एनटीपीसी
NTPC

एन टी पी सी लिमिटेड
(भारत सरकार का उद्यम)
NTPC Limited
(A Govt. of India Enterprise)
(Formerly National Thermal Power Corporation Ltd.)

नबीनगर / Nabinagar

संदर्भ संख्या / Ref. No.: NSTPS/TS/EMG/2023

दिनांक / Date: 22.09.2023

To,
The Member Secretory
Bihar State Pollution Control Board
Parivesh Bhawan, Patliputra Industrial Area,
P.O. Sadakat Ashram, Patna-800010 (Bihar)

Email: bspcb@yahoo.com; msbspcb-bih@gov.in

***Sub: Submission of Environmental Statement (Form V) for year 2022-23 of Nabinagar Super Thermal Power Station.***

Dear Sir,
May pl find enclosed the Environmental Statement of NSTPS Nabinagar for the financial year ending 31st March 2023, under Rule 14 of the Environmental (Protection) Rule - 1986.

Yours faithfully,

22.09.2023.

(K. D. Pandey)
DGM (Envt. Mngt. Gr.)
NSTPS, Nabinagar.

Enclosure:

1. **Environmental Statement 2022-23.**

**Copy:**
Additional Principal Chief Conservator of Forests (Central)
Ministry of Environment, Forest & climate Change (ECZ)
Regional Office, Shyamali Colony
Ranchi-834002.

# ENVIRONMENTAL STATEMENT

# OF

# Nabinagar Super Thermal Power Station, (NSTPS)

## (*FOR THE FINANCIAL YEAR ENDING 31ST MARCH 2023*)

## *(Under Rule 14 of The Environmental (Protection) Rule – 1986)*

## ENVIRONMENT STATEMENT (NSTPS)

## (*FOR THE FINANCIAL YEAR ENDING 31ST MARCH 2023*)

## PART-A

| | | | |
|---|---|---|---|
| 1 | Name & address of the Owner / occupier of the industry operation as process. | : | *Sh. Chandan Kumar Samanta, CGM, NSTPS, P.O. Aditi Nagar, Distt: Aurangabad, Bihar. Pin: 824304.* |
| 2 | Industry Category primary (STC Code) | : | Thermal |
| 3 | Production Capacity (MW) | : | 3X660 MW (All Units are in commercial operation). |
| 4 | Year of Establishment | : | 2008 |
| 5 | Date of last Environment Statement Submitted | : | 22.09.2022 |

## PART-B

### (Water and Raw Material Consumption)

**01. Water Consumption ($M^3$/day):**

| Sl. No. | Water Consumption | | ($M^3$/year) | ($M^3$/day) |
|---|---|---|---|---|
| 1. | Industrial Cooling | : | 36921163 | 101154 |
| 2. | For Process | : | 906804 | 2484 |
| 3. | For Domestic | : | 339046 | 929 |
| | Total | : | 38167013 | 104567 |

| | Process water consumption per product output (Liters/kWh) | | | |
|---|---|---|---|---|
| | **Name of Products** | | **During Previous Financial year (2021-22)** | **During the current financial Year (2022-23)** |
| i. | ELECTRICITY | : | 2.44 | 2.95 |

**02. Unit#1 declared commercial on 06th Sept. 2019, Unit#2 on 23rd July 2021 and Unit#3 on 01st Jun 2022.**

**03. Raw Material Consumption:**

| Sl. No. | Name of Raw Materials | Name of Product | Consumption of raw material/ Unit (Kg/kWh) | |
|---|---|---|---|---|
| | | | 2021-22 | 2022-23 |
| i. | Coal | Electricity | 0.596 | 0.597 |

## PART-C

## POLLUTION DISCHARGED TO ENVIRONMENT/UNIT OF OUTPUT

(Parameters as specified in the Consent issued)

| Pollutants | Quantity of Pollutants Discharged (Kg/day) | Concentration of Pollutants in Discharges ($mg/Nm^3$) | % of variation from prescribed standard with reasons. |
|---|---|---|---|
| **A: AIR POLLUTION (Stack Emission): Average** | | | |
| **SPM** | 3186.8 | 25.80 | Within limit |
| **$SO_2$** | 138660.9 | 1120.7 | Stack with 275 meters height is provided as per EC conditions. FGD installation is under process and will be completed by Dec' 2026. Limit not provided at initial stage. However, for NOx control, SOFA (Separated over fire air) and COFA (Close coupled over fire air) system is installed in the boiler. The boiler is *of sliding pressure supercritical, once-through* type, utilizing a Tangential Firing System. |
| **$NO_X$** | 23013.2 | 186.0 | |
| **B: WATER POLLUTION: Plant is designed for Zero liquid discharge (ZLD).** | | | |
| **(i)** **Ash Pond Effluents:** There is no discharge from Ash Pond.<br>**(ii)** **Main Plant Effluents:** Effluent is being treated and recycled. | | | |

