



GUJARAT STATE ELECTRICITY CORPORATION LIMITED

Gas Based Power Station, Dhuvaran – 388 610,

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CIN U40100GJ1993SGCO19988

Ref. No.: DGBPS /Effi/ENV/CCPP-III/1425

Date: 30.Apr.2018

By RPAD

To,
The Addl. Principal Chief Conservator of Forests (c),
Ministry of Environment & Forests,
Regional Office (Western Region),
Kendriya Paryavaran Bhavan,
Link Road no. 3, E-5, Ravishankar Nagar,
Bhopal - 462 016. (MP)

Sub.- Compliance of the Environmental Clearance Conditions for 395 MW project at GSECL, DGBPS.

Ref.- Env. Clearance issued by MoEF, New Delhi vide 13012/103/2007-IA.1I (T) dated 31/1/2011

Dear Sir,

In context to the above captioned subject, please find enclosed here with point wise compliance report of the conditions given in Environmental Clearance for the period of **October -17 to March-18** of CCPP-III at Dhuvaran TPS issued by M.O.E.F., New Delhi vide letter under reference.

Thanking you,

Yours faithfully,

ADD. CHIEF ENGINEER (GEN)

GSECL: DGBPS

Encl.: As above

Copy to:

1. Gujarat Pollution Control Board. 2nd floor, Bardanwala complex. Amul dairy road. Anand.
2. The Chief Engineer (gen.), GSECL, CO, Race course, Vadodara..... **by email**

Expansion of existing 106.617 MW and 112.45 MW Gas Based TPP by addition of 395 MW Gas Based TPP, Environmental Clearance issued by MOEF, New Delhi vide letter No. Compliance to stipulated Conditions –Reg.

Sr. no	Conditions laid down in clearance by MOEF	Compliance status
	SPECIFIC CONDITIONS:	
i	In case fuel for running the power plant is proposed to be changed from natural gas to other fuel (liquid or solid) the project proponent shall apply for such a change in environmental clearance along with Necessary documents as required under EIA notification, 2006 (and its amendments). In such a case the necessity for holding public hearing again or otherwise will be determined by the Ministry in consultation with the Expert Appraisal Committee (Thermal Power).	The fuel for running the power plant will be natural gas only and will not be changed without prior intimation to MoEF.
ii	Vision document specifying prospective plan for the site shall be formulated and submitted to the Ministry within six months .	Complied. Submitted in earlier compliance report.
iii	Old cooling tower shall be abandoned and the project proponent shall examine in detail the feasibility to use sea water for condenser cooling. The status of action taken and detailed justification in the event of non feasibility to use sea water shall be submitted to the Ministry within six months .	Old NDCT cooling towers are already demolished. GSECL Dhuvaran plant is using canal water for condenser cooling purpose. However feasibility of using sea water for same purpose will be examined, if required.
iv	If sea water use can be adopted it shall be ensure that intake point and outfall are suitably located such that no marine biology is adversely affected. Prior marine impact assessment study shall be got done by an institute of repute and intimation to the Regional Office of the Ministry shall be made.	In case, Sea water use is adopted, GSECL shall ensure protection of marine biology by selecting proper intake & outfall point.
v	COC 1.25 shall be adopted for use of sea water as source of condenser cooling.	In case sea water use is adopted, this will be implemented.
vi	No ground water shall be extracted for the project work at any stage.	It will be considered and complied.
vii	Minimum required environmental flow suggested by the Competent Authority of the State Govt. (if any) shall be maintained in the Channel Rivers (as may be applicable) even in lean season.	Noted and complied.
viii	It shall be ensured that the area drainage is not disturbed due to the proposed expansion.	Noted and complied. GSECL ensure that there will not be any disturbance to the area drainage.
ix	Hydro-geological study of the area shall be reviewed annually to assess the sustainability of the source of water particularly in lean season. The review report duly vetted by the concerned Department in the state government shall be submitted to the Ministry. In case adverse impact on ground and surface water is observed, immediate mitigating steps to contain the	Hydro-Geological study as said had been carried out. For said study 4 nos. of brackish water bore wells in DGBPS premises were tested for existing ground water table, which was @51 feet to 55 feet below ground & after pumping 60 to 70 feet. The test carried out in the months of November & February in the

