Free Life The Journal of the Libertarian Alliance
Vol. 3 : No.2 1982 - *Article 3 of 5*

# Against nuclear energy

By PETER BOLWELL

According to Geoffrey Sampson, writing in Free Life vol.2 no.2, the Editor has been looking for an article putting the case against nuclear power. Mr Sampson gamely had a go, although as he admitted towards the end, he does not really believe that the nuclear option should be abandoned. Nevertheless, he put forward a number of objections to nuclear power which succeded in drawing fire from Messrs Melnyk and Vaughan in subsequent issues. Since I believe that the question is far too important to be left at that, I am weighing in with my own contribution.

Mr Sampson's article was concerned almost exclusively with the physical dangers arising from accidents at nuclear reactors. I agree that this is one of the major issues at stake, but let me add for good measure that nuclear power is not only unacceptably dangerous, it is also unreliable, unnecessary, destructive, and horrendously expensive. How's that to be getting on with! Now, having stuck my neck out so far, I'll try to explain why.

First of all, the big one: the question of the physical dangers involved in the nuclear programme. The dangers do not just arise from the operating of nuclear reactors, but all along the fuel cycle from mining to reprocessing. Richard Vaughan made the point that coal mining results in many premature deaths: what is forgotten is that uranium miners suffer as bad or worse effects, and in fact the incidence of lung cancer among uranium miners is scandalous, but because we don't mine uranium in this country, casualties (only foreigners, after all) are ignored. But the dangers we all know and talk about - dangers to workers in nuclear plants and to the public from radiation leakage - are in addition to the danger to miners, of whom one in five can expect to die of lung cancer over a working period of 20 years. At least coal, once it is mined, is not still dangerous.

Mr Sampson made the point that once fissile material is at work in a reactor, creating all sorts of radioactive waste products within the reactor core, it presents a tempting target for attack to any would-be aggressor. The danger however is not so much from a nuclear strike on a nuclear reactor, since this would add little (in the short term) to the effects of the bomb itself. The danger rather is an attack by conventional bombs or missiles on a nuclear reactor, which would then release radiation as though the bomb itself had been atomic. Few nations have atomic weapons even now, but lots of nations have ordinary bombs and guided missiles. By having nuclear reactors on our soil, we confer nuclear status on any aggressor who attacks them. He supplies the blast, but we supply the radiation ourselves! Incidentally, the concrete containment structures to which Mr Vaughan referred are present only at PWR stations, which as yet we do not have in Britain. Our own reactors could be quite easily disabled. The Flowers Report made the point that if there had been nuclear reactors in Europe during the last war, much of the Continent would still be uninhabitable.

From the reactors, spent fuel is taken by rail for reprocessing at Windscale. This stage of the fuel cycle - transport - is by far the most vulnerable, and frankly I consider it only a matter of time before there is either a serious derailment involving escape of radiation; or else an IRA attack with a view either to causing such a release, or possibly to stealing fissile material. Incredibly, the fuel containers are only tested to withstand an impact of 30mph (when we know the trains travel at 60mph) and a fire of 300°C, lasting for only 30 minutes (the temperature of a petrol fire can reach 1200°C). Even worse, the actual containers themselves are not tested at all: all the tests are carried - out on V4 scale models! In case anyone was not aware, by the way, nuclear fuel from all three reactors in the south east is routed straight through the middle of London. If there were an accident at Earl's Court, say, with a west wind, involving just 10% release of a flask's contents, 80,000 people would have to be evacuated for 25 years. If there were a total release, of course, the whole of London would have to be sealed off for a century.

It is important to grasp the horrible, insidious nature of radiation. You cannot see it, feel it or smell it, but it can kill you. It might be anywhere and you would never know. Some of it remains dangerous for thousands, even hundreds of thousands of years - longer than human beings have been on this planet! In 1976 it was found that a waste silo at Windscale had been leaking. As far as I know, it is still leaking: they haven't worked out what they can do about it yet. All that radioactive matter will sink down into the ground and will eventually reach the water table. If you think about it long enough you could end up being afraid of your own environment: in Jungk's words.

"Every leaf, every blade of grass, every insect, every breath of air, might be noxious." (*The Nuclear State* Robert Jungk, 1978).

