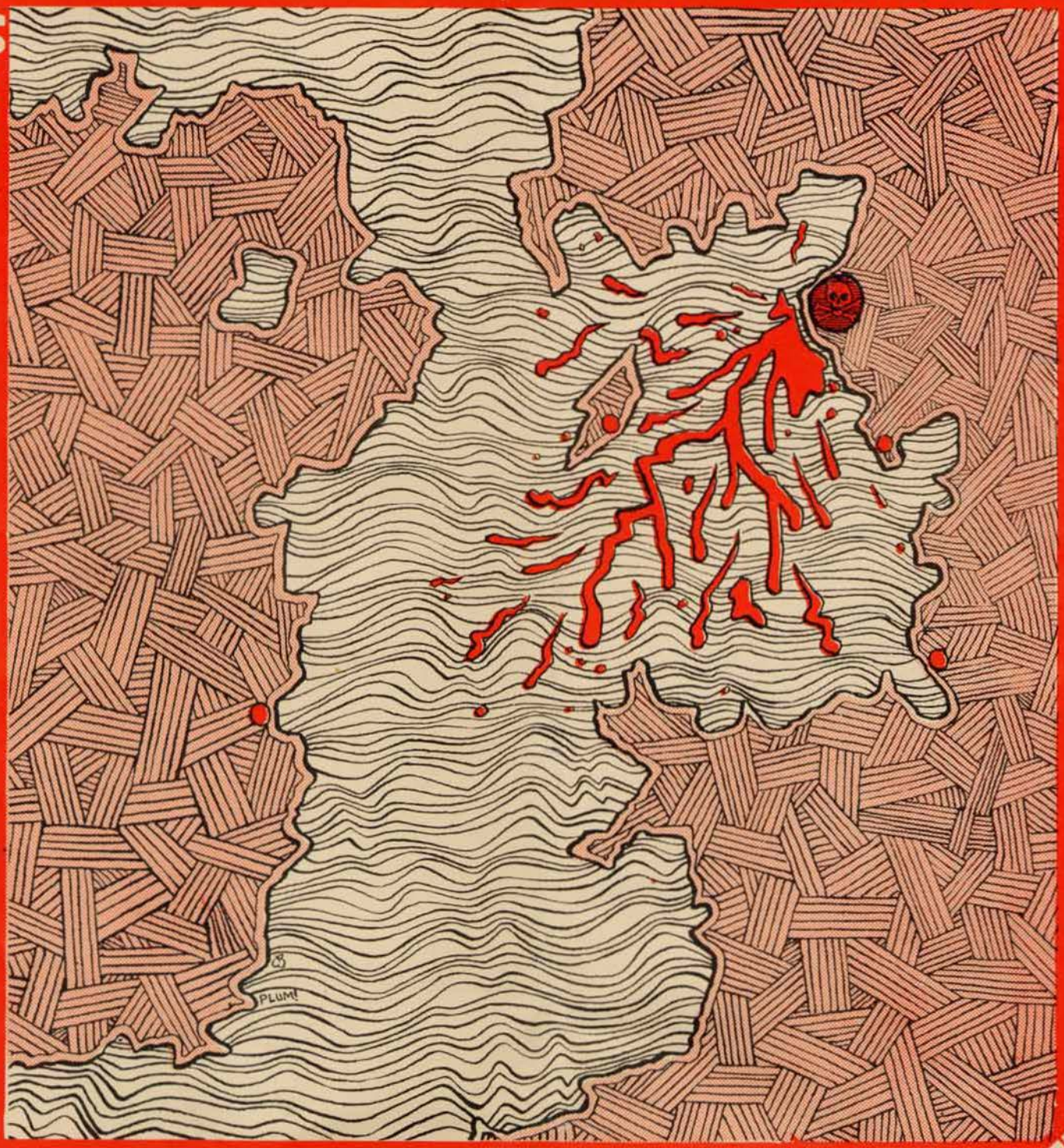
SCRAM

NUCLEAR POWER? NO THANKS

The Anti Nuclear & Safe Energy Journal No 38.

40 pence



Close Windscale

TRIDENT Broadsheet FREE

Contents

This magazine is produced for the Anti-Nuclear, Safe Energy and Disarmament movements in Britain by the Scottish Campaign to Resist the Atomic Menace.

SCRAM, 11 Forth Street, Edinburgh 1. [031 557 4283]. We welcome contributions.

Typesetting by Joy Leys at S.C.P., 30 Grindlay St., Edinburgh 3. (031 229 3574). Distribution by Scottish and Northern Books Distribution Co-op. 48a Hamilton Pl., Edinburgh 3. (031 225 4950), and by Full Time Distribution, 17 Balfe St. London N1. (01 837 1460).

Comment

It looks like the dumping of nuclear waste at sea has been effectively thwarted this year. Apart from the UK, all the nuclear powers have decided to abide by the London Dumping Convention resolutuion calling for a two year moratorium. It has even been suggested that the days of sea disposal are over.

But we must not allow ourselves to become complacent.

As our article below points out, the hunt is on for land-based sites for nuclear dumps. In the usual manner of the nuclear industry, the public has been kept in the dark whilst NIREX investigated 150 potential sites, two of which will be announced soon. The 'lucky' sites will be the recipients of either 500,000 cubic metres of 'short-lived' waste or 80,000 cubic metres of 'longer-lived' waste. There will of course be a public inquiry!

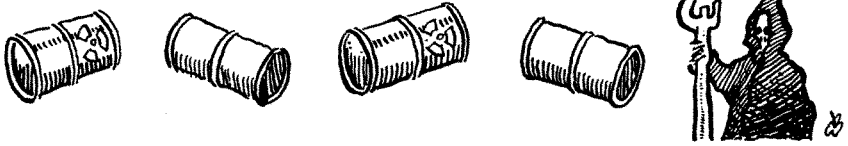
On page 7 we set out the background to the campaign for compensation for the veterans of the UK atomic tests in the Pacific in the '50's. Thousands of military personnel and civilians have died or are suffering from illnesses directly related to their exposure during nuclear testing. The Official response is a catalogue of deception, cynical disregard for safety and statistical manipulation.

The story on page 3, by Peter Wilkinson of Greenpeace, describes the "most radioactive sea in the world". British Nuclear Fuels Limited are pumping volumes of effluent into the Irish Sea which would not be permissible anywhere else in the world. Greenpeace are planning a campaign against this unnecessary pollution during the autumn. The health effects of Windscale are similar to those of the atomic veterans yet the authorities choose to ignore them.

In the centre of the Journal we enclose a special four-page broadsheet written by the Anti-Trident Campaign. It explains how Trident would be a really massive unilateral nuclear escalation by Britain, and gives the reasons why you should oppose it.

Tricia Benzie, of the Anti-Trident Campaign, has contributed, on page 6 a story relating the anti-Trident activities in America and the workplace initiatives for conversion of the weapons industries to provide socially useful work.

NIREXploits.



NIREX (the Nuclear Industry Radioactive Waste Executive) is expected to announce "before the end of the year" two sites they have chosen, from 150 investigated, for the disposal of intermediate level nuclear waste on land. One site is designed for the short-lived waste. It will apparently take the form of a 20 metres deep trench large enough to take about 500,000 cubic metres of waste; the present trench, at Drigg in Cumbria, is becoming full. The other site to be announced is to be a 300 metres deep cavern into which 80,000 cubic metres of longer-lived waste will be dumped.

NIREX is a 'public' consortium comprising: the Central Electricity Generating Board, South of Scotland Electricity Board, British Nuclear Fuels Limited and UK Atomic Energy Authority. Five private groups are also involved in the land-based dumping programme: ICI, Wimpey-Gilbert, NEI Waste Treatment, Fairmac (a partnership of Fairey and Tarmac) and GIS Waste Services. (Watch out for these companies' activities). Although no firm announcement has been made, the make-up of the research group has caused some people to suspect particular locations. Two sites which seem most likely are both owned by ICI: one in their salt mine in Cheshire, and the other in the anhydrite mine in Cleveland. Either (or both) of these sites may be earmarked as the 'cavern dump'.

Other sites have also been rumoured, particularly in Scotland. It is thought that the idea of using the on-site capacity of **Hunterston A** and **Torness** to store the UK's low level waste has been ditched, but the Institute of Geological Sciences are adamant in their suggestion that **Dounreay** is Britain's best site for high level waste.

The UKAEA has stressed that there is no connection between the Union ban on sea dumping and the accelerated search for land-based sites, in fact Maurice Ginniff of NIREX has said that "if we had land sites we'd still be pressing for the sea dump because it's our duty to use the most safe and economic route for each waste stream". He states that it is more expensive to dump on land, presumably because it requires monitoring, something which is singularly lacking in sea dumping.

It is expected that the criteria for these dumps are to be published at the same time as the chosen sites. The Town and Country Planning Association see this as as a method to foil public debate; we need to know these criteria, as well as the full list of 150 potential sites, **before** the implications of dumping nuclear waste on land can be fully assessed.

As mentioned above, low and intermediate level wastes are not the industry's only problem; it is intended that the much more dangerous **high level waste** (the residue left after reprocessing spent fuel), will also have to be disposed of soon. The nuclear industries in Sweden and Finland have recently applied for licences from their Governments to construct high level waste repositories (see news pages) but they do not intend to reprocess their spent fuel - instead it will simply be dumped after a period of five years' cooling. The suggestion that high level waste is soon to be dumped has come as a shock to anti-dumping groups, considering that a Government statement in 1981 promised that it will be stored at Windscale for "at least 50 years" before anything further is done to it.

Understandably, local residents are very frightened of the possibility of a nuclear waste dump in their 'back yard', especially when they hear of the waste dump catastrophe in the Ural mountains of the Soviet Union in 1958. Several hundred people died immediately and huge tracts of land will remain uninhabitable for centuries.

We must make sure that accidents of this sort do not happen again, anywhere. While this year's sea dump has been postponed we shouldn't get complacent. Only when no more deadly waste is being produced, will we accept that some permanent solution must be found for its disposal. In the meantime we strongly oppose all irretrievable disposal of radioactive wastes.

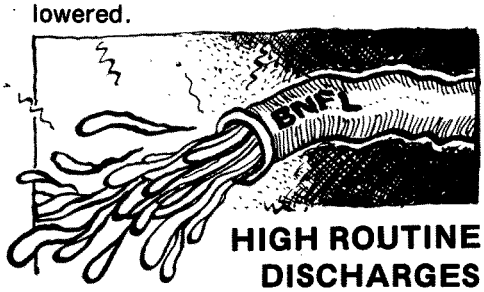
WINDSCALE -close it down!

What is the truth behind the fears of Cumbrians about the impact the giant Windscale complex is having on their lives? Are local people like Joe Stephenson, an inshore fisherman from Askam, justified in their refusal to eat the product of their own labour?

Is Windscale responsible in part or whole for the apparent high incidence of heart-disease and cancer which seems to be affecting 30 and 40 year-olds indiscriminately? Greenpeace are campaigning specifically on Windscale this autumn. Peter Wilkinson reports:-

There is more to the Windscale story than cold scientific "analyses of pathways for radioactive contamination" or statistical calculations of how many deaths are attributable to the reprocessing factory. The very existence of Windscale is a threat to the lives of tens of thousands of people in the north of England, as pointed out in a report prepared for CND by Peter Taylor of Political Ecology Research Group (PERG).

The amount of radioactivity locked up in Windscale is unimaginable and any release, through war, accident or sabotage would render whole areas of land uninhabitable for decades, if not centuries, and would lead to the deaths of thousands. The psychological impact of Windscale on the lives of people in the area is impossible to assess but it is a well known fact that if people live under stress, their resistance to all manner of diseases is lowered.



