring reports.**

Status: Being complied

It has been observed that the PAs are in process of harnessing solar power within the premises of the plant. Solar panels have been installed above canteen roof and solar power light fixtures are installed at plant and township.

- xxxviii. Long term study of radioactivity and heavy metals contents on coal to be used shall be carried out through a reputed institute and results thereof analysed every two year and reported along with monitoring reports. Thereafter mechanism for an in-built continuous monitoring for radio activity and heavy metals in coal and fly ash (including bottom ash) shall be put in place.**

Status: Partially complied

It has been observed that the PAs are conducting heavy metal analysis present in the fly ash, bottom ash and coal by third party monitoring agency M/s Care Labs, Hyderabad which is accredited by Ministry and NABL. As per the monitoring conducted in the month of September, 2021, the heavy metal composition is as follows:

SN	Parameter	Fly ash	Bottom ash	Coal
1	Arsenic as As (ppm)	0.03	0.04	0.10

166

2	Mercury as Hg (ppm)	<0.02	<0.02	<0.02
3	Chromium as Cr (ppm)	0.62	0.84	1.08
4	Lead as Pb (ppm)	0.38	0.54	0.70

However, radio activity of coal is not being monitored.

It is required to conduct long term study of radioactivity and heavy metals contents on coal to be used through a reputed institute and results thereof analysed every two year and reported along with monitoring reports. Thereafter mechanism for an in-built continuous monitoring for radio activity and heavy metals in coal and fly ash (including bottom ash) shall be put in place.

- xxxix. Fugitive emissions shall be controlled to prevent impact on agricultural or non-agricultural land.**

Status: Being complied

It has been observed that the PAs are in process of controlling fugitive emission to prevent impact on agricultural or non-agricultural land. Stock Pile Dust Suppression system around coal yards, Dry Fog dust suppression System along conveyor belts, Cyclone separators & bag filters at crusher house, Vacuum truck for road dust cleaning are implemented to avoid fugitive dust emissions and prevent the impact on agricultural or non-agricultural land.

- xl. Space for FGD shall be provided for future installation as may be required.**

Status: Being complied

It has been informed that the space for FGD has been provided for future installation as may be required.

- xli. No ground water shall be extracted for use in operation of the power plant even in lean season. No water bodies including natural drainage system in the area shall be distributed due to activities associated with the setting up / operation of the power plant.**

Status: Being complied

It has been observed that the PAs are meeting water requirement with Sea Water treated at WTP.

- xlii. Fly ash is not to be used for agricultural purpose. No mine void**

filling will be undertaken as an option for ash utilization without adequate lining of mine with suitable media such that no leachate shall take place at any point of the time. In case, the option of mine void filling is to be adopted, prior detailed study of soil characteristics of the mine area shall be undertaken from an institute of repute and adequate clay lining shall be ascertained by the State Pollution Control Board and implementation done in close coordination with the State Pollution Control Board.

Status: Being complied

It has been observed that the condition is being followed by PAs.

- xliii. Green belt shall also be developed around the ash pond over and above the green belt around the plant boundary.**

Status: Being complied

It has been observed that the PAs are in process of developing green belt around the ash pond area.

- xliv. A Common Green Endowment Fund shall be created and the interest earned out of it shall be used for the development and management of green cover of the area.**

Status: Being complied

As per the discussions held, it has been informed that the a separate fund centre has been earmarked for Green belt development and maintenance.

- xliv. For proper and periodic monitoring of CSR activities, a CSR committee or a social audit committee or a suitable credible external agency shall be appointed. CSR activities shall also be evaluated by an independent external agency. This evaluation shall be both concurrent and final.**

Status: Being complied

As per the discussions held, it has been informed that the PAs have constituted a CSR committee for evaluation and implementation of CSR activities.

- xlvi. An Environment Cell comprising of at least one expert in environment science / engineering, ecology, occupational health and social science, shall be created preferably at the project site itself and shall be headed by an officer of**

appropriate superiority and qualification. It shall be ensured that the Head of the Cell shall directly report to the Head of the Plant who would be accountable for implementation of environmental regulations and social impact improvement / mitigation measures.

Status: Being complied

It has been observed that the PAs have established an Environment Management Cell with suitable qualified personnel under the supervision of Head-HSE, who reports directly to the Station Head. Services of Marine biologist & ecologist will be hired based on the requirement.

- xlvi. The project proponent shall formulate a well laid Corporate Environment Policy and identify and designate responsible officers at all levels of its hierarchy for ensuring adherence to the policy and compliance with the conditions stipulated in this clearance letter and other applicable environmental laws and regulations.**

Status: Complied

It has been observed that the PAs have Environmental Policy which has been incorporated in the QHSE Policy.

CRZ Clearance No. 11-129/2010-IA.III dated 05.12.2011

- i. "Consent For Establishment" shall be obtained from state pollution control board under Air and Water Act and a copy shall be submitted to the Ministry before start of any construction work at the site.**

Status: Not complied

As per the discussions held, it has been informed that the Consent For Establishment (CFE) from Andhra Pradesh Pollution Control Board has been obtained vide Order. No. 177/PCB/CFE/RO/-NLR/HO/2009-433 dated 15/05/2010. However, the said CFE is for establishment of following activity:

SN	Product/Activity	Capacity
1	Generation of Electrical Power Fuel – Blended coal (70% indigenous coal and 30% imported coal)	1980 MW (Stage-I – 2x660 MW + Stage-II – 1X660 MW)

It is required to submit the copy of "Consent For Establishment" granted for construction of pump house, Sea

water Intake and Outfall facilities obtained from APPCB under Air and Water Act.

