

Ref: GVPGL-RJY/O&M/21/ 49

DT: 03/Jul/2021

To,

Additional Principal Chief Conservator of Forests(C),
Ministry of Environment, Forest and Climate Change,
Regional Office (SEZ),
Ist and IInd floor, Handloom Export Promotion council,
34, Cathedral Garden Road, Nungambakkam,
Chennai – 600034.

Sub: -Submission of Six Monthly Environmental Compliance report.

Dear Sir,

We are here with submitting Six monthly Environmental Compliance report
(From Jan-21 to Jun-21). Kindly acknowledge.

Thanking you,

Yours faithfully,

For GMR VEMAGIRI POWER GENERATION LIMITED



Mathews.P
COO, Gas Assets

CC To

The Assessing Authority,, APPCB, Vijayawada
The Regional Environmental Engineer, APPCB, Kakinada



Registered Office:
Skip House, 25/1, Museum Road,
Bengaluru - 560 025

GMR Vemagiri Power Generation Limited



Plant Office:
Vemagiri, Kadiam Mandal,
East Godavari Dist.
A.P -533125
CIN U23201KA1997PLC032964
T +91-883-2452313 - 317
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Ref: GVPGL-RJY/O&M/21/ 50

DT: 03/06/2021
www.gmrgroup.in

To,
The Assessing Authority,
A.P Pollution Control Board,
D.No. 33-26-14
D/2, Near Sunrise Hospital,
Pushpa Hotel Centre,
Chalamalavari Street, Kasturibaipet,
Vijayawada – 520 008

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Ref: GVPGL-RJY/O&M/21/ 51

To,
The Regional Environmental Engineer,
Andhra Pradesh Pollution Control Board,
5.532, Shanthinagar,
Opp.DIC Office, Ramanayyapeta,
Kakinada-533005.

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**SIX MONTHLY ENVIRONMENTAL COMPLIANCE
REPORT**

**GMR VEMAGIRI POWER
GENERATION LIMITED**

**Vemagiri Village,
Kadium Mandal, East Godavari District,
Andhra Pradesh
Pin-533125, India**

Jan-21 to Jun -21

GMR VEMAGIRI POWER GENERATION LIMITED

Environment Monitoring Report

Jan 2021 to Jun 2021

INTRODUCTION

GMR Vemagiri Power Generation Limited has commissioned 388.5 MW Combined cycle power plant at Vemagiri East Godavari District. The plant was commissioned in combined cycle mode in the month of September-2006 and at present the plant is under operation as per the gas availability.

SITE LOCATION

The project is located near village Vemagiri, about 12 kms South-East of Rajahmundry town in the East Godavari District of Andhra Pradesh, India. The site location Longitude is $81^{\circ}45' \& 81^{\circ}50'$ and Latitude is $16^{\circ}55' \& 17^{\circ}$. The site measuring around 70 acres, is very close to Rajahmundry-Kakinada High Way No.NH5 at a distance of 1.5 km. Rajahmundry is nearest Railway Station located at a distance of 12 km and Rajahmundry is nearest Airport at a distance of 32 km and Kakinada Sea port distance of 60 km from project site. The site is accessible both by road and railway.

GMR VEMAGIRI POWER GENERATION LIMITED

Environment Monitoring Report

Jan 2021 to Jun 2021

CONTENTS

- EC, CFE and CFO Compliance
- Meteorological Data
- Ambient Air Quality monitoring
- Stack Emission monitoring for Heat Recovery Steam Generator stack
- Effluent Quality Monitoring
- Noise level measurement inside the plant (Day & Night).
- Water balance report.

