



Is the Nuclear option indispensable?

Pradip Dutta
Santanu Chacraverti

So now it is Haripur. For more than decades now, the CPM-led Left Front Government has sought to set up nuclear reactors in West Bengal. At different points they have considered different sites for this purpose. Yet the DAE's (Department of Atomic Energy) Site Selection Committee failed to settle on a suitable spot.

The last few months have seen resurgence of the effort, and with new vigour. This time however the DAE's Site Selection Committee has succeeded in deciding on a suitable site - Haripur on the East Medinipur coast. "The site selection committee will submit its report on Haripur's suitability for setting up nuclear reactors to the Centre by December '06. The government takes two to six months to clear such sites... We have found that Haripur provides good potential and offers good possibility of setting up a nuclear power plant" the chairman of the Site Selection Committee, Mr Jain, told *Economic Times*. Mr Jain further said "Haripur being on the coastal belt of India, NPCIL intends to set up six to eight thermal power generating units of 1000-1,500 MW each, for which it will acquire 2 sq km. The total generation capacity will be between 6,000 MW and 9,000 MW".

It is not that the arguments against nuclear power are unknown to either the State or the Central Governments. They are as old as the efforts to set up reactors. Only about five years ago the issue led to processions, meetings, lathicharges etc.

The reactor merchants, their political patrons and the bosses of the nuclear establishment have now launched a renewed campaign for nuclear power as a positive and viable option in the context of current anxieties about global warming. True, by 2050 the energy requirements of the world will be doubled. One of the pressing issues of the present is how to meet the escalating demands of energy and at the same time reduce the production of greenhouse gases. Atmospheric scientists advise the industrially advanced nations to reduce their carbon emissions by 80% by the mid-21st century.

As they emit no carbon dioxide in the act of producing electricity, nuclear reactors are being seen as a major option in a desirable energy scenario. According to the International Atomic Energy Agency (IAEA), the number of nuclear reactors in the world as on 25 November 2006 is 442, whose total electricity output was 369.728 GW (1 GW = 1000 Megawatts). Neither the number of reactors nor the quantum of nuclear electricity has increased significantly for more than a decade. By 2030 the production of electricity will have increased greatly but the proportion derived from nuclear sources will have declined from its present 16% to a mere 9%. *The Nuclear Engineering International* (June 2005) states that the total number of reactors that are active for 30 years or more is 79. Many reactors are scheduled to be closed down in the

coming ten years; merely to keep the global production of nuclear electricity at the present level some 80 reactors of an average of 1000 MW need to be constructed and brought into operation within the same time. In the next ten years again about 200 reactors need to be connected to the grid. Right now, the objective seems unattainable. That is, let alone replacing coal, gas or oil, it seems impossible for nuclear electricity to retain its existing share in the total electricity production. Thus the dream of reducing greenhouse gases by means of nuclear energy is just that, a dream.

The arguments that were advanced against nuclear power some thirty years ago still retain their relevance, for they still remain unanswered. The risk of terrible accidents is still the greatest hurdle facing the production of nuclear electricity. To this has been now added the ever-present threat of terrorist strikes.

What if the person in nuclear establishment do succeed in increasing the number of operational reactors? They will immediately be confronted by growing uranium shortage. In 2004 the world's total uranium deposit amounted to 14.4 million tons—this is as per the data of Nuclear Energy Agency and International Atomic Energy Agency. But the amount of uranium that can be mined was only 3.5 million tons. This uranium may be mined at the cost of less than \$80 per Kg. Presently the annual global consumption of uranium is about 67000 tons. If uranium is used up at no more than the present rate, even then the accessible uranium deposits of the world will last for another fifty years. And as uranium deposits start declining, their price will begin to increase, taking the already high cost of nuclear electricity to prohibitive levels. Therefore in order to keep the nuclear energy option a viable one for a long time, one has to use plutonium as reactor fuel. This is where the question of the breeder reactor comes in. But the use of breeder reactor multiplies the risks of accident and terrorist actions, as also of nuclear arms proliferation. Keeping these risks in view the United States, the United Kingdom, France and Japan have discarded breeder reactors as too dangerous.

In a meeting in Berlin 2003, the World Association of Nuclear Operators expressed anxiety over six major incidents and two cases of suppressing security related facts. In all these cases the consequences could have been disastrous. The speakers presented estimates of tremendous expenses incurred from reactor problems and also criticised the prevalence of indifference and complacency. They argued that diagnosis of problems must be followed by immediate corrective action. Otherwise a major accident may lead to the destruction of the whole industry.

According to the IAEA and the Intergovernmental Panel on Climate Change (IPCC), by 2050 annual carbon dioxide emissions must be reduced by 25 to 30 billion tons. On the other hand, in the same time CO₂ emissions may be reduced by 40 to 50 billion tons if :

- 1) Production, distribution and transmission of energy is made more efficient.
- 2) Energy production from solar, wind, hydro-, biomass and geothermal sources is increased.
- 3) Clean coal technologies are further developed and more widely used.
- 4) Energy efficiency is increased in transport, industrial, domestic and indeed in all sectors and activities.

Since the beginning of this century the average annual increase in electricity production has been 150,000 MW. The average annual increase in nuclear electricity has been 3000 MW. In the same time the average annual increase in electricity from wind power has been to the tune of 8000 MW. In 1997 the world's production of electricity from wind power was 7475 MW; at the end of 2005 it was 58,982 MW. Even in face of governmental indifference, electricity from wind power in India increased by 1430MW (at the end of 2005) and the total annual production stood at 4430 MW. As a producer of wind power India is globally in the fourth rank. This year, long before the year is out (by the month of September) the increase in electricity from wind is 1430 MW. As a youthful source that is only ten years old in this country, electricity from wind amounts to 5700 MW, five percent of the total electricity production—despite chronic governmental indifference. And after 38 years of production, and all the tremendous governmental concern and fanfare, nuclear electricity stands at about 3000 MW!!!

Yet the call for new reactors. For a technology that is not only extremely dangerous and prohibitively expensive but one that will lead to the eviction of countless people. The people of Haripur and adjoining areas are horrified. They should be. ❧❧

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