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Government of India
Ministry of Environment and Forests
Regional Office (South Zone)

U.R.P

Kendriya Sadan, IV Floor,
E & F Wing, 17th Main Road, 2nd Block,
Koramangala, BANGALORE-560 034

Dated: 08-06-2012.

To

Dr S.K. Agarwal, Scientist "F",
Ministry of Environment and Forests,
Paryavaran Bhawan, CGO Complex,
Lodhi Road, New Delhi -110 003

Subject: Submission of monitoring report & a copy of an Independent report on the 2 x 600 MW Imported Coal based TPP at Udupi Dist. in Karnataka by Udupi Power Corporation Limited.

Ref: Ministry's Clearance for this project Vide Ref J-13011/23/1996- IA II (T) dated 01-09-2011.

Sir,

I am directed to forward herewith a copy of an Independent report prepared by two experts, Executive Chairman of Karnataka State Bio-fuel Development Board Y.B. Ramakrishna and T.V. Ramachandra of Energy & Wetlands Research Group, Indian Institute of Science entitled "*Environmental profile and peoples livelihood aspects in the vicinity of coal based thermal power plant at Yellur panchayat, Udupi District*" given to the APCCF (c) of this Regional office. Since, the contents of the independent report are of multidisciplinary in nature; ministry may constitute a team to look into all the aspects of the report.

I am also directed to forward a copy of the monitoring report of the project of Udupi Power Corporation Limited carried out on 11th May 2012.

Encl: As above...

Yours faithfully



(Dr U. Sridharan)
Scientist "SF"

O/C

GOVERNMENT OF INDIA
Ministry of Environment and Forests
(Regional Office, Southern Zone)
Bangalore-34
MONITORING REPORT

PART I

F. No. EP/12.1/83/ 7 (2010-11) /Karnataka

- | | | |
|---|---|--|
| 1 | Name of the projects | 1. 2 x 600 MW Imported Coal based TPP at Udupi Dist. in Karnataka by Udupi Power Corporation Limited.
2. CRZ clearance for laying the pipeline corridor at Yellur, Udupi District, Karnataka by M/s. Udupi Power Corporation Ltd. |
| 2 | Clearance letter No.& date | 1. J-13011/23/1996- IA II (T) dated 01-09-2011
2. No. 11-14/2010-IA-III dated 18 th May, 2010 |
| 3 | Location: District & State / UT | Kolachur, Yelluru Village, Padubidri, Udupi District |
| 4 | Address for correspondence: | Mr D S Murali, Executive Director (Engineering)
Udupi Power Corporation Ltd
2 nd Floor, Le Parc Richmonde
51, Richmond Road,
Bangalore - 560 025, Karnataka, India.
Tel: +91-80-4025 4025
Fax: +91-80-4025 4000 |
| 5 | Date of site visit for this report | 11 th May 2012 |
| 6 | Date of previous visit(s) if any | 03-01-2011 |
| 7 | Brief on the project along with the present status: | |

Site visit to this unit was carried out along with Mr Mr D S Murali, Executive Director (Engineering) of Udupi Power Corporation Ltd and other officers of the Power plant.

The 2 x 600 MW Udupi Power Project is located in Udupi District of Karnataka, about 35 km north of Mangalore city. The area was declared as industrial by the state in 1995 and 1998. The Udupi Power Project was conceived as early as 1994 and its capacity was increased to 1,015 MW (2 x 507.5) by the Nagarjuna Power Corporation Limited (NPCL) in 1996. The project obtained site clearance from the Karnataka State Pollution Control Board (KSPCB) in 1996 and environmental clearance from the Ministry of Environment & Forest (MoEF) in March 1997. Its capacity was increased to 2 x 600 MW in stages, and clearances were obtained for capacity enhancement in 1999. Project was renamed as Udupi Power Project and Company renamed as Udupi Power Corporation Limited on acquisition by Lanco Group Capacity of the project

enhanced to 1200 MW (2 x 600 MW) after obtaining due clearance from MOEF in 2009. Finally the MoEF has issued a comprehensive Environmental Clearance on 01.09.2011 for this project.

Unit No. 1 of this project was commissioned and Commercial Operation Date achieved on 11.11.2010 and this unit is generating at full capacity (600 MW) now. Where as their Unit No. 2 was synchronized on 07.03.2011, loaded up to 600 MW but they are unable to operate due to transmission constraints (400 KV lines are yet to be built by KPTCL)

This project is operating with the imported coal received through rail from their captive jetty New Mangalore Port. The Water requirement is completely met by drawing sea water from Arabian Sea located about 6 km from main plant and their sweet water requirement is met through their desalination plant. Their ash Pond is situated in Santuru Village about 3 km from main plant and their sea water intake point is in Yermal Tanka about 6 km from main plant.

