



राष्ट्रीय इस्पात निगम लिमिटेड
(भारत सरकार का उपक्रम)

Rashtriya Ispat Nigam Limited
(A Government of India Undertaking)
CIN : U27109AP1982GOI003404



Ref. No:VSP/EnMD/20/ 118
Date: 22.09.2020

To
The Environmental Engineer,
Regional Office
A P Pollution Control Board,
Madhavadhara VUDA Colony
Near RTA Office
VISAKHAPATNAM – 530018.

Dear Sir

Sub: Submission of environmental statement (Form-V)
Ref: The Environment (Protection) Rules, 1986.

With reference to the above, the environmental statement of Visakhapatnam Steel Plant for the financial year ending 31st March, 2020, in form – V is enclosed for your information and record.

Thanking you,

Yours faithfully,

(M N Murthy)

General Manager (EnMD)I/c
Environment Management Department

Encl: as above

CC: Jt. Chief Environmental Engineer: For kind information with enclosure
APPCB, Zonal Office, VIZAG

हिन्दी के प्रयोग का स्वागत है, पत्र का उत्तर शीघ्र दिया जायेगा।

Please send your reply to :

Web Site : www.vizagsteel.com

विशाखपट्टणम इस्पात संयंत्र, विशाखपट्टणम – 530 031

Visakhapatnam Steel Plant, Visakhapatnam - 530 031

E-mail :

Cell No. :



Regd. Office : Rashtriya Ispat Nigam Limited (A Government of India Undertaking)

Visakhapatnam Steel Plant, Administrative Building, Visakhapatnam - 530 031, INDIA.

पंजीकृत कार्यालय : राष्ट्रीय इस्पात निगम लिमिटेड, (भारत सरकार का उपक्रम)

विशाखपट्टणम इस्पात परियोजना, प्रशासनिक भवन, विशाखपट्टणम - 530 031, भारत

2019-20

FORM – V : ENVIRONMENT STATEMENT



**VIZAG
STEEL**
Pride of Steel

**RASHTRIYA ISPAT NIGAM LIMITED
VISAKHAPATNAM STEEL PLANT
Environment Statement
Form – V: 2019-20**

FORM – V

ENVIRONMENTAL STATEMENT FOR THE YEAR ENDING 31st MARCH 2020

PART – A

- (i) Name and address of the owner/ occupier of the industry operation/ process. : K V VIDYA SAGAR
ED (Works) I/c
VISAKHAPATNAM STEEL PLANT,
VISAKHAPATNAM – 530 031
- (ii) Industry category Primary-(STC code): -
Secondary (SIC code)
- (iii) Production during 2019-20 in tonnes
a) Saleable steel : 4452223t
b) Pig iron : 47928t
c) Coal chemicals (Ammonium sulphate benzol& tar products) : 140367t
d) Captive power generation : 339.1MW
- (iv) Year of establishment : 18th FEB, 1982 (incorporated)
- (v) Date of last environmental statement submitted : 14th AUGUST 2019

PART – B

Water and raw material consumption

- (1) Water consumption in KLD
- a. In the plant for process (Excluding TPP) : 31727
- b. In TPP for power generation : 92178
-
- c. Total in process : 123905
- d. In plant for fire fighting& drinking : 15601
-
- Grand total : 139506

Name of product	Process water consumption per unit of product output	
	During the financial year, 2018-19	During the current financial year, 2019-20
Saleable steel	11.207 cum/tonne of sal. Steel	11.47 cum/tonne of sal. Steel

(2) Raw material consumption (Unit : tonne / tonne of saleable steel)

Name of raw material	Name of products	Consumption of raw-material Per unit of output	
		During the current financial year,2018-19	During the current financial year,2019-20
Coking coal	Saleable steel	0.984	0.893
Pulverized Coking Coal		0.077	0.126
Iron ore (lumps & fines)		1.725	1.679
Sand		0.0038	0.0036
Lime stone		0.315	0.326
Dolomite		0.172	0.198
Mn.Ore		0.002	0.0007
Alloys at SMS		0.0204	0.0200
Boiler coal Kg/t of steam	Steam	157.19	179.14

PART – C

Pollution discharged into environment per unit of output.

