



रामगुण्डम  
RAMAGUNDAM

Ref.No:09/EMG/A1/2016/

Date: 10.11.2016

To

**THE DIRECTOR**

**Regional Office (SEZ)**

Ministry of Environment Forests & Climate Change

1st and 2nd Floors, Handloom Export Promotional Council

4 Cathedral Garden Road

Nungambakkam, Chennai -560 034

Dear Sir

**Sub: Six Monthly Compliance report of EC issued to Telangana Super Thermal Power Plant Stage-I (2X800MW) Ramagundam-Reg**

We are herewith submitting the six monthly compliance reports for Environmental Clearance given to our station pertaining to the period April 2016 to September 2016. Also please find enclosed the Soft copy of the report in CD.

Thanking you

Yours faithfully  
For NTPC Ltd

  
(Y.S.GUPTA) 10/11/16

**Additional General Manager (EMG)**

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*Received*  
*H. Karupiah*  
*15/11/16*  
**Dr. M. T. KARUPPIAH,**  
**Scientist 'C'**  
**Ministry of Environment Forests and Climate Change**  
**Government of India**  
**Regional Office - Chennai**

**Telangana Super Thermal Power Plant  
Stage-I (2X800MW)  
HALF YEARLY COMPLIANCE STATUS OF ENVIRONMENTAL CLEARANCE CONDITIONS**

*Vide Letter No. J- 13012/112/2010-IA. II (T) Dated 20<sup>th</sup> January 2016*

Sr.No.	EC Conditions	Status as on 30.09.2016
<b>A</b>	<b>SPECIFIC CONDITIONS</b>	
(i)	As the Satellite Imagery submitted was not clear, a clear satellite imagery shall be submitted to the Ministry and its R.O. Further, latest authenticated. Satellite imagery shall be submitted on an annual basis to the Ministry and its R.O to monitor the alterations of the area.	The contract for the job was awarded to Telangana State Remote Sensing Application Centre (TRAC) , Govt. of Telangana and the study is under progress. First satellite imagery is expected in December 2016.
(ii)	The PP shall ensure compliance to the Ministry's Notification. Dated 02.01.2014 regarding use of coal with ash content not exceeding thirty-four per cent, on quarterly average basis. This is to be ensured by incorporating a condition in the MoU/FSA with CIL etc. Also, if required, coal washery shall be installed.	The said stipulation will be complied during operation phase of the project.
(iii)	The Sulphur and ash content of coal shall not exceed 0.5% and 34% respectively. In case of variation of quality at any point of time, fresh reference shall be made to the Ministry and suitable amendments to the environmental clearance will have to be sought.	The said stipulation will be complied during operation phase of the project.
(iv)	FGD shall be installed as the emissions are found to be almost reaching threshold limit of 80 unit (for the worst case scenario) and also considering the cushion w.r.t NAAQS.	FGD system will be installed for controlling of SO <sub>2</sub> emission within prescribed limit.
(v)	NTPC shall endeavour to enter into MoUs with NHAI, Associations of Cement Industries and Municipal Authorities for ensuring ash utilization in roads construction and cement manufacturing.	Ash Utilization Plan has been prepared and shall be implemented in compliance to fly ash gazette notification dated 03.11.2009.  Already NTPC received Expression of Interest (EOI) for lifting ash from various cement & brick manufacturing industries. NTPC is also continuously making efforts to sign MoU with other cluster of industries for ensuring maximum ash utilization. Matter has also been taken up with NHAI for entering into MOUs for use of ash in road construction works.
(vi)	The PP shall examine possibility of relocating the ash pond. In case, the relocation of ash pond is not possible, precautionary measures by providing maximum green belt between ash pond and reservoir etc. shall be undertaken.	The location of ash pond was selected after making techno feasible examination of all available option. However, maximum possible thick greenbelt will be developed and bund will be constructed between ash pond and reservoir area.
(vii)	Study shall be conducted regarding the impact on agricultural fields in terms of heavy metal in food chain and ground water/soil for a period of one year and the report submitted to the Ministry.	The consultancy package for undertaking impact assessment study on agricultural fields in terms of heavy metal in food chain and ground water/soil was awarded to

