

The Chief Conservator of Forests (Central)  
Kendriya Sadan, 4th Floor  
E7F Wing1 II Block  
Koramangala  
BANGALORE-560034

Date: 01.04.2013.

Sir,

**Sub:** Environmental Clearance granted for NCC Power Projects Limited (NCCPPL) for establishing a Coal based Thermal Power Plant (1320 MW -- 2X660MW) at Painampuram of Muthukur Mandal, Varakavipudi and Shivarampuram of TP Gudur Mandal in SPS Nellore District, A.P -- Submission of Report on Status of Compliance Conditions of Environmental Clearance - Reg.

Ref: MoEF & Letter No.J13012/76/2009-1A.II (T) dated 18/05/2011.

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As specified in the Environmental Clearance by MoEF for 1320 MW coal-based power project of NCC Power Projects Ltd., Compliance Report (up to April 2013) is enclosed for information please.

Thanking you  
for **NCC Power Projects limited**

  
01.04.2013

**Authorized Signatory**

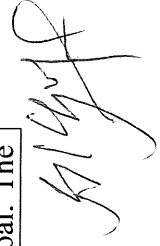
Encl: As above.

Cc: Ministry of Environment & Forests  
Paryavaran Bhawan, CGO Complex  
Lodhi Road, New Delhi 110003.

<b>Status of Compliance of Conditions – April 2013</b>	
<b>A</b>	<b>Specific Conditions</b>
(i)	Environmental clearance is subject to obtaining CRZ clearance (as applicable) for permissible activities in CRZ area
(ii)	In case source of fuel supply is to be changed at a later stage for the proposed 2x660 MW units now proposed to be run on imported coal from Indonesia, the project proponent shall intimate the Ministry well in advance along with necessary requisite documents for its concurrence for allowing the change. In such a case the necessity for re-conducting public hearing may be decided by the Ministry in consultation with the Expert Appraisal Committee
(iii)	The project proponent shall examine in detail the possibility to adopt NIOT technology of desalination plant using Low Temperature Thermal Desalination (LTTD) process. In case the same is not feasible detailed explanation shall be submitted to the Regional Office of the Ministry.
(iv)	Local employable youth shall be identified and 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.
	<ul style="list-style-type: none"> <li>• CRZ clearance issued vide letter no (F.No 11-44/2011-IA-III) Dated: 09<sup>th</sup> April 2012. Annexure-1</li> <li>• Amended EC issued by MoEF Govt. Of India on the name of NCC Power Projects Ltd for use of 70:30 blend coal has already been submitted vide our dated 11<sup>th</sup> April 2011</li> <li>• Advantages &amp; Disadvantages with LTTD technology as suggested by TCE Consulting Engineers has been submitted in the previous report. However explanation report would be submitted to MoEF after discussions with NIOT Chennai.</li> <li>• A Batch of 22 members of Varakavipudi and Pynapuram panchayaths were sponsored by NCCPPL. Completed 3 months short term technical training in the trades of “Bar Bending, Electrician, Welding” at Soma-Swarnabharath Technical Training Institute, Nellore, Among them 11 members passed in the trades and were provided employment in the project activities of the NCC.</li> <li>• When women gain, families regain health, nutrition and financial stability. We believe that women have played a significant role in our country’s socio-economic development process. Our initiatives aim at exploring their latent energies and hidden potential through constant women empowerment trainings in the areas of vocational trades like Tailoring, Fabric painting, petty shops management and others which</li> </ul>

*Ally*

		<p>gives self employment to rural women. Trainings were planned for women in the vicinity of project area in co-ordination with Swarnabharath trust continuously. A 45 days Training programme on fabric painting was started in the SC hamlet of village Pynapuram for 23 members.</p> <ul style="list-style-type: none"> <li>• NCC power project committed to develop the surrounding communities to develop on their own by providing opportunities in project construction</li> <li>• Around 50 No's were provided employment and surrounding villagers were provided livelihood by engaging them in green belt activities, housekeeping, security services, construction activities, other services, and providing them contracts in some of the project activities to benefit the surrounding communities</li> <li>• As per the letter received from the Assistant Director- Fisheries department, Nellore District A.P, there are no inland &amp; marine fishermen in the project vicinity (3km). Copy of letter is already submitted vide our letter dated 11<sup>th</sup> April 2011.</li> </ul>
(v)	<p>The project proponent shall establish at its own costs a Fish Landing Platform, Ice Plant etc. and shall accordingly submit to the Regional Office of the Ministry and the Fishery Department of the State Govt. a detailed plan and implementation schedule. The project proponent shall also prepare an action plan for implementation. Regarding providing sustainable fishing option for fishermen community in the area.</p>	
(vi)	<p>An endowment of Fishermen Welfare Fund shall be created out of CSR component for specific activities to be finalized <b>within three months</b> for upliftment of the lives of fishing community in the region. Creation of facilities such as Fish Drying Platforms /Ice plant can as mentioned at clause (v) above can form a part of the scheme.</p>	<ul style="list-style-type: none"> <li>• Refer point (v) above</li> </ul>
(vii)	<p>The project proponent shall not hamper the vocation of the fishing community in the area and it shall be ensured that local fishing community shall be allowed to carry out their vocation.</p>	<ul style="list-style-type: none"> <li>• There is no hampering of fishing activities due to development of the Project</li> </ul>
(viii)	<p>Existing Port facility in the region shall be utilized for</p>	<ul style="list-style-type: none"> <li>• Krishapatnam port is proposed to be used for importing of coal. The</li> </ul>