The Boiler capacity is 2 x 2028 t/hr of steam for the turbine generator capacity of 2 x 600 MW. Their coal firing rate is about 488 t/hr (design coal with 5900 kcal/kg GCV) for 2 units with the ash generation of about 58 t/hr based on 12 % ash in coal from 2 units. Make up sea water drawn is 10000 m³/hr (2 units) and the Return sea water quantity: about 7400 m³/hr (2 units). The Cooling tower circulating water flow rate: 76000 m³/hr (design, per unit)

CRZ clearance for laying the pipeline corridor:

The project authorities have obtained a separate CRZ clearance for their pipeline corridor. Water requirements for the Power plant is met by drawing sea water from Arabian Sea at Yermal Tenka village about 6 Kms from the main plant through pipelines and the pipeline corridor width is 25 m. Off-shore intake pipeline is at a distance of 1430 m from the coast and discharge pipeline is for 670 m from the coast line. The intake and the discharge points are identified and recommended by N.I.O. Goa. The sea water pipeline passes through nearly 78 m Coastal Regulation Zone I (Sandy beach portion) from Arabian Sea and crosses CRZ Zone III for 500 m. The extent of land falling within CRZ Zone III is 1300 m² and Zone I is 1950 m². The CRZ portion terrain is flat and sandy soil. There are no Reserve Forest, National Parks, Sanctuaries, Heritage monuments and Mangroves falling within 7 Km radius of the pipeline corridor. As per this clearance regular monitoring is carried out at Guard pond before discharging into sea. Fisheries College, Mangalore has been entrusted with the regular monitoring in the Sea. The project authorities are complying with the clearance conditions of the CRZ clearance also along with their main power plant clearance.

Environmental Measures

They use of imported coal having an average ash content of 12 % much lower compared to power stations using Indian Coal and the maximum sulphur content of 0.8 % in coal. Transportation of coal is done through railway wagons with tarpaulin covers. The entire water requirement is met through sea water and no surface water or ground water is used. Boilers are equipped with high efficiency ESP to capture fly ash to reduce SPM in the flue gas leaving the chimney to less than 50 mg/ NM³. Multi-flue stack of 275 m height with two independent steel flues, one for each boiler is provided. Flue Gas Desulphurization plant is provided for each boiler to control sulphur dioxide emission. Boilers are provided with low NOx burners to reduce NOx emission. In this plant fly ash and gypsum are being fully utilized at present. They have tied up with ACC for the utilization of the fly ash. ACC will be installing cement blending unit within

the power plant premises, and is expected to be ready by March 2013. Only unutilized fly ash is transported in dry form in closed bulkers to the ash disposal area. Fly ash finally conveyed to ash pond as slurry. A thin film of water is always maintained above the ash to prevent the ash from being airborne. Fresh water from the main plant (generated from sea water) is used for making the slurry and to maintain thin film of water in the ash pond. Arrangement to use water collected in the ash pond itself to make the slurry after treatment installed. A treatment plant is installed near ash pond to treat any excess water from the ash pond. It was informed that the treated water will used to make slurry or will be recycled back to the guard pond in the main plant for onward disposal to sea. The ash pond is provided with impervious layer to prevent ground water contamination. Garland drains are constructed around the ash pond to prevent storm water from surrounding areas entering ash to reduce possibility of overflow. The CPRI has been engaged to explore possibility to utilize bottom ash. Also, it was informed that the Fly ash is offered free of cost to the manufacturers of fly ash or clay fly ash bricks, blocks and tiles within a radius of 100km from the plant.

Gypsum generated is being disposed off to the end users such as MCF and Vintech. Dust suppression and dust extraction system is provided in coal handling system to reduce dust pollution. Run off from coal stockyard is collected in coal settling pond through garland drains and clear water after treatment reused or sent to guard pond for onward disposal to sea. Provision of coal shed to prevent rain water mixing with coal is under study.

Location of sea water intake has been decided based on the recommendations of the National Institute of Oceanography (NIO), Goa. Sea water is pumped into the plant through MS pipeline to avoid any leakage. Re-circulating system of condenser water cooling with natural draft cooling towers adopted to draw only make up water from the sea unlike the once through cooling water system where a large quantity of water is drawn and returned back to the sea. They have installed drift eliminators recently in their cooling tower to mitigate saline water evaporation by cooling tower. To meet sweet water requirements desalination plant (Reverse osmosis plant) is installed. Blow down from the cooling tower drawn from the cold water channel. Temperature of return water is much less than the 5 degree C permitted by MOEF. Cooling tower blow down and RO plant reject water (basically sea water) returned back to the sea through guard pond with other treated effluents

ETP is installed to treat plant effluents and treated water reused to extent possible and excess water sent to sea through guard pond. The return water discharge point in sea located as per the recommendations of NIO. It was informed that a study in progress for replacement of return GRP pipe by MS pipe.

