
# Uranium: Hope or Havoc

**The great uranium debate is central to development planning in many Third World countries. Dr. Brian Martin PhD., examines some of the aspects of the debate.**

**The mining of Australian uranium and the promotion of nuclear power around the world are important environmental, economic, political, and social issues. What is the significance of uranium mining and nuclear power for the Third World? It is argued here that nuclear power is an unsuitable technology for poor countries; that nuclear power in the rich countries will bring no benefits to the poor countries; and that opposition to uranium mining and nuclear power is an important link in a world-wide struggle for political and social self-management. But first let me summarise some of the conventional concerns about nuclear power and uranium mining.**

## THE COSTS OF NUCLEAR POWER

Uranium is a mineral that is mined from the ground, like copper or gold. After several stages of processing, a small fraction of the uranium is used as a fuel in nuclear power stations, which produce electricity. Because nuclear power can only produce electricity, it competes with electricity from coal-fired or oil-fired generating stations. Nuclear power will not replace oil as a source of liquid fuel. Australia has about 20% of the world's reserves of high-grade uranium.

There are several major dangers associated with the production of electricity from uranium. One is the possibility of accident or sabotage at a nuclear power station, resulting in a massive release of radioactivity into the nearby area with great loss of life. Another major environmental danger is posed by radioactive wastes, which are inevitably produced by the operation of any nuclear power station; if these wastes escape into the environment, they can result in cancer or in genetic defects in unborn generations. Since some of the wastes, especially plutonium, remain dangerous for hundreds of thousands of years, this means that the wastes must be stored permanently or guarded in some way for at least this long — through earthquake, geologic change, war, or civil disorder — or else generations far in the future will suffer the consequences. It is significant that radioactive wastes remain dangerous for much longer than the duration of any known civilisation.

## PLUTONIUM

Nuclear power stations produce as a by-product the element plutonium, from which it is relatively easy (with a bit of technological know-how) to produce nuclear weapons. Therefore 'peaceful' nuclear power serves to promote nuclear weapons proliferation. India's nuclear test was based on plutonium obtained from a Canadian-built nuclear power plant. Plutonium is also a tempting target for criminals, either for the manufacture of nuclear weapons or directly as a basis for threat or reprisal. Because of the serious environmental dangers and the potential for nuclear weapons proliferation and criminal use nuclear power also poses a threat to the social structure. To protect against these dangers it would be necessary to introduce strict security measures, such as nuclear security police and extensive dossier checks on nuclear industry employees. The necessity to ensure social and political stability to protect against major environmental disasters could form the basis for repressive social policies.

Reactor failures, long-lived wastes, nuclear weapons proliferation, repressive social policies: these are some of the main reasons for opposition to nuclear power. It is felt by opponents that nuclear power should be avoided if there are any feasible alternatives. And there are alternatives, namely energy conservation and coal in the short term, and in the long term solar power plus a more sensible organisation of living conditions in an environmental and energy-conscious way.

## ABORIGINAL CULTURE

Opposition to uranium mining is mainly based on opposition to nuclear power. Stopping the mining and export of Australian uranium would serve as a strong boost to the anti-nuclear movement around the world. But there is (in some cases) a second major reason to oppose uranium mining: its effects on Aborigines and on traditional Aboriginal culture. The disastrous effects of mining on Aborigines are well known: destruction of the land, desecration of sacred sites, breakup of traditional life patterns and allegiances, and introduction of prostitution, alcoholism and unemployment. So the anti-nuclear movement has strong links with the struggle for Aboriginal dignity and autonomy.

## NUCLEAR POWER FOR THE THIRD WORLD?

One 'justification' for nuclear power is to provide energy directly in the Third World. Nuclear stations are currently operating in such places as Argentina and Pakistan, and are planned for such places as South Korea, Iran, Brazil, Taiwan, and the Philippines. Is nuclear power part of a suitable development strategy for such countries?