HIGH ROUTINE DISCHARGES

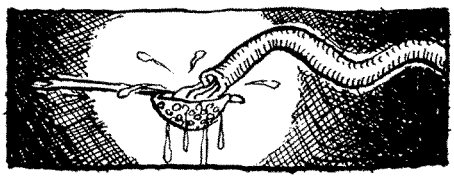
But it is the routine radioactive discharges from the plant which have been the subject of Greenpeace's campaign for the past four years. During that period, we have sought to take on the nuclear industry in its own back-yard using weapons which they are very fond of wielding against us - scientific analysis. Whatever the white-coated scientists say, a few facts are immutable.

Windscale discharges volumes of radioactive effluent from three pipelines into the Irish Sea which would not be permissible under US, French, Japanese or any other national legislation. Yes, the discharges **are** within international limits but this country translates those limits as loosely as it can. In Japan, for instance, the reprocessing factory at Toki-maru has a licence to discharge 0.6 curies of 'alpha emitters'. In France, Cap de la Hague discharges something like 9 curies of 'alpha emitters' per annum.

The Windscale limit is 4000 curies although only a quarter of this upper limit is normally utilised. The 16000+ curies of plutonium which has thus far been discharged from the plant translates to about ¼ tonne of plutonium which is lying, it is assumed, on the sediments of the Irish Sea. Can any civilised and cautious industry really justify the casual pumping of a known caricinogen of plutonium's toxicity into an enclosed, shallow and heavily fished waterway such as the Irish Sea?

Among the nuclides discharged from Windscale, radioactive caesium is the most easily traceable in the marine environment. The Ministry of Agriculture, Fisheries and Foods publish a glossy book which, among other things, traces the dispersal of caesium over the years. Contamination is now detectable in the coastal waters of Belgium, Holland, Denmark, Sweden, Norway, Russia and is now being found in the Arctic waters around Greenland.

Quite apart from any health impact this contamination is having on distant populations, the very principle of allowing a national industry which for the most part only 'benefits' this country to contaminate the national territory of others, let alone the international waters through which the pollution migrates, is nothing short of a scandal.



SOME REDUCTIONS... ... MORE ACHIEVABLE

Caesium discharges are being slowly reduced. One new attempt to lower them has led to the design and construction of the SIXEP (Site Ion-Exchange Effluent Plant) which will start operating in a few years. At a meeting last year with the Dept. of the Environment, we asked them what the expected performance of the SIXEP plant would be. They said that as the plant was not operating yet, it was impossible to predict its performance. In other words, the DoE will ask BNFL to advise them as to the reductions the plant is capable of and then issue the necessary license. The plant will not reduce alpha-emitters.

The tragedy of all this is the fact that discharges from Windscale could be reduced to levels which are comparable to the Japanese or the French standards. The technology exists; all that is lacking is the will to introduce a system based on the principle of 'as low as technically achievable' (ALATA) instead of the current and outdated 'as low as reasonably achievable' (ALARA).

Estimating the impact the discharges are having on human health, it can be shown that **statistically** (not medically, as BNFL - British Nuclear Fuel Limited, are so keen to point out at every opportunity) the annual discharges claim the lives of between 1 and 10 people through cancer fatalities, create between 1 and 10 non-fatal cancers, between 1 and 10 serious genetic defects and an unknown number of minor genetic defects. The wide variation in these figures reflects the differing opinions of different scientific schools of thought and the lack of definitive knowledge on the issue of radiation exposure.

Using the monetary yardstick for health impact employed widely in the US, it can be shown that the discharges from Windscale create $13 million-worth of health impact in the UK and, as most of the contamination is exported to unwitting European neighbours, $17 million-worth of damage in Europe. Windscale has cost an estimated $300 million-worth of sickness since it began operations.

CLEAN UP IRISH SEA!

During the tour Greenpeace carried out in June, visiting five Irish Sea ports with its vessel, 'Cedarlea', the welcome we received in Dublin stands out as a memorable and moving occasion. Five hundred people welcomed us at the quayside and showered the ship with flowers. The Minister for the Environment was there to greet Greenpeace and an invitation to formally present our case to the Irish Dail was made.

At the public meeting in the City that evening, it was standing room only as 700+ crammed the theatre to listen, contribute and applaud. There is now a network of groups established along the Irish Sea border from Haverfordwest to Barrow and beyond, all of which are committed to a co-ordinated plan of action to force BNFL to clean up or close up their Windscale dustbin. Few would disagree that the latter would be preferable.

More information is set out in their excellent pamphlet - **The Windscale File,** available for £2 + 20p post from Greenpeace, 36 Graham Street, London N1. (01-251-3020).

One Week Nuke

The Central Electricity Generating Board's £520 million nuclear power station at Hartlepool has been shut down only a week after it began producing electricity. The station has had innumerable problems since construction started, and is now 9 years behind schedule and has cost five times the original estimated estimate.

The shut down was caused by a leak in the turbine part of the plant (not the nuclear part they assure us!) discovered at the beginning of August. "You get these little leaks coming along from time to time" a CEGB spokesperson said.

Seal sands, a 400 acre area full of natural wildlife which separates the nuclear plant from a chemical plant, is proposed as a site for a Petrochemicals plant.... Good idea these time bombs aren't they???

Indian Cruise... & Chinese Polaris

India's Aeronautical Development Establishment is working on a cruise missile that could attack Pakistani targets with high explosives or nuclear warheads. The weapon is known as the Pilotless Target Aircraft and the first type will tow aerial targets for gun and missile practice. At least one European company working on the project admits privately however, that the real aim of the missile is to develop cruise.

An Indian government owned aerospace company is to start building the PTA in 1987. The prototype PTA, powered by French-made jet engines, will begin 18 months of flight trials early next year. Like the American cruise, it can be launched from the air or from small ground vehicles. The missile will provide a great "advantage" to the Indian strategic war-planning in that it cannot be shot down by aircraft and is very accurate. India exploded a nuclear test in 1974, and the possibilities of nuclear warheads in cruise missiles cannot be very remote.

N. Sc. 4.11.83.

China has developed a nuclear missile submarine and now joins the United States, Soviet Union, France and Britain in having strategic missile submarines. The new class of weaponry, known as the Xia, has apparently taken the Chinese seventeen years to develop and only now has it's existence been confirmed. It is nuclear-powered, allowing it to stay underwater indefinitely and has the same weight, shape and number of missiles as the British Polaris.

The missile has been tested twice in 1982, the first from Huluato in the yellow sea fired a range of 1800 miles and the second was said to also have been "successful". In 1981, a submerged submarine exploded while trying to fire a missile underwater, presumably a test of the Xia missile, killing the entire crew of 100.

Observer 21.8.83

Saskaturanium

The Japanese Power and Nuclear Fuel Development Corporation (DONEN) is to participate in an international venture to mine uranium at Dawn Lake in **Saskatchewan**, Canada. Other partners are the Saskatchewan Mining and Development Company and the French Nuclear Corporation (Cogema). Two US firms dropped out because current prices for uranium are low, demand is stagnant and interest rates are high. Japan was invited to join the deal, because it is the biggest importer of Canadian uranium and can use interest-free government money. DONEN has three other mining rights in Canada and says that although demand is stagnant now, the situation will have changed by the late 1990's.

"RADON KILLS" - OFFICIAL

Anti-uranium activists in Saskatchewan have recently had their concerns justified by the publication of a report entitled **"Risk Estimates for Health Effects of Alpha Radiation"**, published by Canada's Atomic Energy Control Board (AECB). The report evaluates uranium mining in a number of different countries, and shows beyond doubt that low-level radiation interacts with other factors such as smoking, dust exposure and age to markedly increase the chances of cancer in miners. It concludes that as many as sixteen out of every hundred miners have a high probability of dying from cancer if they smoke. The risk is lower for non-smokers.

For Saskatchewan miners, particularly those working at the soon-to-be-opened Key Lake Mine, the implications of this report are serious. Key Lake is one of the world's most concentrated ore bodies, so the hazard of radon gas exposure is expected to be particularly high.

"Risk Estimates for Health Effects of Alpha Radiation" available from Atomic Energy Control Board, PO Box 1046, Ottawa, Canada KIP 5S9.

WISE, 3 & 24.5.83

Europe Breeding Together

Plans have been announced for a joint European project to develop a commercially viable fast breeder reactor. The nations involved will be Britain, France, Italy, West Germany, Belgium and the Netherlands.

The French already have a 1200 MW fast reactor, 'Superphenix', which they built in collaboration with Italy and West Germany. Britain, too, has a 250 MW fast breeder at Dounreay which was the first of its kind when it went into operation in 1974. Doubts existed as to the future of Dounreay when its initial test programme was completed in 1981.

This pooling of knowledge is of great benefit to the countries concerned since both reactors have faced technical and financial problems as has the German prototype at Kalkar.

The siting of the new reactor has not been decided but it seems most likely to be on French soil as they are regarded as the leaders in fast breeder technology. Three potential British sites can be discounted; Dounreay, Caithness is too remote (that's why the British one is there), and at Orfordness, Suffolk and Winfrith, Dorset there would be stiff local opposition.

International co-operation over fast breeder research has previously been beset by clashes of interest. President Carter stopped American involvement as he regarded it as unnecessary proliferation even though American waste was used at Dounreay; also the Japanese have never favoured full-scale co-operation. A joint European venture was first mooted in 1980 but it suffered from traditional Anglo-French bickering.

Heavy Water

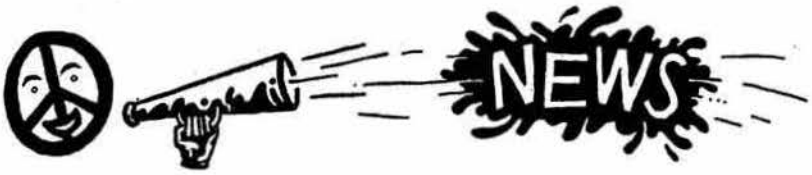
The U.S. government has recommenced nuclear trade with Argentina by allowing a West German company to sell this material, which was manufactured in America, to Argentina's Comision National de Energia Atomica (CNEA). This trade marks a distinct change in U.S. policy, being the first nuclear deal between the two countries since the mid 1970's. It provides an unnecessary escalation in nuclear trade, and therefore by helping to spread nuclear energy makes more possible the escalation of nuclear weapons.

Whilst allowing the two power plants, Atucha I and Embalse to be monitored by international inspectors; other facilities, including a reprocessing plant to extract plutonium from spent fuel, have been constructed and the inspectors prevented from gaining access to these premises. This fact alone suggests that the transfer of nuclear technology to the Third World should be treated with extreme caution.

CANDU Leaks

Canada's "non-stop" CANDU nuclear reactor near Toronto has had three of it's five reactors shut down within a week. A leak of radioactive heavy water on 1st August caused the first one to stop. Three days later one of the tubes in another reactor leaked radioactive water into nearby Ontario. The leak has not been found. The third accident resulted in a cloud of water vapour being spread over the town of Pickering. A spokesperson for the owner Ontario Hydro, said the vapour was "cleaner than the water you drink".