		Tropical Forest Research Institute, Jabalpur and the study is under progress and scheduled to be completed by Oct 2017.
(viii)	The Ash water Re-circulation System (AWRS) shall be immediately installed for the existing TPP. Till that time, the ash pond effluent shall not be discharged into agricultural fields etc.	Existing station is already having Ash Water Re-circulation System (AWRS). In addition, scheme has been developed for augmenting the existing system and tendering done.
(ix)	The PP shall enhance the green belt of the existing TPP in compliance to the earlier EC conditions etc.	Already about 13.0 lakh trees were planted till now in the surroundings of existing RSTPP and Township. Further, plantation will continue at all available spaces in and around the project area, after construction is complete. Contract was already awarded for planting 50,000 more saplings.
(x)	Long term monitoring of temperature shall be undertaken on-site and off-site of the TPP, as data of decrease in temperature needs to be Verified. Further, requisite corrective action shall be taken based on the findings of the monitoring.	Long term monitoring of temperature profile will be undertaken both on-site and off-site of the TPP and accordingly the necessary corrective action will initiated.
(xi)	As the data for the health studies was more than five years old, a fresh Occupational health and epidemic health disorders survey of the study area (10 km radius) shall be conducted and the report submitted to the Ministry and its R.O within one year.	The consultancy package for undertaking Occupational Health and Epidemic Health Disorders Survey of the study area (10 KM radius) was awarded to Ms. Pollucon Laboratories Pvt Ltd, Surat, and the study is under progress.
(xii)	As Committed, a minimum amount of Rs. 20 Crores shall be earmarked as capital cost for CSR activities and the recurring cost per annum shall be as per the CSR Policy of GOI till the operation of the plant commences.	Rs. 20 Crores has been already earmarked for implementing CSR –CD for the project and shall be utilized.
(xiii)	Vision document specifying prospective plan for the site shall be formulated and submitted to the Regional office of the Ministry within six months.	NTPC vide letter dated 06.04.2016 has already submitted a project vision document to the Regional Office (South Eastern Zone), MOEF&CC at Chennai.
(xiv)	Harnessing solar power within the premises of the plant particularly at available roof tops shall be carried out and status of implementation including actual generation of solar power shall be submitted along with half yearly monitoring report.	A Solar plant PV based 10MW capacity is already operating within the premises, also solar power is being harnessed from roof tops. Besides this, scheme for harnessing solar power from roof tops within the premise of the upcoming plant has been formulated in Feasibility report (FR) and will be implemented.
(xv)	A long term study of radio activity and heavy metals contents of coal to be used shall be carried out through a reputed institute and results thereof analyzed every two year and reported along with monitoring reports. Thereafter mechanism for an in-built continuous monitoring for radio activity and heavy metals in coal and fly ash (including bottom ash) shall be put in place.	Heavy Metals and radio activity of tapering linkage coal (WCL) has been carried out. Further long term study on heavy metal and radio activity contents will be carried out once the project starts receiving the coal during operation phase.

(xvi)	Online continuous emission monitoring system for stack emission and ambient air shall be installed.	On line continuous Stack Emission Monitoring System (CEMS) for the parameters like particulate matter (PM) NOX, SO2, is installed in existing station and the same will be also installed for proposed units. Already online continuous emission monitoring system AAQMS at 3 locations installed and are functional.
(xvii)	High Efficiency Electrostatic Precipitators (ESPs) shall be installed to ensure that particulate emission does not exceed 50 mg/Nm <sup>3</sup> or as would be notified by the Ministry, whichever is lesser. Adequate dust extraction system such as cyclones/ bag filters and water spray system in dusty areas such as in coal handling and ash handling Points, transfer areas and other vulnerable dusty areas shall be provided along with an environment friendly sludge disposal system.	The High Efficiency Electrostatic Precipitators (ESP) will be is designed for a guaranteed efficiency of 99.99 % in order to comply with the direction.  Besides, dust extraction systems and suitable water spray systems are included in the design of the plant to suppress/avoid dust emissions from the coal and ash handling areas.
(xviii)	Adequate dust extraction system such as cyclones/hag filters and water spray system in dusty areas such as in coal handling and ash handling points, transfer areas and other vulnerable dusty area shall be provided	Adequate no. of dust suppression and dust extraction systems are under construction in coal handling area including coal stock yard area ash handling area and other vulnerable dusty area for control of fugitive dust emissions.
(xix)	COC of at least 5.0 shall be adopted.	Closed cycle cooling system has been designed with Cycle of Concentration (COC) of 5.0 for optimization of water requirement.
(xx)	Monitoring of surface water quantity and quality shall also 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 also be undertaken and results/findings submitted along with half yearly monitoring report.	Monitoring of Surface and ground water quality will be carried out regularly as per stipulations and half yearly reports will be submitted to Regional office of MoEF&CC at Chennai during the operation phase of the project. Heavy metal monitoring in ground water shall be undertaken and results will be submitted along with half yearly monitoring report.
(xxi)	A well designed rain water harvesting system shall be put in place within six months, which shall comprise of rain collection from the built up and Open area in the plant premises and detailed record kept of the quantity of water harvested every year and its use.	Rain water harvesting system will be put in place and records shall be maintained.
(xxii)	No water bodies including natural drainage system in the area shall be disturbed due to activities associated with the setting up/ operation of the power plant.	The said stipulation will be complied both during the construction as well as operation phase of the project.
(xxiii)	Wastewater generated from the plant shall be treated before discharge to comply limits prescribed by the SPCB/CPCB.	An effluent management scheme will be implemented during the operation phase of the project with the objective to treat the waste water as per the prescribed statutory