Windscale also discharges about 1/2 million litres of radioactive liquid waste every day into the Irish Sea, which is now the most radioactive sea in the world. Like other pollutants, radiation is concentrated in the body tissues of fish, and of anything that eats fish, of course. You can get one-third of your maximum permitted dose of radiation just by eating fish from the Irish Sea. Next time you are eating fish, just pause for a moment to ask yourself where it was caught.

What comes out of Windscale after the spent fuel has been reprocessed is the biggest headache of all: highly radioactive decay products, which are so dangerous for such a long time that they still don't know what they can do to dispose of it safely, so it is all piling up at Windscale while the boffins ponder. Here, incidentally, I must take issue with Richard Vaughan. Responding to Geoffrey Sampson's concern on this issue, he stated that it is not true no technology for disposing of high-level waste had been developed, since there is a copious literature on the subject. With respect, copious literature is no substitute for a solution. The fact is that they still don't know what to do with the stuff. The idea which seems to be most favoured at the moment is to encapsulate the waste in glass blocks ("vitrification") and then dump them somewhere inaccessible. But now it has been reported, first from America, that glass blocks would break up under high temperature and pressure, and then, from Australia, that radiation renders glass susceptible to chemical breakdown by moisture. So the literature gets ever more copious, while the answer seems no nearer, and the deadly waste all the while accumulates. Our children and grandchildren will have to guard it for generations, and they will curse us for the greedy, short-sighted imbeciles we are.

Finally on the question of risk, I will take up Mr Vaughan's challenge, and dispose once and for all of the myth that nuclear power never killed anyone. Whether by accident or design, Mr Vaughan's phrasing of the issue (confining it to "civil reactor accidents") neatly glosses over a number of actual fatalities which have occurred in the nuclear programme. Mr Vaughan himself refers to deaths among workers at Windscale - but that of course is a reprocessing plant rather than a reactor. Similarly, deaths have occurred among Aldermaston workers, and of course there are the uranium miners to whom I have already referred. Turning to specific cases, in America, Joe Harding, who worked in an enrichment plant, developed horrible malformations before dying of a variety of cancers and a previously unknown form of pneumonia. Edward Gleason was just a truck driver who had the misfortune to handle a crate in transit that was leaking plutonium. It got into a cut on his hand, and he died of cancer after the amputation of one arm had failed to arrest the disease. Then three men died when the Idaho Falls reactor exploded: their bodies were so radioactive they had to be cut in half. Parts of them were buried in leadained coffins, the rest was incinerated inside the reactor, which of course can never be used again, but must still be guarded forever. But since the reactor was run by the military, you could say it does not fall within the phrase "civil reactor accidents". All the same, whether or not they were involved in civil reactor accidents, all these people have still been killed in the course of the nuclear power programme.

However, there are incidents which satisfy even the strict letter of Mr Vaughan's phrase. One happened in West Germany in 1974, at the Gundremmingen reactor. Two men died when a cloud of hot radioactive steam

escaped. They were soldered into zinc coffins for burial. Another such incident, of course, was Three Mile Island. For some reason it seems to have been accepted, not only by Messrs Melnyk and Vaughan, but even by Mr Sampson, that no-one suffered any harm in that fiasco, but this is not the case. Admittedly nobody died immediately, but that is not the way radiation works. In the six months after the accident, however, infant deaths within ten miles of the reactor had more than doubled compared with the same period in the previous year, and abnormalities among new born babies were five times greater there than in the rest of the country. That is just what has come to light already: bearing in mind the time cancers usually take to appear, it is quite possible that we haven't yet beard the last of Three Mile Island.

Apart from the dangers, there are as I said earlier many other objections to nuclear power, which I will briefly outline. First of all, the question which is so obvious it is often overlooked: do we need nuclear power anyway? There is a lot of nonsense talked about a looming energy gap due to oil shortages which only nuclear power can fill. Let us be clear on one thing: nuclear power can only produce electricity. You cannot put it in your petrol tank. So the question is, do we need more electricity? The answer, simply, is no. Electricity as a whole contributes only 14% of Britain's delivered energy, and nuclear power supplies only 1½%. The CEGB meanwhile has the capacity to generate 3% over peak electricity demand, and consumption of electricity has remained static for some years now. We just don't need any more.