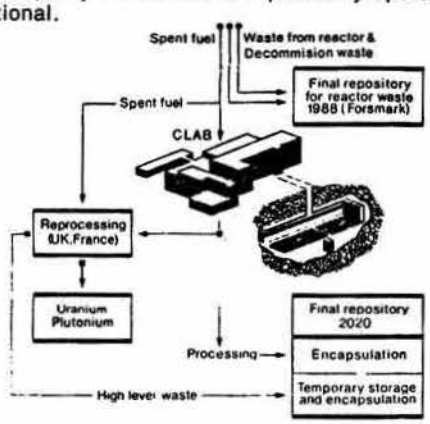
How reassuring!! **N. Sc. 11.8.83**



CLAByrinth

The Swedish and Finnish nuclear industries are expecting their respective Governments to grant licences for them to proceed with construction of high level nuclear waste dumps. These developments are seen as attempts to keep their nuclear industries alive for the next 30 years.

Both countries intend to dispose of the spent fuel assemblies without reprocessing, unlike most European countries. After a 40 year cooling period under water in underground caverns, the assemblies are to be transported to permanent respositories. The Swedish 'interim' storage facility is known as CLAB. It is expected to cost £120 million and is scheduled to be ready by 1985. Sweden's final repository is designed to take the spent fuel from 12 reactors, only 10 of which are presently operational.



A new Swedish law demands that, before a new nuclear station may be commissioned, the operator must **"prove to the satisfaction of the Government that there exists one method to finally dispose of waste or used fuel"**. The publication of the KBS-3 waste disposal report comes as no surprise, therefore, when one realises that the final two reactors in the series are due for commissioning next year!

The spent fuel is to be packed in copper canisters. Because the canisters are made of metal, the 500m deep repository must be kept free of groundwater to prevent corrosion. Swedish corrosion experts believe that they can guarantee the integrity of the cannisters for "at least one, probably several millions of years!"

Financial Times, 18.8.83 & 5.9.83

Railroader

A bus that can run on both road and rail is due to receive help from the Greater London Council. The £230,000 to be invested in the bus will go towards developing the production process to cut the cost of rail vehicles thus keeping branch lines open.

Road-rail vehicle, a socially useful product

The idea originally came from the workers at Lucas Aerospace. Faced with the threat of unemployment they established a plan to build socially useful alternative products instead of military ones. Government and company priorities, however, curtailed their attempts.

British rail has developed a similar bus but it cannot run on roads and consists of considerably less bus parts. The council plans to fund the building of a prototype, testing it and to carry out various study's such as the maximum load for different wheels and experimenting with suspensions, etc.

The bus has a few hurdles to cross before it can become a reality. It has to meet railway design standards to ensure that during a crash it will not fold up and crush it's occupants. Another problem is transferring the bus from road to rail, the process is very labour-intensive which could contradict the savings made on the vehicle itself. There's 3 million people on the dole who would gladly take jobs with this socially useful product but the lack of future funds may result in an end to the project. Indeed the government has pledged to abolish the GLC.

N. Sc. 18.11.83

Wastelines

Whitehall is said to be "furious" that confidential minutes of a private meeting, held just two weeks before last February's London Dumping Convention, have been leaked to Greenpeace and Friends of the Earth. The meeting, attended by representatives of the Ministries of Defence and Agriculture (MoD and MAFF), Rolls-Royce and the Atomic Weapons Research Establishment at Aldermaston, discussed proposals for including plutonium in the UK's 'low level' sea dumping programme.

Hugh Neilson of the MAFF, who chaired the meeting, was worried about the proposals: "One of the problems is that the inclusion of a small number of new, larger-sized packages would attract attention and might lead to awkward questions about the content and origin of the packages". Each of these "larger packages" would contain up to 500g of plutonium, mostly in contaminated clothing and equipment from Aldermaston. This would it seems contravene international regulations.

At a press conference on 1st September, Pete Wilkinson of Greenpeace pointed out that it is "only the fear of discovery rather than the moral doubts that seem to restrain them from dumping high level waste in the sea". Jim Slater of the National Union of Seamen also received the minutes, and he understands that the MoD are considering "smuggling" waste into their dockyards and using the Navy to dump it at sea to attempt to evade the Seafarers' blockade. He moved a resolution at the Trades Union Congress, calling for the Government to stop sea dumping and investigate long-term alternatives. It was passed overwhelmingly despite opposition from the Amalgamated Union of Engineering Workers and the Electrical and Plumbing Trades Union.

• • • • • • • • • •

According to David Fishlock, Science Editor of the Financial Times, of the 4,000 tonnes of low level waste which the UK planned to be dumped at sea this year, roughly "one third comes from the Ministry of Defence. The rest divides about equally between hospitals and manufacturing industry and the four partners of NIREX" (FT, 2.9.83). An MoD spokesperson has a different idea: "There is no way we are involved in the current sea disposal... other than that some of the waste comes from MoD establishments" and "... compared with the energy industry's waste, our's is a drop in the ocean". (sic) (Glasgow Herald, 3.9.83).

HELP STOP NUCLEAR DUMPING

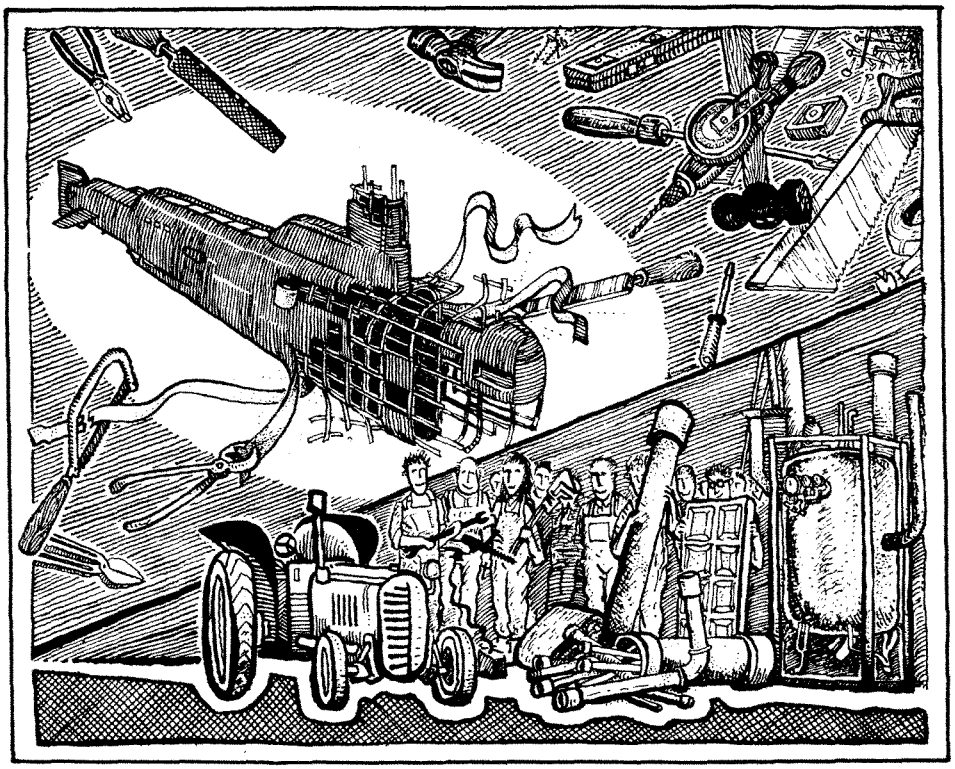
Order badges and car stickers and Barry Moore's single "Deadly Potions" from HOPE, The Anchor, Bantry, County Cork, Ireland.

Badges: 30p(+26p postage); 10 for £2.50; 100 for £20.00.
Stickers: 45p(+26p); 10 for £3.50. 100 for £30.00.
Single: £1.50(+30p); bulk rates on request.

Pagans Against Nukes (P.A.N.) seeks to unite all who reverence the Earth in political and magical action to banish all nuclear technology and re-establish a culture that lives in harmony with Her, that the Earth be Greened Anew.

We publish a quarterly magazine, 'The Pipes of PAN', subscription (UK) £2 per year.

Contact: 69 Cranbury Road, Reading, Berkshire.



Tractors not Trident

In the past years several American anti-nuclear activists have come across to Britain "to learn" from our groups, whom they regard as the experts. However, as Tricia Benzie of the Anti-Trident Campaign reports here, some of the anti-Trident groups in the US have a great deal of campaigning experience in their own right, and a philosophy we would do well to study:

Anti-Trident groups in the US have been going for at least 10 years, since the 1973 go-ahead was given for Trident. Many of these groups are based on Christian witness, with a strong commitment to nonviolent direct action. This is blended with a pragmatic approach to campaigning; a desire to 'fit in' to the local community and to use arguments most suited to the local audience - strategic, environmental, economic or moral.

A key figure in the anti-Trident movement is Robert Aldridge (see review of his book **"First Strike"**, page 10). He helped set up the Pacific Life Community in California after he quit Lockheed in 1974. The group, which now focusses mainly on Trident, was founded during the **"Stop the B1 Bomber"** campaign. Aldridge says that the "PLC founders considered it hypocritical for people living in the Santa Clara Valley to only oppose the B1 when the deadly Trident submarine was being conceived right in their back yard."

CONVENTIONAL CAMPAIGNING AT FIRST

The group began using 'conventional' campaigning techniques: distributing leaflets to Lockheed employees; producing slide shows for circulation to other groups; and organising seminars and workshops in the universities and churches. They sponsored visits from Hiroshima and Nagasaki survivors and experts in international law. They recently helped form the **Mid Peninsula Conversion Project** (now a leading research organisation) and have even organised meetings with Lockheed management, encouraging other groups to do the same.

Around Seattle on the north west coast, Jim and Shelley Douglass are campaigning against the Trident Submarine base at Bangor. Jim Douglass still marvels at the way they managed to raise enough money to buyd a piece of land right next door to the base - only a fence separates them. They named their new property **"Ground Zero for Nonviolent Action"**. Recognising that their's would be a long term witness, the group has worked hard to 'belong' to the area:-

"When we started, there was a great resentment from the locals. They didn't like us trying to face them with the truths about Trident. The fact that we were strangers increased that resentment."

However, they've now developed a rapport through a patient, uncondemning approach, and they have concentrated on economic arguments as well as moral ones. For several years the Base has been leafleted regularly - sometimes with a different leaflet each week - and some workers, including the Chaplain, have left the Base to join Ground Zero's struggle.

The Church has influenced, and followed, groups like Ground Zero. Archbishop Raymond Hunthausen, who refuses to pay the 50% military portion of his tax bill, was a strong influence on Jim and Shelley and the Bishop of Texas has urged his congregation not to work for the nuclear arms industry. Considering that much of his flock is employed by the Pantex Corporation (Trident component manufacturers), it's more than just a gesture. No doubt because of this influence, whole congregations have been to Bangor to hold services and vigils outside the Base.

EVOLVING NEW TACTICS

More recently, when it was felt that 'conventional' methods alone were not going to stop Trident, groups began campaigns of direct action and civil disobedience. Last year's sea blockade of the new **Ohio** submarine by Ground Zero was just one example. Perhaps the most exciting and successful direct action was the 'Tracks Campaign'.

After several years' careful research, Ground Zero was able to plot the entire route followed by rail convoys with Trident parts from Texas to Bangor, and supporters publicised the convoys along the Tracks. Local residents and councils were horrified and furious that they weren't informed about the passage of dangerous nuclear weapons through **their** towns. Finally, this year one missile convoy was met with demonstrations in every town along its route, and Ground Zero staged a blockade when it arrived at the Base. The media took hold of the story and, at last, the anti-Trident struggle was big national news.

As one would expect, blockades of missile convoys and submarines carry heavy prison sentences - as long as a year - so careful preparations are made for such actions. Groups call expert witnesses to testify in court about international law and the need to break the law to prevent a greater harm. The groups also prepare very thoroughly for long prison terms. Interestingly, a judge hit the headlines last month by declaring sympathy with Ground Zero's aims (a similar statement was made recently by the Sheriff sentencing Faslane peace campers).