- ii. Cutter suction dredging shall be adopted instead of grab technology so as to control the sediments during dredging.**

Status: Complied

During the day of monitoring, no dredging activities were undertaken. It has been informed that the cutter suction dredging was adopted during dredging.

- iii. Top of the pipeline buried shall be minimum 2 m below the sea bed. The PP shall obtain a certificate of compliance from the agency executing the pipeline, with supporting documentation and shall submit to RO of MoEF and to state PCB.**

Status: Complied

As per the discussions held, it has been informed that the pipeline is buried at 2 m below the sea bed. The sea water intake pipeline installation certificate has issued by M/s Gayatri Projects Limited vide letter dated 24.06.2014. The compliance certificate has submitted to RO of MoEF and APPCB.

- iv. No effluent from fly ash system is permitted to discharge into the marine system, as committed by PP. The effluent from fly ash shall be treated and the entire quantity shall be recycled in the cooling tower makeup etc., and suitable meter shall be installed to record the quantity of effluent recycled.**

Status: Being complied

It has been observed that, no effluent from fly ash system is being discharged into marine water. The effluent water from ash pond is being collected and recycled. Flow Meters are installed for recording the quantity.

- v. Shall implement all the measures as committed to the Ministry vide their letter dated 01.08.2011, as a part of the clarifications submitted by the PP. A copy of these submissions shall be submitted to RO of MoEF.**

Status: Partially complied.

It has been informed that the PAs have implemented all the measures as committed to the Ministry.

It is required to provide the details implementation status of all

the measures as committed to the Ministry vide their letter dated 01.08.2011, as a part of the clarifications submitted by the PP.

- vi. A suitable STP shall be provided to treat the domestic effluent and treated effluent shall be used for green belt, dual plumbing system etc., measuring meters shall be provided to record the treated effluent used for different purposes.**

Status: Being complied

It has been observed that the PAs have provide 30 KLD of STP to treat the domestic sewage generated at the site. The treated water is used for greenbelt development.

- vii. All the mitigation measures submitted in the EIA report shall be prepared in a matrix format and the compliance for each mitigation plan shall be submitted to MoEF-RO.**

Status: Partially complied

It has been informed that the mitigation measures submitted in the EIA report is being followed

It is required to submit the compliance status of all mitigation measures submitted in the EIA report which are to be prepared in a matrix format to Ministry's IRO, Vijayawada.

- viii. The proponent shall commit himself to be one of the partners / proponents (who have undertaken / will be undertaking similar power projects in the close proximity of site) as and when instructed by the MoEF/State Government Authorities in preparing an overall EIA report comprising both terrestrial / marine EIA components for the region and share the cost of the study and proposed mitigation measures for the coastal stretch as decided by the authorities in the best interest of protecting the environment.**

Status: Being complied

It has been observed that the natural draft Cooling Towers are installed at the site. ETP consists of Flash Mixer, Lamella Clarifier, Sludge Pit, Oily Water Separation Unit, Oily water collection tank and Central Monitoring Basin & Dosing system is used to treat the effluent to meet the prescribed norms.

- ix. Appropriate screens and trash bars shall be put in place at the intake to avoid fish entering into the pipe due to heavy quantity**

of water drawl by once through water intake system.

Status: Complied

As per the discussions held and designs provided, it has been observed that the PAs have provide appropriate screens and trash bars to avoid fish entering in to the pipe.

- x. Temperature and salinity level shall be monitored regularly by providing online monitoring system at the appropriate location on the outfall system.**

Status: Being complied

As per the discussions held and designs provided, it has been observed that the PAs are monitoring the parameters by providing online EQMS which is connected to CPCB/APPCB on real time basis.

- xi. Periodic monitoring of coastal water shall be carried out at outfall location.**

Status: Being complied

As per the discussions held, it has been observed that the monthly joint sampling of coastal water is being practiced along with state PCB office.

- xii. No construction work other than those permitted in coastal regulation zone notification shall be carried out in coastal regulation zone area.**

Status: Being complied

It has been observed that, no construction work other than those permitted in coastal regulation zone notification has carried out in coastal regulation zone area.

- xiii. The project proponent shall set up separate environmental management cell for effective implementation of the stipulated environmental safeguards under the supervision of a senior executive.**

Status: Being complied

It has been observed that the PAs have established an Environment Management Cell with suitable qualified personnel under the supervision of Head-HSE, who reports directly to the Station Head.

- xiv. The funds earmarked for environment management plan shall be**

included in the budget and this shall not be diverted for any other purposes.

Status: Being complied

As per the discussions held, it has been informed that the funds earmarked for environment management plan has included in the budget and are not be diverted for any other purposes.

B. General Conditions

- i. Appropriate measures must be taken while undertaking digging activities to avoid any likely degradation of water quality.**

Status: Complied

During the day of monitoring, no dredging activities were undertaken. It has been informed that the cutter suction dredging was adopted during dredging.