Compliance Status

Compliance Status for EC J-13011/35/96-IA.II (T) dated April 8, 1997		
	Conditions	Status
i)	All the conditions stipulated by the APSPCB vide their letter No.161/PCB/C.Estt/RO-RJY/AEE-N/96/6004 dt: 10.02.1997 & it's Schedule A & B should be strictly implemented.	Status of the conditions provided.
ii)	The sulphur content in the Naphtha to be used as fuel shall not exceed 0.15%.	Plant is running with Natural Gas as fuel. This condition has been deleted as per MOEF memorandum No J.13011/35/96-IA.II (T) dated 9th January 2001.
iii)	Land acquisition will be restricted to 270 acres.	At present GVPGL is having total land of 70 acres.
iv)	Two main stack height of 70 mt & bypass stack height of 70 mt each with continuous stack monitoring arrangement will be provided.	Plant design is with single GT and single Steam Turbine. Therefore single stack is sufficient. Regarding the bypass stack, as the open cycle operation not envisaged, only main stack provided. Stack height is 70 meters as per the norms stipulated by MOEF. Continuous stack emission monitoring is in operation.
v)	The NOx emission should not exceed 100 ppm as stipulated by CPCB.	The NOx emission is less than 50 ppm, which is within the stipulated limit given by the APPCB & MOEF office memorandum No-J-13011/35/96-IA.II (T) dated 9th January 2001. Gas turbine provided with Dry Low NOx Combustion system (Model DLN2+).
vi)	Closed circuit cooling with cooling towers shall be provided.	The cooling system provided with closed circuit and induced draft system.
vii)	Treated waste water conforming to the prescribed standards shall be used for raising the green belt and remaining water will be discharged into natural drain/Godavari river downstream of the project site after ensuring the quality parameters prescribed for surface water.	Treated wastewater is being utilized for gardening, and water quality parameters are maintained within the limits.
viii)	Adequate precautions shall be taken to ensure that the noise levels do not exceed the prescribed standards. Workers in the high noise area will be provided with ear protection devices & their use by the workers shall be ensured.	Acoustic Enclosures provided for Gas turbine generator, steam turbine generator and for other high noise generating equipment. In addition to these enclosures, Ear protection devices provided for Workers exposed to high noise areas and their usage ensured.
ix)	A green belt of 100 mt. Width & tree density (1500-2000 ha) with suitably selected species shall be developed all around the power plant. At least one third of the land area shall be covered under the green belt. The guidelines prepared by CPCB for rising of green belt shall be followed in this regard. The plan may be prepared in consultation with the Forest Department authorities & implemented in a time bound manner.	Being complied with.
x)	Regular monitoring of the air quality shall be carried out in & around the power plant & records maintained. A periodic report (six monthly) shall be submitted to this	Industry has installed four common ambient monitoring stations. Six monthly compliance status reports being

	Ministry.	submitted regularly.
xi)	A separate environment monitoring cell with suitably qualified staff shall be set up for implementation of the stipulated environmental safeguards.	GMR Group has set up an environment management cell to manage environmental related issues.
xii)	A half yearly report on the status of implementation of the stipulated conditions & environmental safeguards shall be submitted to this Ministry / RO / CPCB / SPCB.	Six monthly compliance status reports being submitted regularly.
xiii)	Regional Office of MOEF located at Bangalore will monitor the implementation of the stipulated conditions. Complete set of Impact Assessment Report & Management Plan should be forwarded to the Regional Office / CPCB / SPCB for their use during monitoring.	Noted and accepted.
xiv)	Separate funds should be allocated for implementation of environmental protection measured along with item wise break up. These costs should be included as part of project costs. These funds earmarked for the environment protection measures should not be diverted for other purposes & year wise expenditure should be reported to this Ministry.	Complied. Being complied with.
xv)	Necessary permission should be obtained from the Chief Controller of Explosives for the storage of Naphtha.	Presently plant is operating with Natural Gas as fuel and storage license is not applicable.
Compliance Status for EC J- 13011/35/96/IA-II (T) dated 24th September 1998		
2(ii)	Naphtha at the rate of 2011 Ton/day would be used and the sulphur contents should not exceed 0.15% in the fuel.	Presently plant is operating with Natural Gas as fuel and this is not applicable.
2(iii)	Land acquisition for the project will be restricted to 200 acres only.	At present GVPGL is having total land of 70 acres. This is within the limit specified by MOEF.
2(vi)	Fresh water to the tune of 29000 cum / day would be used in the project & closed circuit cooling with cooling towers shall be provided.	Cooling water system is closed cycle cooling type with induced draft cooling. Total water consumption within stipulated limit only.
Compliance Status for EC J- 13011/35/96/IA-II (T) dated 9th January 2001		
ii)	NOx emission should be restricted to 50ppm and details of technology adopted for this should be submitted to the Ministry within one month.	The NOx emission is less than 50 ppm, which is within the stipulated limit given by the APPCB & MOEF. Gas turbine is provided with Dry Low NOx Combustion system (Model DLN2+).
iii)	A risk assessment & emergency management plan should be submitted to Ministry for the conveyance of natural gas in the power plant premises within one month of issue of this letter.	Already submitted.
iv)	For use of natural gas APPCB should be approached for seeking amendments. A copy of APPCB Consent order for Establishment should be submitted to Ministry of Environment & Forests.	APPCB has been approached and amendment has been issued by APPCB vide their order No 161/PCB/C.Estt/RO-Rjy/AEE-N/96-3215 dated 15th February 2001.

