

Nightmare of a Dream

ON DECEMBER 2, 1942 the first nuclear reactor went critical, releasing for the first time the enormous energies of atomic fission and ushering in the nuclear dream. But the reality was to be different; the dream rapidly turned into a nightmare. By the end of that decade not only had energy from the atom claimed 'war victims' but it had also shown its potential in killing, maiming and scarring for life anyone who worked with it. As early as August 19 a young worker at the Los Alamos 'atom bomb laboratory' working on fission studies died an agonising death after accidental exposure to radiation even as his numerous colleagues transporting fission material or experimenting with it were becoming permanently affected. By the fifties while several countries had built commercial reactors producing electricity, well-developed weapons programmes were also under way. And that was when the myth of the peaceful atom took shape and gained substance.

The nuclear debate, in addition to being a human rights issue directly impinges on all aspects of health care. A nuclear war, even a limited one, would be completely unmanageable by even the most efficient and most sophisticated health care system. (See p 112) Moreover no weapons system, even if meant as a deterrent, and however rudimentary/skeletal can be built up without some kind of testing of the devices. This has a direct consequence for the burden of ill-health among people not only of the affected region, but globally. And then there is the expenditure on armaments which is eating into the already meagre health and welfare budgets. While this is true of all countries, it has a more disastrous impact on poor nations. The 'peaceful atom' too is a health hazard. Three Mile Islands and Chernobyls can with the increasing proliferation of nuclear reactors, happen more frequently. With the secrecy which is an integral feature of the international nuclear industry, we may not even know when and if such disasters have taken place. Besides, evidence is accumulating on the long-term effects of low-level radiation, once thought to be 'harmless'. (See p 113).

'Atoms For Peace'

It is not an accident of history that the Atoms for Peace programme was proposed by Eisenhower in 1953. By then the military expenditure on nuclear installations had overshot anything that the country had spent even during times of war; the anti-bomb lobby while certainly not influential enough to change the course of development, at least had nuisance value; nuclear reactors whether for peaceful uses or for war weapons development were essentially the same; under US legislations weapons technology could not be shared with non-weapons countries—an important

political lever for other kinds of gains in international diplomacy; it was only logical therefore to devise ways and means of continuing and expanding research and development efforts in nuclear sciences which while being ostensibly 'civilian' could easily be harnessed to war efforts when needed.

Thus the technical linkages between peaceful and military nuclear reactors—i.e., the fact that it is during the process of controlled fission that the bomb material is produced or that the enrichment plants used to produce fuel for the 'peaceful' nuclear reactor can also, with sufficient modifications, be used to manufacture bomb material—have been politically reinforced. To argue that the two, the peaceful atom and the military atom are different is neither politically nor technically tenable.

It is in this context that the Indian nuclear programme got under way. It would be incredibly naive today to believe that the Indian bourgeoisie at the time of independence were not aware of the weapons potential of the peaceful nuclear programme. The fact that the programme has from the beginning been accorded high priority in terms of funding, that it has always been under the prime minister's direct control, the creation of the Atomic Energy Act with its unbelievable powers to suppress information, and the fact that the department's accounts have never been open to public or parliamentary scrutiny or audit by the Auditor General of India are obvious indications that the weapons angle has always been kept in perspective in developing the programme. Events in subsequent years especially in the last decade have given further evidence of this.

The nuclear debate is not new. While the dissent of the 50s was generally focussed on nuclear armament, the first ever protest against a nuclear power reactor was organised in 1957 in the US. But it is in the seventies that the nuclear debate came into its own. Throughout the 60s even as more and more 'peaceful' nuclear reactors were being built, data was also accumulating about radiation-related deaths among victims exposed to nuclear test fallouts, about the numerous things that could go wrong in a nuclear reactor, and about the potential long-term effects of low-level radiation.