- ii. Full support shall be extended to the officers of this Ministry / regional office at Bangalore by the project proponent during inspection of the project for monitoring purposes by furnishing full details and action plan including action taken reports in respect of mitigation measures and other environmental protection activities.**

Status: Being complied

It has been observed that the condition is being complied with.

- iii. A six – monthly monitoring report shall need to be submitted by the project proponents to the Regional Office of this Ministry at Bangalore regarding the implementation of the stipulated conditions.**

Status: Being complied

As per the records, it has been observed that the PAs are submitting six monthly compliance reports on status of compliance and the monitored data to the Ministry's Regional Office, Chennai. The latest six monthly compliance report for the period April – September, 2021 has submitted vide letter no. SEIL P1/MoEF&CC/Chennai/2021/005 dated 05.12.2021 to Integrated Regional Office, Chennai.

During Inspection, it has been informed that the Ministry of Environment, Forest and Climate Change vide Gazette of India Notification No. 1-5/2013-ROHQ dated 13.08.2020 has

established 09 new Integrated Regional Offices (IROs) including IRO, Vijayawada. The IRO, Vijayawada is functioning with the jurisdiction of State Andhra Pradesh. Henceforth, six monthly compliance reports will all monitored data including required enclosures should be submitted to IRO, Vijayawada in soft copy (PDF format) only on regularly basis to ecompliance-ap@gov.in (only).

- iv. **Ministry of Environment & Forests or any other competent Authority may stipulate any additional conditions or modify the existing ones, if necessary, in the interest of environment and the same shall be complied with.**

Status: Being complied

It has been observed that the condition is being complied with.

- v. **The Ministry reserves the right to revoke this clearance if any of the conditions stipulated are not complied with satisfaction of the Ministry.**

Status: Being complied

It has been observed that the condition is being complied with.

- vi. **In the event of change in project profile or change in the implementation agency, a fresh reference shall be made to the Ministry of Environment and Forests.**

Status: Assured to comply

It has been assured by PAs that a fresh reference will be made to Ministry in the event of change in project profile or change in the implementation agency.

- vii. **The project proponents shall inform the regional office as well as the Ministry, the date of financial closure and final approval of the project by the concerned authorities and the date of start of land development work.**

Status: Partially complied

As per the discussions held, it has been stated the details regarding the date of financial closure and final approval of the project by the concerned authorities and the date of start of land development work has communicated. However, as per the records, information is not available.

It is required to provide the details regarding the date of financial closure and final approval of the project by the concerned authorities and the date of start of land development work.

- viii. **A copy of the clearance letter shall be marked to concerned Panchayat / local NGO, if any, from whom any suggestions / representation has been made received while processing the proposal.**

Status: Complied

It has been observed that the condition has complied with.

- ix. **Tamil Nadu Pollution Control Board shall display a copy of the clearance letter at the Regional Office, district industries centre and Collector's Office/ Tahsildar's office for 30 days.**

Status: Complied

It has been observed that the condition has complied with.

- x. **These stipulations would be enforced among others under the provisions of Water (prevention and control of pollution) Act, 1974, the Air (prevention and control of pollution) Act, 1981, the Environment (protection) Act, 1986, the Public Liability (Insurance) Act, 1991 and EIA Notification, 1994, including the amendments and rules made thereafter.**

Status: Complied

It has been observed that the condition has complied with.

- xi. **All other statutory clearances such as the approvals for storage of diesel from chief controller of explosives, fire department, civil aviation department, forest conservation Act, 1980 and wild life (Protection) Act, 1972 etc., shall be obtained, as applicable by project proponents from the respective competent authorities.**

Status: Being complied

It has been observed that the Ministry granted Environmental Clearances (ECs) and CRZ clearances to the project at various stages. The details of EC and CRZ clearances granted to the project are as follows:

S N	Project	Clearance No. and date
--------	---------	------------------------

I/7789/2022

175

Environmental Clearance		
1	3 X 660 MW (Stage-I: 2 X 660 MW; and Stage-II: 1 x 660 MW) Super Critical Coal Based Thermal Power Plant at village Painampuram, in Muthukur Mandal, in Nellore Distt., in Andhra Pradesh	J-13011/02/2009-IA.II(T) dated 04.11.2009
2	3 X 660 MW (Stage-I: 2 X 660 MW; and Stage-II: 1 x 660 MW) Super Critical Coal Based Thermal Power Plant at village Painampuram, in Muthukur Mandal, in Nellore Distt., in Andhra Pradesh – Extention of EC validity	J-13011/02/2009-IA.II(T) dated 02.03.2015
3	2x660 MW (Stage-I) Super Critical Coal Based TPP at Village Painampuram & Nelaturu, in Muthukur Mandal, in SPSR Nellore Distt., in Andhra Pradesh by M/s Thermal Powertech Corporation (India) Ltd-reg Transfer of EC	J-13011/02/2009-IA.II(T) dated 09.10.2019
CRZ Clearance		
4	CRZ clearance for the construction of pump house, Sea water Intake and Outfall facilities at Pianapuram Village, Near Nellore, Andhra Pradesh by M/s Thermal Power Tech Corporation India Ltd.	11-129/2010-IA.III dated 05.12.2011.