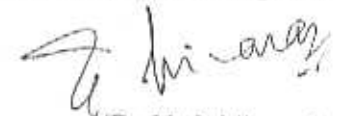
The project authorities have installed CEMS to continuously monitor the emissions from their chimney. Real time data is available on the website of UPCL. Ambient air quality, noise level and ground water quality are being regularly monitored by agency approved by KSPCB. The project authorities are submitting their monthly reports to KSPCB. Locations of the monitoring points are decided in consultation with KSPCB. The coastal water quality monitoring is being carried out by the Fisheries College, Mangalore near the sea water intake and discharge points. The project authorities are submitting monthly progress reports on the coastal water quality.

Sufficient efforts are being taken by the project authorities for the development of the Greenbelt in their main plant, corridor leading to ash pond and around the ash pond. It was informed that so

far, about 135000 saplings are planted. They have targeted to plant 2 lakh saplings to maintain greenery in and around the plant.

As a part of their CSR activities the project authorities are organizing several activities like medical camps, school development grants, education support for land losers; Mobile health services in neighboring villages, providing employment to qualified locals at plant, distribution of drinking water to adjoining villages, etc. They also celebrate the World Environment day celebrations and Tree plantation drives and provide village green awards.

After the field visit and perusal of the documents provided by the project authorities the compliance status of the project is rated satisfactory. The detailed point wise compliance is given in this report.


(Dr U. Sridharan)
Scientist "SF"

PART-II

Status of compliance to the Environmental clearance issued by the Ministry of Environment and Forests for the 2 x 600 MW Imported Coal based TPP at Udipi Dist. in Karnataka by Udipi Power Corporation Limited issued vide Ref: No J-13011/23/1996- IA II (T) dated 01-09-2011.

Compliance status in brief:

No.	Specific Conditions	COMPLIANCE
1	All the conditions stipulated by the KSPCB including FGD Plant.	Being complied
2	Sulphur and ash contents in the coal shall not exceed 0.8% and 12 % (average).	Being complied
3	A single bi-flue stack of 275 m & online monitoring of SO ₂ , NO _x and PM _{2.5} & PM ₁₀ .	Complied
4	An instrumented meteorological tower shall be set up	Complied
5	High Efficiency ESPs & Low NO _x Burners shall be installed.	Complied
6	Adequate dust extraction system and water spray system in dusty areas be provided.	Complied
7	Transportation of coal with adequate provisions to prevent fugitive emissions.	Being complied
8	Fly ash shall be collected in dry form and storage facility (silos) shall be provided.	Being complied
9	Transportation of dry fly ash to the ash disposal area through closed bulkers..	Being complied
10	Extensive monitoring of air quality in and around the power plant	Being complied
11	No leachate be formed at any point from the Coal storage area and Ash Pond.	Being complied
12	Fugitive emission of fly ash (dry or wet) shall be controlled.	Being complied
13	COC of atleast 1.25 shall be adopted.	Being complied
14	Closed Circuit Cooling Tower be installed with sea water for cooling purpose.	Complied
15	No effluent will be discharged into the Mulki River	Complied
16	Brine management of desalination plant status of implementation shall be submitted.	Complied
17	Possibility for setting up transit storage temperature control be examined.	Being complied
18	Monitoring of ground and surface water quality nearby shall be regularly conducted.	Being complied
19	A well designed rain water harvesting system shall be put in place..	Being complied
20	The project proponent shall not hamper the vocation of the fishing community.	Being complied
21	Acquisition of land should be restricted to 550 ha as per the following breakup	Complied
22	Green belt of adequate width and density with native species should be developed.	Being complied
23	Local employable youth be trained for eventual employment in the project itself.	Being complied
24	The project affected people should be rehabilitated and resettled properly.	Complied
25	Status of implementation of R&R shall be submitted to the regional Office..	Complied
26	Finance for implementation of the environmental measures be earmarked.	Being complied
27	Shall also adequately contribute in the development of the neighboring villages.	Being complied
28	Shall formulate sustainable livelihood scheme for poor society in the area.	Being complied
29	Atleast three nearest village shall be examined for possible.	Being complied