	import of coal instead of setting up individual jetty to avoid disruptions in coastal and inland ecology.	coal from the Port will be transported by means of a closed conveyor and hence there will be not be any disruptions in coastal and inland ecology.
(ix)	Possibility for setting up transit storage within plant site for temperature control of effluent before discharge to the sea shall be carried out and details submitted <b>within three months</b> of starting construction activities to the Ministry	<ul style="list-style-type: none"> <li>Guard pond has been proposed in the plant layout and details of the same including temperature control would be submitted during detail engineering stage. However, preliminary details of guard pond and temperature details are already furnished vide letter dated 11<sup>th</sup> April 2011</li> </ul>
(x)	Additional soil for leveling 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.	<ul style="list-style-type: none"> <li>Noted</li> </ul>
(xi)	No waste (effluent) shall be discharged into canal systems, backwaters, marshy areas and the sea (as applicable) without treatment.	<ul style="list-style-type: none"> <li>Noted</li> </ul>
(xii)	The marshy areas in the vicinity (if any) shall not be disturbed.	<ul style="list-style-type: none"> <li>Noted</li> </ul>
(xiii)	Intake shall be from deep sea to avoid aggregation of fish and other marine creatures	<ul style="list-style-type: none"> <li>Noted</li> </ul>
(xiv)	It shall be ensured that no contamination of soil, ground and surface waters (canals & village pond) with sea water in and around the project sites takes place. Necessary preventive measures for spillage from pipelines, such as lining of guard pond used for the treatment of outfall before discharging in to the sea and surface RCC channels along the pipelines of outfall and intake should be adopted.	<ul style="list-style-type: none"> <li>Noted</li> </ul>
(xv)	Hydro-geological study of the area shall be <b>reviewed annually</b> and results submitted to the Ministry and concerned agency in the State Govt. In case adverse impact on ground water quantity and quality is observed, immediate mitigating steps to contain any adverse impact on ground water shall be undertaken	<ul style="list-style-type: none"> <li>M/s BS Envitech has been appointed as consultant Monitoring Environmental Parameters &amp; Submission of periodical Report to MoEF &amp; APPCB.</li> <li>Relevant Environment parameters monitoring Data is enclosed as <b>Annexure-II (CD)</b></li> </ul>
(xvi)	A stack of 275 m height shall be provided with continuous online monitoring equipments for SO <sub>x</sub>	<ul style="list-style-type: none"> <li>Noted</li> </ul>

	NO <sub>x</sub> and PM2.5 and 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.	
(xvii)	Sulphur content in the imported coal shall not exceed 0.60%	<ul style="list-style-type: none"> <li>Noted</li> </ul>
(xvii i)	High Efficiency Electrostatic Precipitators (ESPs) shall be installed to ensure that particulate emission does not exceed 50 mg/Nm <sup>3</sup>	<ul style="list-style-type: none"> <li>Noted and design of ESP has been taken care accordingly with BTG supplier</li> </ul>
(xix)	Provision for FGD shall be provided for future use as and when required	<ul style="list-style-type: none"> <li>Space provision has been considered in the layout</li> </ul>
(xx)	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	<ul style="list-style-type: none"> <li>Noted and dust extraction systems 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 are included in the scope of EPC contractor.</li> </ul>
(xxi)	A detailed coal analysis from a reputed lab for all contracted coal sources for the project shall be submitted <b>within three months.</b>	<ul style="list-style-type: none"> <li>Indigenous coal- Contracted mine source is yet to be finalised by Ministry of Coal Govt. of India.</li> <li>Imported coal- coal production would commence from March 2014 and lab test reports will be submitted immediately thereafter.</li> </ul>
(xxii)	Utilisation of 100% Fly Ash generated shall be made from 4 <sup>th</sup> year of operation of the plant. Status of implementation shall be reported to the Regional Office of the Ministry from time to time.	<ul style="list-style-type: none"> <li>Noted and 100% Fly Ash will be utilized from 4<sup>th</sup> year of operation of the plant. Regular compliance report shall be submitted after commencement of Power Generation.</li> </ul>
(xxii i)	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 high concentration slurry form. Mercury and other heavy metals (As,Hg, Cr, Pb etc.) will be monitored in the bottom ash as also in the effluents emanating from the existing ash pond. No ash shall be disposed off in low lying area.	<ul style="list-style-type: none"> <li>Noted for Compliance.</li> </ul>
(xxi v)	Ash pond shall be lined with HDP/LDP lining or any other suitable impermeable media such that no leachate takes place at any point of time. Adequate safety measures shall also be implemented to protect	<ul style="list-style-type: none"> <li>The ash disposal area shall be lined with HDPE/LDPE lining of suitable thickness (150 to 200 microns) on a sand bed of 100mm thickness, followed by layer of mortar and brick lining on the HDPE/LDPE liner, for protecting the liner. A typical schematic of the</li> </ul>

	the ash dyke from getting breached	proposed HCSD system along with details of the liner has already submitted vide out letter dated 11 <sup>th</sup> April 2011
(xxv )	For disposal of Bottom Ash ( <i>if proposed to be undertaken</i> ) in abandoned mines it shall be ensured that the bottom and sides of the mined out areas are adequately lined with clay before Bottom Ash is filled up. The project proponent shall inform the State Pollution Control Board well in advance before undertaking the activity	<ul style="list-style-type: none"> <li>• Will be disposed off to ash pond through HCSD system. NCCPPL has made provision to adopt High Concentration Slurry Disposal system.</li> </ul>
(xxv i)	Closed cycle cooling system shall be provided. The Effluents shall be treated as per the prescribed norms. COC of at least 1.25 shall be adopted.	<ul style="list-style-type: none"> <li>• Noted for Compliance.</li> </ul>
(xxv ii)	Green Belt consisting of 3 tiers of plantations of native species around plant and at least 100 m width shall be raised. Wherever 100 m width is not feasible a 50 m width shall be raised and adequate justification shall be submitted to the Ministry. Tree density shall not less than 2500 per ha with survival rate not less than 75 %	<ul style="list-style-type: none"> <li>• Green Belt Development Plan: An area of 315 acres is being developed under green belt to improve aesthetics, control of dust and noise pollution. A curtain of trees all around the power plant complex has been envisaged as follows: <ul style="list-style-type: none"> <li>▪ Primary Zone: This zone will be nearest one to the emission source, where the ambient pollutant concentration is higher. The trees planted here shall have dense spreading canopy. The trees will be close set with spacing of 2-3 mtrs between trees and width of this zone will be 15-30 mtrs.</li> <li>▪ Secondary Zone: Outer to the primary zone 15-50 mtrs width wide strip of Land will be planted with trees which are moderately tolerant to the pollutants but are endowed with fast growing, Dense foliage canopy.</li> <li>▪ Curtain Zone: All along the boundary power station complex, a 20-100 meter width land strip will be planted with trees which are tall in nature and ever green in habit.</li> </ul> </li> <li>• Plantation of 50 Acres has been completed and balance area plantation is under progress.</li> <li>• Scientific methods have been adopted for propagation, plantation and maintenance of green belt.</li> <li>• Nearly 30 acres of existing green belt area is protected and maintaining within the boundary layout.</li> </ul>