Unlike British protests, however, Ground Zero has never blockaded the Trident workers, and even large-scale actions are always seen as symbolic. Also symbolic but far more 'direct' was last year's east coast action by "Trident Nein". They entered the General Dynamics works in Conneticut and left their mark on a half-finished Trident submarine, with hammers and red paint: "USS Auschwitz".

SOCIALLY-USEFUL JOBS

Organisations promoting ideas for conversion to socially useful production are plentiful on the east coast; academic projects and pressure groups. Leaflets have been produced for the public, with simple economic comparisons such as half a Trident submarine = 360 health centres, or the entire US Federal education budget could be funded by the cost of one Trident.

"Jobs with Peace" groups, in at least 15 cities, work with local community groups and trades unions. In Atlanta, Georgia, the Civil Rights Union is campaigning along these lines against the King's Bay Trident Servicing Base, where US and British missiles will be maintained.

Anti-Trident activity hasn't been confined to the mainland, a proposed Trident base is threatening Pacific Islanders in the Republic of Belau, despite three votes for a nuclear-free constitution. The islanders are actively supported by the US groups and a Campaign for a Nuclear Free and Independent Pacific is gathering momentum.

The British Anti-Trident Campaign is in contact with many of these groups and visits from Jim Douglass and Gene Guererro, of Atlanta's Jobs with Peace Campaign have produced fresh ideas and new campaigning perspectives. Many of these ideas will be discussed at the major Anti-Trident Convention in Manchester next February.

Contact: Anti-Trident Campaign, 420 Sauchiehall Street, Glasgow 2. (041-332-3141).

The Atomic Legatees

The Ministry of Defence is covering up the ill-effects caused by early British Atomic Bomb tests, say ex-servicemen who witnessed them. The newly-formed British Nuclear Tests Veterans Association also alleges that medical records have been tampered with, and they say that the survey of veterans announced by the Government this spring will not be truly independent.

Chairperson of the Association, Ken McGinley, who was invalided out of the Royal Engineers in 1959 with radiation-related illnesses, addressed a public meeting in Edinburgh on 17th August. Steve Martin reports:-

At the meeting, sponsored by SCRAM and seven other local peace groups, Mr. McGinley gave an account of his harrowing experience of five nuclear tests on Christmas Island in 1958, and the effects they have had on his health:

"You could see all your bones in your hands like an X-ray, everything was so bright. The heat was like a blowtorch at your back and many of us were thrown by the blast. We were sitting there stunned and some boys broke down crying and others just looked around in a dazed fashion. After about 15 minutes I had diarrhoea and everything emptied out of my stomach. This happened to many of the men."

Ever since then Ken has been ill; he suffers from haemorrhaging, dizzy spells, eyesight problems, skin disorders and pains in his bones. He has been unable to have children and was forced to leave his job as a shop manager, three years ago.

EARLY TESTS: DIRTY

Since 1945, up until December last year, 1375 nuclear warheads have been exploded; 1200 by the USA and the USSR, and 175 by China, France, India and the UK. Since the Partial Test Ban Treaty of 1963 (which prohibited atmospheric but allowed underground tests) the annual average for tests has been 44; in 1982 this figure was exceeded by 10 - there were 54 tests in an extremely intensive year for weapons developments.

However, it is the tests prior to the PTBT in 1963 which has caused the recent controversy, since it is radioactivity from these atmospheric tests which appears to be the cause of serious health problems experienced by 'atomic veterans', a group which must also include civilians.

The British Nuclear Test Veterans Association was formed in May of this year following wide coverage in the Press, and particularly BBC's 'Nationwide' programme, over the past 12 months. The Association believes that it will be able to take the first compensation case to court in three year's time. During this time the BNTVA is trying to contact as many people who were present at the tests as possible. To achieve this, a nationwide 'crusade' is being launched which, following the Edinburgh meeting, continues with a meeting in Newcastle on 15th September, one in Yorkshire in October/November, and then on through England and Wales.

RADIATION-RELATED ILLNESSES

From 1952 to 1958 the UK tested 20 nuclear bombs in Australia and Christmas Island in the Pacific Ocean and it is thought that up to 12,000 servicemen and civilians were involved. Up to date over 600 men have been contacted, and more than 150 ex-servicemen have either died from cancer or are suffering from illnesses which may be radiation-related. The Australian Government has already started a survey of 9,000 servicemen and civilians who were involved and have announced an appeal for anyone who feels they may have been affected to come forward.

The British Government have launched a survey which will take more than two years to complete. David Alton MP (Liverpool Edgehill, Liberal) has accused the Ministry of Defence of deliberately increasing the sample size - from 12,000 to 20,000 - in order to reduce the statistical significance of any cancers discovered; Ken McGinley puts it more bluntly - the MoD are "trying to rig the figures".

Speaking on the same platform as Ken McGinley, in Edinburgh, was Andrew Hewitt, who works with People for Nuclear Disarmament (PND) in Australia. Andrew reported on the anti-nuclear movement in Australia and the widespread opposition to both 'civil' and military nuclear technologies. He was able to elaborate on Ken McGinley's account of the early British tests from an Australian perspective, especially the way in which aboriginal peoples have been affected. Britain carried out 12 tests in Australia between October '52 and '57; three over the Monte Bello Islands, off the coast of Western Australia; two at a site known as Emu, about 150 miles north of Maralinga; and the remainder at Maralinga (an aboriginal word meaning "Field of Thunder").

PRACTICALLY NO PROTECTION

Before the tests, the only warning to the local population was signs written in **English!** telling the nomadic peoples to stay clear. Many cases have since been reported of servicemen finding groups of aborigines covered in sores sitting in contaminated areas after the tests. As Ken pointed out, this lack of concern for the native peoples is not surprising when one considers how much protection the servicemen, and even the scientists and support crews, were afforded. What little protection there was amounted to rayon overalls and gasmasks which, owing to the intense heat in the Australian desert, had to be removed regularly to allow the men to breathe, and to let the perspiration flow. Observers at a distance were dressed in only shorts and berets, and were told to turn their backs to the blast, "and you will be alright".

VETERANS SUE U.S. GOVT.

In the USA and Australia, cases have already been taken to court. A case involving 24 plaintiffs, only one third of whom are still alive and the remainder are represented by relatives, has been heard in the USA and a judgement is still awaited. This case is seen as laying the groundwork for the other 1,168 suits for compensation which have already been filed, all of which come from civilians who lived downwind of the US tests in the Nevada desert during the 1950's and '60's. Their claims amount to more than $2 billion. In January an Australian airman was awarded A$300,000 by a Sydney court where it was agreed that his cancer was due to his service at Maralinga.

The British authorities are not so sympathetic to the atomic veterans' case. Dr. Alice Stewart of Birmingham University's Department of Social Medicine has analysed some of the data presented by Ken McGinley and 'Nationwide' and has discovered 27 men from the sample who have died of blood cancers including leukaemia and lymphona. The expected number of deaths from these kinds of cancers is only 17 and this "abnormally high incidence" could be due to a much higher radiation risk than had been previously expected. Six claims for compensation have been rejected by the Ministry of Defence during the last decade because, they say "in no case had there been any evidence of exposure to nuclear radiation significantly above.... background level, or that cancer arose from other than natural causes."

BAN ALL "TESTS"

SCRAM believes it's important to publicise the effects of these nuclear weapons tests for several reasons. Firstly it will help develop a better understanding of the long-term effects of "harmless" low doses of radiation. Secondly it will bring home to the public the fact that the citizens of Hiroshima and Nagasaki are by no means the only victims of nuclear weapons. Thousands more have died and will die in the vicious race to perfect ever more lethal weapons of mass destruction. For this reason we strongly support the call for a Complete Test-Ban Treaty (CTBT).

Most immediately though, if you know of anyone who was forced into the position of human guinea pig like Ken, or if you would like to make a donation to **BNTVA**, contact **Ken McGinley, Pitcairlie House, East Bay, Dunoon, Argyllshire.**

APPROPRIATE TECHNOLOGY

Giant buys into CHP

The economics of co-generation (combined heat and power) is beginning to filter through to big business. General Electric, the US heavy electrical group, are to take a 49% stake in the new Bayou co-generation plant in Houston, Texas.

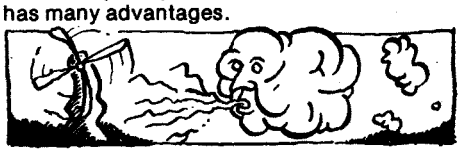
The $100m facility will serve as an energy centre for six industrial plants. It is rated at 300MW and will begin producing electricity and 1.4m lb of steam per hour late next year. The steam will be used for oxygen, nitrogen and argon production by Big Three Industries (who own 51% of the unit). Extra steam will be distributed to nearby chemical works.

Financial Times, 8.9.83

Wagner's Wind

Dr. Gunther Wagner, a German engineer, has developed a new design of wind power machine which he claims will only cost one-fith as much as conventional ones. The design encompasses cheaper blades and heavy gearing but because it is based on the ground without a tower it requires blades almost twice as long as other designs. The rotor consists of two blades at an angle of 110° to each other, rotating about an axis raised 55° from ground level.

Wagner believes his design can take up to 370 metre long blades, weighing 810 tonnes. This enormous machine could produce 100 MW in a wind speed of 15 m/s. Wagner proposes basing the machines at sea on ships or platoons. This arrangement has many advantages.



First of all, it could use the many sea vessels lying dormant round many countries' ports. Secondly, any sea vessel moored by it's bow drifts automatically to face the wind and lastly the design avoids the cost of tower building, especially the proposals for offshore tower wind machines.

Wagner has built a prototype capable of 250 kilowatts and has operated successfully in the north sea. He is also hoping to build a "wind" farm in the Elbe estuary with 10 of the machines. Wagner claims that a plant of this type will produce a kilowatt of energy for £250 whereas a new coal-fired station would cost £375/KW, while a nuclear plant costs not only the earth but between £750 and £1250/KW.

Warm & Well-Lit

Trusthouse Forte has received a grant from the Department of Energy towards 25% of the capital cost of installing six **Fiat Totem** mini-Combined Heat and Power (CHP) units. The units are to replace oil-fired boilers at the 85 bedroom Castle Hotel, Windsor. **Fiat Energy** have predicted that over £9,000 per year fuel savings may be achieved by running the Totems in parallel with existing gas-fired boilers.

Electrical Review, 2.9.83

Tilting at Windmills

A conflict of views inside the energy establishment about the Orkney wind turbine was exposed during the final week of the Sizewell Inquiry, before it broke up for a seven-week summer holiday.

The official line of the CEGB and the Department of Energy has been that they are keen to develop wind power. Their critics have argued that this can be done only if the wind turbines are stationed at sea because - as the Central Electricity Generating Board has said repeatedly - there are severely limited possibilities of building up "wind farms" on land inside a crowded country like Britain. But their top expert on renewable energy, Dr. John Wright, claimed to the Inquiry that the Orkney wind turbine was designed for development of wind power at sea. He said in June, in reply to cross-examination by objector David Ross, who had claimed that the CEGB was not serious about wind power:

> "The Department of Energy, who have the prime responsibility for developing the Research and Development on the renewables in the UK, when they set up their Orkney project with the North of Scotland Hydro Board, had in mind this type of machine which is probably not so suitable for going onshore on low wind speed sites, was likely to be very suitable for going offshore. The whole strategy has got offshore as an ultimate objective but we go to Orkney and go onshore and see if it works there first."