30	Rs. 5.0 Crores be earmarked as one time capital cost for CSR programme.	Being complied
31	CSR scheme be identified on need based assessment in and around the villages.	Being complied
32	It shall be ensured that an in-built monitoring mechanism for the schemes is in place.	Being complied
33	A Monitoring Committee should be constituted for reviewing the compliance	Complied
General Conditions:		
1	A Corporate Environmental Policy shall be formulated in six months.	Complied
2	The treated effluents shall be re-circulated and reused within the plant.	Complied
3	A sewage treatment plant shall be provided and the treated sewage be used	Being complied
4	A well designed rainwater harvesting shall be constructed.	Being complied
5	Adequate safety measures to check/minimize spontaneous fires in coal yard.	Being complied
6	Storage of liquid fuel in consultation with Department of Explosives, Nagpur.	Complied
7	Monitoring of ground water level shall be carried out.	Being complied
8	Monitoring surface water quantity and quality shall also be regularly conducted	Being complied
9	First Aid and sanitation arrangements for the drivers and other workers	Complied
10	Noise levels emanating from turbines shall be so controlled	Being complied
11	Regular monitoring of ground level conc. of SO ₂ , NO _x , PM _{2.5} & PM ₁₀ and Hg.	Being complied
12	Provision shall be made for the housing of construction labour.	Complied
13	The project proponent shall advertise in at least two local newspapers.	Complied
14	Clearance letter shall be sent to concerned Panchayat, /Local NGO, if any etc.	Complied
15	An Environmental Cell shall be created at the project site itself.	Complied
16	The proponent shall upload the status of compliance on their website..	Complied
17	The environment statement in Form - V as is mandated to be submitted..	Complied
18	The project proponent shall submit six monthly status reports..	Being complied
19	Regional Office of the MoEF will monitor the implementation of conditions.	Complied
20	Separate funds shall be allocated for implantation of environmental measures.	Being complied
21	Inform the MoEF & Regional Office regarding the date of financial closure	Complied
22	Full cooperation shall be extended to the Scientists monitoring the compliance.	Complied

Part-III

A. Specific Conditions:

- (i) All the conditions stipulated by the Karnataka State Pollution Control Board issued from time to time should be strictly implemented including the installation of Flue Gas Desulphurisation (FGD) Plant.

The project authorities are complying with all the conditions stipulated by KSPCB. FGD plant is already commissioned and in operation. Statuses of implementation are being submitted to RO, MOEF.

- (ii) Sulphur and ash contents in the coal to be used in the project shall not exceed 0.8% and 12 % (average) respectively at any given time. In case of variation of coal quality at any point of time, fresh reference shall be made to the Ministry.

It was informed that the project authorities are complying with both sulphur and ash content, 2.2 million Tonnes contracted with ash content of 1-3%, 0.5 million T contracted with ash content of 5-10% and another 0.5 million T with 6.5-16% ash content. 1.45 million T procurement will be done; ensuring the average 12% ash content & 0.8% sulphur content.

- (iii) A single bi-flue stack of 275 m height shall be provided with continuous online monitoring equipments of SO_x, NO_x and Particulate Matter (PM_{2.5} & PM₁₀). Exit velocity of flue gases shall not be less than 22 m/sec. Mercury emissions from stack shall also be monitored on periodic basis.

A single bi-flue stack of 275 m height is provided with continuous online monitoring equipments of SO_x, NO_x, Particulate Matter (PM_{2.5} & PM₁₀) and mercury. It was informed that their Boiler is designed for exit velocity of 23 m/sec. at full load.

- (iv) An instrumented meteorological tower shall be set up for collecting on-site meteorological data.

Meteorological station is established.

- (v) High Efficiency Electrostatic Precipitators (ESPs) shall be installed to ensure that particulate emission from the proposed plant does not exceed 50 mg / NM³. Low NO_x Burners shall be installed.

High efficiency ESPs and low NO_x burners installed. Emission less than 50 mg / NM³ is achieved.

- (vi) 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.

Water sprinklers/ fog systems are provided in coal yard, coal unloading system and coal conveyors transfer system. Dust extraction/ suppression system is provided in Track hopper and bunkers. Bag filters are provided in ash silos and ash handling systems.

- (vii) Transportation of coal from Mangalore Port to the project site shall be undertaken by rail with adequate provisions to prevent fugitive emissions.

Coal is transported to the site through Rail by wagons covered with tarpaulin sheets during the transportation to avoid fugitive emission.

- (viii) Fly ash shall be collected in dry form and storage facility (silos) shall be provided. Unutilized fly ash shall be disposed off in the ash pond in the form of slurry and heavy metals (As, Hg, Cr, Pb etc.) be monitored in the bottom ash & effluents. No ash shall be disposed off in low lying area. To prevent ground water contamination, the ash pond area should be lined with impervious layer.

Fly ash is being collected in dry form and storage is facilitated through ash silos. It was informed that only occasionally the un-utilized fly ash will be disposed in slurry form. No ash is disposed in low lying area. Monitoring of heavy metals & mercury is being done in ash pond area by installing test wells. Ash pond has been lined with impervious layer and no effluent is generated from the ash pond as water is being re-used.

- (ix) The transportation of dry fly ash to the ash disposal area through closed bulkers shall be allowed till 30.03.2012 till the Cement Grinding unit of M/s ACC Ltd. is set up. Monitoring of particulate emissions along the route of transportation shall be carried out.

Transportation of unutilized dry fly ash is done through closed bulkers. Already around 50% to 60% ash utilization is achieved. Further, M/s ACC and M/s Ashtech are together putting up the

cement blending unit within the UPCL plant area which is expected to be completed by end July 2012. Alternatively, ACC have agreed to increase the fly ash quantity lilled by them to the extent of 70 to 80 % of the total fly ash generated. Further, action is taken by UPCL through M/s Vintech, M/s Ultratech, etc to utilize fly ash. Monitoring of particulate emissions (AAQ) is done near ash pond.