(Parameter as specified in the consent issued)

a. Trade effluent from the plant after treatment :

Pollutants	Qty. of pollutants discharged (mass/day) Kg/day	Concentration of pollutants in discharges (mass/volume) mg/ltr	Percentage of variation from prescribed standards with reasons
Suspended solids	188.62	59.63	-40
Oil & grease	20.47	6.47	-35
Phenol	0.41	0.13	-87
Cyanide	0.54	0.17	-15
COD	580.73	183.59	-27
BOD	41.72	13.19	-56
Amm.N2	59.40	18.78	-62

Redution due to better process control at MBC Plant & E T P

b . TPP-DM Effluent after treatment :

Pollutants	Qty. of pollutants discharged (mass/day) Kg/day	Concentration of pollutants in discharges (mass/volume) mg/ltr	Percentage of variation from prescribed standards with reasons	
Suspended solids	129.18	60.95	-39	Reduction due to better process control at DM Water treatment plant
Oil & grease	8.54	4.03	-60	
Phenol	0.34	0.16	-84	
Iron	1.91	0.9	-10	
Copper	0.06	0.03	-97	
Amm.N2	5.34	2.52	-95	

c. Emissions from chimneys:

Pollutants	Qty. of pollutants discharged (mass/day) Kg/day	Concentration of pollutants in discharges (mass/volume) mg/Nm ³	Percentage of variation from prescribed standards with reasons
SPM	11,217.4 kg/day against the consent value of 21,433 kg/day	33.45 mg/Nm ³ against the consent value of 50 mg/NM ³	-33% Improvement in performance of ESPs & Bag filters

PART – D

Hazardous wastes (As specified under Hazardous Wastes (M&H) Rules, 2008)

SI No	Name of the Hazardous waste	Total Quantity (Generation)	
		During the current year 2018-19	During the current year 2019-20
1	ETP Sludge (MBC & ETP)	5595.58 t	3959.74 t
2	Used oil / Waste lubricating oil / Vacuum oil / Transfermer oil / Waste oil	175.97 t	487.51 t
3	Tank bottom sludge of tar and oil storage tanks	3086 t	3513.97 t
4	Acid tar from Ammonium sulphate Plant(ASP)	507 t	378 t
5	Benzol sludge from decanters of Benzol Distillation Plant	508 t	190 t

PART – E

Solid wastes

Solid Waste Utilization for the year 2018-19						
Solid Waste	Total generation (t/year) (a)	Recycled or Reused (t/year) (b)	Sold (t/year) (c)	Utilized in construction activities (d)	%Utilization : $\frac{b+c}{a} \times 100$ (e)	Remarks
Dust from ESP's, DE Systems/ Process	463720	336905	126540	-	99.94	
Sludge from Water Treatment Plants	268749	275802	-	-	102.62	7053t of sludge utilized from prev. stock
BF Slag	1809916	-	2664875	4842	147.51	859801 t of BF Slag sold from prev. stock
LD Slag	882411	141528	15850	-	17.84	
Total	3424796	754235	2807265	4842	104.13	

Solid Waste Utilization for the year 2019-20						
Solid Waste	Total generation (t/year) (a)	Recycled or Reused (t/year) (b)	Sold (t/year) (c)	Utilized in construction activities (d)	%Utilization : $\frac{b+c}{a} \times 100$ (e)	Remarks
Dust from ESP's, DE Systems /process	407536	290831	115280	-	99.65	
Sludge from Water Treatment Plants	275034	278087	-	-	101.11	3053 t of sludge utilized from prev. stock
BF Slag	1665584	-	1507271	7607	91	
LD Slag	808197	150695	84433	-	29.1	
Total	3156351	719613	1706984	7607	77.1	

PART – F

Please specify the characterization (in terms of composition and quantum) of hazardous as well as solid wastes and indicate disposal practice adapted for both these categories of wastes.