Throughout the fifties the US continued to test nuclear weapons in a variety of geographical locations—66 of the 200, were in the Pacific ocean. While radiation damage from the fallout had been accumulating slowly over the years throughout the area, it was the Rongelap or the Bikini test which brought home to the world not only the horrors of the nuclear armaments programme even during peace time, but also the horrendous coverup used by the US and every other state which has had anything to do with the

atoms—the denials, the coverups and the secrecy. Children of Rongelap played in the 'snow' from the massive fallout from the test which entirely covered the ground for 78 hours before the US decided to inform the islanders of the deadly radiation and evacuated them. The first five years saw a sharp rise in miscarriages and stillbirths; but it was only after 9 years that the US medical experts acknowledged that the children were particularly prone to thyroid problems and the seriousness was highlighted when a 19-year-old boy who had been the youngest to play in the 'snow' died of leukaemia. Women from Rongelap continue to give birth to what they describe as "a bunch of grapes"—a consequence of radiation exposure because of which cystic grape like structures occur in the uterus or sometimes a single hydatiform mole is formed from a fertilised ovum which has lost its nucleus.

The peaceful atom too was beginning to show its belligerence—the increasing health problems of nuclear workers—the uranium miners, the transporters, reactor operators and the whole army of workers—was forcing several nations to pass legislations. But this also led to successful efforts to formulate so-called safety standards which only obliterated the real effects of radiation damage.

It is interesting here to point out that the international bodies which are supposed to set the limits of exposure and monitor it are themselves open to criticism of bias. Moreover, even as evidence accumulates about the extensive and long-term damage due to nuclear operations, the levels of exposure etc have been revised and concepts modified to accommodate them. For instance, it is now accepted that there is no safe dose of radiation; therefore the 'permissible dose' was evolved. And, ironically enough it is not the health establishment which has traditionally been involved with monitoring these aspects; the discipline called health physics which evolved at around the time of the first nuclear reactor has been dominated by physicists and engineers and its fundamental concern has been to give the nuclear industry a clean chit. (See page 119 for discussions on the biases in concepts of 'risk' and safety')

Anti Nuke Debate

It is pertinent to ask why a debate which has been going on for over three decades needs to be given space and attention here. There have been several developments in the past few years about which we can neither remain unaware nor unconcerned. For one thing after four decades of the arms race the US and the USSR are on the verge of reaching a historic agreement on dismantling nuclear weapons in Europe. If the agreement on dismantling intermediate range missiles in Europe whatever its limited scope comes through it will be the first ever of its kind. Undoubtedly, national and global economic and political considerations have had a lot to do with the move, with the growing European peace movement, which is itself

another manifestation of these considerations, providing a motive force. The growth of the peace movement cannot be measured only in terms of numbers but in terms of its political effectivity. One consequence of this has been the incorporation of many of the anti-nuke movements, demands into the programmes and manifestos of opposition parties in Europe. While the Green party has gained ground in West Germany in the last election, in Australia and Iceland too parties with a major focus on anti-nuke and peace issues have contested elections and won parliamentary representation. The communists in France are actively participating in anti-nuke demonstrations, for the country has continued to conduct nuclear tests in the Pacific despite worldwide protest. At Greenham Common, UK women have been camping outside the defence area in protest against the deployment of Cruise missiles.

In the Pacific too, several nations have come together to declare the zone a nuclear free one with many countries, including the USSR and excluding the US ratifying the declaration. Not the least of these new developments has been the spectacular impact of the International Physicians for the prevention of nuclear war (IPPNW) (See p 111)

But closer home a vocal nuclear lobby is pressurising the Indian state into giving the final signal to produce the bomb which is supposedly all but ready. Moreover the nuclear industry is planning the biggest expansion programmes, with a target of 10,000 MW of power from nuclear sources. Capitalist development in India poised to shift gears to a more rapid growth which will inevitably make demands for changes in the economy. The atoms-for-progress-and-peace theme is acquiring new meaning. Acquiring nuclear weapons capability not only becomes necessary as deterrence 'to keep peace' in the region, but also to reassert hegemonic aspirations. At the same time nuclear power with its long-term advantage of low labour inputs, centralised control etc is seen as the only means of providing for the power requirements of industrial growth.

Thus the nuclear debate has both a global and a national dimension and within this broad perspective are several issues. There is on the one hand the issue of how we view war, nuclear armament and disarmament at the global level as well as the national. Recent marxist analyses of war see it mainly as a condition of capitalist production. They argue that highly industrialised capitalist economies generate surplus value at such a rate that capital begins to accumulate rapidly and this inevitably leads to falling returns of investment thus leading to crisis. The creation of defence establishments which must be kept ready to strike at all times in terms of training, competence and technical superiority provides for vast capital expenditures in a justifiably non-productive fashion—ie without creating new value. Seen in this light the theory of deterrence, whether it is in terms of keeping huge conventional military establishments or building up nuclear armaments and deploying them becomes a conditions

of capitalist production.