- (x) Extensive monitoring of air quality in and around the power plant and extending up to Western Ghat should be carried out and records should be scientifically maintained.

Monitoring is being carried out at locations selected in consultation with KSPCB and records being maintained and submitted to KSPCB every month.

- (xi) No leachate shall takes place at any point of time from the Coal storage area and Ash Pond and adequate safety measures such as lining with impermeable membrane / liner shall be adopted.

Impervious layers / liners are provided at coal storage area and ash pond. Monitoring wells are provided around ash pond and regular monitoring is being done.

- (xii) Fugitive emission of fly ash (dry or wet) shall be controlled so 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.

As final disposal of fly ash is in slurry form, there will be no fugitive emissions. It was informed that in case of any damages, compensation will be suitably provided.

- (xiii) COC of atleast 1.25 shall be adopted.

It was informed that Cycles of Concentration of 1.4 is maintained.

- (xiv) Closed Circuit Cooling Tower shall be installed and sea water shall be used for cooling purpose. The sweet water requirement shall be met from the desalination plant.

Closed circuit cooling tower is provided. Sea water is only used for cooling purpose. Desalination plant is provided for sweet water requirement. They have installed drift eliminators recently in their cooling tower to mitigate saline water evaporation by cooling tower.

- (xv) No effluent will be discharged into the Mulki River. The treated effluents shall be discharged through a pipeline in the Arabian Sea ensuring that the differential temperature is maintained at 5⁰ C. The area and location of the intake and discharge point shall be finalized in consultation with the NIO, Goa/CWPRS, Pune.

Treated effluents including Blow down from cooling tower is sent to sea. No effluent is discharged into Mulki River. Differential temperature is less than 5 degrec C. Location of intake and outfall points finalized as per the recommendation of NIO.

- (xvi) Brine management from desalination plant, its disposal mechanism and status of implementation shall be submitted to the Regional Office of the Ministry from time to time.

Desalination plant brine discharge is sent back to sea through the guard pond. It was informed that the Scheme for this is already conveyed to RO of Ministry by the project authorities.

- (xvii) Possibility for setting up transit storage within plant site for temperature control of effluent before discharging to the sea shall be examined and details submitted to the Ministry within six months.

Treated effluents including blow down from cooling tower is sent back to sea via the guard pond. Temperature is maintained much below the specified limit of 5 °C.

- (xviii) Monitoring of ground and surface water quality nearby shall be regularly conducted and records maintained. Monitoring for heavy metals in ground water shall be undertaken.

Monitoring for ground water quality is being carried out regularly and reports submitted to KSPCB every month. Monitored data of six monthly reports are being submitted to RO, MOEF regularly. Monitoring points are located in consultation with KSPCB. Monitoring of heavy metals in ground water is done.

- (xix) A well designed rain water harvesting system shall be put in place which shall comprise of rain water collection from the built up and open area in the plant premises. Action plan and road map for implementation shall be submitted to the Regional Office of Ministry.

It was informed that in view of the very heavy rain fall in the area, it is not practical to have rain water collection from built up and open areas. A well designed rain water management system is already established, they have also engaged a consultant to study the feasibility for rain water harvesting and the project authorities informed that the report and action plan will be submitted RO, MOEF soon.

- (xx) The project proponent shall not hamper the vocation of the fishing community in the area (if any) and it shall be ensured that local fishing community shall be allowed to carry out their vocation. Clearance from the Department of Fisheries in the State Govt. shall be obtained.

Monitoring of sea water around the intake and outfall points is done regularly through Fisheries College, Mangalore and report is submitted to KSPCB & RO of the Ministry. Clearance from Fisheries Department is already obtained for 2 x 507.5 MW Capacity. Also, have already applied for the amendment for Enhanced capacity of 2x600 MW and the Fisheries dept is awaiting for internal clarifications before issuing the amendment. It was told that the amendment is expected shortly.

- (xxi) Acquisition of land should be restricted to 550 ha as per the following breakup:

Plant area-180 ha; Ash disposal area- 150 ha; Colony area 45 ha; Intake pipe route - 25 ha; Other requirement - 50 ha; Rehabilitation, green belts Ash utilizations etc.- 100 ha

The project authorities assured that their land acquisition is restricted as per their plans submitted.

- (xxii) Green belt of adequate width and density with suitably selected native species should be developed all around the plant area and the ash disposal site. Density of trees shall not be less than 2000 per ha and survival rate not less than 80%. It shall be ensured that at least 1/3rd of the total area is utilized for creation of green belt. Adequate financial provision should be made for this purpose.

It was informed that a Green belt is planned for 2, 00,000 trees of which about 1, 32,000 saplings have already been planted and the target of 200000 will be achieved by the end of the monsoon 2012.