(i) Characteristics and practice of disposal of solid wastes ‘%’

Type of Waste (Non-hazardous)	FeO (%)	CaO (%)	Mg O (%)	SiO ₂ (%)	Al ₂ O ₃ (%)	MnO (%)	Basicity	Method of disposal
BF SLAG	0.33	35.9	8.99	34.1	18.3	0.12	1.79	Sold to cement manufacturers.
LD SLAG	18.7	49.2	10.4	16.5	1.00	0.98	3.27	Recycled in Sinter Plant to replace limestone, utilized as ballast in rail tracts , for road works and construction works. Balance stacked for future use.
	T.Fe	CaO	MgO	SiO ₂	Al ₂ O ₃	MnO	LOI	Method of disposal
Met. Wastes	39.1	7.66	1.35	6.37	3.20	-	25.1	100% recycled in SP

(ii) Characteristics & Practice of disposal of Hazardous Waste

Unit: mg/kg unless otherwise specified

Parameter	MBC Sludge	ETP sludge	Tar sludge	Benzol Sludge	Acid tar from ASP	Method of disposal
Fe	9030	11684	1186	1885	15670	All hazardous wastes are recycled in Coke Oven batteries
Cu	21.2	43.5	3.3	15.47	33.4	
Pb	52.0	66.2	13.2	25.25	37.8	
Zn	112	237	106	106	91	
Ni	19.56	27.2	16.9	17.31	19.56	
Cr	21.6	51.3	34.6	30.48	37.8	
Cd	-	-	9.2	5.17	-	
Mn	17.4	54.3	245	-	100	

PART – G

Impact of pollution abatement measures taken on conservation of natural resources and on the cost of production.

Pollution Abatement Measures at VSP : Estimated impact on conservation of natural resources and cost of production in the year 19-20

Pollution Abatement Measures	Description of the measures taken	Estimated Natural resources saved	Estimated Savings in terms of cost (Rs Cr)
Green Technology use	Back Pressure Turbines Station in coke ovens Gas expansion Turbine Station in Blast Furnace Waste heat recovery based power plant in Sinter Plant Heat recuperators in Mills LD gas recovery system	777307 tons of boiler coal equivalent	274
Waste water treatment and recycling system	Waste water recycling systems of i)Balacheruvu ii)Appikonda iii) Ultra filtration plant and iv) COCCP RO plant	744.69 Million gallons of water	14.11
Recycling and selling of solid wastes(by-products)	Solid waste utilization of : 1. Process solid co-products 2.Dust from DE systems 3. Sludges from water treatment plants 4. Slags from Blast Furnace and Convertor	727220 tons of solid wastes recycled and 1706984 tons of solid waste sold	257.8

PART – H

Additional measures / investment proposal for environmental protection including abatement of pollution, prevention of pollution.

The following additional measures for environmental protection are under implementation for abatement & prevention of pollution.

S.No	Project Description	Present status
1	Upgradation of ESPs of TPP	The work "Revamping of ESP of boiler-1 in TPP" was completed. M/s BHEL was awarded contract for revamping of remaining boilers 2-5 by 2022 in phased manner at a cost of Rs. 170 cr
2	Construction of 4 nos. of Guard Ponds at outlet of MBC before marine discharge of the effluent	Rs 9.14 cr Project is in final stage of completion.
3	Upgradation of 29 nos. of Continuous Stack Emission Monitoring Systems	Order placed on M/s Environment S.A. India Pvt. Ltd. Expected to be completed by Mar'21

PART – I

Any other particulars for improving the quality of the environment.

The following initiatives were taken in 2019-20 for improving the quality of environment.

1. Waste Water Recycling

4 nos of waste water treatment & recycling systems were operationalized, thereby effecting saving of makeup water. Details are as given below:

Water saved by Reuse of storm water and waste water after treatment (Million Gallons)	
Water recycling scheme	2019-20
Balacheruvu waste water treatment plant	349.63
Appikonda waste water treatment by RO process	192.46
Treated township sewage by Ultra-filtration	177.67
COCCP RO Treatment Plant	24.93
Total	744.69



