

SERInews

Vol. 5 No. 7, March, 2011

*With you in Pursuit of Sustainable
Management of Finite Water Resources*

Chief Editor

Sayali Joshi, CEO

Editorial Board

Dr. Pramod Salaskar
Pradeep Thakur
Pallavi Patil

Executive Editor, Design

Susmit

Advisors

Dr. Jayant Mandlik
Dr. Suresh Karkhanis
Dr. Bikash Aich

Contact: Executive Editor, Shrishti Eco-Research Institute, B-106, Devgiri, Opp. P. L. Deshpande Garden, Near Ganesh Mala, Pune - 411 030. India. Phone: 91-20-24253773 /Telefax: 91-20-66206539

Website: www.seriecotech.com Email: seri_news@yahoo.co.in

Point for discussion this month **Eco-friendly Energy Centres**

(For private circulation only) Pl. note that the ownership of views expressed by the author lies with him / her only. SERI's management does not endorse or own them.

Eternal Words

And Man created the plastic bag and the tin and aluminum can and the cellophane wrapper and the paper plate, and this was good because Man could then take his automobile and buy all his food in one place and He could save that which was good to eat in the refrigerator and throw away that which had no further use. And soon the earth was covered with plastic bags and aluminum cans and paper plates and disposable bottles and there was nowhere to sit down or walk, and Man shook his head and cried: "Look at this God awful mess."

~Art Buchwald, 1970

Dear Readers,

Cover photo is of a creek near proposed Jaitapur Nuclear Power Plant (JNPP) in the Ratnagiri District, Maharashtra State, western coast of India. It proposes to use EPR technology developed by AREVA, a French company to generate 9900 MW electricity using radioactive fuel. It is claimed that it is the safest form of generating electricity to cater the ever-increasing demands of industrialized state of India - Maharashtra.

Any developmental activity has its impacts on the environmental resources and ecological processes in the region which has the particular set of livelihood and sustainability. Introduction of project development activities and operations bring massive changes in the quality and quantity of natural resources available to the residents. These consequently result into occupational patterns leading socio-psychological alterations which fetch tensions, strifes and conflicts among the various layers of the populations. Attainment of the integration of social fabric, equity and equality should be one of the major objectives of the large power and infrastructure projects considering its life cycle and ecological life beyond its closure.

Article given in this issue, highlights the major contentious issues - water bodies and their biodiversities, conflicts of methodology and presentations of EIA studies, social disagreements and disappointments, eco-political issues, economic sustainability etc. We have just tried to compile the available information to give reader brief overview of the JNPP and its impacts and the responses from various sections of governmental departments, agencies, experts, NGOs and residents.

Environmental assessment of the huge projects need not restricted to space and time scale to which the governance can stretch itself. The impacts go much beyond the current standpoints of administrative and disaster management measures. Therefore, it needs to be understood on the basis of its ecological footprint and timescale. The role of Impact Analyst is very crucial to light the path of appropriate development.

Thank you,
Chief Editor

How ecofriendly are the Nuclear Power Plants? Reference to Proposed Jaitapur, Maharashtra State

Background

- India's power generation capacity in 2010 was 162,367 MW - 64 percent from fossil fuel, 23 percent from hydro, 3 percent from nuclear and balance 10 percent from renewable energy sources.
- Nuclear Power Project, designed and developed by AREVA, a French company, got environmental clearance on November 28, 2010. It is proposed to set-up 9900 MW (6 reactors x1650 MW capacity) at Jaitapur, Taluka - Rajapur, Ratnagiri in Maharashtra. Area designated for the project is 970 hectares. It will require 8640000 m³/day (64 million population equivalent - 64 MPE @ Indian standard - 135 lit per capita per day) of water from the sea to run the plant.



- Initially, Government of India approved the establishment of 2x1000 MW of Nuclear power plant units at Jaitapur in Taluka Rajapur, District Ratnagiri, in Maharashtra in October 2005. However, to enable India to have nuclear trade with other countries, owing to the advancement in technology and in view of recent development in international scenario of NSG waiver, Government of India now 'in principle' has approved 6x1650 MW plant at the same location. Proposed Jaitapur Nuclear Power Project (JNPP) is one of the largest proposed projects in Asia.

- Location wise, Jaitapur plant is sensitive, located in between the Rajapur creek and Vijayadurg creek and likely to pose significant impacts on marine ecology as well as on surrounding environment. Both these creeks are rich in mangrove and widely used for fishing.
- The project will attract investment of about Rs. 25,000 – 35,000 crores in the first two phases. The government has offered Rs 350 crores as compensation to the villagers. There are about 2,033 families who would be directly affected by the project on 968 hectares of land.