Compliance Status for CFE Order No.161/PCB/C.Fstt/RO-RJY/AFE-N/96 -6004 Dt: 10-02-1997

Schedule-A		
	Conditions	Status
1.	Trees shall be planted and maintained around the plant in the area at least 4 times the built up area of the industry. Green belt development shall be started along with the construction activity.	Being complied with.
2.	The industry shall construct & commission the Effluent Treatment Plant (ETP) and install air pollution control equipment along with the commissioning of the industry. All the units of the ETP shall be impervious to prevent ground water pollution.	Complied.
3.	The industry shall treat the effluent to the surface water standards stipulated under Environmental (Protection) Rules, 1986, as amended up to date, notified and published by Ministry of Environment and Forests. Government of India as specified in schedule VI vide G.S.R 422(E) dated 19.05.1993 as amended on 31.12.1993.	Treated wastewater is being utilized for gardening, And discharge water quality parameters are within the stipulated limits
4.	The industry shall discharge the treated effluent into a natural drain or into the river Godavari at downstream of the barrage after conforming to the surface water standards.	Treated effluent water is being utilized for gardening and the water quality parameters are maintained within the stipulated limits
5.	The industry shall discharge domestic effluent into a natural drain or into the river Godavari at downstream of the barrage after conforming to the surface water standards.	Treated effluent water is being utilized for gardening and the water quality parameters are maintained within the stipulated limits
6.	Separate meters with necessary piping shall be provided for assessing the quantity of water used for each of the four purposes mentioned below. Industrial cooling/ spraying in pits or boiler feeds. Domestic purposes. Processing where by water gets polluted and pollutants are easily biodegradable. Processing where by water gets polluted and pollutants are not easily biodegradable.	Separate meters provided and water consumption reports are submitted regularly in Form-1 to APPCB.
7.	The industry shall install & commission appropriate control equipment's for controlling the stack emission from boiler to the standard prescribed below Particulate matter 150Ng/Nm ³ NOx 50ppm	Continuous stack emission monitoring is in operation. The NOx emission is less than 50 ppm, which is within the stipulated limit given by the APPCB& MOEF. Gas turbine is provided with Dry Low NOx Combustion system (Model DLN2+) to control NOx.
8.	The industry shall provide stack height for the following as per the standards prescribed by MOEF, vide Notification No. GSR 422(E) of 18.5.93 as amended on 31.12.1993 Boiler	Stack height is 70 meters as per the norms stipulated by MOEF.
9.	The industry shall provide a sampling port with removable dummy of not less than 15cm diameter in the stack at a distance of 8 times the diameter of the stack from the nearest constraints such as bends etc. The industry shall provide a platform with suitable ladder below 1 mt. of sampling port to accommodate 3 persons with instruments. The industry shall also provide a 5 AMP, 250 V plug point on the platform.	Complied.