David Ross, however, when giving his main, two-hour, 20,000-word submission in the final week, produced a release from the Wind Energy Group, which is erecting the Orkney machine. This showed that the Group was thinking of "market assessments" for the "many hundreds of small diesel-grid systems in the world which are burdened with large generating costs". In other words, it would be sold to islands and towns which at present depend on burning expensive oil to get electricity. **There is no mention of basing such a machine at sea.**

He commented that it was not the Department of Energy (which Dr. Wright had mentioned) which was financing the Orkney operation but the Department of Trade and Industry; not the CEGB but NOSHEB "and these people, who are actually spending money on wind power in the Orkneys have a different idea about the purpose." He said it seemed that either the Department of Energy had forgotten to tell the people building the wind turbine what they were supposed to be doing, or else "the CEGB is massaging the facts."

Ross also produced the latest meteorological data to show that, even during the exceptional heatwave in July, there was ample power available at sea - 10 foot waves off the Hebrides for wave power and gale-force and near-gale force winds off the north of Scotland and in the North Sea for wind power.

His survey of the renewables, and of the failings in the official case for Sizewell, can now be obtained free in an immaculately typed document, including the updated insertions to take account of the latest developments, courtesy of the Department of Energy.

It is available to any member of the public who cares to ask for Transcript of Day 101 from:

Sizewell B Inquiry Secretariat,
PO Box 333,
Snape Maltings,
Saxmundham, Suffolk. IP17 1SP.

Or you can telephone a request to Snape (072.888)757.

APPROPRIATE TECHNOLOGY

Coal Burning & Acid Rain

Dear SCRAM,

SCRAM Journal 36: PITS & THE PENDULUM

I am also anti-nuclear **BUT** *as the article seems to suggest that the SSEB shoul use more coal ("coal burn down") this would emit more sulphur dioxide into the atmosphere thus causing the problem mentioned on page 7 but not on page 3 . . .*

Confused

Yours,
J.W. Worrall,
Nottingham.

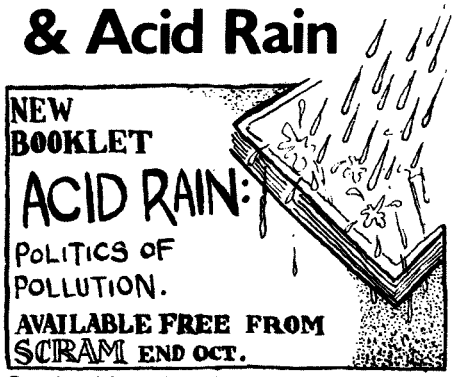
Dear Confused,

Believe it or not, we are glad that you have asked this question, since it raises important questions about the anti-nuclear movement's attitude to coal as an acceptable energy source for the future.

On the question of coal miners' jobs, it may not be appreciated south of the border, but there is an acute crisis facing the Scottish Coal Board.

At present, the SSEB meets demand in its area from just five major power stations, one of which (oil-fired), has been completely moth-balled and another of which (coal-fired), is partially moth-balled. This means that with just one AGR and one Magnox station, both at Hunterston, the SSEB region has the highest percentage of 'nuclear' electricity in the world, presently around 38%. This figure will rise to over 50% with the completion of Torness; and remember that the SSEB still want a further nuclear power station 'on stream' before the end of the century.

The result, when the SSEB presently buys 60-70% of the Scottish NCB's output, will be a complete collapse of the Scottish coal mining industry, with no opportunity for 'rationalisation' or diversification of markets. This is in the context of the SSEB's persitence in shoring-up jobs in what they see as an essential muclear industry. What we are experiencing in



Scotland is only a foretaste of what is in store for the rest of the country.

But what of the 'Acid Rain' problems associated with coal burning? If, as we believe, we must regard one source of pollution as bad as another, then we must also seek to minimise the pollution from coal burning. **There are no shortage of solutions** to the problem of Acid Rain: retrofitting of 'scrubbers' which use limestone to absorb sulpher dioxide in flue gases; fluidised-bed combustion which can reduce SO_2 emmisions by 90%; or, use of sulphur-free fuels.

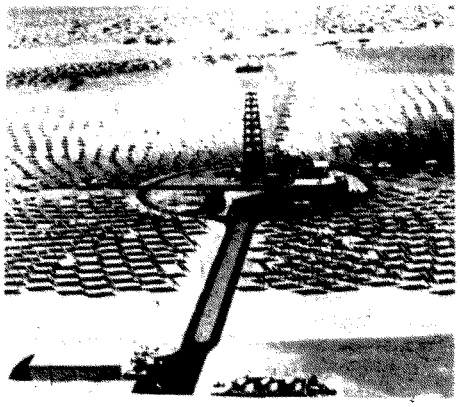
But these are only 'Technical Fixes' for a more basic problem. We must continue to push for Britain to move towards a more energy efficient future — with all that implies in terms of Energy conservation, Combined Heat and Power and District Heating and fluidised-bed combustion — in order that we do not burn more coal than is necessary.

Nuclear Power is simply not an acceptable energy source — for reasons we explained in last issues Broadsheet. Either way coal will be burnt for a long time to come. Our concern is that is is burnt cleanly and efficiently. What this will mean for the long term future of the coal industry, depends on which energy scenario you read, but no one in the environmentalist or anti-nuclear movement would, we hope, advocate the kind of catastrophic collapse of the coal mining Industry implied by the present expansion of the nuclear programme.

David Somervell.

Sunpower Record

On the day of the summer solstice the world's largest solar-powered generating station, the **Solar One** plant in California, achieved an output of 12.1MW, although it is nominally rated at only 10MW. Operating since April, the $141m demonstration power tower also achieved a single-day output of 104MWh, generating a total of 127MWh since the previous morning.



Sunlight is reflected from 1,818 stationary mirrors (heliostats) onto a boiler on top of a 100m high tower. The heat store is 290m³ of rock and oil. Performance can be boosted further as improvements are made, according to Paul Skvarna, the site manager.

Electrical Review, 2.9.83

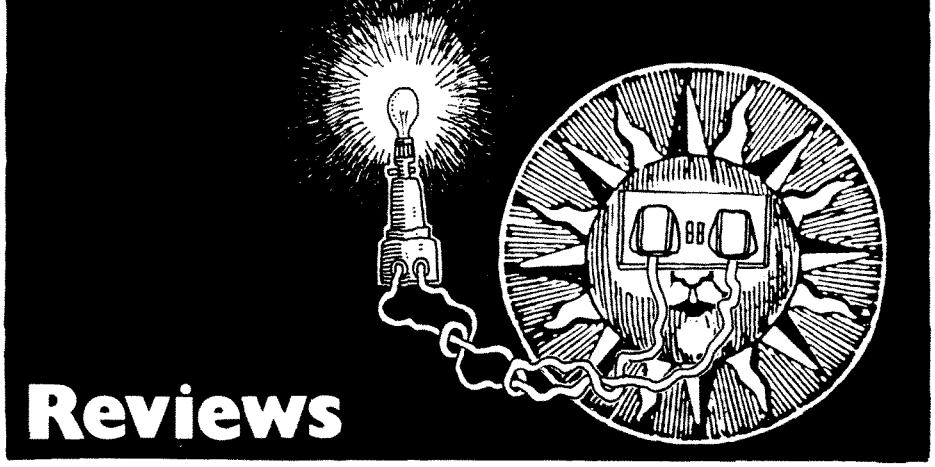
Plant a Tree for....

Hereford County Council has begun a major tree planting programme of native hardwoods on 2355 hectares. The trees are suitable for coppicing which means the forest can be effectively 'farmed' to supply wood, pulp and small timber for industrial use, and fuel.

With the increasing popularity of wood and straw burning stoves, the Council believes that farming and coppicing can be effectively integrated.

In addition to the planting programme the project at Longden includes an evaluation of the landscape and studies of the ecology of the area and the needs of local farmers. The Council foresees the considerable potential in all aspects of the project.

WISE, September '83



Reviews

FIRST STRIKE - The Pentagon's Strategy for Nuclear War" by Robert C. Aldridge, Pluto Press. (£5.95 + 60p postage).

A little over ten years ago Robert C. Aldridge resigned as design engineer with the Lockheed Corporation, where he had been working on the Poseidon missile system. His conscience forbade him to use his skills to further the arms race and, because of his position, he knew that the public prouncements made by U.S. government on disarmament were untrue. 'First Strike' is the consolidation of his experience and subsequent research into the American military-industrial complex.

Officially the West has always followed the policy of Mutually Assured Destruction (MAD) or "I'll only fire mine if you fire your's first". However Robert Aldridge shows how the Pentagon's strive for greater accuracy and technology superiority is incompatible with anything other than preemptive first strike capability. The implication being that should the "International Situation" deteriorate America could destroy Russia's ability to respond to a nuclear attack.

This capability has been achieved by the research and development teams being given blank cheques to reach incredible standards of technical innovation and engineering finesse. The best example being of a satellite-based camera that used a laser of the same frequency as the colour of sea-water — a photograph could be taken of a Russian submarine on the ocean floor at a depth of several kilometres. (Think about it).

Of particular interest is the chapter on the Trident system for which the British Taxpayer is shelling out £7 billion. It was conceived and designed as a first strike weapon with accuracy of ten metres over a range of 7,000 kilometres. All of which makes utter nonsense of Thatcher's claim that it is a deterrent. It is hard to contemplate a U.K. first strike on Russia, but after the Belgrano.....

After examining the technical side of the U.S. nuclear arsenal Robert Aldridge turns his attention to the industry itself. He catalogues a pitiful tale of projects costing far more than originally expected and never fulfilling their specifications; of the vast multinational (most of whom have retired military personnel as senior executives) companies, vieing for lucrative arms contracts, and of the sheer economic waste of it. All this is neatly summed up by the account of Rockwell International playing down a fault on a prototype B-1 bomber: "This section was built for testing, not to be flown".

The history of arms limitation talks is also examined. The 'Russian Threat' is shown to be non-existent after all, and the Pentagon's misleading statements on it are closely scrutinised.

In the epilogue Robert Aldridge appeals for an end to the arms race and demonstrates alternative production ideas. He envisages an end to the arms race being achieved only when more people like him, who actually produce the military strategists dreams of war machines, give up their comfortable jobs and pay-cheques to achieve a better world.

All in all, this is an exceptionally good book, not only because there is a large glossary of the acronyms used. (As soon as I think I've learnt them all I find a new one.) It provides a fully comprehensive survey of the history, implications and truth behind the nuclear arms race and will help you no end in arguments with the ignorant.

James Smith

THE CULT OF THE ATOM: The Secret Papers of the Atomic Energy Commission by Daniel Ford; Simon and Schuster, New York.

Everyone knows that SCRAM means to shut down a nuclear reactor by inserting the control rods, but does anyone know why? Apparently when Enrico Fermi constructed and ran the world's first nuclear reactor in a squash court at the University of Chicago in 1942, a special emergency control rod was suspended above the reactor by a rope. If the nuclear chain reaction went out of control, someone had the job of slashing the rope with the axe that was provided. He was called (wait for it) the Safety Control Rod Axe Man.

Again, everyone knows that someone said nuclear power would produce electricity "too cheap to meter", but does anyone know who it was? For the record it was Lewis Strauss, the chairman of the US Atomic Energy Commission, talking to the National Association of Science Writers in September 1954. His speech is worth savouring:

> "Our time scale can fold like an accordion... Transmutation of the elements, unlimited power... these and a host of other results all in fifteen short years. It is not too much to expect that our children will enjoy in their homes electrical energy too cheap to meter, will know of great periodic regional famines in the world only as matters of history, will travel effortlessly over the seas and under them and through the air with a minimum of danger and at great speeds, and will experience a life span far longer than ours... This is the forecast for an age of peace."