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		<ul style="list-style-type: none"> <li>Local Workers engaged for plantation activities gives direct and indirect employment to the surrounding communities.</li> <li>More CO2 consuming indigenous varieties were planned in the green belt development.</li> </ul>
(xxv iii)	<p>A good action plan for R&amp;R (if applicable) with package for the project affected persons be submitted and implemented as per prevalent R&amp;R policy <b>within three months</b> from the date of issue of this letter</p>	<ul style="list-style-type: none"> <li>R&amp;R is not applicable for this project as there is no re-settlement involved.</li> </ul>
(xxi x)	<p>An amount of Rs 27.3 Crores shall be earmarked as one time capital cost for CSR programme. Subsequently a recurring expenditure of Rs 5.5 Crores per annum shall be earmarked as recurring expenditure for CSR activities. Details of the activities to be undertaken shall be <b>submitted within one month</b> along with road map for implementation</p>	<ul style="list-style-type: none"> <li>CSR activities are undergoing as per the road map Currently the company is undertaking various CSR activities as under: <ol style="list-style-type: none"> <li>1) Medical dispensaries which are regularly operating in Mandapam, Pynapuram, and Varakavi pudi Panchayath. Veterinary doctor engaged and Medical assistance extended to all villagers of the project area. Farmers were given suggestions by doctors to protect the live stock. The centre is presently operating at Varakavipudi Panchayath</li> <li>2) Distribution of Educational Kits to the school children in the vicinity villages.</li> <li>3) Organising medical camps for pregnant women in Mandapam, Pynapuram, and Varakavi pudi Panchayath on a regular basis</li> <li>4) Drinking water distribution line in Pynapuram village - RO drinking water plant (1000 litre/hr) commissioned at Varakavipudi Panchayath and supplying safe drinking water to villagers. Drinking water through tankers supplied to 8 villages of Mandapam Panchayaths and also water supply extended to Villages of Ananthapuram, Sivarampuram and Varakavipudi</li> <li>5) Women Empowerment - About 20 women were identified and trained in fabric painting under the supervision of Swarna Bharati Foundation. Similar training programme is planned in tailoring &amp; allied activities</li> <li>6) Infrastructure facilities for schools developed by constructing school compound walls, Kitchen Blocks in surrounding Villages. An exclusive Evening tuition centre with qualified teachers is</li> </ol> </li> </ul>

	running at Varakavipudi school to extend the educational support to all school children of the surrounding Villages. Laying of 2.5 KMS Road to Mandapam katepalli up to sea coast famous shivatemple became useful for pilgrims,communities and fisherman	
(xxx )	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 upliftment 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 individuals imparted to take up self employment and jobs.	<ul style="list-style-type: none"> <li>• Refer point (xxix) above</li> </ul>
(xxx i)	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	<ul style="list-style-type: none"> <li>• CSR activates along with Road map for implementation has been submitted to CCF (Central), MoEF &amp; Director, MoEF vide the letter dated 14/03/2011. Copy of the same was already submitted vide our letter dated 11<sup>th</sup> April 2011. Details are furnished at Point No. xxix above</li> </ul>
<b>B</b>	<b>General Conditions:</b>	
(i)	The treated effluents conforming to the prescribed standards only shall be re-circulated and reused within the plant. There shall be no discharge outside the plant boundary except during monsoon. Arrangements shall be made that effluents and storm water do not get mixed.	<ul style="list-style-type: none"> <li>• Noted.</li> <li>• Treated effluents conforming to the prescribed standards will only be re-circulated and reused within the plant</li> <li>• Effluents and storm water do not get mixed. A separate storm water drain will be provided all along the boundary of the power plant.</li> <li>• Final WBD and ETP scheme are enclosed as <b>Annexure – III.</b></li> </ul>
(ii)	A sewage treatment plant shall be provided and the treated sewage shall be used for raising greenbelt/plantation.	<ul style="list-style-type: none"> <li>• Sewage treatment plant has been considered and the treated sewage will be used as manure for greenbelt/ plantation.</li> <li>• Details of STP will be furnished during detail engineering stage</li> </ul>



(iii)	A well designed rain water harvesting system shall be put in place within six months before commissioning of the plant, which shall comprises of rain water collection from the built up and open area in the plant premises. Central Groundwater Authority/ Board shall be consulted for finalization of appropriate rainwater harvesting technology and details shall be furnished	<ul style="list-style-type: none"> <li>• Noted. Details of rain water harvesting system will be furnished during detail engineering stage</li> </ul>
(iv)	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	<ul style="list-style-type: none"> <li>• Details of the same will be furnished during detail engineering stage</li> <li>• Studies on fire due to spontaneous combustion of coal dust has been furnished in EIA report (Chapter 7 Clause 7.3.3.1)</li> </ul>
(v)	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	<ul style="list-style-type: none"> <li>• NOC from CCE Nagpur will be obtained at appropriate time.</li> <li>• Disaster Management Plan- has already been furnished in EIA report (Chapter 7 Clause 7.3.3.2)</li> </ul>
(vi)	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	<ul style="list-style-type: none"> <li>• Monitoring Protocol of ground water around the ash pond is already submitted vide our letter dated 11<sup>th</sup> April 2011</li> </ul>
(vii)	First Aid and sanitation arrangements shall be made for the drivers and other contract workers during construction phase	<ul style="list-style-type: none"> <li>• Dedicated First Aid Centre with qualified medical person available round the clock at site to look after the welfare of workers and families of workers staying at labour colony.</li> <li>• Ambulance service is provided at site for taking care of health of workmen on 24 Hrs basis.</li> </ul>



(viii)	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/less noisy areas.	<ul style="list-style-type: none"> <li>• Noted and Noise levels of plant equipment will be designed according to the standards</li> </ul>
(ix)	Regular monitoring of ground level concentration of SO <sub>2</sub> , NO <sub>x</sub> , RSPM 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	<ul style="list-style-type: none"> <li>• Noted for compliance.</li> </ul>
(x)	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	<ul style="list-style-type: none"> <li>• Labour camps were made with all facilities like drinking water, sanitation facilities, education for children and the same is well monitored by our administration department.</li> </ul>
(xi)	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/	<ul style="list-style-type: none"> <li>• Complied. Copies of advertisement given in Local News Papers are already furnished vide our letter dated 11<sup>th</sup> April 2011</li> </ul>



	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>	
(xii)	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 proponent	<ul style="list-style-type: none"> <li>• Complied. Acknowledgement has been furnished vide our letter dated 11<sup>th</sup> April 2011</li> </ul>
(xiii)	A dedicated Environment management Cell with suitable qualified personnel constituting of <b>Marine Biologist and an ecologist</b> shall be set-up under the control of a Senior Executive, who will report directly to the Head of the Organization	<ul style="list-style-type: none"> <li>• Complied.</li> </ul>
(xiv)	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, 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	<ul style="list-style-type: none"> <li>• Will be implemented.</li> </ul>
(xv)	The project proponent shall also submit <b>six monthly reports on the status of compliance</b> 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.	<ul style="list-style-type: none"> <li>• Complied</li> </ul>
(xvi)	The environment statement for each financial year ending 31 <sup>st</sup> March in Form-V as is mandated to be	<ul style="list-style-type: none"> <li>• Will be taken up after commissioning of the plant.</li> </ul>

