# ENVIRONMENTAL STATEMENT REPORT

## JAYPEE NIGRIE SUPER THERMAL POWER PROJECT

(A Unit of M/s Jaiprakash Power Ventures Limited)

Villages: Nigrie, Tehsil :Sarai

District: Singrauli

2014 – 2015

**SUBMITTED**
**M.P. POLLUTION CONTROL BOARD**
**BHOPAL (M.P.)**

**20th August 2015**

**Jaypee Nigrie Super Thermal Power Project**

**(A unit of Jaiprakash Power Ventures Limited)**

## Introduction:

Jaypee group is the great contributor in Power generation of the country through hydro based & Thermal Power plants, Initially started from the Hydropower sector the Group has initiated its entry into Thermal Power Generation, Power Transmission implementing the power plants at Bina , Nigrie & Bara. The Group is committed towards the safety and health of employees and the public. The motto of the Group is '**Work For Safe, Healthy, Clean & Green Environment'**.

Jaypee Nigrie Super Thermal Power Project is a coal based super critical thermal power project of (660 x 2) 1320 MW at Nigrie Village, Deosar Tehsil in Singrauli district of Madhya Pradesh state having adjacent Cement Grinding Unit of 4.0 MTPA. Geographically, it is located at Latitude 24°10'17" North and Longitude 81°54'36" East.

Unit-I of Jaypee Nigrie Super Thermal Power Plant Commissioned in September 2014 and Unit-II got commissioned in March 2015 respectively. Two nos. of Boilers based on super critical technologies are installed. The Control & Instrumentation system supports complete remote operation of the plant from the CCR with high degree of automation and providing monitoring feature of all major systems, equipment and related subsystems so that all salient parameters of the plant are made available to the operator at the Central Control Room. C & I system is based on the state of the art smart instrumentation and Distributed Control System (DCS) with functional and part geographical distribution of Inputs and Outputs at different locations of the plant to optimize the use of direct cabling from sensors.

Jaypee Nigrie Super Thermal Power Project (JNSTPP) is a division of Jaiprakash **Jaiprakash Power Ventures Limited** (JPVL) division with Head Office and Registered Office both at Noida (U.P.), a leading Business House with its presence in Core Industries like Cement industry, Construction division, Hydropower & Thermal Power, Education, I.T. & a chain of five star hotels in major cities of India, which has been at the vanguard in generating wealth for the Nation.

**"FORM – V"**

(See rule 14)

ENVIRONMENTAL STATEMENT FOR THE FINANCIAL YEAR ENDING THE 31st MARCH 2015

**PART – A**

| | | |
|---|---|---|
| (I) | Name & Address of the Owner / Occupier of the Industry Operation or Process | **Jaypee Nigrie Super Thermal Power Project (JNSTPP)** **(Unit of Jaiprakash Power Ventures Limited)** PO- Nigrie, Distt. Singrauli-486885 Madhya Pradesh |
| (II) | Industry Category Primary ( STC CODE ) Secondary ( SIC CODE ) | Red Category and Large industry (Primary STC Category) |
| (III) | Production Capacity Unit-I Unit-II | 660 x2 MW Electricity Generation |
| (IV) | Year of Establishment Unit-I Unit-II | Year 2014 Year 2015 |
| (V) | Date of last Environmental Statement Submitted | Plant is in operation since September, 2014.This is first Environment Statement of the plant. |

## PART – B

## Water & Raw Material Consumption

**A. Water Consumption - m3/d**

| | | | |
|---|---|---|---|
| (i) | Process | - | 2665.0 |
| | Cooling | - | 25612.0 |
| | Domestic | - | 315 |

| **Name of the Product** | **Process Water Consumption per unit of Product Output ($m^3$/MU) (1 Mu=1000000 KW)** | |
|---|---|---|
| | **During the Previous Financial Year (2013-14)** | **During the Current Financial Year (2014-2015)** |
| Electricity | NA | 264.38 |

