

**F. No. 11-25/2010-IA-III**  
**Government of India**  
**Ministry of Environment & Forests**  
**(IA Division)**

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

**Dated: 25<sup>th</sup> July 2012**

**To,**  
**M/s Nuclear Power,**  
**Nuclear Power Corporation Ltd.**  
**ENT II, Nabhikiya Urja Bhawan,**  
**Anushakti Nagar, Mumbai-400 094.**

**Subject: CRZ clearance for Kudankulam Nuclear Power Plant unit 3-6,**  
**Seawater intake and outfall at Kudankulam, Tamil Nadu by**  
**M/s Nuclear Power Corporation of India Limited. -Reg.**

This has reference to your letter No: NPCIL/ED(KK)/2011/M/11 dated 7.2.2012 seeking prior CRZ Clearance for the above project under the Coastal Regulation Zone (CRZ) Notification, 2011 and subsequent letter dated 30.4.2012. 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 5<sup>th</sup> -6<sup>th</sup> April, 2011 and 21<sup>st</sup>-23<sup>rd</sup> September, 2011 and 10<sup>th</sup> - 16<sup>th</sup> May, 2012 and 4<sup>th</sup> - 5<sup>th</sup> June, 2012.

2. It is inter alia, noted that the proposal involves setting up of additional reactors as KKNPP units-3 to 6(KKNPP # 3 to 6 each of 1000 MWe). The proposed units are similar in design as in Kudankulam Nuclear Power Plant Units 1 and 2 and also to be located adjacent to KKNPP 1 and 2 which is in commissioning stage. Each unit consists of four Primary Coolant System (PCS) loops transferring the heat energy from the reactor to the Steam Generators (SG). The steam produced in the shell side of SG is fed to the Turbine Generator to generate electricity. For condenser cooling, sea water is drawn at a depth of 10 Mtr from closed dykes which also house a unique fish protection system. The fish protection system separates the fishes from the cooling water and ensures that the fishes are diverted back in sea and water alone is taken to condenser. As water is drawn from closed dykes, sea erosion is not there. The fresh water requirement of the plant is met through desalination plant.

3. The plant is having the most advanced safety features and is termed as "first of its kind" in the safety aspect. Active safety systems are having a backup of passive safety systems. To increase redundancy, each active safety systems are supplied from four independent and physically separated

channels. The plant elevation is designed for Tsunami and flooding with sufficient conservatism. The plant system, structures and components are designed for earthquake, explosions and other natural calamities. The Reactor building is designed to take care of an aircraft crash of Cessna type aircraft. 1053 ha land is already acquired during phase 1 (KKNPP 1&2) construction. No additional land will be required for present expansion.

4. Comprehensive Environmental Impact Assessment Study for the expansion has been carried out through NEERI, Nagpur and it brought out Environmental Management Plan. As per the EIA, EMP, No National Park, Sanctuary, Biosphere, Mangrove, Monuments, Reserve Forest in the zone of 15 km. The reserve forest of Thadakmalai, Poigaimalai and Mahendragiri lies within 15 to 30 km of the site. The biodiversity rich area of Gulf of Mannar Bio Reserve (GOMBRE) in 150 km from the site. The total fresh water requirement for the proposed KKNPP 3 to 6 units will be 12388 cum/day and it will be met from desalination plants already under operation at the project site. In addition, for condenser cooling, seawater will be taken from the sea and will be discharged back to sea. Major source of wastewater discharge is from condenser cooling system. The cooling system has been designed as once through condenser cooling system wherein water from the Sea would be drawn and discharged back in to the Sea and the temperatures rise of the reject water is limited to +6.6°C.

5. Mathematical Model studies for thermal dispersion of cooling water discharge has been done to locate the outfall point. The Radioactive Liquid waste will be concentrated to reduce volume and concentrated residue will be solidified through cementation and stored in solid waste depositary as per the norms of Atomic Energy Regulatory Board (AERB). The remaining liquid wastes conforming to the norms of AERB will be discharged in to Sea.

6. Environmental clearance under EIA notification 2006 has been obtained from MoEF in September 2008 for KKNPP 3&4 and in December 2009 for KKNPP 5&6. Tamil Nadu State Coastal Zone Management authority has recommended to MoEF for granting CRZ clearance to KKNPP3-6 in December 2010. MoEF considered the proposal in 99<sup>th</sup> meeting and recommended for additional studies to be undertaken. The terrestrial and marine EIA updation and the mathematical modeling of CCW discharge has been carried out by M/s Engineers India Limited, Gurgaon. The CRZ mapping in 1:4000 scale with project layout superimposed has been carried out by M/s CESS Trivandrum. Comprehensive EMP has been prepared keeping in view all possible strategies oriented towards impact minimization both during construction and operation phases.

7. 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 CRZ Clearance for the project. Accordingly, the Ministry hereby accord necessary CRZ Clearance for the above project as per the provisions of Coastal Regulation Zone Notification, 2011, subject to strict compliance of the terms and conditions as follows:



**8. 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) Proponent submitted schematic diagram of outfall. The technical details of outfall, diffusers etc shall be submitted to the Ministry prior to the commencement.
- (iii) Regular monitoring at outfall shall be carried out especially for the temperature and marine life quality.
- (iv) All physic-chemical and biological parameters including radioactivity shall be carried out regularly
- (v) 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.
- (vi) The project shall be executed in such a manner that there shall not be any disturbance to the fishing activity.
- (vii) 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.
- (viii) The funds earmarked for environment management plan shall be included in the budget and this shall not be diverted for any other purposes.

**9. 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) Tamil Nadu Pollution Control Board shall display a copy of the clearance letter at the Regional Office, District Industries Center and Collector's Office/Tehsildar's office for 30 days.

10. 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.

11. 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.

12. 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 Bengaluru.



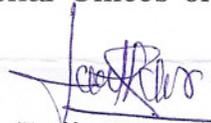
13. Environmental clearance is subject to final order of the Hon'ble Supreme Court of India in the matter of Goa Foundation Vs. Union of India in Writ Petition (Civil) No.460 of 2004 as may be applicable to this project.

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

15. A copy of the clearance letter shall be sent by the proponent to concerned Panchayat, Zilla Parisad/Municipal Corporation, Urban Local Body and the Local NGO, if any, from whom suggestions/ representations, if any, were received while processing the proposal. The clearance letter shall also be put on the website of the company by the proponent.

16. 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.

17. 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 The Principal Secretary, Department of Environment and Forests, First Floor, Panagal Building, Saidapet, Chennai - 600 015, Tamil Nadu.
- 2 The Chairman, CPCB, Parivesh Bhawan, CBD-cum-Office Complex, East Arjun Nagar, Delhi - 32.
- 3 The Member Secretary, TCZMA/ Director, Department of Environment, Government of Tamilnadu. Panagal Building, Ground Floor, Saidapet, Chennai-15.
- 4 The Chairman, Tamil Nadu Pollution Control Board, No. 76, Mount Salai, Gundy, Chennai.
- 5 The CCF, Regional Office, Ministry of Environment & Forests(SZ), Kendriya Sadan, IVth floor, E&F wings, 17<sup>th</sup> Main Road, Koramangala II Block, Bengaluru - 560 034.
- 6 Guard File.
- 7 Monitoring Cell.

  
**(Lalit Kapur)**  
**Director (IA-III)**