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	same shall be undertaken.	year 2012-13. The water available is brackish water.
x	The treated effluents conforming to the prescribed standards only shall be reused to the extent possible and excess discharged. Arrangements shall be made that effluents and storm water do not get mixed.	Noted and complied. We have separate storm water and effluent water drain.
xi	A sewage treatment plant shall be provided (as applicable) and the treated sewage shall be used for raising greenbelt/plantation. Continuous monitoring of effluent discharge shall be undertaken and it shall be ensured that when discharge enters the natural drain the temperature of effluent shall be at ambient.	STP of 350 m ³ /day capacity is already working and its discharge is reused in gardening and plantation in and around plant premises.
xii	Monitoring of ground and surface water quality (if any nearby) shall be regularly conducted and records maintained. The monitored data shall be submitted to the Ministry regularly. Further, monitoring points shall be located between the plant and drainage in the direction of flow of ground water and records maintained. Monitoring for heavy metals in ground water shall be undertaken.	Monitoring of the ground and surface water quality is done regularly. (Report attached as Annexure A)
xiii	A well designed rainwater harvesting shall be put in place. Central Groundwater Authority/Board shall be consulted for finalization of appropriate rainwater harvesting technology within a period of three months from the date issue of clearance and details shall be furnished. Status of implementation shall be submitted to the Regional Office of the Ministry.	For rain water harvesting at DGBPS, total 54 nos. of dug cum twin bore wells (Percolating wells) have been constructed at various locations & same are in service since 2009 in CCPP I & II and colony area. New 7 big rainwater harvesting wells and 16 small wells directly in storm water drain are made in CCPP-III areas.
xiv	Adequate safety measures shall be provided in the plant area to check/minimize spontaneous fires 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.	All necessary safety measures are provided in plant.
xv	Noise levels emanating from turbines shall be so controlled such that the noise in the work zone shall be limited to 75 dBA at 1m from the Source of noise. For people working in the high noise area, requisite personal protective equipment like ear Plugs/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.	Proper acoustics enclosures are provided at all possible high noise area, and Sound proof cabin are also provided to the worker working in high noise level area. In addition all necessary PPE are given to worker working in that area and audiometry test are also conducted twice a year for all workers.
xvi	NOx emission from each Gas Turbine shall not exceed 50 ppm.	Noted and Complied.
xvii	Stacks of 70 m shall be provided with continuous	Noted and complied.

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	online monitoring equipments. Exit velocity of flue gases shall not be less than 25 /sec.	
xviii	Regular monitoring of ground level concentration of SO _x , NO _x , RSPM (PM ₁₀ & PM _{2.5}) etc. 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 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.	Noted and complied. Monitoring as prescribed is conducted on monthly basis by GPCB approved monitoring agency and reports of the same are sent regularly to stated address. (Results are attached as Annexure- B)
xix	Impact on fishery shall be studied in case sea water use is feasible and adopted. Accordingly a scheme for uplifting the livelihood of fishermen community shall be formulated and a separate Fishermen Welfare Fund created to enhance their quality of life through creation of facilities for fish landing platforms / fishing harbor / cold storage etc. and also to provide relief in case of emergency situations such as missing of fishermen on duty due to rough seasons, tropical cyclones and storms etc. The fund shall be created not out of CSR budget.	Noted and complied.
xx	Time bound action plan for implementation of issues raised in public hearing shall be submitted to the Ministry within three months.	Complied.
xxi	An amount of Rs 5.70 Crores shall be earmarked as one time capital cost for CSR programme. Subsequently a recurring expenditure of Rs 1.2 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.	Complied. GSECL has formed a trust exclusively for utilizing the fund for CSR activities. Approximately Rs. 4132367/- is used for CSR activity in 2017-18.
xxii	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 up liftmen 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 individual's imparted LV take up self employment and jobs.	Need based assessment of the local villagers will be conducted under CSR program to study the economic measures and implement an action plan of community development for upliftment of poor section of society. GSECL will develop the income generation projects using the local skills available in the area. These activities will be done by GSECL under the separate budget allocation.
xxiii	It shall be ensured that in-built monitoring mechanism for the schemes identified is in place and annual	In-built monitoring mechanism will be provided as a part of these social programs.