It has been observed the the CRZ clearance issued by the Ministry vide Clearance No. 11-129/2010-IA.III dated 05.12.2011 for the construction of pump house, Sea water Intake and Outfall facilities at Pianapuram Village, Near Nellore, Andhra Pradesh has granted to M/s Thermal Power Tech Corporation India Ltd. The transfer of CRZ clearance in favor of M/s Sembcorp Energy India Limited has not provided.

Other permissions Clearances granted to the Project are as follows:

SN	Permissi ons obtaine d by unit	Document/ license no.	Issue date	Valid upto	Name of the Departmen t
1	Boiler License	Unit#1: AP- 6119	02.07.2021	01.07.202 2	Factories Dept. Govt. of Andhra Pradesh
		Unit#2: AP-	03.08.2021	01.08.202	

I/7789/2022

176

		6146		2	
2	Fire NOC	Rc.No 17760/ NLR/ MSB/ 2021, Dt: 03.06.2021	03.06.2021	02.05.202 2	AP State Disaster Response and Fire Services Departmen t
3	PESO License	P/HQ/AP/ 15/4044 (P326181)	19.09.2014	31.12.202 3	PESO
4	CTE	Order No. 177/PCB/C FE/RO- NLR/HO/2 009	15.05.2010	-	APPCB
5	CTO	Order No. APPCB/ VJA/ NLR/ 930/HO/C FO/2016	16.11.2021	30.11.202 6	APPCB
6	Hazardous Waste Approval	Order No. APPCB/ VJA/ NLR/ 930/HO/C FO/2016	16.11.2021	30.11.202 6	APPCB
7	Factory License	R.No. 114074 /DYCIFN- ADMNOLIC N/08/2020 -SUVR(A)- DYCIF-NLR	20.02.2015	31.12.202 2	Factories Dept. Govt. of Andhra Pradesh
			19.08.2017		
			26.02.2018		
			26.06.2020		
8	EC Letter	J 13012/02/ 2009-IA.II (T)	04.11.2009	03.11.201 4	MoEF&CC
		J 13012/02/ 2009-IA.I (T)	02.03.2015	03.11.201 5	MoEF&CC
9	Panchay	NOC	09.09.2009	-	Nelatur

I/7789/2022

177

	ath Running License	Available			Panchayat
10	Public Liability Insuran ce Act	Policy Number: 030400580 5 01 00	19/11/202 1	18/11/20 22	Tata AIG General Insurance Company Limited

- xii. The project proponent shall advertise in at least two local newspapers widely circulated in the region, one of which shall be in the vernacular language informing that the project has been accorded environmental clearance and copies of clearance letters are available with the state pollution control board and may also be seen on the website of the Ministry of Environment and Forest at <http://www.envfor.nic.in>. The advertisement should be made within 10 days from the date of receipt of the clearance letter and a copy of the same should be forwarded to the regional office of this Ministry at Bangalore.**

Status: Partially complied

It has been informed that that condition has been complied and communicated.

It is required to submit the copies of newspaper advertisement to Ministry's IRO, Vijayawada for records.

- xiii. Environmental services is subject to final order of the Hon'ble Supreme Court of India in the matter of Goa Foundation Vs. Union of India in writ Petition (civil)No.460 of 2004 as may be applicable to this project.**

Status: Being complied

It has been observed that the condition is being complied with.

- xiv. Status of compliance to the various stipulated environmental conditions and environmental safeguards will be uploaded by the project proponent in its website.**

It has been observed that the PAs are not uploading the status of compliance of the stipulated CRZ clearance conditions, including results of monitored data on their website.

It is required to upload the status of compliance of the stipulated CRZ clearance conditions, including results of monitored data on their website.

- xv. **A copy of the clearance letter shall be sent by the proponent to concerned Panchayat, Zilla Parishad /Municipal corporation, urban local body and the local NGO, if any from whom suggestions/representations, if any, received while processing the proposal. The Clearance letter shall also be put on the website of the Company by the Proponent.**

Status: Complied

As per the discussions held, it has been informed that the clearance letter was sent to concerned Panchayat, Zilla Parishad/ Municipal Corporation, urban local body. Clearance letters are also uploaded in Sembcorp website at <https://www.sembcorpenergyindia.com/AboutUs/Disclosure>

- xvi. **The proponent shall upload the status of compliance of the stipulated EC conditions, including results of monitored data on their website and shall update the same periodically. It shall simultaneously be sent to the Regional Office of MoEF, the respective zonal office of CPCB and the SPCB.**

Status: Partially complied

It has been observed that the PAs are not uploading the status of compliance of the stipulated CRZ clearance conditions, including results of monitored data on their website.

As per the records, it has been observed that the PAs are submitting six monthly compliance reports on status of compliance and the monitored data to the Ministry's Regional Office, Chennai. The latest six monthly compliance report for the period April – September, 2021 has submitted vide letter no. SEIL P1/MoEF&CC/Chennai/2021/005 dated 05.12.2021 to Integrated Regional Office, Chennai.