		<p>standards of SPCB/CPCB before its final discharge.</p> <p>The water system of Telangana STPP, Stage-I has been designed with Zero Liquid Discharge (ZLD) Concept by maximum recycle power of waste water after treatment for various plant activities</p>
(xxiv)	Online continuous effluent monitoring system shall also be installed.	Online continuous emission monitoring system installed and functional in existing station and the same shall be installed for proposed units also.
(xxv)	Additional soil for levelling of the proposed site shall be generated within the sites (to the extent possible) so that natural drainage system of the area is protected and improved.	All additional soil levelling of the project site will be done from within the sites only with all necessary precautions to protect natural drainage system of the area.
(xxvi)	Fly ash shall be collected in dry form and storage facility (silos) shall be provided. Mercury and other heavy metals (AS, Hg, Cr, Pb etc.) shall be monitored in the bottom ash. No ash shall be disposed off in low lying area.	<p>An ash management &amp; disposal scheme will be implemented consisting of dry ash extraction system (DAES) for dry collection of fly ash with storage facility (silos), supply of ash to entrepreneurs for utilization and promoting ash utilization to maximum extent and safe disposal of unused ash in the ash pond area.</p> <p>The plant shall have two different systems for ash disposal – conventional wet slurry disposal with ash water re-circulation for bottom ash and High Concentration Slurry Disposal (HCSD) for fly ash.</p> <p>Periodic monitoring for mercury &amp; heavy metals in the bottom ash and water emanating from ash pond will be done during the operation phase of the project.</p>
(xxvii)	Fugitive emission of fly ash (dry or wet) shall be controlled such that no agricultural or non-agricultural land is affected. Damage to any land shall be mitigated and suitable compensation provided in consultation with the local Panchayat.	Fugitive emission of fly ash & dust will be controlled with the aid of suitable pollution control devices such as dust extraction system and dust suppression system, bag filters, etc. Extensive plantation will be undertaken in all available spaces including coal handling, ash pond area etc selectively with Air Pollution Tolerant (APT) plant species.
(xxviii)	Green Belt consisting of three tiers of plantations of native species all around plant and at least 50 m width shall be raised. Wherever 50 m width is not feasible a 20 m width shall be raised and adequate justification shall be submitted to the Ministry. Tree density shall not be less than 2500 per ha with survival rate not less than 80 %	<ul style="list-style-type: none"> <li>• Around 13 lakh trees of different species were already planted by NTPC in and around its existing Ramagundam station.</li> <li>• Extensive afforestation will be undertaken at all available spaces in and around project, after construction is complete.</li> <li>• Contract was awarded for planting 50,000 saplings.</li> </ul>