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	social audit shall be got done from the nearest government institute of repute in the region. The project proponent shall also submit the status of Implementation of the scheme from time to time.	GSECL will conduct the annual audits the effectiveness of these programs with the help of reputed government institute in the area. The status reports on implementation of such schemes will be submitted to MoEF by GSECL.
xxiv	Green Belt consisting of 3 tiers of plantations around the plant of 150 m width and adequate tree, density not less than 2500 per ha with survival rate not less than 80 % shall be developed. In areas where 150 m width is not possible, Green belt of not less than 50 m width Shall be raised with adequate justification submitted to the regional Office of the Ministry.	Noted and Complied. Total 10 hectares of land area are developed for gardening in and around plant and colony premises. Total 2600 nos. of trees are developed in colony and plant premises.
General Conditions:		
i	Storage facilities for auxiliary liquid fuel such as LDO and/HFO/LSHS if any) shall be made in the plant area 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.	This is a Gas based power plant, hence no LDO/HFO/LSHS will be used. Besides adequate Disaster Management Plan is prepared.
ii	First Aid and sanitation arrangements shall be made for the drivers and other contract workers during construction phase.	Complied.
iii	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.	Complied
iv	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 Website of the Ministry of Environment and Forests at http://envfor.nic.in .	Complied.
v	A copy of the clearance letter shall be sent by the proponent to concerned Panchayat, Zila Parisad / 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	Complied.

Sr. no	Conditions laid down in clearance by MOEF	Compliance status
	website of the Company by the proponent.	
vi	An Environmental Cell shall be created at the project site itself and shall be headed by an officer of appropriate seniority and qualification. It shall be ensured that the head of the Cell shall directly report to the Head of the organization.	Complied. Environment cell as said is created and working.
vii	The proponent shall upload the status of compliance of the stipulated environmental clearance 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.	Noted and complied. Result of Env monitoring data are regularly sent to respective office in hard copy as well as data upload in GPCB xgn site in specific user ID also. The compliance report along with the results of monitored data shall be uploaded on GSECL website.
viii	The project proponent shall also submit six monthly reports on the status of compliance of the stipulated EC conditions including results of monitored data (both in hard copies as well by e- mail) to the respective Regional Office of MOEF, the respective Zonal Office of CPCB and the SPCB.	Noted and complied.
ix	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 environment of the environmental clearance conditions on their website and update the same periodically and simultaneously send the same by e-mail to the Regional Office, Ministry of Environment and Forests.	Noted and complied. The compliance report along with the results of monitored data shall be uploaded on GSECL website and is being periodically updated.
X	Regional Office of the Ministry of Environment & 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 up-load the compliance status in their website and up-date the same from time to time at least six monthly basis. Criteria pollutants levels including NOx (from stack & ambient air) shall be displayed at the main gate of the power plant and it public domain.	Noted and will be complied
xi	Separate funds shall be allocated for implementation of environmental protection measures along with item-wise break-up. These cost 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.	Noted and complied. Separate funds are allocated for implementation of environmental protection measures. Env. Expenditure for the year 2017-18 is attached as Annexure C .

Sr. no	Conditions laid down in clearance by MOEF	Compliance status
xii	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 commissioning of plant.	Noted and complied.
xiii	Full cooperation shall be extended to the Scientists/Officers from the Ministry / Regional Office of the Ministry at Bangalore / CPCB/ SPCB who would be monitoring the compliance of environmental status.	GSECL will fully cooperate with Scientists/ Officers, Regional offices of MoEF, CPCB, and GPCB at the time of monitoring the compliance of environmental status.

ANNEXURE-A

BOREWELL Water Analysis report

AVE OF OCT-17 TO MARCH-18

Sr. No.	Parameters	Units	Sweet Water	Brakish water bore well
1	P ^H	Unit	8.05	7.52
2	Conductivity	MS	1309	13492
3	P - Alkanity	ppm	0	0
4	Mo - Alkanity	ppm	424	320
5	Chloride as NaCl ⁻	ppm	187	10498
6	Total Hardness as CaCO ₃	ppm	122	3239
7	Calcium Hardness as CaCO ₃	ppm	48	953
8	Magnesium Hardness as CaCO ₃	ppm	74	2286
9	Suspended Solid	ppm	--	42
10	Total Dissolve Solid	ppm	785	8095