	<p>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 EC conditions and shall also be sent to the respective Regional Offices of the Ministry by e-mail</p>	
<p>(xvii) )</p>	<p>The project proponent shall submit <b>six monthly reports</b> 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.</p>	<ul style="list-style-type: none"> <li>• Corporate policy displaced at prominent places at site.</li> <li>• BS Envitech monitoring reports are submitted to APPCB/MoEF</li> <li>• Monitoring during construction to be taken up including the greenbelt development</li> </ul>
<p>(xvii) i)</p>	<p>Regional Office of the Ministry of Environment &amp; Forests will monitor the implementation of the stipulated conditions. <b>A complete set of documents including Environmental Impact Assessment Report and Environment Management Plan along with the additional information</b> 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 &amp; ambient air) shall be displayed at the main gate of the power plant.</p>	<ul style="list-style-type: none"> <li>• Already furnished vide our letter dated 11<sup>th</sup> April 2011</li> </ul>
<p>(xix)</p>	<p>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</p>	<ul style="list-style-type: none"> <li>• Cost estimates for provision of environmental protection measures have given in chapter -6 of EIA report</li> </ul>



	environment protection measures shall not be diverted for other purposes and year-wise expenditure should be reported to the Ministry.	
(xx)	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	<ul style="list-style-type: none"> <li>• The Company has signed Common Loan Agreement with REC (Rural Electrification Corporation Ltd), PFC (Power Finance Corporation Ltd) and ICICI Bank Ltd on 4<sup>th</sup> June 2011 and 1<sup>st</sup> disbursement has been drawn.</li> <li>• Site developmental works have been commenced from 26<sup>th</sup> June 2011 a) Site office Construction completed.</li> <li>• COD of plant would be 42 months from date of NTP i.e. 10.02.2012.</li> </ul>
(xxi)	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	<ul style="list-style-type: none"> <li>• Noted</li> </ul>

*[Handwritten Signature]*

# **ANNEXURE-1**

11/4/2012

F.No. 11-44/2011-IA-III  
Government of India  
Ministry of Environment & Forests  
(IA Division)

Paryavaran Bhawan,  
CGO Complex, Lodhi Road,  
New Delhi - 110 003.

Dated: 9<sup>th</sup> April, 2012

To,  
M/s NCC Power Projects Ltd,  
NCC House, 5<sup>th</sup> Floor, S.No. 64, Madhapur,  
Hyderabad-500 081.

**Subject: CRZ clearance for construction of seawater Intake and outfall pipeline facilities, coal corridor, bridge over Buckingham Canal, Power evacuation Corridor and approach road from Painapuram, Nellore District, Andhra Pradesh by M/s NCC Power Projects Ltd -Reg.**

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This has reference to letter No: 636/CZMA/2011 dated 04.06.2011 seeking prior CRZ Clearance for the above project under the Coastal Regulation Zone (CRZ) Notification, 2011. The proposal has been appraised as per prescribed procedure in the light of provisions under the Coastal Regulation Zone Notification, 2011 on the basis of the mandatory documents enclosed with the application viz., the Questionnaire, recommendation of State Coastal Zone Management Authority, EIA, EMP and the additional clarifications furnished in response to the observations of the Expert Appraisal Committee constituted by the competent authority in its meeting held on 13<sup>th</sup> - 15<sup>th</sup> July, 2011.

2. It is interalia, noted that the proposal involves construction of seawater Intake and outfall pipeline facilities, coal corridor, bridge over Buckingham Canal, Power evacuation Corridor and approach road from Painapuram, Nellore District, Andhra Pradesh. NCC Power Projects Ltd is setting up a 2 x 660 MW supercritical thermal power project near Krishnapatnam in the villages of Eduru, Pynampuram, Sivaramapuram and Anantapuram villages in Muthukur and T.P. Gudur mandals of SPSR Nellore District. The total area of the plant site is 1018 acres (865 Acres for the Main Plant & 150 Acres for the Coal- corridor, Sea Water piping, approach road & township). The distance of seaward boundary from the project site is 550 m, Buckingham Canal flows at a distance of 100 m to the west of the project boundary and traverses in North-South direction and the Barren land on the north of the project. The general elevation of the main plant area varies between 2.0 m to 6.0 m above MSL and it is a more or less a flat plain and sandy terrain. The entire Power Plant facility is located outside the CRZ area. The Land Fall Point (LFP) is located

at Latitude 140 21' 45.69" N and Longitude 800 10' 09.55" E which is in the north eastern part of the coastal front.

3. The requirement of seawater for cooling and processing purposes is 3,08,880 cum per day (12,870 cum/hour). The seawater intake well is located at a distance of 2,000 m from the shoreline at (-) 7.6 m depth of water. The water will be transported through submarine pipeline of 2000 mm diameter. The coordinates of the intake system is 140 21' 45.93" N Latitude, 800 11' 18.53" E Longitude. The quantum of warm water released into the sea is indicated as 2,33,760 cum per day (9,740 cum/ hour). The outfall diffuser will be located at a distance of 1000 m from the Shoreline at 6.0 m depth and conveyed through 1800 mm diameter submarine pipeline provided with multiple port (10X500 mm dia) diffuser arrangement system to facilitate dissipation of temperature. The coordinates of the outfall system is 140 21' 45.82" N Latitude, 800 10'45.93" E Longitude. Desalination plant will be set up to meet sweet water requirement. The estimated quantum of discharge from the Desalination plant into the sea is 24,000 cum per day (1,000 cum/hour). The coal conveyance corridor crosses the Nelatur creek and enters into the plant site at the SE with Latitude 140 19' 35.31" N, Longitude 800 8'4.82" E. An approach road to the plant site is proposed from Palnapuram Village at Latitude 140 20' 21.67" N, Longitude 800 8'5.42" E. The pipelines are laid through the dedicated corridor earmarked for this purpose and the Land Fall Point is planned in such a way to avoid disturbance to the sand humps. The operational constructions for Thermal power plants, which includes Construction of seawater Intake, and Outfall pipeline facilities, Coal Conveyor Corridor, Bridge over Buckingham Canal, Approach road to the Plant site and Power Evacuation Corridor Total project cost is Rs 7046.9 Cr.