- (xxiii) Local employable youth from Project Affected Family shall be trained in skills relevant to the project for eventual employment in the project itself. The action taken report and details thereof to this effect shall be submitted to the Regional Office of the Ministry and the State Govt. Dept. concerned from time to time.

It was informed that as per the recommendation of KIADB for the Project Affected families, people are taken on employment and provided with Training and skill development. Six monthly reports are already submitted to RO, MOEF and will continue to submit the same regularly.

- (xxiv) The project affected people should be rehabilitated and resettled in consultation with the State Govt. of Karnataka. A Rehabilitation Committee should be constituted with representatives from the state of Govt. of Karnataka, affected people, local recognized NGOs, technical institutions, experts etc.

It was informed that as per R&R policy by GOK, Rehabilitation and Resettlement is already provided to the project affected people.

- (xxv) Status of implementation of R&R including its financial component spent and action pending shall be submitted to the regional Office of the Ministry from time to time.

The project authorities informed that status of implementation is already submitted to RO, MOEF along with their periodical progress reports.

- (xxvi) Financial requirements for implementation of the environmental mitigative measures should be earmarked and shall not be diverted for the other purposes. Adequate provision should be ensured for enhancement of funds required, if any, in future.

The project authorities have already taken measures to safeguard the environmental problems. It was informed that all the control equipments are in place and it was assured that any future requirement will be provided as and when required.

(xxvii) The project proponent shall also adequately contribute in the development of the neighboring villages. Special package with implementation schedule for free potable drinking water supply in the nearby villages and schools shall be undertaken in a time bound manner.

It was informed that assistance like Medical, Educational, Artificial Limbs and appliances, infrastructure facilities, etc, is being provided for the neighboring villages. Potable Drinking water supply through separate RO plant is already started. Scholarships and school grants are also provided.

(xxviii) The project proponent shall formulate sustainable livelihood scheme for landless and marginalised section of society (such as landless farmers) in the area who are directly or indirectly affected due to power project.

The project authorities have engaged the local people for area development, green belt development and other services like catering, etc.,

(xxix) At least three nearest village shall be examined for possible adoption and basic amenities like development of roads, drinking water supply, primary health centre, primary school etc shall be developed in co-ordination with the district administration.

The project authorities are already complying with their CSR activities as mentioned in Condition xxvii and they are working with local panchayats of Tenka, Bada, and Santur for possible adoption and providing basic amenities.

(xxx) An amount of Rs. 5.0 Crores shall be earmarked as one time capital cost for CSR programme. Subsequently a recurring expenditure of Rs. 1.0 Crores per annum till the life the plant 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.

It was informed that Rs 5 Cr is already earmarked and Rs 1 Cr as revenue is being spent for all CSR activities and the details are submitted to RO, MOEF.

(xxxii) CSR scheme shall be identified based on need based assessment in and around the villages within 5.0 km of the site and in constant consultation with the village Panchayat and the District Administration. As part of CSR prior identification of local employable youth and eventual employment in the project as required after imparting relevant training shall be also undertaken as necessary.

The project authorities informed that separately, 5 people are employed for assessment and consultation with local villages for CSR activities on a continuous basis. Scholarships are provided for local youth to get them proper education and getting eventual employment opportunities.

(xxxiii) It shall be ensured that in-built monitoring mechanism for the schemes identified is in place and annual 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.

It was informed that regular monitoring & monthly progress is being reviewed and annual social audit will be carried out through Govt. Institute as recommended.

- (xxxiii) A Monitoring Committee should be constituted for reviewing the compliance to various safeguard measures by involving recognized local NGOs, Pollution Control Board, Institutions, Experts etc.

The project authorities informed that expert committee is already constituted for reviewing the safeguards undertaken by UPCL.

B. General Conditions:

- (i) A Corporate Environmental Policy shall be formulated and after due approval of the Board of Directors of the Company shall be submitted to the Ministry with six months.

It was informed that the Environmental policy under Integrated Management System for quality, safety, Health and environment is in place and the same is approved by their Board.

- (ii) The treated effluents conforming to the prescribed standards only shall be re-circulated and reused within the plant. Arrangements shall be made that effluents and storm water do not get mixed.

Arrangements are made to ensure effluents are not mixed with storm water. Effluent treatment plant has been established for treating the effluent and after treatment only the water is reused for their green belt.

- (iii) A sewage treatment plant shall be provided (as applicable) and the treated sewage shall be used for raising greenbelt / plantation.

The project authorities have provided treatment plant and they are using their treated water for their plantation development.

- (iv) A well designed rainwater harvesting shall be constructed. Central Groundwater Authority / Board shall be consulted for finalization of appropriate rainwater harvesting technology within a period of three months from the date of issue of clearance and details shall be furnished to the Regional Office of the Ministry.