**(ii). Raw Material Consumption**

| **Name of the Raw Material** | **Name of Product** | **Consumption of Raw Material per Unit Product Output (MT/MU of Electricity ) (1 Mu=1000000 KW)** | |
|---|---|---|---|
| | | **During the Previous Financial Year (2013-14)** | **During the Current Financial Year (2014-2015)** |
| Coal<br>Fuel Oil<br>Chemicals-<br>• Hydrochloric acid (HCL)<br>• $H_2SO_4$<br>• NaOH<br>• Ammonia<br>• Hydrazene<br>• Alum<br>• NaOCl<br>• Hydrogen Gas<br>• $CO_2$ Gas | Electricity | **No Generation** | • 627.26<br>• 5.17<br>• 0.395<br>• 0.07282<br>• 0.196<br>• 0.031<br>• 0.005<br>• 0.015<br>• 0.015 (m3/Mu of Electricity)<br>• 1.89<br>• 0.24 |

**Total Electricity Generation Mu (**1 MU=1000000 KW)

| Name of Product | During Previous Financial Year (13-14) KWH | During Current Financial Year (14-15) MU |
|---|---|---|
| **Electricity** | **NA** | **1895.04** |

## PART - C

## Pollutant Discharged To Environment / Unit of Output

(Parameters as specified in the consent issued)

| S. No. | Pollutants | Quantity of Pollutants Discharged (Mass / day) (tonne/day) | Concentrations of Pollutants in discharged (Mass / Volume) (mg/Nm3) | Percentage of variation from prescribed standard with reasons |
|---|---|---|---|---|
| (a) | **Water** | | | |
| (i) | **Domestic** | Zero discharge is maintained. Treated waste water reused in cooling and domestic waste water is being used in Horticulture . | | |
| (ii) | **Industrial** | Zero discharge | | |
| (b) | **Air** | | | |
| | Monitoring of Ambient Air Quality parameter within limit and report attached as **Annexure- I** | | | |
| | **Stack emission** | | | |
| | **(a) ESPs** | | | |
| | Stack-I (Unit-I) | 0.221 | 35.23 | Within permissible limit |
| | Stack-II(Unit-II) | 0.265 | 24.07 | |

## PART – D

## Hazardous Wastes

(As specified under [Hazardous Waste (Management, Handling & Transboundary Movement) Rules 2008)]

| Hazardous Waste | | Total Quantity (Kg) | | | | | |
|---|---|---|---|---|---|---|---|
| | | During the Previous Financial Year (2013-2014) | | | During the Current Financial Year (2014-2015) | | |
| (a) | From Process | Used oil | Waste oil | Resins | Used oil | Waste oil | Resins |
| | | NA | | | Nil | | |
| (b) | From Pollution Control Facilities. | NA | | | Nil | | |

## PART – E

## Solid Wastes

| Solid Waste | | Total Quantity | |
|---|---|---|---|
| | | During the Previous Financial Year (2013-2014) | During the Current Financial Year (2014-2015) |
| (a) | From Process | NA | Fly Ash (360063 MT)<br>Bottom Ash (90016 MT) |
| (b) | From Pollution Control facilities | NA | All the collected material is recycled in the process. |
| (c) | (i) Qty. recycled or reutilised within the unit.<br><br>(ii) Sold<br>(iii) Disposed | NA<br><br>Nil<br>Nil | Fly Ash (360063 MT)<br><br>Nil<br>Bottom Ash (90016 MT) is disposed in Ash Pond |

## PART – F

**PLEASE SPECIFY THE CHARACTERISATIONS (IN TERMS OF COMPOSITION AND QUANTUM) OF HAZARDOUS AS WELL AS SOLID WASTES AND INDICATE DISPOSAL PRACTICE ADOPTED FOR BOTH THESE CATEGORIES OF WASTES.**

**Hazardous waste :** Hazardous Waste will be collected in empty drums and barrels & stored under covered shed in isolated fenced place as per Hazardous Waste (Management, Handling & Transboundary Movement) Rules, 2008 from where the stored hazardous waste will be sold out to authorized recyclers.