These are just two gems from this fascinating book. Daniel Ford, using the US Freedom of Information Act has unearthed a whole series of internal nuclear industry reports and memos which haveenabled him to write a genuine "inside story". There are countless detailed accounts of internal splits, the suppression of information, inadequate supervision and ineffectual safety standards. The book is particularly devastating on the handling of key safety issues which, even after the Browns Ferry and Three Mile Island accidents, are still not being properly dealt with.

In narrating his semi-official history, Ford reveals the shameful way in which the US nuclear industry treated some of its lesser-known dissidents. His account will strike chords amongst those who have observed the treatment meted out to Britain's small but growing band of nuclear dissenters (see August/September SCRAM journal). What we now need of course is an equivalent history of the British nuclear industry. But with Britain's emphasis on official secrecy instead of freedom of information, it is difficult at the moment to see how this could be done.

Rob Edwards

ELECTRICITY FROM SUNLIGHT: The Future of Photovoltaics, C. Flavin, Worldwatch Paper 52. £1 [+ 30p].

For anyone wanting a fast up-date on photovoltaic cells **"Electricity from Sunlight"** by Christopher Flavin is a good start. This Worldwatch Paper is a happy combination of well written non-technical text backed by extensive references for those interested in more detailed study.

The author is clearly not intimidated by the high-tech nature of the photovoltaic industry. He gives a brief description of how the cells convert energy from the sun into electricity. He succinctly outlines both the new industry and its possible lines of future research and development.

ECONOMICS RULES

The book benefits from the author's background in economics, because economics of one kind or another are still the main barrier to using photovoltaic cells in those regions where climate makes them a theoretically attractive source of electricity.

Christopher Flavin rightly identifies the cost targets set in the '70s in the USA as accounting targets. This has saddled the research effort with inflated expectations of rapid development. The reality is that several years more research are still required to meet these rigorous targets.

OPTIMISTIC ANALYSIS

The author then considers the future of the photovoltaic industries - and here I feel his analysis is a little weak. He shies away from the obvious but unpalatable conclusion of the first part of the book - that a great deal more spadework and/or a major advance in technology is needed to bring down the costs to an acceptable market level for large-scale use and enthuses about the vast potential solar cell market in the Third World. It is in the developing world's isolated and rural communities, far from any distribution grid, that he envisages the mass sales that would kickstart the solar cell industry.

WIDER QUESTIONS

Subsidies will however still be essential if remote communities are to be able to afford these cells. So, like many before him he dodges the real issue. It is wholly irrelevant to rural peoples in developing countries at what point solar cells become an economic alternative to a diesel generator if in the first place they cannot afford the generator and their government shows no inclination, or is also too poor, to help them out.

Fiona Riddoch

The titles marked with price & postage are available **with many more** by mail order from The Smiling Sun, 11 Forth Street, Edinburgh 1.

Nuclear Numbers

Dear SCRAM,

I'm a Greenpeace supporter, and I recently received one of your leaflets. According to you, **"Nuclear Reactors produce only 3% of Britain's primary energy needs."**

According to Maurice Ginniff, the Chief Executive of NIREX, **"The Nuclear Industry, by the end of this year, is going to be generating some 20% of the electricity of this country."** (Newsnight, BBC TV, July 1983).

Can you please tell me who is correct?

Mark C., Guildford.

Dear Mark,

Thanks for your letter responding to our leaflet which Greenpeace kindly enclosed with their newsletter. You seem to be suffering from the all-too-common problem of manipulation of statistics by the nuclear electricity supply industry!

You ask "who is correct - SCRAM or Maurice Ginniff of NIREX?" The glib answer, as in many spheres of statistics, is **both.**

The reason why you are confused is the use of terminology. Our leaflet states that "nuclear reactors produce only **3%** of Britain's **primary energy** needs". This is correct - **primary energy** includes all fuels used in the country for all types of work: transport, heating, lighting, industrial processes etc.

According to the United Kingdom Energy Statistics 1983, electricity accounted for 13.6% (7.4 thousand million therms of 54.3) of total energy supplied to final users in 1982. Of the total electricity generated, nuclear accounted for 14.7% (35.3TWh of 239.1). A simple calculation reveals that just over 2% of total energy supplied to final users came from nuclear powered electricity. That's the basis of our figure, rounded up slightly.

Mr. Ginniff's statement is, in the absolute sense, potentially true. He asserts that "the nuclear industry, **by the end of this year,** is going to be generating some 20% of the electricity of this country." It is not possible to prove him wrong until after the event, as it is only a forecast. An educated guess would suggest that 20% nuclear powered electricity by the end of the year is rather optimistic.

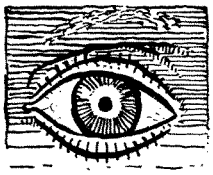
The nuclear portion of electricity generated is now roughly 15%, so why will it this year leap by 5%? The answer is because of the "merit order" of generating sets - the nuclear stations are used to provide the "base load"electricity, that is coal (and oil) stations are only used to supply peak demands on the system, eg. at 6 p.m. for dinner time etc. So the **nuclear stations are displacing fossil-fueled stations.** In a period of depressed demand, this means that there is a savage, unplanned reduction in the coal-burn because nukes must be run continuously to recoup their enormous capital cost.

Two new nuclear stations have been commissioned this year (Hartlepool and Dungeness B) but they are both expected to be out of action for some time with teething troubles - Hartlepool was only on stream for one week! So to achieve this high proportion of nuclear electricity, fossil fuelled stations must be used less, and nuclear stations more, than at present. Many coal stations are hardly ever used at all these days; in fact some coal burning stations are actually being closed down altogether eg. Kincardine in Scotland and Connah's Quay in Wales. A very cold winter usually requires the use of coal burning units, but mild winters, as last year, often pass without much use at all.

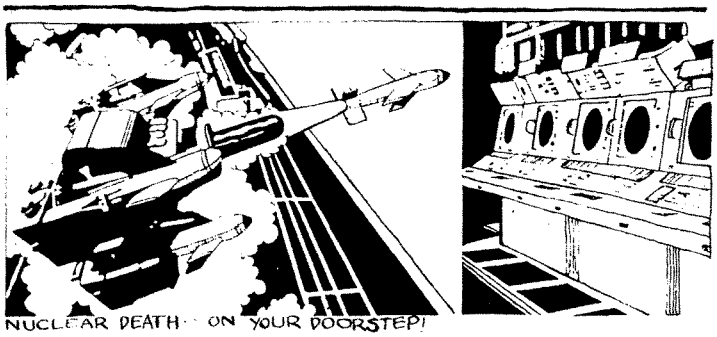
So, I hope this answers your question, and demonstrates both how figures can be manipulated and how the electricity boards are deliberately running down fossil fuel stations in favour of nuclear stations, with all the potential risks to health, employment and civil liberties.

Best Wishes

Steve Martin from SCRAM.



Focus on Ferranti



A one-week peace camp was held outside one of **Ferranti's** Edinburgh factories during August by the **SCRAM nonviolent direct action group.** It was situated directly outside the main gates in the path the workers take when entering and leaving the factory. Eight people participated in the camp through from 8th - 12th August, the aim of which was to draw attention to the military nature of a large proportion of **Ferranti's** work: advanced electronics for weapons guidance systems and general military hardware, some of which is related to nuclear weapons.

We raised the issues of conversion to socially useful production, and opposition to nuclear weapons generally, by leafleting and discussion with the workers at the gates and in the camp. The leaflet emphasised conversion, and was well received by the workforce. Unfortunately no long-term contacts were established with the workforce, but hopefully a debate within the factory may have been prompted.

A POSITIVE PRESENCE

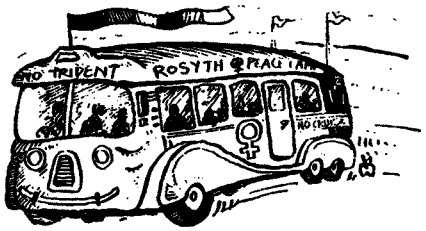
The local community from a large council housing estate were very friendly and supportive; people of all ages visited the camp and discussed its aims in a constructive manner. Two meetings were held at a local school, based on two video films: Critical Mass, Helen Caldicott's lecture on the medical consequences of nuclear technology from October 1980; and The Last Epidemic, another Caldicott lecture delivered to American scientists and physicians.

As Ferranti is located in a built up area, the camp had an immediate impact on a large number of people, who recognised that the peace movement is alive and actively pursuing the anti-nuclear cause in the area. Its visible presence was such that, workers who didn't receive a leaflet, attend the meetings or visit the camp couldn't fail to notice it and become aware of the militarist nature of Ferranti's production, the concept of conversion and the economic waste associated with nuclear weapons. If you want more details contact us at the SCRAM Offices.

Peace Camp on the move

We have been at Rosyth Women's Peace Camp for 4 months and during that time we feel we have achieved some of our aims. We would like to stay longer, but unfortunately the women who wish to be involved in the camp do not have the time due to other commitments — work/child care etc. Sadly this means that the camp will have to close on Sunday, 25th September.

If people cannot come to us, we will have to go to them. To do this we have conceived the idea of a **PEACE BUS**, which could act as a mobile resource centre, going to housing estates, rural areas and companies involved in the arms industry. This would highlight the fact that nuclear arms are **everywhere.**



Obviously, to get this project off the ground we will need a fair amount of money, as well as help and support from other women, in all parts of Scotland.

If you would like to be involved, or want to know more about the planned **Scottish Women's Peace Bus**, please contact Nicky, Irene or Helen at 031 447 9607.

SIAMESE TWINS

A 45 minute slide / tape show on the links between nuclear power and nuclear weapons.

Produced by Islington and Hackney Friends of the Earth for the Campaign for Nuclear Disarmament. **80 Slides, a cassette and text.** Purchase price - £2.50. Hire Charge - £4.00 (+ carriage)

Available from Claire Holman, **FoE, 377 City Road, London EC1 [01 837 0731].**

No Booze no Cruise

An advertising hoarding in central Edinburgh has been 'converted' from one extolling the praises of McEwan's lager, to an anti-cruise message. A spokesperson for Scottish & Newcastle Breweries said "In a free society people are entitled to express their feelings as they wish". But who it was who did this cunning deed remain a mystery!

DIARY

Oct. 1st Deadline for receipt of registration to CND Annual Conference for those requiring accommodation.
Deadline for receipt of nominations for election to council or to offices.

Oct. 2nd **Labour CND** 'Nuclear Weapons Are No Defence' Peace March.
1.30 Assemble AT THE LEVEL, Brighton.
2.30 rally at THE FISH MARKET HARD

Oct. 15th **National Trade Union CND Conference.** Birmingham. Details from Ruth Longoni, 34 Broomfield Rd., Earlsdon, Coventry.

Oct. 18th **Christian CND action at MoD,** Whitehall, during Week of Prayers for World Peace.

Sat. 22nd Oct. London **National CND Demo.** Details 11 Goodwin St., Lon. N4. 01-263-0977 or local peace group.

Nov. 5-6 **Christian C.N.D. AGM,** Queen Mary College, London.

Nov. 11th Deadline for registration for CND Annual Conference without accommodation.

Nov. 12/13 **CND Student Campaigning Conference.** Manchester Poly. S.U., Oxford Rd., Manchester. Details from Charlotte Bath, SCND, Goodwin St. London.