4. The Institute of Remote Sensing, Anna University, Chennai has carried out the demarcation of LTL, HTL and CRZ. The area earmarked for the proposed power project does not fall or contain any environmentally sensitive and important ecosystem in its vicinity. The entire Power Plant facility is located outside the CRZ area. The area of intake and outfall of corridor within CRZ is 16.65 acres. The coverage of CRZ area for approach road is 5.08 acres. The length of coal corridor in CRZ is 44.76 acres. The development area does not fall or contain in its vicinity, any environmentally sensitive and important ecosystem. Public hearing for the Power project was conducted on 6/1/2010 and Ministry of Environment and Forests, has accorded environmental clearance to the proposed power project. The Company has also obtained Consent to establish from Andhra Pradesh Pollution Control Board.



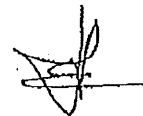


5. The Andhra Pradesh Coastal zone Management Authority has recommended the project vide letter dated 636/CZMA/2011 dated 04.06.2011.

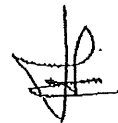
6. The Expert Appraisal Committee, after due consideration of the relevant documents submitted by the project proponent and additional clarifications furnished in response to its observations, have recommended for the grant of Environmental and CRZ Clearance for the project. Accordingly, the Ministry hereby accord necessary Environmental Clearance for the above project as per the provisions of Environmental Impact Assessment Notification - 2006 and Coastal Regulation Zone Notification, 2011, subject to strict compliance of the terms and conditions as follows:

7. SPECIFIC CONDITIONS :

- (i) "Consent for Establishment" shall be obtained from State Pollution Control Board under Air and Water Act and a copy shall be submitted to the Ministry before start of any construction work at the site.
- (ii) A revised map showing the coordinates of HTL, 200m line, 500m boundary at discrete intervals 25m/50m etc as appropriate shall be submitted to the Ministry prior to commencement of the work, in place of mere lines shown in the map prepared by authorized agency so as to enable verification of installations and compliance thereof on the ground later when the work is in progress.
- (iii) Periodic monitoring of water quality in terms of temperature, chlorine content if applicable, salinity etc at the outfall location shall be carried out. If the impact of temperature and salinity is found significant in future, necessary remediation measures shall be taken by extending the outfall as well as the intake lines and/or providing augmentation in inland cooling facilities.
- (iv) The proposed village road shall be extended up to seashore in order to provide access to the public to the seafront.
- (v) Recreational park/ Amusement park, approach road etc for public use shall be developed in consultation with user community.
- (vi) Installation of trash bar/screen shall be put in place at the intake well to avoid fish entrapment.




- (vii) The intake and outfall shall be buried pipelines and no open channel/cutting is permissible in CRZ areas.
- (viii) The outfall pipe shall be extended further by at least by 200m into the sea and also it shall be ensured that the intake is properly located to avoid any re-circulation.
- (ix) The proponent shall commit himself to be one of the partners/ proponents (who have undertaken/will be undertaking similar power projects in the close proximity of site) as and when instructed by the MOEF/State government authorities in preparing an comprehensive EIA report comprising both terrestrial/ marine EIA components for the region and share the cost of the study and proposed mitigation measures for the coastal stretch as decided by the authorities in the interest of protecting the environment in its entirety.
- (x) Best possible dredging technology shall be adopted to minimize coastal impact Zero discharge from ash pond shall be ensured as proposed.
- (xi) All the conditions laid by the State level Committee shall be strictly adhered to.
- (xii) Construction activity shall be carried out strictly as per the provisions of CRZ Notification, 2011. No construction work other than those permitted in Coastal Regulation Zone Notification shall be carried out in Coastal Regulation Zone area.
- (xiii) The project shall be executed in such a manner that there shall not be any disturbance to the fishing activity.
- (xiv) It shall be ensured that there is no displacement of people, houses or fishing activity as a result of the project.
- (xv) The project proponent shall set up separate environmental management cell for effective implementation of the stipulated environmental safeguards under the supervision of a Senior Executive.
- (xvi) The funds earmarked for environment management plan shall be included in the budget and this shall not be diverted for any other purposes.



8. GENERAL CONDITIONS:

- (i) Appropriate measures must be taken while undertaking digging activities to avoid any likely degradation of water quality.
- (ii) Full support shall be extended to the officers of this Ministry/Regional Office at Bengaluru by the project proponent during inspection of the project for monitoring purposes by furnishing full details and action plan including action taken reports in respect of mitigation measures and other environmental protection activities.
- (iii) A six-Monthly monitoring report shall need to be submitted by the project proponents to the Regional Office of this Ministry at Bengaluru regarding the implementation of the stipulated conditions.
- (iv) Ministry of Environment & Forests or any other competent authority may stipulate any additional conditions or modify the existing ones, if necessary in the interest of environment and the same shall be complied with.
- (v) The Ministry reserves the right to revoke this clearance if any of the conditions stipulated are not complied with the satisfaction of the Ministry.
- (vi) In the event of a change in project profile or change in the implementation agency, a fresh reference shall be made to the Ministry of Environment and Forests.
- (vii) The project proponents shall inform the Regional Office as well as the Ministry, the date of financial closure and final approval of the project by the concerned authorities and the date of start of land development work.
- (viii) A copy of the clearance letter shall be marked to concerned Panchayat/local NGO, if any, from whom any suggestion/representation has been made received while processing the proposal.
- (ix) State Pollution Control Board shall display a copy of the clearance letter at the Regional Office, District Industries Centre and Collector's Office/Tehsildar's office for 30 days.

9. These stipulations would be enforced among others under the provisions of Water (Prevention and Control of Pollution) Act 1974, the Air (Prevention and Control of Pollution) Act 1981, the Environment (Protection) Act, 1986, the Public Liability (Insurance) Act, 1991 and EIA Notification 1994, including the amendments and rules made thereafter.



10. All other statutory clearances such as the approvals for storage of diesel from Chief Controller of Explosives, Fire Department, Civil Aviation Department, Forest Conservation Act, 1980 and Wildlife (Protection) Act, 1972 etc, shall be obtained, as applicable by project proponents from the respective competent authorities.

11. The project proponent shall advertise in at least two local Newspapers widely circulated in the region, one of which shall be in the vernacular language informing that the project has been accorded Environmental Clearance and copies of clearance letters are available with the State Pollution Control Board and may also be seen on the website of the Ministry of Environment and Forests at <http://www.envfor.nic.in>. The advertisement should be made within 10 days from the date of receipt of the Clearance letter and a copy of the same should be forwarded to the Regional office of this Ministry at Bangalore.

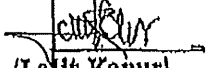
12. Environmental clearance is subject to final order of the Hon'ble Supreme Court of India in the matter of Goa Foundation Vs. Union of India in Writ Petition (Civil) No.460 of 2004 as may be applicable to this project.