**Solid waste:** Fly Ash & Bottom Ash are two solid wastes being generated from Jaypee Nigrie Super Thermal Power Project for which suitable provisions are made for its use-

- Fly Ash is being consumed by its adjacent Jaypee Nigrie Cement Grinding Unit & rest is being transported to nearby Cement Plants (Jaypee Rewa, Bela & Sidhi).
- Bottom ash shall be carried in slurry form to Ash Pond situated inside the plant premises. Ash Pond is lined with fine sand then HDPE (1 mm thickness) lining and over

that PCC. Bottom Ash will also be suitably utilized after drying to meet the stipulation of Fly ash Notification.

Ash Dyke Pond

## PART – G

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

**Following measures have been adopted for abatement of pollution, conservation of natural resources:-**

**a) Utilization of Fly Ash for the manufacturing of cement**

- JNSTPP having capacity of 660 x2 MW has the potential to generate 1.477 MTPA (Fly ash = 1.177 MTPA & Bottom Ash 0.30 MTPA). Generated Fly ash is consumed in adjacent Jaypee Nigrie Cement Grinding Unit & rest will be transported to nearby Cement Plants (Jaypee Rewa, Bela & Sidhi) which will be consumed for manufacturing of PPC & hence Limestone is conserved.

**b) Installation of Sewage Treatment Plant & Effluent Treatment Plant-**

Adequate facilities for treatment of industrial waste water including blow down from boilers. The waste water is treated in the ETP (WWTP) and the quality of treated water confirms to MPPCB standards as notified in Gazette dated 25/03/88. Sewage Treatment Plant of 1000 KLD has been installed and treated water is used for horticulture. There is no discharge of water from the premises to any surface drain.


## Waste water Treatment Plant (ETP)


Photograph of WWTP

### c). Installation of APCDs at various sources-

High Efficiency ESPs (2Nos.) are attached to Boiler Stacks.The ESP Engineering, supply and erection work is done by M/s. BHEL (A Govt. of India Undertaking), with guaranteed emission level of 50 mg/Nm$^3$ with one field out of service at full load with worst coal. Each ESP has six passes and each pass is having 16 fields (i.e total 96 fields ).We have installed 7 no. of bag filters at various points source to control the fugitive emission. The ESP have the efficiency of about 99.9%.

Photograph of ESP

d**) Online Monitoring system**: Online Continuous ambient air quality monitoring instruments are installed and commissioned for monitoring of PM, SO2, NOx & CO in the ambient air. The four locations have been approved for CAAQM stations. The Opacity meters have been installed & Commissioned at stack for monitoring of PM, $SO_2$ & NOx & Hg.