(xxix)	<p>CSR schemes identified based on need based assessment shall be implemented in consultation with the village Panchayat and the District administration starting from the development of project itself. As part of CSR prior identification of local employable youth and eventual employment in the project after imparting relevant training shall be also undertaken. Company shall provide separate budget for community development activities and income generating programmers.</p>	<p>Various CSR schemes have been implemented and will be continued based on need based survey in consultation with the village Panchayat and the District Administration.</p> <p>Separate budget has been earmarked for implementing CSR-CD activities for the project and shall be utilized in accordance with the said stipulations.</p> <p><b>NTPC is already providing solar lights &amp; toilets in villages, distributed scholarship to school children &amp; organized medical camp for local population.</b></p>
(xxx)	<p>For proper and periodic monitoring of CSR activities, a CSR committee or a social Audit committee or a suitable credible external agency shall be appointed. CSR activities shall also be evaluated by an independent external agency. This evaluation shall be both concurrent and final.</p>	<p>In-built mechanism will be adopted for the monitoring CSR schemes through any Government institute or agency of repute in the region.</p>
(xxxi)	<p>An Environmental cell comprising of at least one expert in environmental science/ engineering, ecology, occupation health and social science, shall be created preferably at the project site itself and shall be headed by an officer of appropriate superiority and qualification. It shall be ensured that the Head of the Cell shall directly report to the Head of the Plant who would be accountable for implementation of environmental regulations and social impact improvement/mitigation measures.</p>	<p>An Environment Management Group (EMG) headed by AGM (EMG) is already functional at the Telangana STPP.</p> <p>The EMG will be responsible for implementing and monitoring the stipulations. EMG shall have sufficient trained manpower and equipment for environmental monitoring and other environmental related activities to ensure compliance with statutory requirements. It will interact regularly with the State Pollution Control Board. A laboratory at Telangana STPP will be established for monitoring of ambient air quality, stack emission water/effluent quality, etc.</p>
<b>B GENERAL CONDITIONS</b>		
(i)	<p>The treated effluents conforming to the prescribed standards only shall be recalculated and reused within the plant. Arrangements shall be made that effluents and storm water do not get mixed.</p>	<p>The concept of zero discharge shall be adopted through reuse of plant effluents.</p> <p>An independent plant effluent drainage system will be constructed to ensure that plant effluents do not mix with storm water drainage.</p>
(ii)	<p>A sewage treatment plant shall be provided (as applicable) and the treated sewage shall be used for raising greenbelt/ plantation.</p>	<p>All domestic sewage emanating from plant and township will be treated in a sewage treatment plant. The treated sewage conforming to prescribed standards shall be utilized for plantation &amp; raising greenbelt to the extent possible.</p>
(iii)	<p>Adequate safety measure shall be provided in the plant area to check/minimize spontaneous fires in coal yard, especially during summer season. Copy</p>	<p>Hydrant system for covering the entire power station including all the auxiliaries and buildings in the plant area shall be</p>

	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.	implemented. The system will be complete with piping, hydrants, valves, instrumentation, hoses, nozzles, hose boxes/stations etc.  Copy of these measures with full details will be submitted to RO, MOEF&CC after detailed Engineering Completion.
(iv)	Storage facilities for auxiliary liquid fuel such as LDO/HFO/ LSHS 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.	Storage facilities for auxiliary liquid fuel LDO/HFO are designed conforming to the safety standards and where risk is minimal.  A detailed Disaster Management Plan & Risk assessment including fire and explosion issues will be prepared and finalized in consultation with Department of Explosives, Nagpur and regular mock drills shall be conducted as per plan in order to address any eventuality in case of an accident
(v)	First Aid and sanitation arrangement shall be made for the drivers and other contract workers during construction phase.	All arrangements related to first aid, health & safety and sanitation for workers during construction phase of the project have been kept under the scope of EPC contractor. However, NTPC will ensure effective compliance of the said stipulations.
(vi)	Noise levels emanating from turbines shall be so controlled such that the noise in the work zone shall be limited to 85 dB (A) from source. For people working in the high noise area, requisite personal protective equipment like earplugs/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 none noisy/less noisy areas.	Design specification for the equipments has been made to comply with the stipulation. Personal protective equipment has been arranged through contractors during construction phase. Periodic examination of workers during operation phase shall be done as stipulated.  The workers of generator hall and other high noise area will be provided with appropriate ear protection devices.
(vii)	Regular monitoring of ambient air ground level concentration of SO <sub>2</sub> , NOX, PM <sub>2.5</sub> & PM <sub>10</sub> and Hg 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.	Regular Monitoring of Ambient air quality is being carried out through Continuous Ambient Air Quality Monitoring System and internal as well as through third party monitoring and reports are being submitted to TSPCB and RO, MoEF&CC at Chennai .
(viii)	Utilization of 100% Fly Ash generated shall be made from 4 <sup>th</sup> year of operation. Status of implementation shall be reported to the Regional office of the Ministry from time to time.	Ash Utilization shall be implemented in compliance to fly ash gazette notification by MOEF & CC dt 14.09.1999 and its subsequent amendments and status of ash utilization plan implementation shall be intimated to the RO of Ministry, of MoEF&CC at Chennai.