10.	Suitable automatic flow measuring devices and monitoring equipments shall be installed at appropriate points in consultation with regional officer APPCB.	Complied.
11.	Floor washings shall be admitted in to the effluent collection system only, and shall not be allowed to find their way in storm water drains or open areas. The applicant shall maintain good house keeping both within the factory and in the premises. All pipe valves, sowers, and drains shall be leak proof.	Chemical area (DM Plant) floor washings are connected to the Effluent treatment plant only. Provided leak proof effluent discharge system and good housekeeping maintained in entire plant.
12.	All solid wastes arising in the premises shall be properly classify and disposed off to the satisfaction of the board by Land fill in case of inert material Controlled incineration, where ever possible in case of combustible organic material Vermiculture /Composting in case of biodegradable material. Secure land fill in case non-biodegradable, chemically active / Hazardous solid waste care being taken to ensure that the material dos not give rise to lechate which may percolate in to ground water or carried away with storm runoff.	Plant is having Valid Authorization for disposal of Hazardous Waste. Disposal carried out through APPCB/CPCB Authorized recyclers/vendors only. From this year onwards it will be disposed as per the amendment proposed by authority by vide letter APPCB/VSP/HO/CFO/2020 1987 dated 18.02.2020.
13.	The industry shall implement the following rules and regulations modified by the MOEF, GOI. Hazardous waste management and handling rules 1989 Manufacture, storage and import of hazardous chemicals rules 1989. Rules for manufacture, use, import, export and storage of hazardous micro-organism / genetically engineered organism or cells 1989.	Plant is having valid Hazardous waste authorization as per the Hazardous waste management and handling rules 1989 thereafter amendments.
14.	There shall any perceptible odour outside the industry premises	NO, Plant is not generating any odour effluents and emissions.
15.	All the rules and regulations notified by ministry of environment forest, GOI in respect of noise control measures shall be followed to avoid nuisance to the public.	Noise levels are being monitored regularly and reports are being submitted to the Board.
16.	The generator shall be installed in a closed area with a silencer and suitable noise absorption systems so as to comply the ambient noise level standard as mentioned below. The ambient noise level shall not exceed 75dB at distance of 5 mt from the source.	Acoustic Enclosures provided for Gas turbine and steam turbine generators
17.	The industry shall install minimum stack height to the DG set as per CPCB guidelines. The minimum stack height shall be calculated based on the following formula. $H = h + 0.2 / \sqrt{KVA}$ H = height of stack in Meters. H = height of the building in Meters, where DG set is installed. KVA = Total generator capacity	Complied.
18.	The industry shall submit Environmental statement by September of every year and this should also a form a part of their annual report.	Environmental Statement is being submitted to the Board at periodical intervals.
19.	The industry shall follow the rules and regulations notified by Ministry of Law and Justice, GOI, regarding the public liability insurance Act 1991.	Industry is having valid Public Liability Insurance.

20.	The industry shall report progress on implementation of the project to this office and regional office, AP Pollution Control Board regularly.	Complied.
21.	The applicant shall obtain consent for trial production before the industry goes in to trial production.	Not applicable.
22.	The applicant shall obtain consents for operation regularly from APPCB, as required under section 25/26 of the water (P&C of P) Act 1974 and under section 21/22 of the air (P&C of P) Act 1981 for operation of the industry, before starting commercial production.	Plant is having valid Consent & Authorization.
23.	The applicant shall comply with and carry out conditions issued by the Board in this consent order scrupulously. The applicant is liable for legal action as per the provisions of the relevant Acts in case of non-compliance of any conditions of the consent order.	Noted and accepted.
24.	Notwithstanding anything contained in this conditional letter or consent, the Board thereby reserves its right and power under section 27(2) of water (Prevention and Control of Pollution) Act 1974, and under section 21(4) of air (Prevention and Control of Pollution) Act 1981. to review any or all the conditions as deemed fit and stipulate any additional conditions for the purpose of the Act by the Board.	Noted and accepted.
25.	The applicant shall exhibit the consent of the Board in the factory premises at a conspicuous place for the information of the inspection officers of different departments.	Complied.
26.	The industry is liable to pay compensation for any environmental damage caused by it, as fixed by the collector and district Magistrate as civil liability.	Noted and accepted.
Schedule-B		
1.	The proponent shall use naphtha as fuel because all the predictions are based on naphtha only. If any other fuel is used, the proponent shall obtain separate NOC from the Board. (CFE has been obtained for Natural Gas)	Now plant is operating with Natural Gas as a fuel.
2.	The wastewater discharge shall be minimized by increasing the cycle of cooling bleed off and brought down to less than 400 M3/day.	Industry got the Amendment for waste water discharge upto 9000 m3/day Ref.Lr.No.161/PCB/C.Estt/RO-RJY/AEE-N/96-78515 DT: 5/8/97.
3.	The treated waste shall not be discharged to the Samalkot main canal as it is being used as a drinking water source in the downstream area. The proponent shall discharge the treated water in to a natural drain or in to the river Godavari a downstream of the barrage after confirm surface water standards.	Treated effluent water is being utilized for gardening, and the water quality parameters are being maintained with in the specifications