Then there is the question of cost. With its present over-generating capacity the CEGB is seriously embarrassed by the government's programme to build yet more unnecessary power stations. Already the Board is in a cleft stick, having to repay massive capital loans for the cost of building the present reactors. With electricity demand now static, it risks depressing consumption even further if tariffs are significantly increased. The then Chairman of the CEGB, Sir Arthur Hawkings, described Britain's second generation AGR programme as "an economic catastrophe we must now repeat". For example the first AGR to be ordered, Dungeness B, is now ten years behind its scheduled completion date. It has cost about £500 million (having started with a budget of £89 million) and has not given us a single volt yet. As for the planned new PWR programme of ten rectors, these are supposed now to cost £1,500 million each. If they undergo the usual White Elephant Syndrome (like Dungeness B, Concorde etc.) the total costs at the end of it all just beggar imagination. Never has so little benefit been paid for at such a price. To add insult to injury, the government spends £2½ million of taxpayers' money each year just in publicity to "re-educate" the public into accepting the whole incredible deal.

It is relevant here to point out that, of all the possible fuels we could have picked upon, uranium is the one we do not have in this country. Nuclear power would leave us dependent upon expensive imports of rare uranium, in a world where more demands are going to be made upon the very limited available reserves. Most of our supplies at present come from Namibia - hardly one of the the more stable areas of the world. How much longer will Namibian uranium be available to us? Even if it is, how much longer will it last? The chances are that uranium will run out even before oil, and if we have then put all our eggs in the nuclear basket, we are going to look very silly.

Related to costs of course is the problem of the technology, which has been far from reliable. In other words, nuclear power is not only dangerous, expensive and unnecessary, it doesn't even work very well. Our first generation "Magnox" reactors are now quite literally cracking up. Every one of them has had to be shut down at one time or another, and of course the Magnox design (never popular abroad) has been abandoned by Britain. Since the AGR programme looks like being a washout, we now face the prospect of the PWR, i.e. the kind which distinguished itself at Three Mile Island. The now largely discredited Rasmussen Report will be remembered, if at all, as the document which considered the risk of such an accident and assessed it (just 5 years before it actually happened) at a million to one against.

Of course no human technology will ever be perfect, as Mr Melnyk pointed out. But whether you continue experimenting with the project will depend on a cost benefit analysis. In terms simply of hard cash, we know that the costs of nuclear power are massive, and the benefits at best insubstantial. If we take human costs into account the problem becomes even more tricky. How many cancers and stillbirths do you set against one more unnecessary nuclear reactor? Nor is it sufficient to say, as Mr Melnyk does with callous brutality, that it doesn't matter if people get cancer anyway, since they can always sue. Should Mr Melnyk ever have the misfortune to develop cancer himself, he may perhaps take a less cavalier view of the matter, but in any case in practice this statement is not really true. After all, how do you positively identify the source of a particular cancer? Over the past ten years the incidence of mycloid leukaemia in north Lancashire (the area downwind from Windscale) has doubled. The town with the highest incidence of leukaemia in England is Barrow-in-Furness. The connection is, morally and realistically, obvious: but how would an individual be able to prove in court where his particular cancer originated?

Mr Sampson's point about awareness of fallibility is valid. It all hinges on the concept of "acceptable risk". The greater the risk, the correspondingly greater must be the benefit. The worse the consequences of the supposed risk, the more remote must be the probability of its materialising. In the case of nuclear power, since the benefits are marginal, we should not have to risk very much for them. But the risks are enormous: therefore the possiblity of anyone suffering should be infinitesimal. Quite clearly, they are not. What we really require, bearing in mind that all technology is ultimately fallible, is a system which can fail - safely. Nuclear power on the other hand is a system which must at all costs be fail-safe, and of course, it is not.

I would just like to finish with a few words on the kind of society which would result from dependence upon nuclear power. The technology involved is by its nature, unbelievably expensive, highly technical, and suitable only for large-scale energy production. It is therefore elitist, elusive of democratic control, and tends to bolster up industrial agglomerations and enhance the power ol centralised bureaucracies (especially, of course, the power of central government).

Is this the kind of society you want? Already the Atomic Energy Authority controls the only legal private police force in the country. They carry arms at all times, and may arrest on suspicion. The Flowers Report stated that the presence of fissile material would make strict survellance measures necessary, including "the use of informers, infiltrators, wire tapping, checking on bank accounts and the opening of mail". Virtually a police state, in fact. How do you like the sound of it? It is all part and parcel of the Plutonium economy, the natural consequence of choosing the nuclear option. We are getting deeper into it every year, but we still have the choice, for a little while longer.