## PART-D

## HAZARDOUS WASTES

| HAZARDOUS WASTE (GENERATED) | | Total Quantity of waste generated | |
|---|---|---|---|
| | | 2021-22 | 2022-23 |
| (a) | **From Process:** | | |
| 1. | Used & dirty oil (in KL) | Nil | Nil |
| 2. | Scrap Battery (in MT) | Nil | 1.07 |
| 3. | Metal & Metal bearing Scraps | 79.875 MT | 900 MT |
| (b) | **From Pollution Control Facilities:** | | |
| | | Nil | Nil |

## PART-E

## SOLID WASTES

| SOLID WASTE | | TOTAL QUANTITY | |
|---|---|---|---|
| | | During the previous fin. Year 2021-22 | During the current fin. Year 2022-23 |
| A. | **FROM PROCESS (Generated)** | | |
| i) | ASH (MT) | 1695584 | 26,07,000 |
| B. | **FROM POLLUTION CONTROL FACILITY:** | | |
| i) | | Nil | Nil |
| C. (1) | **QUANTITY RECYCLED OR RE-UTILISED WITHIN THE UNIT:** | | |
| i) | Fly Ash (MT) | 3000 | 2,45,200 |
| ii) | Pond Ash (MT) | Nil | |
| (2) | **SOLD (MT):** | | |
| i) | Fly Ash (MT) | 854025 | 1142203 |
| ii) | Cenosphere (MT) | Nil | Nil |
| (3) | **DISPOSED off to Ash Dyke** (MT) | 838558 | 1219650 |

**Note:-**

1. The generated fly ash from Unit # 1, 2 & 3 is being lifted by different Cement industries from AHP Silo -1, 2, 3 & 4 and the balance is being disposed to ash pond.
2. The wet ash from ash pond is issued to NHAI on free of cost basis. For FY 2022-23, 5,32,600 MT has been issued to NHAI.

## PART-F

## CHARACTERISATION (IN TERMS OF COMPOSITION OF QUANTUM) OF HAZARDOUS AS WELL AS SOLID WASTE AND DISPOSAL PRACTICE ADOPTED FOR BOTH THESE CATEGORY OF WASTES

### A. HAZARDOUS WASTE DOSPOSAL STATUS AT NSTPS:

| S. No. | Hazardous Waste per Authorization | Category | Approx. Quantity of waste generated during operation (year 2022-23) | Method of Disposal/Qty. Dispatched (MT/KL) |
|---|---|---|---|---|
| 01 | Used or spent oil | 5.1 | Nil | Storage at identified place. Disposal as per procedure. |
| 02 | Plastic empty barrels/drum/container | 33.1 | 4.281 MT | |
| 03 | Contaminated cotton rags or other cleaning materials | 33.2 | Nil | |
| 04 | Waste or residues containing oil | 5.2 | Nil | |
| 05 | Spent ion exchange resin containing toxic metal | 35.2 | 0.8 MT | Storage at identified place. Disposal to authorized recycler |
| 06 | Oil and grease skimming | 35.4 | Nil | |
| 07 | Halogenated aliphatic compounds (C12-Eco-Toxic) | Sch-II as Class C | Nil | |
| 08 | Metal and metal bearing waste (Iron steel scraps) | Schedule-III as Part-D | 900 MT | Storage at identified place. Disposal as per procedure. |

### B. SOLID WASTE STATUS AT NSTPS:

| S. No. | Solid Waste | Approx. Quantity/Year | Method of Disposal |
|---|---|---|---|
| 01. | Ash (Fly + Bottom) | 26.07 LMT | In cement and brick manufacturing & NHAI. Balance quantity disposed to ash pond. |

## PART-G

## IMPACT OF POLLUTION ABATEMENT MEASURES ON CONSERVATION OF NATURAL RESOURCES AND THE COST OF PRODUCTION.

- NSTPS is designed for Zero Liquid Discharge (ZLD) and accordingly system like Ash Water Recirculation System (AWRS) which recycles & reuses effluents from ash pond, Liquid Wastewater Treatment System (LWTS) which recycles & reuses entire effluents generated in main plant and Sewage Treatment Plant (STP) for township & plant domestic effluent, effectively. These systems reduce the water requirement and consumption leading to significant water conservation. Water conservation has both direct and indirect effect on the cost of production as water is most precious natural resources.