During Inspection, it has been informed that the Ministry of Environment, Forest and Climate Change vide Gazette of India Notification No. 1-5/2013-ROHQ dated 13.08.2020 has established 09 new Integrated Regional Offices (IROs) including IRO, Vijayawada. The IRO, Vijayawada is functioning with the jurisdiction of State Andhra Pradesh. Henceforth, six monthly compliance reports will all monitored data including required enclosures should be submitted to IRO, Vijayawada in soft copy (PDF format) only on regularly basis to ecompliance-ap@gov.in (only).

It is required to upload the status of compliance of the stipulated CRZ clearance conditions, including results of monitored data on their website.

- xvii. The proponent shall also submit six monthly reports on the status of compliance of the stipulated EC conditions including results of monitored data to the respective Regional Office of MoEF, the respective zonal office of CPCB and the SPCB.**

Status: Being complied

As per the records, it has been observed that the PAs are submitting six monthly compliance reports on status of compliance and the monitored data to the Ministry's Regional Office, Chennai. The latest six monthly compliance report for the period April – September, 2021 has submitted vide letter no. SEIL P1/MoEF&CC/Chennai/2021/005 dated 05.12.2021 to Integrated Regional Office, Chennai.

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- xviii. The Environmental statement for each financial year ending 31st March in form-V as is mandated to be submitted by the project proponent to the concerned state pollution control board as prescribed under the environment (protection) rules, 1986 as amended subsequently, shall also be put on the website of the company along with the status of compliance of EC conditions and shall also be sent to the respective Regional Offices of MoEF by e-mail.**

Status: Partially complied

As per the discussions held, it has been informed that the Environment Statement (Form V) for FY 2020-21 has been submitted to APPCB vide letter no. SEIL P1/APPCB/BZA/2021/006 dated 28.11.2021. However, the same is not being submitted to Ministry's IRO, Vijayawada.

It is required to submit the Environment Statement for each financial year ending 31st March in Form V IRO, Vijayawada in soft copy (PDF format) only on regularly basis to ecompliance-ap@gov.in (only).

It has been observed that the PAs have uploaded Environmental Statement for FY 2019-20 on company's website (<https://www.sembcorpenergyindia.com/AboutUs/Disclosure>).

It is required to update the Environmental Statement in company's website on regular basis.

10. Observations:

The PAs have complied or are in process of complying the conditions stipulated by the Ministry. In this context, information/action plans have been sought on following points.

EC No. J-13012/02/2009-IA.II (T) dated 04.11.2009

1. It is required to monitor Mercury and other heavy metals (As, Hg, Cr, Pb etc.) in the effluents emanating from the existing ash pond.
2. It is required to implement the recommendations made in the Hydrogeological study report.
3. It is required to conduct hydrogeological study of the area annually and results submitted to the Ministry and concerned agency in the State Government.
4. It is required to earmark an amount of Rs 32.0 crores as one time capital cost for CSR programme. Subsequently a recurring expenditure of Rs. 6.4 Crores per annum should be earmarked as recurring expenditure for CSR activities. Details of the activities to be undertaken should be submitted within along with road map for implementation.
5. It is required to implement CSR activities as per need based assessment for the nearby villages to study economic measures with action plan which can help in upliftment of poor section of society. Income generating projects consistent with the traditional skills of the people besides development of fodder farm, fruit bearing orchards, vocational training etc., can form a part of such programme. Company shall provide separate budget for community development activities and income generating programmes. This will be in addition to vocational training for individuals imparted to take up self employment and jobs.
6. During Inspection, it has been informed that the Ministry of Environment, Forest and Climate Change vide Gazette of India Notification No. 1-5/2013-ROHQ dated 13.08.2020 has established 09 new Integrated Regional Offices (IROs) including IRO, Vijayawada. The IRO, Vijayawada is functioning with the jurisdiction of State Andhra Pradesh. Henceforth, six monthly compliance reports will all monitored data including required enclosures should be submitted to IRO, Vijayawada in soft copy (PDF format) only on regularly basis to ecompliance-ap@gov.in (only).

7. It is required to submit the Environment Statement for each financial year ending 31st March in Form V IRO, Vijayawada in soft copy (PDF format) only on regularly basis to ecompliance-ap@gov.in (only).
8. It is required to update the Environmental Statement in company's website on regular basis.
9. It is required to submit the detailed report regarding the expenditure incurred for implementation of environmental protection measures along with six monthly compliance to Ministry's Integrated Regional Office on regular basis.
10. It is required to submit the details regarding the date of financial closure and final approval of the Project by the concerned authorities and the dates of start of land development work and commission of the plant.

J-13011/02/2009-IA.II(T) dated 02.03.2015 (Extension of EC validity)

11. It is required to conduct long term study of radioactivity and heavy metals contents on coal to be used through a reputed institute and results thereof analysed every two year and reported along with monitoring reports. Thereafter mechanism for an in-built continuous monitoring for radio activity and heavy metals in coal and fly ash (including bottom ash) shall be put in place.