Consider the situation in most Third World countries. They are characterised by: a low utilisation of human labour, or in other words high unemployment and underemployment; scarce capital resources; a very small number of highly trained personnel; and a meager infrastructure of public services (such as electrification and plumbing). Nuclear power is singularly ill-suited to such a situation: it creates negligible employment, uses massive amounts of capital (to build the nuclear power stations, mainly), requires relatively large numbers of highly trained personnel (such as nuclear scientists and engineers), and requires an extensive network of facilities (such as electric pumps) for distribution and end-use.

Nuclear power is not necessarily worse than no power for Third World countries. But the relevant comparison is not without power, but with alternative development strategies. Technologies do exist which are more directly suited to the needs of poor communities: diffuse solar collectors, biogas cookers (in widespread use in China), careful design of buildings and tools, and the use of manure for fertiliser (rather than energy-expensive artificial fertilisers). Such technologies produce more employment and utilise available capital in a more effective manner than nuclear power. They reduce dependence on foreign expertise, develop the skills and self-reliance of the local people, and foster a more equitable distribution of social wealth.

## INCREASE DISPARITY

The actual effect of the introduction of nuclear power in poor countries will be to increase the disparity in wealth and power between national elites in metropolitan areas and the rural and urban poor. The nuclear electricity will mainly go to operate the appliances of the rich, to run the industries producing exports or luxuries, or to build and light offices for government bureaucrats. The existence of nuclear capacity will add a strong extra lever to the power of elites to promote a 'development' strategy based on the introduction of urban consumer goods and the necessary infrastructure (roads, offices, automobiles, washers, air travel), financed by export of agricultural commodities of raw materials from the hinterland. This strategy serves to stifle the aspirations and initiative of the rural poor and to ensure an inequitable distribution of wealth. For as long as the poor have no control over the pattern of technological development, it is very difficult for them to transform the political and social structures which shackle them.