Nov. 12th **CND International Committee** One Day International Workshop. More details later.

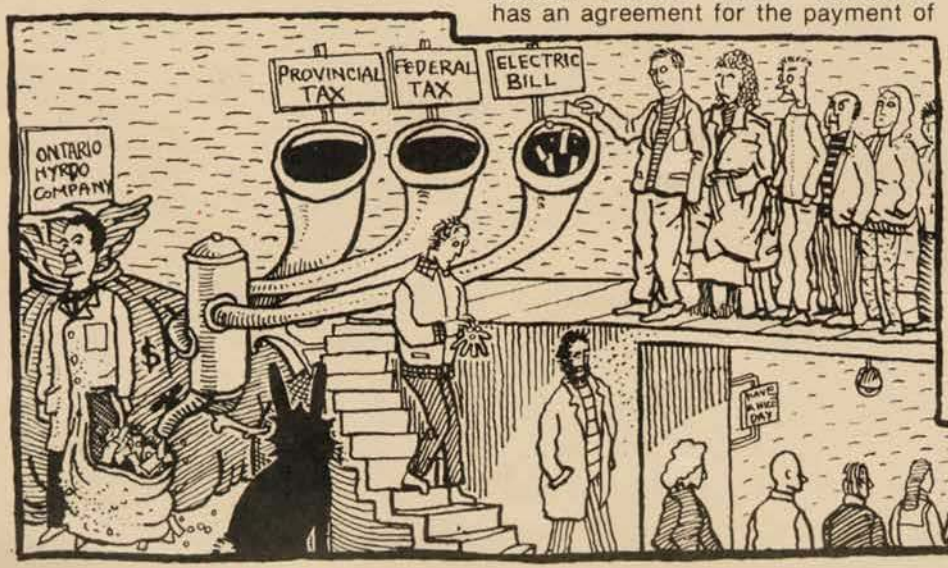
Nov. 26/27 Edinburgh **British Society for Social Responsibility In Science National Conference -** Edinburgh. Details: Dave Smith, 031-557-0616 or Alan Beard, 031-667-1081 xt. 2932.

Little Black Rabbit was looking over the collective editors' shoulders at the copy for this SCRAM Journal when she noticed a story for the news pages, concerning leaking CANDU reactors on Lake Ontario, taken from an August issue of **New Scientist**. She remarked that it took nearly one month before the story broke in the 'national press', in the form of the **Guardian**. Even then, none of the reports, including that of her friends at SCRAM, carried the full story....

The full story goes beyond the gallons of radioactive water spewed into the Great Lakes. It appears that the company which operates the power station, **Ontario Hydro Company,** has an agreement for the payment of costs if repairs are required. One half of the bill is picked up by AECL (Atomic Energy of Canada Ltd.) and, of the remaining sum, the Ontario Provincial Government pays half, with the electricity consumer paying the rest.

This means that the much-put-upon consumer has, in effect, to pick up the whole tab. As a tax payer, both Federal **and** Provincial, the Ontario consumer foots the repairs bill. Then, as an electricity consumer, higher electricity bills further burden the individual's budget.

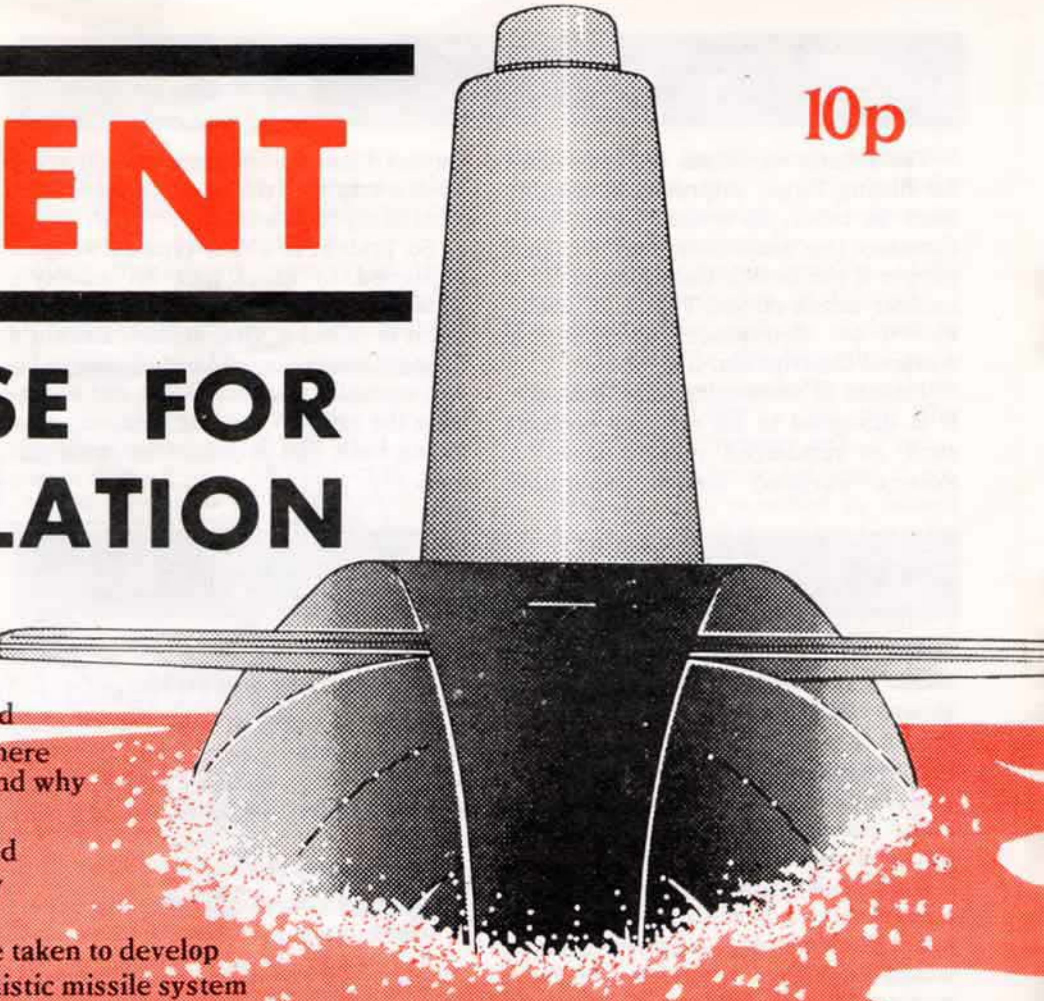
So, despite widespread opposition to nuclear power and uranium mining in Canada, the consumers still have to bear the brunt of any accident - they are exposed to the radiation released and then they are asked to pay for it. All this when Little Black Rabbit was taught about how cheap and clean nuclear power was... Funny world.



TRIDENT

THE CASE FOR CANCELLATION

10p



'STOP TRIDENT' is an oft-repeated demand... but what is 'Trident'? Where does it come from, what is its cost, and why does it represent such a threat?

This broadsheet has been prepared by the *Anti- Trident Campaign* to try to answer some of these questions.

It shows that secret decisions were taken to develop the *Trident* submarine-launched ballistic missile system for British use long before the Government announced their plans in July 1980.

It explains how the new extended range, accuracy and destructive force of the *Trident* missiles creates the possibility of a *'first strike'* against the Soviet Union — a terrifying escalation in the nuclear arms race.

The Government has already begun work and plans to have *Trident* operating in barely ten years. This broadsheet gives you the reasons why you should oppose these plans and urgently asks for your support to publicise and to broaden the Anti-Trident Campaign.

TRIDENT: DEADLY DEVELOPMENT

The Trident missiles would be carried on four giant submarines to be built at the Vickers yard at Barrow-in-Furness. Each sub would be over 500 feet long and weigh 14,600 tons.

Power for the submarines would be provided by new 'PWR2' nuclear reactors developed by Rolls-Royce of Derby. They are to be tested at HMS Vulcan, the Royal Navy's secret research establishment at Dounreay in the far north of Scotland.

Britain's Trident submarines are designed to carry up to **16 D5 missiles** - compared with 24 in the American version. These missiles, each 42 feet long and 7 feet in diameter, are being manufactured by Lockheed in the USA.

Each missile could in turn carry up to **14 warheads,** although the government says they plan only eight. The destructive power planned for each warhead is likely to be between **150 and 355 kilotons**. That means that each one could cause damage equivalent to between 10 and 20 Hiroshima bombs.

The missiles are designed to be fired 600 miles into space, where the warheads would be released. Each warhead would then be able to head for a separate military or civilian target, avoiding anti-ballistic missile systems on the way.

The warheads would be serviced and stored at the Coulport base on the Clyde, which is to be considerably extended. The missiles were originally also to have been serviced at Coulport. But the government has since decided that they should go to King's Bay, Georgia, USA. The submarines themselves would be based at Faslane, with refits being carried out at Rosyth Dockyard near Edinburgh, where the PWR2 reactors would also be refuelled.

NOT 'REPLACING' POLARIS

Trident would mean a major increase in Britain's ability to wage nuclear war.

- Each Polaris submarine can now hit 16 targets. The government say that a Trident sub would be able to hit at least 96 targets; but this could be increased to as many as 224 if it had no empty missile tubes and used the American pattern of 14 warheads.
- The Polaris missiles now used are accurate to within a radius of 900 metres - more than half a mile; Trident D5 missiles are designed to be accurate to within 90 metres!
- Polaris missiles now have a range of 2,800 miles; those fired from a Trident sub could fly more than 6,000 miles. This makes a huge difference to the area they would threaten - just **one** mile over 2,800 miles means another 15,000 square miles of potential target.
- Only two of the four Polaris subs can now be out on patrol together - and that only for 75 per cent of the time. **Three** Trident subs could be out for over 80 per cent of the time according to government sources.

NOT A DETERRENT

The Polaris warheads are only good for hitting large, unprotected targets such as cities. In other words, they threaten the annihilation of Russian people if the Soviet Union launched a nuclear attack on us. This is officially known as 'deterrence' or Mutually Assured Destruction. It's 'MAD'.

Trident is something else entirely. It is designed to hit military targets, such as reinforced missile silos. A Polaris warhead would apparently have a 4 per cent chance of destroying such a target - Trident would be 92 per cent likely to do so.[1]

So Trident is a new type of weapon designed to knock out an enemy's weapons **before** they can be used - what is called a **'first strike'**. Britain's Trident system would not of course be big enough to do this alone; but alongside the new US nuclear weapons now being built that is just what it threatens.

WON'T PRESERVE PEACE

The current development of **'first-strike'** systems by NATO nations means that the Soviet Union will be forced to go for the same thing. Former President Carter admitted in 1978 that Trident's *'hard target capability could stimulate negative effects on Soviet reactions'*.[2]

The British government says it is committed to peace through multilateral nuclear disarmament. So you would think that it would at least be prepared to negotiate constructively to reduce this threat. But Britain has steadfastly refused to put its nuclear weapons into international arms talks. Instead it unilaterally proposes to increase them with Trident.

If it's all right for Britain to enormously expand its nuclear arsenal at will, then why shouldn't other countries? As the **Glasgow Herald** has noted:

'... the adoption of Trident II can only encourage nuclear proliferation among other medium-sized and small powers, such as the Argentine'.[3]

No way would Trident help to maintain national security and world peace. Its development would **threaten** them.

"There is no point in firing at the other side's weapons - the basis of counterforce - unless you are prepared to fire first. And that can never make sense... It would be suicidal for us to threaten to use Trident against Russia... So what the bloody hell is it for? It's a waste of money."
Field Marshall Lord Carver, interviewed in 'Sanity', December 1982.