Environment Impact Assessment

- NEERI, a CSIR institution – known expert in environmental engineering - submitted EIA report to the ministry with findings conducted by many environmental and national organizations such as the Bombay Natural Historical Society (BNHS) and the Central Water Power Research Station (CWPRS).
- Site selection of Jaitapur Nuclear Power Plant (JNPP) in the EIA report is documented that it is a waste and barren land. *(But in the landuse maps of the proposed area is shown as the mixture of agricultural and grazing land).*



- In the EIA report, it is mentioned that as no data on the discharges coming through Rajapur (Jaitapur) and Vijaydurg creeks was available, the model boundary at the creeks is assumed to be closed. Proposed project will construct 2300 metre long breakwater at Jaitapur creek. Simulation study was prepared by the CWPRS. *(No 3-D modeling of impacts).*

- EIA report stated that the proposed project would not have impact on environment and livelihood although around 11000 fishermen (as reported by the local community) were dependent on fishing.
- The EIA report, based on the Marine study conducted by college of Fisheries, Ratanagiri, referring to Kalpakkam study on marine ecology, claimed that no impact on marine life is anticipated due to discharge of 6 million.
- The study of impact on marine ecology by proposed JNPP justified that the discharge of hot water by Kalpakkam Nuclear plant (440 MW) does not cause much impact on marine's life. Therefore, the proposed project will not impact the marine ecology.
- A hydrodynamic study was done to analyze water currents and inter-tidal activity of the sea on the proposed site. Researchers also did a thermodynamics study to analyze the dispersal of hot water discharged from the nuclear reactor into the sea. *(Silent on the effects the discharges on the creeks and on consideration of the creeks' currents, especially during low tide).*
- Extensive studies carried out by experts from various government institutions have found no active geological fault up to a 30-km radius from the proposed Jaitapur Nuclear Power Project site *(There should not be any active geological fault within a five-km radius from the proposed site, the code set by Atomic Energy Regulatory Board (AERB) for site selection of the nuclear power plant).*
- The NEERI report had described the land surrounding the nuclear plant as "rocky and barren land with no habitation and vegetation" and hence ruled out any adverse ecological impact in the area. *(BNHS report contradicted the official NEERI report of 1,200 page environment impact assessment report in April, 2010. The same area was surveyed during the monsoon by BNHS, which found 134 species of plants on the plateau).*

Lapses in EIA

- No provision / mention of any permanent storage of radioactive waste, though it has discussed different ways of disposing the waste *(Proposed JNPP plant is 25 times bigger than Kalpakkam nuclear power plant)*
- No site-specific primary data on demography of the region and impact on existing infrastructures and amenities in the study area. The EIA report had used the old census of 2001 and also there is discrepancy in the population data
- Confirmation of seismic zone severity – III or IV

- Silent on payment of ecological services and comparative statement of project costs with ecological costs

Points of Concern

- Estimation of risks of sand deposition and erosion due to construction of 2.3 km breakwater and subsequent loss of rich marine biodiversity of Vijaydurg creek and confluence of Vaghotan River and Arabian Sea.
- Assessment of the impact of hot water 6 million m³ on dissolved oxygen - lifeline of the marine biodiversity
- High to moderate seismic zone.
- Geological repository to store spent nuclear fuel

Assurances by Project Proponent

- Design for the proposed NPP units at Jaitapur takes care for seismicity and corresponding frequency spectrum as per AERB regulations, in line with the current practice for all nuclear power plants
- Compliance with the 35 environmental conditions set by the environment ministry while giving the green signal for the nuclear plant.

Chief Minister of Maharashtra's Defence for JNPP - Eco-political Scenario

- Mr. Prithiviraj Chavan, Chief Minister of Maharashtra and former Science and Technology Minister (Government of India) with vehement words warned the local villagers and protesters for their lack of awareness of science and not to be misled by outsiders and their propaganda.
- In Feb. 2011, in a meeting at Jaitapur he said after listening to the opponents and supporters of the project that the issues raised were misleading and some foreign powers did not want to see India progress. Not a single point raised by the opponents was true, he claimed.
- He announced that compensation could go up to Rs. 400 crore. However, it was not an issue of money, it's a question of misunderstandings that were being aired, he said. He said while he did not want to dwell on technical issues, such a huge investment would not come to India again. He said, solar energy was heavily subsidized and coal energy was highly polluting. As far as hydel power was concerned, he said it led to submerging forest land. In this country 50 per cent did not have electricity and increasing capacity is important, Mr. Chavan said.

Counterviews by experts and local protestors

Secretary, Union ministry of health said, "Since the response system to deal with any kind of emergency of such type is not well-equipped, it is natural that mortality and morbidity due to multiple burn, blasts, radiation injuries and psycho-social impact could be on very high scale."

Citizens are demanding answers to questions regarding approvals, rehabilitation and land acquisition, (governance monitoring and commitments) costs of project life span, radioactive byproducts, reprocessing of spent fuel and disposal of radioactive wastes and civil (safety and security of ecosystems, animals and populations) nuclear liability limits of the JNPP.

Affordability of the project

The cost of electricity generated from JNPP would be in excess of Rs 9 per unit. This does not include the costs of managing radioactive waste and decommissioning. The current cost of electricity is about Rs 4 per unit. It has been noted in the Rajya Sabha that as far as the cost difference between hydro, thermal and all the available options vis-à-vis nuclear electricity is concerned, the cost difference is 1:3.

Conclusion

Jaitapur Project has led to some fundamental issues of -

1. Harmonizing the development processes with environmental sustainability
2. Integration of ecological costs into the project accounting
3. People's participation in project development and operational phases
4. Eco-politics to be based on the basic theme of National Environment of Policy 2006 - livelihood should come through conservation of environmental resources rather than exploitation
5. Credibility of EIA consultants

What's next?

Sandeep Joshi, a well-known impact analyst, says "Cost -benefit of the project is to be based not only the project and environmental costs during the developmental and operational phases; but it must go beyond considering the ecological life of the adverse impacts of project". This reporting is compiled by the SERI Team considering the views and reports published. It can be critically evaluated, contributed and modified by the learned readers.

---x---