13. Status of compliance to the various stipulated environmental conditions and environmental safeguards will be uploaded by the project proponent in its website.

14. A copy of the clearance letter shall be sent by the proponent to concerned Panchayat, Zilla Parishad/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.

15. The proponent shall upload the status of compliance of the stipulated EC 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.

16. The environmental 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 EC conditions and shall also be sent to the respective Regional Offices of MoEF by e-mail.

  
(Lalit Kapur)  
Director (IA-III)

Copy to:

- 1 Smt Janaki R.Kondapl, Chairman, Andhra Pradesh Coastal Zone Management Authority, IAS, Special Chief Secretary to Government,

- E.F.S & T. Department Government of Andhra, Pradesh Secretariat,  
Hyderabad- 500 002
- 2 The Chairman, CPCB, Parivesh Bhawan, CBD-cum-Office Complex,  
East Arjun Nagar, Delhi - 32.
  - 3 The Member Secretary, Andhra Pradesh Coastal Zone Management  
Authority, IAS, Special Chief Secretary to Government, E.F.S & T.  
Department Government of Andhra, Pradesh Secretariat, Hyderabad-  
500 002
  - 4 The Chairman, Andhra Pradesh Pollution Control Board, Paryarana  
Bhawan, A-III, Industrial Area, Sanathnagar, Hyderabad - 500 018,  
Andhra Pradesh.
  - 5 The C.C.F., Regional Office (SZ), Ministry of Environment & Forests,  
Kendriya Sadan, IV Floor, Environment & Forests Wings, Office (SZ),  
7th Main Road, II Block, Koramangala, Bangalore - 560 034.
  - 6 Guard File,
  - 7 Monitoring Cell.

(Lalit Kapur)  
Director (IA-III)

# **ANNEXURE-2**

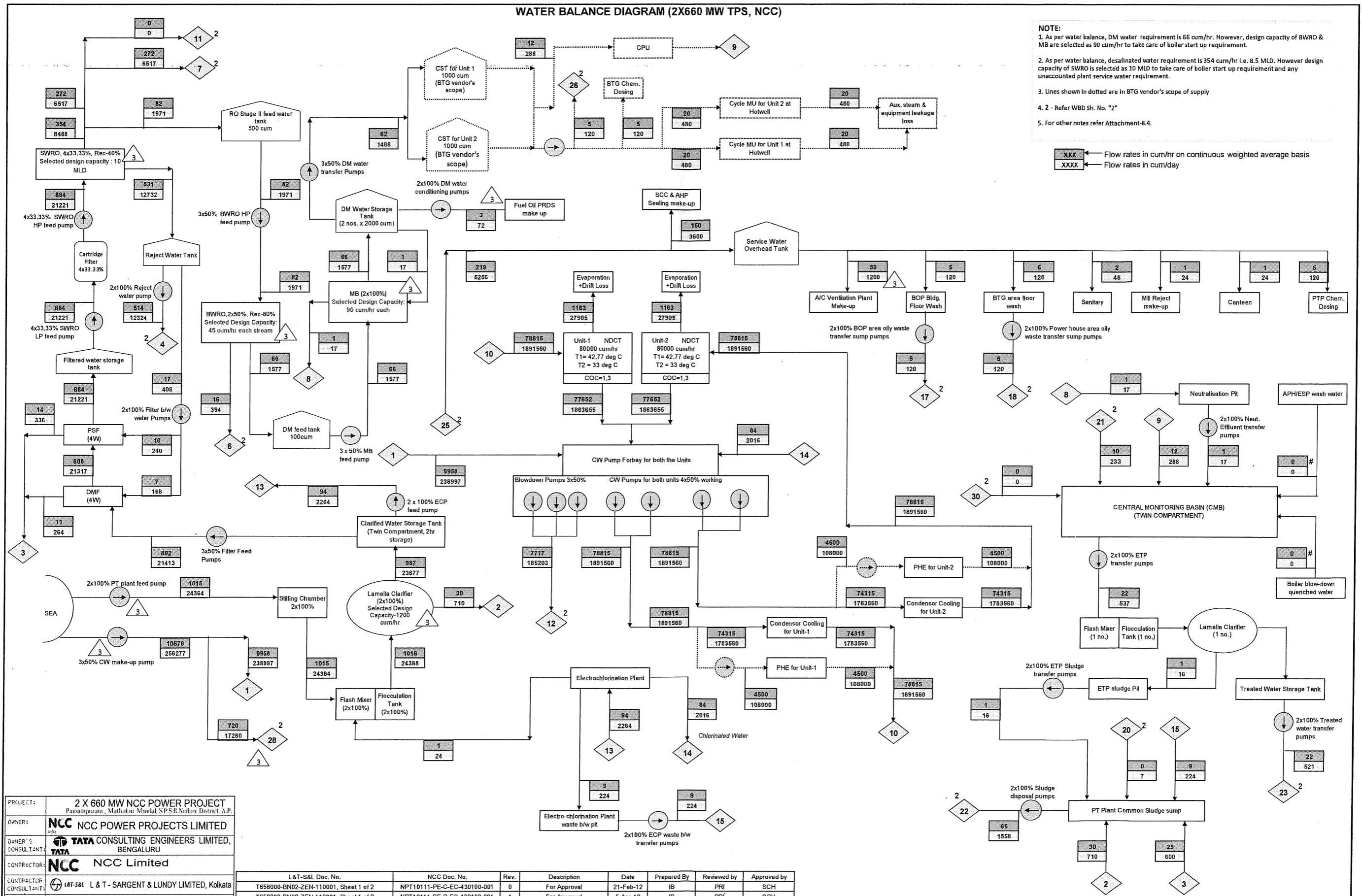
(Enclosed CD)

# **ANNEXURE-3**

### WATER BALANCE DIAGRAM (2X660 MW TPS, NCC)

- NOTE:**
- As per water balance, DM water requirement is 66 cum/hr. However, design capacity of BWRO & MB are selected as 90 cum/hr to take care of boiler start up requirement.
  - As per water balance, desalinated water requirement is 354 cum/hr i.e. 8.5 MLD. However design capacity of SWRO is selected as 10 MLD to take care of boiler start up requirement and any unaccounted plant service water requirement.
  - Lines shown in dotted are in BTG vendor's scope of supply
  - 2 - Refer WBD Sh. No. "2"
  - For other notes refer Attachment-8.4.