CRZ Clearance No. 11-129/2010-IA.III dated 05.12.2011

12. It has been observed the the CRZ clearance issued by the Ministry vide Clearance No. 11-129/2010-IA.III dated 05.12.2011 for the construction of pump house, Sea water Intake and Outfall facilities at Pianapuram Village, Near Nellore, Andhra Pradesh has granted to M/s Thermal Power Tech Corporation India Ltd. The transfer of CRZ clearance in favor of M/s Sembcorp Energy India Limited has not provided.
13. It is required to submit the copy of "Consent For Establishment" granted for construction of pump house, Sea water Intake and Outfall facilities obtained from APPCB under Air and Water Act.
14. It is required to provide the details implementation status of all the measures as committed to the Ministry vide their letter dated 01.08.2011, as a part of the clarifications submitted by the PP.
15. It is required to submit the compliance status of all mitigation measures submitted in the EIA report which are to be prepared in a matrix format to Ministry's IRO, Vijayawada.
16. It is required to provide the details regarding the date of financial closure and final approval of the project by the concerned authorities and the date of start of land development work.
17. It is required to submit the copies of newspaper advertisement to Ministry's IRO, Vijayawada for records.

18.It is required to upload the status of compliance of the stipulated CRZ clearance conditions, including results of monitored data on their website.

11. Recommendations:

This project can be put up in the following tick-marked category of compliance status.

- Compliance status could not be judged as the project was shut down / not in operational during the site visit.
- No non-compliances detected. No any further action is required.
- ✓ ***Minor non-compliances detected (not of immediate danger to health & safety of the people). Letter issued to project authorities for taking corrective measures.***
- Serious non-compliances detected. Recommended to issue a Show-Cause Notice to Project Authorities.

Sd/-

(डॉ। सुरेश बाबु पसुपुलेटी)

(Dr. Suresh Babu Pasupuleti)

संयुक्त निदेशक (एस) / वैज्ञानिक 'डी'

Joint Director (S) / Scientist 'D'

Copy to: Project File

Digitally Signed by Suresh

Babu Pasupuleti

Date: 22-03-2022 14:40:26

Reason: Approved

Compliance status of the conditions stipulated in Schedule –B of Consent Order No: APCCB/ VJA/ NLR/ 930/HO/CFO/2016 Date:21.11.2016 issued to M/s Sembcorp Energy India Limited (Project-1) [Formerly Thermal Powertech Corporation India Limited-TPCIL], Painampuram & Nelaturu Villages, Muthukur Mandal, SPSR Nellore District

S.No	Conditions	Compliance																																																	
1	<p>The effluent discharged shall not contain constituents in excess of the tolerance limits mentioned below.</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 15%;">Outlet</th> <th style="width: 45%;">Parameter</th> <th style="width: 40%;">Limiting standards</th> </tr> </thead> <tbody> <tr> <td rowspan="13" style="text-align: center; vertical-align: top;">1 to 3</td> <td>pH</td> <td>6.5 to 8.5</td> </tr> <tr> <td>Suspended solids</td> <td>100 mg/l</td> </tr> <tr> <td>Oil & Grease</td> <td>10 mg/l</td> </tr> <tr> <td>Temperature</td> <td>Shall not exceeded 5° C above the receiving water temperature</td> </tr> <tr> <td>Biochemical oxygen</td> <td>100 mg/l</td> </tr> <tr> <td>Chemical Oxygen</td> <td>250 mg/l</td> </tr> <tr> <td>Arsenic</td> <td>0.2 mg/l</td> </tr> <tr> <td>Mercury</td> <td>0.01 mg/l</td> </tr> <tr> <td>Lead</td> <td>2.0 mg/l</td> </tr> <tr> <td>Cadmium</td> <td>2.0 mg/l</td> </tr> <tr> <td>Hexavalent Chromium</td> <td>1.0 mg/l</td> </tr> <tr> <td>Bio essay test</td> <td>90% survival fish after 96 hours</td> </tr> <tr> <td rowspan="10" style="text-align: center; vertical-align: top;">5 to 8</td> <td>pH</td> <td>5.5 — 9.0</td> </tr> <tr> <td>Suspended solids</td> <td>100 mg/l</td> </tr> <tr> <td>Oil & Grease</td> <td>10 mg/l</td> </tr> <tr> <td>Biochemical oxygen</td> <td>100 mg/l</td> </tr> <tr> <td>demand (3 days at</td> <td></td> </tr> <tr> <td>Arsenic (as As)</td> <td>0.2 mg/l</td> </tr> <tr> <td>Cyanide (as CN)</td> <td>0.2 mg/l</td> </tr> <tr> <td>Bio essay test</td> <td>90% survival fish after 96 hours</td> </tr> <tr> <td>Copper (Total)</td> <td>1 mg/l</td> </tr> <tr> <td>Iron (Total)</td> <td>1 mg/l</td> </tr> </tbody> </table>	Outlet	Parameter	Limiting standards	1 to 3	pH	6.5 to 8.5	Suspended solids	100 mg/l	Oil & Grease	10 mg/l	Temperature	Shall not exceeded 5° C above the receiving water temperature	Biochemical oxygen	100 mg/l	Chemical Oxygen	250 mg/l	Arsenic	0.2 mg/l	Mercury	0.01 mg/l	Lead	2.0 mg/l	Cadmium	2.0 mg/l	Hexavalent Chromium	1.0 mg/l	Bio essay test	90% survival fish after 96 hours	5 to 8	pH	5.5 — 9.0	Suspended solids	100 mg/l	Oil & Grease	10 mg/l	Biochemical oxygen	100 mg/l	demand (3 days at		Arsenic (as As)	0.2 mg/l	Cyanide (as CN)	0.2 mg/l	Bio essay test	90% survival fish after 96 hours	Copper (Total)	1 mg/l	Iron (Total)	1 mg/l	Complied.
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11. Domestic (Plant)	50.0					
Total	2,32,846.0					
	Separate meters with necessary pipe-line shall be maintained for assessing the quantity of water used for each of the purposes mentioned above for Cess assessment purpose					
3	The industry shall provide Separate digital water meters in the intake point of sea water (i.e. at sea coast) with totalizer facility unit wise with asses daily water consumption quantity instead of cumulative water consumptions	Complied. Digital flow meters provided for Sea water				
4	The industry shall comply with the MoEF&CC Notification S.O.No. 3305 (E) dated 07.12.2015 as applicable pertaining to water consumption and report compliance to RO, Nellore.	Not applicable. The industry using Sea water for their operations. The MoEF&CC vide GSR.No.593 (A), dt.28.06.2018 issued amendment, which states that the specific water consumption mentioned in S.O.No.3305 (E) shall not be applicable to Thermal Power Plants using Sea water.				
5	The industry shall maintain flow meter preferably Electro Magnetic Flow Meters with totalizers for water and effluent quantity measurements for different streams of effluents and different categories of water usage stipulated in this order.	Complied. The industry operating 19 Nos. of Digital Flow Meters provided at different sections for water consumption				
6	The industry shall provide leachate collection tank to collect the leachate from garland drain of ash pond.	Complied.				
7	The industry shall provide provision to collect the excess water from the ash pond into sea to control overflow of saline water from ash pond and to prevent irrigation tanks being polluted	Complied. The industry has provided clarifier tank for the ash ponds to collect the clear water from the ash pond and for reuse. The excess water during the rainy season disposed to sea.				

