By Speed Post

No. J-14011/2/2010-IA.II(N)
Government of India
Ministry of Environment & Forests

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Dated the 13th October , 2010

To

M/s Nuclear Power Corporation of India Ltd.
Nabhikya Urja Bhawan,
Anushakti Nagar,
Mumbai-400 094

Sub: Haryana Atomic Power Project at village Gorakhpur, District Fatehabad, Haryana by M/s Nuclear Power Corporation of India Ltd. - Prescribing of TOR - Regarding.

The undersigned is directed to refer to your communication no. NPCIL/ED(Engineering & Procurement)/2010/M/17 dated 1st April, 2010 along with the application in prescribed format (Form-I) along with pre-project feasibility report regarding the above mentioned project. Subsequent information furnished vide letter no. NPCIL/AD(New 700 MWe Projects)/2010/M/21 dated 4th August, 2010 has also been considered.

2. The proposal is for setting up of a Nuclear Power Project of 4x700 MWe to be implemented in two phases at village Gorakhpur, District Fatehabad, Haryana. A township is also proposed to be setup as part of this project. The proposal has, therefore, been considered as an integrated proposal. The total land requirement for the project is 609 ha, which includes 534 for the project and 75 ha for township. The project area includes the requisite exclusions zone for the four nuclear reactors. Out of this land, 501 ha falls under double crop agriculture category. 6.0 ha of land is low lying area. The land selected for township is barren with no habitation. No forestland is involved. The cooling water requirement for the four units has been estimated as 320 cusecs, which will be drawn from the Bhakra canal with consumptive usage of 160 cusecs. The total water requirement for the project including township has been estimated as 783.65 mld. It was reported that the canal closure is limited to 15 days in 10 years and during this period specific design provision has been made for removal of decay heat during shut down. Close circuit cooling system with cooling towers will be provided. The domestic waste from the project and township will be suitably treated and disposed of as per the prescribed norms. The sewage sludge will be used for greenbelt.

3. Based on the presentation made and discussions held, the Committee prescribed the following TORs for undertaking detailed EIA study:-

(i) A note on site selection should be given in the EIA report.
(ii) The data contained in the EIA report for the ultimate capacity of the plant.
(iii) All the coordinates of the plant site as well as the township with toposheet should be given.
(iv) The study area should cover an area of 10 km radius around the proposed site for conventional pollutants and 30 km radius for radiological parameters.
(v) Land use of the study area as well as the project area shall be given separately.
(vi) Location of any National Park, Sanctuary, Elephant / Tiger Reserve (existing as well as proposed), migratory routes, if any, within 10 km of the project site shall be specified and marked on the map duly authenticated by the Chief Wildlife Warden.
(vii) Land requirement for the project along with usage for different purposes should be given. It should also give information relating to right of way (ROW), if any required for pipeline etc. as well as details of township.
(viii) Location of intake and outfall points (with coordinates) should be given.
(ix) Topography of the area should be given clearly indicating whether the site requires any filling. If so, details of filling, quantity of fill material required, its source, transportation etc. should be given.
(x) Impact on drainage of the area and the surroundings should be given.
(xi) Information regarding surface hydrology and water regime and impact of the same, if any due to the project should be given.
(xii) One season site-specific meteorological data shall be provided.
(xiii) One complete season AAQ data (except monsoon) to be given along with the dates of monitoring for the purpose of the EIA report for obtaining environmental clearance; however, data collection should continue for the entire one year (three seasons). The parameters to be covered shall include PM_{10}, $PM_{2.5}$, SO_2 and NOx. Besides, conventional pollutants information on long lived radio nuclides and background natural radio activity, gross alpha and gross beta levels should also be given. The location of the monitoring stations should be so decided so as to take into consideration the pre-dominant downwind direction, population zone and sensitive receptors including reserved forests. There should be at least one monitoring station in the upwind direction. There should be at least one monitoring station in the pre dominant downwind direction at a location where maximum ground level concentration is likely to occur. Baseline data on noise levels may also be generated.
(xiv) Impact of the project on the AAQ of the area. Details of the model used and the Input data used for modeling should also be provided. The air quality contours may be plotted on a location map showing the location of project site, habitation nearby, sensitive receptors, if any. The wind roses should also be shown on this map. Levels due to radioactive releases should also be predicted and radiation dose there from at the fence post should also be worked out.

(xv) Source of water and its availability. Commitment regarding availability of requisite quantity of water from the competent authority. The availability of water during canal closure should also be detailed and discussed in the report. It may clearly be stated whether any groundwater is to be used in the project or township. If so, detailed hydro-geological study should be carried out.

(xvi) Details of rainwater harvesting and how it will be used in the plant.

(xvii) Optimization of COC should be done for water conservation. Other water conservation measures proposed in the project should also be given. Quantity of water requirement for the project should be optimized.

(xviii) Details of water balance taking into account reuse and re-circulation of effluents.

(xix) Details of greenbelt i.e. land with not less than 1500 trees per ha giving details of species, width of plantation, planning schedule etc.

(xx) Detailed R&R plan/compensation package in consonance with the National / State R&R Policy for the project affected people including that due to fuel transportation system/pipeline and their ROW, if any, shall be prepared taking into account the socio economic status of the area, homestead oustees, land oustees, landless laborers.

(xxi) Details of flora and fauna duly authenticated should be provided. In case of any scheduled fauna, conservation plan should be provided.