Note -Analysis is done in in-house laboratory

ANNEXURE-B

AMBIENT AIR QUALITY MONITORING DATA

FOR THE PERIOD OF OCTOBER-17 TO MARCH -18

Station	Parameter	Permissible limit	Oct -17	Nov-17	Dec-17	Jan-18	Feb -18	March-18
Near VIP Guest House Area	PM ₁₀	100 µg/M ³	43	46	48	51	53	58
	PM _{2.5}	60 µg/M ³	14.6	15.3	16.3	17.2	18.9	19.4
	Sox	80 µg/M ³	8.34	9.13	9.89	8.67	9.16	9.34
	NOx	80 µg/M ³	17.96	18.79	18.56	19.68	21.97	22.56
Near Security main gate CCPP-III	PM ₁₀	100 µg/M ³	50	54	57	59	62	65
	PM _{2.5}	60 µg/M ³	17.3	18.7	19.8	20.7	22.4	23.18
	Sox	80 µg/M ³	10.98	11.57	12.49	11.67	12.19	11.56
	NOx	80 µg/M ³	19.43	20.96	19.67	20.96	21.14	23.49
Near Security main gate CCPP-I&II	PM ₁₀	100 µg/M ³	54	59	61	64	68	71
	PM _{2.5}	60 µg/M ³	18.7	19.5	21.8	22.9	24.2	25.6
	Sox	80 µg/M ³	11.67	12.98	13.18	12.79	13.57	14.19
	NOx	80 µg/M ³	20.94	21.47	20.94	22.18	23.79	24.53
Near STP area CCPP-I&II	PM ₁₀	100 µg/M ³	48	51	55	58	62	64
	PM _{2.5}	60 µg/M ³	16.4	17.6	18.8	19.4	21.8	22.8
	Sox	80 µg/M ³	9.67	10.39	11.42	10.98	11.17	12.46
	NOx	80 µg/M ³	20.37	22.16	21.89	22.78	24.53	25.89

Note- Ambient Air Quality is monitored by M/s. Comet Consultancy Service, Rajkot.

ANNEXURE-C

Gujarat State Electricity Corporation Ltd.

Dhuvaran Thermal Power Station

Details of Recurring Expenditure on Environmental Management (In Rupees)

For the year 2017-18 (April 2017-March 2018)

Sr. No.	Expenses on	Total Amount Rs.	Remarks, if any
1	Payment to Contractors for monthly monitoring	175863.00	To comet consultancy
2	Fees to Environment Auditors.	183986.00	for April-17 to March-18
3	Consent / Audit / Other Fees to GPCB	10000.00	Env audit fees for the year 2016-17 .
4	Payment to GPCB for sampling and analysis	17680.00	To GPCB Anand
5	Inhouse sampling and analysis cost	0.00	from Chemical lab
6	Payment of Water Cess to GPCB	103491.00	Assessment order for year 2015-16 and 2016-17
7	Installation / maintenance and calibration of flow meter at ETP/STP and at various point for water conservation measures	25488.00	for calibration of flow meter at ETP/STP
8	Purchase / Maintenance of Equipments for Environment laboratory	0.00	for purchase of new equipment for lab.
9	Gardening and Plantation	1178350.00	Total gardening and plantation.
10	Misc. Civil Works for Environment	0.00	
11	Maintenance of On-line Monitors/ WMS	48933.00	for WMS-271 at CCPP
12	Maintenance of Neutralising Pits / Cost of chemicals used	40000.00	for maintenance-chemical cost
13	Expenses / Maintenance of ETP	894956.00	for maintenance-chemical cost, Expenses & spares for ETP Sub. Pump set
14	Expenses / Maintenance of STP	241590.00	for maintenance-chemical cost, Expenses & repairing of Clarifier drive & spare for back wash pump
15	Participation in Environment related Seminars / Conferences / Training programmes/ World Environment Day	20000.00	for celebration of Env day
16	Waste Oil, Resin and Battery management	800.00	Oily cotton waste disposed in june-17.
17	Bio-medical wastes management	54000.00	BMW disposal fees to Samvedna Incinerator, Halol
GRAND TOTAL (Recurring) Rs.		2995137.00	
In addition to above, the Capital expenditure done for Environment up gradation is as under			
1	Shed for Waste oil/Waste storage area or any work related to Env management.	0.00	
2	Online Opacity monitors/Sox Nox analyzer	160684.00	Connectivity to CPCB & GPCB server
3	flow meter or any other		
Total Capital Expenditure. Rs.		160684.00	