Air pollution														
8	<p>The emissions shall not contain constituents in excess of the prescribed limits mentioned below.</p> <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th style="text-align: center;">Chimney No.</th> <th style="text-align: center;">Parameter</th> <th style="text-align: center;">Emission Standards</th> </tr> </thead> <tbody> <tr> <td rowspan="4" style="text-align: center; vertical-align: middle;">1 & 2</td> <td style="text-align: center;">Particulate matter</td> <td style="text-align: center;">50 mg/Nm³</td> </tr> <tr> <td style="text-align: center;">SO₂</td> <td style="text-align: center;">*200 mg/Nm³</td> </tr> <tr> <td style="text-align: center;">NO_x</td> <td style="text-align: center;">*300 mg/Nm³</td> </tr> <tr> <td style="text-align: center;">Mercury (Hg)</td> <td style="text-align: center;">*0.03 mg/Nm³</td> </tr> </tbody> </table> <p>*The thermal power plants shall meet the limits on or before 7th December 2017 as per MoEF&CC Notification S.O.3305 (E) dt.07.12.2015</p>	Chimney No.	Parameter	Emission Standards	1 & 2	Particulate matter	50 mg/Nm ³	SO ₂	*200 mg/Nm ³	NO _x	*300 mg/Nm ³	Mercury (Hg)	*0.03 mg/Nm ³	Complied.
Chimney No.	Parameter	Emission Standards												
1 & 2	Particulate matter	50 mg/Nm ³												
	SO ₂	*200 mg/Nm ³												
	NO _x	*300 mg/Nm ³												
	Mercury (Hg)	*0.03 mg/Nm ³												
9	<p>The industry shall comply with ambient air quality standards of PM₁₀ (Particulate Matter size less than 10µ.m) - 100 µg/ m³; PM_{2.5} (Particulate Matter size less than 2.5 µm) - 60 l.ig/ m³; SO₂ - 80 µg/ m³; NO_x - 80 l.ig/m³, outside the factory premises at the periphery of the industry.</p> <p>Standards for other parameters as mentioned in the National Ambient Air Quality Standards CPCB Notification No.E-29016/20/90/PCI-I, dated 18.11.2009.</p> <p>Noise Levels: Day time (6 AM to 10 PM) - 75 dE (A) Night time (10 PM to 6 AM) - 70 dB (A)</p>	<p>Complied.</p> <p>The industry has provided 4nos of CAAQM Stations and also monitoring AAQ through 3rd party. As per the reports the AAQ values are within the NAAQM standards.</p>												
10	<p>The industry shall comply with emission limits for DG sets of capacity upto 800 KW as per the Notification G.S.R.520 (E), dated 01.07.2003 and ~S.R.448(E), dated 12.07.2004 under the Environment (Protection) Act Rules. In case of DG sets of capacity more than 800 KW shall comply with emission limits as per the Notification G.S.R.489 (E), dated 09.07.2002 at serial no.96, under the Environment (Protection) Act, 1986</p>	---												
11	<p>The industry shall provide closed sheds for storage of coal and industry shall provide wind barriers/ wind breaking walls to the coal yards as temporary arrangement to control fugitive dust emissions on immediate surroundings</p>	<p>Not complied.</p> <p>The industry has not provided closed sheds for storage of coal, as the Board has directed to provide wind barriers after the green belt buffer around coal stock yard to prevent fugitive dust emissions in all directions vide TF directions dt.24.11.2017. However, they planted Conocarpus</p>												