NOT INDEPENDENT

Trident is supposed to be an independent British weapon. But its missile guidance computer would in fact be normally programmed to act as part of a NATO strike force (though a second 'British' programme would also be carried on board). This was confirmed in a diplomatic note from the Prime Minister to Washington:

'The successor to Polaris will be assigned to NATO... the successor force will be used for purposes of international defence of Western alliance in all circumstances.'[4]

So this new weapons system would commit us to aggressive US postures. This is compounded by the decision to service the missiles in the USA.

However, Trident is actually part of a much bigger deal tying us to American interests. Britain has been offered cut-rate terms and the chance for British firms to tender for work on the US missiles. But this *'is conditioned by the way the UK acts in the wider defence of the alliance and the US'*, as one of those in the know put it to **Sunday Times** defence correspondent Jon Connell.[5]

This could include undertaking *'other military activities which could find favour in the eyes of the American administration and Congress'*, as well as the supply and operation of Rapier surface-to-air missiles in defence of US bases in Britain.

Furthermore, although it has been officially denied, rumours persist that part of the deal includes a promise to sell our surplus plutonium to the US. This might only be used for civil purposes, but would nonetheless allow the US to divert its own plutonium stocks into weapons production.

EXPENSIVE FOLLY

No-one really knows how much Trident will cost. £10 billion is a much quoted estimate - and that's just the capital costs. The government says £7.5 billion, but no weapons system has come in since the war at much less than 100 per cent over target budget.

The former Defence Secretary, John Nott, said of Trident in October 1981: *'Even 1,000 Treasury officials, a million accountants or even if you get a Nobel prize for mathematics, you are not going to be able to know what the cost will be in the next 30 years.'*[6]

... and this is the government which is committed to controlling public spending!

Huge amounts are to be spent on Trident at a time when our health, education, housing and welfare services are being run down. The money saved by scrapping Trident could pay for 450 new hospitals, 9,000 new schools, or more than 300,000 new houses.

They say we need Trident to defend our way of life. But our way of life is being steadily dismantled just to pay for it!

VERY FEW JOBS

The government claims that Trident would provide work for British people. In fact it would bring few jobs for the billions of pounds spent on it.

High technology projects of this kind provide the lowest return in jobs for the capital invested. And though British firms were given a special opportunity to tender for contracts in building the missiles, few appear to have done so successfully.

One early 'selling point' - jobs servicing the missiles at Coulport - has already gone with the decision to maintain them in the United States. The workforce at Coulport would be reduced from 2,000 to 500 with the introduction of Trident, unless other employment was found for them.

The main work provided in Britain would be in building the subs at Barrow. But this wouldn't provide new jobs, or save jobs that would otherwise go. Vickers already have a full order book for the building of hunter-killer submarines. It is these which would have to be put on one side in order to build Trident.

Even if this were not the case, the development of new sea-based civil technologies could provide more jobs at lower cost. Such projects could include wave-power, submersibles and other equipment for nodule collection, mining and agriculture on the sea-bed, and ocean tub-barge systems.

UNDEMOCRATIC DEALINGS

Trident is already undermining the very democracy it would supposedly defend.

The government officially decided to purchase Trident in July 1980. But preliminary design work at the Atomic Weapons Research Establishment in Aldermaston was begun as early as the mid-1970s. It is thought that up to three British underground tests in Nevada between 1974 and 1981 were connected with Trident.

Money was being spent on developing the massive new A90 complex at Aldermaston at least a year before the 1980 'decision'. Intended mainly for Trident, one bay of the A90 building will be used for research and development into nuclear systems already being dreamt up to replace Trident! The costs of this complex, incidentally, have **not** been counted into the Trident programme - and they could be as high as £500 million.

Journalist Duncan Campbell calls this the Aldermaston vested interest. *'In the secret corridors of Whitehall, capacity to supply tends to create a demand from the MoD.'*[7] This is clearly what happened with Trident.

By May 1981, just two months after Parliament first debated the issue, nuclear analyst John Simpson was telling the House of Commons Defence Committee that the pressures for Trident

'have now acquired a momentum of their own which makes it very difficult to question the functional benefits of such a course of action.'[8]

Secrecy shrouds the Trident programme. Only a handful of people make the decisions and really know what is going on. This is supposedly for 'security' reasons. Yet the Soviet military planners certainly know about it - only the British public are left in the dark.

The proposal for a public inquiry into the Coulport development, though not actually rejected, has virtually been ruled out. Naval Commodore George Vallings explained as long ago as September 1981:

'We have got to get on with Trident. For all the good that can come out of a public inquiry, it would be too long drawn out.'[9]

So much for public accountability.

Trident is a further example of the control over military spending being taken away from any democratically accountable bodies. Its effect, as noted in a Church of Scotland study on the attitudes of people living near the Faslane base, is to promote a feeling of helplessness in the face of the nuclear arms race.

THE TRIDENT WARHEADS

Plutonium and tritium for the warheads would come from the early nuclear power stations run by **British Nuclear Fuels Ltd** at **Calder Hall** and **Chapelcross.** They also produce electricity.

The warheads are being designed at the Atomic Weapons Research Establishment (AWRE) at Aldermaston in Berkshire.

The plutonium would be separated at **Sellafield,** formerly called **Windscale,** then sent to **Aldermaston** for conversion into the specialised parts of the bomb core.

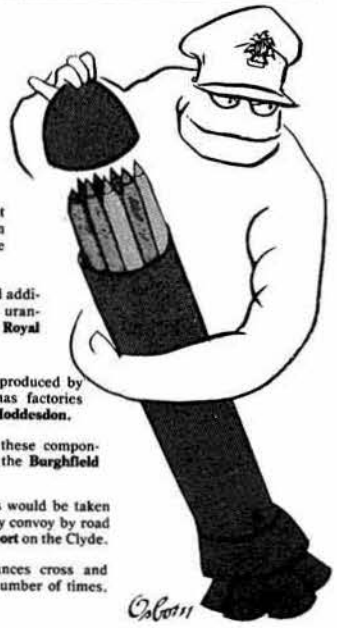
Around the core would be positioned additional layers of beryllium and natural uranium, manufactured at the **Cardiff Royal Ordnance Factory.**

The bomb casings would be produced by **Hunting Engineering,** which has factories in **Ampthill,** near Bedford, and **Hoddesdon.**

The final assembly of all these components would be performed at the **Burghfield Royal Ordnance Factory.**

From there the warheads would be taken in a heavily guarded military convoy by road to the missile depot at **Coulport** on the Clyde.

Those radioactive substances cross and re-cross the country a fair number of times, don't they?



This broadsheet was written by members of the **Anti-Trident Campaign.** It has been designed and printed by **SCRAM, the Scottish Campaign to Resist the Atomic Menace, 11 Forth Street, Edinburgh EH1 3LE. [031-557-4283].** It was distributed with the October/November issue of their **SCRAM Journal** (free sample sent on request).

"The thing that brought everything to a head was when I saw that the Trident missile was going to be a more aggressive weapon and that the military was interested in a shift toward more aggressive weaponry... I could see that they were interested in the type of targets that you would need accuracy on - more military-type targets... the things you have to destroy before they serve their function.

"A weapons technology of sharply increased accuracy is not increasing our safety at all. It doesn't matter whether there's any intention to use it in a first strike or not. If you have the perceived capability, that is, if the Soviets under some conditions think you have a first-strike capability and that you might use it, it could provoke the first strike which it's supposed to prevent."

Robert Aldridge, Trident missile designer at Lockheed until his resignation in 1973, interviewed in 'Peace News', 29 October 1982.

ANTI-TRIDENT CAMPAIGN

The **Anti-Trident Campaign** was first set up as the Scottish Campaign Against Trident in September 1981.

SCAT soon met with a big response, bringing more than 20,000 people onto the streets of Glasgow at Easter 1982.

But although Trident would be based in Scotland, that decision has been made by a **British** government, and the links in the chain run from Dounreay in the far north right down to the South of England. So at the end of 1982 SCAT became the **Anti-Trident Campaign**, as one means of encouraging opposition to develop throughout Britain.

The **ATC** is an umbrella organisation which does not seek to compete with existing groups. Its aim is rather to coordinate all strands of the opposition to the proposed Trident weapons system.

For this reason it is based on **affiliations**. All affiliated organisations can send delegates to the policy-making General Meetings held at least once a year. They are further encouraged to nominate individuals to the ATC Committee, a working body which is elected at general meetings but is always seeking further members through co-option.

Annual affiliation fees are a minimum of £5, but we would ask for consideration of a larger amount depending on the size of the organisation.

Individuals may also be included on a personal mailing list and receive the Campaign's monthly newsletter for a minimum annual payment of £3.

Further copies of this broadsheet are also available at the following bulk rates - all **post free** for cash with order.

10-49: 9p each; 50-99: 8p each; 100-499: 7p each; 500+: 5p each.

Please clip and return with your cheque/PO in payment to:
Anti-Trident Campaign, 420 Sauchiehall Street, Glasgow G2. (041-332-3141).

Name/Organisation: ....

Address: ....

.... Tel: ....

I/we would like to (tick as appropriate)

Affiliate to the Anti-Trident Campaign - minimum £5 ☐
Be put on the ATC mailing list as an individual - minimum £3 ☐
Make a donation to ATC of £50 ☐; £25 ☐; £10 ☐; £5 ☐; other ....
Order ..... copies of this broadsheet.

I/we therefore enclose £......... in payment.

WHAT YOU MUST DO

Trident has aroused almost unprecedented opposition in Scotland. This is now spreading to England and Wales as well.

All major political parties except the Conservatives oppose its development. Even the Tory Reform Group in Scotland rejects it.

Joining in the outcry have been the trade unions, churches, local authorities, and even military figures such as Lord Carver. Opinion polls have shown up to 63 per cent opposed to Trident.[10] Your help is needed to make this opposition effective:-

- Make sure any organisation to which you belong takes a stand against Trident and affiliates to the Anti-Trident Campaign.
- Distribute ATC leaflets and petitions, and support anti-Trident activities such as public meetings and demonstrations.
- Talk to friends, neighbours, and people at work; write to newspapers; and make sure your elected representatives (MPs, councillors, etc.) stand up to be counted.
- Promote the idea of a boycott of any firms doing work on Trident. Already the workforce at Rolls-Royce in Hillington, Glasgow, have rejected any work on the US Trident submarines. But such action will only be effective if it is bolstered by public support.

If enough people take a public stand opposing Trident then this pro-nuclear government will have to reconsider this foolish project or else face serious consequences.

The actions of ordinary people **do** have an impact in the corridors of power. As Peter Foot of the Aberdeen University Centre for Defence Studies has noted: 'Policy-makers would not give house room to the arguments of, say, Lord Carver, were it not for the sight of thousands marching in the streets.'[11]

Trident CAN be stopped. Won't you help us?

REFERENCES

1. SANA Briefing, May 1983.
2. Quoted in Robert Aldridge, **First Strike** (Pluto Press, 1983), p.99.
3. Editorial, 5 April 1982.
4. **Hansard**, July 1980.
5. **Sunday Times**, 21 February 1982.
6. Quoted in **Glasgow Herald**, 20 October 1981.
7. **New Statesman**, [illegible] 1982.
8. Quoted in Sheila Durie and Rob Edwards, **Fuelling the Nuclear Arms Race** (Pluto, 1982).
9. Quoted in **Sunday Standard**, 27 Sept 1981.
10. LWT 'Weekend World' poll, 28 Feb 1982.
11. **Glasgow Herald**, 19 January 1983.