CAAQMS


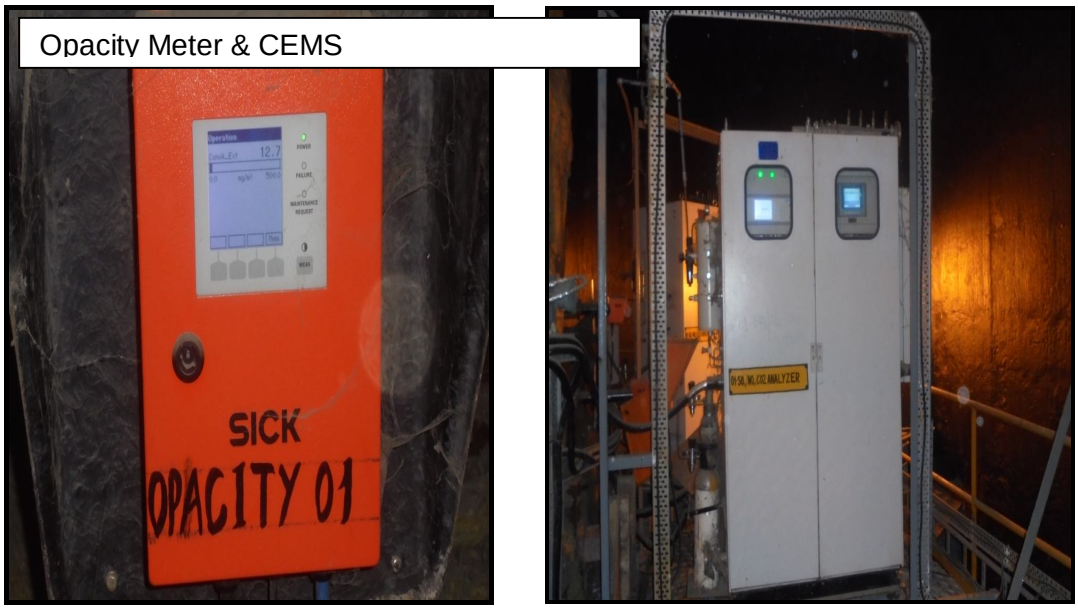


Photo of CAAQMs &CEMS

**e). Installation of Water Sprinkling Systems-** Water spraying arrangements are made for control of fugitive emission from Coal handling plant and other areas by installation of Water Sprinklers.

Photograph of sprinkler at coal stacker

**f).Noise Pollution Abatement Measures** – Provision of Acoustic Enclosures at Turbines & other Machineries to attenuate Noise Levels. Acoustic Enclosures of Machines to control Noise Levels.

**g). Good housekeeping practice adopted**

Following measures have been taken for good house keeping

a. Raw materials are being stored in the covered shed.

b. The conveyor belts are fully covered.

c. Schedule maintenance of PCDs

d. Coal Wagon bottom unloading System

**CHP and covered conveyer belts**


**Coal wagon unloading system**

## PART – H

**ADDITONAL MEASURES / INVESTMENT PROPOSALS FOR ENVIRONMENTAL PROTECTION INCLUDING ABATEMENT POLLUTION, PREVENTION OF POLLUTION.**

**Additional measures taken for Environmental Protection are as under**

**Extensive plantation in and around the Plant.**

We have a dedicated team of skilled horticulturists for the afforestation and greenery development program at our plant under the supervision of senior experienced person. Till date we have planted around 18250 plants.

**Steps taken to protect plantation:**

1. Barricading provided for protection of plants.
2. Two numbers of dedicated water tankers are provided for regular watering of plant.
3. Dedicated manpower is provided for regular watering of plants.
4. Tree Guards are provided for protection of the plants.

## PART – I

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

- Water Harvesting Measures- A surface water body is designed in the township area for rain water harvesting.


- Establishment of Environment Laboratory-

  Environment Laboratory has been set up with well equipped facilities such as water & waste water testing instruments as well Air Quality Monitoring machines.

- Concreting of Roads- All internal roads are made Pucca.

- **CSR works –**

  Adoption of village: Surrounding four villages i.e. (i) NIGRIE (ii) KATAI (iii) NIWAS and (iv) HARDI have been identified for development through COMPREHENSIVE RURAL DEVELOPMENT PROGRAM (CRDP): This Program will comprise of Health care, Education, Vocational Training, provision of drinking water, Sanitation and employment generation particularly in the area of Animal Husbandry

- **Hindi Medium School- Free Education for nearby villagers-**

- **Free Medical Camps –**

- **Free Medicines to all nearby Villagers -** A 12 bed hospital is functional for medical check-up and treatment to the local habitats for the surrounding 10 villages. Almost 250 to 300 people avail the Medical facilities daily

**For Jaypee Nigrie Super Thermal Power Project,**
**(A Unit of Jaiprakash Power Ventures Ltd)**

Authentic Signature
V.K. Jawada
Sr.Pres
Jaypee Nigri Super
Yours faithfully