XXX ← Flow rates in cum/hr on continuous weighted average basis  
 XXXX ← Flow rates in cum/day



PROJECT:	2 X 660 MW NCC POWER PROJECT Panapuram, Multhur Mandal, SPSR Nellore District, A.P.		
OWNER:	NCC POWER PROJECTS LIMITED		
OWNER'S CONSULTANT:	TATA CONSULTING ENGINEERS LIMITED, BENGALURU		
CONTRACTOR:	NCC Limited		
CONTRACTOR CONSULTANT:	L & T - SARGENT & LUNDY LIMITED, Kolkata		
TITLE:	WATER BALANCE DIAGRAM		

L&T-S&L Doc. No.	NCC Doc. No.	Rev.	Description	Date	Prepared By	Reviewed by	Approved by
T658000-BN02-ZEN-110001, Sheet 1 of 2	NPT10111-PE-C-EC-430100-001	0	For Approval	21-Feb-12	IB	PRI	SCH
T658000-BN02-ZEN-110001, Sheet 1 of 2	NPT10111-PE-C-EC-430100-001	1	For Approval	5-Apr-12	IB	PRI	SCH
T658000-BN02-ZEN-110001, Sheet 1 of 2	NPT10111-PE-C-EC-430100-001	2	For Approval	24-Jul-12	IB	PRI	SCH
T658000-BN02-ZEN-110001, Sheet 1 of 2	NPT10111-PE-C-EC-430100-001	3	For Approval	12-Feb-13	IB	PRI	SCH

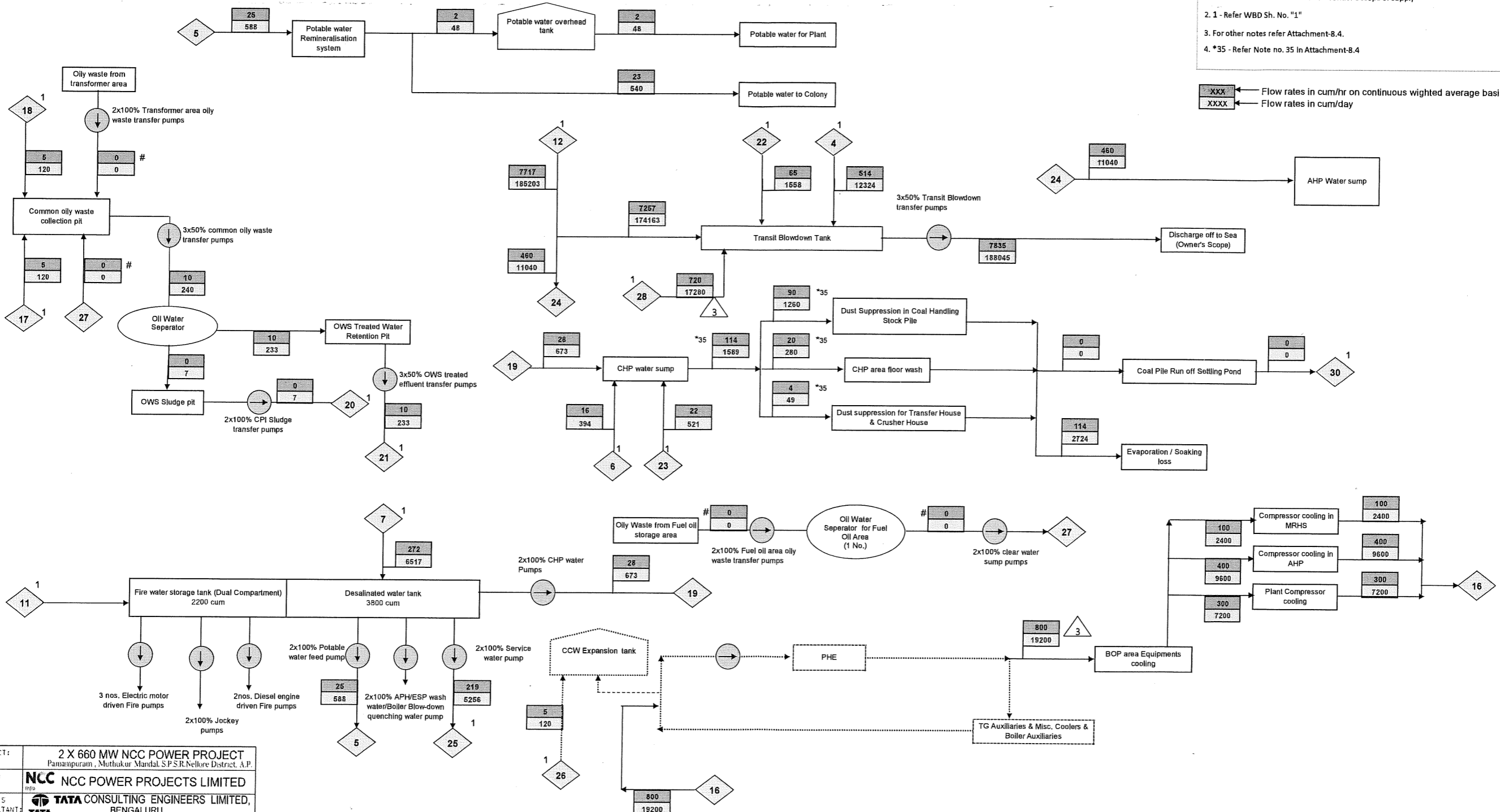
**NOTE: Considering no recovery from ash pond with both 100%FA & 100%BA in HCSD mode and Truck Disposal (wet), at 100% BMCR with worst coal firing**



### WATER BALANCE DIAGRAM (2X660 MW TPS, NCC)

**NOTE:**  
 1. Lines shown in dotted are in BTG vendor's scope of supply  
 2. 1 - Refer WBD Sh. No. "1"  
 3. For other notes refer Attachment-8.4.  
 4. \*35 - Refer Note no. 35 in Attachment-8.4