(xxii) Details regarding waste management, liquid and solid waste (conventional and radioactive) should be given in the EIA report.

(xxiii) Details regarding storage and management of spent fuel should be given.

(xxiv) Details regarding storage of hazardous chemical including maximum inventory to be stored at any point of time should be given.

(xxv) Detailed risk assessment and disaster management plan should be given. The risk contours may be plotted on location map.

(xxvi) Issues relating to de-commissioning of the plant and the related environmental issues should be discussed.

(xxvii) Demographic data of the study area as well as pre-project health survey of the population in study area around the project site should be collected.

(xxviii) Detailed environmental management plan to mitigate the adverse environmental impacts due to the project should be given. It should also include possibility of use of solar energy for the project including measures for energy conservation.

(xxix) Details of post project monitoring should also include in the EIA report.

(xxx) Details regarding infrastructure facilities such as sanitation, fuel, restroom, medical facilities, safety during construction phase etc. to be provided to the labour force during construction as well as to the casual workers including truck drivers during operation phase.

(xxxi) Public hearing points raised and commitment of the project proponent on the same. An action plan to address the issues raised during public hearing and the necessary allocation of funds for the same should be provided.

(xxxii) Measures of socio economic influence to the local community proposed to be provided by project proponent. As far as possible, quantitative dimension to be given.

(xxxiii) Impact of the project on local infrastructure of the area such as road network and whether any additional infrastructure would need to be constructed and the agency responsible for the same with time frame particularly keeping in view the transportation of over sized consignments should be given.

(xxxiv) EMP to mitigate the adverse impacts due to the project along with item wise cost of its implementation.

(xxxv) Any litigation pending against the project and /or any direction /order passed by any Court of Law against the project, if so, details thereof.

4. In respect of the township, the following TORs are prescribed for addressing the same in the EIA report.

(i) A site plan showing the project site and its surroundings with physical features and topographical details, such as land use, contours and drainage pattern, along with photographs of the site from all four sides, shall be examined in detail.

(ii) If the site is low lying and will require extra earth, examine the quantity required and identify the area from where the earth will be borrowed and whether any permission will be required or not.

(iii) Examine in detail the proposed site with reference to impact on infrastructure covering water supply, storm water drainage, sewerage, power, etc., and the disposal of treated/ raw wastes from the complex on land/water body and into sewerage system.

(iv) Consider soil characteristics and permeability for rainwater harvesting proposals, which should be made with due safeguards for ground water quality. Maximise recycling of water and utilisation of rainwater.

(v) Provision should be made for guard pond and other provisions for safety against failure in the operation of wastewater treatment facilities. Identify acceptable outfall for treated effluent.

(vi) Examine existing education and health facilities, police and other services and include adequate provisions in the proposal.

(vii) Study the existing flora and fauna of the area and the impact of the project on them.

(viii) Landscape plan, green belts and open spaces should be described.

(ix) Assess soil erosion in view of the soil characteristics, topography and rainfall pattern.

(x) Application of renewable energy/alternate energy, such as solar and wind energy may be described including solar water heating. Provide for conservation of resources, energy efficiency and use of renewable sources of energy in the light of ECBC code.

(xi) Arrangements for waste management may be described as also the common facilities for waste collection, treatment, recycling and disposal of

all effluent, emission and refuse including MSW. Identification of recyclable wastes and waste utilisation arrangements may be made.

(xii) Traffic management plan including parking and loading / unloading areas may be described. Traffic survey should be carried out both on weekdays and weekend.

(xiii) Use of local building materials should be described.

(xiv) Application of resettlement and rehabilitation policy may be described. Project affected persons should be identified and rehabilitation and resettlement plan should be prepared.

(xv) Examine separately the details for construction and operation phases both for Environmental Management Plan and Environmental Monitoring Plan.

(xvi) Examine and prepare in detail the Disaster Management Plan and emergency Evacuation Plan for natural and manmade disasters like earthquakes, cyclones/flooding, Tsunami and terrorists attack.

5. Besides the above, the below mentioned points will also be followed:-

a) All the information contained in various project documents should be rechecked and reconciled.
b) All documents to be properly referenced with index, page numbers and continuous page numbering.
c) Where data are presented in the report especially in tables, the period in which the data were collected and the sources should be indicated.

6. After preparing the draft EIA (as per the generic structure prescribed in Appendix-III of the EIA Notification, 2006) covering the above mentioned issues, the proponent will get the public hearing conducted and take further necessary action for obtaining environmental clearance in accordance with the procedure prescribed under the EIA Notification, 2006.

(Dr. S.K. Aggarwal)
Director

Copy to:-

1. The Secretary, Department of Environment, Govt. of Haryana, SCO 1-3, Sector 17-D, Chandigarh.
2. The Chairman, Haryana Pollution Control Board, S.C.O. No. 11A-12, Sector 7-C, Madhya Marg, Chandigarh.
3. The Chief Conservator of Forests (C), Ministry of Environment & Forests, Regional Office (NZ), Bays No. 24-25, Sector 31-A, Dakshin Marg, Chandigarh-160 030.
4. The Secretary, Department of Atomic Energy, Anushakti Bhawan, Chhatrapati Shivaji Maharaj Marg, Mumbai-400 001.
5. Guard File.

(Dr. S.K. Aggarwal)
Director