In the context of international capitalist development it is absurd to take one view of war and armament on the global level, i.e. support disarmament efforts, while at the same time take a completely different view at the national level, i.e. support the bomb lobby encouraging nuclear arms production.

Equally, it would be utterly naïve and blind to try to delink the nuclear arms issue from that of nuclear power. Setting up a nuclear capability for producing 10,000 MW power is equivalent to establishing the base for producing a full complement of nuclear weaponry. But for the moment let us assume that it is possible for us to separate the two. Would nuclear power be a feasible and safe proposition then?

It is important here to point out that India has been active on the peaceful nuclear front at every level of the nuclear cycle. Uranium is mined in the country; this ore as well as other fission materials can be processed and enriched, albeit to a limited extent according to official sources; we have several reactors which even if they have never been working efficiently to produce power for which they were ostensibly set up they have been producing fission products in large quantities and huge quantities of radioactive waste; India has had a sophisticated reprocessing facility for almost as long as it has had its first power reactor and it has had to store the long and short half life wastes in many dumps.

There is today enough information worldwide to show how workers and "non-workers in and around these various nuclear establishments are being permanently affected by radiation damage. Indian studies (see p 124) have shown just how incapable the department has been in monitoring the health of workers in the Rare Earths plant at Alwaye in Kerala one of the oldest such plants in the country. Since the 70s several stories of how workers are exposed to high radiation doses during cleanups have repeatedly surfaced from Tarapur and Rajasthan. The department has kept on record of people around any nuclear installations; but recent studies in UK have shown a definite possibility of childhood leukaemia clusters around power plants and no significant contradictions have as yet come forth despite close scrutiny of the studies. And nobody is aware of where the nuclear waste dumps are which is classified information under the Atomic Energy Act Government control.

In fact the Act which vests extraordinary powers with the state is perhaps the most draconian of legislations in the country. It permits the nuclear industry to get away with criminal negligence of the most basic safety norms. And yet quite amazingly, it has, by and large escaped criticism—the Parliamentary opposition has never made an issue of demanding a review of the Act.

And then there are two other issues—one of the possibility of accident at a nuclear facility and the other of 'retiring' old plants. It is clear now that Three Mile Island and Chernobyl, the two publicly known

nuclear accidents are not specific and rare instances—they can occur at any point in the nuclear cycle, no matter how fail-safe the process. The secrecy which is part of any nuclear establishment anywhere in the world makes it impossible to ensure the safety of populations around. Only in the last decade has the issue of what to do with old nuclear plants received attention. The dilemma is that firstly, the expenses involved in shutting down are enormous, secondly a nuclear plant unlike other establishments cannot simply be abandoned it is in the nature of a time bomb because it will be radioactively 'hot' for a long-time and has therefore to be safeguarded and thirdly in the bright dawn of the nuclear era nobody had thought to make provisions, costwise or otherwise about dismantling these monsters.

But notwithstanding all this there is yet another facet of the picture which demands attention. Atomic energy has not only produced electricity but a variety of nuclear products used in a range of applications, particularly in medicine. There can be no denying the fact that the use of radioisotopes have enormously benefited biomedical and engineering sciences and there is no substitute for radiation therapy with all its drawbacks and problems. While it is true that the technology to produce them may be different, can it not be argued that this is in many senses a matter of scale? Can we separate this from the rest of the issue and would it be possible to confine all future applications, research etc only to these areas. Can scientific developments no matter what their impetus and the predetermined boundaries of growth, be entirely contained?

The Indian anti-nuke movement has been of fairly recent origin—but it has already made considerable impact on an establishment, which for the first time has been forced to give serious consideration to sensitive questions. But the medical establishment, has in keeping with its class interest kept out of the picture.

However, if health is our everyday concern and if we believe that health care is more than medicare and is a political issue, we have to confront the nuclear issue. For, in doing so, we confront in quintessence, the contradictions and consequences of world capitalism.

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