		trees all around coal yard and claiming it as wind barrier, the plants height at present is about 6 to 8 meters. The industry provided high speed water sprinklers around the coal storage area and also provided water sprinklers on coal reclaimer stacker.
12	The industry shall provide water sprinklers around the ash pond area to control fugitive emissions in the surrounding area within 2 months and report compliance to RO, Nellore	Partially complied. Water sprinklers were provided towards eastern part of the ash pond.
13	The industry shall regularly operate water sprinklers provided to control stock yard to mitigate fugitive dust on the surroundings from coal handling area.	Complied. During the inspection, the water sprinklers are in operation.
14	The industry shall provide necessary air pollution control systems at coal transfer points in coal conveyer system from port boundary to industry premises within 3 months.	Complied. Bag filters & dust collectors provided at coal transfer points in coal conveyer system.
15	The industry shall upgrade the air pollution control systems at coal crusher within 3 months.	Complied. Bag filter provided at coal crusher.
16	The industry shall provide separate energy meters along with totalizer facility for each ESP.	Complied
17	The industry shall comply with the MoEF&CC Notification S.O. No.3305 dt.07.12.2015 and S.O. 682 (E) dt.07.03.2016 as applicable and report compliance to RO, Nellore.	--
	<u>General</u>	
18	The industry shall handover the original consent dated 15.02.2016 to the RO, Nellore after receipt of this order.	---
19	The drums containing chemicals / solvents shall be stored under a rood on elevated platform with a provision to collect leakages/spillages in the collection pit.	Complied.

20	<p>The industry shall maintain the following records and the same shall be made available to the inspecting officers of the Board:</p> <ul style="list-style-type: none"> a. Daily production details (ER-1 Central Excise Returns). b. Quantity of Effluents generated, treated, recycled/reused and disposed. c. Log Books for pollution control systems. d. Characteristics of effluents and emissions. e. Hazardous/non hazardous solid waste generated and disposed. f. Inspection book. g. G. Manifest copies of hazardous waste. 	Complied.												
21	<p>The industry shall dispose solid waste (Non-Haz) as follows :-</p> <table border="1"> <thead> <tr> <th>S. No.</th> <th>Name of the solid waste</th> <th>Quantity</th> <th>Disposal</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>Fly ash</td> <td>0.96 Million Tons/ Annum</td> <td>To cement / brick units</td> </tr> <tr> <td>2</td> <td>Bottom Ash</td> <td>0.24 Million Tons/ Annum</td> <td>To Cement, brick manufacturing units. Utilized bottom ash to ash pond in slurry mode</td> </tr> </tbody> </table>	S. No.	Name of the solid waste	Quantity	Disposal	1	Fly ash	0.96 Million Tons/ Annum	To cement / brick units	2	Bottom Ash	0.24 Million Tons/ Annum	To Cement, brick manufacturing units. Utilized bottom ash to ash pond in slurry mode	<p>Complied.</p> <p>Fly ash: Disposing to cement / brick units, excess to ash pond.</p> <p>Bottom Ash : Disposing to ash pond and disposing to outside parties for low lying filling</p>
S. No.	Name of the solid waste	Quantity	Disposal											
1	Fly ash	0.96 Million Tons/ Annum	To cement / brick units											
2	Bottom Ash	0.24 Million Tons/ Annum	To Cement, brick manufacturing units. Utilized bottom ash to ash pond in slurry mode											
22	<p>The industry shall relocate the CAAQM stations provided at sea intake point to suitable location in consultation with RO, Nellore.</p>	<p>The Board vide CFO amendment order dt.13.07.2019 has permitted to continue CAAQM stations at the existing sea intake point.</p>												
23	<p>The industry shall operate CAAQM stations for monitoring SPM, SO₂ and NO_x with recording facility and maintain connectivity to PCB server.</p>	Complied.												
24	<p>The industry install online effluent and stack monitoring systems for specified parameters as per CPCB directions dated 05.02.2014 & 02.03.2015 and maintain connectivity to APPCB/CPCB websites</p>	<p>Complied.</p> <p>Online effluent stack & AAQ monitoring provided and connected to APPCB website.</p>												
25	<p>The industry shall carryout regular calibration for the on-line stack monitoring systems and CAAQM stations with tamper proof mechanism</p>	Complied.												
26	<p>The industry shall dispose 100% of fly ash generated as per the Fly ash Notification.</p>	<p>Not complied.</p> <p>Bottom ash is being accumulated in ash pond. Ash</p>												

		generation and disposal details submitted by the industry are herewith enclosed.
27	The industry shall develop the thick green belt in an area of 395 acres all along the periphery of the industry and ash pond area	Partially complied. The industry developed green belt in an extent of about 330 acres. The industry may be directed to develop more green belt to meet the condition.
28	The industry shall submit a copy of policy of PLI duly indicating the amount contributed towards ERF to the RO once in six month.	Complied
29	The industry shall comply with Board directions issued from time to time.	Partially complied.
30	The industry shall comply with standards and directions issued by CPCB/ MoEF&CC as and when notifications are issued.	Partially complied. The industry is meeting the emission & effluent standards. But not yet achieved 100% disposal of fly ash
31	The industry shall submit compliance report on the conditions mentioned in the consent order every six months i.e. on 1st of January and July of every year to the RO/ZO	Complied.