It was informed that in view of the very heavy rain fall in the area, it is not practical to have rain water collection from built up and open areas. A well designed rain water management system is already established. It was also informed that they have also engaged a consultant to study the possibility of putting up rain harvesting system and the same will be submitted soon.

- (v) Adequate safety measures shall be provided in the plant area to check/minimize spontaneous fires in coal yard, 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.

It was informed that adequate safety measures of fire fighting system and Water sprinklers to prevent spontaneous fire in the coal yard are provided and full details & plant layout are being submitted to RO, MOEF.

- (vi) Storage facilities for auxiliary liquid fuel such as LDO and 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.

It was informed that the storage facilities are approved by Department of Explosives, Nagpur. The Sulphur content will be as supplied by the Oil Companies (GOI Undertaking) and the Disaster management plan is in place as approved by Inspectorate of Factories and Boilers.

- (vii) Regular monitoring of ground water level shall be carried out by establishing a network of existing wells and constructing new piezometers. Monitoring around the ash pond area shall be carried out particularly for heavy metals (Hg, Cr, As, Pb) and records maintained and submitted to the Regional Office of this Ministry. The data so obtained should be compared with the baseline data so as to ensure that the ground water quality is not adversely affected due to the project.

Regular monitoring being done through existing wells and bore wells built for that purpose. Reports are being submitted regularly. Monitoring for heavy metals is being done in the ash pond area.

- (viii) Monitoring 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 be undertaken.

Monitoring points for the surface water are identified in consultation with KSPCB and Monitoring is being carried out regularly and six monthly data submitted to RO, MOEF.

- (ix) First Aid and sanitation arrangements shall be made for the drivers and other contract workers during construction phase.

It was informed that their construction phase completed & they have complied with this condition during construction phase. First aid centre and ambulance are provided.

- (x) Noise levels emanating from turbines shall be so controlled such that the noise in the work zone shall be limited to 75 dBA. 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 non-noisy / noise less areas.

Enclosures are provided for turbines to control the noise. PPEs are provided for workers working in high noise area. Periodic audiometric examinations are carried out for the people working in the high noise area and records are maintained.

- (xi) Regular monitoring of ground level concentration of SO₂, NO_x, PM_{2.5} & PM₁₀ 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.

AAQMS monitoring stations are provided in consultation with state PCB and continuous monitoring is being carried out. Data is displayed on the website of the company at <http://udupipower.com/> Monitoring reports are being submitted to KSPCB as well as RO of the Ministry.

- (xii) Provision shall be made for all the necessary infrastructure and facilities for the workers.

Construction activities have been completed and it was informed that necessary infrastructure provided to the construction workers.

- (xiii) 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.

The project authorities have already advertised & published in two local news papers.

- (xiv) 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 website of the Company by the project proponent.

It was informed that the copies are already provided to the concerned & also displayed in their website at <http://udupipower.com/>. It was informed that no representations were received while processing the proposal.

- (xv) 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. The status report on the functioning of the Cell shall be submitted to the regional office of the Ministry periodically. The Cell shall comprise of an expert in Marine Biology, Fishery and Mangroves preservation.

The project authorities informed that a 5-member cell headed by the Vice-President (O&M head) is already in place. For Marine Biology and Fisheries, Monitoring is being carried out regularly by Fisheries College, Mangalore and reports are submitted.

- (xvi) 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. The criteria pollutant levels namely; SPM, RSPM (PM_{2.5} & PM₁₀), SO₂, NO_x (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.

Environment Clearance conditions, and monitoring data on real time basis are available on website at <http://udupipower.com/>. Six monthly reports are regularly submitted to RO, MOEF, CPCB and KSPCB. Digital display board near main gate is in service.

- (xvii) The environment statement for each financial year ending 31st March in Form – V as is mandated to be submitted by the project proponent to the SPCB & shall also be put on the website of the company.

Environment statement for last year is submitted to KSPCB and RO, MOEF. Environment Statement is also uploaded on the website of the company.

- (xviii) The project proponent shall submit six monthly reports & also shall upload the status of compliance of the environment of the environmental clearance conditions on their website.

Six monthly reports are regularly submitted to RO, MOEF, CPCB and KSPCB. Also the status of compliance for this EC is uploaded on their website.

- (xix) Regional Office of the Ministry of Environment & Forests will monitor the implementation of the stipulated conditions. A complete set of documents including EIA & EMP shall be forwarded to the Regional Office. Criteria pollutants levels including NO_x (from stack & ambient air) shall be displayed at the main gate of the power plant.

EIA report with EMP is already submitted to RO, MOEF. Status of compliance for this EC is uploaded on website. Digital display board near main gate is in service.

- (xx) Separate funds shall be allocated for implantation of environmental protection measures & the funds earmarked for the environment protection measures shall not be diverted for other purposes.

Capital cost towards environment protection measures already incurred as the project has been completed.