- Depreciation cost of pollution control devices & cost of Operation & Maintenance of these devices has direct impact on cost of production.

- Extensive tree plantation has been carried out as a part of Greenbelt development which will control the impact of Air pollution and optimize the ambient temperature of surrounding areas. *App. 1.475 lac. saplings have been planted so far.*

- Ash Utilization in cement industries, brick manufacturing industries and NHAI will lead to conservation of the topsoil and indirectly related to cost of production by reducing quantum of ash transportation to the ash dyke and additional capacity in ash dyke.

## PART-H

## ADDITIONAL MEASURES / INVESTMENT FOR ENVIRONMENT PROTECTION DETAILS

- Continuous ambient air monitoring stations at four locations are for better & effective monitoring of Ambient Air quality around the plant and township. AAQMS at all four locations are installed, commissioned and in service.
- Continuous Emission Monitoring System (CEMS) for stack emission and continuous effluent quality monitoring system (EQMS) are provisioned, installed in service.
- Adoption of new & environment friendly technologies and continuous strive for better environment management.
- Implementation of Zero Liquid Discharged (ZLD) is in progress and about to complete shortly.
- For better control of fugitive emission, water spraying is being done on unpaved internal roads except during rainy seasons.
- An amount of Rs. 801.3 Crores have been earmarked in the Feasibility Report for Nabinagar STPS towards environmental measures like ESP, Chimney, Cooling System, Ash Handling and Disposal, Effluent Treatment, Recycle and Reuse, Sewage Treatment, Dust Extraction and Suppression System, Fire Fighting and Safety, Green Belt and Afforestation etc. Various systems are under implementation at site.
- Flue Gas De-sulphurisation (FGD) system installation and commissioning is under progress for $SO_2$ control. COFA & SOFA installed and commissioned for NOx Control.
- Municipal Waste Management: Vermi-composting, waste segregation and disposal to common township waste-disposal facility.
- **Environmental Institutional set up:** Experienced, qualified, and dedicated environment management group at project level supported and assisted for environment monitoring and management at station, regional and corporate level.
- **Hazardous Waste Management:** Authorization (Ref No.: HW/B-2977 dtd. 03.07.2020, Valid Upto: 02.07.2025) by Bihar State Pollution Control Board (BSPCB). Storage and disposal of hazardous waste as per rule & direction contained in authorization.
- **Bio-Medical Waste Management:** Authorization (Ref No.: BMW/1794/20/B-3403 dtd. 19.08.2020 and Valid Upto: 18.08.2025) by Bihar State Pollution Control Board (BSPCB).

## PART-I

## ANY OTHER PARTICULARS FOR IMPROVING THE QUALITY OF ENVIRONMENT.

1. **Large Scale Plantation Program:** 1.475 lac. saplings have been planted under mass afforestation program. Further 1100 saplings have been planted under Van Mahotsav program.
2. Regular monitoring of various Environmental Parameters is being carried out by vendor approved by MoEF/Govt of Bihar and all necessary steps are being taken to maintain the same within prescribed limit.
3. **Water Management:** Periodic water balance study and water meters installation at all required place to access actual water consumption and opportunity to reduce water consumption further.
4. **Ash Dyke Management:** Installation of Ash Water Recirculation System (AWRS), Toe drain water recirculation system (TDWRS) and maintaining water cover lagoon leads to reduce conservation and elimination of fugitive emission from ash dyke.
5. **Environmental Awareness:** Mass awareness programs such as training classes, mass tree plantation, slogan, essay writing, painting competition, Environmental Quiz competition among school children, employee & family members of NSTPS and their associate agencies are taken up for better awareness towards environmental protection.
6. Complete infrastructural facilities and technological support for proper monitoring & effective management of surrounding environment.
7. Celebration of World Environment Day, 2023 under Mission LiFE (Lifestyle for the Environment) and other environment related celebrations.

Date: 22.09.2023

(K.D. Pandey)
DGM (EMG)

(**Chandan Kumar Samanta**)
Chief General Manager
Nabinagar Super Thermal Power Station
P.O. Aditinagar (NSTPS Township)
Aurangabad, Bihar-824304.

चंदन कुमार सामंता/Chandan Kumar Samanta
मुख्य महाप्रबंधक/Chief General Manager
नबीनगर सुपर थर्मल पावर स्टेशन
Nabinagar Super Thermal Power Station