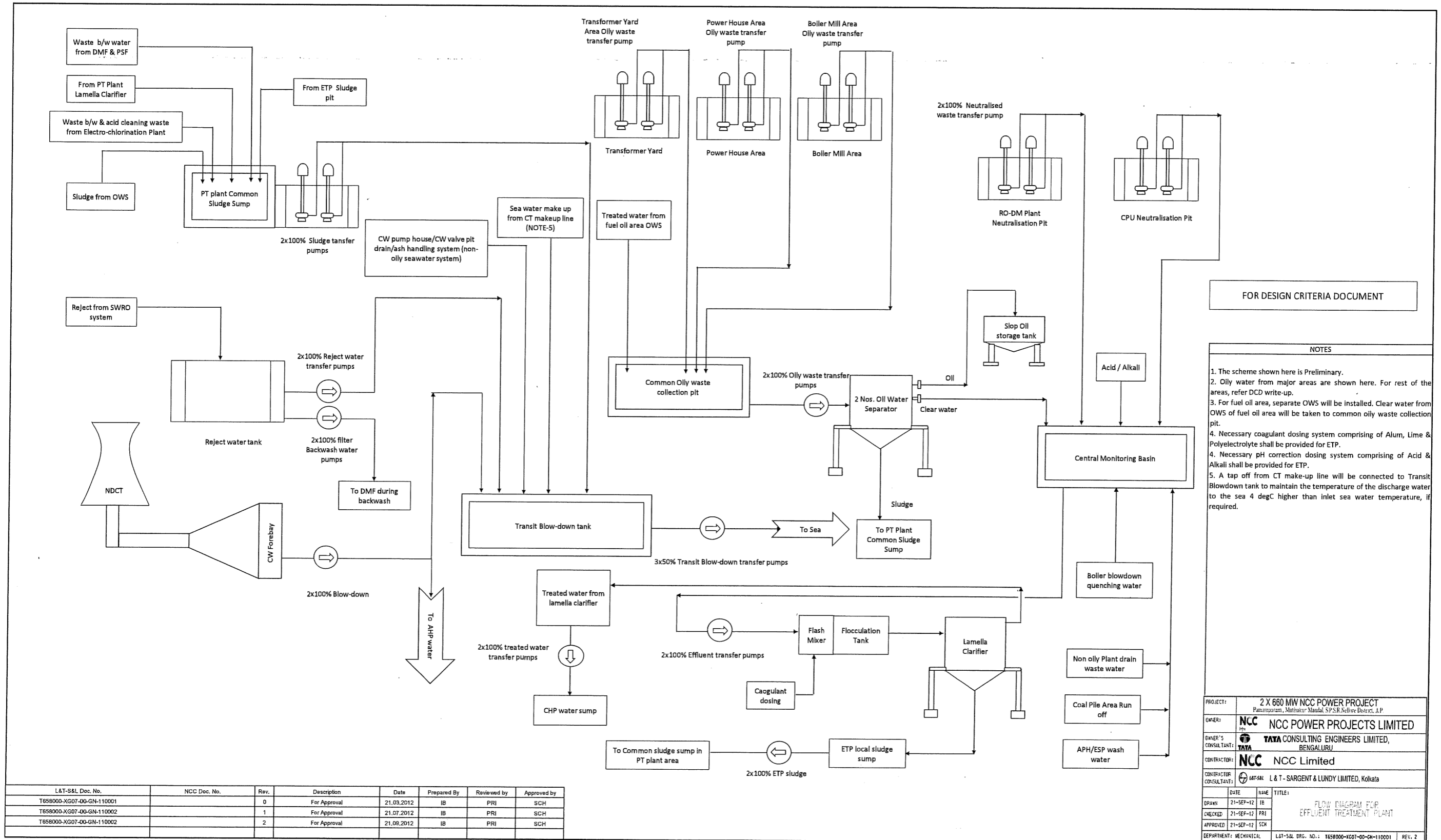
XXX ← Flow rates in cum/hr on continuous wighted average basis  
 XXXX ← Flow rates in cum/day



PROJECT:	2 X 660 MW NCC POWER PROJECT Panampuram, Muthukur Mandal, S.P.S.R.Nellore District, A.P.
OWNER:	NCC POWER PROJECTS LIMITED
OWNER'S CONSULTANT:	TATA CONSULTING ENGINEERS LIMITED, BENGALURU
CONTRACTOR:	NCC Limited
CONTRACTOR CONSULTANT:	L & T - SARGENT & LUNDY LIMITED, Kolkata
TITLE:	WATER BALANCE DIAGRAM

L&T-S&L Doc. No.	NCC Doc. No.	Rev.	Description	Date	Prepared By	Reviewed by	Approved by
T658000-BN02-ZEN-110001, Sheet 2 of 2	NPT10111-PE-C-EC-430100-001	0	For Approval	21-Feb-12	IB	PRI	SCH
T658000-BN02-ZEN-110001, Sheet 2 of 2	NPT10111-PE-C-EC-430100-001	1	For Approval	5-Apr-12	IB	PRI	SCH
T658000-BN02-ZEN-110001, Sheet 1 of 2	NPT10111-PE-C-EC-430100-001	2	For Approval	24-Jul-12	IB	PRI	SCH
T658000-BN02-ZEN-110001, Sheet 1 of 2	NPT10111-PE-C-EC-430100-001	3	For Approval	12-Feb-13	IB	PRI	SCH

**NOTE:** Considering no recovery from ash pond with both 100%FA & 100%BA in HCS mode and Truck Disposal (wet), at 100% BMCR with worst coal firing



FOR DESIGN CRITERIA DOCUMENT

- NOTES
- The scheme shown here is Preliminary.
  - Oily water from major areas are shown here. For rest of the areas, refer DCD write-up.
  - For fuel oil area, separate OWS will be installed. Clear water from OWS of fuel oil area will be taken to common oily waste collection pit.
  - Necessary coagulant dosing system comprising of Alum, Lime & Polyelectrolyte shall be provided for ETP.
  - Necessary pH correction dosing system comprising of Acid & Alkali shall be provided for ETP.
  - A tap off from CT make-up line will be connected to Transit Blowdown tank to maintain the temperature of the discharge water to the sea 4 degC higher than inlet sea water temperature, if required.

PROJECT:	2 X 660 MW NCC POWER PROJECT Patnamuram, Mathurur Mandal, SPSR Nellore District, A.P.		
OWNER:	NCC POWER PROJECTS LIMITED		
OWNER'S CONSULTANT:	TATA CONSULTING ENGINEERS LIMITED, BENGALURU		
CONTRACTOR:	NCC Limited		
CONTRACTOR CONSULTANT:	L & T - SARGENT & LUNDY LIMITED, Kolkata		
DATE:	21-SEP-12	NAME:	IB
DRAWN:	21-SEP-12	TITLE:	FLOW DIAGRAM FOR EFFLUENT TREATMENT PLANT
CHECKED:	21-SEP-12		
APPROVED:	21-SEP-12		
DEPARTMENT:	MECHANICAL	L&T-S&L DRG. NO.:	1659000-XG07-00-GN-110001 REV. 2

L&T-S&L Doc. No.	NCC Doc. No.	Rev.	Description	Date	Prepared By	Reviewed by	Approved by
T659000-XG07-00-GN-110001		0	For Approval	21.03.2012	IB	PRI	SCH
T659000-XG07-00-GN-110002		1	For Approval	21.07.2012	IB	PRI	SCH
T659000-XG07-00-GN-110002		2	For Approval	21.08.2012	IB	PRI	SCH