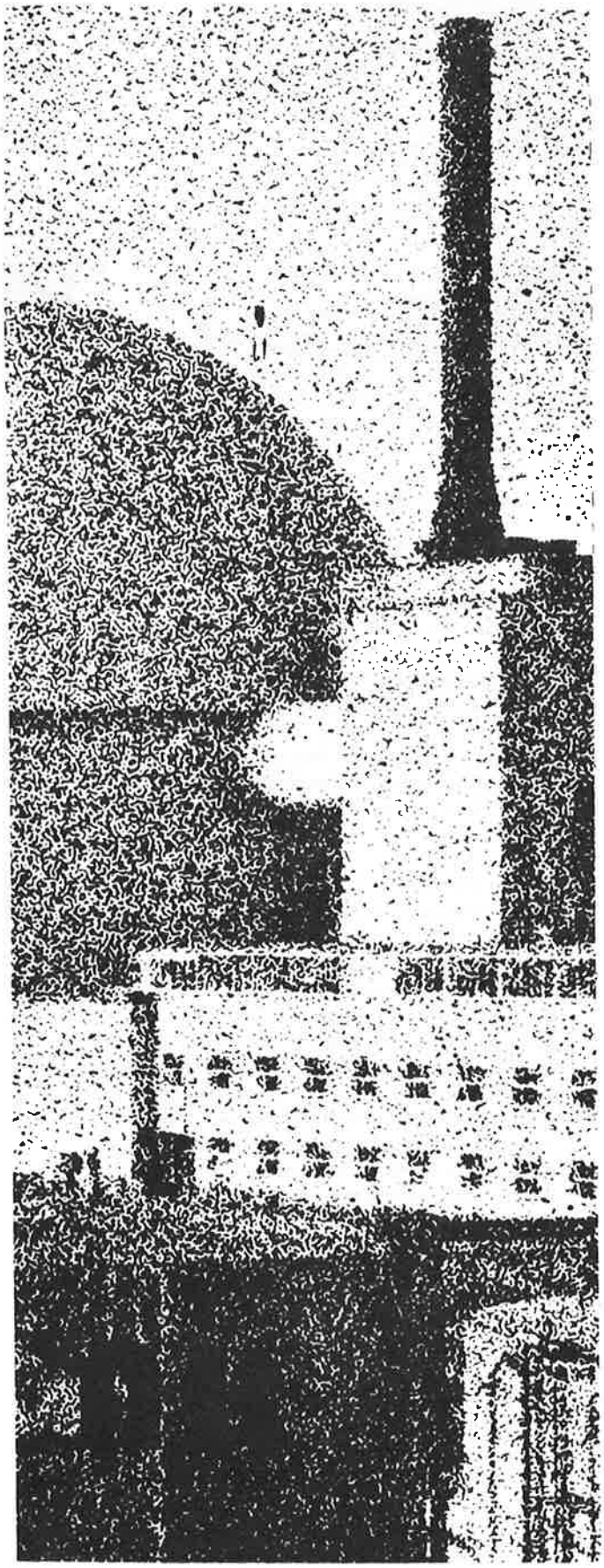
## MULTINATIONALS

Nuclear power in Third World countries also increases their dependence on the rich countries and the multinations, in terms of capital, expertise, and other products normally found in (and often imported from) industrialised countries. This is a major factor in the rich countries' enthusiasm for exporting nuclear power to the Third World. Through money, technology, and linked patterns of development, the Third World becomes tied by decisions made in the interests of foreign elites; expressions of national purpose become difficult unless they mimic overseas patterns.

## NUCLEAR POWER FOR THE RICH

An even more unlikely way to help the poor of the world is to promote nuclear power in the rich countries. The argument for this strategy is that if the rich countries switch to nuclear power, the price of coal and oil will drop and this will benefit the poor countries. But there is no evidence that rich countries will cut their consumption of oil just because a little more nuclear electricity is available. It is more likely that oil not used for electricity generation will be used for petrol and space heating. Furthermore, the price of petroleum is likely to reflect political considerations (OPEC policy, multinational oil company strategies) as well as purely economic ones.

If Australia were truly concerned about helping the poor of the world, it could (a) offer no-strings-attached help to poor countries in developing appropriate low-level technology, (b) subsidise exports of coal to meet energy shortages in poor countries (this is nearly economic at present anyway), and (c) encourage OPEC and others to provide petroleum at reduced prices to poor countries.



## THE IMPORTANCE OF THE STRUGGLE

If opposition to uranium mining and nuclear power were based solely on aversion by the affluent to environmental consequences affecting their well-appointed lifestyles, then Third World people might well question the relevance of such an issue to their own problems. But the nuclear power question has deeper implications.

In the world today, a rise in the GNP of the United States by a few percent means a massive increase in the consumption of energy and resources - many times the increase caused by a 25% rise in India's GNP. Experience has shown that this sort of inequity is not going to be reduced by growth, nor by trade, nor by altruism. Nor, in the context of the dynamics of international political and economic trends, is traditional economic growth going to improve the lot of the poor of the world by any appreciable amount. More growth of the standard type is quite inadequate ("let them eat growth"), if for no other reason than because with the present trends there simply won't be enough to go around.

## BEST FOR RICH AND POOR?

The question of nuclear power can be seen as one involving a choice of technologies. What sort of technology is best suited for the needs of the poor and of the rich peoples of the world? It is convenient to distinguish two types of technology. One type is designed to be controlled by the people it serves: it is simple to build and use, so non-experts can build and use it; it is inexpensive and freely available, so use it not restricted to the rich and powerful; it is easy to repair and can be adapted for many purposes, so people can use it without control by producers or experts; and it is designed to minimise impact on the environment and on other people's freedom. In short, this sort of technology is a reflection of the attributes of a self-managed society. Such tools as bicycles, solar cookers, simple hand tools, telephones, and slow-moving simple and rugged motor vehicles fit this discription. It should be emphasised that to endorse such 'convivial' technology is not to advocate using only pre-modern technology. Much of 'people-controlled' technology, such as the biogas generator and parts of communications technology, is based on modern knowledge or ideas. The question is one of endorsing, out of all possible modern technologies, a particular modern technology with a set of attributes which are thought desirable for particular purposes – in this case to give people power over their lives.