- (xxi) The project authorities shall inform the Regional Office & MoEF regarding the date of financial closure and the dates of start of land development work and commissioning of plant.

The project authorities have already informed to MOEF.

- (xxii) Full cooperation shall be extended to the Scientists / Officers who would be monitoring the compliance of environmental status.

The project authorities extended necessary cooperation for monitoring this project



(Dr U. Sridharan)
Scientist "SF"

An independent report prepared by two experts, Executive Chairman of Karnataka State Bio-fuel Development Board Y.B. Ramakrishna and T.V. Ramachandra of Energy & Wetlands Research Group, Indian Institute of Science entitled "Environmental profile and peoples livelihood aspects in the vicinity of coal based thermal power plant at Yellur panchayat, Udupi District" (CES Technical Report 126 April 2012) was given to the APCCF (c) of the Regional office of the Ministry. A copy of the independent report is enclosed and the clarifications provided by the UPCL authorities on the report are given below:

Response of UPCL to the Report of Sri Y B Ramakrishna and Sri T V Ramachandra

UPCL clarifies against the Reports published in various newspapers on 3rd May 2012 on certain environmental issues, based on the report submitted by one Sri Y B Ramakrishna and Sri T V Ramachandra. At the outset UPCL denies all the allegations made therein and gives below the clarifications for the same. The report is more of academic nature and without any basis in regard to UPCL.

- a. Since, time and again these issues were raised by certain vested interests, an Expert Committee consisting of 6 Members was appointed by the DC, Udupi District, and as a part of the Objectives to ascertain the facts, and the Committee Members visited the Plant and other nearby areas. After thorough evaluation and findings, the committee has submitted an interim report and based on their recommendation, to mitigate the issue raised on saline water evaporation by Cooling Tower, drift eliminators are provided. However, subsequently, the above 2 (two) personalities were also included in the Committee as Additional Members and subsequently they were removed by the State Government for the reasons best known to them. The Independent Report prepared and submitted by the Authors are only self-serving and needless to mention that it is based on a biased attitude since the Authors are aggrieved and against parties. The findings and listings in the report are generic not specific to UPCL. The allegations are baseless and contrary to the recorded proof.*
- b. UPCL project has been well conceived and implemented with the latest proven technology based on imported coal having a very low ash content and UPCL also have provided the special environmental protection infrastructures like 275 meters height Chimney, High efficiency*

Electro Static Precipitators for collection of dry fly ash, Flue Gas Desulphurisation plant (FGD), Sewage Treatment Plant, Effluent Treatment Plant and a Desalination Plant. Also, to preserve the River Water, UPCL is drawing only Sea Water for the entire water requirement. The Authors of the so-called Independent report, without updating themselves about the present position in the Plant and with a closed-eye, now giving recommendation, for the installation of the above equipment, clearly shows that they are not aware of the infrastructure installed for protecting the environment, and this will itself prove their biased attitude against UPCL.

- c. UPCL states that both ambient air quality and water quality are being regularly monitored on continuous basis through a third - party, recognised by KSPCB and data are being submitted to KSPCB and MOEF. The results are all well within the stipulated levels and UPCL has been following and complying with all the directions given by the environment monitoring authorities like KSPCB and MOEF. Hence, the analysis done by the Authors of Independent Report cannot be relied upon and taken as granted for coming to a conclusion as it is contrary to the factual data monitored and recorded for long time.*
- d. UPCL states that the imported coal is transported in Wagons duly covered with tarpaulin and no fugitive emission is found. Impervious layers are provided for the Ash Pond and the Coal Stockyard as per the MOEF stipulations and this has been verified by the Members of the Monitoring Committee nominated by the DC. No water is let out from ash pond and the water does not contain heavy metals. Only sea water is sent back to sea after RO processing. Fish catch has increased as per the fisheries record.*
- e. UPCL reiterates that entire Dakshina Kannada region has been facing low pH water quality for a long period even before the establishment of UPCL for which EIA and other study records are available. Based on the earlier reports, it is evident the pH value in water is comparatively very low in this area and the iron value are very high in some areas. Hence, the allegation that this is the after effect of UPCL is biased and there are no evidences to support.*
- f. Technically No hydrocarbons can ooze out from any of thermal Power Plant and so is the case with UPCL plant. Also there are no health problems or reduction of population of peafowl, no miscarriage of livestock, no higher crime rate, etc., as alleged in the Report. UPCL has not disrupted any public pathway and in fact they have widened Public Roads in some local areas as per the requests of respective Panchayats. Also it is very much required here to mention that local people have expressed their support for the Project, to the Committee, in writing.*

Needless to clarify that a Project like UPCL - formerly known as Nagarjuna Power Corporation Limited, cannot be established without obtaining all the required clearances from MOEF, KSPCB and other Statutory Authorities, including the location at Yellur and hence the allegation of a different location mentioned in the report is not only totally false but also made to mislead all.