(ix)	Provision shall be made for the housing of construction labour (as applicable) within the site with all necessary infrastructure and facilities such as fuel for cooking, mobile toilets, mobile STP, safe drinking water, medical health care, crèche etc. The housing may be in the form of temporary structures to be removed after the completion of the project.	A labour colony with necessary infrastructure facilities such as housing, sanitation, mobile toilet, fuel, medical facilities, safety, drinking water supply etc. will be provided for construction labour through EPC contractor. Also NTPC will ensure effective compliance of the said stipulations.
(x)	The project proponent shall advertise in at least <b>two local newspapers widely circulated in the region around the project one of which shall be in the vernacular language of the locality concerned</b> 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 <a href="http://envfor.nic.in">http://envfor.nic.in</a> .	The information of Environmental Clearance was published in <b>Two news papers widely circulated in the region namely THE HINDU (English) &amp; EENADU (Telugu)</b> on 23.01.2016
(xi)	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, were received while processing the proposal. The clearance letter shall also be put on the website of the Company by the proponent.	Copy of clearance letter has been submitted to Municipal Corporation, office of Zila Parisad and other concerned local authorities on 23.01.2016. The environmental Clearance was also uploaded on the NTPC website on 25.01.2016.
(xii)	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 SPCBB. The criteria pollutant levels namely; SPM, RSPM (MP <sub>2.5</sub> & PM <sub>10</sub> ), SO <sub>2</sub> , NO <sub>x</sub> (ambient levels as well as stack emissions) shall be displayed at a convenient location near the main gate of the company in the public domain.	The HYC status of the stipulated environmental clearance conditions will also be uploaded on the NTPC website of the company.  The display of ambient air quality in terms of PM <sub>10</sub> , PM <sub>2.5</sub> , SO <sub>2</sub> and NO <sub>x</sub> shall be displayed at convenient location near main gate of company and in the public domain during the operational phase of the project.
(xiii)	The environment statement for each financial year ending 31 <sup>st</sup> March in Form-v as is mandated to be submitted by the project proponent to the concerned State Pollution Control Board as prescribed under the Environment (Protection) Rules, 1986, as amended subsequently, shall also be put on the website of the company along with the status of compliance of environmental clearance conditions and shall also be sent the respective Regional Offices of the Ministry by e-mail.	The environment statement for each financial year ending 31 <sup>st</sup> March in Form-V will be submitted once the plant becomes operational by the project proponent to the Telangana State Pollution Control Board.
(xiv)	The project proponent shall submit six monthly reports on the status of the implementation of the stipulated environmental safeguards to the	Will be complied  Six monthly EC Compliance report for 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 environmental clearance conditions of their website and update the same periodically and simultaneously send the same by e-mail to the Regional Office, Ministry of Environment and Forests.	period April 2016 to Sept 2016 is submitted herewith.
(xv)	<b>Regional Office of the Ministry of Environment &amp; 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 NO<sub>x</sub> (from stack &amp; ambient air) shall be displayed at the main gate of the power plant.</b>	<b>Shall be complied</b>
(xvi)	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 protections measures shall not be diverted for other purposes and year-wise expenditure should be reported to the Ministry.	Separate funds for Environment Protection measures allocated.  Financial Provision stipulated towards env. Protection measure will not be diverted for any other purpose.
(xvii)	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.	Will be complied.
(xviii)	Full cooperation shall be extended to the Scientists / Officers from the Ministry / Regional Office of the Ministry /CPCB / SPCB who would be monitoring the compliance of environmental status.	Full cooperation shall be extended to the Scientists / officers from the Ministry / Regional Office of the Ministry at Bhopal / CPCB / TSPCB during monitoring of the project.
7	The ministry reserves the right to revoke the clearance if conditions stipulated are not implemented to the satisfaction. The Ministry may also impose additional environmental conditions or modify the existing ones, if necessary.	Noted.
8	The environmental clearance accorded shall be valid for a period of 7 years from the date of issue of this letter to start operations by the power plant.	Noted.

9	Concealing factual data or submission of false / fabricated data and failure to comply with any of the conditions mentioned above may result in withdrawal of this clearance and attract action under the provisions of Environmental (Protection) Act, 1986.	Noted.
10	In case of any deviation or alteration in the project proposed including coal transportation system from those submitted to this Ministry for clearance, <b>a fresh reference should be made to the Ministry to assess the adequacy of the conditions (s) imposed and to add additional environmental protection measures required, if any.</b>	Noted.
11	The above stipulations would be enforced among others under the water (Prevention and Control of Pollution) Act, 1974, the Air (Prevention and Control of Pollution) Act, 1981, the Environmental (Protection) Act, 1986 and rules there under, Hazardous Wastes (Management, Handling & Transboundary Movement) Rules, 2008 and its amendments, the Public Liability Insurance Act, 1991 and its amendments.	Noted.
12	Any appeal against this environmental clearance shall lie with the National Green Tribunal, if preferred, within 30 days as prescribed under Section 16 of the National Green Tribunal Act, 2010.	Noted.