## TECHNOLOGICAL CONTROL

The other sort of technology is designed (though not normally in a conscious way) to be controlled by people other than those who it 'serves': it is complicated, so it can only be produced in factories under the supervision of experts; it is expensive, so only the rich can promote it or use it; it is difficult to repair and specialised in use (planned obsolescence), so it must be maintained by experts; often it is environmentally damaging; and it shuts out alternative technologies or associated life-styles. Examples are supersonic aircraft, freeway systems, computers, and electric toothbrushes. But wherever one wishes to draw the line between these two types of technology, it is clear that nuclear power is on the extreme end of the sort of technology which is controlled by people other than those who use it. Nuclear power is a technology that requires experts, capital, and centralised control; it demands adoption of an electricity grid system for use; and it demands tight security measures to guard against the possibility of human error or sabotage. Nuclear power is a reflection of a social and political system based on centralised control by elites, and denial of control by the people over the pattern of development of their own lives.

It has been said that technology reflects the social, economic and political structures in which it arises and is used. But particular technologies also help promote the type of society to which they are most suited. In a world in which the highest priority in both poor and rich countries is the transformation of structures to give control to people rather than to elites or self-serving bureacracies, a focus on the association technologies becomes a valuable tool in the struggle. A grasp of the implications of nuclear power for the type of society in which we live, and of the potential of alternative technologies, can become the basis for a deeper picture of the social and political choices underlying these technologies. And the actual fight against the vested interests backing nuclear power can expose the real objectives of these interests and serve to unify their opponents.

Although nuclear power has strong implications for the Third World, it is an issue that must be fought primarily in the rich countries, for it is the rich countries which develop the techhology, promote it and export it, and in large part us it. We in the rich countries cannot expect the poor to adopt a 'desirable' alternative technology development strategy if we do not make the first step.

## ENERGY

This means that we must adopt technologies which do not use massive amounts of energy and resources (e.g. solar heating and bicycles); we must promote life-styles that are based more on individual and community control over working conditions (e.g. communal design and construction of buildings, more local production of food); we must foster the non-materialistic aspirations of human nature (community–based art, spirituality, crafts, person-to-person relationships, rather than possession of material goods and titles); and we must promote a society which makes it natural to value these things in themselves. Only then can we honestly expect Third World peoples to strive for similar goals.

## CHOICE

The essence of the problem is ensuring the ability of people to make a choice. At the moment only a few people in the affluent countries have a real choice of life-styles. Choice here refers not just to the 'choice' between Western-type affluence and poverty (the false dichotomy favoured by proponents of conventional development), but to a conscious ability by community groups to shape, and by individuals to select, their life conditions: employment conditions, the extent of the division of labour, community organisation, systems for transport and communication, methods of cultural expression, education, promotion of health, and patterns of interpersonal interaction. The struggle against nuclear power is part of the struggle to ensure that people - rich and poor - will have the ability to make such choices. For the essence of nuclear power as a technology for human society is that it concentrates decision-making power in the hands of a few, and pre-empts alternatives based on decentralised decision-making power.

**So along with the promotion of more environmentally-conscious life-styles, the campaign against nuclear power is an ideal focus for the challenge that must be made against the social and political structures that ensure that decision-making in society serves the interests of those structures. It is in this context that the issues of uranium mining and nuclear power are important in the world struggles against the structures of war, poverty, and oppression.**

**(Helpful comments were received from Mark Diesendorf, Dougal Jeffries, Ken Newcombe, and Dave Shaw).**