Waste Water Recycling Systems at VSP

2. Utilisation of treated water in Raw Material Handling Plant (RMHP):

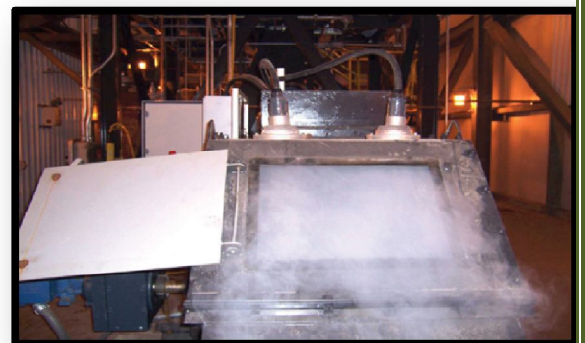
System installed for using treated effluent from MBC (Mechanical, Biological & Chemical treatment plant) of coke ovens, for spraying on Boiler coal stock piles to prevent fugitive dust emissions & self ignition of coal in RMHP (Raw Material Handling Plant)



Sprays at RMHP Yard

3 Improving work zone environment

10 nos Dry fog Systems were commissioned from 2015 to 2017 covering RMHP, Sinter Plant & Blast Furnace to avoid fugitive emissions during material handling & processing. Another 5 nos Dry fog systems (101 to 105) are commissioned in the month of Aug 2018 at coal handling area to avoid the fugitive emissions. IOAS DSS was commissioned in June 2019 for RMHP expansion area.



4. Reduction of CO2 emissions

BF waste gas based power plant has produced around 102.1 MW of power during the year 2019-20. This has avoided CO2 emissions to the tune of 11.23 Lakh tons



5. Installation of continuous effluent quality monitoring systems

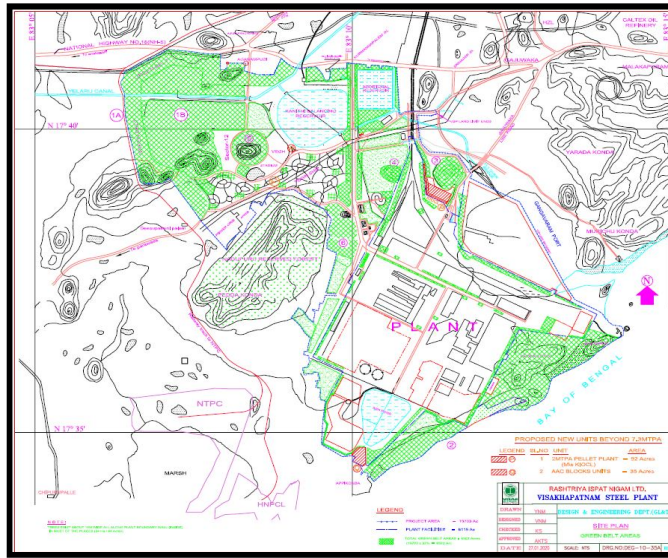
Continuous effluent quality monitoring systems were installed for monitoring of effluents at both outfalls 1. ETP outlet and 2. DM plant outlet. pH, TSS, phenol, cyanide, flow, COD & BOD are monitored and real time minute to minute data is uploaded directly to APPCB and CPCB portals.



Continuous Effluent Monitoring System installed at ETP

6.Plantation: Green Visakha Program

Out of total acquired land of 7973.5 Ha (19703Ac), Green belt has been done in 2621.3 Ha (6502Ac.)



Site plan showing green belt areas



Tree plantation: Environment Management Department Organized Tree Plantation drive in Feb 2020 at Environment Park of EnMD Department

7. World Environment Day & Awareness campaigns at VSP



Awareness Campaign at WED 2020

Environment Awareness

An Environment stall was set up at Trishna grounds, Ukkunagaram on the RINL formation day, VSP formation day i.e., 18.02.2020. The stall showcased to the public, equipment, methods and techniques involved, in measurement and monitoring of various parameters, that are necessary, for accessing quality of environment in a steel plant. This stall attracted huge crowds.



8 Environment related CSR activities

RINL has allocated Rs.6.53 Cr budget under the Corporate Social Responsibility (CSR) fund to take up the 35 projects under CER, Remediation plan, Natural & Community resource augmentations plan. Out of the 35 projects initiated during the year, 21 projects worth of Rs. 4.52 Cr have been initiated and Rs. 3.06 Crs have been spent during the year 2019-20. Balance 14 projects are at various stages of implementation.